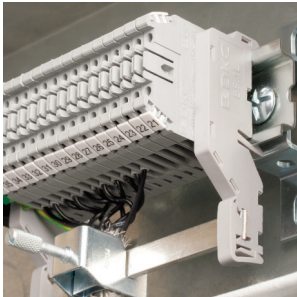




Product catalog

Solutions for automation
and IT



- Floor-mounted and wall-mounted enclosures
- Uninterruptible power supplies
- Floor-mounted and wall-mounted enclosures for IT equipment
- Climate control system
- Terminal blocks
- Marking system
- SPD

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Revision history

The following changes were made in the new version of the catalog:

Section: Wall-mounted enclosures and boxes

Page 16: The series of enclosures STX with glass was added.
Page 17: The series of red enclosures ST RAL3000 was added.
Page 18: The series of enclosures ST with two doors was added.
Page 21: Wall-mounted enclosures with transparent doors were renamed into CEX.

Section: The system of enclosures for floor-mounted of "RAM block"

Page 114: The photo and item R5MAG01 were replaced by R5MAG01N.

Section: Uninterruptible power supplies "RAM batt"

Pages 182-188: UPS order codes were updated.
Page 190: Information of the subsection "Accessories" was updated.
Page 193: Information of the subsection "Drawings and overall dimensions" was updated.
Page 198: The subsection "Discharge characteristics" was added.

The section "Jupiter" surge protection" was added

Pages 260-263: The parameter "pre-fuse rating" was added into SPD characteristics.

Section: Wiring system for electric plants and control boards "Quadro"

Page 326: Codes in the section "Heat-shrink tubing" were corrected.
Page 355: New products were added to the section "Terminal blocks for DIN-rails".
Page 461: The section "Control and signaling devices" was reorganized.

Section: Marking system

Pages 340-353: The section structure was changed.
Page 341: The range of printer cartridges was extended.
Pages 343-344: Codes for rails with digits and rails with symbols were updated.
Page 345: The lug tool was updated.
Pages 347-378: Codes for tubular holders were updated.

Additional references

DKC has issued a wide range of technical publications available both in printed and electronic form.

To order them in printed form, please contact any regional representative office of DKC. The list of representative offices can be found at the DKC website in the section "About company".

All the provided information can also be downloaded from the Company website: www.dkc.ru



Catalog
of cable support systems



Catalog
of power distribution solutions
"RAM power"



Catalog
of busbars and transformers



Fire-resistant
cable lines



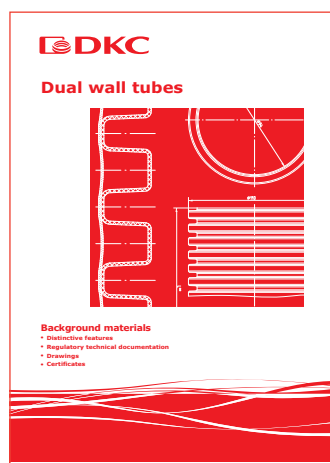
Collection of instructions for
installation of cable ducts



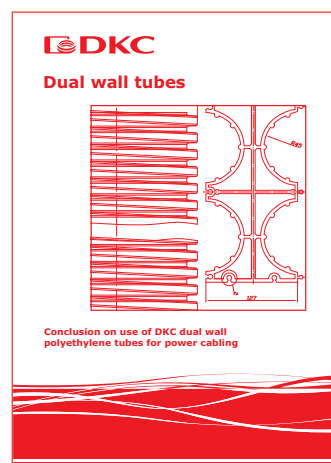
Zinc lamellar coating



Solutions for monolithic
construction

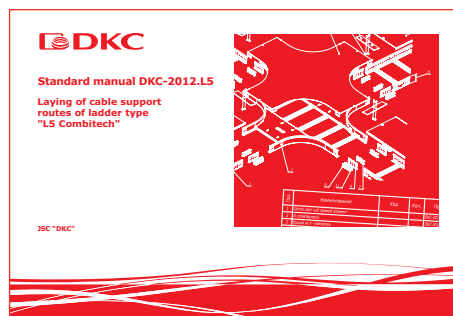


Dual wall tubes
Background materials

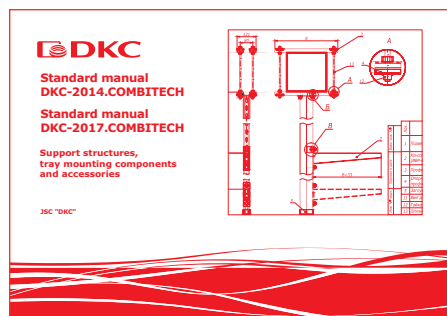


Conclusion
on use of DKC dual wall
polyethylene tubes for power
cabling

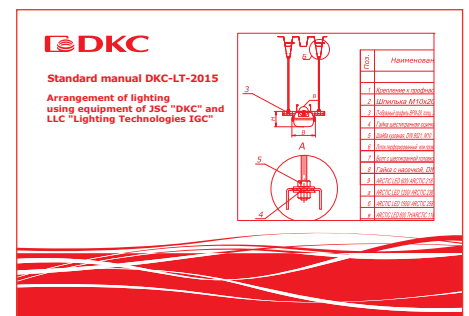
Additional references



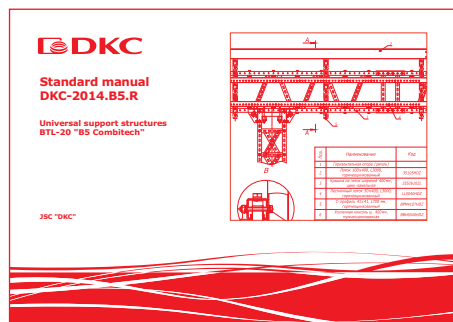
Standard manual DKC-2012.L5
Laying of cable support routes
of ladder type "L5 Combitech"



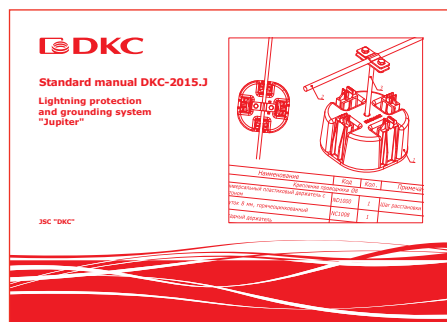
Standard manual DKC-2014.COMBITECH
Standard manual DKC-2017.COMBITECH
Support structures, tray mounting components
and accessories



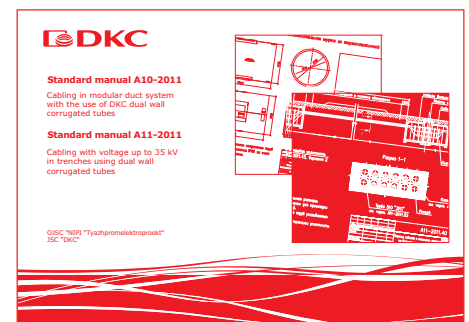
Standard manual DKC-LT-2015
Arrangement of lighting
using equipment of DKC and Lighting
Technologies



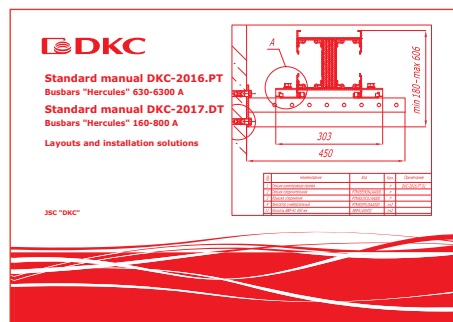
Standard manual DKC-2014.B5.R
Universal support structures BTL-20
"B5 Combitech"



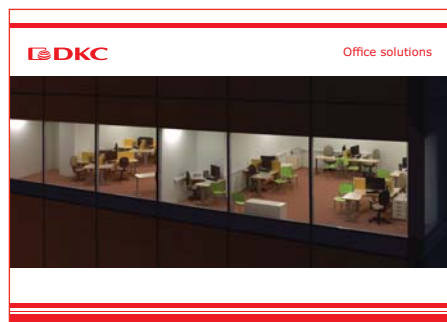
Standard manual DKC-2015.J
System of lightning protection
and grounding "Jupiter"



Standard manual A10-2011
Cabling in modular duct system with the use
of DKC dual wall corrugated tubes
Standard manual A11-2011
Cabling with voltage up to 35 kV
in trenches using dual wall
corrugated tubes



Standard manual DKC-2016.PT
Busbars "Hercules" 630-6300 A
Standard manual DKC-2017.DT
Busbars "Hercules" 160-800 A
Layouts and installation
solutions



Office solutions



Storage solutions



Supermarket solutions



Ground parking solutions



Industrial solutions

About DKC



DKC, an international company established in August 1998, has gained a strong leading position on the global electrotechnical market. Rapidly developing its production and introducing new high performance technologies, DKC today is among the largest manufacturers of cable support systems and low-voltage equipment in Russia and Europe.

The aim of DKC is to provide the latest industry solutions and high-quality products to the global electrotechnical market. Over the past few years DKC has made great progress and is constantly striving for new achievements.

Assortment

At the moment DKC product range involves more than 30,000 components and accessories combined into several basic groups: cable ducts, metal and plastic pipes, metal and plastic trays, low-voltage equipment, air conditioning systems, busbars, lightning protection and grounding. Due to active research works and development of new materials and products DKC has managed to collect an impressive list of its own patents that would enable the Company to maintain the status of an innovative manufacturer.

Coverage

At the moment manufacturing and warehousing complexes of DKC are located in Russia, Ukraine, Italy, Hungary and Romania. Regional representative offices of the Company operate in Russia, CIS countries and abroad. Products are being delivered to Latin America, West and Central Africa.

Sales strategy

DKC cooperates with an extensive network of distributors, thus not performing direct sales to end users. The balanced sales policy of the Company allows ensuring continuous presence of products on the market and adjusting the price level in a timely manner.

Partner support

The Company carries out seminars and technical consultations for its distributors and their clients on a regular basis. Each partner is treated with an individual approach, and obtains marketing support from the Company.

Quality

Certification of the quality management system (QMS) for conformity with the international standard ISO 9001 successfully held by DKC on a regular basis reflects commitment to the high standards and continuous improvement of management and production processes. DKC products are considered to be the baseline of quality for the whole industry.

Social targeting

DKC is firmly convinced that the key aspect of development of the Company is active involvement in life of its employees and electrotechnical industry at large. The Company launches new projects for higher education institutions, supports talented young specialists, and takes an active part in improvement of mounting education.

Industry solutions

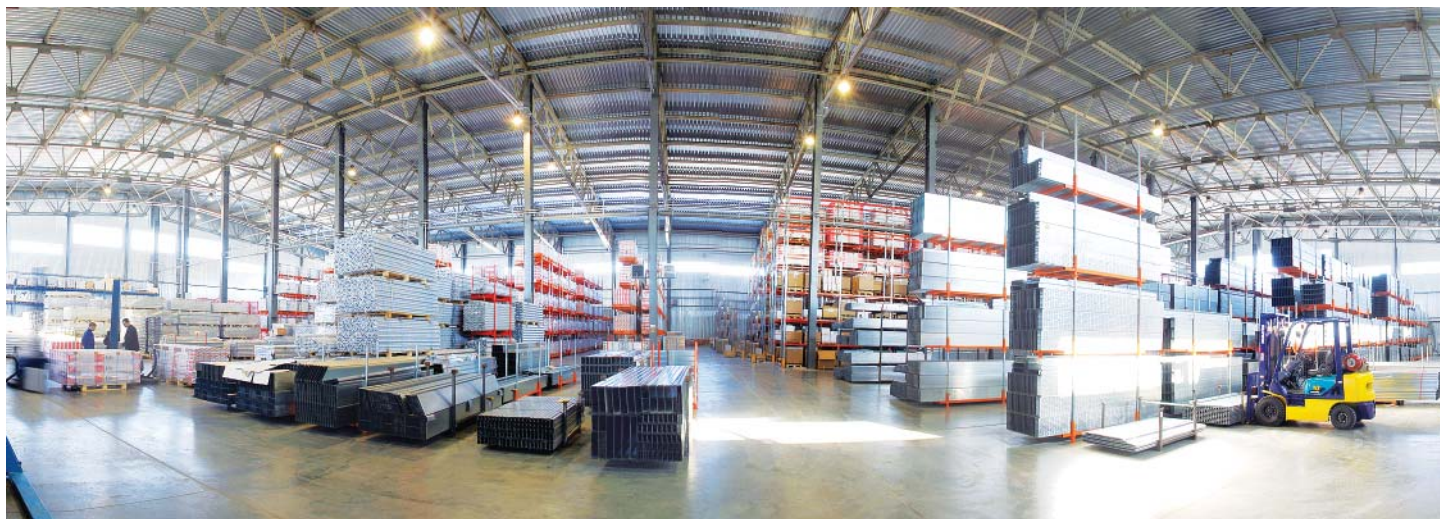
DKC employs its own engineering service which provides support to partners during design of fuse boxes according to single-line diagrams and development of complex solutions for special (non-standard) low-voltage packages (LVP).

Company specialists have gained considerable experience of industry solutions in the oil and gas sector, telecommunications, infrastructure projects, and many other areas. DKC has developed the special "Electronic directory of standard solutions" for "RAM block" enclosures intended specifically for design institutes, energy management departments of industrial enterprises, and engineering departments of companies manufacturing electric control room equipment. The basic advantage of this directory is the possibility to obtain the whole package of documents, including equipment specification and 2D drawings in dwg format, as well as compatibility of solutions with power and active equipment of any manufacturer that is present on the Russian market. Use of this directory allows reducing the development time of projects on power supply to industrial and civil facilities to a significant degree.

Projects

DKC products were given preference in supplies to many important facilities, such as: Vostochny Cosmodrome, Kazachya Compressor Station of the South Stream Pipeline, Alabyano-Baltiysky Tunnel, Mikheevsky Mining and Processing Plant, Achinsk Refinery of Rosneft, Olympic facilities in Sochi, Moscow Metro, State Academic Bolshoi Theatre, Rocket Plant of Concern PVO "Almaz-Antey", Terminal 1A of Kazan International Airport, bridge to the Russky Island, and Bushehr NPP.

Advantages of working with DKC



For distributors

Financial gains

High profit from sales of DKC products

High brand recognition

Absence of dumping due to strict control of DKC over compliance with the established discount range

Advantageous financial and credit conditions of a distributor contract

Logistics and warehousing

Information on warehouse state updated daily

Fast and free delivery of DKC products throughout the Russian Federation to any regional distributor's warehouse

Detailed planning of production and shipping schedule

Individual retail packaging for "Quadro" system

All elements of CQE enclosures of "RAM block" group are supplied in disassembled state to reduce costs for transportation and storage

Service

System of online orders of DKC products

Possibility to buy a wide range of high-quality low-voltage equipment at one place

Original marking of all products for automation of warehouse accounting

Publication of information on a distributor and all its retail outlets at the DKC website

Marketing

Financial support of regional marketing programs

Free provision of demonstration stands, specimens of finished products, printed catalogs and advertising materials

System of online training at the DKC website

Support

Involvement of DKC specialists to carry out seminars and presentations for clients

Program of annual trainings throughout Russia

Provision of engineering support during design of complex facilities

Constantly updated regulatory technical documentation on all products

For designers

Compatibility of low-voltage equipment with other series of DKC products (metal trays, cable ducts, pipes, etc.)

Versatile modular structure of enclosures is compatible with active and power equipment of the leading European manufacturers

Annually updated and full product catalog with indication of technical characteristics of products and accessories, as well as detail drawings

Technical support in terms of the entire variety of products by phone or via DKC website

Possibility to design fuse boxes on the basis of "RAM block" enclosure range according to single-line diagrams

Possibility to develop solutions for specialized (non-standard) LVPs

Training by DKC leading technical specialists

Free access to necessary 2D and 3D drawings of products compatible with the most common design programs

Regularly updated and full product catalog

Consultations and assistance in complex design solutions

For end users

High quality of products

Optimal delivery periods of ordered products

Wide network of authorized partner assemblers of low-voltage packages throughout Russia

Availability of all necessary certificates and test reports

Detailed instructions for assembly and installation of products

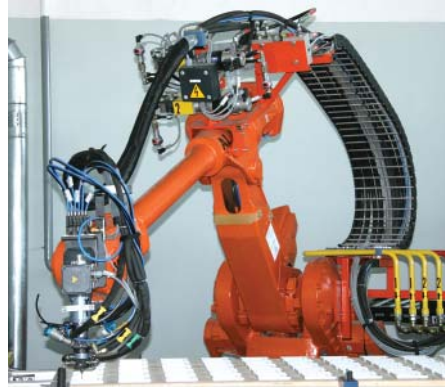
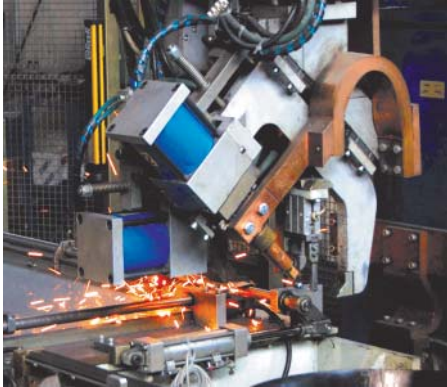
Professional installation

Possibility to perform technical training on equipment installation and operation

Full scope of DKC low-voltage equipment meets the highest requirements to installation and operation conditions

Comprehensive offer of equipment for assembly of fuse boxes

Over the past several years DKC proved to be the manufacturer of high-quality low-voltage equipment which has been installed and successfully operated not only in Russia and Europe, but also in countries of North Africa, Middle East and Latin America. Modern automated manufacturing, implementation of advanced technologies and own design bureau allow providing consumers with products of consistent high quality and make it possible for the Company to develop successfully on the market of electrotechnical equipment. DKC offers ample opportunities for furnishing of enclosures with high-quality components from one supplier to low-voltage equipment assemblers.

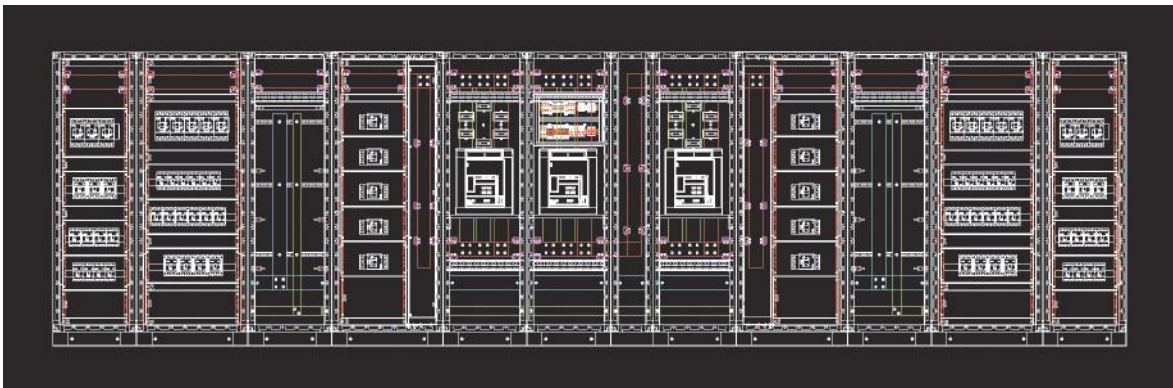


Technical support

DKC pays great attention to technical support of its products. Technical handbooks, drawings and software products are issued regularly for support of clients operating DKC low-voltage equipment. The website www.dkc.ru provides free access to all necessary 2D and 3D drawings in STEP and DWG formats which are compatible with the most common programs of two-dimensional and three-dimensional design. Dynamic blocks of 2D drawings of metal and heavy duty enclosures made of polycarbonate which allow simplifying design and avoiding errors when selecting accessories are also available.

High qualification of specialists of the Technical Support Department makes it possible to deal with projects of any complexity, render a full range of services on support of clients operating low-voltage equipment:

- design of fuse boxes on the basis of "RAM block" enclosure range and "Quadro" components according to single-line diagrams;
- development of solutions for special (non-standard) LVPs;
- technical training on equipment installation and operation.



Example of appearance drawing of a low-voltage switchgear on the basis of "RAM block" enclosures

Engineering Solutions Division of DKC

The Engineering Solutions Division of DKC consists of four departments: technical support department, two design departments and service department.

The basic center of cooperation with clients is the **Technical Support Department** responsible for receipt, processing and calculation of necessary specifications in accordance with customers' requests, as well as for performance of technical consultations of clients in respect of selection and installation of DKC products.

If there is a need in technical consultations on application of DKC products, please feel free to contact employees of the Technical Support Department located in the nearest city or region, or by phone 8-800-250-52-63.

The list of addresses is available at the Company website www.dkc.ru in the section "Support".

Design departments are responsible for comprehensive implementation of projects with introduction of DKC products, and solve the following tasks:

- exploratory design and development of the concept for integration of DKC products into a designed facility;
- coordination of necessary project components with a design organization in accordance with a customer's technical assignment;
- independent design using DKC products for further introduction into a project facility according to an available self-regulatory organization (SRO) admission.

Activities of the **Service Department** are aimed at:

- performance of necessary measurements and consultations in the course of facility exploratory design;
- technical support of design departments during design;
- organizational and technical management of product supply according to a project and installation monitoring (designer supervision, installation supervision);
- facility construction monitoring for necessary project adjustment (amendment and correction of specifications), coordination of changes in supplied products before shipment thereof;
- post-warranty support of a facility or customer in respect of operation of DKC installed products.

DKC provides in-depth technical support to its partners and clients, and specialists of the Engineering Solutions Division are always ready to assist in resolution of any problem.



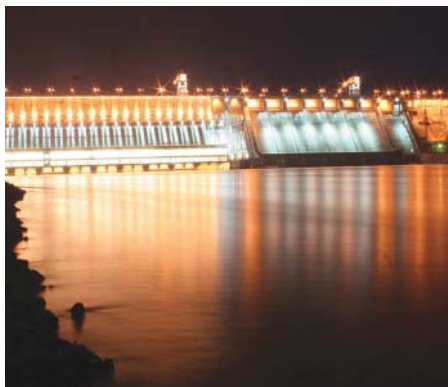
Wall-mounted enclosures and boxes

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Wall-mounted enclosures and boxes

Application

DKC wall-mounted enclosures made of high-quality materials in accordance with the most stringent requirements are designed for arrangement and protection of various electrotechnical and electronic components against environmental exposure in different applications.



Distinctive features

Assortment

A wide range of standard sizes and materials (sheet steel with high-quality coating, stainless steel, polycarbonate, heat-resistant plastic) allows selecting enclosures or boxes according to any customer's requirements.

Characteristics

Full scope of wall-mounted enclosures meets the highest requirements to installation and operation conditions. High protection degree allows using enclosures in harsh environmental conditions.

Conformity with regulations

Wall-mounted enclosures have all the necessary certificates of conformity, including conformity with the stated dust and moisture protection level. They have successfully passed climatic, shock and vibration tests, and are approved for operation at marine vessels and facilities.

Ease of installation

All enclosures, housings, boxes and accessories are supplied complete with fasteners required for installation.

Flexibility

Enclosures and boxes are compatible with active and power equipment of leading European and domestic manufacturers, and allow implementing virtually any solutions, selecting the most optimal structural options in accordance with all customer's requirements.

System composition

ST – wall-mounted metal enclosures

CE – wall-mounted metal enclosures

CDE – wall-mounted terminal boxes

Wall-mounted enclosures and boxes made of stainless steel

"RAM box" – heavy duty enclosures made of polycarbonate

"RAM base" – modular distribution boxes

Wall-mounted enclosure series ST



ST series enclosures are designed for protection of equipment in power distribution and automation systems against aggressive environmental exposure.

Modern automated manufacturing of ST series enclosures is carried out in the Russian Federation. DKC is the first Russian company which has launched its own, fully automated manufacturing and tuned up production of high-grade and state-of-the-art enclosures that are competitive on the global market.

Total quality control and introduction of modern technologies and advanced equipment into manufacturing of ST series enclosures make it possible not only to ensure high quality level and long service life of manufactured products, but also to provide universal and unique items.

The structure of ST enclosures and their elements is made of strong and safe modern materials, thus showing high operating reliability. Technologies and equipment unique for the Russian market are applied in manufacturing along with involvement of highly qualified specialists both from Russia and European Union countries.

ST enclosure series has fully inherited all basic advantages of CE series products, such as high degree of dust and moisture protection, shock resistance, operating efficiency, seismic and vibration resistance. Moreover, it has gained additional advantages, such as mounting plate marking, minimized number of plastic elements, higher resistance to impact of environmental factors, UKhL1 climatic version according to GOST 15150 and so on.

When working with the new series of enclosures, it is possible to use the current accessories from the range of CE series enclosures. Where necessary, this allows replacing CE series enclosures by newly modified enclosures without any trouble, not losing anything for that matter.

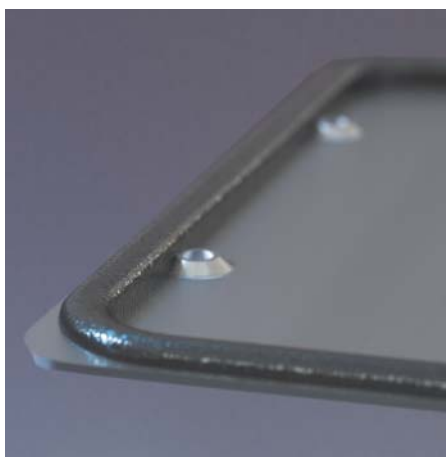
All the stated parameters for the new ST enclosure series are confirmed by the relevant tests and reports or certificates thereof. If you wish to obtain a confirming document, please visit the Company website at www.dkc.ru or contact a regional representative of DKC.

Advantages



Mounting plate marking

Allows for fast and convenient arrangement of active or power equipment on the mounting plate, and installation thereof into the enclosure



Closed loop of foamed polyurethane on the door and cable flange

Prevents ingress of moisture and solid particles within the enclosure. Seal is applied automatically using modern sophisticated equipment, thus ensuring high quality of application



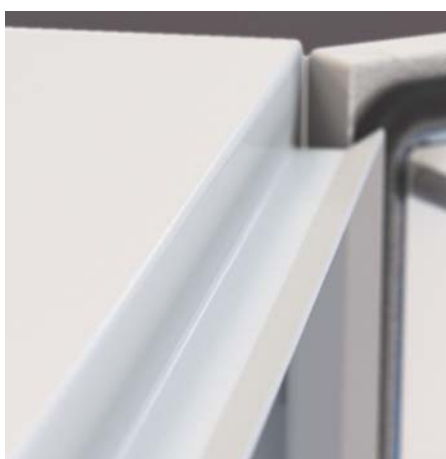
Metal lock cylinder

Prevents destruction of the basic element of the latching mechanism during operation and exposure to environmental factors, such as low and high temperatures, ultraviolet radiation



Metal door hinge retainer

Secures a door hinge reliably, resistant to impact of low and high temperatures, ensures reliable contact under vibration loads on the enclosure



Enclosure edging

Standard and obligatory solution for DKC enclosures. Prevents ingress of moisture into the enclosure



Protection of work holes

In order to ensure the required level of dust and moisture protection, special plugs for work holes are used



Closed weld for enclosure rear wall

Ensures high level of resistance to vibration and seismic loads, as well as to static weight loads

ST metal enclosures



Purpose:

- for power distribution and process automation systems.

Material:

- Frame: steel with thickness of up to 1.2 mm, RAL 7035 powder coating;
- door: steel with thickness of up to 1.5 mm, RAL 7035 powder coating;
- mounting plate: galvanized steel with thickness of up to 1.8 mm;
- lock cylinder: metal;
- cast seal: polyurethane.

Distinctive features:

- dust and moisture protection degree is from IP65 to IP66;
- shock resistance degree is IK10;
- door is two-way and installed on the right by default;
- lock for a key with a double bit of 3 mm is installed in the door;
- marking is applied on the mounting plate;
- quick-release flange for cable entry with applied seal;
- full compatibility with CE enclosure accessories.

Scope of supply:

- enclosure, mounting plate, door, lock, cable entry flange, mounting accessories.

Depth	Height	Width	Lock, q-ty	Protection degree	Cable flange type, q-ty	Code
150	200	300	without handle, 1 pce	IP66	–	R5ST0231
	300	250	without handle, 1 pce	IP66	–	R5ST0391
	300	300	without handle, 1 pce	IP66	–	R5ST0331
	300	400	without handle, 1 pce	IP66	–	R5ST0341
	400	300	without handle, 1 pce	IP66	–	R5ST0431
	500	300	without handle, 2 pcs	IP66	–	R5ST0531
200	300	400	without handle, 1 pce	IP66	type 3, 1 pce	R5ST0342
	400	300	without handle, 1 pce	IP66	–	R5ST0432
	400	400	without handle, 1 pce	IP66	type 3, 1 pce	R5ST0442
	400	600	without handle, 1 pce	IP66	type 5, 1 pce	R5ST0462
	500	300	without handle, 2 pcs	IP66	–	R5ST0532
	500	400	without handle, 2 pcs	IP66	type 3, 1 pce	R5ST0542
	500	500	without handle, 2 pcs	IP66	type 4, 1 pce	R5ST0552
	500	600	without handle, 2 pcs	IP66	type 5, 1 pce	R5ST0562
	600	400	without handle, 2 pcs	IP65	type 3, 1 pce	R5ST0642
	600	500	without handle, 2 pcs	IP65	type 4, 1 pce	R5ST0652
	700	500	without handle, 2 pcs	IP65	type 4, 1 pce	R5ST0752
	800	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST0862
250	800	800	without handle, 2 pcs	IP65	type 3, 2 pcs	R5ST0882
	1200	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST1262
	500	400	without handle, 2 pcs	IP65	type 3, 1 pce	R5ST0549
	600	400	without handle, 2 pcs	IP65	type 3, 1 pce	R5ST0649
	600	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST0669
	700	500	without handle, 2 pcs	IP65	type 4, 1 pce	R5ST0759
300	800	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST0869
	1000	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST1069
	500	500	without handle, 2 pcs	IP65	type 4, 1 pce	R5ST0553
	500	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST0563
	800	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST0863
	800	800	without handle, 2 pcs	IP65	type 3, 2 pcs	R5ST0883
	1000	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST1063
	1000	800	without handle, 2 pcs	IP65	type 3, 2 pcs	R5ST1083
	1200	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST1263
	1200	800	without handle, 2 pcs	IP65	type 3, 2 pcs	R5ST1283
400	1400	600	handle with lock, 1 pce	IP65	type 5, 1 pce	R5ST1463
	1400	800	handle with lock, 1 pce	IP65	type 3, 2 pcs	R5ST1483
	600	400	without handle, 2 pcs	IP65	type 3, 1 pce	R5ST0644
	600	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST0664
	800	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST0864
	800	800	without handle, 2 pcs	IP65	type 3, 2 pcs	R5ST0884
	1000	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST1064
	1000	800	without handle, 2 pcs	IP65	type 3, 2 pcs	R5ST1084
	1200	600	without handle, 2 pcs	IP65	type 5, 1 pce	R5ST1264
	1200	800	without handle, 2 pcs	IP65	type 3, 2 pcs	R5ST1284

STX wall-mounted enclosures with a transparent door


Purpose:

- for power distribution systems;
- for process automation.

Material:

- frame is made of steel with thickness of 1.2 mm, RAL 7035 powder coating;
- door is made of steel with thickness of 1.5 mm, RAL 7035 powder coating, tempered glass;
- mounting plate is made of galvanized steel with thickness of 1.8 mm.

Distinctive features:

- dust and moisture protection degree is from IP65 to IP66;
- shock resistance degree is IK10;
- door is two-way, fitted with tempered glass and installed on the right by default; Lock for a key with a double bit of 3 mm is installed in the door;
- quick-release flange for cable entry complete with seal.

Scope of supply:

- enclosure, mounting plate, door, lock, cable entry flange, mounting accessories.

Drawings:

- on a disk attached to the catalog;
- at the Company website in the section "Support".



Enclosure dimensions, mm			Lock, q-ty	Protection degree	Cable flange type, q-ty	Code
depth	height	width				
200	400	300	1 pce	IP66	-	R5STX0432
		400	1 pce		type 3, 1 pce	R5STX0442
		600	1 pce		type 4, 1 pce	R5STX0462
	500	300	2 pcs		-	R5STX0532
		400	2 pcs		type 3, 1 pce	R5STX0542
		500	2 pcs		type 4, 1 pce	R5STX0552
	600	400	2 pcs		type 3, 1 pce	R5STX0642
	700	500	2 pcs		type 4, 1 pce	R5STX0752
250	500	400	2 pcs	IP65	type 3, 1 pce	R5STX0549
	600	400	2 pcs		type 3, 1 pce	R5STX0649
		600	2 pcs		type 5, 1 pce	R5STX0669
	700	500	2 pcs		type 4, 1 pce	R5STX0759
	800	600	2 pcs		type 5, 1 pce	R5STX0869
	1000	600	2 pcs		type 5, 1 pce	R5STX1069
300	800	600	2 pcs		type 5, 1 pce	R5STX0863
	1000	600	2 pcs		type 5, 1 pce	R5STX1063
		800	2 pcs		type 3, 2 pcs	R5STX1083
	1200	600	2 pcs		type 5, 1 pce	R5STX1263
		800	2 pcs		type 3, 2 pcs	R5STX1283
400	600	400	2 pcs		type 3, 1 pce	R5STX0644
		600	2 pcs		type 5, 1 pce	R5STX0664
	800	600	2 pcs		type 5, 1 pce	R5STX0864
	1000	600	2 pcs		type 5, 1 pce	R5STX1064
		800	2 pcs		type 3, 2 pcs	R5STX1084
	1200	600	2 pcs		type 5, 1 pce	R5STX1264
		800	2 pcs		type 3, 2 pcs	R5STX1284

ST wall-mounted enclosures of red color RAL 3000



Purpose:

- for power distribution systems;
- for process automation.

Material:

- frame is made of steel with thickness of 1.2 mm, RAL 3000 powder coating of red color;
- door is made of steel with thickness of 1.5 mm, RAL 3000 powder coating of red color;
- mounting plate is made of galvanized steel with thickness of 1.8 mm.

Distinctive features:

- dust and moisture protection degree is from IP65 to IP66;
- shock resistance degree is IK10;
- door is two-way and installed on the right by default. Lock for a key with a double bit of 3 mm is installed in the door;
- quick-release flange for cable entry complete with seal.

Scope of supply:

- enclosure, mounting plate, door, lock, cable entry flange, mounting accessories.

Drawings:

- on a disk attached to the catalog;
- at the Company website in the section "Support".

Dimensions, mm			Lock, q-ty	Protection degree	Cable flange type, q-ty	Code
depth	height	width				
150	200	300	1 pce	IP66	-	R5ST0231-RAL3000
	300	250	1 pce		-	R5ST0391-RAL3000
	300	300	1 pce		-	R5ST0331-RAL3000
	300	400	1 pce		-	R5ST0341-RAL3000
	400	300	1 pce		-	R5ST0431-RAL3000
	500	400	2 pcs		-	R5ST0531-RAL3000
200	300	400	1 pce	IP66	type 3, 1 pce	R5ST0342-RAL3000
	400	300	1 pce		-	R5ST0432-RAL3000
	400	400	1 pce		type 3, 1 pce	R5ST0442-RAL3000
	400	600	1 pce		type 4, 1 pce	R5ST0462-RAL3000
	500	300	2 pcs		-	R5ST0532-RAL3000
	500	400	2 pcs		type 3, 1 pce	R5ST0542-RAL3000
	500	500	2 pcs		type 4, 1 pce	R5ST0552-RAL3000
	500	600	2 pcs		type 5, 1 pce	R5ST0562-RAL3000
	600	400	2 pcs		type 3, 1 pce	R5ST0642-RAL3000
	600	500	2 pcs		type 4, 1 pce	R5ST0652-RAL3000
	700	500	2 pcs		type 4, 1 pce	R5ST0752-RAL3000
	800	600	2 pcs		type 5, 1 pce	R5ST0862-RAL3000
	800	800	2 pcs		type 3, 2 pcs	R5ST0882-RAL3000
	1200	600	2 pcs		type 5, 1 pce	R5ST1262-RAL3000
250	500	400	2 pcs	IP65	type 3, 1 pce	R5ST0549-RAL3000
	600	400	2 pcs		type 3, 1 pce	R5ST0649-RAL3000
	600	600	2 pcs		type 5, 1 pce	R5ST0669-RAL3000
	700	500	2 pcs		type 4, 1 pce	R5ST0759-RAL3000
	800	600	2 pcs		type 5, 1 pce	R5ST0869-RAL3000
	1000	600	2 pcs		type 5, 1 pce	R5ST1069-RAL3000
300	500	500	2 pcs	IP65	type 4, 1 pce	R5ST0553-RAL3000
	500	600	2 pcs		type 5, 1 pce	R5ST0563-RAL3000
	800	600	2 pcs		type 5, 1 pce	R5ST0863-RAL3000
	800	800	2 pcs		type 3, 2 pcs	R5ST0883-RAL3000
	1000	600	2 pcs		type 5, 1 pce	R5ST1063-RAL3000
	1000	800	2 pcs		type 3, 2 pcs	R5ST1083-RAL3000
	1200	800	2 pcs		type 3, 2 pcs	R5ST1283-RAL3000
	1200	600	2 pcs		type 5, 1 pce	R5ST1263-RAL3000
400	600	400	2 pcs	IP65	type 3, 1 pce	R5ST0644-RAL3000
	600	600	2 pcs		type 5, 1 pce	R5ST0664-RAL3000
	800	600	2 pcs		type 5, 1 pce	R5ST0864-RAL3000
	800	800	2 pcs		type 3, 2 pcs	R5ST0884-RAL3000
	1000	600	2 pcs		type 5, 1 pce	R5ST1064-RAL3000
	1000	800	2 pcs		type 3, 2 pcs	R5ST1084-RAL3000
	1200	600	2 pcs		type 5, 1 pce	R5ST1264-RAL3000
	1200	800	2 pcs		type 3, 2 pcs	R5ST1284-RAL3000

ST wall-mounted enclosures with two doors



Purpose:

- for power distribution systems;
- for process automation.

Material:

- frame is made of steel with thickness of 1.2 mm, RAL 7035 powder coating;
- door is made of steel with thickness of 1.5 mm, RAL 7035 powder coating;
- mounting plate is made of galvanized steel with thickness of 1.8 mm.

Distinctive features:

- dust and moisture protection degree is from IP55;
- shock resistance degree is IK10;
- locks for a key with a double bit of 3 mm are installed in doors;
- quick-release flange for cable entry complete with seal.

Scope of supply:

- enclosure, mounting plate, doors, locks, cable entry flange, mounting accessories.

Drawings:

- on a disk attached to the catalog;
- at the Company website in the section "Support".

Dimensions, mm			Lock, q-ty	Protection degree	Cable flange type, q-ty	Code
depth	height	width				
200	800	1000	2 pcs	IP55	type 1, 2 pcs	R5ST0812
300	600	800	2 pcs		type 1, 2 pcs	R5ST0683
300	800	1000	2 pcs		type 1, 2 pcs	R5ST0813

Wall-mounted enclosure series CE



Designed for provision of reliable protection of installed equipment against external effects in power distribution and automation systems.

CE series enclosures are distinguished by operating reliability, made of high-grade sheet steel and coated with a layer of powder polyester paint having heat-resisting properties.

The enclosure has only 4 welds, thus ensuring high structural strength and reducing risks of corrosion.

Cast polyurethane seal provides high degree of protection against ingress of moisture and dust within the enclosure.

The mounting plate, flange and all necessary mounting accessories are supplied complete with the enclosure for ease of assembly, whereas the rear panel has perforated holes for surface mounting that excludes the need for marking and perforation.

A standard lock with a cylinder for a key with a double bit is replaced by other types of standard locks. It is possible to install special door rails for ease of installation of equipment on the door.

CE series enclosures comply with the most stringent quality standards which is confirmed by European and Russian certificates, and are recommended for use at marine vessels and in earthquake endangered areas.

CE wall-mounted enclosures with a solid door


Purpose:

- for power distribution and process automation systems.

Material:

- frame and door: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- mounting plate: galvanized steel with thickness of 2 mm;
- cast seal: polyurethane.

Distinctive features:

- dust and moisture protection degree is from IP55 to IP66;
- shock resistance degree is IK10;
- door is two-way and installed on the right by default;
- lock for a key with a double bit of 3 mm is installed in the door;
- quick-release flange for cable entry complete with seal.

Scope of supply:

- enclosure, mounting plate, door, lock, cable entry flange, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm			Lock, q-ty	Protection degree	Cable flange type, q-ty	Code
depth	height	width				
150	200	300	without handle, 1 pce	IP66	–	R5CE0231
	300	250	without handle, 1 pce	IP66	–	R5CE0391
	300	300	without handle, 1 pce	IP66	–	R5CE0331
	300	400	without handle, 1 pce	IP66	–	R5CE0341
	400	300	without handle, 1 pce	IP66	–	R5CE0431
	500	300	without handle, 2 pcs	IP66	–	R5CE0531
200	300	400	without handle, 1 pce	IP66	type 1, 1 pce	R5CE0342
	400	300	without handle, 1 pce	IP66	–	R5CE0432
	400	400	without handle, 1 pce	IP66	type 1, 1 pce	R5CE0442
	400	600	without handle, 1 pce	IP66	type 2, 1 pce	R5CE0462
	500	300	without handle, 2 pcs	IP66	–	R5CE0532
	500	400	without handle, 2 pcs	IP66	type 1, 1 pce	R5CE0542
	500	500	without handle, 2 pcs	IP66	type 1, 1 pce	R5CE0552
	500	600	without handle, 2 pcs	IP66	type 2, 1 pce	R5CE0562
	600	400	without handle, 2 pcs	IP65	type 1, 1 pce	R5CE0642
	600	500	without handle, 2 pcs	IP65	type 1, 1 pce	R5CE0652
	700	500	without handle, 2 pcs	IP65	type 1, 1 pce	R5CE0752
	800	600	without handle, 2 pcs	IP65	type 2, 1 pce	R5CE0862
250	800	800	without handle, 2 pcs	IP65	type 2, 1 pce	R5CE0882
	500	400	without handle, 2 pcs	IP65	type 1, 1 pce	R5CE0549
	600	400	without handle, 2 pcs	IP65	type 1, 1 pce	R5CE0649
	600	600	without handle, 2 pcs	IP65	type 2, 1 pce	R5CE0669
	700	500	without handle, 2 pcs	IP65	type 1, 1 pce	R5CE0759
	800	600	without handle, 2 pcs	IP65	type 2, 1 pce	R5CE0869
300	1000	600	without handle, 2 pcs	IP55	type 2, 1 pce	R5CE1069
	500	500	without handle, 2 pcs	IP65	type 1, 1 pce	R5CE0553
	500	600	without handle, 2 pcs	IP65	type 2, 1 pce	R5CE0563
	800	600	without handle, 2 pcs	IP65	type 2, 1 pce	R5CE0863
	800	800	without handle, 2 pcs	IP65	type 2, 1 pce	R5CE0883
	1000	600	without handle, 2 pcs	IP55	type 2, 1 pce	R5CE1063
	1000	800	without handle, 2 pcs	IP55	type 2, 1 pce	R5CE1083
	1200	600	without handle, 2 pcs	IP55	type 2, 1 pce	R5CE1263
	1200	800	without handle, 2 pcs	IP55	type 2, 1 pce	R5CE1283
	1400	600	handle with lock, 1 pce	IP55	type 2, 1 pce	R5CE1463
400	1400	800	handle with lock, 1 pce	IP55	type 2, 1 pce	R5CE1483
	600	400	without handle, 2 pcs	IP55	type 1, 1 pce	R5CE0644
	600	600	without handle, 2 pcs	IP55	type 2, 1 pce	R5CE0664
	800	600	without handle, 2 pcs	IP55	type 2, 1 pce	R5CE0864
	800	800	without handle, 2 pcs	IP55	type 2, 1 pce	R5CE0884
	1000	600	without handle, 2 pcs	IP55	type 2, 1 pce	R5CE1064
	1000	800	without handle, 2 pcs	IP55	type 2, 1 pce	R5CE1084

CE wall-mounted enclosures with a double door



Purpose:

- for power distribution and process automation systems.

Material:

- frame and door: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- mounting plate: galvanized steel with thickness of 2 mm;
- cast seal: polyurethane.

Distinctive features:

- dust and moisture protection degree is IP55;
- shock resistance degree is IK10;
- lock for a key with a double bit of 3 mm is installed in the door;
- quick-release flange for cable entry complete with seal.

Scope of supply:

- enclosure, mounting plate, door, lock, cable entry flange, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm			Lock, q-ty	Protection degree	Cable flange type, q-ty	Code
depth	height	width				
200	800	1000	without handle, 2 pcs	IP55	type 1, 2 pcs	R5CE0812
300	600	800	without handle, 2 pcs		type 1, 2 pcs	R5CE0683
	800	1000	without handle, 2 pcs		type 1, 2 pcs	R5CE0813
	1000	1000	handle with lock, 1 pce		type 1, 2 pcs	R5CE1013
	1200	1000	handle with lock, 1 pce		type 1, 2 pcs	R5CE1213
	1400	1000	handle with lock, 1 pce		type 1, 2 pcs	R5CE1413
	1200	1200	handle with lock, 1 pce		type 2, 2 pcs	R5CE12123

CEX wall-mounted enclosures with a transparent door



Purpose:

- for power distribution and process automation systems.

Material:

- Frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- door: steel with thickness of 1.5 mm, RAL 7035 powder coating, tempered glass;
- mounting plate: galvanized steel with thickness of 2 mm.

Distinctive features:

- dust and moisture protection degree is from IP55 to IP66;
- shock resistance degree is IK10;
- door is two-way and installed on the right by default. Lock for a key with a double bit of 3 mm is installed in the door;
- quick-release flange for cable entry complete with seal.

Scope of supply:

- enclosure, mounting plate, door, lock, cable entry flange, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm			Lock, q-ty	Protection degree	Cable flange type, q-ty	Code
depth	height	width				
200	400	300	without handle, 1 pce	IP55	–	R5CEX0432
	400	400	without handle, 1 pce		type 1, 1 pce	R5CEX0442
	400	600	without handle, 1 pce		type 2, 1 pce	R5CEX0462
	500	300	without handle, 2 pcs		–	R5CEX0532
	500	400	without handle, 2 pcs		type 1, 1 pce	R5CEX0542
	500	500	without handle, 2 pcs		type 1, 1 pce	R5CEX0552
	600	400	without handle, 2 pcs		type 1, 1 pce	R5CEX0642
	700	500	without handle, 2 pcs		type 1, 1 pce	R5CEX0752
250	500	400	without handle, 2 pcs		type 1, 1 pce	R5CEX0549
	600	400	without handle, 2 pcs		type 1, 1 pce	R5CEX0649
	600	600	without handle, 2 pcs		type 2, 1 pce	R5CEX0669
	700	500	without handle, 2 pcs		type 1, 1 pce	R5CEX0759
	800	600	without handle, 2 pcs		type 2, 1 pce	R5CEX0869
	1000	600	without handle, 2 pcs		type 2, 1 pce	R5CEX1069
300	800	600	without handle, 2 pcs		type 2, 1 pce	R5CEX0863
	1000	600	without handle, 2 pcs		type 2, 1 pce	R5CEX1063
	1000	800	without handle, 2 pcs		type 2, 1 pce	R5CEX1083
	1200	600	without handle, 2 pcs		type 2, 1 pce	R5CEX1263
	1200	800	without handle, 2 pcs		type 2, 1 pce	R5CEX1283

Accessories for ST and CE

Inner door


Purpose:

- for installation of control and signaling elements.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- adjustable installation depth (40–65 mm);
- not installed into enclosures with depth of 150 mm;
- door is equipped with a lock; for enclosures with height of 700 mm and more, doors are equipped with two locks;
- lock for a key with a double bit of 3 mm is installed in the door.

Scope of supply:

- door, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Lock, q-ty	Protection degree	Code
height	width			
400	300	without handle, 1	IP20	R5IE43
	400	without handle, 1		R5IE44
	600	without handle, 1		R5IE46
500	300	without handle, 1		R5IE53
	400	without handle, 1		R5IE54
	500	without handle, 1		R5IE55
600	400	without handle, 1		R5IE64
	600	without handle, 1		R5IE66
700	500	without handle, 2		R5IE75
800	600	without handle, 2		R5IE86
1000	600	without handle, 2		R5IE16
	800	without handle, 2		R5IE18
1200	600	without handle, 2		R5IE26
	800	without handle, 2		R5IE28

Protective shield


Purpose:

- for protection against moisture ingress.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Scope of supply:

- shield, mounting accessories.

Drawing:

- see on the disk.

Enclosure dimensions, mm		Code
depth	width	
200	400	R5TT042
	500	R5TT052
250	400	R5TT049
	500	R5TT059
	600	R5TT069
300	600	R5TT063
	800	R5TT083

Modular equipment panels


Purpose:

- for installation of modular equipment (circuit breakers, load break switches, etc.)

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- DIN rail complete with each panel;
- panels are installed into enclosures with depth from 200 mm.

Scope of supply:

- supporting frame, modular panels, DIN rails, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Number of modules	Protection degree	Code
height	width			
400	300	20 (2x10)	IP20	R5TM43
400	400	32 (2x16)	IP20	R5TM44
500	300	30 (3x10)	IP20	R5TM53
500	400	48 (3x16)	IP20	R5TM54
500	500	63 (3x21)	IP20	R5TM55
600	400	64 (4x16)	IP20	R5TM64
700	500	84 (4x21)	IP20	R5TM75
600	600	78 (3x26)	IP20	R5TM66
800	600	104 (4x26)	IP20	R5TM86
1000	600	130 (5x26)	IP20	R5TM106
1200	600	156 (6x26)	IP20	R5TM126

A solid panel with height of 180 mm is available for enclosures with width of 600 mm

Panel dimensions, mm		Type	Code
height	width		
180	600	solid panel	R5PFC64

Wall mounting bracket



R5A50

R5A55

Purpose:

- for wall mounting of wall-mounted enclosures and terminal boxes.

Material:

- galvanized steel.

Distinctive features:

- two versions for different loads.

Scope of supply:

- 4 brackets, mounting accessories.

Drawings:

- see on the disk.

Maximum load on one bracket, kg	Code
15	R5A50
25	R5A55

Eye bolt


Purpose:

- transportation of wall-mounted enclosures.

Material:

- metal.

Distinctive features:

- maximum vertical load on two bolts is 160 kg.

Scope of supply:

- 2 eye bolts, mounting accessories.

Description	Code
Kit for transportation of wall-mounted enclosures	R5LEST160

Escutcheon


Purpose:

- unauthorized access protection.






Distinctive features:

- lock cylinders are replaceable.

Material:

- plastic.

Description	Material handle/cylinder	Code
Escutcheon, cylinder with a double bit of 3 mm	plastic/plastic	R5CE205

Cylinders	Description	Dimension, mm	Material cylinder/key	Code	
				key	cylinder
	For a double-bit key	3	metal/plastic	R5CE240	R5CE261
	For a triangle key	8	metal/plastic	R5CE246	R5CE224
		7	metal/plastic	R5CE245	R5CE223
	For a key of FIAT type	–	metal/metal	R5CE237	R5CE226
	For a square key	7	metal/plastic	R5CE243	R5CE221
	For an Allen wrench, complete with a key	–	plastic+metal/metal	R5CE227	
	For a customized wrench, complete with a key	–	plastic+metal/metal	R5CE228	

Standard handle


Purpose:

- for unauthorized access protection.





Distinctive features:

- handle cylinders are replaceable.

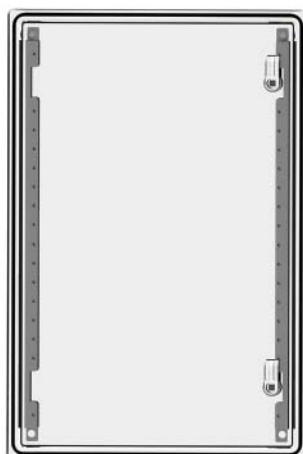
Material:

- plastic.

Description	Material handle/cylinder	Code
Handle, cylinder with a double bit of 3 mm	plastic/cylinder	R5CE200

Cylinders	Description	Dimension, mm	Material cylinder/key	Code	
				key	cylinder
	For a double-bit key	3	metal/metal	R5CE230	R5CE219
	For a triangle key	8	metal/metal	R5CE236	R5CE214
		7		R5CE235	R5CE213
	For a key of FIAT type	–	metal/metal	R5CE237	R5CE262
	For a square key	7	metal/metal	R5CE233	R5CE211
		8		R5CE234	R5CE212

Vertical door rails


Purpose:

- for installation of equipment on the internal door surface.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- they have perforation with diameter of 4.2 mm and pitch of 25 mm for ease of rail installation.

Scope of supply:

- 2 rails, mounting accessories.

Drawings:

- see on the disk.

Enclosure height, mm	Code
500	R5S50
600	R5S60
700	R5S70
800	R5S80
1000	R5S100
1200	R5S120
1400	R5S140

Cable gland


Purpose:

- for arrangement of entry into the enclosure.

Material:

- brass;
- surface nickel plating.

Color:

- nickel.

Distinctive features:

- dust and moisture protection degree is up to IP65;
- operating temperature range is from -40 to +100 °C;
- resistant to impact of salts, acids and alkalis;
- structure has elements made of polyamide 6.6 designed for protection of a cable during entry thereof into the enclosure;
- it is recommended for use when arranging cable entry into enclosures made of stainless steel or painted metal, application whereof is designed for exposure to aggressive media;
- each gland is equipped with an attachment lock nut.

Scope of supply:

- 1 to 10 glands in a package.

Inlet port diameter	Cable dimension, mm	Q-ty in a package	Code
M12	3-7	10	R5BCM12
M16	4-8	10	R5BCM16
M18	6-10	10	R5BCM18
M20	8-12	10	R5BCM20
M24	10-14	10	R5BCM24
M27	13-18	10	R5BCM27
M32	15-22	5	R5BCM32
M36	18-25	5	R5BCM36
M40	22-28	2	R5BCM40
M48	25-32	2	R5BCM48
M54	32-38	1	R5BCM54
M60	37-44	1	R5BCM60
M72	42-52	1	R5BCM72
M80	55-60	1	R5BCM80
M85	65-70	1	R5BCM85
M100	75-80	1	R5BCM100

Membrane cable gland


Purpose:

- for arrangement of cable entry into the enclosure.

Material:

- thermoplastic elastomer.

Color:

- white.

Distinctive features:

- fire resistance V0 according to UL94;
- dust and moisture protection degree is up to IP65;
- operating temperature range is from -40 to +130 °C;
- does not contain halogens;
- resistant to oil products;
- 6 versions.

Scope of supply:

- cable gland, mounting accessories.

Drawings:

- see on the disk.

Type	Total number of glands	Hole diameter, mm Q-ty	Protection degree	Code
FL21	6	24–54 mm, 2 pcs 30–59 mm, 1 pce 6–14 mm, 3 pcs	IP65	R5HTC03
	16	40 mm, 1 pce 20 mm, 15 pcs	IP54	R5HTC16
	25	20–26 mm (IP65) or 12–15 mm (IP55), 1 pce 8–14 mm (IP65) or 7–10 mm (IP55), 16 pcs 14–20 mm (IP65) or 5–10 mm (IP55), 4 pcs 5–7 mm (IP65), 4 pcs	IP55–IP65	R5HTC25
	35	17–32 mm, 1 pce 12–18 mm, 2 pcs 10–14 mm, 16 pcs 7–12 mm, 12 pcs 6–10 mm, 4 pcs	IP65	R5HTC35
	50	7–13 mm, 49 pcs 15–25 mm, 1 pce	IP65	R5HTC50
	36	4–8 mm, 4 pcs 6–10 mm, 4 pcs 7–12 mm, 12 pcs 10–14 mm, 14 pcs 12–18 mm, 2 pcs 17–32 mm, 1 pce	IP65	R5HTKC36
FL13	10	12–21 mm, 2 pcs 8–15 mm, 2 pcs 5–8 mm, 6 pcs	IP55	R5HTB10

Cable flanges


Purpose:

- for arrangement of cable entry into the enclosure.

Material:

- steel with thickness from 1.2 to 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- required flange type can be determined using the table on page 20;
- two flange versions: solid and perforated flanges for installation of a cable gland as per FL21 standard;
- cable flanges are ordered separately;
- applicable only to CE and ST series enclosures.

Scope of supply:

- flange, mounting accessories.

Drawings:

- see on the disk.

Flange type	Perforation / type	Number of notches	Series of enclosures	Dimension, mm	Code
1	yes / FL21	1	CE	330x100	R5FPCE01
2	yes / FL21	2	CE	530x100	R5FPCE02
1	no / *	–	CE	330x100	R5FSCE01
2	no / *	–	CE	530x100	R5FSCE02
3	yes / FL21	1	ST	343x153	R5FPST01
4	yes / FL21	1	ST	443x153	R5FPST02
5	yes / FL21	2	ST	543x153	R5FPST03

Limit switch holder


Purpose:

- for installation of a limit switch.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- attached to a grounding bolt within the enclosure;
- use of a holder allows preserving high degree of dust and moisture protection of the enclosure;
- holder is designed for installation of R5CM** limit switches, see page 115;
- limit switch is not included into the scope of supply of enclosures.

Scope of supply:

- holder, mounting accessories.

Drawings:

- see on the disk.

Description	Code
R5MC** limit switch holder for CE series enclosures	R5FLS01

Pole attachment kit


Purpose:

- for attachment of enclosures to poles.

Material:

- profile is made of galvanized steel with thickness of 2 mm;
- coupling bands are made of stainless steel AISI 304, 19x0.7 mm (WxT).

Distinctive features:

- maximum pole diameter is up to 200 mm;
- rated static weight load is up to 150 kg;
- band tension and cutting are performed using standard tools. Tools are not included into the scope of supply;
- kit is designed for installation of CE, ST series enclosures and "RAM box" heavy duty enclosures.

Scope of supply:

- profile, coupling band, band attachment lock.

Drawings:

- see on the disk.

Enclosure width, mm	Code
300	R5FB300
400	R5FB400
500	R5FB500
600	R5FB600
800	R5FB800

Door opening angle limiter


Purpose:

- for limiting of a door opening angle.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- maximum door opening angle when using the limiter comprises 90°.

Scope of supply:

- 1 limiter, mounting accessories.

Drawings:

- see on the disk.

Description	Code
Door opening limiter for an angle of up to 90°	R5A31

Wall-mounted boxes series CDE



Designed for connection and branching of control and power cables and wires.

CDE boxes are available in 42 different versions: with or without flanges, with box cover attachment using screws or hinges.

Boxes are made of high-quality sheet steel and coated with powder polyester paint.

The cover, flange, lock and all necessary mounting accessories are supplied complete with the box for ease of assembly, while the rear panel is equipped with pre-installed bars for installation of a DIN rail or mounting plate.

The box cover is equipped with a grounding terminal, as well as polyurethane cast seal to provide high protection degree (up to IP66).

CE series boxes comply with the most stringent quality standards which is confirmed by European and Russian certificates, and are recommended for use at marine vessels and in earthquake endangered areas.

CDE wall-mounted terminal boxes


Purpose:

- for power distribution and process automation systems.

Material:

- frame and door: sheet steel with thickness of 1.5 mm;
- door seal: polyurethane.

Distinctive features:

- dust and moisture protection degree is up to IP66;
- shock resistance degree is IK10.

Scope of supply:

- enclosure, mounting accessories.

Drawings:

- see on the disk.

Box dimensions, mm			Box code without flanges IP66	Box code with flanges IP55	Box code with hinged cover IP55
depth	height	width			
80	150	150	R5CDE1180	–	–
	200	200	R5CDE2280	–	R5CDE2280C
	300	200	R5CDE3280	–	R5CDE3280C
	400	200	R5CDE4280	–	R5CDE4280C
	600	200	R5CDE6280	–	–
	800	200	R5CDE8280	–	–
120	150	150	R5CDE11120	–	–
	200	200	R5CDE22120	–	R5CDE22120C
	300	150	R5CDE31120	–	–
	300	200	R5CDE32120	R5CDE32120F	R5CDE32120C
	300	300	R5CDE33120	R5CDE33120F	R5CDE33120C
	400	200	R5CDE42120	R5CDE42120F	R5CDE42120C
	400	300	R5CDE43120	R5CDE43120F	R5CDE43120C
	400	400	R5CDE44120	R5CDE44120F	–
	500	200	R5CDE52120	R5CDE52120F	R5CDE52120C
	500	300	R5CDE53120	R5CDE53120F	–
	600	200	R5CDE62120	R5CDE62120F	–
	600	300	R5CDE63120	R5CDE63120F	–
	600	400	R5CDE64120	R5CDE64120F	–
	800	200	R5CDE82120	R5CDE82120F	–
	800	400	R5CDE84120	R5CDE84120F	–

Accessories for CDE

Door hinges


Purpose:

- for suspension of covers in CDE terminal boxes.

Material:

- die-cast zinc.

Scope of supply:

- 6 hinges, mounting accessories.

Drawing:

- see on the disk.

Description	Code
Door hinges for CDE terminal boxes	R5CDA02

Mounting plate for terminal boxes


Purpose:

- for equipment installation.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- installed on rails provided for by the structure of CDE terminal boxes.

Scope of supply:

- mounting plate.

Drawings:

- see on the disk.

Box dimensions, mm		Code
height	width	
150	150	R5CDP11
200	200	R5CDP22
300	200	R5CDP32
400	200	R5CDP42
600	200	R5CDP62
800	200	R5CDP82
300	150	R5CDP31
300	300	R5CDP33
400	300	R5CDP43
400	400	R5CDP44
500	200	R5CDP52
500	300	R5CDP53
600	300	R5CDP63
600	400	R5CDP64
800	400	R5CDP84

Wall-mounted enclosures and boxes AISI304, AISI316



Wall-mounted enclosures and terminal boxes made of stainless steel are used for protection of installed equipment in premises with content of water vapors, aggressive media or other corrosive compounds in the air at enterprises of gas, oil refining and chemical industries.

The nomenclature of stainless steel products includes enclosures with a solid and double door, with and without flanges, as well as terminal boxes.

DKC wall-mounted enclosures and terminal boxes are made of high-quality steel of AISI 304 and AISI 316 grades which is characterized by high corrosion resistance and ensures protection of internally installed equipment under severe operating conditions.

The enclosure has solid, fully welded joints and is equipped with special mounting holes, thus simplifying its installation. The enclosure door has special polyurethane seal to ensure high dust and moisture protection degree.

CE stainless steel wall-mounted enclosures with a solid door


Purpose:

- for power distribution and process automation systems.

Material:

- frame and door: stainless steel with thickness of up to 1.5 mm;
- mounting plate: galvanized steel with thickness of 2 mm;
- door seal: polyurethane.

Distinctive features:

- dust and moisture protection degree is from IP55 to IP66;
- shock resistance degree is IK10;
- lock for a key with a double bit of 3 mm is installed in the door;
- versions with a solid bottom or a cable flange are available.

Scope of supply:

- enclosure, mounting plate, door, lock, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm			Code			
			without flange		with flange	
depth	height	width	AISI 304	AISI 316	AISI 304	AISI 316
150	300	250	R5CEB03911	R5CEB03912	R5CEF03911	R5CEF03912
	300	300	R5CEB03311	R5CEB03312	R5CEF03311	R5CEF03312
	300	400	R5CEB03411	R5CEB03412	R5CEF03411	R5CEF03412
	400	300	R5CEB04311	R5CEB04312	R5CEF04311	R5CEF04312
	500	300	R5CEB05311	R5CEB05312	R5CEF05311	R5CEF05312
200	400	300	R5CEB04321	R5CEB04322	R5CEF04321	R5CEF04322
	400	400	R5CEB04421	R5CEB04422	R5CEF04421	R5CEF04422
	400	600	R5CEB04621	R5CEB04622	R5CEF04621	R5CEF04622
	500	300	R5CEB05321	R5CEB05322	R5CEF05321	R5CEF05322
	500	400	R5CEB05421	R5CEB05422	R5CEF05421	R5CEF05422
	500	500	R5CEB05521	R5CEB05522	R5CEF05521	R5CEF05522
	600	400	R5CEB06421	R5CEB06422	R5CEF06421	R5CEF06422
	700	500	R5CEB07521	R5CEB07522	R5CEF07521	R5CEF07522
250	500	400	R5CEB05491	R5CEB05492	R5CEF05491	R5CEF05492
	600	400	R5CEB06491	R5CEB06492	R5CEF06491	R5CEF06492
	600	600	R5CEB06691	R5CEB06692	R5CEF06691	R5CEF06692
	700	500	R5CEB07591	R5CEB07592	R5CEF07591	R5CEF07592
	800	600	R5CEB08691	R5CEB08692	R5CEF08691	R5CEF08692
	1000	600	R5CEB10691	R5CEB10692	R5CEF10691	R5CEF10692
300	800	600	R5CEB08631	R5CEB08632	R5CEF08631	R5CEF08632
	800	800	R5CEB08831	R5CEB08832	R5CEF08831	R5CEF08832
	1000	600	R5CEB10631	R5CEB10632	R5CEF10631	R5CEF10632
	1000	800	R5CEB10831	R5CEB10832	R5CEF10831	R5CEF10832
	1200	600	R5CEB12631	R5CEB12632	R5CEF12631	R5CEF12632
	1200	800	R5CEB12831	R5CEB12832	R5CEF12831	R5CEF12832
	1400	600	R5CEB14631	R5CEB14632	R5CEF14631	R5CEF14632
	1400	800	R5CEB14831	R5CEB14832	R5CEF14831	R5CEF14832
400	600	400	R5CEB06441	R5CEB06442	R5CEF06441	R5CEF06442
	600	600	R5CEB06641	R5CEB06642	R5CEF06641	R5CEF06642
	800	600	R5CEB08641	R5CEB08642	R5CEF08641	R5CEF08642
	800	800	R5CEB08841	R5CEB08842	R5CEF08841	R5CEF08842
	1000	600	R5CEB10641	R5CEB10642	R5CEF10641	R5CEF10642
	1000	800	R5CEB10841	R5CEB10842	R5CEF10841	R5CEF10842

CE stainless steel wall-mounted enclosures with a double door



Purpose:

- for power distribution and process automation systems.

Material:

- frame and door: stainless steel with thickness of up to 1.5 mm;
- mounting plate: galvanized steel with thickness of 2 mm;
- door seal: polyurethane.

Distinctive features:

- dust and moisture protection degree is from IP55 to IP66;
- shock resistance degree is IK10;
- lock for a key with a double bit of 3 mm is installed in the door;
- versions with a solid bottom or a cable flange are available.

Scope of supply:

- enclosure, mounting plate, door, lock, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm			Code			
			without flange		with flange	
depth	height	width	AISI 304	AISI 316	AISI 304	AISI 316
200	800	1000	R5CEB08121	R5CEB08122	R5CEF08121	R5CEF08122
300	600	800	R5CEB06831	R5CEB06832	R5CEF06831	R5CEF06832
	800	1000	R5CEB08131	R5CEB08132	R5CEF08131	R5CEF08132
	1000	1000	R5CEB10131	R5CEB10132	R5CEF10131	R5CEF10132
	1200	1000	R5CEB12131	R5CEB12132	R5CEF12131	R5CEF12132
	1400	1000	R5CEB14131	R5CEB14132	R5CEF14131	R5CEF14132
	1200	1200	R5CEB121231	R5CEB121232	R5CEF121231	R5CEF121232

CDE stainless steel wall-mounted terminal boxes

Purpose:

- for power distribution and process automation systems.

Material:

- frame and door: stainless steel with thickness of up to 1.5 mm;
- door seal: polyurethane.

Distinctive features:

- dust and moisture protection degree is up to IP66;
- shock resistance degree is IK10.

Scope of supply:

- enclosure, mounting accessories.

Drawings:

- see on the disk.

Box dimensions, mm			Code	
depth	height	width	AISI 304	AISI 316
80	150	150	R5CDE11801	R5CDE11802
	200	200	R5CDE22801	R5CDE22802
	300	200	R5CDE32801	R5CDE32802
	400	200	R5CDE42801	R5CDE42802
	600	200	R5CDE62801	R5CDE62802
	800	200	R5CDE82801	R5CDE82802
120	150	150	R5CDE111201	R5CDE111202
	200	200	R5CDE221201	R5CDE221202
	300	150	R5CDE311201	R5CDE311202
	300	200	R5CDE321201	R5CDE321202
	300	300	R5CDE331201	R5CDE331202
	400	200	R5CDE421201	R5CDE421202
	400	300	R5CDE431201	R5CDE431202
	400	400	R5CDE441201	R5CDE441202
	500	200	R5CDE521201	R5CDE521202
	500	300	R5CDE531201	R5CDE531202
	600	200	R5CDE621201	R5CDE621202
	600	300	R5CDE631201	R5CDE631202
	600	400	R5CDE641201	R5CDE641202
	800	200	R5CDE821201	R5CDE821202
	800	400	R5CDE841201	R5CDE841202

"RAM box" heavy duty enclosures for aggressive operating conditions



Designed for provision of reliable protection of electronics and electrotechnical devices against aggressive environmental exposure.

8 standard sizes of enclosures in different versions are available: with transparent and non-transparent covers.

Enclosures are made of top-grade polycarbonate having high degree of resistance to ignition and different external mechanical effects.

A great variety of additional accessories and compatibility with other series of DKC products, such as rigid and corrugated pipes of "Octopus" and "Express" series, guarantees numerous opportunities for installation of enclosures at a facility.

A significant range of operating and mounting temperatures and non-susceptibility to corrosion ensure failure-free equipment operation under the most severe operating conditions.

Technical characteristics

Characteristics	Values
Dust and moisture protection degree	IP67
Mechanical shock protection degree	IK09 (10 J)
Insulation protection class	II
Material	polycarbonate
Seal material	polyurethane
Mounting temperature, °C	from -40 to +60
Operating temperature, °C	from -80 to +100 (UKhL1)
Short-term exposure	up to +160 °C
Operating/rated voltage	~ 650 V / ~ 1000 V
Resistance to ultraviolet	resistant

	For bases and non-transparent covers	For transparent covers
Color	gray RAL 7035	-
Self-extinguishability (according to UL94 categories)	V0	V2
Resistance to high temperatures (glow-wire test according to IEC 695-2-1)	960 °C	750 °C

Heavy duty enclosures


Purpose:

- for protection of installed equipment against aggressive environmental exposure.

Distinctive features:

- color is gray RAL 7035.

Scope of supply:

- plastic screws for attachment of a cover to an enclosure;
- bushings for plastic screws (for covers with height of 21 mm) or plastic plugs (for covers with height of 35 mm);
- drive-in bushings with M6 female thread for equipment installation within the enclosure.

Drawings:

- see on the disk.

Length, mm	Width, mm	Enclosure height, mm	Cover height, mm	Code	
				enclosure with flanges and non-transparent cover	enclosure with flanges and transparent cover
300	150	125	21	531210	531211
		125	35	531310	531311
300	200	125	21	532210	532211
		125	35	532310	532311
400	200	125	21	542210	542211
		125	35	542310	542311
600	300	125	21	563210	563211
		125	35	563310	563311

Accessories for enclosures

Mounting plates


Purpose:

- for equipment installation.

Material:

- galvanized steel.

Scope of supply:

- mounting plate, screws for plate attachment within the enclosure.

Installation examples:

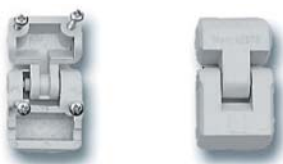
- page 41.

Drawings:

- see on the disk.

Dimension, mm	Metal thickness, mm	Code
300x150	1.5	503310
300x200	1.5	503320
400x200	1.5	503420
600x300	2	503630

Standard hinge


Purpose:

- for cover attachment.

Distinctive features:

- it is possible to install hinges on covers with height of 35 mm;
- in order to attach a cover in closed position, it is recommended to use the lock kit (code 502003).

Material:

- polycarbonate.

Name	Package, pcs	Code
Standard hinges	10	502001

Expandable hinge


Purpose:

- for cover attachment.

Distinctive features:

- it is possible to install hinges on covers with height of 35 mm;
- in order to attach a cover in closed position, it is possible to use both screws supplied and lock kits (code 502003).

Material:

- polycarbonate.

Name	Package, pcs	Code
Expandable hinge	10	502002

Polyurethane seal


Purpose:

- for joint sealing.

Material:

- foamed polyurethane.

Distinctive features:

- used when combining enclosures to form modular systems, and when installing flange plugs;
- mating area should be lubricated with sealant.

Instructions:

- page 41.

Installation example:

- page 43.

Name	Q-ty in a package, m	Code
Flange seal	3	501012

Lock kit


Purpose:

- for enclosure sealing.

Distinctive features:

- it is possible to install hinges on covers with height of 35 mm.

Material:

- polycarbonate.

Name	Package, pcs	Code
Lock kit	1	502003

Flange plug


Purpose:

- for blocking of a knocked-out flange.

Distinctive features:

- protection degree is IP67;
- when installing a flange plug on a flange to preserve dust and moisture protection of the enclosure, it is required to install a flange seal (code 501012).

Material:

- polycarbonate.

Scope of supply:

- plug attachment screws and special middle clamp (only for a "C" type plug).

Name	Dimensions, mm	Code
Flange plug, type A	73x88	501001
Flange plug, type B	123x88	501002
Flange plug, type C	223x88	501003

Lookup table of flange plugs depending on enclosure standard size

Plug as per length	"RAM box" enclosure dimensions, mm		Plug as per width
	length	width	
501003	300	150	501001
501003	300	200	501002
2x501002	400	200	501002
2x501003	600	300	501003

When installing a flange plug on a flange to preserve the IP degree, it is required to install a flange seal (code 501012).

Pole attachment kit


Purpose:

- for attachment of enclosures to poles.

Material:

- profile: galvanized steel with thickness of 2 mm;
- coupling bands: stainless steel AISI 304, 19x0.7 mm (WxT).

Distinctive features:

- maximum pole diameter is up to 200 mm;
- rated static weight load is up to 150 kg;
- band tension and cutting are performed using standard tools. Tools are not included into the scope of supply;
- kit is designed for installation of "RAM box" heavy duty enclosures and CE series enclosures.

Scope of supply:

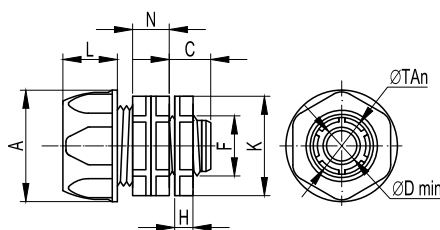
- profile, coupling band, band attachment lock.

Drawings:

- see on the disk.

Enclosure width, mm	Code
300	R5FB300
400	R5FB400
500	R5FB500
600	R5FB600
800	R5FB800

Tube-box reinforced adapter, IP65


Purpose:

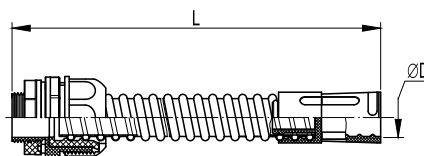
- for connection of flexible reinforced tubes with junction boxes, enclosure housings and boxes with preservation of the IP degree.

Characteristics:

- material is polypropylene;
- color is gray RAL 7035;
- operating temperature is from -25 to +60 °C;
- protection degree IS IP65.

Nominal inside diameter of reinforced tube, mm	Physical dimensions, mm									Weight, g	Package, pcs	Code
	ØTAn	A	L	N	C	H	Dmin	F	K			
10	16.5	Ø 26	16	12	12.5	6	Ø 8	12.5 (1/4")	Ø 24	10	50	55110
12	18.3	Ø 28	16	13	13	6.5	Ø 10	15.8 (3/8")	Ø 26	11	50	55112
14	20	Ø 29	18	14	13	7	Ø 12	20.5 (1/2")	Ø 29	12	40	55114
16	22	Ø 31	18	14	14.5	7	Ø 14	20.5 (1/2")	Ø 29	15	40	55116
20	26.3	Ø 36	19.5	15	16	7.5	Ø 18	25.4 (3/4")	Ø 35	19	40	55120
22	29	Ø 39	19.5	15	16	7.5	Ø 20	25.4 (3/4")	Ø 37	20	30	55122
25	33	Ø 43	24.5	17	17	8.5	Ø 23	32.3 (1")	Ø 41	30	20	55125
28	35.5	Ø 47	24.5	17	18	8.5	Ø 26	32.3 (1")	Ø 44.5	34	20	55128
32	41.5	Ø 51	28	18	19.5	8.5	Ø 30	41.2 (1-1/4")	Ø 49	43	10	55132
35	43	Ø 55	28	18	20	8.5	Ø 33	41.2 (1-1/4")	Ø 49	47	10	55135
40	49	Ø 59	32.5	19	22	9	Ø 38	47.2 (1-1/2")	Ø 57.5	58	5	55140
50	59.5	Ø 70	34.5	19	24	9	Ø 48	59.0 (2")	Ø 68	76	5	55150

Tube-box flexible coupling, IP65


Purpose:

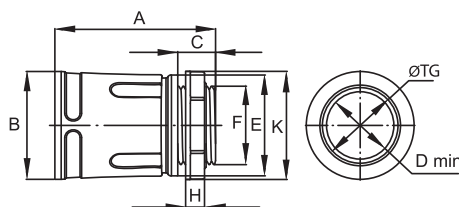
- for connection of rigid smooth tubes with junction boxes, housings of enclosure and boxes at a random angle with preservation of the IP degree.

Characteristics:

- material is PVC;
- color is gray RAL 7035;
- minimum bend radius is 2 outside diameters;
- operating temperature is from -25 to +60 °C;
- protection degree is IP65.

D, mm	L, mm	Package, pcs	Code
16	230	50	57116
20	240	20	57120
25	260	20	57125
32	290	8	57132
40	340	6	57140
50	410	3	57150

Tube-box coupling, IP67


Purpose:

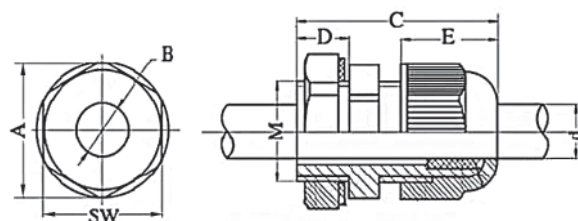
- for connection of rigid smooth tubes with housings of junction boxes, enclosures and boxes with preservation of the IP degree.

Characteristics:

- climatic version is UKhL1;
- enclosure material is polypropylene;
- seal material is rubber;
- color is gray RAL 7035;
- operating temperature is from -40 to +60 °C;
- protection degree is IP67.

Diameter, mm	Physical dimensions, mm										Wholesale package		Retail package	
	ØTG	A	B	C	H	F	E	K	Dmin	for key	q-ty pcs	code	q-ty pcs	code
16	16	45	Ø 26	12	7	M16x1.5	Ø 24	Ø 26	Ø 13	22	100	50216	30 (15x2)	50216R
20	20	47	Ø 30	12	7	M20x1.5	Ø 28	Ø 30	Ø 17	26	100	50220	24 (12x2)	50220R
25	25	51	Ø 35	12	7	M25x1.5	Ø 33	Ø 35	Ø 21	30	50	50225	20 (10x2)	50225R
32	32	57	Ø 42	14	7	M32x1.5	Ø 40	Ø 43	Ø 27	38	50	50232	16 (8x2)	50232R
40	40	70	Ø 50	14	8	M40x1.5	Ø 48	Ø 53	Ø 34	46	20	50240	-	-
50	50	75	Ø 60	14	8	M50x1.5	Ø 58	Ø 62	Ø 44	57	20	50250	-	-

Cable clamp with lock nut, IP68



Purpose:

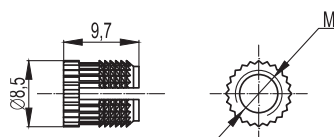
- for entry of tubes and cable into housings of distribution boxes, boards, enclosures and boxes with preservation of the IP degree.

Characteristics:

- material is polyamide 6.6;
- operating temperature is from -25 to +60 °C;
- protection degree is IP68.

Cable diameter, mm	Thread	Physical dimensions, mm								Wholesale package		Retail package	
		A	B	C	D	E	d	M	SW	pcs	code	pcs	code
3-6.5	PG 7	19.7	8.5	30	8	13.9	6.5	12.5	18	50	52500	80 (20x4)	52500R
4-8	PG 9	23.7	11	34	8	14.8	8	15.5	22	50	52600	60 (15x4)	52600R
5-10	PG 11	26.2	13	35	8	16.9	11	18.5	24	50	52700	60 (15x4)	52700R
6-12	PG 13.5	29	15	37	10	18	12	20.5	27	50	52800	48 (12x4)	52800R
9-14	PG 16	33	20.4	40	10	17.8	13.5	22.5	30	50	52900	20 (10x2)	52900R
13-18	PG 21	39	22	40	10	24	18.5	28.5	36	25	53000	16 (8x2)	53000R
15-25	PG 29	50	31	52	12	25.2	24.5	37	46	20	53100	-	-
20-31	PG 36	64	39	62	14	31	31.5	47	58	15	53200	-	-
28-38	PG 42	70	46.5	63	14	30.1	38	54	64	10	53300	-	-
34-43	PG 48	76	52	64	14	30.1	44	60	70	10	53400	-	-

Drive-in bushings



Purpose:

- for arrangement of an attachment point within the enclosure.

Material:

- brass.

Distinctive features:

- driven in special sockets on the enclosure.

Characteristics:

- M6 thread.

Name	Q-ty in a package, pcs	Code
Drive-in bushing	10	501007

M6 screws



Purpose:

- for equipment installation within the enclosure.

Distinctive features:

- it is possible to use them along with drive-in bushings 501007.

Characteristics:

- M6x8 thread;
- DIN84.

Name	Q-ty in a package, pcs	Code
M6 screw	10	501010

Screws and nuts for connection of enclosures



Purpose:

- for combining of enclosures when forming modular structures.

Name	Q-ty in a package, pcs	Code
Screw for connection of enclosures	10	501013
Nut for connection of enclosures	10	501014

Instructions

Wall mounting



1. Screw the enclosure to the wall



2. Secure the cover



3. General view of installed enclosure

Cable gland installation



1. Drill holes



2. Install cable clamps



3. Connect tubes to clamps

Modular structure formation

When forming the modular structure, it is necessary to ensure that the dimension of mated flanges is identical



1. Remove attaching holes



2. Remove flanges



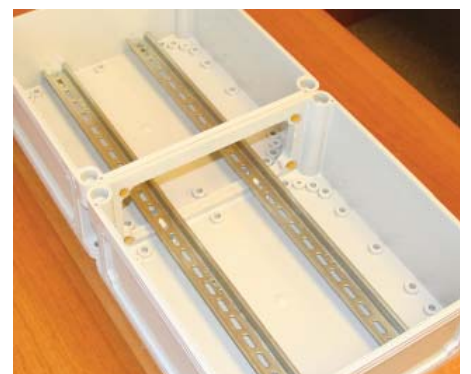
3. Install the seal on both enclosures being combined



4. Install bushings



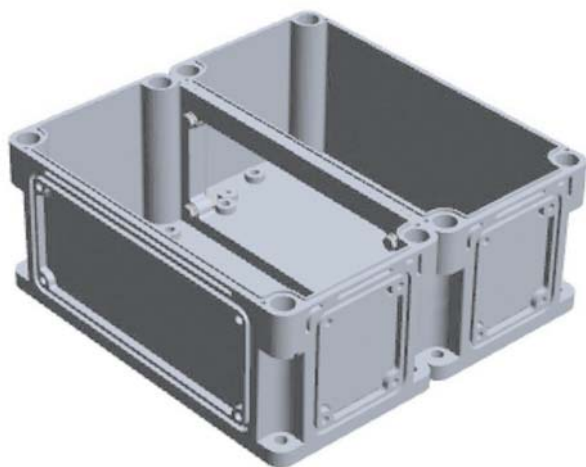
5. Connect enclosures



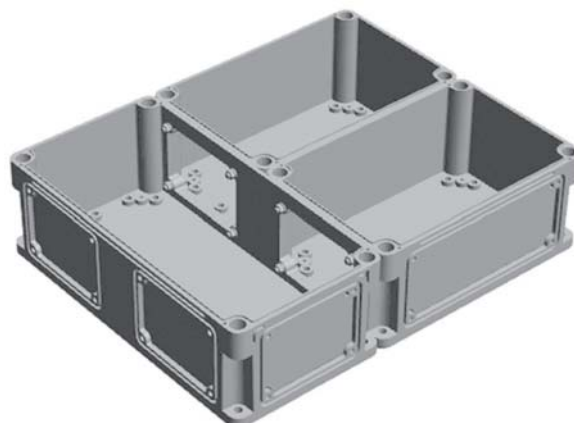
6. Tighten bolts, install DIN rails

Installation examples

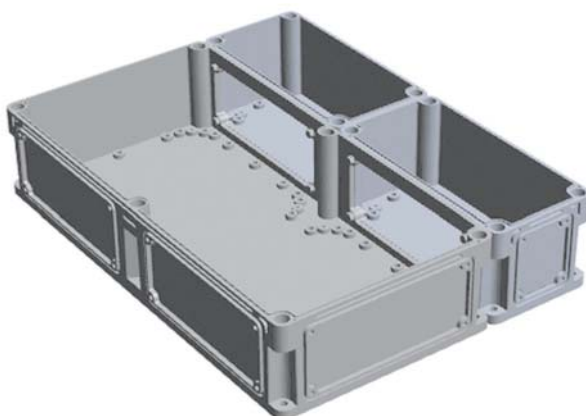
Options on the basis of 2 and more enclosures



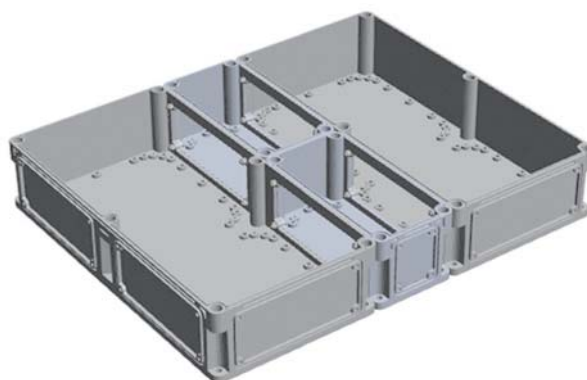
Enclosure 300x300 mm consisting of 2 "RAM box" 300x150 mm



Enclosure 500x400 mm consisting of 1 "RAM box" 400x200 mm and 2 enclosures 300x200 mm



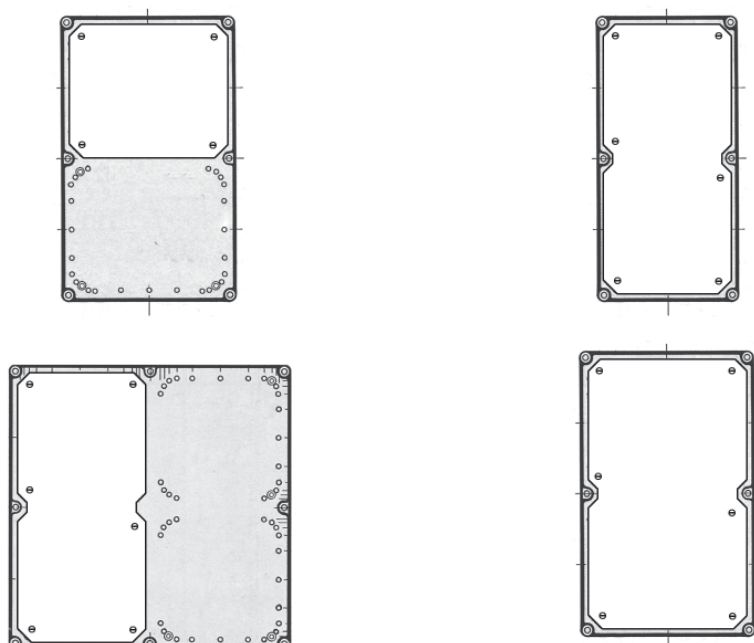
Enclosure 600x450 mm consisting of 1 "RAM box" 300x600 mm and 2 enclosures 300x150 mm



Enclosure 600x750 mm consisting of 2 "RAM box" 300x600 mm and 2 enclosures 300x150 mm

Placement of mounting plates in enclosures

Owing to special arrangement of grooves for drive-in bushings on the basis of the enclosure 600x300, it is possible to use mounting plates of various dimensions to expand equipment installation options.



Polyurethane seal installation



Hinge installation



The screw nail hole diameter for hinge attachment is 2.5 mm

Boxes for fixed electrical installation "RAM base"

Application

The system of "RAM base" plastic distribution boxes is designed for placement of modular devices. DKC distribution boxes have contemporary design, are manufactured in accordance with the highest European quality standards, and can be installed in residential, administrative, auxiliary or production premises. A wide array of standard sizes and compatibility of boxes with other series of DKC products, such as "Octopus" series corrugated tubes and accessories, "Express" series rigid tubes and accessories, "In-liner" cable ducts and "Quadro" wiring system, help to solve any task of electrotechnical installation in hand.



Administrative premises



Production premises



Residential premises

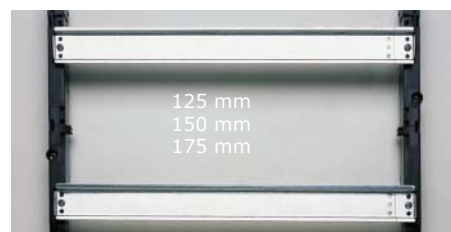
Distinctive features



The special structure of hinges allows opening the door by more than 180°, protecting it against damage in case of a sudden shock. To remove the door, it is necessary to open it fully and press the handle. This operation will not affect functionality of a hinged joint.



Quick connection of boxes with DKC rigid tubes of different dimensions is ensured using additional accessories. Use of DKC junction boxes or enclosures of "RAM box" series expands opportunities for electrical installation.



Attachment points make it possible to adjust the distance between DIN rails, thus expanding opportunities of equipment installation and making boxes compatible with any monitoring and control devices. Adjustment can be performed within the box or with supports removed from grooves.



Pre-perforated holes and notches on the rear and sides of flush-mounted boxes ensure precise connection with DKC plastic tubes of the "Octopus" system of different diameters.



Notches on the inside of surface-mounted boxes ensure connection with DKC plastic boxes of the "In-liner" system using a special adapter. It is possible to use the box with depth of 60 and 80 mm, width from 60 to 200 mm, whereas precision and aesthetic qualities of the connection are provided.



A special perforated duct that latches on supports is used for ease of cabling during installation. Additional attachments are used for standard perforated ducts.

Characteristics

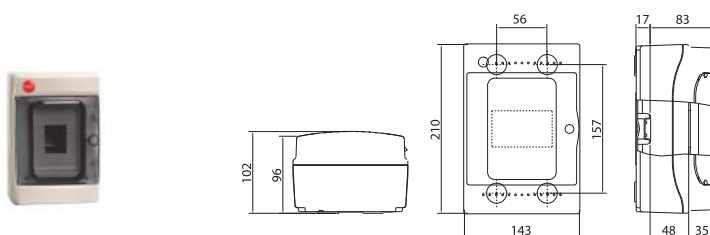
Technical characteristics

Material	heat-resistant plastic
Technical specifications	GOST R 51321.1-2000
Insulation protection class	II
Protection degree of surface-mounted boxes	IP65
Color of surface-mounted boxes IP65	gray RAL 7035
Shock resistance IP65	IK09 (10 J)
Maximum rated voltage	400 V
Maximum rated current	125 A
Maximum short-circuit current	10 kA
Resistance to high temperatures	up to 650 °C according to glow-wire test results as per IEC 695-2-1
Mounting temperature	from -25 to +60 °C
Door	shaded, transparent, opens by more than 180°

Surface-mounted modular distribution boxes IP65 with a door

Designed for surface mounting in residential, administrative, auxiliary or production premises.
Compatible with modular devices of any manufacturers.

4 modules

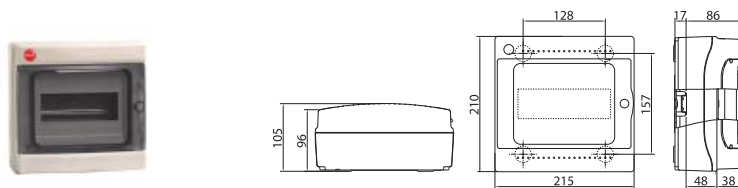


Scope of supply:

- galvanized DIN rail;
- DIN rail support;
- plugs for empty modules;
- double-insulated plugs on grooves for wall mounting;
- assembly screws.

Maximum number of modules	Availability of removable plastrons	Center-to-center distance between rows, mm	Power dissipation rating, W	Color	Code
4	no	–	13	gray	85604

8 modules

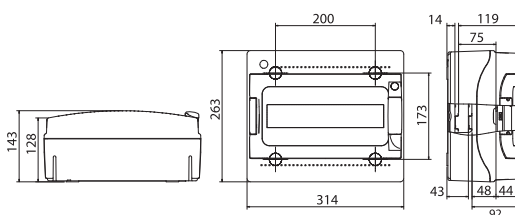


Scope of supply:

- galvanized DIN rail;
- DIN rail support;
- plugs for empty modules;
- double-insulated plugs on grooves for wall mounting;
- assembly screws.

Maximum number of modules	Availability of removable plastrons	Center-to-center distance between rows, mm	Power dissipation rating, W	Color	Code	Code, box with terminal block (87508) and lock (87188)	Code, box with reinforced terminal block (87308)
8	no	–	19	gray	85608	85908	85708

12 modules

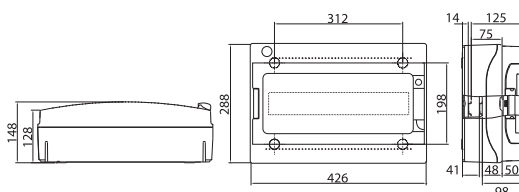


Scope of supply:

- door handle;
- galvanized DIN rail;
- DIN rail support;
- plugs for empty modules;
- double-insulated plugs on grooves for wall mounting;
- assembly screws.

Maximum number of modules	Availability of removable plastrons	Center-to-center distance between rows, mm	Power dissipation rating, W	Color	Code	Code, box with terminal block (87508) and lock (87188)	Code, box with reinforced terminal block (87312)
12	yes	–	30	gray	85612	85912	85712

18 modules

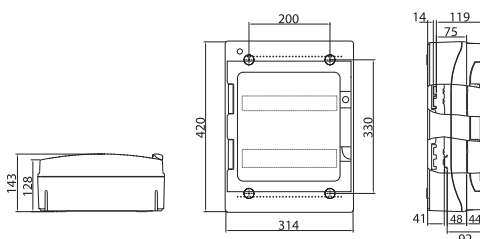


Scope of supply:

- door handle;
- galvanized DIN rail;
- DIN rail support;
- plugs for empty modules;
- double-insulated plugs on grooves for wall mounting;
- assembly screws.

Maximum number of modules	Availability of removable plastrons	Center-to-center distance between rows, mm	Power dissipation rating, W	Color	Code	Code, box with terminal block (87508) and lock (87188)	Code, box with reinforced terminal block (87312)
18	yes	–	37	gray	85618	85918	85718

24 modules

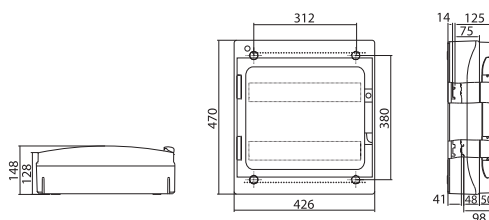


Scope of supply:

- door handle;
- galvanized DIN rail;
- DIN rail support;
- plugs for empty modules;
- double-insulated plugs on grooves for wall mounting;
- assembly screws.

Maximum number of modules	Availability of removable plastrons	Center-to-center distance between rows, mm	Power dissipation rating, W	Color	Code	Code, box with terminal block (87508) and lock (87188)	Code, box with reinforced terminal block (87312)
24	yes	125-150-175	42	gray	85624	85924	85724

36 modules

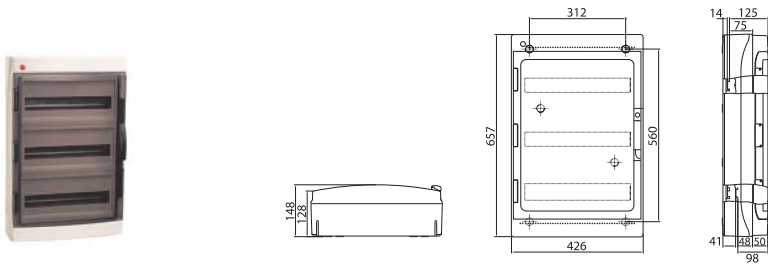


Scope of supply:

- door handle;
- galvanized DIN rail;
- DIN rail support;
- plugs for empty modules;
- double-insulated plugs on grooves for wall mounting;
- assembly screws.

Maximum number of modules	Availability of removable plastrons	Center-to-center distance between rows, mm	Power dissipation rating, W	Color	Code	Code, box with terminal block (87508) and lock (87188)	Code, box with reinforced terminal block (87312)
36	yes	150-175-200	54	gray	85636	85936	85736

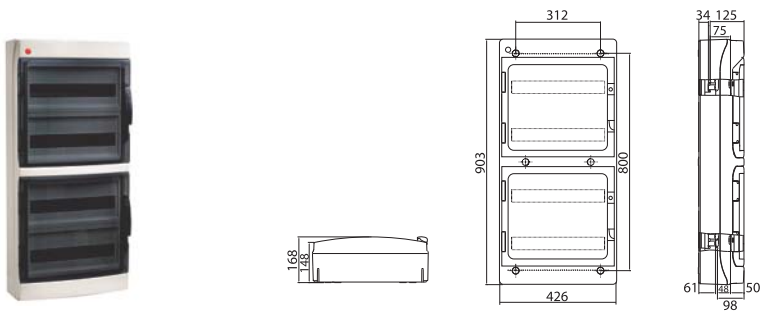
54 modules



- Scope of supply:**
- door handle;
 - galvanized DIN rail;
 - DIN rail support;
 - plugs for empty modules;
 - double-insulated plugs on grooves for wall mounting;
 - assembly screws.

Maximum number of modules	Availability of removable plastrons	Center-to-center distance between rows, mm	Power dissipation rating, W	Color	Code
54	yes	150-175-200	72	gray	85654

72 modules



- Scope of supply:**
- door handle;
 - galvanized DIN rail;
 - DIN rail support;
 - plugs for empty modules;
 - double-insulated plugs on grooves for wall mounting;
 - assembly screws.

Maximum number of modules	Availability of removable plastrons	Center-to-center distance between rows, mm	Power dissipation rating, W	Color	Code
72	yes	150-175-200	91	gray	85672

Accessories for modular boxes

Solid panel



Purpose:

- for protection of the box against ingress of foreign matter. Used if one or more rows of the box remain empty.

Description	Color	Package, pcs	Code
For 12 modules for boxes IP65 for 12, 24 modules	RAL 7035	10	87172
For 18 modules for boxes IP65 for 18, 36, 54, 72 modules	RAL 7035	10	87173

Plug



Purpose:

- for protection of the box against ingress of foreign matter. It is necessary to use it in case of incomplete occupation of a box row with modular devices.

Description	Color	Package, pcs	Code
For 4 modules for surface-mounted boxes IP65	RAL 7035	40 (4x10)	87165
For 6 modules for surface-mounted boxes IP65	RAL 7035	40 (4x10)	87180

Hinges



Purpose:

- for surface mounting of boxes.

Description	Package, pcs	Code
For box suspension	120 (12x10)	87160

Spacer for 2 modules

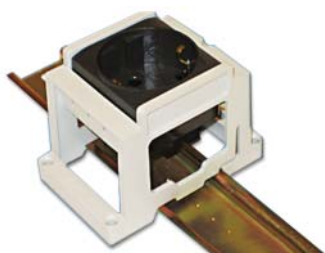


Purpose:

- for adjustment of DIN rail attachment depth.

Description	Package, pcs	Code
Spacer for 2 modules	20 (2x10)	87163

Socket support



Purpose:

- for installation of "Brava" series sockets and electric equipment on the mounting plate using four countersunk screws 4x16 mm or self-tapping screws 4x16;
- for installation of "Brava" series sockets and electric equipment on DIN rails of "Quadro" series 35x7.5 and 35x15 with width of 1.5 mm

Description	Package, pcs	Code
Socket support	30	54840

Cable attachment element



Purpose:

- for cable attachment in boxes from 36 to 72 modules.

Description	Package, pcs	Code
Cable attachment element	10 (1x10)	87078

Terminal blocks



Purpose:

- for switching of wire and cable conductors in electric boards.

Number of holes	Hole diameter, q-ty x ø mm	U _{rated} , V	Package, pcs	Code
7	5x5.3 mm, 2x6 mm	750	20	507F
11	9x5.3 mm, 2x6 mm	750	12	5011F
15	13x5.3 mm, 2x6 mm	750	10	5015F

Adapter for connection of a surface-mounted box with a duct



Purpose:

- for connection of surface-mounted boxes with plastic cable ducts of "In-liner" series.

Description	Color	Package, pcs	Code
Adapter for boxes IP65 with a duct (12, 24 modules)	RAL 7035	10 (1x10)	87166
Adapter for boxes IP65 with a duct (18, 36, 54, 72 modules)	RAL 7035	10 (1x10)	87167

Fuse holders


Purpose:

- switching of a power line, wire and cable conductors.

Distinctive features:

- fuse holder is attached using supplied self-tapping screws onto special profiles located on the bottom of the box inner part.

Scope of supply:

- fuse holder includes a terminal holder, two terminal blocks of the relevant standard size and a kit for attachment of the fuse holder within the box. It is possible to order terminal holders and terminal blocks separately for non-standard solutions.

Description	Package, pcs	Code
Fuse holder (2x87408+supports) complete with fasteners	10	87508
Fuse holder (2x87412+supports) complete with fasteners	10	87512
Fuse holder (2x87418+supports) complete with fasteners	10	87518
Reinforced fuse holder (2x87108) complete with fasteners	10	87308
Reinforced fuse holder (2x87112) complete with fasteners	10	87312
Reinforced fuse holder (2x87118) complete with fasteners	10	87318
Terminal holder (for 2 terminal blocks 87108, 87408)	10	87208
Terminal holder (for 2 terminal blocks 87112, 87412)	10	87212
Terminal holder (for 2 terminal blocks 87118, 87418)	10	87218

Terminal blocks


Purpose:

- switching of a power line, wire and cable conductors.

Distinctive features:

- terminal block is designed for operation with currents of up to 63 A, whereas the reinforced one is designed for operation with currents of up to 160 A.

Description	Package, pcs	Code
Terminal block for 8 modules (holes 1x5.4+7x4.5 mm)	10	87408
Terminal block for 12 modules (holes 3x5.4+10x4.5 mm)	10	87412
Terminal block for 18 modules (holes 5x5.4+14x4.5 mm)	10	87418
Reinforced terminal block for 8 modules (holes 1x9+7x5.4 mm)	10	87108
Reinforced terminal block for 12 modules (holes 3x9+10x5.4 mm)	10	87112
Reinforced terminal block for 18 modules (holes 5x9+14x5.4 mm)	10	87118

Plugs


Purpose:

- for protection of the box against ingress of foreign matter.

Distinctive features:

- designed only for surface-mounted boxes.

Description	Package, pcs	Code
Double-insulated plugs	40 (4x10)	87164

Door locks


Purpose:

- for protection against unauthorized breaking in the box.

Description	Package, pcs	Code
For a surface-mounted box IP65	10	87187

Accessory selection table

Description	Surface-mounted with a door IP65								Code
	4	8	12	18	24	36	54	72	
Fuse holder for 8 modules	–	+	+	+	+	+	+	+	87508
Fuse holder for 12 modules	–	–	+	+	+	+	+	+	87512
Fuse holder for 18 modules	–	–	–	+	–	+	+	+	87518
Reinforced fuse holder for 8 modules	–	+	+	+	+	+	+	+	87308
Reinforced fuse holder for 12 modules	–	–	+	+	+	+	+	+	87312
Reinforced fuse holder for 18 modules	–	–	–	+	–	+	+	+	87318
Double-insulated plug	+	+	+	+	+	+	+	–	87164
Adapter between boxes IP65 and a duct RAL 7035	–	–	–	+	–	+	+	+	87167
Adapter between boxes IP65 and a duct RAL 7035	–	–	–	+	–	+	–	–	87166
Lock for a surface-mounted box IP65	+	+	+	+	+	+	+	+	87187
Cable attachment element	–	–	+	+	+	+	+	+	87078
Solid panel for 12 modules RAL 7035 for boxes IP65	–	–	+	–	+	–	–	–	87172
Solid panel for 18 modules RAL 7035 for boxes IP65	–	–	–	+	–	+	+	+	87173
Solid panel for 18 modules RAL 9016 for flush-mounted boxes	–	+	+	+	+	+	+	+	87179
Plug for 4 modules RAL 7035 for surface-mounted boxes IP65	+	+	+	+	+	+	+	+	87165
Plug for 6 modules RAL 7035 for surface-mounted boxes IP65	–	+	+	+	+	+	+	+	87180
Hinges for box suspension	+	+	+	+	+	+	+	+	87160
Spacer for depth adjustment of DIN rail	–	–	+	+	+	+	+	+	87163



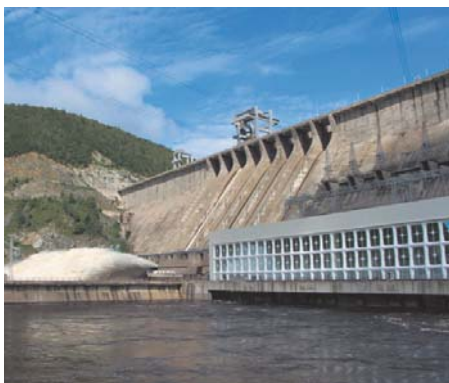
The system of enclosures for floor-mounted of "RAM block"

Floor-mounted universal assembled enclosures series CQE	56
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Console system and panels of control	116

System of floor-mounted enclosures

Application

DKC floor-mounted enclosures of DAE and CQE series represent a universal solution for different applications, such as: formation of control boards, low-voltage distribution boards, and allocation of IT equipment. Full scope of DKC enclosures meets the most stringent requirements to installation and operation conditions, thus making it possible to use them in different industries.



Assortment

A variety of standard sizes and a wide selection of components for DKC enclosures in combination with the high quality level and reasonable price allow satisfying any customers' requirements in various applications.

Quality

DAE and CQE series enclosures feature modern stylish design and are manufactured at DKC factories in Europe in accordance with the highest quality standards.

Flexibility

The versatile modular structure of DKC enclosures is compatible with active and power equipment of leading European and domestic manufacturers, and allows implementing virtually any solutions, selecting the most optimal structural options in accordance with all customer's requirements.

Operation

Full scope of floor-mounted enclosures meets the highest requirements to installation and operation conditions: protection degree of enclosures against external mechanical shocks is higher than that of most analogs on the Russian market (at least IK10). The special polyurethane seal applied on the enclosure door ensures the high dust and moisture protection level that allows using enclosures virtually in any conditions.

Availability

Almost the entire range of floor-mounted enclosures and components of DAE and CQE series is maintained at the warehouse, thus making it possible to meet clients' demands in a timely manner. Where necessary, DKC can manufacture an enclosure based on an individual project with account of customer's requirements.

Conformity with regulations

Floor-mounted enclosures have all necessary certificates of conformity, including conformity with the stated dust and moisture protection level. They have successfully passed climatic, shock and vibration tests, and are approved for operation at marine vessels and facilities.

Technical support

DKC provides a full kit of necessary documentation for the whole range of products, including certificates of conformity, test reports and drawings in 2D and 3D formats. Specialists of the Technical Support Department render services on design of fuse boxes on the basis of DAE and CQE enclosures according to single-line diagrams, as well as development of solutions for non-standard LVPS.

Logistics

Enclosures are supplied unassembled which allows for reducing costs for their transportation and storage. All enclosure elements have an individual package made of top-grade corrugated cardboard preventing damage to items during long-distance transportation.

System description

DKC manufactures metal enclosures, control panels and consoles at its own enterprises in Europe, and has successful experience of supplies to the markets of Western Europe, Middle East and Latin America. A variety of standard sizes and a wide selection of components for DKC enclosures in combination with the high quality level and reasonable price allow satisfying any customers' requirements in various applications.



Metal enclosures, housings and control panels for automation and power distribution means of "RAM block" series manufactured by DKC comply with all necessary requirements and standards applicable in the Russian Federation. The versatile modular structure of "RAM block" enclosures is compatible with active and power equipment of leading European and domestic manufacturers, and allows implementing virtually any solutions, selecting the most optimal structural options in accordance with all customer's requirements.



"RAM block" floor-mounted assembled and wall-mounted welded enclosures have all necessary certificates of conformity. They have also successfully passed tests for conformity with Russian standards on the basis of the following:

- dust and moisture protection degree;
- shock resistance degree;
- resistance to salt fog, high humidity, temperature drops, etc.;
- vibration resistance;
- possibility to use enclosures in earthquake endangered areas according to MSK-64 classification;
- possibility to use enclosures in low-voltage packages designed for rated current of up to 6300 A;
- operability at offshore facilities and vessels.

Floor-mounted universal assembled enclosures series CQE



Floor-mounted universal assembled enclosures series CQE

Designed for creation of control, monitoring or power distribution systems, as well as for arrangement of telecommunication nodes. CQE enclosures are made of high-quality sheet steel and supplied in 116 different standard sizes.

The enclosure frame, cover and panels are made of high-quality sheet steel with thickness of at least 1.5 mm, the mounting plate is made of galvanized steel with thickness of up to 3 mm and has a special U-shaped edging strip for additional stiffness.

The standard enclosure assembly has the dust and moisture protection level corresponding to IP55. This level can be raised to IP65 when using special accessories.

The climatic version area, wherein it is possible to use CQE enclosures without the risk to loose/impair basic enclosure characteristics, such as IP, IK, powder coating quality, seal integrity on external enclosure elements, is maximum, i.e. UKhL1 according to GOST 15150. The enclosure profile structure has several stiffening plates which provides high strength and load bearing capacity of racks of up to 1,000 kg per enclosure assembly.

All internal mounting elements of the CQE enclosure have a universal perforation pitch of 25 mm which makes it possible to perform any modifications of the enclosure structure in a prompt and simple manner.

A wide selection of standard sizes and accessories, possibility to combine enclosures in a line, compatibility with active equipment of leading European and domestic manufacturers turn CQE enclosures into a universal solution that can meet the most stringent customers' requirements.

Basic structural elements

Kit top and bottom



Material:

- steel with thickness of 1.5 mm, powder coating RAL 7011.

Scope of supply:

- bottom, top, mounting accessories, elements for arrangement of cable cable glands.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
depth	width	
400	300	R5KTB34
500		R5KTB35
600		R5KTB36
800		R5KTB38
1000		R5KTB310
400	400	R5KTB44
500		R5KTB45
600		R5KTB46
800		R5KTB48
1000		R5KTB410
1200		R5KTB412
400	600	R5KTB64
500		R5KTB65
600		R5KTB66
800		R5KTB68
1000		R5KTB610
1200		R5KTB612
400	800	R5KTB84
500		R5KTB85
600		R5KTB86
800		R5KTB88
1000		R5KTB810
1200		R5KTB812
400	1000	R5KTB104
500		R5KTB105
600		R5KTB106
800		R5KTB108
1000		R5KTB1010
1200		R5KTB1012
400	1200	R5KTB124
500		R5KTB125
600		R5KTB126
800		R5KTB128
1000		R5KTB1210
1200		R5KTB1212
400	1400	R5KTB144
500		R5KTB145
600		R5KTB146
800		R5KTB148
400	1600	R5KTB164
500		R5KTB165
600		R5KTB166
800		R5KTB168

Vertical rack kit



Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- profile structure has 6 stiffening plates ensuring high strength and load bearing capacity of racks (up to 700 kg for the frame and 1,000 kg for the enclosure assembly);
- universal rack perforation with pitch of 25 mm allows installing different accessories.

Scope of supply:

- 4 racks, mounting accessories for installation of racks.

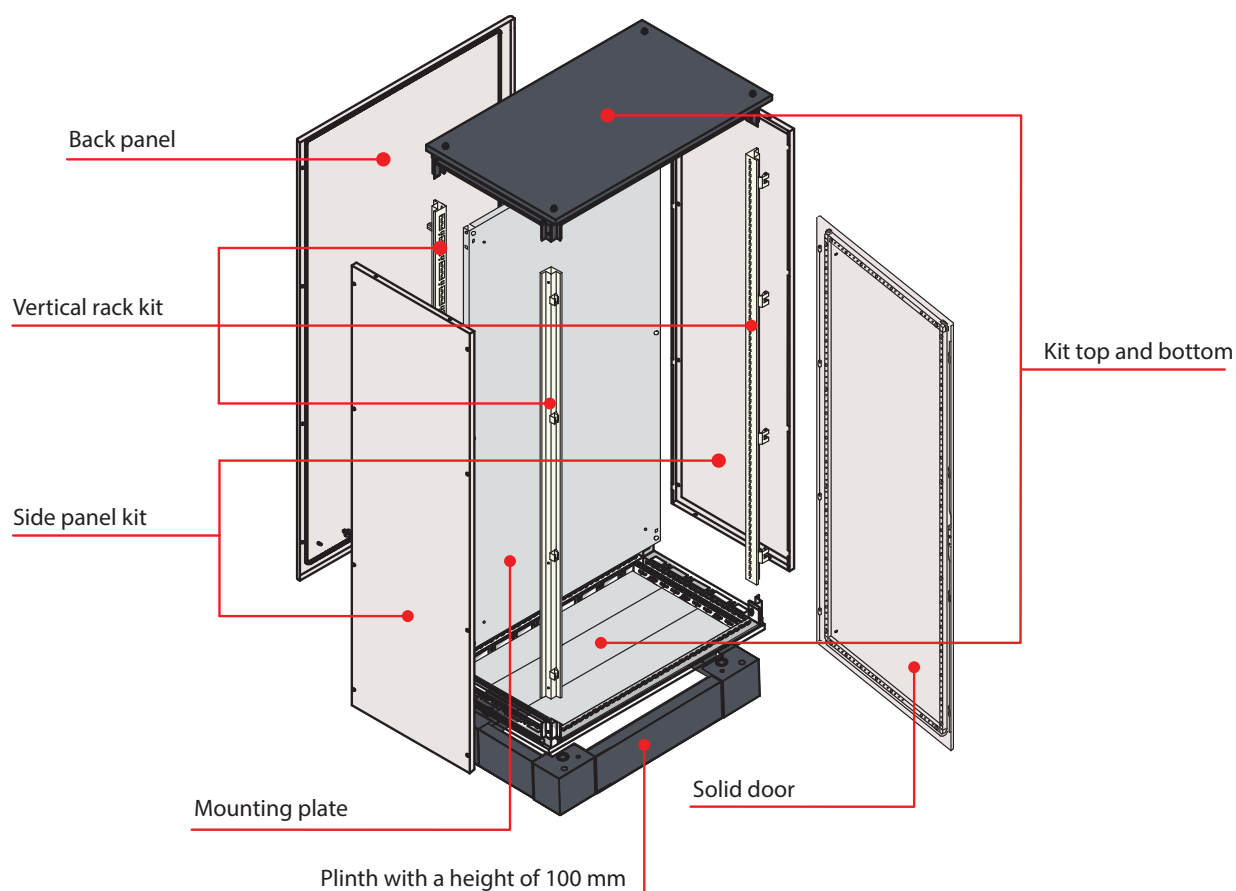
Drawings:

- see on the disk.

Enclosure height, mm	Code
1400	R5KMN14
1600	R5KMN16
1800	R5KMN18
2000	R5KMN20
2200	R5KMN22

Attention: all accessories for installation of external enclosure elements are supplied complete with this element. There is no need to place an order for additional mounting elements

Scheme installation of enclosure series CQE



Basic frame elements:

- top and bottom are ordered with one code. Basic parameters for selection: enclosure width and depth;
- vertical racks are ordered with one code, four racks are included into the scope of supply. The basic parameter for rack selection is enclosure height.

Selection table



Enclosure dimensions, mm			Codes of basic elements					Codes of additional elements		
depth	height	width	bottom+cover	racks	solid door	rear panel	enclosure kit*	mounting plate	side panels	pedestal 100 mm
400	1400	600	R5KTB64	R5KMN14	R5CPE1460	R5CRE1460	R5CQE1464	R5PCE1460	R5LE1442	R5ZE641
400		800	R5KTB84	R5KMN14	R5CPE1480	R5CRE1480	R5CQE1484	R5PCE1480	R5LE1442	R5ZE841
400	1600	600	R5KTB64	R5KMN16	R5CPE1660	R5CRE1660	R5CQE1664	R5PCE1660	R5LE1642	R5ZE641
500			R5KTB65	R5KMN16	R5CPE1660	R5CRE1660	R5CQE1665	R5PCE1660	R5LE1652	R5ZE651
600			R5KTB66	R5KMN16	R5CPE1660	R5CRE1660	R5CQE1666	R5PCE1660	R5LE1662	R5ZE661
400		800	R5KTB84	R5KMN16	R5CPE1680	R5CRE1680	R5CQE1684	R5PCE1680	R5LE1642	R5ZE841
800	1800	400	R5KTB48	R5KMN18	R5CPE1840	R5CRE1840	R5CQE1848	R5PCE1840	R5LE1882	R5ZE841
1000			R5KTB410	R5KMN18	R5CPE1840	R5CRE1840	R5CQE18410	R5PCE1840	R5LE18102	R5ZE1041
1200			R5KTB412	R5KMN18	R5CPE1840	R5CRE1840	R5CQE18412	R5PCE1840	R5LE18122	R5ZE1241
400		600	R5KTB64	R5KMN18	R5CPE1860	R5CRE1860	R5CQE1864	R5PCE1860	R5LE1842	R5ZE641
1000			R5KTB610	R5KMN18	R5CPE1860	R5CRE1860	R5CQE18610	R5PCE1860	R5LE18102	R5ZE1061
1200			R5KTB612	R5KMN18	R5CPE1860	R5CRE1860	R5CQE18612	R5PCE1860	R5LE18122	R5ZE1261
400		800	R5KTB84	R5KMN18	R5CPE1880	R5CRE1880	R5CQE1884	R5PCE1880	R5LE1842	R5ZE841
500			R5KTB85	R5KMN18	R5CPE1880	R5CRE1880	R5CQE1885	R5PCE1880	R5LE1852	R5ZE851
600			R5KTB86	R5KMN18	R5CPE1880	R5CRE1880	R5CQE1886	R5PCE1880	R5LE1862	R5ZE861
1000			R5KTB810	R5KMN18	R5CPE1880	R5CRE1880	R5CQE18810	R5PCE1880	R5LE18102	R5ZE1081
1200			R5KTB812	R5KMN18	R5CPE1880	R5CRE1880	R5CQE18812	R5PCE1880	R5LE18122	R5ZE1281
400		1000	R5KTB104	R5KMN18	R5CPE18100	R5CRE18100	R5CQE18104	R5PCE18100	R5LE1842	R5ZE1041
600			R5KTB106	R5KMN18	R5CPE18100	R5CRE18100	R5CQE18106	R5PCE18100	R5LE1862	R5ZE1061
1000			R5KTB1010	R5KMN18	R5CPE18100	R5CRE18100	R5CQE181010	R5PCE18100	R5LE18102	R5ZE10101
1200			R5KTB1012	R5KMN18	R5CPE18100	R5CRE18100	R5CQE181012	R5PCE18100	R5LE18122	R5ZE12101
1000		1200	R5KTB1210	R5KMN18	R5CPE18120	R5CRE18120	R5CQE181210	R5PCE18120	R5LE18102	R5ZE12101
1200			R5KTB1212	R5KMN18	R5CPE18120	R5CRE18120	R5CQE181212	R5PCE18120	R5LE18122	R5ZE12121
1000	2000	400	R5KTB410	R5KMN20	R5CPE2040	R5CRE2040	R5CQE20410	R5PCE2040	R5LE20102	R5ZE1041
1200			R5KTB412	R5KMN20	R5CPE2040	R5CRE2040	R5CQE20412	R5PCE2040	R5LE20122	R5ZE1241

* **Attention! The enclosure kit ordered with one code is supplied unassembled on a pallet. The enclosure kit includes: mounting plate, side panels, plinth**

Accessories for enclosures

General



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Partitioning



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Installation of busbars



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Climate control



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Lighting



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"RAM telecom"



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Enclosure dimensions, mm			Codes of basic elements					Codes of additional elements		
depth	height	width	bottom+cover	racks	solid door	rear panel	enclosure kit*	mounting plate	side panels	pedestal 100 mm
400	2000	600	R5KTB64	R5KMN20	R5CPE2060	R5CRE2060	R5CQE2064	R5PCE2060	R5LE2042	R5ZE641
500			R5KTB65	R5KMN20	R5CPE2060	R5CRE2060	R5CQE2065	R5PCE2060	R5LE2052	R5ZE651
600			R5KTB66	R5KMN20	R5CPE2060	R5CRE2060	R5CQE2066	R5PCE2060	R5LE2062	R5ZE661
800			R5KTB68	R5KMN20	R5CPE2060	R5CRE2060	R5CQE2068	R5PCE2060	R5LE2082	R5ZE861
1000			R5KTB610	R5KMN20	R5CPE2060	R5CRE2060	R5CQE20610	R5PCE2060	R5LE20102	R5ZE1061
1200			R5KTB612	R5KMN20	R5CPE2060	R5CRE2060	R5CQE20612	R5PCE2060	R5LE20122	R5ZE1261
400		800	R5KTB84	R5KMN20	R5CPE2080	R5CRE2080	R5CQE2084	R5PCE2080	R5LE2042	R5ZE841
500			R5KTB85	R5KMN20	R5CPE2080	R5CRE2080	R5CQE2085	R5PCE2080	R5LE2052	R5ZE851
600			R5KTB86	R5KMN20	R5CPE2080	R5CRE2080	R5CQE2086	R5PCE2080	R5LE2062	R5ZE861
800			R5KTB88	R5KMN20	R5CPE2080	R5CRE2080	R5CQE2088	R5PCE2080	R5LE2082	R5ZE881
1000			R5KTB810	R5KMN20	R5CPE2080	R5CRE2080	R5CQE20810	R5PCE2080	R5LE20102	R5ZE1081
1200			R5KTB812	R5KMN20	R5CPE2080	R5CRE2080	R5CQE20812	R5PCE2080	R5LE20122	R5ZE1281
600		1000	R5KTB106	R5KMN20	R5CPE20100	R5CRE20100	R5CQE20106	R5PCE20100	R5LE2062	R5ZE1061
1000			R5KTB1010	R5KMN20	R5CPE20100	R5CRE20100	R5CQE201010	R5PCE20100	R5LE20102	R5ZE10101
1200			R5KTB1012	R5KMN20	R5CPE20100	R5CRE20100	R5CQE201012	R5PCE20100	R5LE20122	R5ZE12101
600		1200	R5KTB126	R5KMN20	R5CPE20120	R5CRE20120	R5CQE20126	R5PCE20120	R5LE2062	R5ZE1261
1000			R5KTB1210	R5KMN20	R5CPE20120	R5CRE20120	R5CQE201210	R5PCE20120	R5LE20102	R5ZE12101
1200			R5KTB1212	R5KMN20	R5CPE20120	R5CRE20120	R5CQE201212	R5PCE20120	R5LE20122	R5ZE12121
1000		400	R5KTB410	R5KMN22	R5CPE2240	R5CRE2240	R5CQE22410	R5PCE2240	R5LE22102	R5ZE1041
1200			R5KTB412	R5KMN22	R5CPE2240	R5CRE2240	R5CQE22412	R5PCE2240	R5LE22122	R5ZE1241
1000		600	R5KTB610	R5KMN22	R5CPE2260	R5CRE2260	R5CQE22610	R5PCE2260	R5LE22102	R5ZE1061
1200			R5KTB612	R5KMN22	R5CPE2260	R5CRE2260	R5CQE22612	R5PCE2260	R5LE22122	R5ZE1261
1000		800	R5KTB810	R5KMN22	R5CPE2280	R5CRE2280	R5CQE22810	R5PCE2280	R5LE22102	R5ZE1081
1200			R5KTB812	R5KMN22	R5CPE2280	R5CRE2280	R5CQE22812	R5PCE2280	R5LE22122	R5ZE1281
1000		1000	R5KTB1010	R5KMN22	R5CPE22100	R5CRE22100	R5CQE221010	R5PCE22100	R5LE22102	R5ZE10101
1200			R5KTB1012	R5KMN22	R5CPE22100	R5CRE22100	R5CQE221012	R5PCE22100	R5LE22122	R5ZE12101
1000		1200	R5KTB1210	R5KMN22	R5CPE22120	R5CRE22120	R5CQE221210	R5PCE22120	R5LE22102	R5ZE12101
1200			R5KTB1212	R5KMN22	R5CPE22120	R5CRE22120	R5CQE221212	R5PCE22120	R5LE22122	R5ZE12121

* Attention! The enclosure kit ordered with one code is supplied unassembled on a pallet. The enclosure kit includes: mounting plate, side panels, plinth

Additional equipment

Perforated duct	Mounting accessories	Lugs and tools	Spacers and insulators	Marking	Push-buttons, cam switches	Terminal blocks for DIN rails
Page 268	Page 287	Page 300	Page 330	Page 342	Page 462	Page 355

Floor-mounted assembled enclosures series DAE



Metal assembled enclosures series DAE

DAE series enclosures are designed for formation of power distribution and process automation systems.

CQE metal enclosures are made of high-quality sheet steel and supplied in 52 different standard sizes.

Enclosures have lightweight frameless structure and three-section cable gland which accelerates enclosure assembly and connection process significantly.

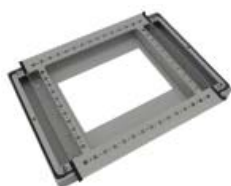
The standard enclosure assembly has the dust and moisture protection level IP55. This level can be raised when using special accessories.

Flexibility of the "RAM block" system allows using accessories for CQE series enclosures in the structure of DAE enclosures. For example, it is possible to use different options of internal rails or partitioning elements.

DAE series metal assembled enclosures have all necessary certificates of conformity and have successfully passed tests for conformity with Russian standards.

Basic structural elements

Kit top and bottom



Material:

- steel with thickness of 1.5 mm, RAL 7011 powder coating.

Distinctive features:

- elements for arrangement of cable glands are included.

Scope of supply:

- bottom, top, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
depth	width	
300	600	R5DTB63
400		R5DTB64
500		R5DTB65
600		R5DTB66
300	800	R5DTB83
400		R5DTB84
500		R5DTB85
600		R5DTB86
300	1000	R5DTB103
400		R5DTB104
500		R5DTB105
600		R5DTB106
400	1200	R5DTB124
500		R5DTB125
600		R5DTB126

Side panel kit



Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- special bends on wall edges ensure high strength and load bearing capacity of the enclosure;
- bends have standard perforation with pitch of 25 mm which allows installing virtually any accessories from the range of CQE universal enclosures into this enclosure (page 66).

Scope of supply:

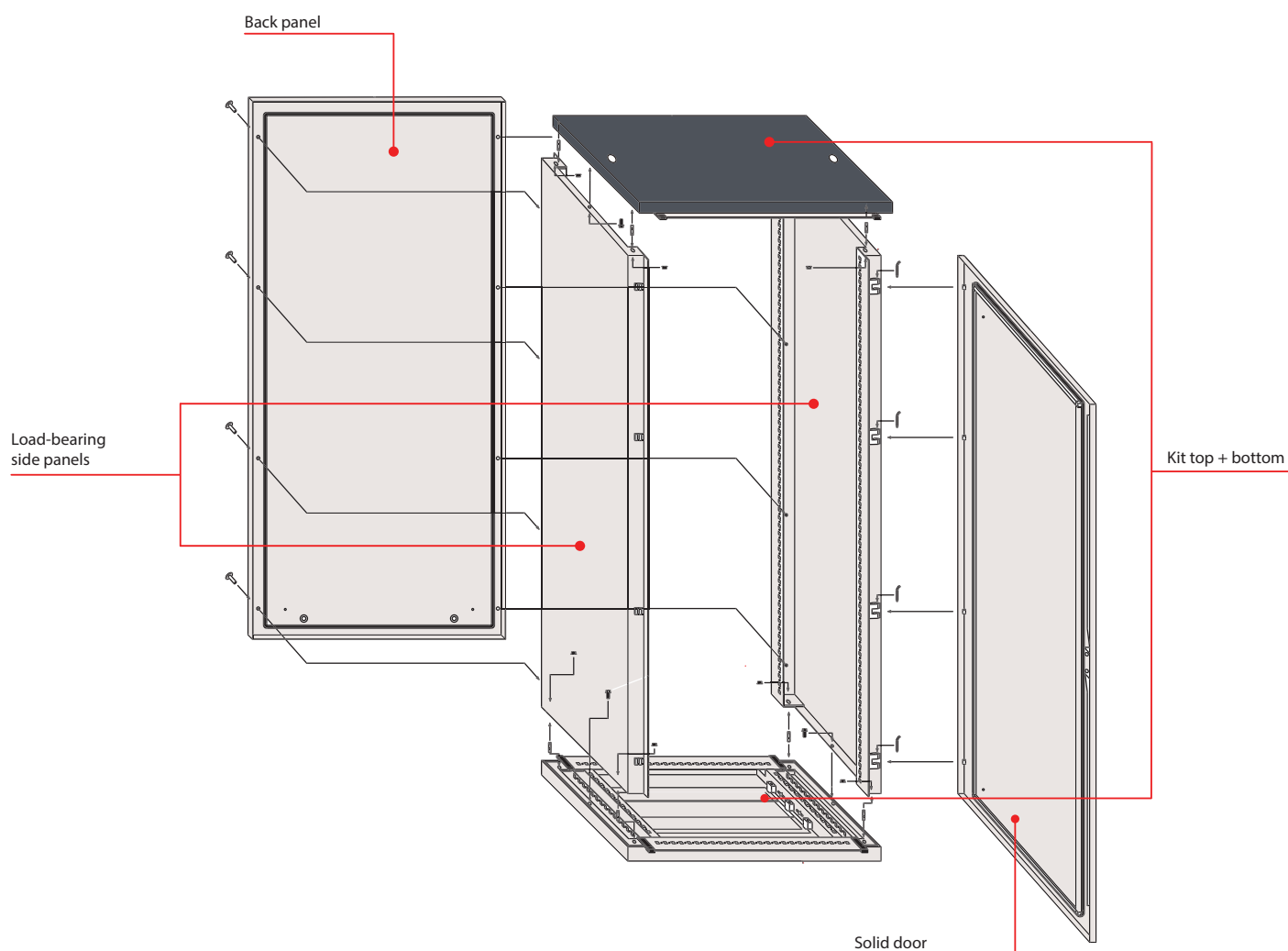
- two side panels, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
depth	height	
300	1000	R5DL1030
400		R5DL1040
300	1200	R5DL1230
400		R5DL1240
300	1400	R5DL1430
400		R5DL1440
300	1600	R5DL1630
400		R5DL1640
300	1800	R5DL1830
400		R5DL1840
500		R5DL1850
600		R5DL1860
300	2000	R5DL2030
400		R5DL2040
500		R5DL2050
600		R5DL2060

Scheme installation of enclosure series DAE



Basic frame elements:

- top and bottom are ordered with one code. Basic parameters for selection: enclosure width and depth;
- side panels are ordered with one code, two panels are included into the scope of supply. Basic parameters for selection: enclosure height and depth.

Attention: remaining elements for the DAE enclosure (door, back panel, plinth, etc.) are used from the general range (page 68)

Selection table



Enclosure dimensions, mm			Kit of side panels	Kit top + bottom	Solid door	Back panel	Mounting plate	Plinth 100 mm
depth	height	width						
300	1000	600	R5DL1030	R5DTB63	R5CPE1060	R5CRE1060	R5PCE1060	R5ZE631
400			R5DL1040	R5DTB64	R5CPE1060	R5CRE1060	R5PCE1060	R5ZE641
300		800	R5DL1030	R5DTB83	R5CPE1080	R5CRE1080	R5PCE1080	R5ZE831
400			R5DL1040	R5DTB84	R5CPE1080	R5CRE1080	R5PCE1080	R5ZE841
300		1000	R5DL1030	R5DTB103	R5CPE10100	R5CRE10100	R5PCE10100	R5ZE1031
400			R5DL1040	R5DTB104	R5CPE10100	R5CRE10100	R5PCE10100	R5ZE1041
300	1200	600	R5DL1230	R5DTB63	R5CPE1260	R5CRE1260	R5PCE1260	R5ZE631
400			R5DL1240	R5DTB64	R5CPE1260	R5CRE1260	R5PCE1260	R5ZE641
300		800	R5DL1230	R5DTB83	R5CPE1280	R5CRE1280	R5PCE1280	R5ZE831
400			R5DL1240	R5DTB84	R5CPE1280	R5CRE1280	R5PCE1280	R5ZE841
300		1000	R5DL1230	R5DTB103	R5CPE12100	R5CRE12100	R5PCE12100	R5ZE1031
400			R5DL1240	R5DTB104	R5CPE12100	R5CRE12100	R5PCE12100	R5ZE1041
300	1400	600	R5DL1430	R5DTB63	R5CPE1460	R5CRE1460	R5PCE1460	R5ZE631
400			R5DL1440	R5DTB64	R5CPE1460	R5CRE1460	R5PCE1460	R5ZE641
300		800	R5DL1430	R5DTB83	R5CPE1480	R5CRE1480	R5PCE1480	R5ZE831
400			R5DL1440	R5DTB84	R5CPE1480	R5CRE1480	R5PCE1480	R5ZE841
300		1000	R5DL1430	R5DTB103	R5CPE14100	R5CRE14100	R5PCE14100	R5ZE1031
400			R5DL1440	R5DTB104	R5CPE14100	R5CRE14100	R5PCE14100	R5ZE1041
300	1600	600	R5DL1630	R5DTB63	R5CPE1660	R5CRE1660	R5PCE1660	R5ZE631
400			R5DL1640	R5DTB64	R5CPE1660	R5CRE1660	R5PCE1660	R5ZE641
300		800	R5DL1630	R5DTB83	R5CPE1680	R5CRE1680	R5PCE1680	R5ZE831
400			R5DL1640	R5DTB84	R5CPE1680	R5CRE1680	R5PCE1680	R5ZE841
300		1000	R5DL1630	R5DTB103	R5CPE16100	R5CRE16100	R5PCE16100	R5ZE1031
400			R5DL1640	R5DTB104	R5CPE16100	R5CRE16100	R5PCE16100	R5ZE1041

Accessories for enclosures

General



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Partitioning



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Installation of busbars



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Climate control



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Lighting



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Enclosure dimensions, mm			Kit of side panels	Kit top + bottom	Solid door	Back panel	Mounting plate	Plinth 100 mm
depth	height	width						
300	1800	600	R5DL1830	R5DTB63	R5CPE1860	R5CRE1860	R5PCE1860	R5ZE631
400			R5DL1840	R5DTB64	R5CPE1860	R5CRE1860	R5PCE1860	R5ZE641
500			R5DL1850	R5DTB65	R5CPE1860	R5CRE1860	R5PCE1860	R5ZE651
600			R5DL1860	R5DTB66	R5CPE1860	R5CRE1860	R5PCE1860	R5ZE661
300		800	R5DL1830	R5DTB83	R5CPE1880	R5CRE1880	R5PCE1880	R5ZE831
400			R5DL1840	R5DTB84	R5CPE1880	R5CRE1880	R5PCE1880	R5ZE841
500			R5DL1850	R5DTB85	R5CPE1880	R5CRE1880	R5PCE1880	R5ZE851
600			R5DL1860	R5DTB86	R5CPE1880	R5CRE1880	R5PCE1880	R5ZE861
400		1000	R5DL1840	R5DTB104	R5CPE18100	R5CRE18100	R5PCE18100	R5ZE1041
500			R5DL1850	R5DTB105	R5CPE18100	R5CRE18100	R5PCE18100	R5ZE1051
600			R5DL1860	R5DTB106	R5CPE18100	R5CRE18100	R5PCE18100	R5ZE1061
400		1200	R5DL1840	R5DTB124	R5CPE18120	R5CRE18120	R5PCE18120	R5ZE1241
500			R5DL1850	R5DTB125	R5CPE18120	R5CRE18120	R5PCE18120	R5ZE1251
600			R5DL1860	R5DTB126	R5CPE18120	R5CRE18120	R5PCE18120	R5ZE1261
300		2000	R5DL2030	R5DTB63	R5CPE2060	R5CRE2060	R5PCE2060	R5ZE631
400		600	R5DL2040	R5DTB64	R5CPE2060	R5CRE2060	R5PCE2060	R5ZE641
500			R5DL2050	R5DTB65	R5CPE2060	R5CRE2060	R5PCE2060	R5ZE651
600			R5DL2060	R5DTB66	R5CPE2060	R5CRE2060	R5PCE2060	R5ZE661
300		800	R5DL2030	R5DTB83	R5CPE2080	R5CRE2080	R5PCE2080	R5ZE831
400			R5DL2040	R5DTB84	R5CPE2080	R5CRE2080	R5PCE2080	R5ZE841
500			R5DL2050	R5DTB85	R5CPE2080	R5CRE2080	R5PCE2080	R5ZE851
600			R5DL2060	R5DTB86	R5CPE2080	R5CRE2080	R5PCE2080	R5ZE861
400		1000	R5DL2040	R5DTB104	R5CPE20100	R5CRE20100	R5PCE20100	R5ZE1041
500			R5DL2050	R5DTB105	R5CPE20100	R5CRE20100	R5PCE20100	R5ZE1051
600			R5DL2060	R5DTB106	R5CPE20100	R5CRE20100	R5PCE20100	R5ZE1061
400		1200	R5DL2040	R5DTB124	R5CPE20120	R5CRE20120	R5PCE20120	R5ZE1241
500			R5DL2050	R5DTB125	R5CPE20120	R5CRE20120	R5PCE20120	R5ZE1251
600			R5DL2060	R5DTB126	R5CPE20120	R5CRE20120	R5PCE20120	R5ZE1261

Additional equipment

Perforated duct



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Mounting accessories



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Lugs and tools



Page 300

Spacers and insulators



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Marking



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Push-buttons, cam switches



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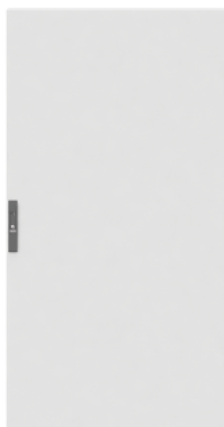
Terminal blocks for DIN rails



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Accessories for floor-mounted enclosures

Solid door


Purpose:

- restriction of access to equipment installed in the enclosure.

Material:

- steel with thickness of 2 mm, RAL 7035 powder coating.

Distinctive features:

- complete with an internal reinforcing frame;
- door opening angle is 130°;
- special seal on the inside perimeter ensuring the protection degree of up to IP65;
- complete with a standard handle with a built-in lock;
- lock for a key with a double bit is installed in the door;
- doors are made two-leaved for width from 1200 mm (inclusively);
- all necessary elements for installation of doors in the enclosure frame are included into the scope of supply.

Scope of supply:

- door, lock, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Type of door	Code
height	width		
1000	600	1	R5CPE1060
	800	1	R5CPE1080
	1000	1	R5CPE10100
1200	600	1	R5CPE1260
	800	1	R5CPE1280
	1000	1	R5CPE12100
1400	600	1	R5CPE1460
	800	1	R5CPE1480
	1200*	2	R5CPE14120
	1600*	2	R5CPE14160
1600	400	1	R5CPE1640
	600	1	R5CPE1660
	800	1	R5CPE1680
	1000	1	R5CPE16100
	1200*	2	R5CPE16120
1800	300	1	R5CPE1830
	400	1	R5CPE1840
	600	1	R5CPE1860
	800	1	R5CPE1880
	1000	1	R5CPE18100
	1200*	2	R5CPE18120
2000	300	1	R5CPE2030
	400	1	R5CPE2040
	600	1	R5CPE2060
	800	1	R5CPE2080
	1000	1	R5CPE20100
	1200*	2	R5CPE20120
	1400*	2	R5CPE20140
	1600*	2	R5CPE20160
2200	300	1	R5CPE2230
	400	1	R5CPE2240
	600	1	R5CPE2260
	800	1	R5CPE2280
	1000	1	R5CPE22100
	1200*	2	R5CPE22120

* Double door

Double door



Purpose:

- restriction of access to equipment installed in the enclosure.

Material:

- steel with thickness of 2 mm, RAL 7035 powder coating.

Distinctive features:

- complete with an internal reinforcing frame;
- door opening angle is 130°;
- has a seal on the inside perimeter ensuring the protection degree of up to IP65;
- complete with a standard handle with a built-in lock;
- lock for a key with a double bit is installed in the door;
- all necessary elements for installation of doors in the enclosure frame are included into the scope of supply.

Scope of supply:

- door, lock, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
height	width	
1400	800	R5CPE1481
1600	800	R5CPE1681
	1000	R5CPE16101
1800	800	R5CPE1881
	1000	R5CPE18101
2000	800	R5CPE2081
	1000	R5CPE20101
2200	800	R5CPE2281
	1000	R5CPE22101

Side solid door



Purpose:

- restriction of access to equipment installed in the enclosure.

Material:

- steel with thickness of 2 mm, RAL 7035 powder coating.

Distinctive features:

- complete with an internal reinforcing frame;
- has a seal on the inside perimeter ensuring the protection degree of up to IP65;
- complete with a standard handle with a built-in lock;
- lock for a key with a double bit is installed in the door;
- maximum door opening angle is up to 100°.

Scope of supply:

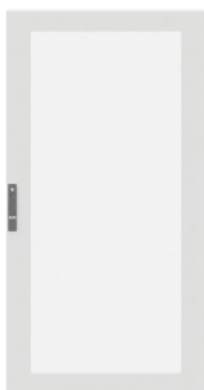
- door, lock, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
depth	height	
500	1800	R5CPLE1850
600		R5CPLE1860
800		R5CPLE1880
500	2000	R5CPLE2050
600		R5CPLE2060
800		R5CPLE2080
500	2200	R5CPLE2250
600		R5CPLE2260
800		R5CPLE2280

Transparent door


Purpose:

- restriction of access to equipment installed in the enclosure.

Material:

- steel with thickness of 2 mm, RAL 7035 powder coating;
- safety glass with thickness of 4 mm.

Distinctive features:

- has a seal on the inside perimeter ensuring the protection degree of up to IP65;
- door opening angle is 130°;
- complete with a standard handle with a built-in lock;
- lock for a key with a double bit is installed in the door;
- all necessary elements for installation of doors in the enclosure frame are included into the scope of supply.

Scope of supply:

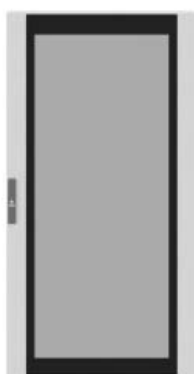
- door, lock, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
height	width	
1000	600	R5CPTE1060
	800	R5CPTE1080
	1000	R5CPTE10100
1200	600	R5CPTE1260
	800	R5CPTE1280
	1000	R5CPTE12100
1400	600	R5CPTE1460
	800	R5CPTE1480
	1000	R5CPTE14100
1600	600	R5CPTE1660
	800	R5CPTE1680
	1000	R5CPTE16100
1800	600	R5CPTE1860
	800	R5CPTE1880
	1000	R5CPTE18100
2000	600	R5CPTE2060
	800	R5CPTE2080
	1000	R5CPTE20100
2200	600	R5CPTE2260
	800	R5CPTE2280
	1000	R5CPTE22100

Shaded transparent door


Purpose:

- restriction of access to equipment installed in the enclosure.

Material:

- steel with thickness of 2 mm, RAL 7035 powder coating;
- shaded safety glass with thickness of 4 mm.

Distinctive features:

- has a seal on the inside perimeter ensuring the protection degree of up to IP65;
- complete with a standard handle with a built-in lock, double bit;
- all necessary elements for installation of doors in the enclosure frame are included into the scope of supply.

Scope of supply:

- door, lock, mounting accessories.

Drawings:

- identical to drawings of transparent doors R5CPTE* (see on the disk).

Enclosure dimensions, mm		Code
height	width	
1600	600	R5CPTED1660
	800	R5CPTED1680
1800	600	R5CPTED1860
	800	R5CPTED1880
2000	600	R5CPTED2060
	800	R5CPTED2080

Internal door



Purpose:

- installation of control and signaling elements.

Material:

- steel with thickness of 2 mm, RAL 7035 powder coating.

Distinctive features:

- ensures the protection level IP20.

Scope of supply:

- door, mounting frame, 2 locks, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
height	width	
1000	600	R5PIE1060
	800	R5PIE1080
	1000	R5PIE10100
1200	600	R5PIE1260
	800	R5PIE1280
	1000	R5PIE12100
1400	600	R5PIE1460
	800	R5PIE1480
	1000	R5PIE14100
1600	600	R5PIE1660
	800	R5PIE1680
	1000	R5PIE16100
1800	600	R5PIE1860
	800	R5PIE1880
	1000	R5PIE18100
2000	600	R5PIE2060
	800	R5PIE2080
	1000	R5PIE20100
2200	600	R5PIE2260
	800	R5PIE2280
	1000	R5PIE22100

Horizontal door rails


Purpose:

- installation of equipment on the internal door surface.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- installation is performed in the reinforcing door frame.

Scope of supply:

- 10 rails, mounting accessories.

Drawings:

- see on the disk.

Door width, mm	Code
500	R5TPE50
600	R5TPE60
700	R5TPE70
800	R5TPE80
1000	R5TPE100

Door interlocking device



R5AE01



R5AEL01

Purpose:

- blocks door opening unless the main door is open.

Material:

- galvanized steel with thickness of 2.5 mm.

Scope of supply:

- interlocking device, mounting accessories.

Drawings:

- see on the disk.

Description	Code
Series door connection	R5AE01
Adjoining door connection	R5AEL01

Door opening angle limiter up to 90°


Purpose:

- door opening angle change.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- maximum door opening angle when using the limiter comprises 90°.

Scope of supply:

- limiter, mounting accessories.

Drawings:

- see on the disk.

Description	Code
For solid doors	R5AE02
For transparent doors	R5AE09

Hinge for angle of 180°


Purpose:

- door opening angle change.

Material:

- alloyed die-cast aluminium RAL 9005.

Distinctive features:

- maximum door opening angle when using the limiter comprises 180°.

Scope of supply:

- 4 hinges, mounting accessories.

Description	Code
Door hinges with opening angle of 180°	R5CE248

Handle twist



- Purpose:**
- unauthorized access protection.
- Material:**
- plastic.
- Distinctive features:**
- lock cylinders are replaceable.

Description	Material handle/cylinder	Code
Lock kit: handle twist, cylinder with a double bit of 3 mm	plastic/metal	R5CE207
Lock kit: handle twist, cylinder for an Allen wrench, key	plastic/metal	R5CE201

Standard handle



- Purpose:**
- unauthorized access protection.
- Material:**
- plastic.
- Distinctive features:**
- lock cylinders are replaceable.

Description	Material handle/cylinder	Code
Lock kit: handle, cylinder with a double bit of 3 mm	plastic/metal	R5CE202
Lock kit: handle, FIAT cylinder	plastic/metal	R5CE203

Replaceable lock cylinders



- Purpose:**
- unauthorized access protection.
- Material:**
- plastic/metal.
- Distinctive features:**
- key is ordered with an individual code.
- Scope of supply:**
- cylinder.

Cylinders, keys	Description	Dimension, mm	Material cylinder/key	Code	
				key	cylinder
	For a double-bit key	3	metal/metal	R5CE230	R5CE219
	For a triangle key	8	metal/metal	R5CE236	R5CE214
		7		R5CE235	R5CE213
	For a key of FIAT type	–	metal/metal	R5CE237	R5CE262
	For a square key	7	metal/metal	R5CE233	R5CE211
		8		R5CE234	R5CE212

Modified handle



- Purpose:**
- unauthorized access protection.
- Material:**
- plastic/metal.
- Distinctive features:**
- handle structure provides for availability of a protective shutter to prevent dust and moisture ingress into the lock mechanism;
 - handle is complete with a lock for a customized key;
 - handle structure prevents spontaneous slipping of the lock mechanism under vibration loads. It is recommended to use the handle when operating enclosures in earthquake endangered areas (with application of a seismic kit, see page 83) or in areas with possible vibration loads.
- Scope of supply:**
- handle with a lock, key, mounting accessories.
- Drawing:**
- see on the disk.

Description	Code
Advanced design door handle	R5CE270

Back panel



Purpose:

- restriction of access to equipment installed in the enclosure.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- has a seal on the inside perimeter ensuring the protection degree of up to IP65;
- it is made of two parts for enclosure width from 1200 mm (inclusively);
- mounting holes are located in recesses on the outside of panels, creating the single plane of the panel and fasteners;
- all necessary elements for installation of panels in the enclosure frame are included into the scope of supply.

Scope of supply:

- back panel, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
height	width	
1000	600	R5CRE1060
	800	R5CRE1080
	1000	R5CRE10100
1200	600	R5CRE1260
	800	R5CRE1280
	1000	R5CRE12100
1400	600	R5CRE1460
	800	R5CRE1480
	1200	R5CRE14120
	1600	R5CRE14160
1600	400	R5CRE1640
	600	R5CRE1660
	800	R5CRE1680
	1000	R5CRE16100
	1200	R5CRE16120
1800	300	R5CRE1830
	400	R5CRE1840
	600	R5CRE1860
	800	R5CRE1880
	1000	R5CRE18100
	1200	R5CRE18120
2000	300	R5CRE2030
	400	R5CRE2040
	600	R5CRE2060
	800	R5CRE2080
	1000	R5CRE20100
	1200	R5CRE20120
	1400	R5CRE20140
	1600	R5CRE20160
2200	300	R5CRE2230
	400	R5CRE2240
	600	R5CRE2260
	800	R5CRE2280
	1000	R5CRE22100
	1200	R5CRE22120

Side panels



Purpose:

- restriction of access to equipment installed in the enclosure.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- special seal on the inside perimeter ensuring the protection degree of up to IP65;
- mounting holes are located in recesses on the outside of panels, creating the single plane of the panel and fasteners;
- all necessary elements for installation of panels in the enclosure frame are included into the scope of supply.

Scope of supply:

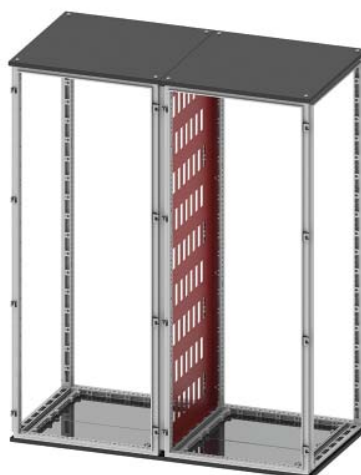
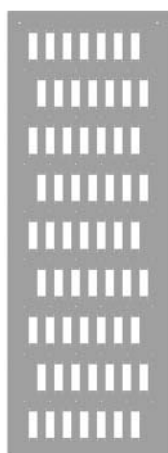
- two side panels, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
depth	height	
400	1400	R5LE1442
500		R5LE1452
400	1600	R5LE1642
500		R5LE1652
600		R5LE1662
400		R5LE1842
500	1800	R5LE1852
600		R5LE1862
800		R5LE1882
1000		R5LE18102
1200		R5LE18122
400	2000	R5LE2042
500		R5LE2052
600		R5LE2062
800		R5LE2082
1000		R5LE20102
1200		R5LE20122
500	2200	R5LE2252
600		R5LE2262
800		R5LE2282
1000		R5LE22102
1200		R5LE22122

Panels for industrial plugs


Purpose:

- installation of 24-pole plugs.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- ensures the protection level IP30.

Scope of supply:

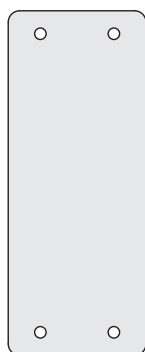
- panel, mounting accessories.

Drawings:

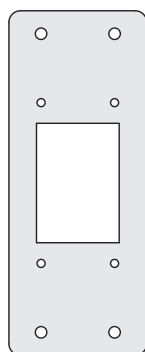
- see on the disk.

Enclosure dimensions, mm		Number of holes	Code
depth	height		
400	1800	24 (3x8)	R5PCDE1840
500		32 (4x8)	R5PCDE1850
600		40 (5x8)	R5PCDE1860
800		56 (7x8)	R5PCDE1880
400	2000	27 (3x9)	R5PCDE2040
500		36 (4x9)	R5PCDE2050
600		45 (5x9)	R5PCDE2060
800		63 (7x9)	R5PCDE2080

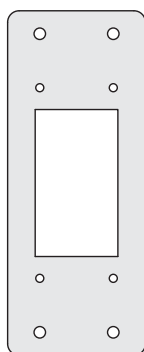
Adapters for panels with industrial plugs



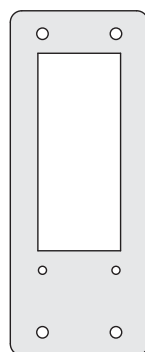
R5AD2400
Solid plug



R5AD2406
Adapter 24 → 6



R5AD2410
Adapter 24 → 10



R5AD2416
Adapter 24 → 16

Purpose:

- closing of unused holes and switching to plugs with fewer poles.

Material:

- galvanized steel with thickness of 2 mm.

Scope of supply:

- 4 adapters, mounting accessories.

Drawings:

- see on the disk.

Adapter	Code
Blind	R5AD2400
24-6	R5AD2406
24-10	R5AD2410
24-16	R5AD2416

Mounting plate



Purpose:

- equipment installation.

Material:

- galvanized steel with thickness of 2 or 3 mm (depending on width).

Distinctive features:

- possible length adjustment with pitch of 25 mm (when installing the plate);
- rated static load is up to 600 kg;
- when installing heavy equipment with weight of more than 600 kg, it is necessary to reinforce the plate with special profiles (page 78).

Scope of supply:

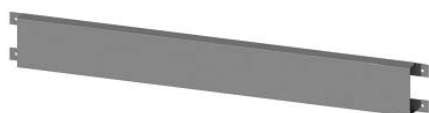
- mounting plate, fasteners, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
height	width	
1000	600	R5PCE1060
	800	R5PCE1080
	1000	R5PCE10100
1200	600	R5PCE1260
	800	R5PCE1280
	1000	R5PCE12100
1400	600	R5PCE1460
	800	R5PCE1480
	1000	R5PCE14100
	1200	R5PCE14120
1600	1600	R5PCE14160
	400	R5PCE1640
	600	R5PCE1660
	800	R5PCE1680
1800	1000	R5PCE16100
	1200	R5PCE16120
	300	R5PCE1830
	400	R5PCE1840
	600	R5PCE1860
	800	R5PCE1880
2000	1000	R5PCE18100
	1200	R5PCE18120
	300	R5PCE2030
	400	R5PCE2040
	600	R5PCE2060
	800	R5PCE2080
	1000	R5PCE20100
	1200	R5PCE20120
2200	1400	R5PCE20140
	1600	R5PCE20160
	300	R5PCE2230
	400	R5PCE2240
	600	R5PCE2260
	800	R5PCE2280
	1000	R5PCE22100
	1200	R5PCE22120

Mounting plate reinforcing profile



Purpose:

- improvement of load bearing capacity of the mounting plate when exceeding rated static loads (not more than 25% of the rating).

Material:

- galvanized steel with thickness of 2 mm.

Scope of supply:

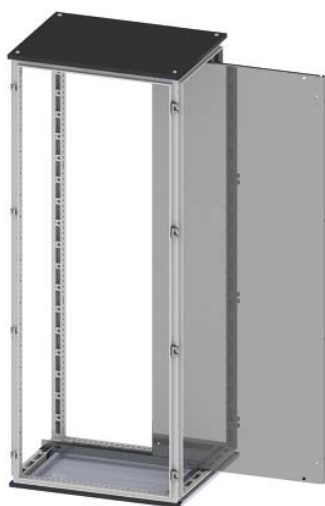
- 2 profiles, mounting accessories.

Drawings:

- see on the disk.

Plate width, mm	Code
600	R5RPC60
800	R5RPC80
1000	R5RPC100
1200	R5RPC120
1400	R5RPC140
1600	R5RPC160

Side-loading mounting plate



Purpose:

- equipment installation.

Material:

- galvanized steel with thickness of 2 or 3 mm (depending on width).

Distinctive features:

- it is possible to adjust length with pitch of 25 mm (when installing the plate);
- rated static load is up to 600 kg;
- when installing heavy equipment with weight of more than 600 kg, it is necessary to reinforce the plate with the special profile R5RPCSE30 (profile length is 3 m).

Scope of supply:

- mounting plate, fasteners, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
height	width	
1600	600	R5PCSE1660
	800	R5PCSE1680
	1000	R5PCSE16100
	1200	R5PCSE16120
1800	600	R5PCSE1860
	800	R5PCSE1880
	1000	R5PCSE18100
	1200	R5PCSE18120
2000	600	R5PCSE2060
	800	R5PCSE2080
	1000	R5PCSE20100
	1200	R5PCSE20120
	1400	R5PCSE20140
	1600	R5PCSE20160
2200	600	R5PCSE2260
	800	R5PCSE2280
	1000	R5PCSE22100
	1200	R5PCSE22120

Partial mounting plate



Purpose:

- equipment installation.

Material:

- galvanized steel with thickness of 2.5 mm.

Distinctive features:

- it is possible to adjust length with pitch of 25 mm (when installing the plate);
- it is also necessary to order side rails R5PDL*** or R5TLE*** for installation (page 92).

Scope of supply:

- mounting plate, fasteners, mounting accessories.

Drawing:

- see on the disk.

Enclosure width, mm	Plate height, mm	Code
600	600	R5PCPE66
	800	R5PCPE86
	1000	R5PCPE106
	1200	R5PCPE126
800	600	R5PCPE68
	800	R5PCPE88
	1000	R5PCPE108
	1200	R5PCPE128
1000	600	R5PCPE610
	800	R5PCPE810
	1000	R5PCPE1010
	1200	R5PCPE1210

Additional mounting plate



Purpose:

- equipment installation.

Material:

- galvanized steel with thickness of 2.5 mm.

Distinctive features:

- installed on the rear of the main mounting plate which allows ensuring bilateral arrangement of equipment on plates.

Scope of supply:

- mounting plate, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
height	width	
1800	600	R5PSP1860
	800	R5PSP1880
	1000	R5PSP18100
	1200	R5PSP18120
2000	600	R5PSP2060
	800	R5PSP2080
	1000	R5PSP20100
	1200	R5PSP20120

Intermediate mounting plate



Purpose:

- provision of the continuous mounting plane.

Material:

- galvanized steel with thickness of 2.5 mm.

Distinctive features:

- when combining enclosures into a common line, the plate provides the uniform mounting plane for equipment installation.

Scope of supply:

- mounting plate, mounting accessories.

Drawings:

- see on the disk.

Enclosure height, mm	Code
1400	R5PIE14
1600	R5PIE16
1800	R5PIE18
2000	R5PIE20
2200	R5PIE22

Set of mounting accessories for mounting plate



R5AE05



R5AE06

Purpose:

- mounting plate attachment.

Material:

- galvanized steel with thickness of 3 mm.

Scope of supply:

- 2 fasteners, mounting accessories.

Drawings:

- see on the disk.

Description	Code
Standard kit of mounting accessories for mounting plate	R5AE05
Kit of mounting accessories for deep installation of mounting plate	R5AE06

Plinth



Purpose:

- ease of enclosure installation and cable glands.

Material:

- steel with thickness of 2 mm, RAL 7011 powder coating.

Distinctive features:

- plinth is dismountable, consists of side, front and back panels, and 4 support angles;
- ordered with one code.

Scope of supply:

- plinth components, mounting accessories.

Drawing:

- see on the disk.

Plinth height, mm	Enclosure width, mm	Enclosure depth, mm						
		300	400	500	600	800	1000	1200
100	200	–	–	R5ZE251	R5ZE261	R5ZE281	–	–
	300	–	R5ZE341	R5ZE351	R5ZE361	R5ZE381	–	–
	400	–	R5ZE441	R5ZE451	R5ZE641	R5ZE841	R5ZE1041	R5ZE1241
	600	R5ZE631	R5ZE641	R5ZE651	R5ZE661	R5ZE861	R5ZE1061	R5ZE1261
	800	R5ZE831	R5ZE841	R5ZE851	R5ZE861	R5ZE881	R5ZE1081	R5ZE1281
	1000	R5ZE1031	R5ZE1041	R5ZE1051	R5ZE1061	R5ZE1081	R5ZE10101	R5ZE12101
	1200	–	R5ZE1241	R5ZE1251	R5ZE1261	R5ZE1281	R5ZE12101	–
	1400	–	R5ZE1441	R5ZE1451	R5ZE1461	R5ZE1481	–	–
	1600	–	R5ZE1641	R5ZE1651	R5ZE1661	R5ZE1681	–	–
200	200	–	–	R5ZE252	R5ZE262	R5ZE282	–	–
	300	–	R5ZE342	R5ZE352	R5ZE362	R5ZE382	–	–
	400	–	R5ZE442	R5ZE452	R5ZE642	R5ZE842	R5ZE1042	R5ZE1242
	600	R5ZE632	R5ZE642	R5ZE652	R5ZE662	R5ZE862	R5ZE1062	R5ZE1262
	800	R5ZE832	R5ZE842	R5ZE852	R5ZE862	R5ZE882	R5ZE1082	R5ZE1282
	1000	R5ZE1032	R5ZE1042	R5ZE1052	R5ZE1062	R5ZE1082	R5ZE10102	R5ZE12102
	1200	–	R5ZE1242	R5ZE1252	R5ZE1262	R5ZE1282	R5ZE12102	–
	1400	–	R5ZE1442	R5ZE1452	R5ZE1462	R5ZE1482	–	–
	1600	–	R5ZE1642	R5ZE1652	R5ZE1662	R5ZE1682	–	–

Corner enclosure plinth



Purpose:

- ease of enclosure installation and cable glands.

Material:

- steel with thickness of 2 mm, RAL 7011 powder coating.

Distinctive features:

- plinth is dismountable, consists of side, front and back panels, and 4 support angles;
- ordered with one code;
- designed only for corner enclosures.

Scope of supply:

- plinth components, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Plinth height, mm	Code
depth	width		
500	500	100	R5ZEA551
600	600	100	R5ZEA661
800	800	100	R5ZEA881
500	500	200	R5ZEA552
600	600	200	R5ZEA662
800	800	200	R5ZEA882

External grounding point


Purpose:

- grounding of CQE/DAE series floor-mounted enclosures.

Material:

- brass, M8 thread.

Distinctive features:

- provides the closed loop, resistance whereof does not exceed 0.1 Ohm.

Scope of supply:

- grounding point, mounting accessories.

Description	Code
External grounding point kit for CQE/DAE	R5EP01

Retainer for plinth attachment on the floor


Purpose:

- plinth attachment on the floor.

Material:

- galvanized steel.

Scope of supply:

- 4 retainers, mounting accessories.

Drawings:

- see on the disk.

Description	Code
Kit of retainers for plinth attachment on the floor	R5KFP01

Adjustable feet


Purpose:

- enclosure leveling.

Material:

- M12 screws, plastic supports.

Distinctive features:

- full foot height is from 70 to 125 mm;
- maximum static load on one foot is 300 kg.

Scope of supply:

- 4 feet, mounting accessories.

Drawings:

- see on the disk.

Description	Full foot height, mm	Code
Height-adjustable feet (up to 50 mm)	70	R5A45
Height-adjustable feet (from 50 to 100 mm)	125	R5A53

Roller installation profile


Purpose:

- facilitation of transportation.

Material:

- steel with thickness of 2 mm, powder coating RAL 7011.

Scope of supply:

- 2 profiles, mounting accessories.

Drawings:

- see on the disk.

Enclosure depth, mm	Code
400	R5A46
500	R5A47
600	R5A48
800	R5A49

Dual-wheel rollers



Purpose:

- facilitation of transportation.

Distinctive features:

- 2 rollers from the kit are equipped with braking mechanisms;
- maximum static load on one roller comprises 80 kg.

Scope of supply:

- 4 rollers, mounting accessories.

Description	Code
Roller kit	R5A41

Seismic kit



Purpose:

- reinforcement of the enclosure structure when installing in earthquake endangered areas.

Material:

- steel.

Distinctive features:

- enclosure complete with this kit is able to withstand vibrations of up to 9 points according to the MSK-64 scale;
- kit consists of 2 elements: seismic plinth and enclosure frame reinforcement kit;
- each element is complete with all necessary mounting accessories;
- when using the seismic kit, it is recommended to replace the standard door handle with the handle R5CE207 or R5CE270 (page 73);
- installed into CQE standard enclosures.

Enclosure frame reinforcement kit



Purpose:

- reinforcement of the CQE enclosure basic structure.

Material:

- angles: steel with thickness of 4 mm, RAL 7011 powder coating;
- C-profile: galvanized steel with thickness of 2 mm;
- C-profile retainer: galvanized steel with thickness of 2 mm.

Distinctive features:

- installed on the CQE enclosure basic structure without additional perforation of enclosure elements;
- all necessary mounting accessories are included into the kit;

Scope of supply:

- 8 angles, 4 to 6 C-profiles (depending on enclosure overall dimensions), 2 to 4 C-profile retainers (depending on enclosure overall dimensions), mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm			Code
height	width	depth	
1800	600	400	R5SK1864
	600	600	R5SK1866
	800	400	R5SK1884
	800	600	R5SK1886
	600	800	R5SK1868
	800	800	R5SK1888
2000	600	400	R5SK2064
	600	600	R5SK2066
	800	400	R5SK2084
	800	600	R5SK2086
	600	800	R5SK2068
	800	800	R5SK2088

Seismic plinth


Purpose:

- enclosure base reinforcement.

Material:

- steel with thickness of 4 mm, RAL 7011 powder coating.

Distinctive features:

- plinth height is 100 mm;
- plinth is supplied fully welded;
- ordered with one code;
- installed on the CQE enclosure basic structure without additional perforation of enclosure elements;
- all necessary mounting accessories are included into the kit.

Scope of supply:

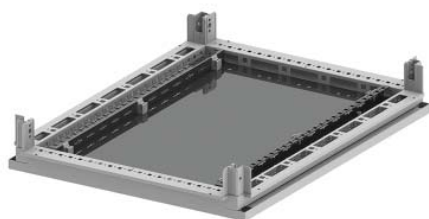
- plinth, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Plinth height, mm	Code
depth	width		
400	600	100	R5ZE641SY
600		100	R5ZE661SY
800		100	R5ZE681SY
400	800	100	R5ZE841SY
600		100	R5ZE861SY
800		100	R5ZE881SY

Solid bottom


Purpose:

- arrangement of cable glands and provision of the high IP protection degree.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- has a seal on the plate perimeter ensuring the protection degree of up to IP65.

Scope of supply:

- bottom, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
depth	width	
400	400	R5FUC44
500		R5FUC45
600		R5FUC46
800		R5FUC48
300	600	R5FUC63
400		R5FUC64
500		R5FUC65
600		R5FUC66
800		R5FUC68
300	800	R5FUC83
400		R5FUC84
500		R5FUC85
600		R5FUC86
800	1000	R5FUC88
300		R5FUC103
400		R5FUC104
500		R5FUC105
600		R5FUC106
800		R5FUC108

Seal for cable glands


Purpose:

- arrangement of cable glands and provision of the high IP protection degree.

Material:

- foamed polyurethane.

Distinctive features:

- section of 25x25 mm;
- installed on a standard cable gland that is provided in each "cover-bottom" kit by default;
- protection degree is IP54.

Scope of supply:

- seal.

Enclosure width, mm	Code
400	R5FPC400
600	R5FPC600
800	R5FPC800
1000	R5FPC1000
1200	R5FPC1200
1400	R5FPC1400
1600	R5FPC1600

Cable glands panel


Purpose:

- arrangement of cable glands and provision of the high IP protection degree.

Material:

- metal.

Distinctive features:

- section of 25x25 mm;
- installed instead of standard cable glands that are provided in each "cover-bottom" kit by default;
- protection degree is IP65.

Scope of supply:

- 2 panels, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Number of seats	Code
600	4	R5FMP600
800	6	R5FMP800
1000	8	R5FMP1000
1200	10	R5FMP1200

Cable gland


Purpose:

- arrangement of cable glands and provision of the high IP protection degree.

Material:

- polypropylene and thermoplastic elastomer.

Distinctive features:

- protection degree is IP65.

Scope of supply:

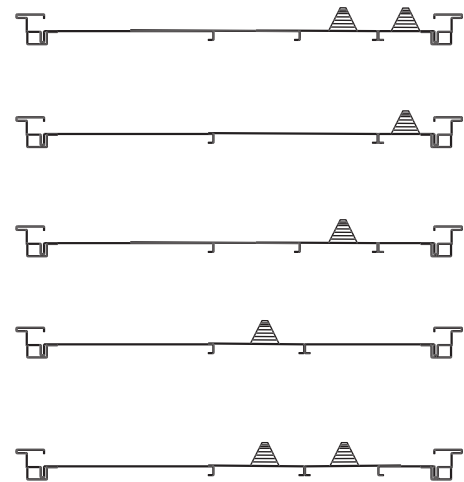
- 20 panels.

Drawings:

- see on the disk.

Number of glands	Maximum hole diameter, mm	Code
1	47	R5MP01
4	21	R5MP04
9	13	R5MP09

Examples of cable gland assembly diagrams



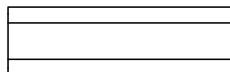
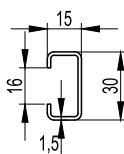
Cable clamp for C-profile



- Purpose:**
- attachment of a cable brought into the enclosure.
- Material:**
- galvanized steel with thickness of 2 mm, plastic.
- Distinctive features:**
- attached to a C-profile;
 - each retainer is equipped with a dielectric cable protection plate;
 - cable attachment is carried out using a clamp to a C-profile (to a C-rail);
- Scope of supply:**
- 15 to 50 retainers (depending on selected section) with a dielectric plate.

Cable outside diameter, mm	Code
6-14	R5CABF14
12-18	R5CABF18
18-22	R5CABF22
22-30	R5CABF30
30-38	R5CABF38
38-42	R5CABF42
42-50	R5CABF50
50-64	R5CABF64
64-70	R5CABF70

C1 DIN rail



Purpose:

- equipment installation.

Material:

- galvanized steel.

Distinctive features:

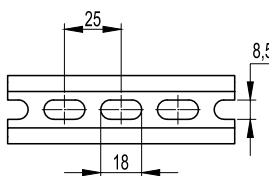
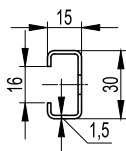
- C-rails, continuous line in the base center, distinguished by high strength and resistance to corrosion (up to 40 minutes in salt solution).

Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
C1	20	02160

C1F DIN rail



Purpose:

- equipment installation.

Material:

- galvanized steel.

Distinctive features:

- C-rails, availability of perforation, distinguished by high strength and resistance to corrosion (up to 40 minutes in salt solution).

Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
C1F	20	02165

Topside module



Purpose:

- entry of current-carrying elements into the enclosure.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- all panels are removable along the perimeter that ensures full access to equipment during installation;
- for arrangement of separation between the module and enclosure, it is necessary to order the R5PDS* cover;
- cover and side panels for the module are ordered separately;
- protection degree is IP55.

Scope of supply:

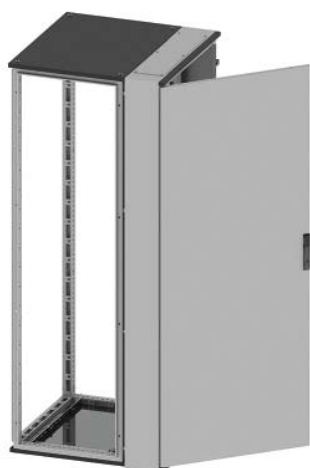
- module, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm			Code		
depth	height	width	module	cover	side panels
500	200	400	R5SCE45	R5PDS45	R5LSE50
		600	R5SCE65	R5PDS65	R5LSE50
		800	R5SCE85	R5PDS85	R5LSE50
		1000	R5SCE105	R5PDS105	R5LSE50
		1200	R5SCE125	R5PDS125	R5LSE50
600		400	R5SCE46	R5PDS46	R5LSE60
		600	R5SCE66	R5PDS66	R5LSE60
		800	R5SCE86	R5PDS86	R5LSE60
		1000	R5SCE106	R5PDS106	R5LSE60
		1200	R5SCE126	R5PDS126	R5LSE60

Cable compartment with side door



Purpose:

- entry of current-carrying elements into the enclosure.

Material:

- frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- door: steel with thickness of 2 mm, RAL 7035 powder coating.

Distinctive features:

- compartment is equipped with cable glands flanges located in the compartment top and bottom;
- door is equipped with a handle and a standard lock for a key with a double bit of 3 mm;
- protection degree is IP55.

Scope of supply:

- compartment, mounting accessories.

Drawings:

- see on the disk.

Compartment dimensions, mm			Code
depth	height	width	
500	1800	200	R5CVCE18250
600			R5CVCE18260
800			R5CVCE18280
500	2000		R5CVCE20250
600			R5CVCE20260
800			R5CVCE20280

Corner enclosure



Purpose:

- provision of continuous linear assembly with the turn at an angle of 90°.

Material:

- frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- panels: steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- enclosure frame has special structure;
- it is obligatory to use the R5ZEA* special plinth for enclosures of this type (page 81);
- protection degree is IP55.

Scope of supply:

- enclosure frame, two solid panels, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm			Code
depth	height	width	
500	1800	500	R5CQEA1855
600		600	R5CQEA1866
800		800	R5CQEA1888
500	2000	500	R5CQEA2055
600		600	R5CQEA2066
800		800	R5CQEA2088

Cable compartment with front door



Purpose:

- entry of current-carrying elements into the enclosure.

Material:

- racks: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- top and bottom: steel with thickness of 1.5 mm, RAL 7011 powder coating;
- door: steel with thickness of 2 mm, RAL 7035 powder coating;
- back panel: steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- compartments are manufactured in 2 versions: without a door and a back panel, only a frame;
- with a door and a back panel;
- irrespective of the arrangement, the compartment is not equipped with a side panel and a plinth. They are ordered separately and appear to be standard;
- in order to combine the compartment with the main enclosure, standard kits R5KE65 and reinforced ones R5KSRE65 and R5KRE65 are used (page 95).

Scope of supply:

- cable compartment, mounting accessories for assembly.

Compartment dimensions, mm			Code of compartment without door and back panel	Code of compartment with door and back panel
depth	height	width		
400	1800	300	R5CQE1834S	R5CQE1834
500		300	R5CQE1835S	R5CQE1835
600		300	R5CQE1836S	R5CQE1836
800		300	R5CQE1838S	R5CQE1838
400		400	R5CQE1844S	R5CQE1844
500		400	R5CQE1845S	R5CQE1845
600		400	R5CQE1846S	R5CQE1846
800		400	R5CQE1848S	R5CQE1848
400	2000	300	R5CQE2034S	R5CQE2034
500		300	R5CQE2035S	R5CQE2035
600		300	R5CQE2036S	R5CQE2036
800		300	R5CQE2038S	R5CQE2038
400		400	R5CQE2044S	R5CQE2044
500		400	R5CQE2045S	R5CQE2045
600		400	R5CQE2046S	R5CQE2046
800		400	R5CQE2048S	R5CQE2048
400	2200	300	R5CQE2234S	R5CQE2234
500		300	R5CQE2235S	R5CQE2235
600		300	R5CQE2236S	R5CQE2236
800		300	R5CQE2238S	R5CQE2238
400		400	R5CQE2244S	R5CQE2244
500		400	R5CQE2245S	R5CQE2245
600		400	R5CQE2246S	R5CQE2246
800		400	R5CQE2248S	R5CQE2248

Door shelf


Purpose:

- working space organization.

Material:

- steel with thickness of 1.5 mm, RAL 3075 powder coating.

Scope of supply:

- shelf, mounting accessories.

Drawings:

- see on the disk.

Door width, mm	Code
600	R5RL600
800	R5RL800
1000	R5RL1000

Desk


Purpose:

- working space organization.

Material:

- shelf: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- panels: steel with thickness of 2 mm, RAL 7035 powder coating.

Distinctive features:

- installed on the enclosure frame or solid panel.

Scope of supply:

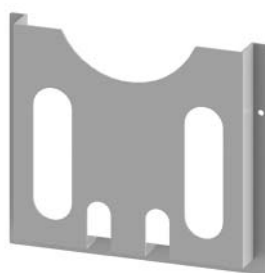
- desk, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Desk dimensions, mm			Code
	height	width	depth	
600	170	500	400	R5LE600
800	170	700	400	R5LE800
1000	170	900	400	R5LE1000
1200	170	1100	400	R5LE1200

Drawing pocket


Purpose:

- storage of working documentation.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- made of 2 materials: steel or plastic.

Scope of supply:

- pocket, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Material, mm	Pocket dimensions, mm			Code
		height	width	depth	
500	steel 1.5	240	345	60	R5TE50
600	steel 1.5	240	445	60	R5TE60
700	steel 1.5	240	545	60	R5TE70
800	steel 1.5	240	645	60	R5TE80
1000	steel 1.5	240	845	60	R5TE100
Any	plastic	222	230	30	R5A32

Fixed and sliding shelves



Purpose:

- equipment installation.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- maximum static load: 30 kg for the sliding shelf; 60 kg for the fixed shelf.

Scope of supply:

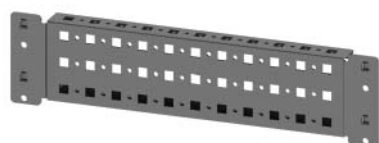
- shelf, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Fixed shelf	Sliding shelf
depth	width		
400	600	R5RF640	R5RE640
500		R5RF650	R5RE650
600		R5RF660	R5RE660
400	800	R5RF840	R5RE840
500		R5RF850	R5RE850
600		R5RF860	R5RE860
400	1000	R5RF1040	–
500		R5RF1050	–
600		R5RF1060	–

Wide side rail



Purpose:

- assembly of universal structures.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- has three mounting planes;
- perforation with pitch of 25 mm;
- installed along enclosure depth.

Scope of supply:

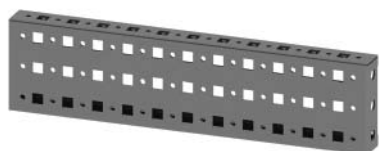
- 4 rails, mounting accessories.

Drawings:

- see on the disk.

Enclosure depth, mm	Maximum static load, kg*	Code
400	210	R5PDL400
500	210	R5PDL500
600	200	R5PDL600
800	170	R5PDL800
1000	140	R5PDL1000
1200	120	R5PDL1200

Wide frontal rail



Purpose:

- assembly of universal structures.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- has three mounting planes;
- perforation with pitch of 25 mm;
- installed along enclosure width.

Scope of supply:

- 4 rails, mounting accessories.

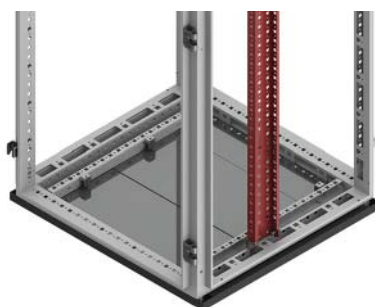
Drawings:

- see on the disk.

Enclosure width, mm	Maximum static load, kg*	Code
400	210	R5PDF400
600	200	R5PDF600
800	170	R5PDF800
1000	140	R5PDF1000
1200	120	R5PDF1200
1400	110	R5PDF1400
1600	100	R5PDF1600

* The load is distributed uniformly on two parallel installed rails

Wide vertical rail


Purpose:

- assembly of universal structures.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- has three mounting planes;
- perforation with pitch of 25 mm;
- installed along enclosure height;
- maximum static load on two parallel installed rails is 180 kg.

Scope of supply:

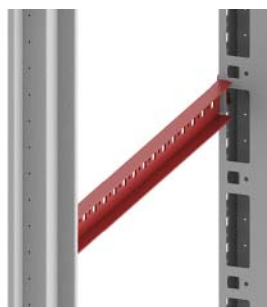
- 2 rails, mounting accessories.

Drawings:

- see on the disk.

Enclosure height, mm	Code
1400	R5PDV14
1600	R5PDV16
1800	R5PDV18
2000	R5PDV20
2200	R5PDV22

Side rail


Purpose:

- assembly of universal structures.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- has one mounting plane;
- perforation with pitch of 25 mm;
- installed along enclosure depth.

Scope of supply:

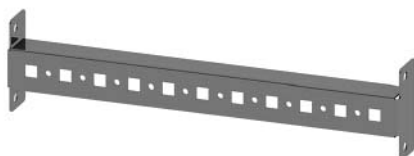
- 4 rails, mounting accessories.

Drawings:

- see on the disk.

Enclosure depth, mm	Maximum static load, kg*	Code
400	110	R5TLE400
500	90	R5TLE500
600	80	R5TLE600
800	60	R5TLE800
1000	50	R5TLE1000
1200	40	R5TLE1200

Special side rail


Purpose:

- assembly of universal structures.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- has one mounting plane;
- perforation with pitch of 25 mm;
- installed along enclosure depth, when mounting the internal door or frame for 19" equipment installation;
- used only in CQE series enclosures.

Scope of supply:

- 4 rails, mounting accessories.

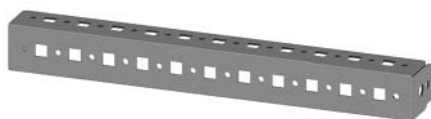
Drawings:

- see on the disk.

Enclosure depth, mm	Maximum static load, kg*	Code
400	110	R5PLE400
500	90	R5PLE500
600	80	R5PLE600
800	60	R5PLE800
1000	50	R5PLE1000

* The load is distributed uniformly on two parallel installed rails

Frontal rail



Purpose:

- assembly of universal structures.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- has three mounting planes;
- perforation with pitch of 25 mm;
- installed along enclosure width.

Scope of supply:

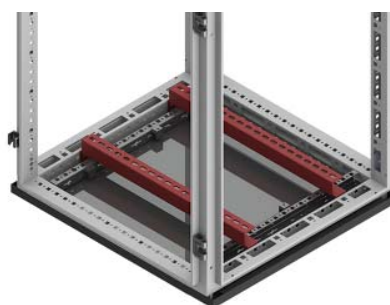
- 4 rails, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Maximum static load, kg*	Code
400	100	R5TFE400
600	70	R5TFE600
800	65	R5TFE800
1000	55	R5TFE1000
1200	50	R5TFE1200
1400	40	R5TFE1400
1600	35	R5TFE1600

Reinforced rail



Purpose:

- heavy equipment installation.

Material:

- galvanized steel with thickness of 3 mm.

Scope of supply:

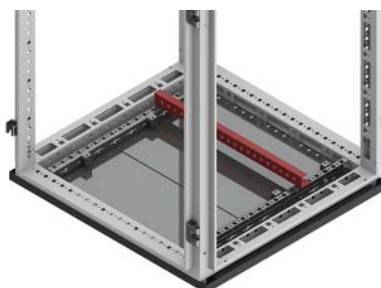
- 2 rails, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Maximum static load, kg**	Code
600	180	R5TTE600
800	150	R5TTE800
1000	100	R5TTE1000
1200	150*	R5TTE1200
1400	150*	R5TTE1400
1600	150*	R5TTE1600

Cable attachment rail



Purpose:

- cable attachment.

Material:

- galvanized steel with thickness of 2 mm.

Purpose:

- for cable attachment within the enclosure.

Scope of supply:

- 2 rails, mounting accessories.

Drawings:

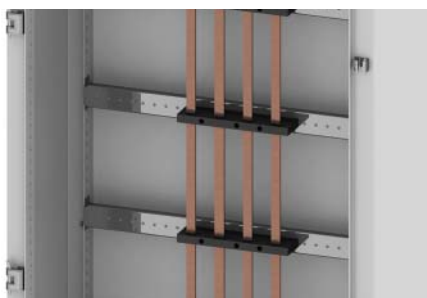
- see on the disk.

Enclosure width, mm	Code
400	R5PAC40
600	R5PAC60
800	R5PAC80
1000	R5PAC100
1200	R5PAC120
1400	R5PAC140
1600	R5PAC160

* The load is distributed uniformly on two parallel installed rails

** The values are obtained using R5PDL**** rails (depending on enclosure width) for structure reinforcement, installation was carried out for reinforced rails along depth

Rail for busbar clamps


Purpose:

- formation of busbars.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

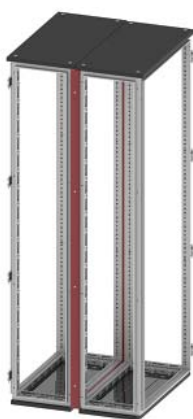
- has one mounting plane;
- perforation with pitch of 25 mm;
- holes \varnothing 6 mm;
- installed along enclosure width.

Scope of supply:

- 4 rails, mounting accessories.

Enclosure width, mm	Maximum static load, kg*	Code
400	100	R5DTF400
600	90	R5DTF600
800	80	R5DTF800
1000	60	R5DTF1000
1200	45	R5DTF1200

"Back-to-back" enclosure combination kit


Purpose:

- combination of enclosures.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- protection degree is IP55.

Scope of supply:

- frame, seal, mounting accessories.

Drawing:

- see on the disk.

Enclosure dimensions, mm		Code
height	width	
1800	300	R5KFRE1830
	400	R5KFRE1840
	600	R5KFRE1860
	800	R5KFRE1880
	1000	R5KFRE18100
	1200	R5KFRE18120
2000	300	R5KFRE2030
	400	R5KFRE2040
	600	R5KFRE2060
	800	R5KFRE2080
	1000	R5KFRE20100
	1200	R5KFRE20120
2200	300	R5KFRE2230
	400	R5KFRE2240
	600	R5KFRE2260
	800	R5KFRE2280
	1000	R5KFRE22100
	1200	R5KFRE22120

Enclosure combination kit



Purpose:

- combination of enclosures with total weight of not more than 600 kg.

Material:

- metal.

Distinctive features:

- protection degree is IP55;
- if the value of 600 kg is exceeded, it is necessary to use reinforced connectors additionally.

Scope of supply:

- 8 connectors, seal, mounting accessories.

Drawing:

- see on the disk.

Description	Code
Enclosure combination kit	R5KE65

Reinforced connector



Purpose:

- combination of enclosures.

Material:

- galvanized steel with thickness of 3 mm.

Distinctive features:

- protection degree is IP55;
- used together with the kit for combination of enclosures R5KE65 in case of total weight of enclosures of more than 600 kg.

Scope of supply:

- 4 connectors, mounting accessories.

Drawing:

- see on the disk.

Connector type	Code
Corner	R5KSRE65
Straight	R5KRE65

Ringbolt



Purpose:

- transportation of enclosures.

Material:

- metal.

Distinctive features:

- maximum vertical load on one bolt is 250 kg.

Scope of supply:

- eye bolt, mounting accessories.

Enclosure type	Code
DAE, 2 ringbolts	R5A36
CQE, 4 ringbolts	R5A33

Angle for attachment of DAE enclosures to the wall



Purpose:

- installation of DAE series enclosures to the wall.

Material:

- steel with thickness of 3 mm, RAL 7011 powder coating.

Scope of supply:

- 2 angles, mounting accessories.

Drawing:

- see on the disk.

Enclosure depth, mm	Code
300	R5SFP30
400	R5SFP40

Hoisting beam for linear assembly transportation


Purpose:

- transportation of enclosures.

Material:

- steel with thickness of 4 mm, RAL 7011 powder coating.

Distinctive features:

- it is necessary to specify beam length in an order.

Scope of supply:

- beam, mounting accessories.

Description	Code
Hoisting beam for linear assembly	R5TSE**

Connecting angle for linear assembly transportation


Purpose:

- transportation of enclosures.

Material:

- galvanized steel with thickness of 5 mm.

Scope of supply:

- 2 angles, mounting accessories.

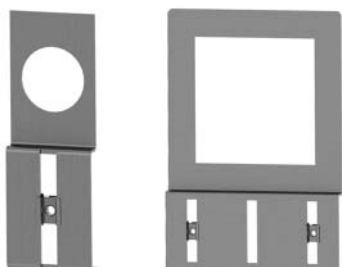
Drawing:

- see on the disk.

Description	Code
Kit of connecting angles for linear assembly transportation	R5TSE02

Perforated duct holders

For installation on door


Purpose:

- perforated duct installation on the internal door surface.

Material:

- galvanized steel with thickness of 1 mm.

Scope of supply:

- holder.

Drawing:

- see on the disk.

Mounting hole, mm	Package, pcs	Code
72x72	10	R5DPC72
96x96	10	R5DPC96
ø 22	50	R5DPC22
ø 30	30	R5DPC30

For installation on R5TE** frame


Purpose:

- perforated duct installation on the frame for installation of internal doors.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- maximum duct width is 60 mm.

Scope of supply:

- 4 holders.

Drawing:

- see on the disk.

Description	Code
Retainer for perforated duct attachment to R5TE*** frame	R5DSF01

For installation on DIN rail



Purpose:

- installation of a perforated duct on a DIN rail or R5DSF01 element.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- it is necessary to use P KLIP clips for installation on a DIN rail (page 287);
- maximum duct width is 60 mm.

Scope of supply:

- 10 holders.

Drawing:

- see on the disk.

Description	Code
Retainer for perforated duct attachment to DIN rail	R5DSF02

Fastening angles



R5A05



R5A06

Purpose:

- equipment installation.

Material:

- galvanized steel with thickness of 4 mm.

Scope of supply:

- 10 angles.

Drawing:

- see on the disk.

Type	Code
Notch-notch	R5A05
Notch-M8 thread	R5A06

Adjustable bracket



R5SPR01



R5SPR02

Purpose:

- equipment installation.

Material:

- galvanized steel with thickness of 2 mm.

Scope of supply:

- 4 brackets, mounting accessories.

Drawing:

- see on the disk.

Range	Code
75-125 mm	R5SRP01
150-200 mm	R5SRP02

Perforation modification kit



Purpose:

- change of perforation pitch on the internal plane of R5KMN** racks (page 147).

Material:

- die-cast zinc alloy.

Distinctive features:

- installed in aperture between perforations with pitch of 100 mm.

Scope of supply:

- 8 elements, mounting accessories.

Description	Code
Perforation modification kit on R5KMN** vertical racks	R5TH01

Expanding nut



- Purpose:**
- equipment installation.
- Material:**
- galvanized steel.
- Scope of supply:**
- 50 pcs.

Thread	Package, pcs	Package weight, kg	Code
M6	50	0.3	CM230600
M8	50	0.6	CM230800

Special nut



R5A51



R5A52

- Purpose:**
- equipment installation.
- Material:**
- die-cast zinc alloy.
- Distinctive features:**
- nut structure has a breaking lug.
- Scope of supply:**
- 50 pcs.

Thread	Code
M6	R5A51
M8	R5A52

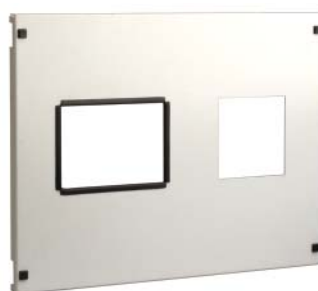
Self-tapping screw



- Purpose:**
- equipment installation.
- Material:**
- galvanized steel.
- Distinctive features:**
- M4, 8x12 mm.
- Scope of supply:**
- 50 pcs.

Description	Code
M4 self-tapping screws, 8x12 mm	R5A07

U-profile



- Purpose:**
- protection of notch edges on external enclosure elements.
- Material:**
- PVC.
- Distinctive features:**
- installed on steel with thickness of 1-1.5 mm.
- Scope of supply:**
- 10 meters.

Description	Code
U-profile for edge protection	R5PP01

Paint spray can



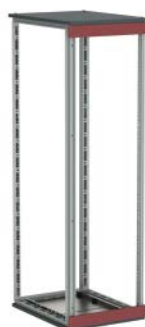
- Purpose:**
- repair of powder coating damages occurring in mechanical works on enclosure elements.
- Scope of supply:**
- 1 spray can.

Color	Volume, ml	Code
RAL 7032	400	R5A21
RAL 7035	400	R5A24
RAL 7011	400	R5A54

Partitioning accessories

External door system

Compensation panel



Purpose:

- access restriction.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- panel height is 100 mm;
- application of this element is obligatory, if external doors are used;
- installation of panels reduces useful height of the mounting area by 200 mm.

Scope of supply:

- 2 panels, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Code
400	R5CPFE4100
600	R5CPFE6100
800	R5CPFE8100
1000	R5CPFE10100

Perforated compensation panel



Purpose:

- access restriction.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- use instead of solid compensation panels, if it is necessary to arrange additional heat extraction;
- installation of panels reduces useful height of the mounting area by 200 to 600 mm depending on selected panel height;
- protection degree is IP31.

Scope of supply:

- 2 panels, mounting accessories.

Enclosure width, mm	Upper panel height, mm	Lower panel height, mm	Code
400	100	100	R5CPFA411
	100	300	R5CPFA413
	300	100	R5CPFA431
	300	300	R5CPFA433
600	100	100	R5CPFA611
	100	300	R5CPFA613
	300	100	R5CPFA631
	300	300	R5CPFA633
800	100	100	R5CPFA811
	100	300	R5CPFA813
	300	100	R5CPFA831
	300	300	R5CPFA833
1000	100	100	R5CPFA1011
	100	300	R5CPFA1013
	300	100	R5CPFA1031
	300	300	R5CPFA1033

Solid external door


Purpose:

- access restriction.

Material:

- steel with thickness of 2 mm, powder coating RAL 7035.

Distinctive features:

- made completely solid.

Scope of supply:

- door, lock, mounting accessories.

Drawings:

- see on the disk.

Door height, mm	Enclosure width, mm			
	400	600	800	1000
200	R5CPME4200	R5CPME6200	R5CPME8200	R5CPME10200
300	R5CPME4300	R5CPME6300	R5CPME8300	R5CPME10300
400	R5CPME4400	R5CPME6400	R5CPME8400	R5CPME10400
500	R5CPME4500	R5CPME6500	R5CPME8500	R5CPME10500
600	R5CPME4600	R5CPME6600	R5CPME8600	R5CPME10600
800	R5CPME4800	R5CPME6800	R5CPME8800	R5CPME10800
900	R5CPME4900	R5CPME6900	R5CPME8900	R5CPME10900
1000	R5CPME41000	R5CPME61000	R5CPME81000	R5CPME101000
1200	R5CPME41200	R5CPME61200	R5CPME81200	R5CPME101200
1400	R5CPME41400	R5CPME61400	R5CPME81400	R5CPME101400
1600	R5CPME41600	R5CPME61600	R5CPME81600	R5CPME101600
1800	R5CPME41800	R5CPME61800	R5CPME81800	R5CPME101800

External door for modular equipment


Purpose:

- modular equipment installation.

Material:

- steel with thickness of 2 mm, powder coating RAL 7035.

Scope of supply:

- door, lock, mounting accessories, DIN rail.

Drawings:

- see on the disk.

Enclosure width, mm	Door height, mm	Number of notches	Modules per notch	Total number of modules	Code
400	200	1	16	16	R5CPME4201
	400	2	16	32	R5CPME4401
600	200	1	26	26	R5CPME6201
	400	2	26	52	R5CPME6401
800	200	1	36	36	R5CPME8201
	400	2	36	72	R5CPME8401
1000	200	1	46	46	R5CPME10201
	400	2	46	92	R5CPME10401

External door with transparent window



Purpose:

- access restriction.

Material:

- steel with thickness of 2 mm, RAL 7035 powder coating.

Distinctive features:

- made with a transparent window.

Scope of supply:

- door, lock, mounting accessories.

Drawings:

- see on the disk.

Door height, mm	Enclosure width, mm	
	600	800
400	R5CPMTE6400	R5CPMTE8400
600	R5CPMTE6600	R5CPMTE8600
800	R5CPMTE6800	R5CPMTE8800

Guiding rails



Purpose:

- partitioning arrangement for installation of partitioned mounting plates or other elements.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- if guiding rails are not applied along full depth, they are installed using R5MVE** vertical rails (page 108).

Scope of supply:

- 2 guiding rails, mounting accessories

Drawings:

- see on the disk.

Enclosure depth, mm	Useful depth, mm	Guiding rails along full enclosure depth	Section guiding rails
400	125	R5SOE345	R5SOE145
	175	R5SOE345	R5SOE195
500	125	R5SOE445	R5SOE145
	175	R5SOE445	R5SOE195
	275	R5SOE445	R5SOE295
600	125	R5SOE545	R5SOE145
	175	R5SOE545	R5SOE195
	275	R5SOE545	R5SOE295
800	125	R5SOE745	R5SOE145
	175	R5SOE745	R5SOE195
	275	R5SOE745	R5SOE295
	325	R5SOE745	R5SOE345

External door rabbet ledge



Purpose:

- increase of the IP protection degree.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Scope of supply:

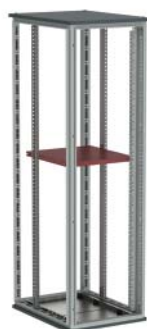
- rabbet, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Code
400	R5TOE40
600	R5TOE60
800	R5TOE80
1000	R5TOE100

Horizontal divider


Purpose:

- partitioning arrangement.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- if dividers are not applied along full depth, they are installed using R5MVE** vertical rails (page 108).

Scope of supply:

- divider, mounting accessories.

Drawings:

- see on the disk.

Enclosure depth, mm	Useful depth for section, mm	Divider along full enclosure depth/ Enclosure width, mm				Section divider/ Enclosure width, mm			
		400	600	800	1000	400	600	800	1000
400	125	R5DOE4345	R5DOE6345	R5DOE8345	R5DOE10345	R5DOE4145	R5DOE6145	R5DOE8145	R5DOE10145
	175					R5DOE4195	R5DOE6195	R5DOE8195	R5DOE10195
500	125	R5DOE4445	R5DOE6445	R5DOE8445	R5DOE10445	R5DOE4145	R5DOE6145	R5DOE8145	R5DOE10145
	175					R5DOE4195	R5DOE6195	R5DOE8195	R5DOE10195
	275					R5DOE4295	R5DOE6295	R5DOE8295	R5DOE10295
600	125	R5DOE4545	R5DOE6545	R5DOE8545	R5DOE10545	R5DOE4145	R5DOE6145	R5DOE8145	R5DOE10145
	175					R5DOE4195	R5DOE6195	R5DOE8195	R5DOE10195
	275					R5DOE4295	R5DOE6295	R5DOE8295	R5DOE10295
800	125	R5DOE4745	R5DOE6745	R5DOE8745	R5DOE10745	R5DOE4145	R5DOE6145	R5DOE8145	R5DOE10145
	175					R5DOE4195	R5DOE6195	R5DOE8195	R5DOE10195
	275					R5DOE4295	R5DOE6295	R5DOE8295	R5DOE10295
	325					R5DOE4345	R5DOE6345	R5DOE8345	R5DOE10345

Vertical divider


Purpose:

- partitioning arrangement.

Material:

- galvanized steel with thickness of 1.5 mm.

Scope of supply:

- divider, mounting accessories.

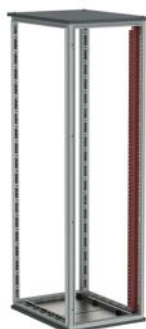
Drawings:

- see on the disk.

Enclosure depth, mm	Useful depth for section, mm	Divider along full enclosure depth/ Enclosure height, mm					Section divider/ Enclosure height, mm		
		1400	1600	1800	2000	2200	1800	2000	2200
400	125	R5DVE1440	R5DVE1640	R5DVE1840	R5DVE2040	-	R5DVP18125	R5DVP20125	-
	175						R5DVP18175	R5DVP20175	-
500	125	R5DVE1450	R5DVE1650	R5DVE1850	R5DVE2050	R5DVE2250	R5DVP18125	R5DVP20125	R5DVP22125
	175						R5DVP18175	R5DVP20175	R5DVP22175
	275						R5DVP18275	R5DVP20275	R5DVP22275
600	125	-	R5DVE1660	R5DVE1860	R5DVE2060	R5DVE2260	R5DVP18125	R5DVP20125	R5DVP22125
	175						R5DVP18175	R5DVP20175	R5DVP22175
	275						R5DVP18275	R5DVP20275	R5DVP22275
800	125	-	-	R5DVE1880	R5DVE2080	R5DVE2280	R5DVP18125	R5DVP20125	R5DVP22125
	175						R5DVP18175	R5DVP20175	R5DVP22175
	275						R5DVP18275	R5DVP20275	R5DVP22275
	325						R5DVP18325	R5DVP20325	R5DVP22325

Internal door system

Vertical racks



Purpose:

- installation of internal doors and partitioning elements.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- application of this element is obligatory, if internal doors are used.

Scope of supply:

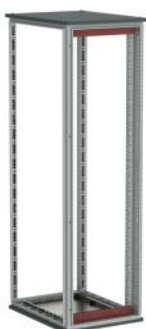
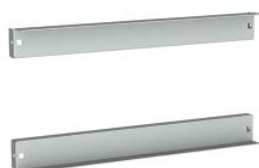
- 2 racks, mounting accessories.

Drawings:

- see on the disk.

Enclosure height, mm	Code
1000	R5TE10
1200	R5TE12
1400	R5TE14
1600	R5TE16
1800	R5TE18
2000	R5TE20
2200	R5TE22

Compensation panels



Purpose:

- access restriction.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- panel height is 50 mm;
- application of this element is obligatory, if internal doors are used;
- installation of panels reduces useful height of the mounting area by 200 mm.

Scope of supply:

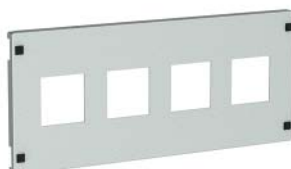
- 2 panels, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Code
400	R5PCD40
600	R5PCD60
800	R5PCD80
1000	R5PCD100

Internal door for measuring equipment



Purpose:

- access restriction.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- intended for installation of measuring equipment;
- door is installed on R5TE** vertical racks (page 103).

Scope of supply:

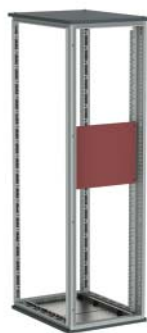
- door, mounting accessories.

Drawings:

- see on the disk.

Door height, mm	Description	Enclosure width, mm	
		600	800
200	2 holes 68x68 mm	R5PI522	R5PI722
	4 holes 68x68 mm+hole, 10 mm	R5PI524	R5PI724

Solid internal door


Purpose:

- access restriction.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- door is installed on R5TE** vertical racks (page 103).

Scope of supply:

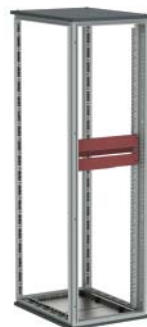
- door, mounting accessories.

Drawings:

- see on the disk.

Door height, mm	Enclosure width, mm			
	400	600	800	1000
50	–	R5PI505	R5PI705	–
100	–	R5PI510	R5PI710	–
150	–	R5PI515	R5PI715	–
200	R5PI320	R5PI520	R5PI720	R5PI920
300	R5PI330	R5PI530	R5PI730	R5PI930
400	R5PI340	R5PI540	R5PI740	R5PI940
600	R5PI360	R5PI560	R5PI760	R5PI960
800	R5PI380	R5PI580	R5PI780	R5PI980
1000	R5PI3100	R5PI5100	R5PI7100	R5PI9100

Internal door for modular equipment


Purpose:

- access restriction;
- for modular equipment installation.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- door is installed on R5TE** vertical racks (page 103).

Scope of supply:

- door, mounting accessories, DIN rail (modular equipment doors).

Drawings:

- see on the disk.

Enclosure width, mm	Door height, mm	Number of notches	Modules per notch	Total number of modules	Code
400	150	1	12	12	R5PI3151
	200	1	12	12	R5PI321
	300	1	12	12	R5PI331
	400	2	12	24	R5PI341
	600	3	12	36	R5PI361
600	150	1	24	24	R5PI5151
	200	1	24	24	R5PI521
	300	1	24	24	R5PI531
	400	2	24	48	R5PI541
	600	3	24	72	R5PI561
800	150	1	34	34	R5PI7151
	200	1	34	34	R5PI721
	300	1	34	34	R5PI731
	400	2	34	68	R5PI741
	600	3	34	102	R5PI761
1000	150	1	46	46	R5PI9151
	200	1	46	46	R5PI921
	300	1	46	46	R5PI931
	400	2	46	92	R5PI941
	600	3	46	138	R5PI961

Guiding rails



Purpose:

- partitioning arrangement for installation of partitioned mounting plates or other elements.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- if guiding rails are not applied along full depth, they are installed using R5MVE** vertical rails (page 108).

Scope of supply:

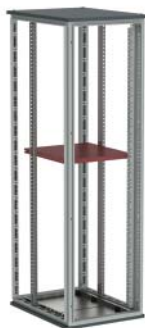
- 2 guiding rails, mounting accessories

Drawings:

- see on the disk.

Enclosure depth, mm	Useful depth for section, mm	Guiding rails along full enclosure depth	Section guiding rails
400	97	R5SOE245	R5SOE095
	147	R5SOE245	R5SOE145
500	97	R5SOE345	R5SOE095
	147	R5SOE345	R5SOE145
	247	R5SOE345	R5SOE245
600	97	R5SOE445	R5SOE095
	147	R5SOE445	R5SOE145
	247	R5SOE445	R5SOE245
800	97	R5SOE645	R5SOE095
	147	R5SOE645	R5SOE145
	247	R5SOE645	R5SOE245
	347	R5SOE645	R5SOE345

Horizontal divider



Purpose:

- partitioning arrangement.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- if dividers are not applied along full depth, they are installed using R5MVE** vertical rails (page 108).

Scope of supply:

- divider, mounting accessories.

Drawings:

- see on the disk.

Enclosure depth, mm	Useful depth for section, mm	Divider along full enclosure depth/ Enclosure width, mm				Section divider/ Enclosure width, mm			
		400	600	800	1000	400	600	800	1000
400	97	R5DOE4245	R5DOE6245	R5DOE8245	R5DOE10245	R5DOE4095	R5DOE6095	R5DOE8095	R5DOE10095
	147					R5DOE4145	R5DOE6145	R5DOE8145	R5DOE10145
500	97	R5DOE4345	R5DOE6345	R5DOE8345	R5DOE10345	R5DOE4095	R5DOE6095	R5DOE8095	R5DOE10095
	147					R5DOE4145	R5DOE6145	R5DOE8145	R5DOE10145
	247					R5DOE4245	R5DOE6245	R5DOE8245	R5DOE10245
600	97	R5DOE4445	R5DOE6445	R5DOE8445	R5DOE10445	R5DOE4095	R5DOE6095	R5DOE8095	R5DOE10095
	147					R5DOE4145	R5DOE6145	R5DOE8145	R5DOE10145
	247					R5DOE4245	R5DOE6245	R5DOE8245	R5DOE10245
800	97	R5DOE4645	R5DOE6645	R5DOE8645	R5DOE10645	R5DOE4095	R5DOE6095	R5DOE8095	R5DOE10095
	147					R5DOE4145	R5DOE6145	R5DOE8145	R5DOE10145
	247					R5DOE4245	R5DOE6245	R5DOE8245	R5DOE10245
	347					R5DOE4345	R5DOE6345	R5DOE8345	R5DOE10345

Internal door rabbet ledge



Purpose:

- increase of the IP protection degree.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- it is installed on the R5DOE**** horizontal divider (page 105).

Scope of supply:

- rabbet, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Code
400	R5BPE40
600	R5BPE60
800	R5BPE80
1000	R5BPE100

Vertical divider



Purpose:

- partitioning arrangement.

Material:

- galvanized steel with thickness of 1.5 mm.

Scope of supply:

- divider, mounting accessories.

Drawings:

- see on the disk.

Enclosure depth, mm	Useful depth, mm	Divider along full enclosure depth/ Enclosure height, mm					Section divider/ Enclosure height, mm		
		1400	1600	1800	2000	2200	1800	2000	2200
400	97	R5DVE1440	R5DVE1640	R5DVE1840	R5DVE2040	-	R5DVP18100	R5DVP20100	-
	147						R5DVP18150	R5DVP20150	-
500	97	R5DVE1450	R5DVE1650	R5DVE1850	R5DVE2050	R5DVE2250	R5DVP18100	R5DVP20100	R5DVP22100
	147						R5DVP18150	R5DVP20150	R5DVP22150
	247						R5DVP18250	R5DVP20250	R5DVP22250
600	97	-	R5DVE1660	R5DVE1860	R5DVE2060	R5DVE2260	R5DVP18100	R5DVP20100	R5DVP22100
	147						R5DVP18150	R5DVP20150	R5DVP22150
	247						R5DVP18250	R5DVP20250	R5DVP22250
800	97	-	-	R5DVE1880	R5DVE2080	R5DVE2280	R5DVP18100	R5DVP20100	R5DVP22100
	147						R5DVP18150	R5DVP20150	R5DVP22150
	247						R5DVP18250	R5DVP20250	R5DVP22250
	347						R5DVP18350	R5DVP20350	R5DVP22350

Adjustable DIN rail



Purpose:

- adjustment of a mounting seat in depth.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- installed on the R5TE** vertical rack (page 103).

Scope of supply:

- DIN rail 35x15 mm, 2 side retainers, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Code
400	R5DGR40
600	R5DGR60
800	R5DGR80
1000	R5DGR100

Recessed internal door



Purpose:

- for installation of circuit breakers or other power equipment with a long control handle/disconnector (up to 100 mm).

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035.

Distinctive features:

- door is installed on R5TE** vertical racks (page 103).

Scope of supply:

- panel, mounting accessories.

Drawings:

- see on the disk.

Door height, mm	Enclosure width, mm	
	600	800
400	R5PA6040	R5PA8040
600	R5PA6060	R5PA8060

Kit for installation of circuit breakers of up to 630 A



Purpose:

- assembly of power distribution systems.

Material:

- vanity panel: steel with thickness of 2 mm, RAL 7035 powder coating;
- mounting plate: galvanized steel with thickness of 2 mm;
- mounting plate holder: galvanized steel with thickness of 2 mm.

Distinctive features:

- kit is installed on R5TE** vertical racks (page 103);
- vanity panel has notches for each circuit breaker type to access device control elements;
- mounting plate has preliminary perforation for ease of installation and switching of circuit breakers;
- kits are provided in 2 versions: it is possible to place several devices in a row for vertical installation of devices; only one device is placed for horizontal installation of devices.

Scope of supply:

- vanity panel, mounting plate, 2 mounting plate holders, mounting accessories.

Drawings:

- see on the disk.

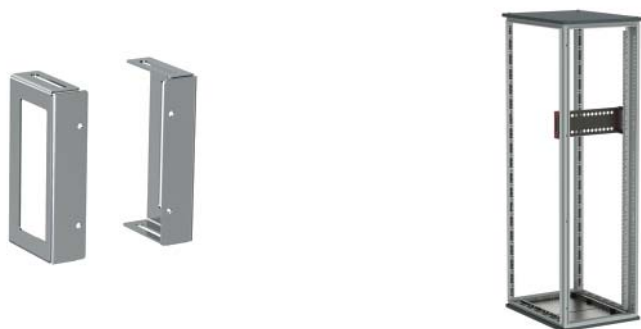
Vertical installation of power equipment

Device manufacturer	Device model	Number of devices (3/4 poles)		Door height, mm	Kit code	
		enclosure width 600 mm	enclosure width 800 mm		enclosure width 600 mm	enclosure width 800 mm
ABB	Tmax T1	4/3	6/5	250	R5PDV0560	R5PDV0580
	Tmax T2	4/3	6/5	250	R5PDV0660	R5PDV0680
	Tmax T3	3/2	4/3	250	R5PDV0760	R5PDV0780
	Tmax T4	2/2	5/3	350	R5PDV0761	R5PDV0781
	Tmax T5	2/2	3/2	350	R5PDV0762	R5PDV0782
SE	Compact NSX100/160/250	3/2	4/3	250	R5PDV0860	R5PDV0880
	Compact NSX400/630	2/2	3/3	450	R5PDV0861	R5PDV0881

Horizontal installation of power equipment

Device manufacturer	Device model	Number of devices (3/4 poles)	Door height, mm	Enclosure width, mm	Kit code
ABB	Tmax T1	1/1	250	600	R5PDO0560
	Tmax T2	1/1	250	600	R5PDO0660
	Tmax T3	1/1	250	600	R5PDO0760
	Tmax T4	1/1	250	600	R5PDO0761
	Tmax T5	1/1	350	600	R5PDO0762
SE	Compact NSX100/160/250	1/1	250	600	R5PDO0860
	Compact NSX400/630	1/1	350	600	R5PDO0861

Holder for partitioned mounting plate



Purpose:

- adjustment of the mounting plate position in depth.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- holder is installed on R5TE** vertical racks (page 103).

Scope of supply:

- holder, mounting accessories.

Drawings:

- see on the disk.

Mounting plate height, mm	Code
200	R5DSL20
300	R5DSL30
400	R5DSL40

Common partitioning elements

Vertical racks



Purpose:

- partitioning arrangement, serves for divider installation in depth.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- has perforation with pitch of 25 mm.

Scope of supply:

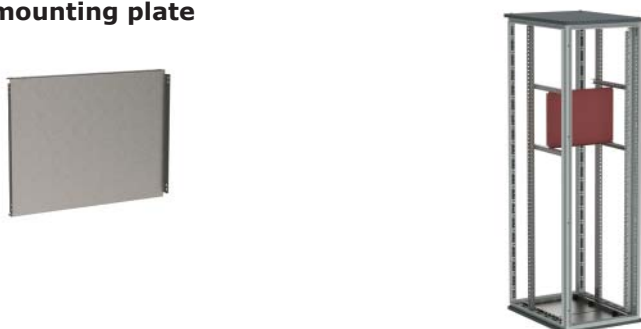
- 2 racks, mounting accessories.

Drawings:

- see on the disk.

Enclosure height, mm	Code
1800	R5MVE18
2000	R5MVE20
2200	R5MVE22

Sectional mounting plate



Purpose:

- partitioning arrangement.

Material:

- galvanized steel with thickness of 2 mm.

Scope of supply:

- plate, mounting accessories.

Drawings:

- see on the disk.

Section height, mm	Enclosure width, mm			
	400	600	800	1000
150	R5PCE4150	R5PCE6150	R5PCE8150	R5PCE10150
200	R5PCE4200	R5PCE6200	R5PCE8200	R5PCE10200
300	R5PCE4300	R5PCE6300	R5PCE8300	R5PCE10300
400	R5PCE4400	R5PCE6400	R5PCE8400	R5PCE10400
500	R5PCE4500	R5PCE6500	R5PCE8500	R5PCE10500
600	R5PCE4600	R5PCE6600	R5PCE8600	R5PCE10600
800	R5PCE4800	R5PCE6800	R5PCE8800	R5PCE10800
900	R5PCE4900	R5PCE6900	R5PCE8900	R5PCE10900
1000	R5PCE41000	R5PCE61000	R5PCE81000	R5PCE101000

Internal door



Purpose:

- access restriction.

Material:

- steel with thickness of 2 mm, powder coating RAL 7035.

Distinctive features:

- installed on the main enclosure frame.

Scope of supply:

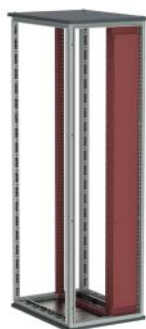
- door, lock, mounting accessories.

Drawings:

- see on the disk.

Section height, mm	Enclosure width, mm	
	600	800
400	R5CPMIE6400	R5CPMIE8400
600	R5CPMIE6600	R5CPMIE8600
800	R5CPMIE6800	R5CPMIE8800

Cable glands arrangement kit



Purpose:

- used for formation of cable glands into the enclosure assembly.

Material:

- steel.

Distinctive features:

- cable compartment width is 200 mm.

Scope of supply:

- frame, solid front panel with locks, mounting accessories.

Drawings:

- see on the disk.

Enclosure depth, mm	Enclosure height, mm	Code
400	1800	R5PFI1840
500		R5PFI1850
600		R5PFI1860
800		R5PFI1880
400	2000	R5PFI2040
500		R5PFI2050
600		R5PFI2060
800		R5PFI2080

Partition wall


Purpose:

- access restriction.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- serves for closing of gaps between partitioned mounting plates when installing them on guiding rails.

Scope of supply:

- 5 partition walls, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Code
400	R5FCP40
600	R5FCP60
800	R5FCP80
1000	R5FCP100

Full depth vertical divider


Purpose:

- access restriction.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- protection degree is IP30.

Scope of supply:

- divider, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
depth	height	
400	1400	R5DVE1440
500		R5DVE1450
400	1600	R5DVE1640
500		R5DVE1650
600		R5DVE1660
400		R5DVE1840
500	1800	R5DVE1850
600		R5DVE1860
800		R5DVE1880
400	2000	R5DVE2040
500		R5DVE2050
600		R5DVE2060
800		R5DVE2080
500	2200	R5DVE2250
600		R5DVE2260
800		R5DVE2280

Accessories for busbars

System of combined busbar clamps for installation of current-carrying busbars on the edge


Purpose:

- formation of busbars.

Distinctive features:

- rated operational current is up to 3200 A; maximum initial short-circuit current is up to 200 kA; allowable through short-circuit current is 85 kA/1 s (action);
- first and last busbar clamps shall be installed at the distance of not more than 1/4 of the minimum distance between busbar clamps (example: if the estimated distance between busbar clamps is 840 mm, the distance from the bus edge to the first and last busbar clamps shall not exceed 210 mm);
- it is required to perform installation of poles successively, because access to mounting studs of internal poles may be obstructed at the minimum distance between phases;
- it is required to insulate studs using the R5BSEV02 tube at the minimum distance between phases;
- it is required to use the dual aluminium profile in bus configurations of 2x80x10 or 3x50x10 per phase (and more).

Scope of supply:

- profile, busbar clamps, mounting accessories.

Technical information:

- page 231.

Profile for busbar clamps


Purpose:

- formation of busbars.

Material:

- non-magnetic aluminium alloy.

Distinctive features:

- has perforation with pitch of 12.5 mm.

Scope of supply:

- profile of 2 meters.

Drawings:

- see on the disk.

Description	Code
Aluminium profile for busbar clamps	R5BSEV01

Combined busbar clamp


Purpose:

- formation of busbars, attachment of flat copper or aluminium buses.

Material:

- fiberglass-reinforced polyamide.

Distinctive features:

- bus is installed on a fin;
- plastic being used is self-extinguishing according to UL94V0.

Scope of supply:

- kit of holders, studs, mounting accessories.

Drawings:

- see on the disk.

Number of poles	Number of insulators	Number of studs	Number of buses per phase	Bus thickness, mm	Bus height, mm	Minimum distance between phases, mm	Code
3	6	4	1-2	5	30-120	50	R5BSEV2/5T
4	8	5	1-2	5	30-120	50	R5BSEV2/5TN
3	6	4	1-4	5	30-120	75	R5BSEV4/5T
4	8	5	1-4	5	30-120	75	R5BSEV4/5TN
3	6	4	1	10	30-120	50	R5BSEV1/10T
4	8	5	1	10	30-120	50	R5BSEV1/10TN
3	6	4	1-2	10	30-120	75	R5BSEV2/10T
4	8	5	1-2	10	30-120	75	R5BSEV2/10TN
3	6	4	1-3	10	30-120	100	R5BSEV3/10T
4	8	5	1-3	10	30-120	100	R5BSEV3/10TN

Stud insulator


Purpose:

- insulation of studs at the minimum distance between phases.

Material:

- plastic.

Scope of supply:

- 100 pcs.

Description	Code
Dielectric stud insulator	R5BSEV02

Profile fastener


Purpose:

- profile installation to the enclosure frame.

Material:

- steel.

Scope of supply:

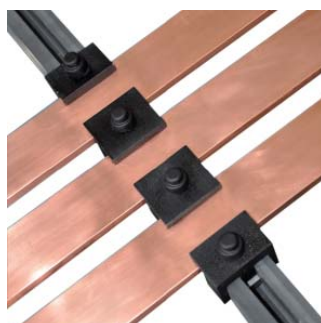
- 10 pcs.

Drawings:

- see on the disk.

Description	Code
For the horizontal bus system	R5BSEV03
For the vertical bus system	R5BSEV04

System of combined busbar clamps for flatwise installation of current-carrying buses


Purpose:

- formation of busbars.

Distinctive features:

- rated operational current is up to 1600 A;
- maximum initial short-circuit current is up to 110 kA;
- allowable through short-circuit current is 50 kA/1 s (action);
- first and last busbar clamps shall be installed at the distance of not more than 1/4 of the minimum distance between busbar clamps (example: if the estimated distance between busbar clamps is 840 mm, the distance from the bus edge to the first and last busbar clamps shall not exceed 210 mm).

Scope of supply:

- profile, busbar clamps, mounting accessories.

Technical information:

- page 231.

Support profile for busbar clamps


Purpose:

- formation of busbars.

Material:

- reinforced PVC.

Distinctive features:

- plastic being used is self-extinguishing according to UL94V0. Maximum temperature is +85 °C.

Scope of supply:

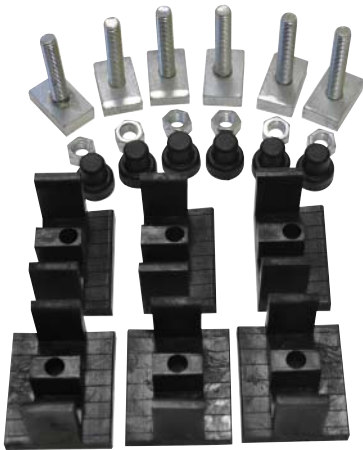
- profile of 2 meters, mounting accessories.

Drawings:

- see on the disk.

Description	Code
Support profile for busbar clamps	R5BSFV

Combined busbar clamp



Purpose:

- formation of busbars, attachment of flat copper or aluminium buses.

Material:

- fiberglass-reinforced polyamide.

Distinctive features:

- bus is installed on a flat side;
- plastic being used is self-extinguishing according to UL94V0.

Scope of supply:

- M6 T-bolts, M6 nuts, end caps, M6x25 screws for attachment of the support profile to the enclosure frame.

Drawings:

- see on the disk.

Number of poles	Pole spacing	Number of busbar clamps in a kit, pcs		Bus thickness, mm	Bus width, mm	Code
		of L type	of T type			
3	20 mm	2	2	5-10	30-100	R5BSFVLT3
4		2	3			R5BSFVLT4
3	≥ 40 mm	6	–			R5BSFVL3
4		8	–			R5BSFVL4

Step-type busbar clamps



Purpose:

- formation of distribution units.

Material:

- fiberglass-reinforced polyamide.

Distinctive features:

- bus is installed on a flat side;
- plastic being used is self-extinguishing according to UL94V0;
- operating temperature is from –40 to +130 °C. Long-term exposure is allowed at the temperature of up to +110 °C.

Scope of supply:

- busbar clamp, mounting accessories.

Technical information:

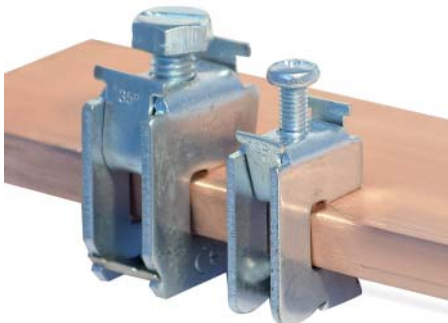
- page 232.

Drawings:

- see on the disk.

Distance between phases, mm	Number of poles	Q-ty in a package, pcs	Description	Code
42	4	8	step-type busbar clamp, up to 250 A	R5BSGF250TN
65		2	step-type busbar clamp, up to 630 A	R5BSGF630TN

Cable bus terminal



Purpose:

- cable switching to a current-carrying bus.

Material:

- galvanized steel.

Distinctive features:

- installed on a current-carrying bus with thickness of 5 to 10 mm;
- switches cables with section of 1.5 to 120 mm².

Scope of supply:

- terminal.

Bus thickness, mm	Cable section, mm ²	Tightening torque, Nm	Code
5	1.5-16	3	R5BC0516
	16-35	6-8	R5BC0535
	35-70	10-12	R5BC0570
	70-120	12-15	R5BC0512
10	1.5-16	3	R5BC1016
	16-35	6-8	R5BC1035
	35-70	10-12	R5BC1070
	70-120	12-15	R5BC1012

Accessories for the lighting system

Lamp



Purpose:

- lighting.

Material:

- plastic.

Distinctive features:

- supplied in two versions: with a luminescent lamp; with a diode;
- lamp is equipped with a platform for installation on perforation of 25 mm.

Scope of supply:

- light fixture, lamp, power socket.

Drawings:

- see on the disk.

Lamp power, W	Rated voltage, V	Lamp length, mm	Light source type	Code
3.6	220-240	342	diode	R5LA03
6.5	220-240	574	diode	R5LA06
8	220-240	342	luminescent lamp	R5LA08
13	220-240	574	luminescent lamp	R5LA13
21	220-240	905	luminescent lamp	R5LA21

Lamp with socket



Purpose:

- lighting.

Material:

- plastic.

Distinctive features:

- luminescent lamp;
- cable 3x1.5 mm with length of 2.5 meters;
- equipped with 2 sockets.

Scope of supply:

- light fixture, lamp, cable.

Power, W	Rated voltage, V	Lamp length, mm	Code
8	220-240	450	R5LAS08
13	220-240	680	R5LAS13

Power socket for lamps



Purpose:

- switching of lamps.

Material:

- plastic.

Scope of supply:

- plug, mounting accessories.

Description	Code
For models R5LA03/06/08/13/21	R5LAJMP
For models R5LAS08/13	R5VS01

Magnetic fixing platform



Purpose:

- installation of lamps.

Material:

- metal (magnetic base).

Distinctive features:

- allows installing lamps on the metal base without additional perforation of the mounting plane.

Scope of supply:

- magnetic fixing platform.

Model of installed lamp	Code
R5LA08/13/21	R5MAG01N
R5LAS08/13	R5MAG02

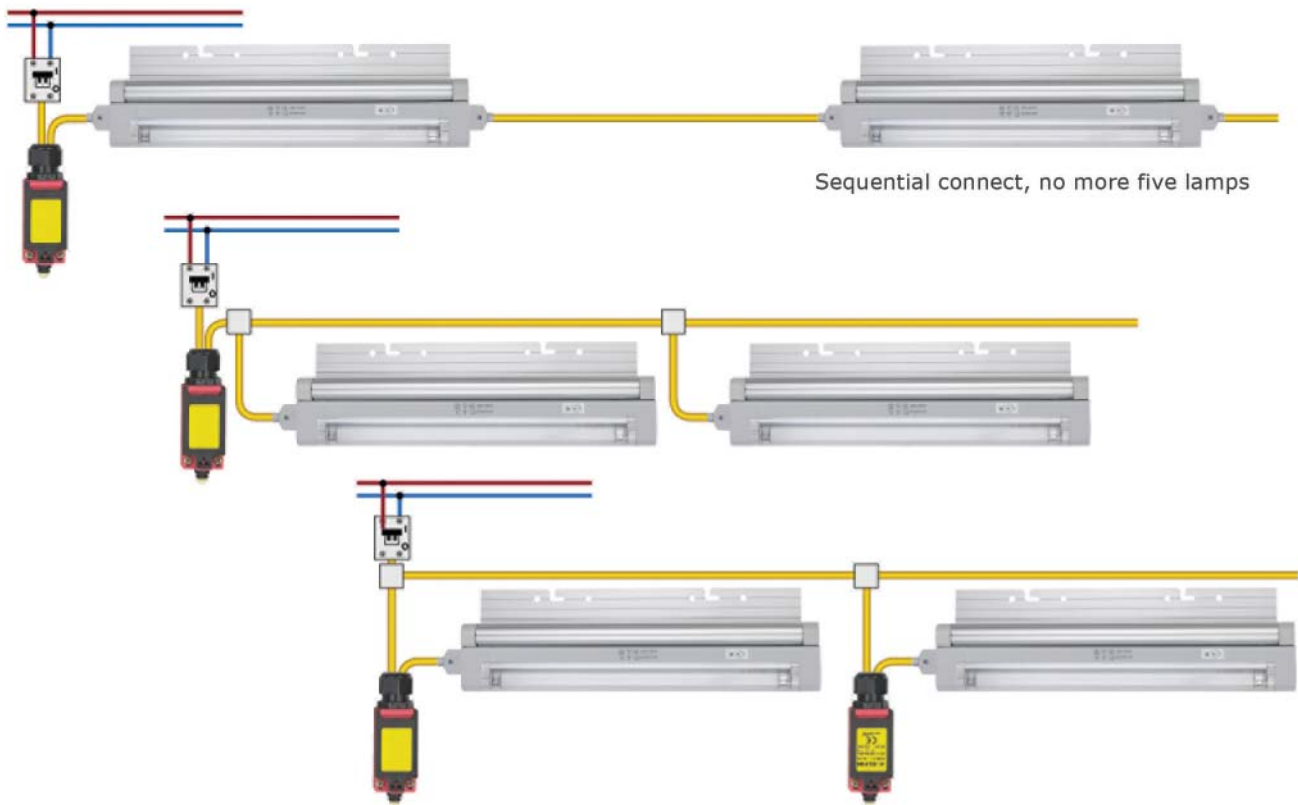
Limit switch (door)



- Purpose:**
- lighting.
- Material:**
- plastic.
- Distinctive features:**
- serves for opening of lighting circuits within the enclosure with the closed door;
 - it is possible to use it in other logic circuits and algorithms;
 - contact type is two normally closed ones (2NC);
 - protection degree is IP65;
 - rated current is 10 A;
 - operating temperature is from -10 to +80 °C;
 - supplied in single-phase and three-phase versions.
- Scope of supply:**
- switch, mounting accessories.
- Drawings:**
- see on the disk.

Description	Code
Single-phase limit switch, without cable and power socket	R5MC01
Three-phase limit switch, without cable and power socket	R5MC02

Scheme installation



Console system and panels of control

Application

DKC control consoles and panels are designed for implementation of process automation systems and used for organization of a working space of an operator controlling operation of the enterprise process.



Distinctive features

Assortment

DKC nomenclature comprises all necessary standard sizes of consoles for real-time control, process control, data input, information and combined ones, etc.

Flexibility

Owing to their universal structure, system elements are easily combined into different versions in accordance with customers' requirements.

Quality

The frame and cover are made of high-quality electrotechnical steel, painting is carried out using modern epoxy-polyether paint by the powder coating method, thus ensuring high corrosion protection of the surface.

Installation

The scope of supply of control consoles and panels comprises the mounting plate, cable glands elements and all necessary mounting accessories. Due to availability of various components in the product range, it is possible to create solutions based on individual customers' requirements.

Operation

Installed equipment may be accessed on both sides, thus simplifying installation, cabling and service.

Control console series PN



Purpose:

- operator's working space organization.

Material:

- frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- cover: steel with thickness of 2 mm, RAL 7035 powder coating;
- back panel: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- cable gland: galvanized steel with thickness of 1.5 mm;
- mounting plate: galvanized steel with thickness of 2 mm;
- door: steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- cover is equipped with stops to prevent spontaneous closing;
- door is two-way; it is equipped with a lock for a key with a double bit of 3 mm;
- protection degree is IP55.

Scope of supply:

- frame, mounting plate, door, cover, back panel, cable glands elements, mounting accessories.

Drawings:

- see on the disk.

Width, mm	Plinth	Console
600	R5ZP638	R5PN600
800	R5ZP838	R5PN800
1000	R5ZP1038	R5PN1000
1200	R5ZP1238	R5PN1200
1600	R5ZP1638	R5PN1600
2000	R5ZP2038	R5PN2000

Base for CN, VN control panels



Purpose:

- operator's working space organization.

Material:

- frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- back panel: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- cable gland: galvanized steel with thickness of 1.5 mm;
- mounting plate: galvanized steel with thickness of 2 mm;
- door: steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- back panel is manufactured as follows: CN – removable panel; VN – back panel;
- door is two-way; it is equipped with a lock for a key with a double bit of 3 mm;
- protection degree is IP55.

Scope of supply:

- frame, mounting plate, door, back panel (VN – rear door), cable glands elements, mounting accessories.

Drawings:

- see on the disk.

Width, mm	CN series		VN series	
	depth, mm	code	depth, mm	code
600	430	R5CPC600	500	R5CPV600
800	430	R5CPC800	500	R5CPV800
1000	430	R5CPC1000	500	R5CPV1000
1200	430	R5CPC1200	500	R5CPV1200
1600	430	R5CPC1600	500	R5CPV1600

Upper section for CN, VN control panels


Purpose:

- operator's working space organization.

Material:

- frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- rear part: CN: panel is made of steel with thickness of 1.5 mm, RAL 7035 powder coating; VN: door is made of steel with thickness of 2 mm, RAL 7035 powder coating;
- cable gland: galvanized steel with thickness of 1.5 mm.
- mounting plate: galvanized steel with thickness of 2 mm;
- door: steel with thickness of 2 mm, RAL 7035 powder coating.

Distinctive features:

- back panel is manufactured as follows: CN – removable panel; VN – back panel;
- door is two-way; it is equipped with a lock for a key with a double bit of 3 mm;
- protection degree is IP55.

Scope of supply:

- frame, mounting plate, door, back panel (VN – rear door), cable glands elements, mounting accessories.

Drawings:

- see on the disk.

Width, mm	CN series		VN series	
	depth, mm	code	depth, mm	code
600	430	R5APC600	500	R5APV600
800	430	R5APC800	500	R5APV800
1000	430	R5APC1000	500	R5APV1000
1200	430	R5APC1200	500	R5APV1200
1600	430	R5APC1600	500	R5APV1600

Console for CN, VN control panels


Purpose:

- operator's working space organization.

Material:

- frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- cover: steel with thickness of 2 mm, RAL 7035 powder coating.

Distinctive features:

- cover is equipped with stops to prevent spontaneous closing;
- cover is equipped with 2 locks for a key with a double bit of 3 mm;
- protection degree is IP55.

Scope of supply:

- frame, cover, mounting accessories.

Drawings:

- see on the disk.

Width, mm	CN series		VN series	
	depth, mm	code	depth, mm	code
600	870	R5MPC600	940	R5MPV600
800	870	R5MPC800	940	R5MPV800
1000	870	R5MPC1000	940	R5MPV1000
1200	870	R5MPC1200	940	R5MPV1200
1600	870	R5MPC1600	940	R5MPV1600

Plinth


Purpose:

- operator's working space organization.

Material:

- steel with thickness of 2 mm, RAL 7011 powder coating.

Distinctive features:

- made completely dismountable.

Scope of supply:

- plinth, mounting accessories.

Width, mm	Height, mm	Code		
		PN series	CN series	VN series
600	100	R5ZP638	R5ZP638	R5ZPV645
800	100	R5ZP838	R5ZP838	R5ZPV845
1000	100	R5ZP1038	R5ZP1038	R5ZPV1045
1200	100	R5ZP1238	R5ZP1238	R5ZPV1245
1600	100	R5ZP1638	R5ZP1638	R5ZPV1645
2000	100	R5ZP2038	–	–

Accessories for control consoles

Cover for base and consoles of CN, VN control panels


Purpose:

- operator's working space organization.

Material:

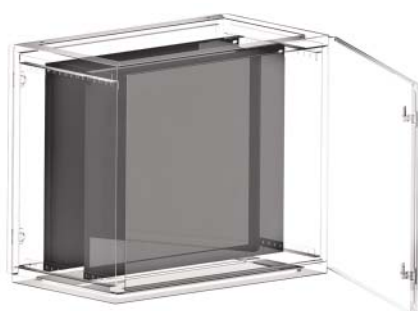
- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Scope of supply:

- cover, mounting accessories.

Panel width, mm	Shelf width, mm	CN series		VN series	
		depth, mm	code	depth, mm	code
600	596	426	R5CC600	496	R5CV600
800	796	426	R5CC800	496	R5CV800
1000	996	426	R5CC1000	496	R5CV1000
1200	1196	426	R5CC1200	496	R5CV1200
1600	1596	426	R5CC1600	496	R5CV1600

Additional mounting plate for control panels


Purpose:

- operator's working space organization.

Material:

- galvanized steel with thickness of 2 mm.

Scope of supply:

- plate, mounting accessories.

Drawings:

- see on the disk.

Panel base width, mm	Plate height, mm	Plate width, mm	Code
600	600	531	R5PC600
800	600	731	R5PC800
1000	600	931	R5PC1000
1200	600	1131	R5PC1200
1600	600	1531	R5PC1600

Mounting plate for consoles


Purpose:

- operator's working space organization.

Material:

- galvanized steel with thickness of 2 mm.

Scope of supply:

- plate, mounting accessories.

Shelf width, mm	Plate width, mm	Plate depth, mm	Code
600	500	350	R5PPM600
800	700	350	R5PPM800
1000	900	350	R5PPM1000
1200	1100	350	R5PPM1200
1600	1500	350	R5PPM1600

Door rails


Purpose:

- operator's working space organization.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- installed on the inside of the cover console to studs.

Scope of supply:

- 2 rails, mounting accessories.

Series	Code
PN	R5S01
CN, VN	R5S02

Ringbolts


Purpose:

- transportation of control panels.

Material:

- steel.

Scope of supply:

- 2 ringbolts, mounting accessories.

Description	Code
Ringbolts for control panels	R5A34

Gas strut


Purpose:

- operator's working space organization.

Distinctive features:

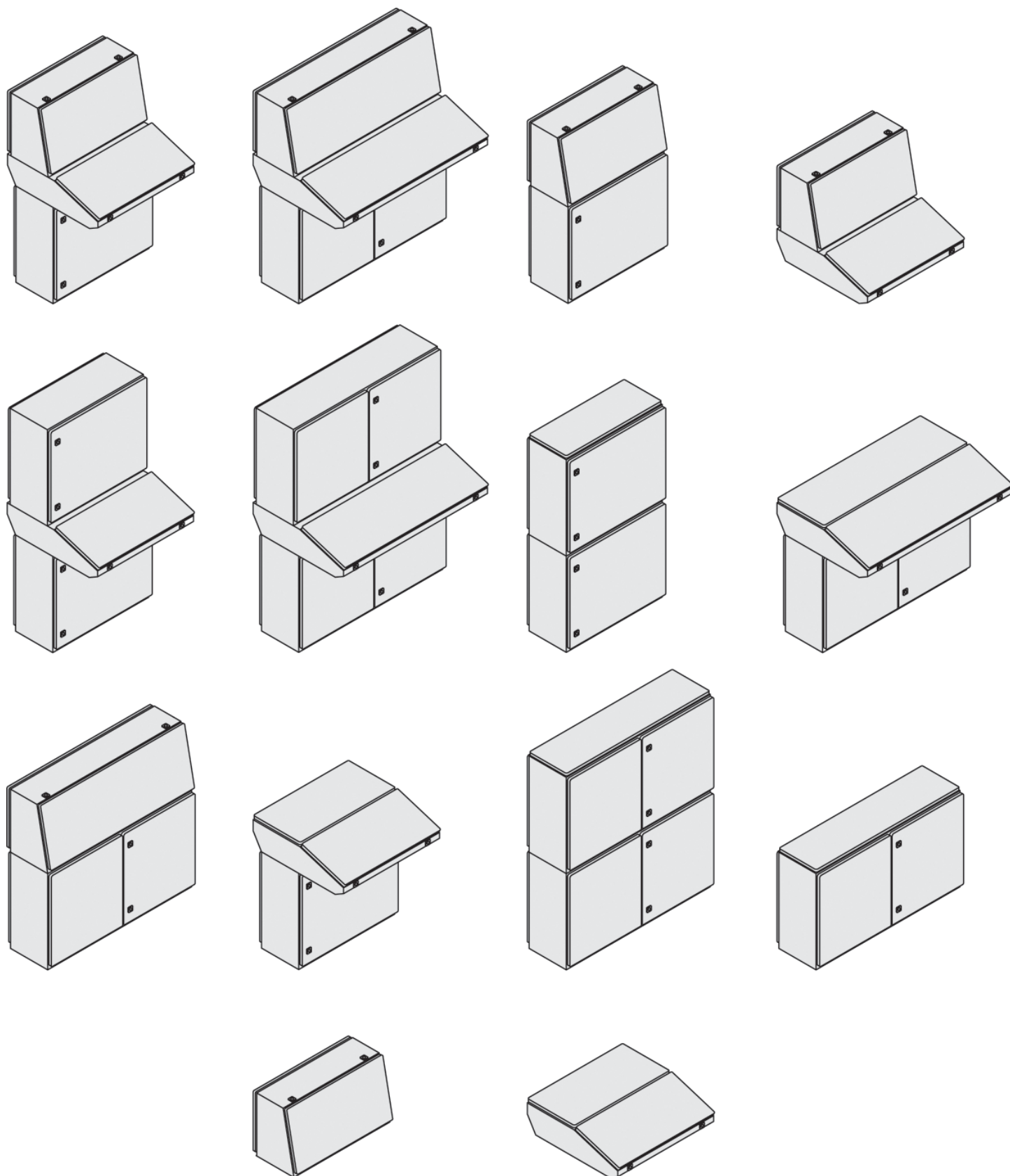
- installed instead of a standard stop (not a gas strut).

Scope of supply:

- 2 stops, mounting accessories.

Cover width, mm						Code
600	800	1000	1200	1600	2000	
Allowable load, kg						
10	7	–	–	–	–	R5MPG20
15	13	11	–	–	–	R5MPG25
–	–	17	15	11	–	R5MPG30
–	–	–	–	17	13	R5MPG35
–	–	–	–	–	18	R5MPG40

Scheme installation of console system and panels of control







Conchiglia
[КОНКИЛИЯ]

Fiberglass enclosures series "Conchiglia"

Floor-mounted enclosures Conchiglia	127
Wall-mounted enclosures Conchiglia	128
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Accessories for Conchiglia enclosures	130

Fiberglass enclosures series "Conchiglia"

Description

"Conchiglia" series enclosures are innovative products in the range of floor-mounted and wall-mounted enclosures for outdoor installation. Owing to the material properties this enclosures are suitable for application in low-voltage power distribution systems, phone networks, gas and water supply systems, traffic light systems under severe conditions of aggressive environment.

"Conchiglia" enclosures have been used for many years in Europe and proved to be reliable and practical solutions for various applications. The first enclosures were designed specifically for one of the biggest energy giant in Europe that is Eni. Thereafter the enclosures have been continuously upgraded and improved and currently they are the most demanded in the EU.

Continuous quality control and introduction of modern technologies and advanced equipment make it possible not only to ensure high quality and long service life of manufactured products, but also to provide completely universal and unique items for outdoor application.

Distinctive features

Characteristics

- corrosion resistance: Fiberglass is corrosion-free and resistant to various chemical substances;
- resistance to severe weather conditions (rain, snow, ultraviolet radiation);
- heat resistance: from -50 to +90 °C
- protection degree IP55 according to IEC 60529 standard;
- grounding of enclosure shell is not required;
- enclosure material does not generate disturbances for transmission of radio- and GSM-signal;
- fiberglass enclosure is by 25–45% lighter than the metal one;
- shock resistance IK10 for the door and the other sides of enclosure, three-point locking system, finned surface (anti-sticker).

Assortment

- five versions of wall-mounted enclosures based on height: 370, 460, 550, 685, and 910 mm;
- six versions of floor-mounted enclosures based on height: 400, 490, 580, 715, 940, and 1,390 mm;
- two versions based on width: 580 and 685 mm;
- two versions based on depth: 330 and 460 mm.

Flexibility

Modular structure of "Conchiglia" series enclosures makes it possible to combine housings for increase of height and depth meeting the highest requirements specified to design and installation, and component geometry makes it possible to form various complex or individual solutions.

Wide range of accessories makes it possible to fill the space inside enclosures in the most rational manner and to fit them with necessary equipment, e.g. for gas and water supply, telephony, lighting control and many other fields of usage.

Applications



Transport infrastructure



Municipal infrastructure



Processing companies



Chemical industry



Ports and docks



Food industry

Functional design

"Conchiglia" series enclosures due to their original appearance fit well into any space and make it possible for design engineers to create solutions of any complexity both in the city area and at the industrial facilities.

Relief design on the front door and rear wall is an important distinctive feature of enclosures. It not only makes enclosures more attractive but also provides high mechanical resistance, reduces impact level of sunlight on the surface ensuring protection against early aging, as well as protection against vandalism.

Basic advantages



Protection against dirt

Special seal protects handle lock against dirt ingress



Long service life

Hinges are made of stainless steel. Production material: steel AISI 304



Ultra secure lock

Special structure of lock provides secure locking in three points. Pin is made of metal



Installation in aggressive media

Enclosures are designed taking into account the necessary requirements for protection of the installed equipment and long service life: IP55, IK10, resistance to gasoline and oils, fire safety



Protection against stickers

Original finned surface provides not only an attractive design, but also bears functional load protecting enclosure against the unauthorized posting of advertisements



Safety

Fiberglass as a dielectric material (protection class II) provides the necessary safety and minimizes risk of electrical shock



Convenient installation

Fabricated structure, lightweight and modularity are the basic principles providing ease and convenience when working with "Conchiglia" series enclosures

Fiberglass enclosures series "Conchiglia"

"Conchiglia" series fiberglass enclosures are designed for application in low-voltage power distribution systems, phone networks, gas and water supply systems, and traffic light systems under conditions of aggressive environment.

"Conchiglia" series enclosures are made of high-quality polyester sheet material by compression molding in heated steel closed molds at hydraulic presses.

The standard enclosure assembly has the dust and moisture protection level IP55 minimum.

The climatic version area, wherein it is possible to use "Conchiglia" series enclosures without risk of reduction of basic enclosure characteristics such as IP, IK, is maximum, i.e. UKhL1 according to GOST 15150.

Enclosures have the lightweight frameless structure which accelerates assembly and connection process significantly.

A wide selection of standard sizes and accessories, possibility to combine enclosures, compatibility with active equipment of leading European and domestic manufacturers makes "Conchiglia" enclosures a universal solution that can meet the most stringent customers' requirements.

Fiberglass floor-mounted enclosures



Applications:

- for low-voltage automation systems, distribution and metering of power under severe conditions of aggressive environment.

Material:

- enclosure: fiberglass with thickness of 3-5 mm, RAL 7035;
- mounting plate: galvanized steel with thickness of up to 2 mm;
- lock cylinder: metal;
- seal: EPDM (ethylene-propylene-diene monomer).

Distinctive features:

- dust and moisture protection degree is IP55;
- installation method: floor mounting, foundation mounting;
- shock resistance degree is IK10;
- door is two-way and installed on the right by default;
- handle made of thermoplastic with lock for a key.

Scope of supply:

- enclosure elements, handle, lock, mounting accessories.
- Enclosures are supplied in a disassembled state.

Drawings:

- see on the disk.

Enclosure dimensions, mm			Protection degree	Code of assembled enclosure
depth	height	width		
330	400	580	IP55	077500106
	490	685	IP55	077702108
	580	580	IP55	077503100
	715	685	IP55	077704104
	940	580	IP55	077505105
	940	685	IP55	077705101
	1390	580	IP55	077508109
	1390	685	IP55	077708105
460	490	685	IP55	077712107
	580	580	IP55	077513109
	715	685	IP55	077714103
	940	580	IP55	077515104
	940	685	IP55	077715100
	1390	580	IP55	077518108
	1390	685	IP55	077718104

Fiberglass wall -mounted enclosures



Applications:

- for low-voltage automation systems, distribution and metering of power under conditions of aggressive environment.

Material:

- enclosure: fiberglass with thickness of 3-5 mm, RAL 7035;
- mounting plate: galvanized steel with thickness of up to 2 mm;
- lock cylinder: metal;
- seal: EPDM (ethylene-propylene-diene monomer).

Distinctive features:

- dust and moisture protection degree is IP55;
- installation method: wall mounting, support mounting;
- shock resistance degree is IK10;
- door is two-way and installed on the right by default;
- handle made of thermoplastic with lock for a key.

Scope of supply:

- enclosure elements, handle, lock, mounting accessories.
- Enclosures are supplied in a disassembled state.

Drawings:

- see on the disk.

Enclosure dimensions, mm			Protection degree	Code of assembled enclosure
depth	height	width		
330	370	580	IP55	077501906
	460	685	IP55	077702900
	550	580	IP55	077503902
	685	685	IP55	077704906
	910	580	IP55	077505907
	910	685	IP55	077705903
460	460	685	IP55	077712909
	550	580	IP55	077513901
	685	685	IP55	077714905
	910	580	IP55	077515906
	910	685	IP55	077715902

Selection table

Fiberglass wall-mounted enclosures



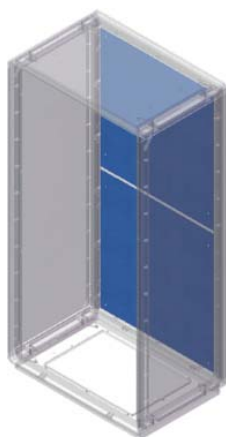
Enclosure dimensions, mm			Code of assembled enclosure	Codes of basic elements				Wall mounting bracket
depth	height	width		bottom+cover	door	back panel	side panels	
330	370	580	077501906	G5DTBI3358	G5CPE4058	G5CRE4058	G-DL3340	095770939
	460	685	077702900	G7DTBI3368	G7CPE4968	G7CRE4968	G-DL3349	095770939
	550	580	077503902	G5DTBI3358	G5CPE5858	G5CRE5858	G-DL3358	095770939
	685	685	077704906	G7DTBI3368	G7CPE7168	G7CRE7168	G-DL3371	095770939
	910	580	077505907	G5DTBI3358	G5CPE9458	G5CRE9458	G-DL3394	095770939
	910	685	077705903	G7DTBI3368	G7CPE9468	G7CRE9468	G-DL3394	095770939
460	460	685	077712909	G7DTBI4668	G7CPE4968	G7CRE4968	G-DL4649	095770939
	550	580	077513901	G5DTBI4658	G5CPE5858	G5CRE5858	G-DL4658	095770939
	685	685	077714905	G7DTBI4668	G7CPE7168	G7CRE7168	G-DL4671	095770939
	910	580	077515906	G5DTBI4658	G5CPE9458	G5CRE9458	G-DL4694	095770939
	910	685	077715902	G7DTBI4668	G7CPE9468	G7CRE9468	G-DL4694	095770939

Fiberglass floor-mounted enclosures



Enclosure dimensions, mm			Code of assembled enclosure	Codes of basic elements				Frame for floor mounting
depth	height	width		bottom+cover	door	back panel	side panels	
330	400	580	077500106	G5DTB3358	G5CPE4058	G5CRE4058	G-DL3340	095775300
	490	685	077702108	G7DTB3368	G7CPE4968	G7CRE4968	G-DL3349	095777306
	580	580	077503100	G5DTB3358	G5CPE5858	G5CRE5858	G-DL3358	095775300
	715	685	077704104	G7DTB3368	G7CPE7168	G7CRE7168	G-DL3371	095777306
	940	580	077505105	G5DTB3358	G5CPE9458	G5CRE9458	G-DL3394	095775300
	940	685	077705101	G7DTB3368	G7CPE9468	G7CRE9468	G-DL3394	095777306
	1390	580	077508109	G5DTB3358	G5CPE1358	G5CRE1358	G-DL3313	095775300
	1390	685	077708105	G7DTB3368	G7CPE1368	G7CRE1368	G-DL3313	095777306
460	490	685	077712107	G7DTB4668	G7CPE4968	G7CRE4968	G-DL4649	095777355
	580	580	077513109	G5DTB4658	G5CPE5858	G5CRE5858	G-DL4658	095775359
	715	685	077714103	G7DTB4668	G7CPE7168	G7CRE7168	G-DL4671	095777355
	940	580	077515104	G5DTB4658	G5CPE9458	G5CRE9458	G-DL4694	095775359
	940	685	077715100	G7DTB4668	G7CPE9468	G7CRE9468	G-DL4694	095777355
	1390	580	077518108	G5DTB4658	G5CPE1358	G5CRE1358	G-DL4613	095775359
	1390	685	077718104	G7DTB4668	G7CPE1368	G7CRE1368	G-DL4613	095777355

Mounting plate


Purpose:

- equipment installation.

Material:

- galvanized steel with thickness of 2 mm.

Scope of supply:

- mounting plate, fastener, mounting accessories.

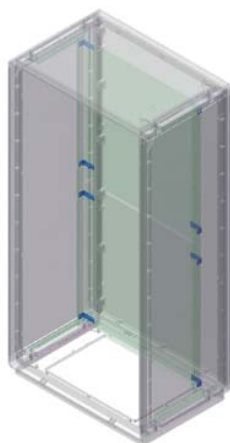
Drawings:

- see on the disk.

Enclosure dimensions, mm		Code
height	width	
400	580	095775011
490	685	095777017
580	580	095775037
715	685	095777025
940	580	095775052
940	685	095777033
1390	580	095775078*
1390	685	095777058*

* 2 kits

Kit for attachment of mounting plate to racks


Purpose:

- attachment of mounting plate to racks.

Material:

- steel with thickness of 2 mm.

Scope of supply:

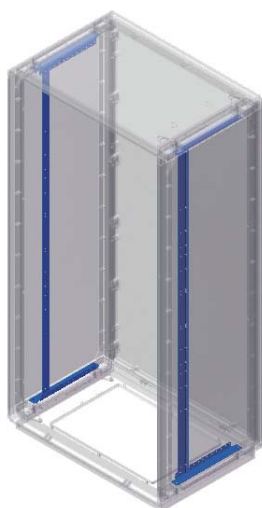
- 4 brackets, mounting accessories.

Drawings:

- see on the disk.

Code	Number of brackets
095770921	4

Vertical racks


Purpose:

- equipment installation.

Material:

- galvanized steel with thickness of 2 mm.

Scope of supply:

- 2 racks, mounting accessories

Drawings:

- see on the disk.

Enclosure height, mm	Code
400	095770012
490	095770020
580	095770038
715	095770046
940	095770053
1390	095770087

Step-type guiding ways


Purpose:

- mounting of vertical racks

Material:

- galvanized steel with thickness of 2 mm.

Scope of supply:

- 4 guiding ways, mounting accessories

Drawings:

- see on the disk.

Enclosure depth, mm	Code
330	095770905
460	095770913

Carrier for attachable panel


Purpose:

- installation of attachable panel.

Material:

- self-extinguishing thermoplastic of gray color, RAL 7035.

Scope of supply:

- carrier, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Number of installed panels	Max. number of modules	Code
height	width			
400	580	1	24	095775706
490	685	2	58	095777702
580	580	3	72	095775722
715	685	3	87	095777710
940	580	4	96	095775748
940	685	4	116	095777728
1390	580	6	144	095775763
1390	685	6	174	095777744

Attachable panel


Purpose:

- access screening, installation of modular equipment.

Material:

- self-extinguishing thermoplastic of gray color, RAL 7035.

Scope of supply:

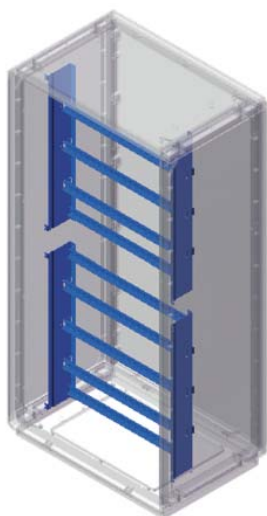
- panel, mounting accessories.

Drawings:

- see on the disk.

Enclosure width, mm	Panel type	Number of modules	Code
580	solid	–	095775607
	perforated	24	095775623
685	solid	–	095777603
	perforated	29	095777629

Mounting frame


Purpose:

- modular equipment installation.

Material:

- steel with thickness of 2 mm.

Scope of supply:

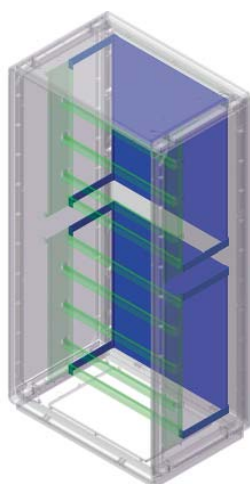
- mounting frame in a disassembled state, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Required quantity, pcs	Code
height	width		
400	580	1	095775805
490	685	1	095777801
580	580	1	095775821
715	685	1	095777819
940	580	2	095775813
940	685	2	095777801
1390	580	2	095775839
1390	685	2	095777819

Kit for attachment of mounting plate to mounting frame


Purpose:

- equipment installation.

Material:

- steel with thickness of 2 mm.

Scope of supply:

- 1 mounting plate, 4 brackets, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm			Distance between mounting frame and plate, mm	Mounting frame code	Kit code
height	width	depth			
400	580	330	85	095775805	095775854
490	685	330	85	095777801	095777865
		460	215		095777868
580	580	330	85	095775821	095775870
		460	215		095775912
715	685	330	85	095777819	095777850
		460	215		095777884
940	580	330	85	095775813	095775862
		460	215		095775904
940	685	330	85	095777801	095777865
		460	215		095777868
1390	580	330	85	095775839	095775888
		460	215		095775920
1390	685	330	85	095777819	095777850
		460	215		095777884

Frame for floor mounting of enclosure


Purpose:

- attachment of enclosure to concrete floor.

Material:

- steel with thickness of 2 mm.

Scope of supply:

- frame, 4 special bolts, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions, mm		Frame for floor mounting
depth	width	
330	580	095775300
	685	095777306
460	580	095775359
	685	095777355

Wall mounting bracket


Purpose:

- attachment of enclosure to the wall.

Material:

- steel with thickness of 2 mm.

Scope of supply:

- 4 brackets, mounting accessories.

Drawings:

- see on the disk.

Code	Number of brackets
095770939	4

Plinth for enclosure


Purpose:

- installation of enclosures into the ground.

Material:

- fiberglass.

Characteristics:

- height is 900 mm.

Enclosure dimensions, mm			Assembled enclosure code	Plinth code
height	width	depth		
490	685	330	077702108	072009103
715	685	330	077704104	072009103
940	685	330	077705101	072009103
1390	685	330	077708105	072009103



IT enclosures system "RAM telecom"

Wall-mounted enclosures STI.....	138
Network/Server enclosures CQE	142
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Accessories for IT enclosures	154
Power Distribution Units	160

IT enclosures STI

Application

Floor-mounted enclosures DKC series "RAM telecom" are a universal solution, and they are designed for installation of network, IT and server equipment in different fields. Their design prevents quick access to an enclosure in case of unauthorized breaking in, and it also provides convenient access for mounting of equipment. All enclosures meet the highest requirements to installation and operating conditions which makes possible their application in different fields from small business to solutions for large state projects or a DPC.



Characteristics

Quality

All enclosures are manufactured at DKC factories in Europe and Russia in accordance with high quality standards.

Material:

- kit: cover and base are made of steel with thickness of 1.5 mm;
- vertical rack kit is made of steel with thickness of 1.5 mm;
- door with tinted glass is made of steel with thickness of 2 mm, shaded safety glass with thickness of 4 mm;
- perforated door is made of steel with thickness of 2 mm;
- side panels with lock are made of steel with thickness of 1.5 mm;
- mounting profile is made of galvanized steel with thickness of 1.8 mm;

Convenience

To assemble an enclosure, you do not need to spend a lot of time to select many components with their own items. You can order a full component kit for rack assembly by specifying just one item. The configurator designed by DKC company will help to significantly simplify selection of an enclosure (it can be downloaded at www.dkc.ru web-site in the section "Support"). For easy access in the course of installation and configuration of equipment, side panels can be removed. Based on the requirements of physical safety they are fitted with locks. The installation depth in all "RAM telecom" enclosures is a variable parameter due to the fact that a 19" profile can be installed all over the width of a side rail. All enclosures are delivered unassembled for ease of transportation and installation.

Assortment

Wide range of more than 50 preassembled configurations and additional accessories. It is possible to combine enclosures in a single line, and also to arrange any enclosure based on client's request.

Availability

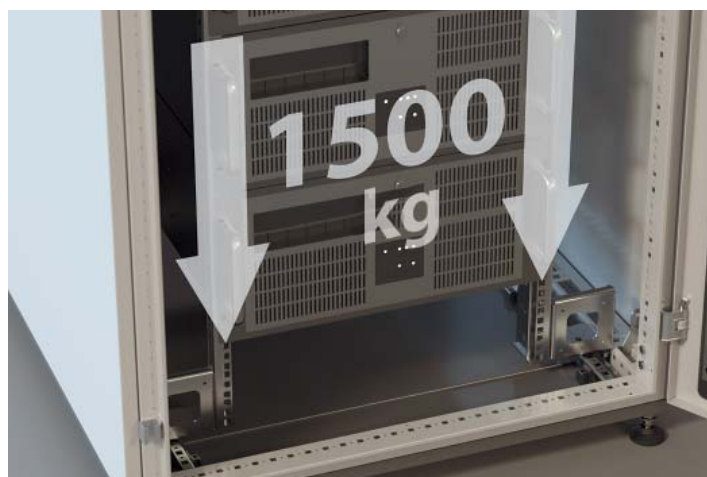
We have virtually complete range of enclosures and accessories in our warehouse in Tver which makes it possible to satisfy needs and requirements of different clients. If necessary, it is possible to work based on an individual client request.

Logistics

All enclosures are delivered unassembled which allows for saving on their transportation and storage.

Technical support

DKC provides a full necessary documentation kit for all products: Certificates, test reports and 2D and 3D drawings. Specialists of the Technical Support Department help in resolving any technical problems related to the products.



High load bearing capacity
Distributed static load is 1,500 kg



Wide range of accessories
Adjustable installation depth allows for installing virtually any equipment

IT enclosures



IT enclosures STI are designed to house server and network devices. They are installed in server and telecommunication rooms.

All elements of floor-mounted enclosures are made of high quality sheet steel with thickness of at least 1.5 mm. The enclosure profile design has several stiffening plates which provides high strength and load bearing capacity of up to 1,500 kg per an assembled enclosure.

Wide range of standard sizes, accessories, and their compliance with international standards make it possible for a client not only get a shell for equipment, but also configure an enclosure according to their needs and, as a result, to purchase a quality and reliable item for IT solutions.

Enclosure configurations:

- doors: perforated, glass, solid;
- cover: blank, perforated, with a flange.

Possibility to select cover furnishing:

- fan module, brush cable gland, plugs.

Inline enclosure combination and removable side plates provide for easy access to equipment for maintenance.

Surface-mounted IT enclosures represented in the range enhance possibilities of placement thereof in confined space.

Wall-mounted IT-enclosures are made of high quality sheet steel with thickness of at least 1.5 mm and door thickness of at least 1.3 mm. When manufacturing glass doors, tinted tempered glass is used.



Metal enclosure
with glass door of STI series



Three-section metal enclosure
with solid door of STI series

Wall-mounted enclosures STI

Metal enclosure with glass door of STI series


Purpose:

- for installation of passive and active IT equipment systems.

Material:

- frame is made of steel with thickness of 1.2 mm, with perforation, powder coating;
- door is made of steel with thickness of 1.5 mm, with perforation, powder coating;
- glass is made of steel with thickness of 1.5 mm, powder coating;
- 19" fastener is made of galvanized steel with thickness of 1.8 mm;
- lock cylinder for a customized key.

Distinctive features:

- distributed static load is 100 kg;
- dust and moisture protection degree is IP31;
- shock resistance degree is IK10;
- door is two-way and installed on the right by default;
- marking is applied on 19" profiles;
- quick-release flange for cable entry from the top and from the bottom;
- quick-release flange for fan panel installation;
- full compatibility with 19" accessories.

Scope of supply:

- enclosure assembly: frame, door with glued in glass, door ground-wire, lock, door hinges, 19" guiding ways, 2 cable entry plugs, and a plug for fan module.

Installation method:

- surface-mounted.

Enclosure dimensions				Color is gray RAL 7035	Color is black RAL 9005
height, U	height, mm	width, mm	depth, mm		
9	500	600	400	R5STI0940GS	R5STI0940GSB
12	600	600	400	R5STI1240GS	R5STI1240GSB
16	800	600	400	R5STI1640GS	R5STI1640GSB
20	1,000	600	400	R5STI2040GS	R5STI2040GSB

Metal enclosure with solid door of STI series


Purpose:

- for installation of passive and active IT equipment systems.

Material:

- frame is made of steel with thickness of 1.2 mm, with perforation, powder coating;
- door is made of steel with thickness of 1.5 mm, with perforation, powder coating;
- 19" fastener is made of galvanized steel with thickness of 1.8 mm;
- lock cylinder for a customized key.

Distinctive features:

- distributed static load is 100 kg;
- dust and moisture protection degree is IP31;
- shock resistance degree is IK10;
- door is two-way and installed on the right by default;
- marking is applied on 19" profiles;
- quick-release flange for cable entry from the top and from the bottom;
- quick-release flange for fan panel installation;
- full compatibility with 19" accessories.

Scope of supply:

- enclosure assembly: frame, door, door ground-wire, lock, door hinges, 19" guiding ways, 2 cable entry plugs, and a plug for fan module.

Installation method:

- surface-mounted.

Enclosure dimensions				Color is gray RAL 7035	Color is black RAL 9005
height, U	height, mm	width, mm	depth, mm		
9	500	600	400	R5STI0940MT	R5STI0940MTB
12	600	600	400	R5STI1240MT	R5STI1240MTB
16	800	600	400	R5STI1640MT	R5STI1640MTB
20	1,000	600	400	R5STI2040MT	R5STI2040MTB

Three-section metal enclosure with glass door of STI series



Purpose:

- for installation of passive and active IT equipment systems.

Material:

- frame base is made of steel with thickness of 1.2 mm, powder coating;
- folding frame is made of steel with thickness of 1.2 mm, powder coating;
- door is made of steel with thickness of 1.5 mm, powder coating;
- glass is made of steel with thickness of 1.5 mm, powder coating;
- 19" fastener is made of galvanized steel with thickness of 1.8 mm;
- lock cylinder for a customized key.

Distinctive features:

- three-section;
- distributed static load is 70 kg;
- dust and moisture protection degree is IP31;
- shock resistance degree is IK10;
- marking is applied on 19" profiles;
- door is two-way, and hinges are installed on the right by default;
- door is two-way and installed on the right by default;
- quick-release flange for cable entry from the top and from the bottom;
- quick-release flange for fan panel installation;
- full compatibility with 19" accessories.

Scope of supply:

- enclosure assembly: frame, folding frame, 2 hinges, door with glued in glass, door ground-wire, lock, door hinges, 19" guiding ways, 2 cable entry plugs, and a plug for fan module.

Installation method:

- wall-mounted.

Enclosure dimensions				Color is gray RAL 7035	Color is black RAL 9005
height, U	height, mm	width, mm	depth, mm		
9	500	600	650	R5STI0965GS	R5STI0965GSB
12	600	600	650	R5STI1265GS	R5STI1265GSB
16	800	600	650	R5STI1665GS	R5STI1665GSB
20	1,000	600	650	R5STI2065GS	R5STI2065GSB

Three-section metal enclosure with metal door of STI series



Purpose:

- for installation of passive and active IT equipment systems.

Material:

- frame base is made of steel with thickness of 1.2 mm, powder coating;
- folding frame is made of steel with thickness of 1.2 mm, powder coating;
- door is made of steel with thickness of 1.5 mm, powder coating;
- glass is made of steel with thickness of 1.5 mm, powder coating;
- 19" fastener is made of galvanized steel with thickness of 1.8 mm;
- lock cylinder for a customized key.

Distinctive features:

- three-section;
- distributed static load is 70 kg;
- dust and moisture protection degree is IP31;
- shock resistance degree is IK10;
- marking is applied on 19" profiles;
- door is two-way, and hinges are installed on the right by default;
- door is two-way and installed on the right by default;
- quick-release flange for cable entry from the top and from the bottom;
- quick-release flange for fan panel installation;
- full compatibility with 19" accessories.

Scope of supply:

- enclosure assembly: frame, folding frame, hinges, door, door ground-wire, lock, door hinges, 19" guiding ways, 2 cable entry plugs, and 2 plugs for fan module.

Installation method:

- wall-mounted.

Enclosure dimensions				Color is gray RAL 7035	Color is black RAL 9005
height, U	height, mm	width, mm	depth, mm		
9	500	600	650	R5STI0965MT	R5STI0965MTB
12	600	600	650	R5STI1265MT	R5STI1265MTB
16	800	600	650	R5STI1665MT	R5STI1665MTB
20	1,000	600	650	R5STI2065MT	R5STI2065MTB

Membrane cable gland



Purpose:

- for arrangement of cable entry into the enclosure.

Material:

- thermoplastic elastomer.

Color:

- white.

Distinctive features:

- fire resistance V0 according to UL94;
- dust and moisture protection degree is up to IP65;
- operating temperature range is from -40 to +130 °C;
- does not contain halogens;
- resistant to oil products;
- 6 versions.

Scope of supply:

- cable gland, mounting accessories.

Drawings:

- see on the disk.

Type	Total number of glands	Hole diameter, mm Q-ty	Protection degree	Code
FL21	6	24–54 mm, 2 pcs 30–59 mm, 1 pcs 6–14 mm, 3 pcs	IP65	R5HTC03
	16	40 mm, 1 pcs 20 mm, 15 pcs	IP54	R5HTC16
	25	20–26 mm (IP65) or 12–15 mm (IP55), 1 pcs 8–14 mm (IP65) or 7–10 mm (IP55), 16 pcs 14–20 mm (IP65) or 5–10 mm (IP55), 4 pcs 5–7 mm (IP65), 4 pcs	IP55–IP65	R5HTC25
	35	17–32 mm, 1 pcs 12–18 mm, 2 pcs 10–14 mm, 16 pcs 7–12 mm, 12 pcs 6–10 mm, 4 pcs	IP65	R5HTC35
	50	7–13 mm, 49 pcs 15–25 mm, 1 pcs	IP65	R5HTC50
	36	4–8 mm, 4 pcs 6–10 mm, 4 pcs 7–12 mm, 12 pcs 10–14 mm, 14 pcs 12–18 mm, 2 pcs 17–32 mm, 1 pcs	IP65	R5HTKC36

Ceiling fan panel



Purpose:

- forced ventilation of equipment within the enclosure.

Material:

- galvanized steel with thickness of 1.5 mm, RAL 7035 or RAL 9005 powder coating.

Distinctive features:

- rated voltage is 220–240 V;
- rated current is 0.3–0.9 A;
- power demand is 44–132 W.

Scope of supply:

- fan panel with a switch, cable with electrical connector, mounting accessories.

Enclosure width, mm	Number of fans	Color is gray	Color is black	Number of occupied U
600	2	R5VSIT6002FG	R5VSIT6002FB	1U

Accessories compatible with enclosures STI

External wall mounting bracket



R5A50

R5A55

Purpose:

- for wall mounting of wall-mounted enclosures and terminal boxes.

Material:

- galvanized steel.

Distinctive features:

- two versions for different loads.

Scope of supply:

- 4 brackets, mounting accessories.

Drawings:

- see on the disk.

Maximum load on one bracket, kg	Code
15	R5A50
25	R5A55

Limit switch holder



Purpose:

- for installation of a limit switch.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- attached to a grounding bolt within the enclosure;
- use of a holder allows preserving high degree of dust and moisture protection of the enclosure;
- holder is designed for installation of R5CM** limit switches, see page 115;
- the limit switch is not included into the enclosure scope of supply.

Scope of supply:

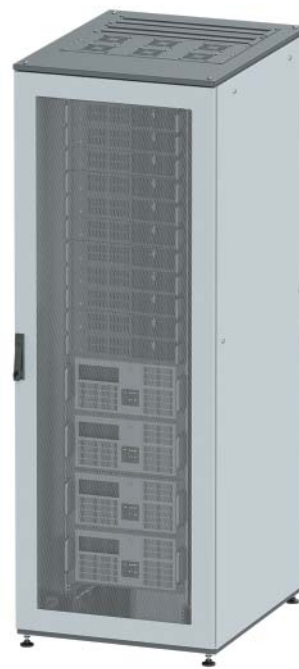
- holder, mounting accessories.

Drawings:

- see on the disk.

Description	Code
R5MC** limit switch holder for CE series enclosures	R5FLS01

Scopes of supply of floor-mounted enclosures with combined code
Width of 600 mm

Enclosure with a glass door

Enclosure with perforated doors

Enclosure with a glass door			Enclosure with perforated doors		
description	q-ty	code	description	q-ty	code
Kit, cover with a flange, and base	1	R5KTB**FIT	Kit, cover with a flange, and base	1	R5KTB**FIT
Vertical racks without additional fasteners, 1 package – 4 pcs	1	R5KMN**	Vertical racks without additional fasteners, 1 package – 4 pcs	1	R5KMN**
19" vertical C-profile, 2 pcs	2	R5MCRE**ITC	19" vertical C-profile, 2 pcs	2	R5MCRE**ITC
Wide side rails, 1 package – 4 pcs	1	R5PDL**	Wide side rails, 1 package – 4 pcs	1	R5PDL**
Door with safety glass	1	R5ITCPTD**	Perforated door	2	R5ITCPRMM**
Solid door	1	R5ITCPE**	Side panels with a lock for a key, 2 pcs	1	R5ITCPELK**
Side panels with a lock for a key, 2 pcs	1	R5ITCPELK**	Adjustable feet, M12x50 mm, 1 package – 4 pcs	1	R5A45
Adjustable feet, M12x50 mm, 1 package – 4 pcs	1	R5A45	Vanity panel for cover, L=600 mm	*	R5FCIT600
Vanity panel for cover	*	R5FCIT**	Panel with a brush gland in cover, L=600 mm	1	R5FSIT600
Panel with a brush gland in cover	1	R5FSIT**			

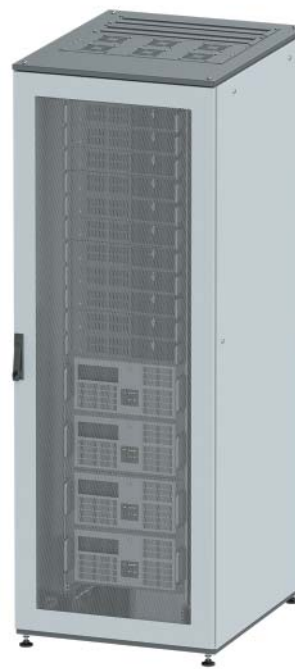
* 1 pcs for enclosure depth of 600 mm, 2 pcs for enclosure depth of 800 mm, 3 pcs for enclosure depth of 1,000 mm

** Depending on the enclosure dimensions

Width of 800 mm



Enclosure with a glass door



Enclosure with perforated doors

Enclosure with a glass door			Enclosure with perforated doors		
description	q-ty	code	description	q-ty	code
Kit, cover with a flange, and base	1	R5KTB**FIT	Kit, cover with a flange, and base	1	R5KTB**FIT
Vertical racks without additional fasteners, 1 package – 4 pcs	1	R5KMN**	Vertical racks without additional fasteners, 1 package – 4 pcs	1	R5KMN**
19" vertical profiles, 2 pcs	2	R5MCRE**ITC	19" vertical C-profile, 2 pcs	2	R5MCRE**ITC
Mounting kit for installation of 19" racks in the enclosure with width of 800 mm, 4 pcs	2	R5MCRE**IT	Mounting kit for installation of 19" racks in the enclosure with width of 800 mm, 4 pcs	2	R5MCRE01IT
Door with safety glass	1	R5ITCPTED**	Perforated door	2	R5ITCPRMM**
Side panels with a lock for a key, 2 pcs	1	R5ITCPELK**	Side panels with a lock for a key, 2 pcs	1	R5ITCPELK**
Solid door	1	R5ITCPE**	Adjustable feet, M12x50 mm, 1 package – 4 pcs	1	R5A45
Adjustable feet, M12x50 mm, 1 package – 4 pcs	1	R5A45	Vanity panel for cover, L=800 mm	*	R5FCIT800
Vanity panel for cover, L=800 mm	*	R5FCIT800	Panel with a brush gland in cover, L=800 mm	1	R5FSIT800
Panel with a brush gland in cover, L=800 mm	1	R5FSIT800			

* 1 pcs for enclosure depth of 600 mm, 2 pcs for enclosure depth of 800 mm, 3 pcs for enclosure depth of 1,000 mm

** Depending on the enclosure dimensions

Table of compatibility of a combined code and accessories



Combined code	Enclosure dimensions, mm			Front door	Rear door	Partition wall between combined enclosures
	height	width	depth			
R5IT2466GS	24U	600	600	glass	solid	X
R5IT2466PF			800	perforated	perforated	
R5IT2468GS			1,000	glass	solid	
R5IT2468PF		800	800	perforated	perforated	X
R5IT2461GS			1,000	glass	solid	
R5IT2461PF			800	perforated	perforated	
R5IT2488GS		800	800	glass	solid	X
R5IT2488PF			1,000	perforated	perforated	
R5IT2481GS			800	glass	solid	X
R5IT2481PF			1,000	perforated	perforated	
R5IT3866GS	38U	600	600	glass	solid	R5DVE1860
R5IT3866PF			800	perforated	perforated	R5DVE1880
R5IT3868GS			1,000	glass	solid	X
R5IT3868PF		800	800	perforated	perforated	R5DVE1880
R5IT3861GS			1,000	glass	solid	X
R5IT3861PF			800	perforated	perforated	X
R5IT3888GS		800	800	glass	solid	R5DVE2060
R5IT3888PF			1,000	perforated	perforated	R5DVE2080
R5IT3881GS			800	glass	solid	X
R5IT3881PF			1,000	perforated	perforated	X
R5IT4266GS	42U	600	600	glass	solid	R5DVE2260
R5IT4266PF			800	perforated	perforated	R5DVE2280
R5IT4268GS			1,000	glass	solid	X
R5IT4268PF		800	800	perforated	perforated	R5DVE2280
R5IT4261GS			1,000	glass	solid	X
R5IT4261PF			800	perforated	perforated	X
R5IT4288GS		800	800	glass	solid	R5DVE2280
R5IT4288PF			1,000	perforated	perforated	X
R5IT4281GS			800	glass	solid	R5DVE2280
R5IT4281PF			1,000	perforated	perforated	X
R5IT4766GS	47U	600	600	glass	solid	R5DVE2260
R5IT4766PF			800	perforated	perforated	R5DVE2280
R5IT4768GS			1,000	glass	solid	X
R5IT4768PF		800	800	perforated	perforated	R5DVE2280
R5IT4761GS			1,000	glass	solid	X
R5IT4761PF			800	perforated	perforated	X
R5IT4788GS		800	800	glass	solid	R5DVE2280
R5IT4788PF			1,000	perforated	perforated	X
R5IT4781GS			800	glass	solid	R5DVE2280
R5IT4781PF			1,000	perforated	perforated	X

Accessories for enclosures

Enclosure combination kit

Seismic kit

Retainer for pedestal attachment on the floor

Limit switch (door)

Lighting





Codes of compatible elements								
ceiling fan	pedestal	shelves			panel with a brush gland	blank panel for cover	wide side rail	angle for heavy equipment
		fixed	sliding	adjustable				
R5VSIT6002F / R5VSIT6004F/ R5VSIT6004FT	R5ZEIT661	R5RCIT60	R5REIT6860	R5RERIT810	R5FSIT600	R5FCIT600	R5PDL600	*
	R5ZEIT681	R5RFCIT80	R5REIT6880				R5PDL800	R5GFITC800
	R5ZEIT610	R5RFCIT100	R5REIT68100				R5PDL1000	R5GFITC1000
R5VSIT8003F / R5VSIT8006F / R5VSIT8006FT / R5VSIT8009FT	R5ZEIT881	R5RFCIT80	R5REIT6880	R5RERIT810	R5FSIT800	R5FCIT800	R5PDL800	R5GFITC800
	R5ZEIT810	R5RFCIT100	R5REIT68100				R5PDL1000	R5GFITC1000
R5VSIT6002F / R5VSIT6004F/ R5VSIT6004FT	R5ZEIT661	R5RCIT60	R5REIT6860	R5RERIT810	R5FSIT600	R5FCIT600	R5PDL600	*
	R5ZEIT681	R5RFCIT80	R5REIT6880				R5PDL800	R5GFITC800
	R5ZEIT610	R5RFCIT100	R5REIT68100				R5PDL1000	R5GFITC1000
R5VSIT8003F / R5VSIT8006F / R5VSIT8006FT / R5VSIT8009FT	R5ZEIT881	R5RFCIT80	R5REIT6880	R5RERIT810	R5FSIT800	R5FCIT800	R5PDL800	R5GFITC800
	R5ZEIT810	R5RFCIT100	R5REIT68100				R5PDL1000	R5GFITC1000
R5VSIT6002F / R5VSIT6004F/ R5VSIT6004FT	R5ZEIT661	R5RCIT60	R5REIT6860	R5RERIT810	R5FSIT600	R5FCIT600	R5PDL600	*
	R5ZEIT681	R5RFCIT80	R5REIT6880				R5PDL800	R5GFITC800
	R5ZEIT610	R5RFCIT100	R5REIT68100				R5PDL1000	R5GFITC1000
R5VSIT8003F / R5VSIT8006F / R5VSIT8006FT / R5VSIT8009FT	R5ZEIT881	R5RFCIT80	R5REIT6880	R5RERIT810	R5FSIT800	R5FCIT800	R5PDL800	R5GFITC800
	R5ZEIT810	R5RFCIT100	R5REIT68100				R5PDL1000	R5GFITC1000
R5VSIT6002F / R5VSIT6004F/ R5VSIT6004FT	R5ZEIT661	R5RCIT60	R5REIT6860	R5RERIT810	R5FSIT600	R5FCIT600	R5PDL600	R5GFITC600*
	R5ZEIT681	R5RFCIT80	R5REIT6880				R5PDL800	R5GFITC800
	R5ZEIT610	R5RFCIT100	R5REIT68100				R5PDL1000	R5GFITC1000
R5VSIT8003F / R5VSIT8006F / R5VSIT8006FT / R5VSIT8009FT	R5ZEIT881	R5RFCIT80	R5REIT6880	R5RERIT810	R5FSIT800	R5FCIT800	R5PDL800	R5GFITC800
	R5ZEIT810	R5RFCIT100	R5REIT68100				R5PDL1000	R5GFITC1000

* will be available soon

Thermostats



Page 228

Accessories



Page 158

19" power distribution unit



Page 160

Uninterruptible power supply unit



Page 180

Kit: cover and base



Material:

- steel with thickness of 1.5 mm, RAL 7011 (dark-gray) or RAL 9005 (black) powder coating.

Distinctive features:

- roof is delivered with perforation for natural ventilation of the enclosure or with a flange for cable gland and fan panel.

Scope of supply:

- bottom, cover, elements for cable gland arrangement, and mounting accessories.

Drawings:

- see on the disk.

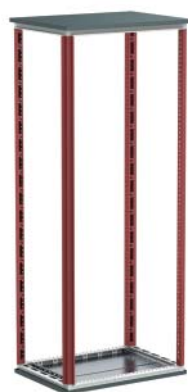
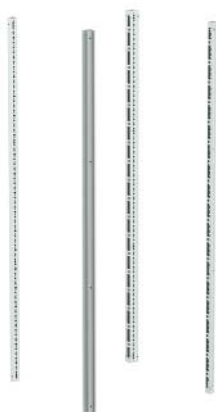
Enclosure dimensions, mm		Code			Color
width	depth	kit: cover and base	kit: cover with a flange and base	kit: perforated cover and base	
600	600	R5KTB66	R5KTB66FIT	x	dark-gray
		R5KTB66B	R5KTB66FITB	x	black
600	800	R5KTB68	R5KTB68FIT	R5KTB68H50IT	dark-gray
		R5KTB68B	R5KTB68FITB	R5KTB68H50ITB	black
	1,000	R5KTB610	R5KTB610FIT	R5KTB610H50IT	dark-gray
		R5KTB610B	R5KTB610FITB	R5KTB610H50ITB	black
800	800	R5KTB88	R5KTB88FIT	R5KTB88H50IT	dark-gray
		R5KTB88B	R5KTB88FITB	R5KTB88H50ITB	black
	1,000	R5KTB810	R5KTB810FIT	R5KTB810H50IT	dark-gray
		R5KTB810B	R5KTB810FITB	R5KTB810H50ITB	black

Cover configurator

Cover	Number of U for installation
R5KTB66FIT	2*
R5KTB68FIT	3*
R5KTB610FIT	4*
R5KTB88FIT	3*
R5KTB810FIT	4*
Fans	Number of occupied U
R5VSIT6002F	1*
R5VSIT6004F	2*
R5VSIT6004FT	2*
R5VSIT6006FT	3*
R5VSIT8003F	1*
R5VSIT8006F	2*
R5VSIT8006FT	2*
R5VSIT8009FT	3*
Plug	Number of occupied U
R5FCIT600	1*
R5FCIT800	1*
Cable gland	Number of occupied U
R5FSIT600	1*
R5FSIT800	1*

* UNIT of the ceiling panel

Vertical rack kit


Purpose:

- basic enclosure frame elements.

Material:

- steel with thickness of 1.5 mm, RAL 7035 or RAL 9005 powder coating.

Distinctive features:

- profile structure has 6 stiffening plates ensuring high strength and load bearing capacity of racks (1,500 kg per enclosure assembly);
- racks have standard perforation with pitch of 25 mm.

Scope of supply:

- 4 racks without mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions		Color is gray	Color is black
height, U	height, mm		
24	1,200	R5KMN12	R5KMN12B
38	1,800	R5KMN18	R5KMN18B
42	2,000	R5KMN20	R5KMN20B
47	2,200	R5KMN22	R5KMN22B

Vertical plug


Purpose:

- airflow arrangement.

Material:

- steel with thickness of 1.5 mm, RAL7035 or RAL9005 powder coating.

Distinctive features:

- profile structure has a stiffening plate ensuring high strength and load bearing capacity of additional side units.

Scope of supply:

- 2 vertical plugs with mounting accessories.

Drawings:

- see on the disk.

Plug dimensions, height, mm	Height, U	Color is gray	Color is black
1,200	24	R5VRK24	R5VRK24B
1,800	38	R5VRK38	R5VRK38B
2,000	42	R5VRK42	R5VRK42B
2,200	47	R5VRK47	R5VRK47B
1,200	24	R5VRU24	R5VRU24B
1,800	38	R5VRU38	R5VRU38B
2,000	42	R5VRU42	R5VRU42B
2,200	47	R5VRU47	R5VRU47B

Enclosure combination kit


Purpose:

- combination of enclosures.

Material:

- metal.

Scope of supply:

- 8 connectors, seal, mounting accessories.

Drawing:

- see on the disk.

Description	Code
Enclosure combination kit	R5KE65

Mounting kit for installation of 19" racks into enclosures with width of 800 mm



Purpose:

- installation of 19" C and L-profiles into enclosures with width of 800 mm.

Material:

- galvanized steel with thickness of 2.5 mm.

Distinctive features:

- installed into enclosures with width of 800 mm.

Scope of supply:

- 4 fastening elements, mounting accessories.

Description	Code
Mounting kit for installation of 19" racks into enclosures with width of 800 mm	R5MCRE01IT

Brackets for attachment of 19" racks to R5PDL**



Purpose:

- additional attachment for 19" C and L-profiles in enclosures with width of 800 mm. Prevents profile twisting under non-uniform loads.

Material:

- galvanized steel with thickness of 2.5 mm.

Distinctive features:

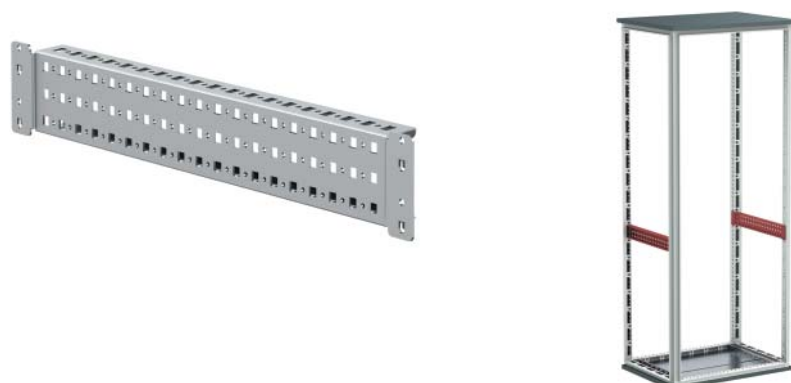
- installed into enclosures with width of 800 mm;
- bracket installation shall be carried out using R5PDL rail**.

Scope of supply:

- 2 brackets, mounting accessories.

Description	Code
Brackets for attachment of 19" racks to R5PDL rails**	R5MCRE02IT

Wide side rail



Purpose:

- assembly of universal structures.

Material:

- galvanized steel with thickness of 1.5 mm.

Distinctive features:

- it has three mounting planes and perforation with pitch of 25 mm;
- installed along enclosure depth.

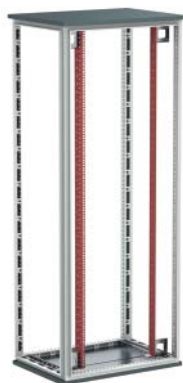
Scope of supply:

- 4 rails, mounting accessories.

Enclosure depth, mm	Maximum static load, kg*	Code
600	200	R5PDL600
800	170	R5PDL800
1,000	140	R5PDL1000

* The load is distributed uniformly on 2 parallel installed rails

Vertical C-profile for equipment with size of 19"



Purpose:

- mounting profile for installation of equipment with size of 19" .

Material:

- galvanized steel with thickness of 1.8 mm.

Distinctive features:

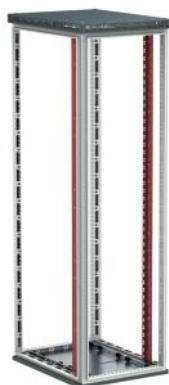
- R5PDL rails shall be applied to install the profile into the enclosure** (page 148);
- R5MCRE01IT additional accessory shall be applied to install the profile into enclosure with width of 800 mm.

Scope of supply:

- 2 vertical profiles, mounting accessories.

Height, U	Enclosure height, mm	Code
24	1,200	R5MCRE12ITC
32	1,600	R5MCRE16ITC
38	1,800	R5MCRE18ITC
42	2,000	R5MCRE20ITC
47	2,200	R5MCRE22ITC

Vertical L-profile for equipment with size of 19"



Purpose:

- mounting profile for installation of equipment with size of 19" .

Material:

- galvanized steel with thickness of 1.8 mm.

Distinctive features:

- R5PDL rails shall be applied to install the profile into the enclosure** (page 148);
- R5MCRE01IT additional accessory shall be applied to install the profile into enclosure with width of 800 mm.

Scope of supply:

- 2 vertical profiles, mounting accessories.

Height, U	Enclosure height, mm	Code
24	1,200	R5MCRE12ITL
32	1,600	R5MCRE16ITL
38	1,800	R5MCRE18ITL
42	2,000	R5MCRE20ITL
47	2,200	R5MCRE22ITL

Door with tinted glass


Purpose:

- restriction of access to equipment installed.

Material:

- galvanized steel with thickness of 2 mm, RAL 7035 or RAL 9005 powder coating;
- shaded safety glass with thickness of 4 mm.

Distinctive features:

- has a seal on the inside perimeter;
- complete with R5CE270 twist handle.

Scope of supply:

- door, mounting accessories.

Drawings:

- see on the disk.

Enclosure dimensions			Color is gray	Color is black
height, U	height, mm	width, mm		
24	1,200	600	R5ITCPTED1260	R5ITCPTED1260B
		800	R5ITCPTED1280	R5ITCPTED1280B
38	1,800	600	R5ITCPTED1860	R5ITCPTED1860B
		800	R5ITCPTED1880	R5ITCPTED1880B
42	2,000	600	R5ITCPTED2060	R5ITCPTED2060B
		800	R5ITCPTED2080	R5ITCPTED2080B
47	2,200	600	R5ITCPTED2260	R5ITCPTED2260B
		800	R5ITCPTED2280	R5ITCPTED2280B

Perforated door


Purpose:

- restriction of access to equipment installed.

Material:

- steel with thickness of 2 mm, RAL 7035 or RAL 9005 powder coating.

Distinctive features:

- perforation;
- complete with an internal reinforcing frame;
- has a seal on the inside perimeter;
- complete with R5CE270 twist handle.

Drawings:

- see on the disk.

Enclosure dimensions			Color is gray	Color is black
height, U	height, mm	width, mm		
24	1,200	600	R5ITCPRMM1260	R5ITCPRMM1260B
		800	R5ITCPRMM1280	R5ITCPRMM1280B
38	1,800	600	R5ITCPRMM1860	R5ITCPRMM1860B
		800	R5ITCPRMM1880	R5ITCPRMM1880B
42	2,000	600	R5ITCPRMM2060	R5ITCPRMM2060B
		800	R5ITCPRMM2080	R5ITCPRMM2080B
47	2,200	600	R5ITCPRMM2260	R5ITCPRMM2260B
		800	R5ITCPRMM2280	R5ITCPRMM2280B

Solid door



Purpose:

- restriction of access to equipment installed in the shell.

Material:

- steel with thickness of 2 mm, RAL 7035 or RAL 9005 powder coating.

Distinctive features:

- complete with an internal reinforcing frame;
- has a seal on the inside perimeter;
- complete with R5CE270 twist handle.

Enclosure dimensions			Color is gray	Color is black
height, U	height, mm	width, mm		
24	1,200	600	R5ITCPE1260	R5ITCPE1260B
		800	R5ITCPE1280	R5ITCPE1280B
38	1,800	600	R5ITCPE1860	R5ITCPE1860B
		800	R5ITCPE1880	R5ITCPE1880B
42	2,000	600	R5ITCPE2060	R5ITCPE2060B
		800	R5ITCPE2080	R5ITCPE2080B
47	2,200	600	R5ITCPE2260	R5ITCPE2260B
		800	R5ITCPE2280	R5ITCPE2280B

Side panels with a lock



Purpose:

- restriction of access to equipment installed in the shell.

Material:

- steel with thickness of 1.5 mm, RAL 7035 or RAL 9005 powder coating.

Distinctive features:

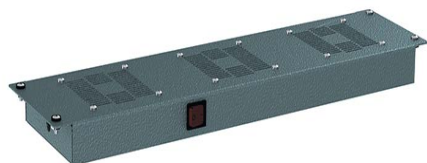
- they have a seal on the inside perimeter;
- they have 3 locks for restriction of access to the enclosure content.

Scope of supply:

- two side panels, mounting accessories.

Enclosure dimensions			Color is gray	Color is black
height, U	height, mm	width, mm		
24	1,200	600	R5ITCPELK1260	R5ITCPELK1260B
		800	R5ITCPELK1280	R5ITCPELK1280B
		1,000	R5ITCPELK12100	R5ITCPELK12100B
38	1,800	600	R5ITCPELK1860	R5ITCPELK1860B
		800	R5ITCPELK1880	R5ITCPELK1880B
		1,000	R5ITCPELK18100	R5ITCPELK18100B
42	2,000	600	R5ITCPELK2060	R5ITCPELK2060B
		800	R5ITCPELK2080	R5ITCPELK2080B
		1,000	R5ITCPELK20100	R5ITCPELK20100B
47	2,200	600	R5ITCPELK2260	R5ITCPELK2260B
		800	R5ITCPELK2280	R5ITCPELK2280B
		1,000	R5ITCPELK22100	R5ITCPELK22100B

Ceiling fan panel



Purpose:

- forced ventilation of equipment within the enclosure.

Material:

- door is made of galvanized steel with thickness of 1.5 mm, RAL 7011 or RAL 9005 powder coating.

Distinctive features:

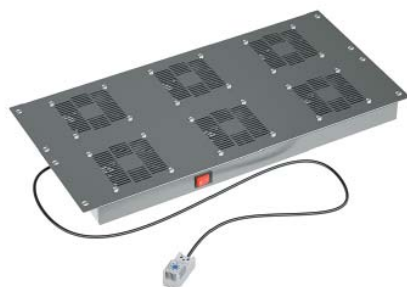
- used for installation on cover with a flange (page 146);
- rated voltage is 220–240 V;
- rated current is 0.3–0.9 A;
- power demand is 44–132 W.

Scope of supply:

- fan panel with a switch, cable with electrical connector, mounting accessories.

Enclosure width, mm	Number of fans	Color is gray	Color is black	Number of occupied units
600	2	R5VSIT6002F	R5VSIT6002FB	1U*
	4	R5VSIT6004F	R5VSIT6004FB	2U*
800	3	R5VSIT8003F	R5VSIT8003FB	3U*
	6	R5VSIT8006F	R5VSIT8006FB	4U*

Fan panel with a thermostat



Purpose:

- forced ventilation of equipment within the enclosure.

Material:

- galvanized steel with thickness of 1.5 mm, RAL 7011 or RAL 9005 powder coating.

Distinctive features:

- used for installation on the cover with a flange (page 146);
- rated voltage is 220–240 V;
- rated current is 0.6–1.3 A;
- power demand is 88–198 W.

Scope of supply:

- fan panel with a switch and IEC socket, cable with electrical connector, Schuko, thermostat, mounting accessories.

Enclosure width, mm	Number of fans	Color is gray	Color is black	Number of occupied Units
600	4	R5VSIT6004FT	R5VSIT6004FTB	2*
800	6	R5VSIT8006FT	R5VSIT8006FTB	2*
	9	R5VSIT8009FT	R5VSIT8009FTB	3*
Enclosure width, mm	Number of fans	Color is gray	Color is black	Number of occupied Units
19"	4	R519VSIT4FT	R519VSIT4FTB	1
19"	6	R519VSIT6FT	R519VSIT6FTB	1
19"	9	R519VSIT9FT	R519VSIT9FTB	1

Technical characteristics of the fan

Model	ITEM	Bearing	Rated voltage	Frequency, Hz	Power current	Power demand	Speed in revolutions per min	Airflow	Static pressure	Noise	Weight
DP200A	2123XBT.GN	ball	220-240	50/60	0.14/0.12	22/21	2850/3150	97/117	0.34/0.39	45/50	550

Selection of a fan module for cover

Width, mm	Depth, mm	Fan can be installed		
600	600	R5VSIT6002F	R5VSIT6004F/T	
	800	R5VSIT6002F	R5VSIT6004F/T	R5VSIT6006FT
	1,000	R5VSIT6002F	R5VSIT6004F/T	R5VSIT6006FT
800	800	R5VSIT8003F	R5VSIT8006F/T	
	1,000	R5VSIT8003F	R5VSIT8006F/T	R5VSIT8009FT

Technical characteristics of fan modules

ART	Air flow rate, m ³ /h	Current, not more than, A	Power consumption, W	Possible heat extraction, kW
R5VSIT6002F	214	0.26	35	0.35
R5VSIT6004F/T	428	0.39	55	0.55
R5VSIT8003F	321	0.52	78	0.78
R5VSIT8006F/T	642	0.78	110	1.1
R5VSIT8009FT	963	1.17	140	1.4

* UNIT of the ceiling panel

Vanity panel for cover with a flange



Purpose:

- covers unused mounting seats in the cover with a flange.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7011 or RAL 9005.

Distinctive features:

- mounted in the cover with a flange;
- height of 1U for the enclosure width of 600 and 800 mm.

Scope of supply:

- vanity panel, mounting accessories.

Cover width, mm	Color is dark-gray	Color is black
600	R5FCIT600	R5FCIT600B
800	R5FCIT800	R5FCIT800B

Panel with a brush cable gland for the cover with a flange



Purpose:

- cable entry.

Material:

- steel, RAL 7011 or RAL 9005 powder coating.

Distinctive features:

- securely protects equipment installed into the enclosure from dirt and dust;
- mounted in the cover with a flange.

Scope of supply:

- cable gland, mounting accessories.

Cover width, mm	Color is dark-gray	Color is black
600	R5FSIT600	R5FSIT600B
800	R5FSIT800	R5FSIT800B

Perforated pedestal with a hole for a brush gland



Purpose:

- for ease of enclosure installation and cable entry.

Material:

- steel with thickness of 1.5 mm, RAL 7011 or RAL 9005 powder coating.

Distinctive features:

- pedestal is dismountable, it consists of front, rear and side panels, and 4 support angles;
- to provide natural ventilation perforation is made at the front;
- ordered with one code.

Scope of supply:

- brush filter;
- pedestal components, mounting accessories.

Enclosure dimensions, mm		Color is dark-gray	Color is black
width	depth		
600	600	R5ZEIT661	R5ZEIT661B
	800	R5ZEIT681	R5ZEIT681B
	1,000	R5ZEIT610	R5ZEIT610B
800	800	R5ZEIT881	R5ZEIT881B
	1,000	R5ZEIT810	R5ZEIT810B

Accessories for enclosure base

Adjustable feet



Purpose:

- enclosure leveling.

Material:

- M12 screws, plastic supports.

Distinctive features:

- full foot height is from 70 to 125 mm;
- maximum static load on one foot is 400 kg.

Scope of supply:

- 4 feet, mounting accessories.

Description	Full foot height, mm	Code
Height-adjustable feet (up to 50 mm)	70	R5A45
Height-adjustable feet (from 50 to 100 mm)	125	R5A53

Roller installation profile



Purpose:

- facilitation of transportation.

Material:

- steel with thickness of 2 mm, RAL 7011 powder coating.

Scope of supply:

- 2 profiles, mounting accessories.

Enclosure depth, mm	Code
600	R5A600
800	R5A800
1,000	R5A1000

Dual-wheel rollers



Purpose:

- facilitation of transportation.

Distinctive features:

- 2 rollers from the kit are equipped with braking mechanisms;
- maximum static load on one roller comprises 100 kg.

Scope of supply:

- 4 rollers, mounting accessories.

Description	Code
Roller kit	R5A41

Cable entry seal



Purpose:

- arrangement of cable entry and provision of the high IP protection degree.

Material:

- foamed polyurethane.

Distinctive features:

- section of 25x25 mm;
- installed on a standard cable gland that is provided in each "cover-bottom" kit by default.

Scope of supply:

- seal.

Enclosure width, mm	Code
600	R5FPC600
800	R5FPC800

Angle for installation

Angle for heavy equipment installation


Purpose:

- angles allow for uniform distribution of load generated by equipment with front attachment only on the enclosure guiding ways.

Material:

- galvanized steel with thickness of 2.5 mm.

Distinctive features:

- used for installation on L and C-profiles (page 149);
- maximum static load is 150 kg;
- height is 0U (attached on the side, no units are occupied).

Scope of supply:

- angle, mounting accessories.

Enclosure depth, mm	Code for attachment to C-profile	Code for attachment to L-profile
600	R5GFITC600	R5GFITL600
800	R5GFITC800	R5GFITL800
1,000	R5GFITC1000	R5GFITL1000

Adjustable angle for heavy equipment installation


Purpose:

- angles allow for uniform distribution of load generated by equipment with front attachment only on the enclosure guiding ways.

Material:

- galvanized steel with thickness of 2.5 mm.

Distinctive features:

- installed on L-profile;
- depth adjustable;
- maximum static load is 100 kg;
- height is 1U.

Scope of supply:

- angle, mounting accessories.

Enclosure depth, mm	Code
800	R5GRIT800
1,000	R5GRIT1000

Guiding ways for equipment with size of 19"


Purpose:

- installation of equipment with size of 19".

Material:

- steel with thickness of 2 mm, powder coating RAL 7035.

Distinctive features:

- height is 1U.

Scope of supply:

- 2 guiding ways, mounting accessories

Description	Code
Guiding ways for equipment with size of 19"	R5SCRK01

Shelves

Fixed perforated


Purpose:

- placement of heavy equipment.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035 or RAL 9005.

Distinctive features:

- perforated base;
- maximum static load is 150 kg;
- height is 1U.

Scope of supply:

- shelf, mounting accessories.

Profile type	Height, U	Enclosure depth, mm	Color is gray	Color is black
C	1	600	R5RFCIT60	R5RFCIT60B
	1	800	R5RFCIT80	R5RFCIT80B
	1	1,000	R5RFCIT100	R5RFCIT100B
L	1	600	R5RFLIT60	R5RFLIT60B
	1	800	R5RFLIT80	R5RFLIT80B
	1	1,000	R5RFLIT100	R5RFLIT100B

Depth adjustable


Purpose:

- placement of light equipment.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035 or RAL 9005.

Distinctive features:

- perforated base;
- can be adjusted for depth from 440 to 740 mm;
- maximum static load is 100 kg;
- height is 1U.

Scope of supply:

- shelf, mounting accessories.

Height, U	Depth, mm	Color is gray	Color is black
1	600-800-1000	R5RERIT810	R5RERIT810B

Sliding perforated


Purpose:

- placement of equipment.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035 or RAL 9005.

Distinctive features:

- access to equipment is facilitated by a pop-out mechanism;
- maximum static load is 60 kg;
- height is 1U;
- depth is 500 and 700 mm.

Scope of supply:

- shelf, mounting accessories.

Height, U	Enclosure depth, mm	Color is gray	Color is black
1	600	R5REIT6860	R5REIT6860B
	800	R5REIT6880	R5REIT6880B
	1,000	R5REIT68100	R5REIT68100B

Console-based


Purpose:

- placement of light equipment.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035 or RAL 9005.

Distinctive features:

- perforated base;
- maximum static load is 30 kg;
- height is 2U;
- depth is 250 and 400 mm.

Scope of supply:

- shelf, mounting accessories.

Height, U	Depth, mm	Color is gray	Color is black
2	250	R5RFIT250	R5RFIT250B
	400	R5RFIT400	R5RFIT400B

Sliding keyboard tray


Purpose:

- placement of keyboard, small tools and instructions.

Material:

- steel with thickness of 1.5 mm, RAL 7035 or RAL 9005 powder coating.

Distinctive features:

- access to equipment is facilitated by a pop-out mechanism;
- maximum static load is 30 kg;
- height is 2U;
- depth is 300 mm.

Scope of supply:

- shelf, mounting accessories.

Height, U	Depth, mm	Color is gray	Color is black
2	300	R5REIT30	R5REIT30B

2U sliding drawer with key


Purpose:

- installation on 19" guiding ways.

Material:

- steel with thickness of 1.2 mm, RAL 7035 or RAL 9005 powder coating.

Distinctive features:

- height is 2U;
- with lock cylinder for a customized key.

Scope of supply:

- sliding drawer, key, mounting accessories.

Height, U	Color is gray RAL 7035	Color is black RAL 9005
2	R5ITCPD2HE	R5ITCPD2HEB

Cable arrangement

19" cable gland with a brush strip



Purpose:

- for cable entry.

Material:

- of base is galvanized steel with thickness of 2 mm, RAL 7035 or RAL 9005 powder coating.

Distinctive features:

- makes it possible to securely protect equipment installed into the enclosure from dirt and dust;
- height is 1U.

Scope of supply:

- cable gland, mounting accessories.

Height, U	Color is gray	Color is black
1	R5SPZ191HE	R5SPZ191HEB

19" cable organizer



Purpose:

- cable laying.

Material:

- of base: galvanized steel with thickness of 2 mm, RAL 7035 or RAL 9005 powder coating;
- rings: polyamide.

Distinctive features:

- for horizontal distribution of switching cables;
- ring sizes: 76x36;
- height is 1U.

Scope of supply:

- cable organizer, mounting accessories.

Height, U	Color is gray	Color is black
1	R5PC191HE	R5PC191HEB

19" cable organizer with feedthrough holes



Purpose:

- cable laying.

Material:

- base: galvanized steel with thickness of 2 mm, RAL 7035 or RAL 9005 powder coating.
- rings: polyamide.

Distinctive features:

- facilitates frontal laying of cables at the same time allowing their passage for connection with devices at the rear of the rack;
- height is 1U.

Scope of supply:

- cable organizer, mounting accessories.

Height, U	Color is gray	Color is black
1	R5PCF191HE	R5PCF191HEB

Single organizer


Purpose:

- secure attachment of many wires.

Material:

- plastic.

Scope of supply

- plastic ring – 6 pcs;
- mounting accessories.

Name	Package, pcs	Code
CL 40x40 cable holder	6	R5ITCL4040
CL 40x60 cable holder	6	R5ITCL4060
CL 60x60 cable holder	6	R5ITCL6060

Fastener kit for 19" guiding ways


Purpose:

- installation of equipment with size of 19".

Scope of supply:

- R5CNS20 – 20 M6 screws, 20 plastic washers, 20 M6 cage nuts;
- R5CNS50 – 50 M6 screws, 50 plastic washers, 50 M6 cage nuts;

* R5CNS12R has been discontinued.

Description	Q-ty, pcs	Code
Kit: screw, washer, nut	20	R5CNS20
Kit: screw, washer, nut	50	R5CNS50

19" solid panel


Purpose:

- covering free space within 19" plane

Material:

- steel with thickness of 2 mm.

Scope of supply:

- 1 panel, mounting accessories.

Height, U	Panel height, mm	Color is gray	Color is black
1	43.6	R5PRK1	R5PRK1B
2	88	R5PRK2	R5PRK2B
3	132.5	R5PRK3	R5PRK3B
4	177	R5PRK4	R5PRK4B
5	221.5	R5PRK5	R5PRK5B
6	266	R5PRK6	R5PRK6B
7	310.5	R5PRK7	R5PRK7B
8	355	R5PRK8	R5PRK8B
9	399	R5PRK9	R5PRK9B
10	443.5	R5PRK10	R5PRK10B
11	488	R5PRK11	R5PRK11B
12	532.5	R5PRK12	R5PRK12B

Power distribution unit for 19" enclosures, 8 Schuko sockets


Purpose:

- power distribution.

Distinctive features:

- compatible with all ranges of equipment with size of 19";
- rated voltage is 220–250 V;
- maximum distribution capacity is 16 A;
- protection degree is IP20;
- height is 1U.

Scope of supply:

- 2.0 m power cable with grounding with Schuko socket, fastener.

Installation method:

- horizontal on 19 inch structures.

Height	Socket	Q-ty	Power supply	Code
Horizontal is 1U	SCHUKO	8 x SCHUKO	16 A	R519SH8

Power distribution unit for 19" enclosures, 8 Schuko sockets and a switch


Purpose:

- power distribution.

Distinctive features:

- compatible with all ranges of equipment with size of 19";
- switch with backlight;
- rated voltage is 220–250 V;
- maximum distribution capacity is 10 A;
- protection degree is IP20;
- height is 1U.

Scope of supply:

- 2.0 m power cable with grounding with IEC 60320 C14 socket, fastener.

Installation method:

- horizontal on 19 inch structures.

Height	Socket	Q-ty	Power supply	Code
Horizontal is 1U	IEC 60320 C14	8 x SCHUKO	10 A	R519SH8OPSHC14

Power distribution unit for 19" enclosures, 6 Schuko sockets and overvoltage protection with indication


Purpose:

- power distribution.

Distinctive features:

- compatible with all ranges of equipment with size of 19";
- overvoltage protector;
- ground check indicator;
- overvoltage indicator;
- power supply indicator;
- switch with backlight;
- rated voltage is 220–250 V;
- maximum distribution capacity is 16 A;
- protection degree is IP20;
- height is 1U.

Scope of supply:

- 2.0 m power cable with grounding with Schuko socket, fastener.

Installation method:

- horizontal on 19 inch structures.

Height	Socket	Q-ty	Power supply	Code
Horizontal is 1U	SCHUKO	6 x SCHUKO	16 A	R519SH6OPSHSP

Power distribution unit for 19" enclosures, 8 IEC 60320 C13 sockets with an amperemeter


Purpose:

- power distribution.

Distinctive features:

- compatible with all ranges of equipment with size of 19";
- digital alternating current amperemeter;
- rated voltage is 220–250 V;
- maximum distribution capacity is 10 A;
- protection degree is IP20;
- height is 1U.

Scope of supply:

- 2.0 m power cable with grounding with IEC 60320 C14 socket, fastener.

Installation method:

- horizontal on 19 inch structures.

Height	Socket	Q-ty	Power supply	Code
Horizontal is 1U	IEC 60320 C14	8 x IEC 60320 C13	10 A	R519IEC8AMC14

Power distribution unit for 19" enclosures, 8 IEC 60320 C13 sockets with 1P circuit breaker


Purpose:

- power distribution.

Distinctive features:

- compatible with all ranges of equipment with size of 19";
- 1P circuit breaker;
- rated voltage is 220–250 V;
- maximum distribution capacity is 10 A;
- protection degree is IP20;
- height is 1U.

Scope of supply:

- 2 m power cable with grounding with IEC 60320 C14 socket, fastener.

Installation method:

- horizontal on 19 inch structures.

Height	Socket	Q-ty	Power supply	Code
Horizontal is 1U	IEC 60320 C14	8 x IEC 60320 C13	10 A	R519IEC8CBC14

Power distribution unit for 19" enclosures, 6 Schuko sockets and 2P circuit breaker


Purpose:

- power distribution.

Distinctive features:

- compatible with all ranges of equipment with size of 19";
- 2P circuit breaker;
- rated voltage is 220–250 V; 50/60 Hz;
- rated power is 16 A;
- protection degree is IP20.

Scope of supply:

- 2.0 m power cable with grounding with Schuko socket, fastener.

Installation method:

- horizontal on 19 inch structures.

Height	Socket	Q-ty	Power supply	Code
Horizontal is 1U	SCHUKO	6 x SCHUKO	16 A	R519SH6CB

Power distribution unit for 19" enclosures, 8 Schuko sockets with an amperemeter


Purpose:

- power distribution.

Distinctive features:

- compatible with all ranges of equipment with size of 19";
- current indicator;
- rated voltage is 220–250 V; 50/60 Hz;
- rated power is 16 A;
- protection degree is IP20.

Scope of supply:

- 2.0 m power cable with grounding with Schuko socket, fastener.

Installation method:

- horizontal on 19 inch structures.

Height	Socket	Q-ty	Power supply	Code
Horizontal is 1U	SCHUKO	8 x SCHUKO	16 A	R519SH8CD

Power distribution unit for 19" enclosures, 6 IEC 603 C20 sockets


Purpose:

- power distribution.

Distinctive features:

- compatible with all ranges of equipment with size of 19";
- rated voltage is 220–250 V; 50/60 Hz;
- rated power is 16 A;
- protection degree is IP20.

Scope of supply:

- 2.0 m power cable with grounding with IEC 60320 C20 socket, fastener.

Installation method:

- horizontal on 19 inch structures.

Height	Socket	Q-ty	Power supply	Code
Horizontal is 1U	IEC 60320 C20	6 x IEC 60320 C19	16 A	R519C146

Vertical power distribution unit, 6 Schuko sockets, 1P circuit breaker with an amperemeter


Purpose:

- power distribution.

Distinctive features:

- 1P circuit breaker;
- current indicator;
- rated voltage is 220–250 V; 50/60 Hz;
- rated power is 16 A;
- protection degree is IP20.

Scope of supply:

- 2.0 m power cable with grounding with Schuko socket, fastener.

Installation method:

- vertical, 0U.

Height	Socket	Q-ty	Power supply	Code
Vertical	SCHUKO	6 x SCHUKO	16 A	R5VSH6CBCD

Vertical power distribution unit, 12 IEC60320 C13 sockets, 2P circuit breaker, power-line filter, indication


Purpose:

- power distribution.

Distinctive features:

- power-line filter;
- ground check indicator;
- overvoltage indicator;
- power supply indicator;
- 2P circuit breaker;
- rated voltage is 220–250 V; 50/60 Hz;
- rated power is 10 A;
- protection degree is IP20.

Scope of supply:

- 2.5 m power cable, Schuko electrical connector, fastener.

Installation method:

- vertical, 0U.

Height	Socket	Q-ty	Power supply	Code
Vertical	SCHUKO	12 x SCHUKO	10 A	R5VIEC12CBOP

Vertical power distribution unit, 11 IEC60320 C13 sockets, power-line filter, indication


Purpose:

- power distribution.

Distinctive features:

- power-line filter;
- ground check indicator;
- overvoltage indicator;
- power supply indicator;
- rated voltage is 220–250 V; 50/60 Hz;
- rated power is 10 A;
- protection degree is IP20.

Scope of supply:

- 2.0 m power cable with grounding with IEC 60320 C14 socket, fastener.

Installation method:

- vertical, 0U.

Height	Socket	Q-ty	Power supply	Code
Vertical	IEC 60320 C14	11 x IEC 60320 C13	10 A	R5VIEC11CDOP

Vertical power distribution unit, 10 Schuko sockets, switch, indication


Purpose:

- power distribution.

Distinctive features:

- overvoltage protector;
- current indicator;
- ground check indicator;
- overvoltage indicator;
- rated voltage is 220–250 V; 50/60 Hz;
- switch with backlight;
- rated power is 16 A;
- protection degree is IP20.

Scope of supply:

- 2.0 m power cable with grounding with Schuko socket, fastener.

Installation method:

- vertical, 0U.

Height	Socket	Q-ty	Power supply	Code
Vertical	SCHUKO	10 x SCHUKO	16 A	R5VSH10SWOPAM

Power distribution unit, 12 IEC60320 C19 sockets, power supply indicator, amperemeter, overload protection


Purpose:

- power distribution.

Distinctive features:

- overvoltage protector;
- power supply indicator;
- current indicator;
- rated voltage is 220–250 V; 50/60 Hz;
- rated power is 16 A;
- protection degree is IP20.

Scope of supply:

- 2.0 m power cable with grounding with IEC 60320 C20 socket, fastener.

Installation method:

- vertical, 0U.

Height	Socket	Q-ty	Power supply	Code
Vertical	IEC 60320 C20	12 x IEC 60320 C19	16 A	R5V12PIOPCDC19

Vertical power distribution unit, 12 IEC sockets, power supply indicator


Purpose:

- power distribution.

Distinctive features:

- power supply indicator;
- rated voltage is 220–250 V; 50/60 Hz;
- rated power is 10 A;
- protection degree is IP20.

Scope of supply:

- 2.0 m power cable with grounding with IEC 60320 C20 socket, fastener.

Installation method:

- vertical, 0U.

Height	Socket	Q-ty	Power supply	Code
Vertical	IEC 60320 C20	12 x IEC 60320 C13	16 A	R5V12CBOPCDC19

Vertical power distribution unit, 24 IEC sockets, power supply indicator


Purpose:

- power distribution.

Distinctive features:

- current indicator;
- overload protection;
- rated voltage is 220–250 V; 50/60 Hz;
- rated power is 10 A;
- protection degree is IP20.

Scope of supply:

- 2.0 m power cable with grounding with IEC 60320 C14 socket, fastener.

Installation method:

- vertical, 0U.

Height	Socket	Q-ty	Power supply	Code
Vertical	IEC 60320 C14	10 x IEC 60320 C13	10 A	R5VIEC24PIC14

Power cables


Purpose:

- power cable.

Distinctive features:

- rated voltage is 220–250 V;
- maximum power is 10 A.

Sockets	Length, m	Code
Schuko-IEC320 C13	0.5	R5CORDS305
Schuko-IEC320 C13	1.0	R5CORDS310
Schuko-IEC320 C13	1.8	R5CORDS318
Schuko-IEC320 C13	2.0	R5CORDS320
Schuko-IEC320 C13	3.0	R5CORDS330
Schuko-IEC320 C13	5.0	R5CORDS350


Purpose:

- power cable.

Distinctive features:

- rated voltage is 220–250 V;
- maximum power is 10 A.

Sockets	Length, m	Code
IEC320 C13-IEC320 C14	0.5	R5CORD3405
IEC320 C13-IEC320 C14	1.0	R5CORD3410
IEC320 C13-IEC320 C14	1.8	R5CORD3418
IEC320 C13-IEC320 C14	2.0	R5CORD3420
IEC320 C13-IEC320 C14	3.0	R5CORD3430
IEC320 C13-IEC320 C14	5.0	R5CORD3450



Purpose:

- power cable.

Distinctive features:

- rated voltage is 220–250 V;
- maximum power is 16 A.

Sockets	Length, m	Code
Schuko-IEC320 C19	0.5	R5CORDS905
Schuko-IEC320 C19	1.0	R5CORDS910
Schuko-IEC320 C19	1.8	R5CORDS918
Schuko-IEC320 C19	2.0	R5CORDS920
Schuko-IEC320 C19	3.0	R5CORDS930
Schuko-IEC320 C19	5.0	R5CORDS950



Purpose:

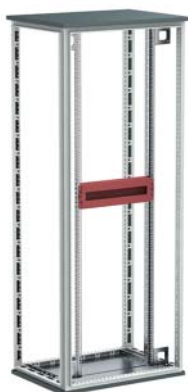
- power cable.

Distinctive features:

- rated voltage is 220–250 V;
- maximum power is 16 A.

Sockets	Length, m	Code
IEC320 C19-IEC320 C20	0.5	R5CORD9005
IEC320 C19-IEC320 C20	1.0	R5CORD9010
IEC320 C19-IEC320 C20	1.8	R5CORD9018
IEC320 C19-IEC320 C20	2.0	R5CORD9020
IEC320 C19-IEC320 C20	3.0	R5CORD9030
IEC320 C19-IEC320 C20	5.0	R5CORD9050

19" modular block with DIN rail, 3U


Purpose:

- installation of modular electrotechnical equipment in 19" guiding ways.

Material:

- steel with thickness of 1.5 mm, powder coating RAL 7035 or RAL 9005.

Distinctive features:

- panel height is 3U;
- number of modules is 22.

Scope of supply:

- modular block, DIN rail, mounting accessories.

Height, U	Color is gray	Color is black
3	R5CMDIT3HE	R5CMDIT3HEB

19" copper grounding bus


Purpose:

- grounding inside the frame.

Material:

- copper with section of 3x20 mm.

Distinctive features:

- output capacity is 200 A.

Dimensions:

- 460x36 mm.

Scope of supply:

- copper bus, insulating washer feet, 4 grounding cables, fastener.

Description	Q-ty in a package, pcs	Code
19" copper grounding bus	1	R5SGB19

Grounding cable kit


Purpose:

- designed for grounding of installed equipment to the enclosure housing.

Distinctive features:

- grounding wires with L=300 mm – 2 pcs, L=400 mm – 1 pcs, L=500 mm – 1 pcs, L=600 mm – 1 pcs, section is 6 mm².

Scope of supply:

- grounding wires– 5 pcs, self-tapping screws – 10 pcs, DIN125 M6 narrow washer – 10 pcs, M6 lock washer – 10 pcs.

Description	Q-ty in a package, pcs	Code
Grounding cable kit	5	R5SGC05

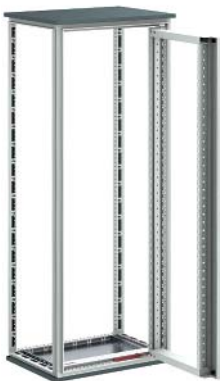
Rotating frame for a wall-mounted enclosure



- Purpose:**
- installation of equipment with size of 19".
- Material:**
- steel with thickness of 1.5 mm, RAL 7035 powder coating.
- Distinctive features:**
- the frame is fitted with two locks;
 - frame opening angle is up to 110°;
 - the frame is installed into enclosures with width of 600 mm and depth of 400 mm;
 - maximum depth of mounted equipment shall be up to 300 mm;
 - the frame can be adjusted for depth, deviation is 40–60 mm;
 - pitch height is 1U.
- Scope of supply:**
- 19" frame, mounting accessories.

Enclosure dimensions			Code
height, U	height, mm	width, mm	
3	400	600	R5TIE460
6	400	600	R5TIE461
9	600	600	R5TIE660
12	800	600	R5TIE860
15	800	600	R5TIE861

19" rotating frame opening angle limiter

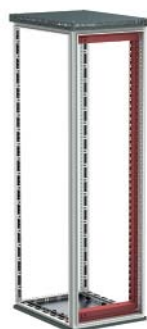


- Purpose:**
- opening angle limitation.
- Material:**
- galvanized steel.
- Distinctive features:**
- opening angle is from 90 to 130°.
- Scope of supply:**
- limiter, mounting accessories.

Opening angle	Code
90–130°	R5AE03

19" frames

Rotating frame for enclosures with width of 800 mm


Purpose:

- installation of equipment with size of 19".

Material:

- frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- cross beam: steel with thickness of 2 mm, RAL 7035.

Distinctive features:

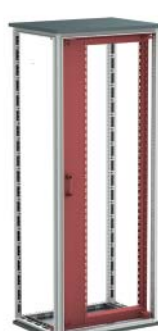
- the frame is fitted with two locks for a key with a double bit of 3 mm;
- frame opening angle is 180°;
- maximum depth of mounted equipment shall be up to 185 mm;
- distance from the main door to the frame is 80 mm;
- load bearing capacity is 110 kg.

Scope of supply:

- frame, framework, mounting accessories.

Enclosure height, U	Frame height, mm	Code
31	1,600	R5TIE1660
35	1,800	R5TIE1860
40	2,000	R5TIE2060
44	2,200	R5TIE2260

Rotating frame for enclosures with width of 800 mm


Purpose:

- installation of equipment with size of 19".

Material:

- frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- cross beam: steel with thickness of 2 mm, RAL 7035.

Distinctive features:

- the frame is fitted with two locks for a key with a double bit of 3 mm;
- frame opening angle is 180°;
- maximum depth of mounted equipment shall be up to 420 mm;
- distance from the main door to the frame is 80 mm;
- load bearing capacity is 120 kg.

Scope of supply:

- frame, framework, mounting accessories.

Enclosure height, U	Frame height, mm	Code
31	1,600	R5TIE1680
35	1,800	R5TIE1880
40	2,000	R5TIE2080
44	2,200	R5TIE2280

Partial rotating frame for enclosures with width of 800 mm


Purpose:

- installation of equipment with size of 19".

Material:

- frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- cross beam: steel with thickness of 2 mm, RAL 7035.

Distinctive features:

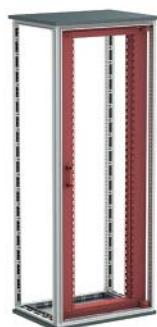
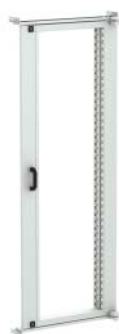
- the frame is fitted with two locks for a key with a double bit of 3 mm;
- frame opening angle is 180°;
- maximum depth of mounted equipment shall be up to 420 mm;
- distance from the main door to the frame is 80 mm;
- load bearing capacity is 3 kg per unit;
- frame installation is carried out using R5PDL rail**;
- pitch height is 1U.

Scope of supply:

- frame, framework, mounting accessories.

Frame height, U	Code
6	R5TIEP6
9	R5TIEP9
12	R5TIEP12
16	R5TIEP16
18	R5TIEP18

Centered rotating frame for enclosures with width of 800 mm



Purpose:

- installation of equipment with size of 19".

Material:

- frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- cross beam: steel with thickness of 2 mm, RAL 7035 powder coating.

Distinctive features:

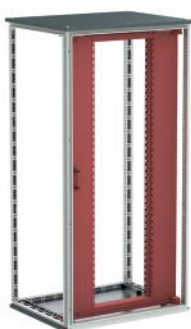
- the frame is fitted with two locks for a key with a double bit of 3 mm;
- frame opening angle is 180°;
- maximum depth of mounted equipment shall be up to 320 mm;
- distance from the main door to the frame is 80 mm;
- load bearing capacity is 120 kg;
- pitch height is 1U.

Scope of supply:

- frame, framework, mounting accessories.

Enclosure height, mm	Frame height, U	Code
1,600	31	R5TIEC1680
1,800	35	R5TIEC1880
2,000	40	R5TIEC2080
2,200	44	R5TIEC2280

Centered rotating frame for enclosures with width of 1,000 mm



Purpose:

- installation of equipment with size of 19".

Material:

- frame: steel with thickness of 1.5 mm, RAL 7035 powder coating;
- cross beam: steel with thickness of 2 mm, RAL 7035 powder coating.

Distinctive features:

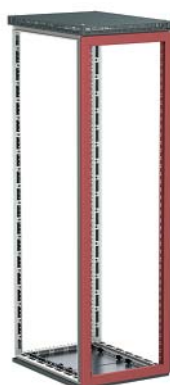
- the frame is fitted with two locks for a key with a double bit of 3 mm;
- frame opening angle is 180°;
- maximum depth of mounted equipment shall be up to 530 mm;
- distance from the main door to the frame is 80 mm;
- load bearing capacity is 100 kg;
- pitch height is 1U.

Scope of supply:

- frame, framework, mounting accessories.

Enclosure height, mm	Frame height, U	Code
1,600	31	R5TIE16100
1,800	35	R5TIE18100
2,000	40	R5TIE20100
2,200	44	R5TIE22100

Frame for equipment installation



Purpose:

- installation of equipment with size of 19".

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- installed instead of main door or rear panel;
- for enclosures with width of 600 mm;
- pitch height is 1U.

Scope of supply:

- frame, mounting accessories.

Enclosure height, mm	Height, U	Code
1,400	28	R5CRK1460
1,600	33	R5CRK1660
1,800	37	R5CRK1860
2,000	42	R5CRK2060
2,200	46	R5CRK2260





Uninterruptible power supplies "RAM batt"

Uninterruptible power supplies types	173
Accessories	190
Software	191
Drawings and overall dimensions	193

Uninterruptible power supplies "RAM batt"

Application

Uninterruptible power supply "RAM batt" is designed for prevention of dangerous situations related to power supply network failures due to short-term and long-term tripping, voltage loss, overvoltage, pulse overcurrent, current distortion and unbalance.

The simplest and the most effective solution for elimination of failures and protection of energy or production process is installation of uninterruptible power supplies (UPS).

Interacting with power system and consumers UPS ensures continuity and quality of power supply for any type of loads and conditions of power system.

UPS use is especially important in the data centers, servers, telecommunications systems, cash desks and lighting systems of supermarkets, in production plants, automation and safety systems, etc.



Supermarkets



Data centers



Shopping and business centers

Basic advantages

High efficiency

Efficiency of "RAM batt" series UPS is more than 96% in "online" mode. It became possible owing to use of new "green" technology in the multilevel inverters.

Low noise level

Use of pulse-width modulation (PWM) technology for fan control minimizes energy consumption and reduces noise ensuring more comfortable labor conditions.

Switch fastness

Improved process of synchronization with the system contributes to maximum reduction of switch and system start-up time as well as energy economy mode increase.

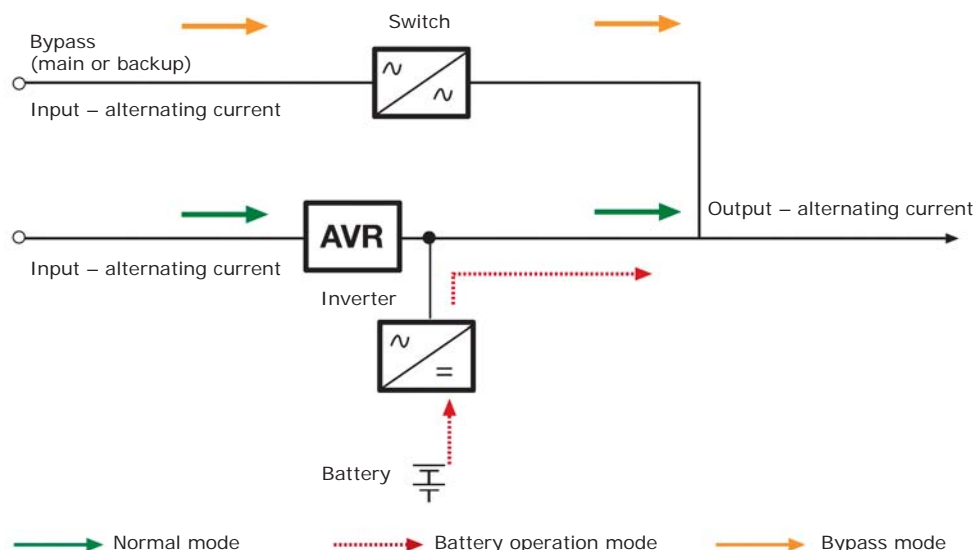
Battery service life increase

UPS battery charging is optimized owing to temperature compensation and its constant condition control.

Uninterruptible power supplies types

Depending on protection level uninterruptible power supplies are divided in two groups: with line-interactive technology (VI) and Online-technology of double conversion (VFI).

Line-interactive UPS (VI)

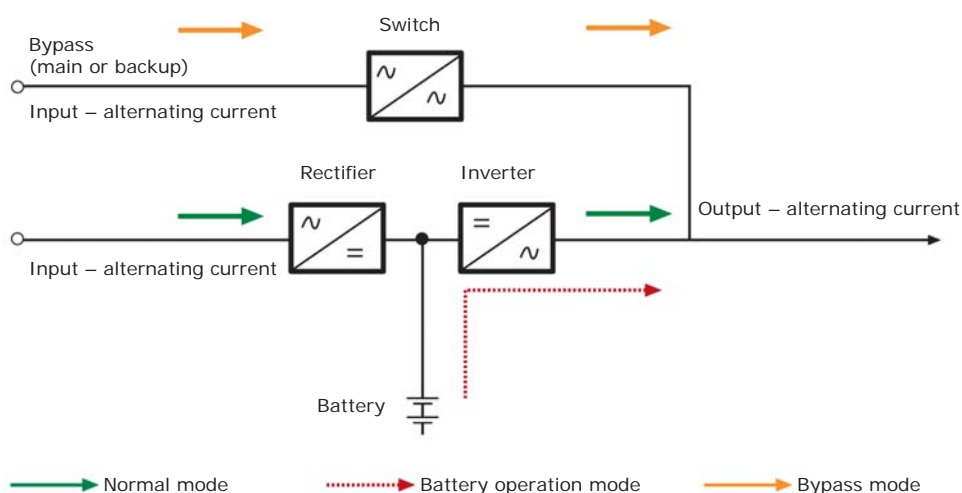


Uninterruptible power supplies with line-interactive technology under normal conditions supply load from system through AVR (automatic voltage regulator) stabilizer.

This device adjusts changes in the system within its adjustment range.

When failures in the system exceed AVR adjustment range, load is switched to power supply of inverter which uses energy accumulated in the batteries. Time required for switch from stabilization mode to power supply of inverter is 5–10 ms that can lead to some problems for sensitive loads for which switch time shall be equal to zero.

"Online" UPS (VFI)



Uninterruptible power supplies with Online-technology of double conversion supply load through inverter and input rectifier with power factor adjuster (PFA) which ensures sinusoidal power consumption.

When the system voltage exceeds the allowable values of rectifier, UPS switches to the mode of operation of the battery which gives energy to inverter for supply of connected loads.

Activation of the battery supply mode is instantaneous (0 ms) ensuring maximum protection for any type of load.

In case of breakdown of rectifier, inverter or excess load UPS starts operating in the mode of bypass which switches electronics off and ensures uninterruptible power of connected consumers. It is possible to switch to bypass in manual way for scheduled/unscheduled maintenance of battery unit or double conversion circuits.

Low-power supplies

"RAM batt" Info and Small series uninterruptible power supplies are primarily designed for personal computers, office workstations, cashpoints in the supermarkets, in (low-power) server rooms and local networks. "RAM batt" Info series UPS are made according to the line-interactive technology, while Small series UPS are made according to Online-technology of double conversion. Small Basic series is designed for vertical floor mounting, Small Convert series is designed for horizontal rack mounting.



Series	Info LED	Small Basic	Small Convert
Power, kVA	0.65 / 0.85 / 1.2 / 1.5 / 2 / 3	1 / 2 / 3	1 / 2 / 3
Technology	line-interactive	Online	
Output waveform	pseudo-sinusoidal	sinusoidal	
Input voltage	single-phase 230 V		
Output voltage	single-phase 230 V		
Automatic bypass	–	●	●
Manual bypass	–	–	–
Dividing transformer	–	–	–
Automatic battery test	–	●	●
Rack mounting	–	–	●
RS232 serial port	–	–	–
USB-port	○	●	●
"Dry" contacts	–	○	○
EPO (emergency power outage)	–	●	●
Economy mode	–	●	●
Backup power supply function	–	–	–
Frequency converter function	–	–	–
LCD display	–	●	●
Software	○	●	●
Autonomy increase ability	–	●	●
AS400 adapter	–	○	○
SNMP network adapter	–	○	○
"Green" technology	–	–	–
Operation mode maintenance	–	–	–

• In series ◦ Optionally

Medium- and high-power supplies

"RAM batt" Solo, Trio and Extra series uninterruptible power supplies are designed for use in server rooms, data centers, industrial plants. Solo MD and Solo MMB series single-phase UPS are designed for floor mounting and rack mounting. "RAM batt" Trio TM series UPS has three-phase input and single-phase output while Trio TT and Extra TT series UPS are completely three-phase.



Series	Solo MD	Solo MMB	Trio TM	Trio TT	Extra TT
Power, kVA	4 / 5 / 6 / 7 / 10 / 12	5 / 6 / 7 / 10 / 12 / 14	10 / 15 / 20	8 / 10 / 12 / 15 / 20 / 30 / 40	60 / 80 / 100 / 125 / 160
Technology	Online				
Output waveform	sinusoidal				
Input voltage	single-phase 230 V		three-phase 400 V		
Output voltage	single-phase 230 V			three-phase 400 V	
Automatic bypass	•	•	•	•	•
Manual bypass	•	•	•	•	•
Dividing transformer	◦	◦	◦	◦	◦
Automatic battery test	•	•	•	•	•
Rack mounting	•	–	•	–	–
RS232 serial port	•	•	•	•	•
USB-port	◦	◦	◦	◦	◦
"Dry" contacts	◦	◦	◦	◦	◦
EPO (emergency power outage)	•	•	•	•	•
Economy mode	•	•	•	•	•
Backup power supply function	•	•	•	•	•
Frequency converter function	•	•	•	•	•
LCD display	•	•	•	•	•
Software	•	•	•	•	•
Autonomy increase ability	•	•	•	•	•
AS400 adapter	◦	◦	◦	◦	◦
SNMP network adapter	◦	◦	◦	◦	◦
"Green" technology	•	•	•	•	•
Operation mode maintenance	•	•	•	•	•

• In series ◦ Optionally

"RAM batt" Info LED series UPS



Purpose:

- uninterruptible power supply load.

Applications:

- personal computers;
- small information networks;
- cashpoints;
- workstations;
- local area networks (LAN).

Distinctive features:

- line-interactive technology;
- vertical mounting;
- automatic voltage stabilization;
- wide range of input voltage;
- "cold" start – starting on the battery;
- automatic restart.

Note: autonomous operation timetables depending on the load are given on page 198.

Model	Charger current	Batteries	Dimensions (HxWxD), mm	Net weight, kg	Code	Output sockets
Models with Schuko sockets:						
INFO650	1 A	1x7 Ah	145x90x291	5	INFO650SI	1xIEC C13 + 1 Schuko
INFO850	1 A	1x9 Ah	145x90x325	5.5	INFO850SI	1xIEC C13 + 1 Schuko
INFO1200	1 A	2x9 Ah	195x122x341	8.5	INFO1200SI	2xIEC C13 + 1 Schuko
INFO1500	1 A	3x7 Ah	212x145x428	17.5	INFO1500SI	2xIEC C13 + 1 Schuko
INFO2000	1 A	4x7 Ah	212x145x428	19.5	INFO2000S	3 Schuko
INFO3000	1 A	4x9 Ah	212x145x428	22	INFO3000S	3 Schuko
Models with IEC sockets:						
INFO650	1 A	1x7 Ah	145x90x291	5	INFO650I	4xIEC C13
INFO850	1 A	1x9 Ah	145x90x325	5.5	INFO850I	4xIEC C13
INFO1200	1 A	2x9 Ah	195x122x341	8.5	INFO1200I	6xIEC C13
INFO1500	1 A	3x7 Ah	212x145x428	17.5	INFO1500I	8xIEC C13
INFO2000	1 A	4x7 Ah	212x145x428	19.5	INFO2000I	8xIEC C13
INFO3000	1 A	4x9 Ah	212x145x428	22	INFO3000I	8xIEC C13

Characteristics of Info LED uninterruptible power supplies

"RAM batt" Info LED series UPS		Model					
		INFO650	INFO850	INFO1200	INFO1500	INFO2000	INFO3000
Input	rated voltage, V	230					
	voltage tolerance, V	140-290					
	frequency, Hz	50/60, automatic selection					
	frequency tolerance	±10%					
Output	rated power, VA	650	850	1200	1500	2000	3000
	active rated power, W	390	510	720	900	1200	1800
	rated voltage during off-line operation, V	230 ±10%					
	rated frequency during off-line operation, Hz	50 or 60 ±10%					
	rated voltage during battery operation, V	230 ±10%					
	rated frequency during battery operation, Hz	50 ±10%					
	waveform	pseudo-sinusoidal, optimized for PC					
	switch time, ms	< 10					
Battery	battery type	VRLA maintenance-free lead-acid					
	battery operation time, min	10					
Physical characteristics	net weight, kg	5	5.5	8.5	17.5	19.5	22
	operating temperature, °C	0-40					
	relative humidity	< 95% without condensate					
	noise level	< 45 dB at a distance of 1 m					
	protection against	short-circuit – overvoltage/undervoltage – overload					
	input socket	Schuko					
Control and communications	visual indicators	availability of system, charging, battery operation					
	external interface	USB – optionally					
Standards	safety and EMC standards	TR CU 004/2011; TR CU 020/2011; EN50091-1-1; EN50091-2; EN61000-2-2; EN61000-3-2; EN61000-4-2/-3/-4; CE, EAC marking					

"RAM batt" Small Basic series UPS



Purpose:

- uninterruptible power supply load.

Applications:

- local area networks (LAN);
- telecommunication facility;
- industrial PLC;
- workstations;
- servers;
- control enclosures.

Distinctive features:

- double conversion technology
- Online VFI;
- vertical mounting;
- high-contrast LCD display;
- microprocessor control;
- "cold" start – starting on the battery;
- autonomy increase ability.

Note: autonomous operation timetables depending on the load are given on page 199.

Model	Output power, kVA/ kW	Charger current	Internal batteries	Dimensions (HxWxD), mm	Net weight, kg	Code
SMALLB1	1/0.8	1 A	36 V, 3x7 Ah	230x144x350	14	SMALLB1A10S
		1 A	–	230x144x350	7	SMALLB1EXTS
		5 A	–	230x144x350	7	SMALLB1EXTPS
SMALLB2	2/1.6	1 A	72 V, 6x7 Ah	328x190x425	26	SMALLB2A10S
		1 A	–	328x190x425	14	SMALLB2EXTS
		5 A	–	328x190x425	14	SMALLB2EXTPS
SMALLB3	3/2.4	1 A	96 V, 8x7 Ah	328x190x425	32	SMALLB3A10S
		1 A	–	328x190x425	14	SMALLB3EXTS
		5 A	–	328x190x425	14	SMALLB3EXTPS

Accessories

Description	Internal batteries	Dimensions (HxWxD), mm	Net weight, kg	Code
Additional battery unit for SMALLB1EXT	36 V, 6x7 Ah	230x144x350	17	BPSMLB1-36V
Additional battery unit for SMALLB2EXT	72 V, 12x7 Ah	328x190x425	34	BPSMLB2-72V
Additional battery unit for SMALLB3EXT	96 V, 16x7 Ah	328x190x425	42	BPSMLB3-96V
SNMP adapter for Small series				SNMPSMALL
AS400 adapter for Small series				AS400SMALL

Characteristics of Small Basic uninterruptible power supplies

"RAM batt" Small Basic series UPS		Model		
		SMALLB1	SMALLB2	SMALLB3
Input	rated voltage, V	from 95 to 300 (0–60% load), from 161 to 286 (60–100% load) it is possible to use with electric generator		
	frequency, Hz	50–60 +/-5%, automatic memorizing		
	Total harmonic distortion (THD)	< 3%		
	power factor	> 0.98		
	type/number of sockets	Schuko / 1		
Output	rated power, VA	1000	2000	3000
	active rated power, W	800	1600	2400
	voltage, V	220 / 230 / 240 (with possibility to select)		
	voltage stabilization accuracy	+/- 2%		
	waveform	pure sinewave		
	frequency, Hz	50 / 60 +/-0.1 (with possibility to select)		
	Total harmonic distortion (THD)	< 3%		
	cross ratio	3:1		
	overload	120% within 1 minute – 150% within 30 seconds		
	type/number of sockets	Schuko 16 A / 2	Schuko 16 A / 2 + terminal block	
Operating characteristics	switch time	0		
	Efficiency	94% (online) – 98% (eco-mode)		
	battery test	automatic – manual		
	bypass	built-in automatic 0 ms		
	protection against	overload – short-circuit – battery discharge – overvoltage – overheating		
	operating temperature, °C	0-40		
	noise level	< 45 dB at a distance of 1 m	< 50 dB at a distance of 1 m	
Control and communications	LCD display	data on load, system, battery and operation mode		
	external interface	USB – "dry" contacts		
	EPO (emergency power outage)	available		
	Software for control and switch-off	included		
	scope of supply	1 input cable 10 A, 1 USB-cable, software		
Accessories	external battery unit	available		
	AS400 adapter	alarms through "dry" contacts and isolated digital inputs		
	external interface plate	Ethernet protocol – SNMP-agent		
	dividing transformer	built-in optionally or in individual enclosure		
Standards	EMC standards	TR CU 020/2011, EN61000-6-1, 61000-6-3		
	safety standards	TR CU 004/2011, EN 62040-1, EN 62040-2, Directive 73/23/EEC, 93/68/EEC		

"RAM batt" Small Convert series UPS


Purpose:

- uninterruptible power supply load.

Applications:

- local area networks (LAN);
- telecommunication facility;
- data centers;
- servers.

Distinctive features:

- double conversion technology
- Online VFI;
- vertical or horizontal rack mounting;
- "cold" start – starting on the battery;
- autonomy increase ability;
- compact size – 2U.

Note: autonomous operation timetables depending on the load are given on page 199.

Angles for rack mounting are specified in the section of IT enclosures on page 155.

Model	Output power, kVA/ kW	Charger current	Internal batteries	Dimensions (HxWxD), mm	Net weight, kg	Code
SMALLC1	1/0.9	1 A	36 V, 3x7 Ah	88x482x476, 2U	16	SMALLC1A10I
		1 A	–	88x482x476, 2U	13	SMALLC1EXTI
		5 A	–	88x482x476, 2U	13	SMALLC1EXTPI
SMALLC2	2/1.8	1 A	–	88x482x476, 2U	13	SMALLC2EXTI
		5 A	–	88x482x476, 2U	13	SMALLC2EXTPI
SMALLC3	3/2.7	1 A	–	88x482x476, 2U	13	SMALLC3EXTI
		5 A	–	88x482x476, 2U	13	SMALLC3EXTPI

Accessories

Description	Internal batteries	Dimensions (HxWxD), mm	Net weight, kg	Code
Additional battery unit for SMALLC1EXT	36 V, 6x7 Ah	88x482x476, 2U	17	BPSMLC1-36V
Additional battery unit for SMALLC2EXT	72 V, 6x7 Ah	88x482x476, 2U	17	BPSMLC2-72V
Additional battery unit for SMALLC3EXT	96 V, 8x7 Ah	88x482x476, 2U	19	BPSMLC3-96V
SNMP adapter for Small series				SNMPSMALL
AS400 adapter for Small series				AS400SMALL

Characteristics of Small Convert uninterruptible power supplies

"RAM batt" Small Convert series UPS		Model		
		SMALLC1	SMALLC2	SMALLC3
Input	rated voltage, V	from 95 to 300 (0–60% load), from 161 to 286 (60–100% load) it is possible to use with electric generator		
	frequency, Hz	50–60 +/-5%, automatic memorizing		
	Total harmonic distortion (THD)	< 3%		
	power factor	> 0.98		
	type/number of sockets	IEC C14 / 1		IEC C20 / 2
Output	rated power, VA	1000	2000	3000
	active rated power, W	900	1800	2700
	voltage, V	220 / 230 / 240 (with possibility to select)		
	voltage stabilization accuracy	+/- 2%		
	waveform	pure sinewave		
	frequency, Hz	50 / 60 +/-0.1 (with possibility to select)		
	Total harmonic distortion (THD)	< 3%		
	cross ratio	3:1		
	overload	105% within 1 minute – 120% within 30 seconds		
	type/number of sockets	IEC / 6		
Operating characteristics	switch time	0		
	Efficiency	94% (online) – 98% (eco-mode)		
	battery test	automatic – manual		
	bypass	built-in automatic 0 ms		
	protection against	overload – short-circuit – battery discharge – overvoltage – overheating		
	operating temperature, °C	0-40		
	noise level	< 45 dB at a distance of 1 m	< 50 dB at a distance of 1 m	
Control and communications	LCD display	data on load, system, battery and operation mode		
	external interface	USB – "dry" contacts		
	EPO (emergency power outage)	available		
	Software for control and switch-off	included		
	scope of supply	1 USB-cable, software		
Accessories	external battery unit	available		
	AS400 adapter	alarms through "dry" contacts and isolated digital inputs		
	external interface plate	Ethernet protocol – SNMP-agent		
	dividing transformer	built-in optionally or in individual enclosure		
Standards	EMC standards	TR CU 020/2011, EN61000-6-1, 61000-6-3		
	safety standards	TR CU 004/2011, EN 62040-1, EN 62040-2, Directive 73/23/EEC, 93/68/EEC		

"RAM batt" Solo series UPS



Purpose:

- uninterruptible power supply load.

Applications:

- local area networks (LAN);
- industrial PLC;
- data centers;
- electromedical apparatus;
- servers;
- emergency devices.

Distinctive features:

- double conversion technology
- Online VFI;
- Efficiency up to 98% in eco-mode;
- vertical or horizontal rack mounting;
- compact size;
- autonomy increase ability;
- remote monitoring with SNMP-agent and AS400 adapter.

Note: autonomous operation timetables depending on the load are given on page 200.

Model	Output power, kVA/ kW	Batteries	Dimensions (HxWxD), mm / number of units	Net weight, kg	Combined code	Order code
SOLOMD4	4/3.6	12x7 Ah	215x445x700	54	-	SOLOMD4A10
		15x7 Ah	215x445x700	62	-	SOLOMD4A15
		15x9 Ah	215x445x700	65	-	SOLOMD4A20
		30x7 Ah	215x445x700	104	-	SOLOMD4A30
		30x9 Ah	215x445x700	110	-	SOLOMD4A40
		45x7 Ah	215x445x700 / x 2 pcs	161	SOLOMD4A60	SOLOMD4A15 + BBC15P2A7
SOLOMD5	5/4.5	15x7 Ah	215x445x700	62	-	SOLOMD5A10
		15x9 Ah	215x445x700	65	-	SOLOMD5A15
		30x7 Ah	215x445x700	104	-	SOLOMD5A20
		30x9 Ah	215x445x700	110	-	SOLOMD5A30
		45x7 Ah	215x445x700 / x 2 pcs	161	SOLOMD5A40	SOLOMD5A10 + BBC15P2A7
		45x9 Ah	215x445x700 / x 2 pcs	170	SOLOMD5A60	SOLOMD5A15 + BBC15P2A9
SOLOMD6	6/5.4	15x9 Ah	215x445x700	65	-	SOLOMD6A10
		30x7 Ah	215x445x700	104	-	SOLOMD6A20
		30x9 Ah	215x445x700	110	-	SOLOMD6A30
		45x9 Ah	215x445x700 / x 2 pcs	155	SOLOMD6A40	SOLOMD6A10 + BBC15P2A9
		60x9 Ah	215x445x700 / x 2 pcs	230	SOLOMD6A60	SOLOMD6A30 + BBC15P2A9
		15x7 Ah	215x445x700	62	-	SOLOMD7A5
SOLOMD7	7/6.3	15x9 Ah	215x445x700	65	-	SOLOMD7A10
		20x9 Ah	215x445x700	80	-	SOLOMD7A15
		30x7 Ah	215x445x700	104	-	SOLOMD7A20
		45x7 Ah	215x445x700 / x 2 pcs	164	SOLOMD7A30	SOLOMD7A5 + BBC15P2A7
		45x9 Ah	215x445x700 / x 2 pcs	170	SOLOMD7A40	SOLOMD7A10 + BBC15P2A9
		60x9 Ah	215x445x700 / x 2 pcs	230	SOLOMD7A60	SOLOMD7A15 + BBC20P2A9
SOLOMD10	10/9	20x7 Ah	215x445x700	81	-	SOLOMD10A5
		20x9 Ah	215x445x700	85	-	SOLOMD10A10
		40x7 Ah	215x445x700 / x 2 pcs	152	SOLOMD10A20	SOLOMD10A0 + BBC20P2A7
		60x9 Ah	215x445x700 / x 2 pcs	220	SOLOMD10A30	SOLOMD10A10 + BBC20P2A9
		80x7 Ah	215x445x700 / x 3 pcs	265	SOLOMD10A40	SOLOMD10A0 + 2 x BBC20P2A7
		100x7 Ah	215x445x700 / x 3 pcs	340	SOLOMD10A60	SOLOMD10A5 + 2 x BBC20P2A7
SOLOMD12	12/10.8	20x9 Ah	215x445x700 / x 2 pcs	85	-	SOLOMD12A5
		30x9 Ah	215x445x700 / x 2 pcs	130	SOLOMD12A10	SOLOMD12A0 + BBC15P2A9
		40x9 Ah	215x445x700 / x 2 pcs	160	SOLOMD12A20	SOLOMD12A0 + BBC20P2A9
		60x9 Ah	215x445x700 / x 2 pcs	220	SOLOMD12A30	SOLOMD12A5 + BBC20P2A9
		80x9 Ah	215x445x700 / x 3 pcs	295	SOLOMD12A40	SOLOMD12A0 + 2 x BBC15P2A9
		100x9 Ah	215x445x700 / x 3 pcs	355	SOLOMD12A60	SOLOMD12A5 + 2 x BBC20P2A9
SOLOMMB14	14/12.6	20x9 Ah	700x300x900	105	-	SOLOMMB14A5
		40x9 Ah	700x300x900	165	-	SOLOMMB14A10
		60x9 Ah	700x300x900	315	-	SOLOMMB14A30
		100x65 Ah	700x300x900 / x 2 pcs	615	SOLOMMB14A60	SOLOMMB14A5 + BPT20P4A9
		140x100 Ah	700x300x900 / x 2 pcs	795	SOLOMMB14A90	SOLOMMB14A30 + BPT20P4A9

Characteristics of Solo uninterruptible power supplies

"RAM batt" Solo series UPS		Model						
		SOLOMD4	SOLOMD5	SOLOMD6	SOLOMD7	SOLOMD10	SOLOMD12	SOLOMB14
Input	rated voltage, V	176-276 (it is possible to use with electric generator)						
	frequency, Hz	48-62						
	Total harmonic distortion (THDi)	< 3%						
	power factor	> 0.98						
	type/number of sockets	terminal block						
Output	rated power, kVA	4	5	6	7	10	12	14
	active rated power, kW	3.6	4.5	5.4	6.3	9.0	10.8	12.6
	voltage, V	220 / 230 / 240 (with possibility to select)						
	voltage stabilization accuracy at 230 V	< 1% at static load < 1% at dynamic load (from 20 to 80%)						
	waveform	pure sinewave						
	frequency, Hz	50 / 60 +/-0.1 (with possibility to select)						
	rated current at 230 V, A	17.4	21.7	26.1	30.4	43.5	52.2	60.9
	starting current at 230 V, A	26.1	32.6	39.1	45.7	65.2	78.3	91.3
	cross ratio	3:1						
	Total harmonic distortion (THDu)	< 1.5% with linear load; < 5% with non-linear load						
	overload	150% within 30 seconds						
	type/number of sockets	terminal block + 6 IEC C13 + 4 IEC C20						
Operating characteristics	switch time	0						
	Efficiency	95% (online) – 99% (eco-mode)						
	battery test	continuously in automatic mode						
	bypass	built-in automatic 0 ms / service manual bypass						
	protection against	overload – short-circuit – battery discharge – overvoltage – overheating						
	operating temperature, °C	0-40						
	noise level	< 45 dB at a distance of 1 m at full load – fan control with PWM						
Control and communications	LCD display	2x16 symbols, blue backlight, 4 push-buttons						
	external interface	RS 232						
	EPO (emergency power outage)	available						
	Software for control and switch-off	included						
Accessories	external battery unit	versions for rack mounting or horizontal mounting on wheels						
	AS400 adapter	alarms through "dry" contacts and isolated digital inputs						
	external interface plate	Ethernet protocol – SNMP-agent						
	dividing transformer	built-in optionally or in individual enclosure						
Standards	EMC standards	TR CU 020/2011, CEI EN 50091-2, EN61000-3-2 (PFA), 61000-3-3 (flicker)						
	safety standards	TR CU 004/2011, CEI EN 60950, EN 62040-1-1, Directive 73/23/EEC, 93/68/EEC						

"RAM batt" Trio TM series UPS


Purpose:

- uninterruptible power supply load.

Applications:

- industrial systems;
- telecommunication facility;
- local area networks (LAN);
- industrial PLC;
- data centers;
- electromedical apparatus;
- servers;
- emergency devices.

Distinctive features:

- double conversion technology
- Online VFI;
- Efficiency up to 96% in online mode and up to 98% in eco-mode;
- vertical mounting;
- compact size;
- microprocessor control;
- autonomy increase ability;
- remote monitoring with SNMP-agent and AS400 adapter.

Note: autonomous operation timetables depending on the load are given on page 201.

Model	Output power, kVA/ kW	Batteries	Dimensions (HxWxD), mm / number of units	Net weight, kg	Combined code	Order code
TRIOTM10	10/9	60x4.5 Ah	1200x450x640	240		TRIOTM10A10
		60x7 Ah	1200x450x640	290		TRIOTM10A30
		60x9 Ah	1200x450x640	310		TRIOTM10A60
		120x9 Ah	1200x450x640 1200x530x605	500	TRIOTM10A120	TRIOTM10A0 + BPTM60P2A9
TRIOTM15	15/13.5	60x7 Ah	1200x450x640	290		TRIOTM15A10
		60x12 Ah	1200x450x640	490		TRIOTM15A30
		120x7 Ah	1200x450x640 1200x530x605	520	TRIOTM15A60	TRIOTM15A0 + BPTM60P2A7
		180x7 Ah	1200x450x640 1200x530x605 / x 2 pcs	850	TRIOTM15A120	TRIOTM15A0 + BPTM60P3A7
TRIOTM20	20/18	60x7 Ah	1200x450x640	290		TRIOTM20A10
		60x12 Ah	1200x450x640 1200x530x605	490	TRIOTM20A30	TRIOTM20A0 + BPTM60P1A12
		180x7 Ah	1200x450x640 1200x530x605	850	TRIOTM20A60	TRIOTM20A0 + BPTM60P3A7
		240x9 Ah	1200x450x640 1200x530x605 / x 2 pcs	1040	TRIOTM20A120	TRIOTM20A0 + 2 x BPTM60P2A9

Characteristics of Trio TM uninterruptible power supplies

"RAM batt" Trio series UPS		Model		
		TRIOTM10	TRIOTM15	TRIOTM20
Input	rated voltage, V	315-470 (it is possible to use with electric generator)		
	frequency, Hz	48-62		
	Total harmonic distortion (THD)	< 4%		
	power factor	>= 0.99		
	type/number of sockets	terminal block		
Output	rated power, kVA	10	15	20
	active rated power, kW	9	13.5	18
	voltage, V	220 / 230 / 240 (with possibility to select)		
	voltage stabilization accuracy	+/- 1% at 230 V		
	waveform	pure sinewave		
	frequency, Hz	50 / 60 +/-0.1 (with possibility to select)		
	rated current at 400 V, A	34.7	58.7	78.3
	starting current at 400 V, A	51.3	88.1	117.5
	cross ratio	3:1		
	overload	150% within 30 seconds		
	type/number of sockets	terminal block		
	switch time	0		
Operating characteristics	Efficiency	92% (online) – 98% (eco-mode)		
	battery test	continuously in automatic mode		
	bypass	built-in automatic 0 ms / service manual bypass		
	protection against	overload – short-circuit – battery discharge – overvoltage – overload		
	operating temperature, °C	0-40		
	noise level	< 52 dB at a distance of 1 m at full load – fan control with PWM		
Control and communications	LCD display	2x16 symbols, blue backlight, 4 push-buttons		
	external interface	RS 232 – USB		
	EPO (emergency power outage)	available		
	Software for control and switch-off	included		
Accessories	external battery unit	vertical version on wheels		
	AS400 adapter	alarms through "dry" contacts and isolated digital inputs		
	external interface plate	Ethernet protocol – SNMP-agent		
	dividing transformer	built-in optionally or in individual enclosure		
Standards	EMC standards	TR CU 020/2011, IEC EN 62040-3		
	safety standards	TR CU 004/2011, ISO 9001:2008, ISO 14001		

"RAM batt" Trio TT series UPS



Purpose:

- uninterruptible power supply load.

Applications:

- industrial systems;
- telecommunication facility;
- local area networks (LAN);
- industrial PLC;
- data centers;
- electromedical apparatus;
- servers;
- emergency devices.

Distinctive features:

- double conversion technology
- Online VFI;
- Efficiency up to 96% in online mode and up to 98% in eco-mode;
- vertical mounting;
- compact size;
- autonomy increase ability;
- remote monitoring with SNMP-agent and AS400 adapter.

Note: autonomous operation timetables depending on the load are given on page 202.

Model	Output power, kVA/kW	Batteries	Dimensions (HxWxD), mm / number of units	Net weight, kg	Combined code	Order code
TRIOTT8	8/8	20x7	700x300x900	95		TRIOTT8A10
		40x9	700x300x900	165		TRIOTT8A30
		80x7	700x300x900 / x 2 pcs	280	TRIOTT8A60	TRIOTT8A0 + BPT20P4A7
		120x9	700x300x900 / x 2 pcs	440	TRIOTT8A120	TRIOTT8A30 + BPT20P4A9
TRIOTT10	10/10	20x9	700x300x900	105		TRIOTT10A10
		40x9	700x300x900	165		TRIOTT10A30
		80x7	700x300x900 / x 2 pcs	280	TRIOTT10A60	TRIOTT10A0 + BPT20P4A7
		120x9	700x300x900 / x 2 pcs	440	TRIOTT10A120	TRIOTT10A30 + BPT20P4A9
TRIOTT12	12/12	40x7	700x300x900	145		TRIOTT12A10
		60x9	700x300x900 / x 2 pcs	260	TRIOTT12A30	TRIOTT12A0 + BPT20P3A9
		80x9	700x300x900 / x 2 pcs	320	TRIOTT12A60	TRIOTT12A0 + BPT20P4A9
		20x65	700x300x900 1400x610x880	615	TRIOTT12A120	TRIOTT12A0 + BPT6BB63 + BS20P1A65
TRIOTT15	15/15	40x7	700x300x900	145		TRIOTT15A10
		80x7	700x300x900 / x 2 pcs	280	TRIOTT15A30	TRIOTT15A0 + BPT20P4A7
		120x7	700x300x900 / x 2 pcs	380	TRIOTT15A60	TRIOTT15A10 + BPT20P4A7
		20x65	700x300x900 1400x610x880	615	TRIOTT15A120	TRIOTT15A0 + BPT6BB63 + BS20P1A65
TRIOTT20	20/20	40x9	700x300x900	165		TRIOTT20A10
		80x9	700x300x900 / x 2 pcs	320	TRIOTT20A30	TRIOTT20A0 + BPT20P4A9
		20x65	700x300x900 1400x610x880	615	TRIOTT20A60	TRIOTT20A0 + BPT6BB100 + BS20P1A65
		20x100	700x300x900 1400x610x880	795	TRIOTT20A120	TRIOTT20A0 + BPT8BB100 + BS20P1A100
TRIOTT30	30/24	80x7	700x300x900 / x 2 pcs	290	TRIOTT30A10	TRIOTT30A0 + BPT20P4A7
		120x9	700x300x900 / x 3 pcs	450	TRIOTT30A30	TRIOTT30A0 + 2 x BPT20P3A9
		20x80	700x300x900 1400x610x880	655	TRIOTT30A60	TRIOTT30A0 + BPT6BB125 + BS20P1A80
		20x120	700x300x900 1400x610x880	855	TRIOTT30A90	TRIOTT30A0 + BPT8BB125 + BS20P1A120
		20x150	700x300x900 1400x610x880	1105	TRIOTT30A120	TRIOTT30A0 + BPT8BB125 + BS20P1A150
TRIOTT40	40/32	80x9	700x300x900 / x 2 pcs	330	TRIOTT40A10	TRIOTT40A0 + BPT20P4A9
		20x65	700x300x900 1400x610x880	625	TRIOTT40A30	TRIOTT40A0 + BPT6BB160 + BS20P1A65
		20x120	700x300x900 1400x610x880	855	TRIOTT40A60	TRIOTT40A0 + BPT8BB160 + BS20P1A120
		20x150	700x300x900 1400x610x880	1105	TRIOTT40A90	TRIOTT40A0 + BPT8BB160 + BS20P1A150
		20x200	700x300x900 1900x 810x980	1455	TRIOTT40A120	TRIOTT40A0 + BPT10BB160 + BS20P1A200

Characteristics of Trio TT uninterruptible power supplies

"RAM batt" Trio series UPS		Model						
		TRIOTT8	TRIOTT10	TRIOTT12	TRIOTT15	TRIOTT20	TRIOTT30	TRIOTT40
Input	rated voltage, V	315-470 (it is possible to use with electric generator)						
	frequency, Hz	48-62						
	Total harmonic distortion (THDi)	< 3%						
	power factor	>= 0.99						
	type/number of sockets	terminal block						
Output	rated power, kVA	8	10	12	15	20	30	40
	active rated power, kW	8.0	10	12	15	20	24	32
	voltage, V	380 / 400 / 415 (with possibility to select)						
	voltage stabilization accuracy at 230 V	< 1% at static load < 1% at dynamic load (from 20 to 80%)						
	waveform	pure sinewave						
	frequency, Hz	50 / 60 +/-0.1 (with possibility to select)						
	rated current at 230 V, A	11.6	14.5	17.5	21.7	29.0	34.8	46.4
	starting current at 230 V, A	17.4	21.7	26.1	32.6	43.5	52.2	69.6
	cross ratio	3:1						
	Total harmonic distortion (THDu)	< 1.5% with linear load; < 5% with non-linear load						
	overload	150% within 30 seconds					133%	112.5%
	type/number of sockets	terminal block						
Operating characteristics	switch time	0						
	Efficiency	95% (online) – 99% (eco-mode)						
	battery test	continuously in automatic mode						
	bypass	built-in automatic 0 ms / service manual bypass						
	protection against	overload – short-circuit – battery discharge – overvoltage – overload						
	operating temperature, °C	0-40						
	noise level	< 45 dB at a distance of 1 m at full load – fan control with PWM						
Control and communications	LCD display	2x16 symbols, blue backlight, 4 push-buttons						
	external interface	RS 232						
	EPO (emergency power outage)	available						
	Software for control and switch-off	included						
Accessories	external battery unit	vertical version on wheels						
	AS400 adapter	alarms through "dry" contacts and isolated digital inputs						
	external interface plate	Ethernet protocol – SNMP-agent						
	dividing transformer	built-in optionally or in individual enclosure						
Standards	EMC standards	TR CU 020/2011, CEI EN 50091-2, EN61000-3-2 (PFA), 61000-3-3 (flicker)						
	safety standards	TR CU 004/2011, CEI EN 60950, EN 62040-1-1, Directive 73/23/EEC, 93/68/EEC						

"RAM batt" Extra TT series UPS



Purpose:

- uninterruptible power supply load.

Applications:

- industrial systems;
- telecommunication facility;
- local area networks (LAN);
- industrial PLC;
- data centers;
- electromedical apparatus;
- servers;
- emergency devices.

Distinctive features:

- Online-technology of double conversion VFI;
- Efficiency up to 96% in online mode and up to 98% in eco-mode;
- vertical mounting;
- microprocessor control;
- low noise level owing to fan control with PWM;
- autonomy increase ability;
- remote monitoring with SNMP-agent and AS400 adapter.

Note: autonomous operation timetables depending on the load are given on page 203.

Model	Output power, kVA/kW	Batteries	Dimensions (HxWxD), mm / number of units	Net weight, kg	Combined code	Order code
EXTRATT60	60/60	120x9 Ah	1800x560x940	590		EXTRATT60A10
		120x11 Ah	1800x560x940	590		EXTRATT60A15
		186x14 Ah	1800x560x940 + 2 x 1800x503x945	1,220	EXTRATT60A30	EXTRATT80A0 + BPEBS62P3A14
		60x70 Ah	1800x560x940 + 2 x 1800x503x945	1,870	EXTRATT60A45	EXTRATT80A0 + BS60P1A70 + 2 x BPEBB100
		126x40 Ah	1800x560x940 + 2 x 1800x503x945	2,250	EXTRATT60A60	EXTRATT80A0 + BS63P2A40 + 2 x BPEBB100
		60x120 Ah	1800x560x940 + 3 x 1800x503x945	2,900	EXTRATT60A90	EXTRATT80A0 + BS60P1A120 + 3 x BPEBB100
EXTRATT80	80/80	120x14 Ah	1800x560x940	840		EXTRATT80A10
		180x11 Ah	1800x560x940	810		EXTRATT80A15
		60x70 Ah	1800x560x940 + 2 x 1800x503x945	1,920	EXTRATT80A30	EXTRATT80A0 + BS60P1A70 + 2 x BPEBB160
		180x24 Ah	1800x560x940 + 3 x 1800x503x945	2,310	EXTRATT80A45	EXTRATT80A0 + BS60P3A24 + 3 x BPEBB160
		180x40 Ah	1800x560x940 + 3 x 1800x503x945	1,590	EXTRATT80A60	EXTRATT80A0 + BS60P3A40 + 3 x BPEBB160
		120x80 Ah	1800x560x940 + 4 x 1800x503x945	3,850	EXTRATT80A90	EXTRATT80A0 + BS60P2A80 + 4 x BPEBB160
EXTRATT100	100/100	60x42 Ah	1800x560x940 + 1800x503x945	1,280	EXTRATT100A10	EXTRATT100A0 + BS60P1A42 + BPEBB200
		120x24 Ah	1800x560x940 + 2 x 1800x503x945	1,660	EXTRATT100A15	EXTRATT100A0 + BS60P2A24 + 2 x BPEBB200
		120x42 Ah	1800x560x940 + 2 x 1800x503x945	2,240	EXTRATT100A30	EXTRATT100A0 + BS60P2A42 + 2 x BPEBB200
		240x24 Ah	1800x560x940 + 4 x 1800x503x945	3,000	EXTRATT100A45	EXTRATT100A0 + BS60P4A24 + 4 x BPEBB200
		120x80 Ah	1800x560x940 + 4 x 1800x503x945	3,870	EXTRATT100A60	EXTRATT100A0 + BS60P2A80 + 4 x BPEBB200
		180x70 Ah	1800x560x940 + 6 x 1800x503x945	5,160	EXTRATT100A90	EXTRATT100A0 + BS60P3A70 + 6 x BPEBB200
EXTRATT125	125/125	120x24 Ah	1800x560x940 + 2 x 1800x503x945	1,700	EXTRATT125A10	EXTRATT125A0 + BS60P2A24 + 2 x BPEBB250
		60x80 Ah	1800x560x940 + 2 x 1800x503x945	2,140	EXTRATT125A15	EXTRATT125A0 + BS60P1A80 + 2 x BPEBB250
		60x100 Ah	1800x560x940 + 3 x 1800x503x945	2,670	EXTRATT125A30	EXTRATT125A0 + BS60P1A100 + 3 x BPEBB250
		120x80 Ah	1800x560x940 + 4 x 1800x503x945	3,910	EXTRATT125A45	EXTRATT125A0 + BS60P2A80 + 4 x BPEBB250
		120x100 Ah	1800x560x940 + 6 x 1800x503x945	4,970	EXTRATT125A60	EXTRATT125A0 + BS60P2A100 + 6 x BPEBB250
		180x80 Ah	1800x560x940 + 6 x 1800x503x945	5,690	EXTRATT125A90	EXTRATT125A0 + BS60P3A80 + 6 x BPEBB250
EXTRATT160	160/160	60x80 Ah	1800x560x940 + 2 x 1800x503x945	2,160	EXTRATT160A10	EXTRATT160A0 + BS60P1A80 + 2 x BPEBB320
		60x100 Ah	1800x560x940 + 3 x 1800x503x945	2,690	EXTRATT160A15	EXTRATT160A0 + BS60P1A100 + 3 x BPEBB320
		120x80 Ah	1800x560x940 + 4 x 1800x503x945	3,930	EXTRATT160A30	EXTRATT160A0 + BS60P2A80 + 4 x BPEBB320
		120x100 Ah	1800x560x940 + 6 x 1800x503x945	4,990	EXTRATT160A45	EXTRATT160A0 + BS60P2A100 + 6 x BPEBB320
		180x80 Ah	1800x560x940 + 6 x 1800x503x945	5,710	EXTRATT160A60	EXTRATT160A0 + BS60P2A80 + 6 x BPEBB320
		180x100 Ah	1800x560x940 + 9 x 1800x503x945	7,300	EXTRATT160A90	EXTRATT160A0 + BS60P3A100 + 9 x BPEBB320

Characteristics of Extra TT uninterruptible power supplies

"RAM batt" Extra TT series UPS		Model				
		EXTRATT60	EXTRATT80	EXTRATT100	EXTRATT125	EXTRATT160
Input	rated voltage, V	400–20% +15%				
	frequency, Hz	45-65				
	Total harmonic distortion, (THD)	< 3%				
	power factor	>= 0.99				
	type/number of sockets	terminal block				
Output	rated power, kVA	60	80	100	125	160
	active rated power, kW	60	80	100	125	160
	voltage, V	380 / 400 / 415 (with possibility to select)				
	voltage stabilization accuracy	+/- 1% at 400 V				
	waveform	pure sine wave				
	frequency, Hz	50 / 60				
	rated current at 400 V, A	87	116	145	181.2	231.9
	starting current at 400 A, A	130.5	174	217.5	271.5	347.8
	cross ratio	3:1				
	overload	125% within 10 minutes – 150% within 30 seconds				
	type/number of sockets	terminal block				
Operating characteristics	switch time	0				
	Efficiency	96% (online) – 98% (eco-mode)				
	battery test	continuously in automatic mode				
	bypass	built-in automatic 0 ms / service manual bypass				
	protection against	overload – short-circuit – battery discharge – overvoltage – overload				
	operating temperature, °C	0-40				
	noise level	< 60 dB at a distance of 1 m				
Control and communications	LCD display	wide display with blue backlight, 4 push-buttons				
	external interface	RS 232 – USB				
	EPO (emergency power outage)	available				
	Software for control and switch-off	included				
Accessories	external battery unit	optionally				
	AS400 adapter	alarms through "dry" contacts and isolated digital inputs				
	external interface plate	Ethernet protocol – SNMP-agent				
	dividing transformer	built-in optionally or in individual enclosure				
Standards	EMC standards	TR CU 020/2011, CEI EN 50091-2, EN61000-3-2 (PFA), 61000-3-3 (flicker)				
	safety standards	TR CU 004/2011, CEI EN 60950, EN 62040-1-1, Directive 73/23/EEC, 93/68/EEC				

Adapters

Plate of "dry" contacts


Purpose:

- UPS remote monitoring.

Applications:

- Small, Solo, Trio, Extra.

Distinctive features:

- standard alarm messages: switch to bypass, UPS failure, UPS battery operation, battery failure.

SNMP plate


Purpose:

- UPS remote monitoring.

Applications:

- Small, Solo, Trio, Extra.

Distinctive features:

- installed within UPS;
- for connection to LAN 10/100 MB local area network;
- main communications protocols (TCP/IP, http, SNMP);
- control of UPS parameters in real-time mode;
- remote setting of the necessary parameters.

Parallel operation kit

Purpose:

- UPS parallel connection for power increase and redundancy as per N+1 scheme.

Applications:

- Extra.

Adapter name	UPS series	Code
Plate of "dry" contacts	Small	AS400SMALL
	Solo, Trio	AS400MMD
	Extra	DRYCONEXTRA
SNMP plate	Small	SNMPSMALL
	Solo, Trio	SNMPMMD
	Extra	SNMPEXTRA
Parallel operation kit	Extra	PAREXTRA

Software for UPS control and switch-off

Uninterruptible power supply can not ensure full protection of information systems due to the following reasons:

- limited time of battery autonomous operation;
- part-time connection (for example, heater and vacuum cleaner can lead to overload which makes protection ensured by UPS insufficient);
- installation in restricted areas (for example, in data centers) or around-the-clock work can lead to complication and failure to receive alarms that jeopardizes critical equipment safety.

DKC products were developed to ensure efficient two-way communications with control systems for failure protection. There are two types of connection: at site – through software as monitoring; remote – using Ethernet interface as control of several plants at the same time.

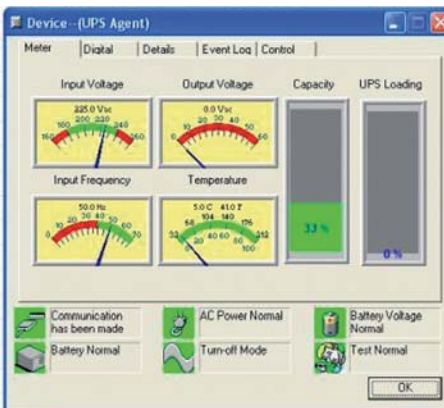
Monitoring at site



For protection of one computer (server, working space) and appropriate peripheral devices it is necessary to connect to computer through RS232 or USB and install software. In this case it is possible to control basic operation parameters (voltage, current, charging percentage and battery condition) as well as review data statistics (operation time, power outage, failures, average charging percentage, etc.) using appropriate software in real-time mode.

Basic system operation parameters with provided shutdown system supported by the most common operating systems can be set using software. In addition, it is possible to connect to systems of the same standard or transmit emergency or failure alarms to the control center using AS400 adapter of "dry" contacts.

Remote monitoring

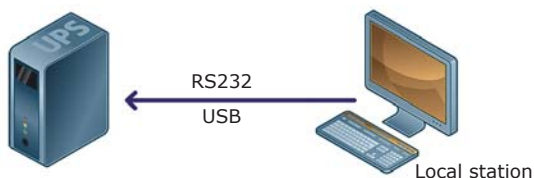


SNMP-agent directly connected to LAN 10/100 local area network can be used for comprehensive protection of several systems at the same time.

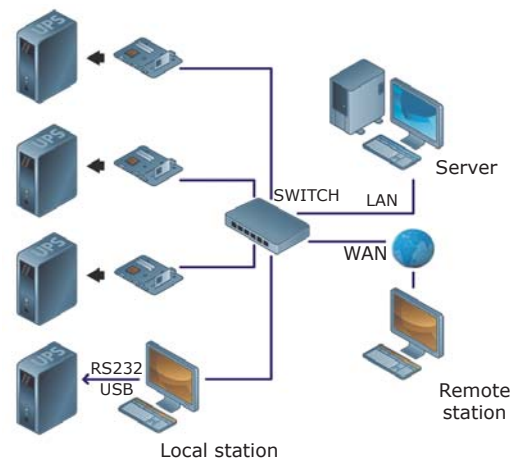
This mode includes graphic interface allowing for control of the following parameters in real-time mode: voltage, current, charging percentage and battery condition. Owing to network interface there are services which allow for remote monitoring of systems (around-the-clock) and immediate receipt of emergency/failure messages by e-mail or POP protocol.

If remote access to the network is available, it is possible to check general condition in real-time mode, perform programmed actions (switch-on/switch-off) and load event history of different equipment.

Connection at site through serial port



Connection through Ethernet TCP/IP LAN/WAN



Recommended protection devices

Important aspect for functioning of uninterruptible power supply is proper calculation for electric plant that ensures reliable protection according to the safety standards and operating conditions. The recommended ratings of protection switches and sections of input/output cables are given below for different UPS models with the following warnings:

- differential switches located on the above plant lines shall be of A or B type with delay of more than 0.1 second and differential current of at least 300 mA;
- all Solo and Trio UPS models provide circuit with **through neutral** and they **shall have neutral designation at the input**.

Single-phase UPS

Model	Input circuit breaker, A	Maximum input phase current, A	Rated output current, A	Input cable section with a length of 10 m, mm ²	Output cable section with a length of 10 m, mm ²
SOLOMD4	25 (2P) C curve	23	18	4	4
SOLOMD5	32 (2P) C curve	28	22	4	6
SOLOMD6	32 (2P) C curve	34	26	6	6
SOLOMD7	40 (2P) C curve	40	30	6	10
SOLOMD10	63 (2P) C curve	57	44	10	10
SOLOMD12	80 (2P) C curve	68	52	16	16
SOLOMMB14	100 (2P) C curve	79	61	16	16

Three-phase – single-phase UPS

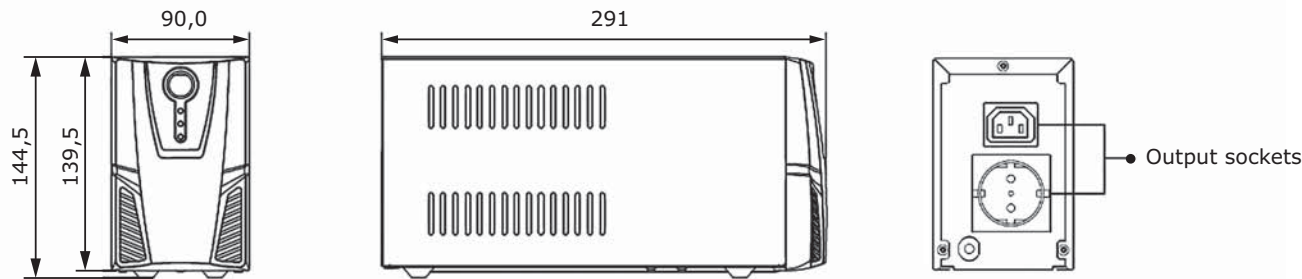
Model	Input circuit breaker, A	Maximum input phase current, A	Rated output current, A	Input cable section with a length of 10 m, mm ²	Output cable section with a length of 10 m, mm ²
TRIOTM10	63 (4P) C curve	22	43	3x10	10
TRIOTM15	100 (4P) C curve	32	65	3x16	16
TRIOTM20	100 (4P) C curve	43	87	3x25	25

Three-phase UPS

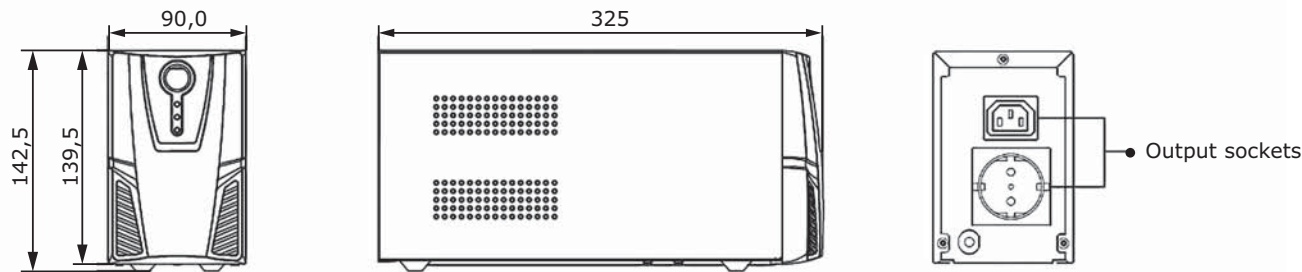
Model	Input circuit breaker, A	Maximum input phase current, A	Rated output current, A	Input cable section with a length of 10 m, mm ²	Output cable section with a length of 10 m, mm ²
TRIOTT8	25 (4P) C curve	17	12	3x4	3x4
TRIOTT10	25 (4P) C curve	22	14	3x4	3x4
TRIOTT12	25 (4P) C curve	26	17	3x4	3x4
TRIOTT15	32 (4P) C curve	32	22	3x6	3x6
TRIOTT20	40 (4P) C curve	43	29	3x10	3x10
TRIOTT30	63 (4P) C curve	65	43	3x16	3x16
TRIOTT40	100 (4P) C curve	86	58	3x25	3x25
EXTRATT60	125 (4P) C curve	109	87	3x35	3x35
EXTRATT80	160 (4P) C curve	140	115	3x50	3x50
EXTRATT100	200 (4P) C curve	170	144	3x70	3x70
EXTRATT125	250 (4P) C curve	214	180	3x70	3x70
EXTRATT160	315 (4P) C curve	267	231	3x95	3x95

Drawings and overall dimensions
"RAM batt" Info LED series UPS

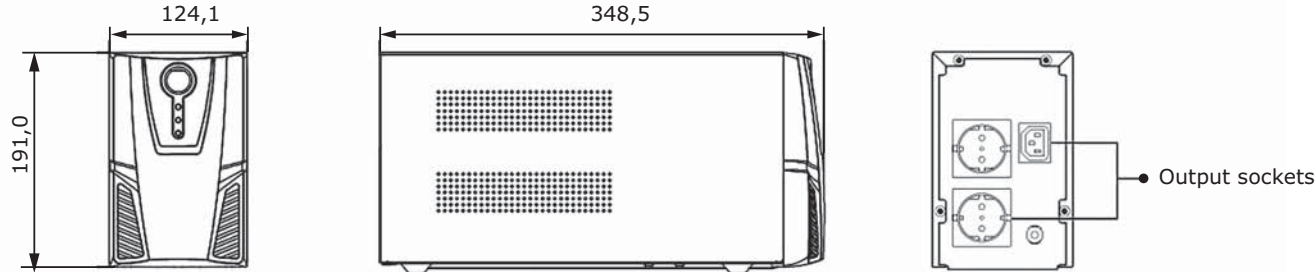
INFO650 SI



INFO850 SI



INFO1200 SI

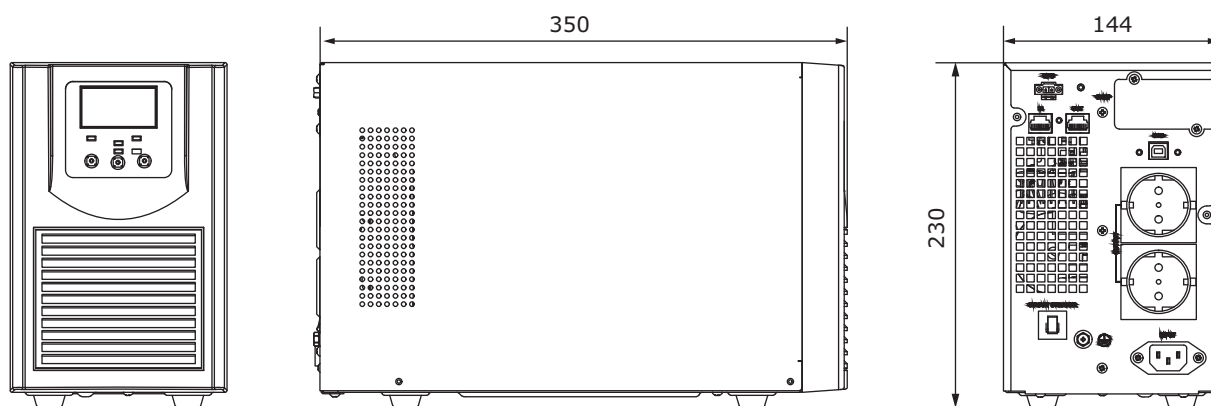


INFO1500S, INFO2000S, INFO3000S

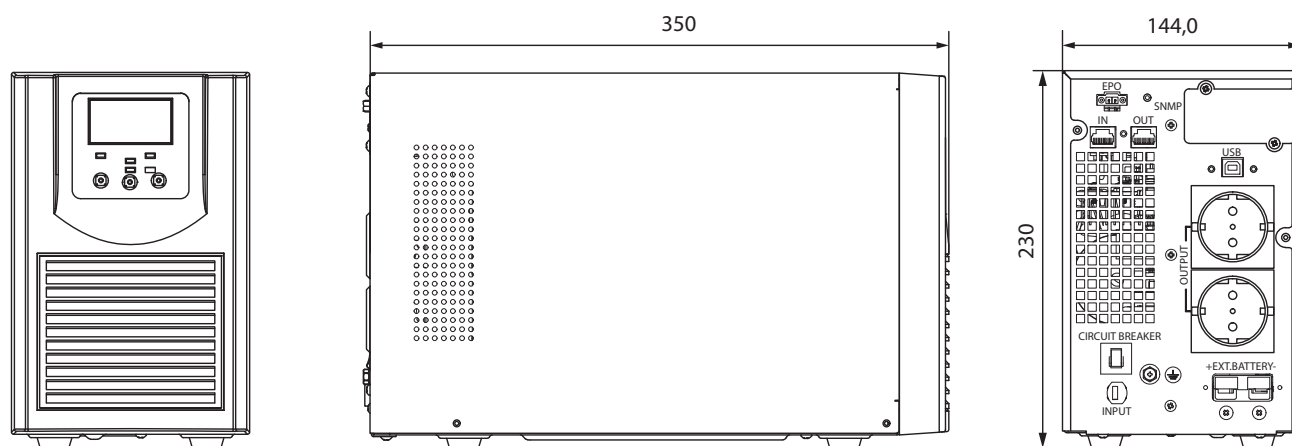


"RAM batt" Small Basic series UPS

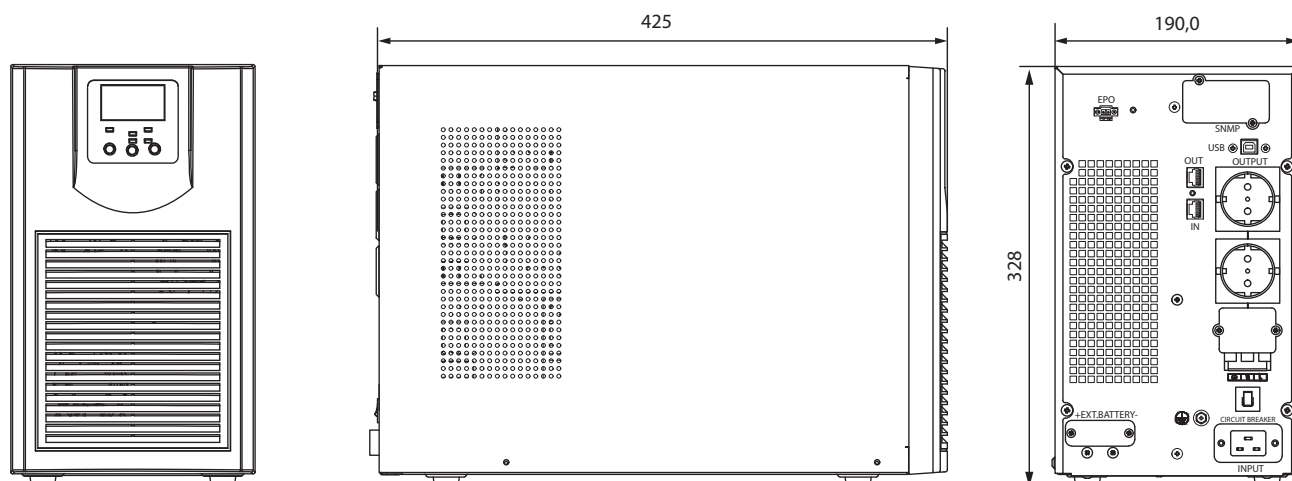
SmallB1A10S



SmallB1EXTS (EXTPS)

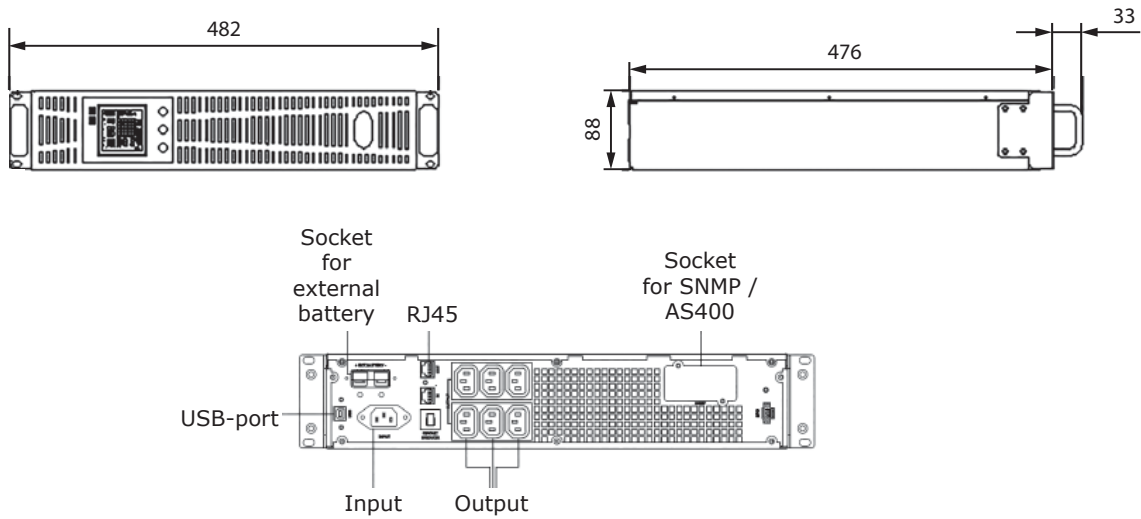


SmallB2EXTS (EXTPS), SmallB3EXTS (EXTPS)

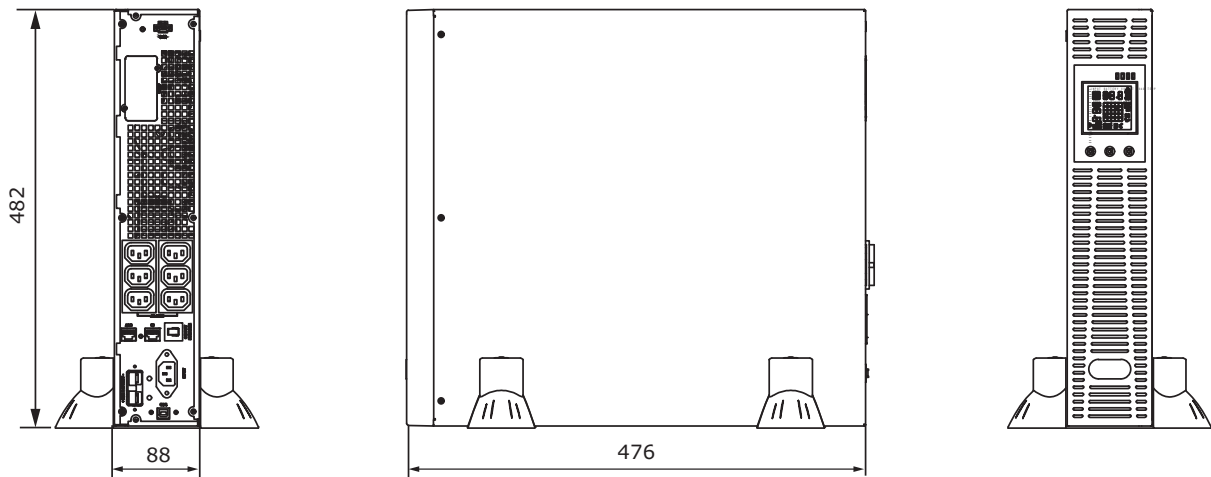


"RAM batt" Small Convert series UPS

"Rack" version

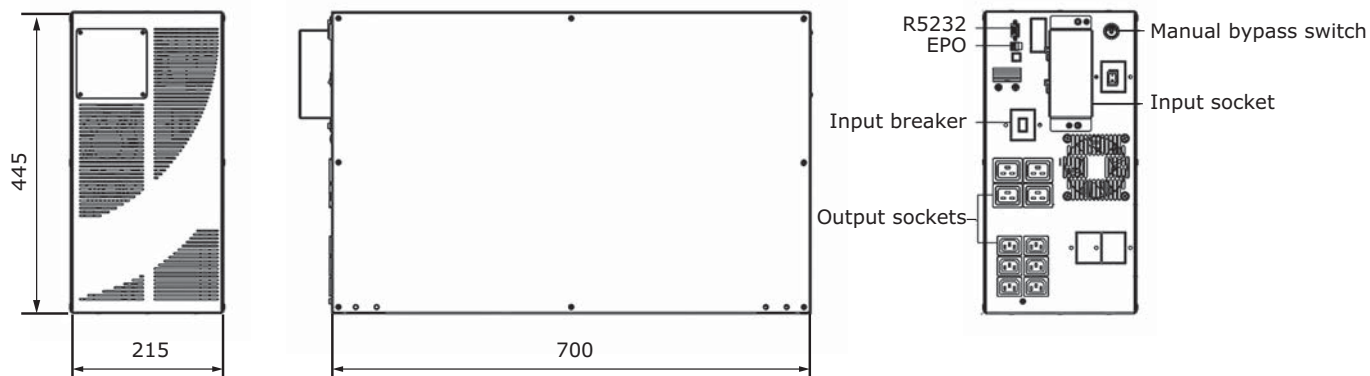


"Tower" version

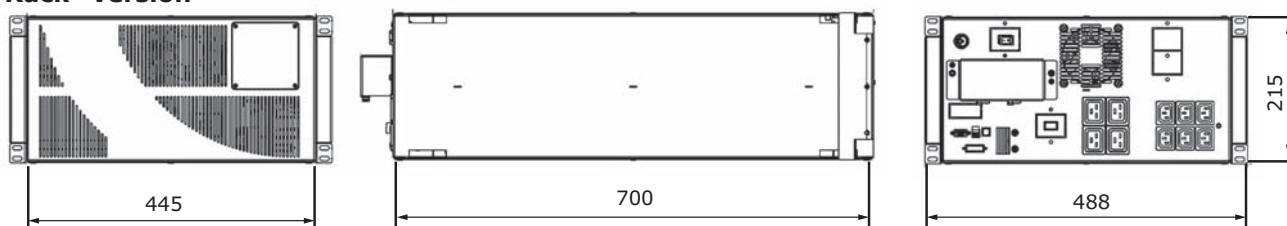


"RAM batt" Solo MD series UPS

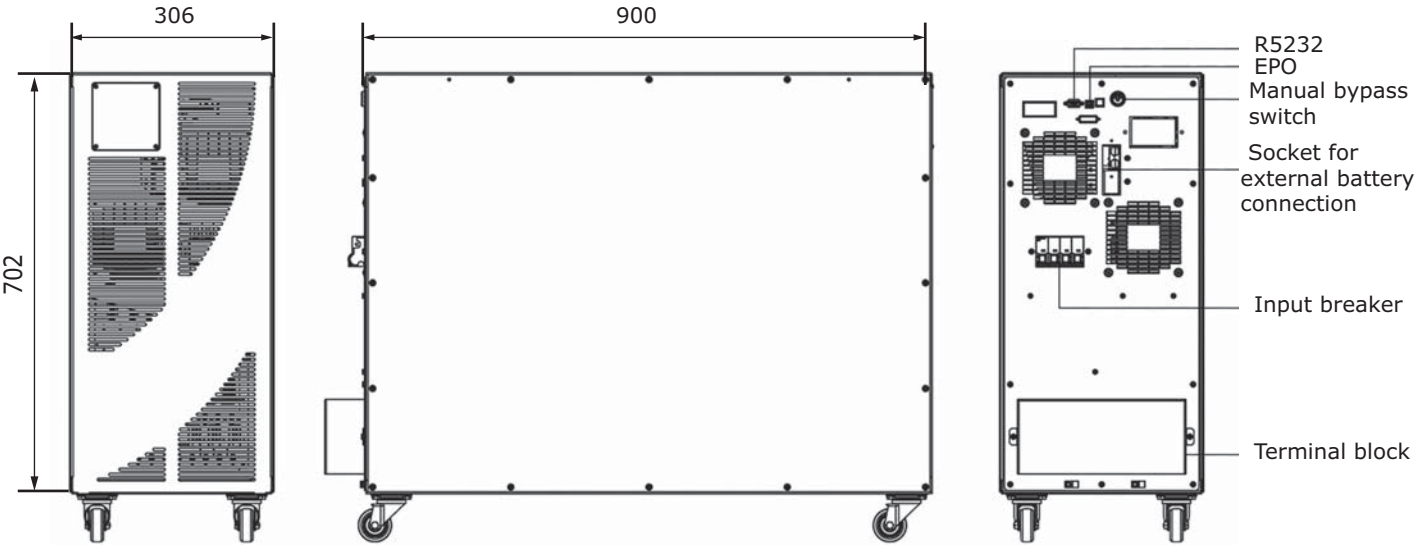
"Tower" version



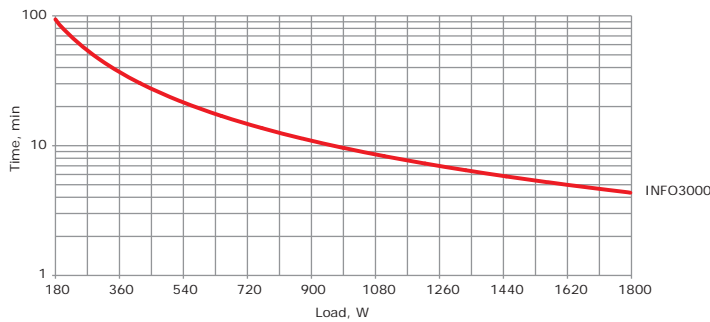
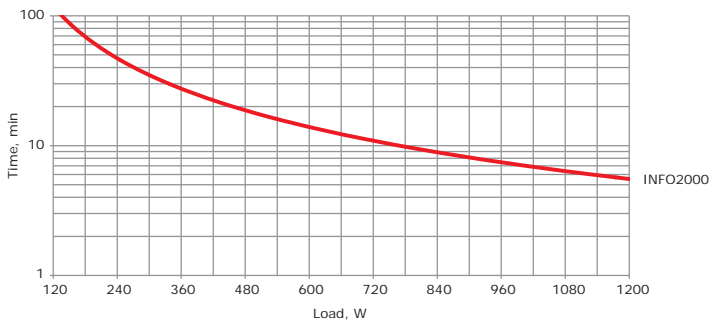
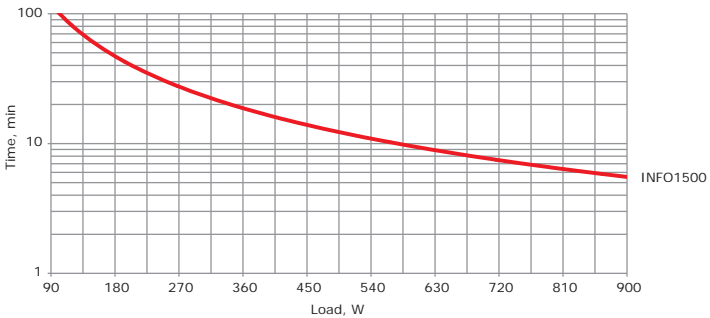
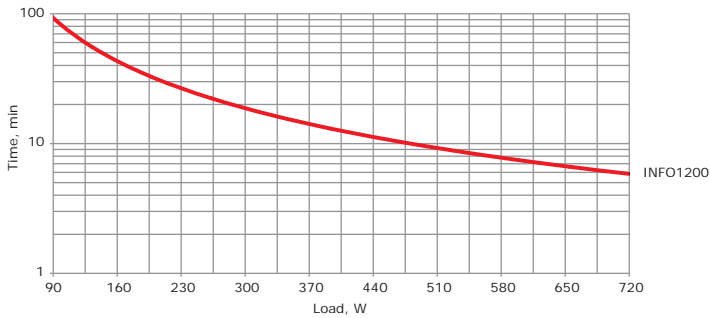
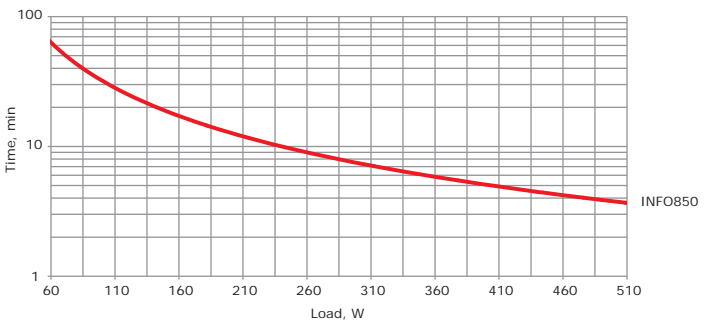
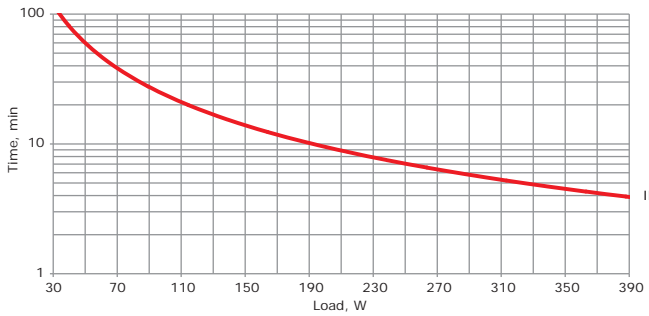
"Rack" version



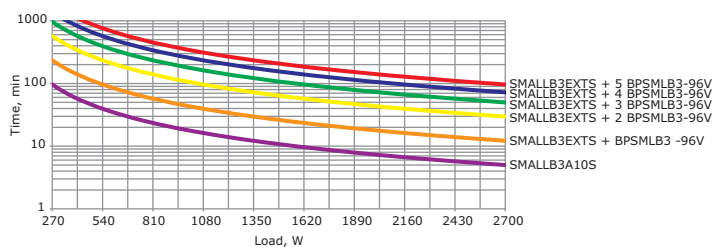
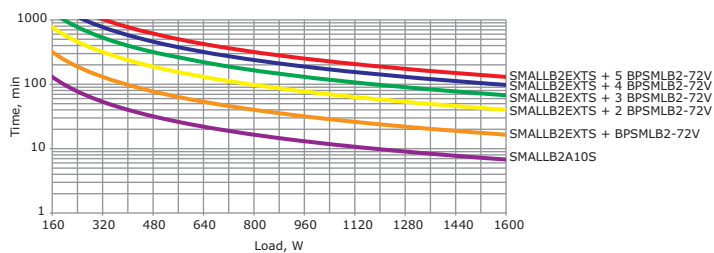
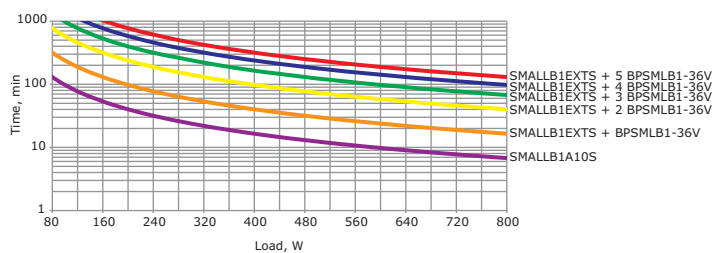
"RAM batt" Trio TT series UPS



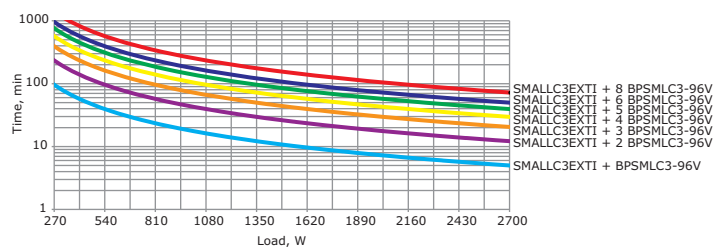
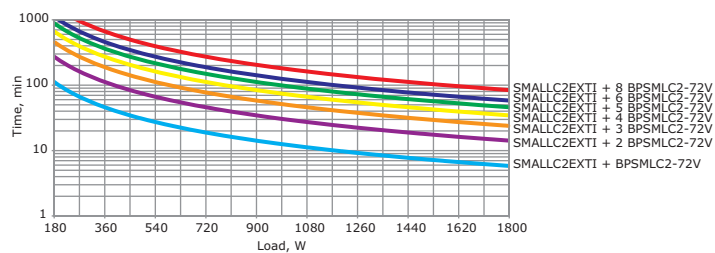
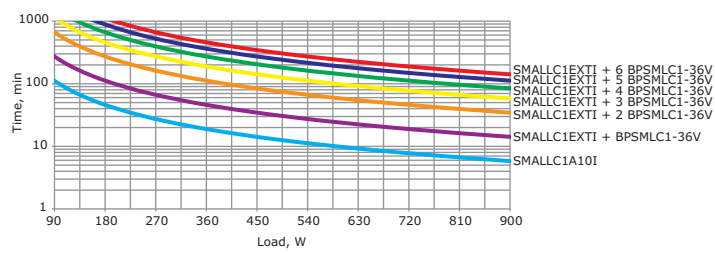
Info LED series



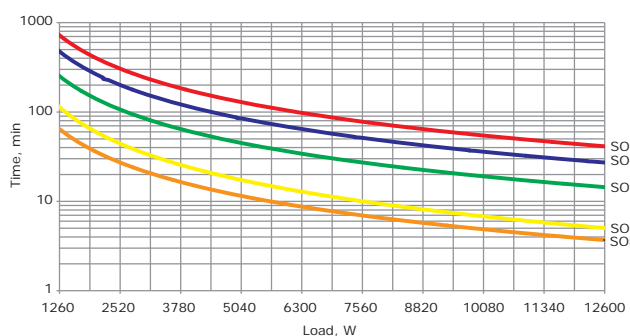
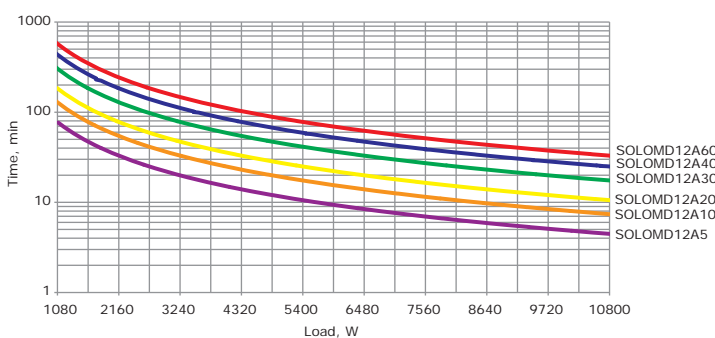
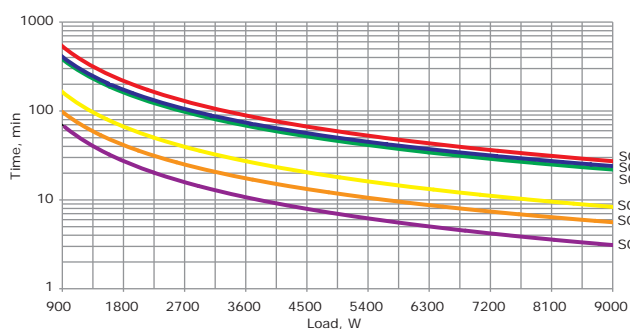
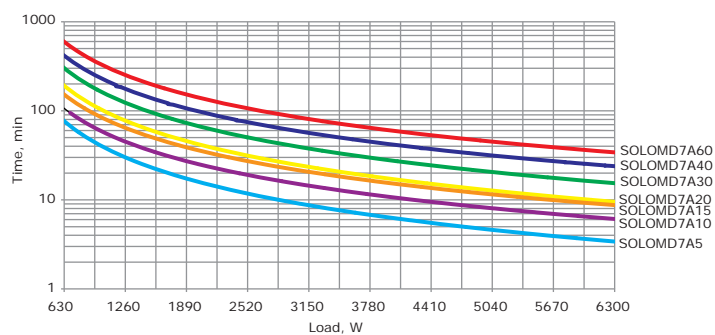
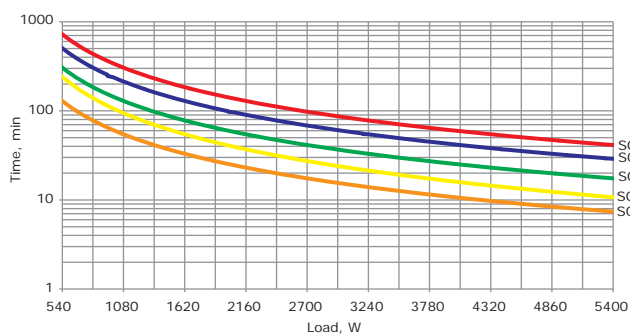
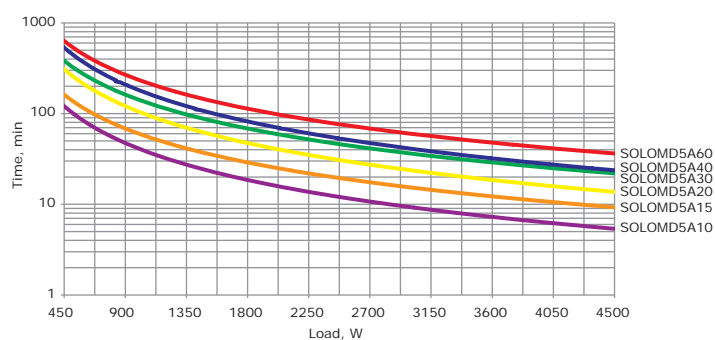
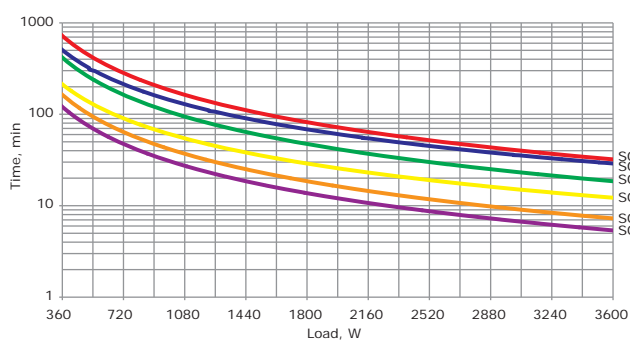
Small Basic series



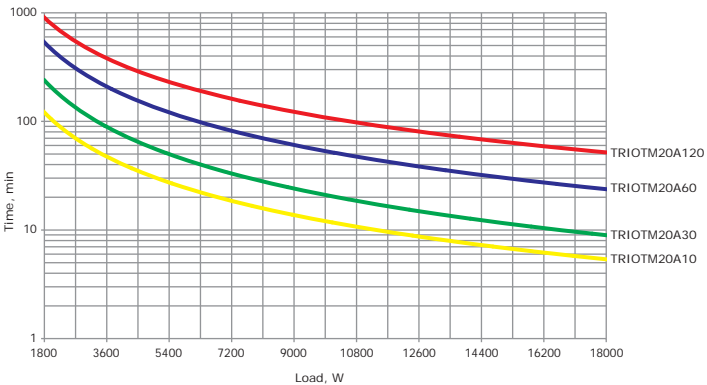
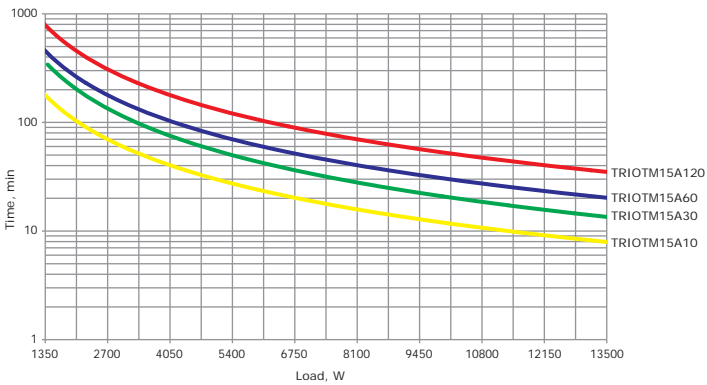
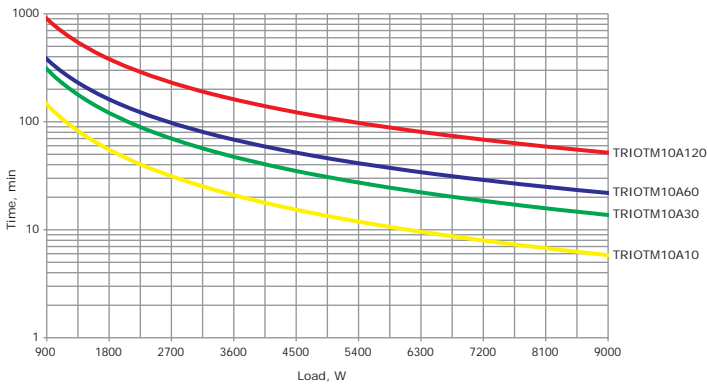
Small Convert series



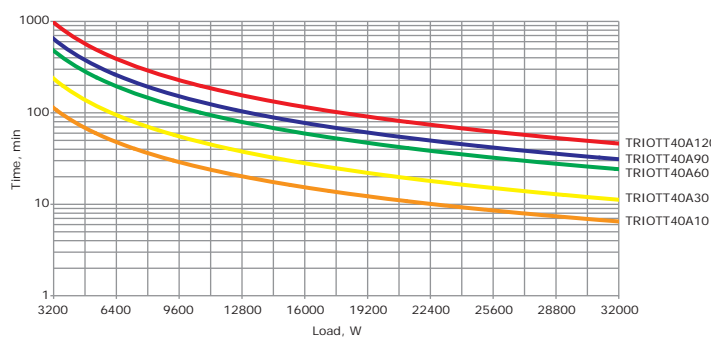
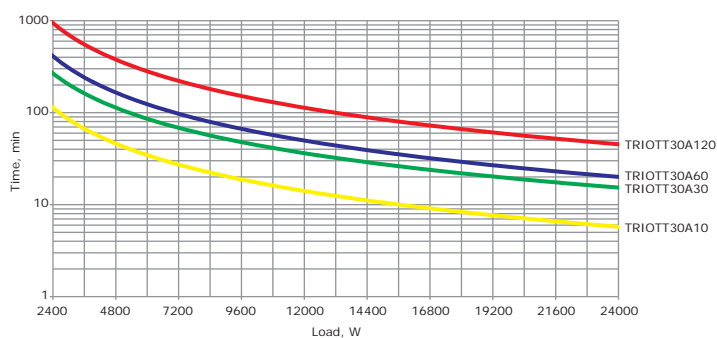
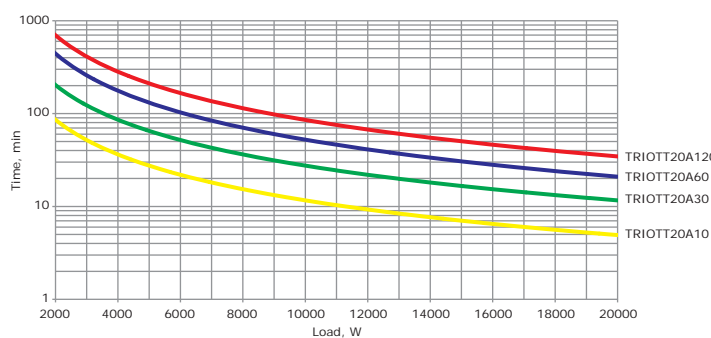
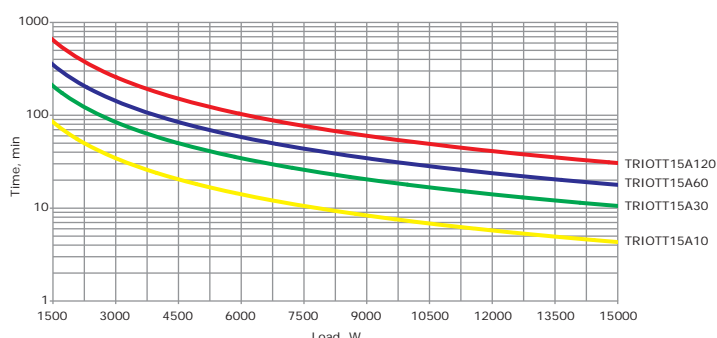
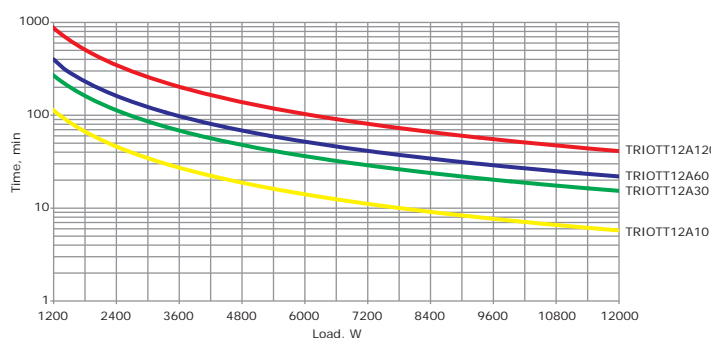
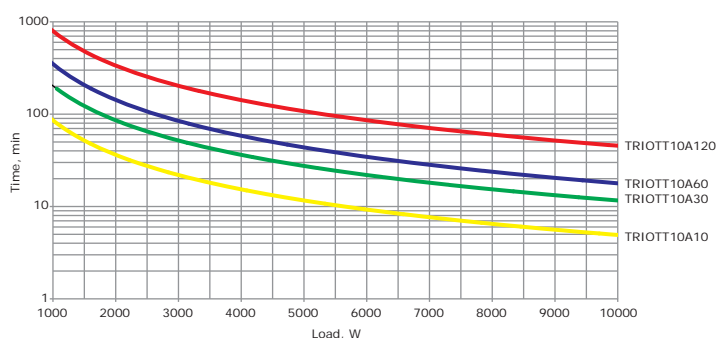
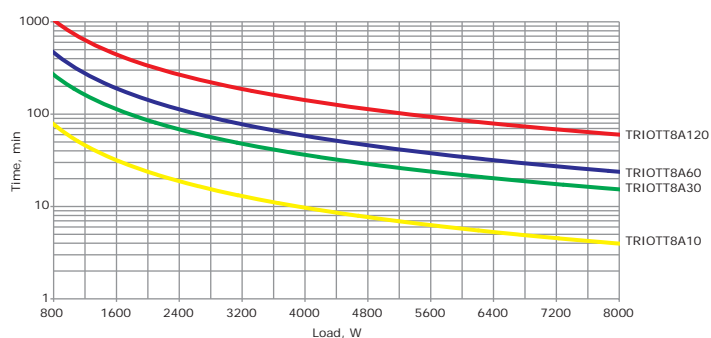
SOLOMD series



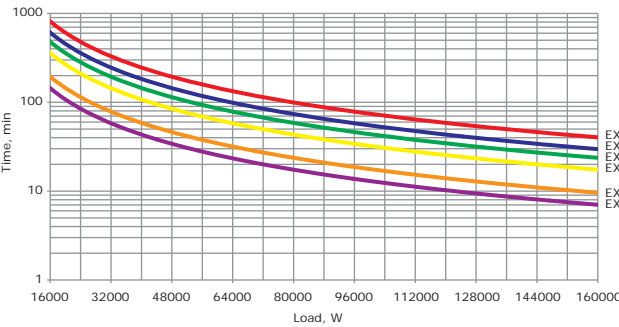
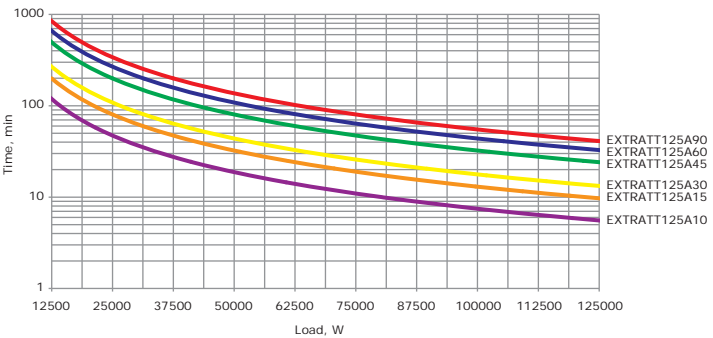
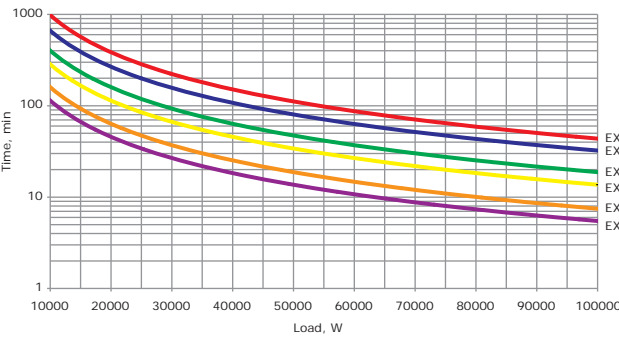
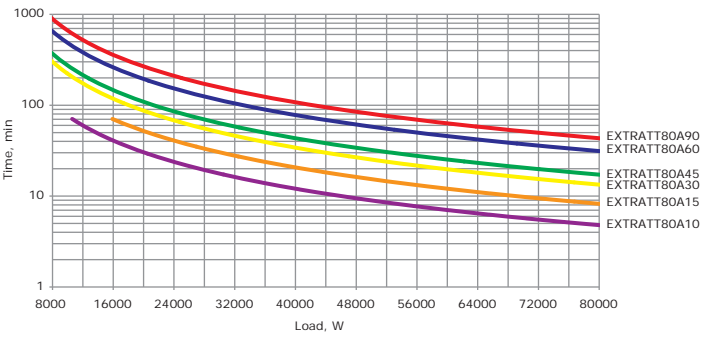
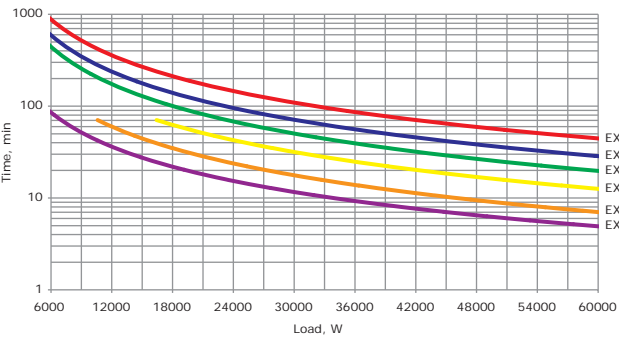
TRIOTM series



TRIOTT series



EXTRATT series







Climate control system "RAM klima"

Fans	208
Coolers	214
Accessories for coolers	222
Heaters	223
Equipment for control of temperature	228

Climate control system "RAM klima"

Application

"RAM klima" climate control system is essentially designed for preservation of equipment installed in the enclosure from overheating or overcooling. Top requested data of the system during automation of production processes in power distribution systems and IT systems.



Assortment

DKC offers a wide assortment of products for climate control. It makes possible to use DKC products in the most complex projects on climate control arrangement.

"RAM klima" system includes coolers, fans, heaters and different accessories.

The whole assortment of the products is supplied in different modifications, that allows making choice in favor of the most likely variant.

Quality

Generally the whole products supplied by DKC differ not only by high quality, but also by contemporary design. Uniqueness of "RAM klima" climate control system is achieved by means of use of nodes and components made by leading manufacturers, as well as due to high level of control over the quality of the products manufactured.

Flexibility

The whole "RAM klima" climate control system and its components can be easily adjusted to necessary technical assignment, that allows creating complex systems without extra costs.

Operation

The proposed climate control system cuts expenses during further equipment operation by means of its flexibility and quality of manufacture. RS-485 interface allows exercising control over an object of conditioning remotely and with no use of additional human resources. Remote access significantly simplifies operation and increases level of safety on a site with DKC equipment installed.

Availability

The whole assortment of the products from "RIM klima" climate control system is always available at the warehouse, thus making it possible to satisfy needs and requirements of company's clients in a timely manner. If necessary, it is possible to work based on an individual client order and considering all his requirements.

Conformity with regulations

All elements of the system passed all necessary tests and certification audits. It is important to note that R134a grade coolant is used in the coolers as a cooling element. It has a necessary approval and is safe for the environment and humans.

Technical support

DKC provides a full necessary documentation kit for the whole range of products: Specialists of the Technical Support Department render services on design and heat-balance calculations.

Moreover the company has a special program for calculation of heat-balance of a plant. It allows calculating defined parameters used during selection of necessary equipment. Program interface is self-intuitive and user-friendly, as well as it helps to avoid an error when calculating the heat-balance, that can cause a system malfunction and equipment breakdown.

The necessity of monitoring and support of climate within an enclosure

Electrotechnical enclosures, essentially described by protection degree IP and shock resistance degree IK, are used for protection of equipment against mechanical effects and aggressive environmental exposure. Herewith each device has specific values of service temperatures and service moisture content, nonobservance of which leads to possible failures in operation of equipment, service life reduction and breakdown of it. Therefore it is necessary to pay special attention to climate creation and control during design of electrotechnical and telecommunication systems.

Purpose



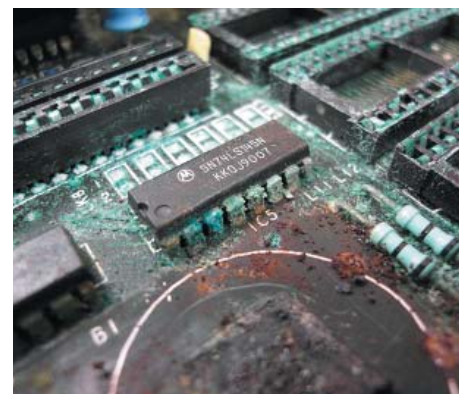
Effective recovery of heat power under any conditions

Fans allow creating of passive or active atmospheric circulation for cooling of installed elements. Coolers allow supporting of a comfort temperature within the enclosure in a range from +30 to +40 °C under conditions of contaminated environment with $T_{env} \leq 50$ °C



Service life increase

Rated values of equipment technical parameters directly depend on sensitivity of the equipment to overheating and overcooling. For example, a recommended operation range for storage batteries: 20–25 °C. Otherwise their capacity reduces, thus increasing risk of a standby power supply failure. The coolers together with the heaters allow supporting of the temperature within a range recommended for the equipment



Prevention of formation of a dew point

Temperature decrease inside the enclosure leads to possible achievement of a dew point value, at which moisture condensation occurs on the equipment, what leads to formation of corrosion on current-carrying elements and possible short circuit. Wide range of powers of heaters allows preventing formation of condensation and protecting of the equipment against breakdown

Creation of configuration of the climate control system

"RAM klima" configurator is a program intended for selection of equipment, which provides necessary climatic conditions of operation of elements located within the electrotechnic enclosure, and is a program, which makes it possible to shorten and simplify a procedure of design of the climate control system.




Оболочка
Температура
Оборудование

1) Условная площадь поверхности шкафа

Материал	поликарбонат и фибер
Высота, мм	2000
Ширина, мм	800
Глубина, мм	600

2) Установка

☐ доступ со всех сторон

☐ смонтирован у стены

☐ смонтирован в конце линейной сборки

☐ смонтирован в углу



☐ смонтирован во внутренней части линейной сборки

☐ смонтирован в нише

☒ смонтирован в нише, закрыт сверху





Оболочка
Температура
Оборудование
Решение

☐ Промышленный кондиционер

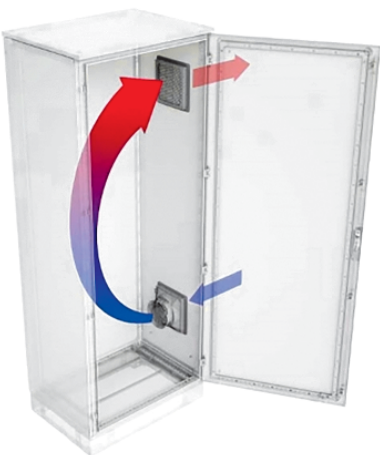
☒ Вентиляционное оборудование (активная циркуляция воздуха)



☐ Корпус шкафа (пассивный отвод тепла)

☒ Обогреватель

☐ Испаритель конденсата

Сформировать отчет



Fans

Environmental air cooling



The fans, included to "RAM klima" system, are the most simple and low cost solution for arrangement of cooling of the components located within the enclosure. When selecting this type of cooling, it is necessary to observe a basic term – environment temperature T_a shall be lower than temperature within the enclosure T_i , herewith $T_i - T_a \geq 5 \text{ }^{\circ}\text{C}$.

Wide range of the accessories allows creating passive and active atmospheric circulation.

Resistance to ultraviolet and an extended range of the operating temperatures allow solving non-routine tasks.

High degree of dust and moisture protection up to IP55 is achieved by means of the following elements:

- foamed polyurethane seal is applied along the entire perimeter of the ventilation grid and provides firm adherence to a wall of the enclosure;
- replaceable filter, included to a scope of supply, has purification degree G3 and allows performing filtration of particles $>5 \text{ }\mu\text{m}$;
- the ventilation grid fins, located at an incline, perform effective moisture extraction upon its penetration.

An airflow made by the fan at the rate from 12 to 1500 m^3/h allows dissipating of total heat power of up to 2000 W.

The fan can be installed in the enclosure using the polyamide clips in an easy and prompt manner, without additional attachment with fasteners. Herewith thickness of the enclosure wall shall be from 1 to 2.5 mm.

Filter change is performed without additional tools, and an internal blocking grid guards the operating personnel against the contact with fan blades during their rotation.

Basic advantages



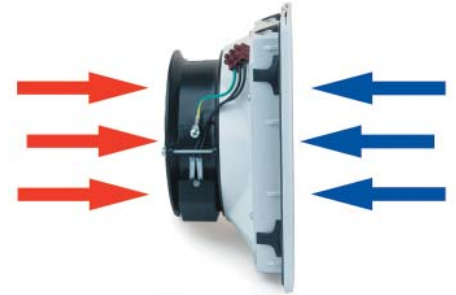
Resistance to UV radiation and low temperatures

Storage temperature is within the range from -40 to +60 °C



Ease of installation

Polyamide clips make it possible to attach a fan or a ventilation grid in a secure and prompt manner.



Flexibility and security

A fan can operate for intake of air to the enclosure as well as for air extraction, and the average service life is 65000 hours of failure-free operation



High protection degree

Fins, located at an angle on an inner part of a carrier, perform effective moisture extraction in case of moisture penetration, and polyurethane seal and fabric filter provide protection degree IP54



Ease of maintenance

An expandable mechanism for removal of an external shell does not require additional tools



Safety and responsiveness

A protection grid guards operating personnel from an accidental contact with a fan blading and allows changing a filter during equipment operation

Air ventilation

Filter fan


Purpose:

- heat extraction.

Material:

- ABS plastic, UL94V0.

Distinctive features:

- grid color: RAL 7035;
- installation is performed using spring clamps;
- ability of the additional attachment with the fasteners;
- the filter is made of temperature-controlled fibers and provides effective operation at a temperature value up to 100 °C and relative humidity of 100 %;
- thickness of the enclosure wall for installation:
 - 1–2 mm for R5KV08** grid;
 - 1–2.1 mm for R5KV12** grid;
 - 1.5–3 mm for R5KV15** grid;
 - 1.5–2.5 mm for R5KV20** grid.
- a mounting point is provided on the enclosure for grounding;
- electrical connection is performed through a terminal block, and through a cable in case of use of R5KV08**;
- protection degree is IP54;
- storage temperature is from –40 to +70 °C;

Scope of supply:

- filter fan.

Technical information:

- page 247.

Recommendations on selection:

- page 238.

Drawings:

- see on the disk.

Rated voltage, V	Current frequency, Hz	Consumption		Airflow, m³/h	Pressure, Pa	Noise level, dB	Operating temperature, °C	Weight, g	Operating resource at 25 °C, h	Code	Version EMC code
		mA	W								
230	50/60	62/50	10/8	12/15	23/33	31/33	from –10 to +60	0.39	50000	R5KV08230	R5KV082301
230	50/60	110/100	18/17	45/50	55/62	48/54	from –10 to +55	0.78	57000	R5KV12230	R5KV122301
230	50/60	233/224	36/36	200/220	90/90	50/55	from –10 to +55	1.5	50000	R5KVL15230	–
230	50/60	160	36	230/270	115/115	50/55	from –10 to +55	1.5	80,000	R5KV15230	R5KV152301
230	50/60	318/381	73/87	520/580	160/185	65.3/68.1	from –10 to +70	3.1	63,000	R5KV20230	R5KV202301
230	50/60	650/820	150/190	710/800	195/205	72.8/75.8	from –10 to +70	4.25	63,000	R5KVL20230	R5KVL202301
115	50/60	113/92	9/7	12/15	23/33	31/33	from –10 to +55	0.39	50000	R5KV08115	R5KV081151
115	50/60	200/180	16/15	45/50	55/62	46/49	from –10 to +55	0.78	57,000	R5KV12115	R5KV121151
115	50/60	280/270	31/31	230/270	115/115	50/55	from –10 to +60	1.5	80,000	R5KV15115	R5KV151151
115	50/60	530/650	60/74	520/580	160/185	66/69.2	from –10 to +70	3.1	63,000	R5KV20115	R5KV201151
115	50/60	1490/1850	165/215	730/820	210/210	74.7/78.9	from –10 to +70	4.25	63000	R5KVL20115	R5KVL201151
48	–	180	8.6	45	56	42.5	from –10 to +55	0.45	57000	R5KV12048	R5KV120481
48	–	340	16	225	99	60	from –10 to +55	1.4	80,000	R5KV15048	R5KV150481
24	–	85	2	15	25	30	from –10 to +55	0.18	50000	R5KV08024	R5KV080241
24	–	310	7.4	47	56	42.5	from –10 to +55	0.45	57,000	R5KV12024	R5KV120241
24	–	710	17	225	99	58	from –10 to +55	1.4	80,000	R5KV15024	R5KV150241

Roof-Mounted Fan


Purpose:

- heat extraction.

Material:

- aluminium, ABS-plastic, RAL 7035.

Distinctive features:

- operating resource up to 80000 hours at the environmental temperature of 25 °C;
- a mounting point is provided on the enclosure for grounding;
- protection degree is IP54.

Scope of supply:

- cover, fan, filter, mounting accessories.

Drawings:

- see on the disk.

Voltage, V	Current frequency, Hz	Power demand		Unimpeded flow, m³/h	Pressure, Pa	Noise level, dB	Temperature condition, °C	Code
		mA	W					
230	50/60	309/360	70/83	420/460	340/455	67.9/71	from -10 to +60	R5KTEV230
115	50/60	620/640	66/74	420/460	340/455	67/9/71	from -20 to +50	R5KTEV115

High duty roof-mounted fan


Purpose:

- heat extraction.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- operating resource up to 50000 hours at environmental temperature of 40 °C;
- protection degree is IP44.

Scope of supply:

- cover, fan, filter, mounting accessories.

Drawings:

- see on the disk.

Voltage, V	Current frequency, Hz	Power demand		Unimpeded flow m ³ /h	Noise level, dB	Temperature condition, °C	Code
		mA	W				
230	50/60	700/980	160/215	1500/1550	74/75	from -25 to +50	R5RTF1500A

Ventilation grid filter


Purpose:

- heat extraction.

Material:

- ABS plastic, UL94V0.

Distinctive features:

- grid color: RAL 7035;
- installation is performed using the spring clamps, that reduces installation time significantly;
- ability of the additional attachment with the fasteners;
- thickness of the enclosure wall for installation:
 - 1–2 mm for R5KF08** grid;
 - 1–2.1 mm for R5KF12** grid;
 - 1.5–3 mm for R5KF15** grid;
 - 1.5–2.5 mm for R5KF20** grid;
- filter (included to a scope of supply of the fans) is made of a material with specialized structures of temperature-controlled fibers, what provides effective and uninterrupted operation under extreme conditions from 100 °C and to 100 % of relative humidity;
- protection degree is IP54;
- storage temperature is from –40 to +70 °C.

Scope of supply:

- grid with a filter.

Technical information:

- page 246.

Drawings:

- see on the disk.

Dimensions, mm	Code	EMC version
106x106	R5KF08	R5KF081
150x150	R5KF12	R5KF121
250x250	R5KF15	R5KF151
325x325	R5KF20	R5KF201

Protection panel


Purpose:

- provides additional protection against moisture and solid particles within the enclosure.

Material:

- stainless steel.

Distinctive features:

- steel grade: AISI 304;
- thickness: 1 mm;
- protection degree is IP55;

Scope of supply:

- panel, mounting accessories.

Drawings:

- see on the disk.

Applicable to grid	Code
R5KF08/R5KV08**	R5CK08
R5KF12/R5KV12**	R5CK12
R5KF15/R5KV15**	R5CK15
R5KF20/R5KV20**	R5CK20

Ventilation cover


Purpose:

- heat extraction.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating.

Distinctive features:

- natural ventilation;
- protection degree is IP33.

Scope of supply:

- cover, mounting accessories.

Drawings:

- see on the disk.

Description	Code
Cover for the roof-mounted fan	R5VE08

Fans


R5V300A

R5V190A
Purpose:

- heat extraction.

Material:

- enclosure is made of an aluminium alloy;
- blading of the fan is made of reinforced fiberglass, UL94V0.

Distinctive features:

- operating temperature is from -40 to +70 °C;
- protection degree is IP55;
- operating resource is 40000 hours at environmental temperature of 40 °C;
- unsuitable for the ventilation grids.

Scope of supply:

- fan.

Drawings:

- see on the disk.

Voltage, V	Current frequency, Hz	Power, W	Airflow, m³/h	Static pressure, Pa	Noise level, dB	Code
230	50/60	20/19	144/167	62/76	40.5/44.5	R5V190A
230	50/60	29	348/384	157/197	50/55	R5V300A

Replaceable filters for ventilation grids


Purpose:

- air purification.

Material:

- polyolefin fibers.

Distinctive features:

- filter thickness: 8 mm;
- purification class: G3 (size of a particle from 5 µm);
- fire resistance complies with class F1 under DIN 53438;
- operating temperature is up to 100 °C at moisture of 100 %.

Scope of supply:

- 6 filters.

Description	Code
Replaceable filter kit for R5KF08/R5KV08 fans/ventilation grids	R5KVF08
Replaceable filter kit for R5KF12/R5KV12 fans/ventilation grids	R5KVF12
Replaceable filter kit for R5KF15/R5KV15 fans/ventilation grids	R5KVF15
Replaceable filter kit for R5KF20/R5KV20 fans/ventilation grids	R5KVF20

Ventilation spacers


Purpose:

- natural ventilation arrangement.

Material:

- galvanized steel.

Distinctive features:

- installed on the enclosure cover (the upper part of R5KTB** element);
- enclosure dust and moisture protection degree is up to IP20;

Scope of supply:

- 4 spacers.

Description	Code
Ventilation spacer for R5KTB** cover, height is 20 mm	R5SPA01
Ventilation spacer for R5KTB** cover, height is 50 mm	R5SPA02

Coolers

Cooling with industrial air conditioners



The coolers, included to "RAM klima" climate control system, allow performing effective cooling of the equipment within the enclosure installed outside or in premises with different temperature ranges.

The feature of this type of cooling is that the cooler does not use external medium air to recover heat from the enclosure, thus insulating the equipment from external atmosphere, which can contain dust and reagents potentially dangerous for the equipment.

A necessary condition for correct operation of the cooler is provision of a dust and moisture protection degree at least IP54.

"RAM klima" system is provided with a variety of versions of the coolers to solve different tasks. Wall-mounted and ceiling-mounted coolers, which allow performing effective cooling of the equipment within the enclosure in the environmental temperature range T_a from +20 to +50 °C and with range of cooling power from 300 to 4000 W with single-, two- and three-phase feed voltage, are used for cooling of the enclosures installed in the premises.

Outdoor coolers are used for effective cooling of enclosures installed outside or in aggressive process media. These coolers have the cooling power range from 1000 to 2000 W with single-phase feed voltage. High dust and moisture protection degree IP56, insularity of electric and electronic components against the environment, and special version of cooler's enclosure allow locating of the equipment in climatic areas with the environmental temperature from -60 °C and performing effective cooling of the equipment from -40 to +55 °C, what is approved by laboratory tests.

Mounting accessories, eye bolts and a hole cut out template, included to a kit, simplify transportation and installation of a unit. Monitoring and setting of basic parameters of the cooler are performed using an electronic thermostat or using RS-485 (RTU) remote control interface. Temperature created within the enclosure T_i is set in the range from +30 to +40 °C. The lower limit of a cooling temperature value can be expanded by a request.

The R134a grade coolant is a basic heat carrier of this device and is safe for humans as well as for the environment. When the cooler is operating, air dehumidification within the enclosure takes place forming the condensate, which congregates in a special dish located within the unit and is vaporized automatically. An automatic tripping function is provided in coolers to prevent an emergency situation in case of achievement of a critical moisture level.

The cooler shell is made of high-quality steel with thickness of 1.5 mm and further painting into RAL 7045 color. It is possible to make the enclosure of AISI 304 or 316 grade stainless steel.

Ease of change of a filter pad is caused by convenience of removal of a metal grid located on a front panel and does not require the additional tools and stopping of the unit. An aluminium filter, which prevents deposition of aggressive agents on lamellae of a condenser and provides long service life, is used during operation of the coolers in places with contaminated process medium.

Coolers

Basic advantages



Safe and ecofriendly

Use of R134a grade coolant ensures safety for people and environment



High dust and moisture protection level

A closed loop of foamed polyurethane on the entire inside perimeter of the cooler provides dust and moisture protection level IP54



Automatic condensate removal

A built-in system of automatic condensate removal does not require additional installation of a system of drainage pipes



Ease of installation

The eye bolts, hole cut out templates and additional accessories, included to the kit, make it possible to perform installation of the cooler on the enclosure in a prompt and simple manner



Remote control and additional signaling

RS-485 standard built-in interface makes it possible to control operation of the cooler and connect it to a common management network of the climate control system (up to 32 units)



Local control

A digital thermostat, located on the front panel, performs monitoring and control of the parameters in real-time mode



Air filtration

A removal filter pad protects the condenser lamellae against contamination and deposition of the reagents, thus providing effective heat extraction and long service life of the cooler

Wall-mounted coolers from 300 to 800 W


Purpose:

- change of the airflow temperature.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating;
- AISI304 or AISI316 stainless steel – on request.

Distinctive features:

- dust and moisture protection degree is IP54;
- built-in electronic thermostat;
- built-in moisture evaporator with liquid level control;
- complete with the removable air filter;
- cooler remote control is possible.

Scope of supply:

- cooler, eye bolts, mounting accessories, mounting hole template.

Technical information:

- page 241.

Drawings:

- see on the disk.

Basic characteristics	Code					
	R5KLM03021LT	R5KLM03042LT*	R5KLM05021LT	R5KLM05042LT	R5KLM08021LT	R5KLM08042LT
Power, W	300	300	500	500	800	800
Voltage, V	~230, 1 phase	~400, 2 phases	~230, 1 phase	~400, 2 phases	~230, 1 phase	~400, 2 phases
Frequency, Hz	50/60	50/60	50/60	50/60	50/60	50/60
Cooling capacity according to DIN 3168, W (L35/L35)	330/360	330/360	530/560	520/550	860/940	830/900
Cooling capacity according to DIN 3168, W (L35/L50)	270/280	270/280	410/430	400/420	690/720	650/690
Dimensions, mm	500x310x188	500x310x188	630x310x230	595x280x228	630x310x230	630x280x278
Rated maximum current, A	1.3/1.5	0.8/0.9	2/2.2	1.2/1.3	2.9/3.2	1.7/1.9
Starting current, A	9	6	11	7	17	9
Fuse, A	4	4	6	4	6	4
Absorption according to DIN 3168, W (L35/L35)	190/220	190/220	280/330	280/330	400/460	400/460
Absorption according to DIN 3168, W (L35/L50)	220/270	220/270	320/390	320/390	450/540	450/540
Temperature adjustment range, °C	from +30 to +40	from +30 to +40	from +30 to +40	from +30 to +40	from +30 to +40	from +30 to +40
Operating temperature range, °C	from +20 to +50	from +20 to +50	from +20 to +50	from +20 to +50	from +20 to +50	from +20 to +50
Internal dust and moisture protection degree	IP54	IP54	IP54	IP54	IP54	IP54
External dust and moisture protection degree	IP34	IP34	IP34	IP34	IP34	IP34
Noise level, dB	61	61	67	67	67	67
Weight, g	20	20	24	26	28	31
Coolant type	R134a	R134a	R134a	R134a	R134a	R134a

* External transformer

Wall-mounted coolers from 1000 to 1500 W



Purpose:

- change of the airflow temperature.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating;
- AISI304 or AISI316 stainless steel – on request.

Distinctive features:

- dust and moisture protection degree is IP54;
- built-in electronic thermostat;
- built-in moisture evaporator with liquid level control;
- complete with removable air filter;
- cooler remote control is possible.

Scope of supply:

- cooler, eye bolts, mounting accessories, mounting hole template.

Technical information:

- page 242.

Drawings:

- see on the disk.

Basic characteristics	Code				
	R5KLM10021LT	R5KLM10042LT	R5KLM15021LT	R5KLM15042LT	R5KLM15043LT
Power, W	1000	1000	1500	1500	1500
Voltage, V	~230, 1 phase	~400, 2 phases	~230, 1 phase	~400, 2 phases	~400/440, 3 phases
Frequency, Hz	50/60	50/60	50/60	50/60	50/60
Cooling capacity according to DIN 3168, W (L35/L35)	1020/1120	1020/1120	1420/1560	1420/1560	1480/1620
Cooling capacity according to DIN 3168, W (L35/L50)	820/860	820/860	1140/1190	1140/1190	1180/1230
Dimensions, mm	950x400x245	1050x400x245	950x400x245	1050x400x245	1050x400x245
Rated maximum current, A	3.7/4.1	2.1/2.4	5.2/5.8	3/3.3	2/2.1
Starting current, A	20	13	24	16	11
Fuse, A	8	4	8	5	4
Absorption according to DIN 3168, W (L35/L35)	490/570	490/570	660/760	660/760	690/780
Absorption according to DIN 3168, W (L35/L50)	540/650	540/650	760/920	760/920	780/940
Temperature adjustment range, °C	from +30 to +40	from +30 to +40	from +30 to +40	from +30 to +40	from +30 to +40
Operating temperature range, °C	from +20 to +50	from +20 to +50	from +20 to +50	from +20 to +50	from +20 to +50
Internal dust and moisture protection degree	IP54	IP54	IP54	IP54	IP54
External dust and moisture protection degree	IP34	IP34	IP34	IP34	IP34
Noise level, dB	69	69	69	69	69
Weight, g	38	47	40	48	50
Coolant type	R134a	R134a	R134a	R134a	R134a

Wall-mounted coolers from 2000 to 4000 W


Purpose:

- change of the airflow temperature.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating;
- AISI304 or AISI316 stainless steel – on request.

Distinctive features:

- dust and moisture protection degree is IP54;
- built-in electronic thermostat;
- built-in moisture evaporator with liquid level control;
- complete with the removable air filter;
- cooler remote control is possible.

Scope of supply:

- cooler, eye bolts, mounting accessories, mounting hole template.

Technical information:

- pages 243–244.

Drawings:

- see on the disk.

Basic characteristics	Code				
	R5KLM20021LT	R5KLM20042LT	R5KLM20043LT	R5KLM30043LT	R5KLM40043LT
Power, W	2000	2000	2000	3000	4000
Voltage, V	~230, 1 phase	~400, 2 phases	~400/440, 3 phases	~400/460, 3 phases	~400/460, 3 phases
Frequency, Hz	50/60	50/60	50/60	50/60	50/60
Cooling capacity according to DIN 3168, W (L35/L35)	1960/2150	1960/2150	1830/2000	2800/3080	4000/4200
Cooling capacity according to DIN 3168, W (L35/L50)	1570/1640	1570/1640	1460/1530	2240/2350	3000/3150
Dimensions, mm	950x400x245	1050x400x245	1050x400x245	1100x500x353	1100x500x353
Rated maximum current, A	6/6.6	3.4/3.8	2.3/2.6	2.6/2.9	3.3/3.7
Starting current, A	26	17	10	12	15
Fuse, A	12	6	4	8	8
Absorption according to DIN 3168, W (L35/L35)	930/1070	930/1070	900/1040	1100/1270	1800/2000
Absorption according to DIN 3168, W (L35/L50)	1080/1300	1080/1300	1030/1250	1260/1520	2120/2500
Temperature adjustment range, °C	from +30 to +40	from +30 to +40	from +30 to +40	from +30 to +40	from +30 to +40
Operating temperature range, °C	from +20 to +50	from +20 to +50	from +20 to +50	from +20 to +50	from +20 to +50
Internal dust and moisture protection degree	IP54	IP54	IP54	IP54	IP54
External dust and moisture protection degree	IP34	IP34	IP34	IP34	IP34
Noise level, dB	70	70	70	71	72
Weight, g	46	56	53	72	75
Coolant type	R134a	R134a	R134a	R134a	R134a

Roof-mounted coolers from 1000 to 1500 W



Purpose:

- change of the airflow temperature.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating;
- AISI304 or AISI316 stainless steel – on request.

Distinctive features:

- dust and moisture protection degree is IP54;
- built-in electronic thermostat;
- built-in moisture evaporator with liquid level control;
- complete with the removable air filter;
- cooler remote control is possible.

Scope of supply:

- cooler, eye bolts, mounting accessories, mounting hole template.

Technical information:

- page 244.

Drawings:

- see on the disk.

Basic characteristics	Code				
	R5KLM10021RT	R5KLM10042RT	R5KLM15021RT	R5KLM15042RT	R5KLM15043RT
Power, W	1000	1000	1500	1500	1500
Voltage, V	~230, 1 phase	~400, 2 phases	~230, 1 phase	~400, 2 phases	~400/440, 3 phases
Frequency, Hz	50/60	50/60	50/60	50/60	50/60
Cooling capacity according to DIN 3168, W (L35/L35)	1020/1120	1020/1120	1420/1560	1420/1560	1480/1620
Cooling capacity according to DIN 3168, W (L35/L50)	820/860	820/860	1140/1190	1140/1190	1180/1230
Dimensions, mm	455x600x408	455x600x408	455x600x408	455x600x408	455x600x408
Rated maximum current, A	3.7/4.1	2.1/2.4	5.2/5.8	3/3.3	2/2.1
Starting current, A	20	13	24	16	11
Fuse, A	8	4	8	5	4
Absorption according to DIN 3168, W (L35/L35)	490/570	490/570	660/760	660/760	690/780
Absorption according to DIN 3168, W (L35/L50)	540/650	540/650	760/920	760/920	780/940
Temperature adjustment range, °C	from +30 to +40	from +30 to +40	from +30 to +40	from +30 to +40	from +30 to +40
Operating temperature range, °C	from +20 to +50	from +20 to +50	from +20 to +50	from +20 to +50	from +20 to +50
Internal dust and moisture protection degree	IP54	IP54	IP54	IP54	IP54
External dust and moisture protection degree	IP34	IP34	IP34	IP34	IP34
Noise level, dB	69	69	69	69	79
Weight, g	43	48	45	51	55
Coolant type	R134a	R134a	R134a	R134a	R134a

Roof-mounted coolers from 2000 to 4000 W


Purpose:

- change of the airflow temperature.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating;
- AISI304 or AISI316 stainless steel – on request.

Distinctive features:

- dust and moisture protection degree is IP54;
- built-in electronic thermostat;
- built-in moisture evaporator with liquid level control;
- complete with the removable air filter;
- cooler remote control is possible.

Scope of supply:

- cooler, eye bolts, mounting accessories, mounting hole template.

Technical information:

- pages 245-246.

Drawings:

- see on the disk.

Basic characteristics	Code				
	R5KLM20021RT	R5KLM20042RT	R5KLM20043RT	R5KLM30043RT	R5KLM40043RT
Power, W	2000	2000	2000	3000	4000
Voltage, V	~230, 1 phase	~400, 2 phases	~400/440, 3 phases	~400/460, 3 phases	~400/460, 3 phases
Frequency, Hz	50/60	50/60	50/60	50/60	50/60
Cooling capacity according to DIN 3168, W (L35/L35)	1960/2150	1960/2150	1830/2000	2800/3080	4000/4200
Cooling capacity according to DIN 3168, W (L35/L50)	1570/1640	1570/1640	1460/1530	2240/2350	3000/3150
Dimensions, mm	455x600x408	455x600x408	455x600x408	505x800x508	505x800x508
Rated maximum current, A	6/6.6	3.4/3.8	2.3/2.6	2.6/2.9	3.3/3.7
Starting current, A	26	17	10	12	15
Fuse, A	8	6	4	8	8
Absorption according to DIN 3168, W (L35/L35)	930/1070	930/1070	900/1040	1100/1270	1800/2000
Absorption according to DIN 3168, W (L35/L50)	1080/1300	1080/1300	1030/1250	1260/1520	2120/2500
Temperature adjustment range, °C	from +30 to +40	from +30 to +40	from +30 to +40	from +30 to +40	from +30 to +40
Operating temperature range, °C	from +20 to +50	from +20 to +50	from +20 to +50	from +20 to +50	from +20 to +50
Internal dust and moisture protection degree	IP54	IP54	IP54	IP54	IP54
External dust and moisture protection degree	IP34	IP34	IP34	IP34	IP34
Noise level, dB	70	70	70	71	72
Weight, g	51	57	58	72	75
Coolant type	R134a	R134a	R134a	R134a	R134a

Wall-mounted outdoor coolers from 1000 to 2000 W



Purpose:

- change of the airflow temperature.

Material:

- steel with thickness of 1.5 mm, RAL 7035 powder coating;
- AISI304 or AISI316 stainless steel – on request.

Distinctive features:

- dust and moisture protection degree is IP56;

Scope of supply:

- cooler, eye bolts, mounting accessories, mounting hole template.

Technical information:

- page 242.

Drawings:

- see on the disk.

Basic characteristics	Code		
	R5KLM10021LO	R5KLM15021LO	R5KLM20021LO
Power, W	1000	1500	2000
Voltage, V	~230, 1 phase	~230, 1 phase	~230, 1 phase
Frequency, Hz	50/60	50/60	50/60
Cooling capacity according to DIN 3168, W (L35/L35)	1020/1120	1420/1560	1960/2150
Cooling capacity according to DIN 3168, W (L35/L50)	820/860	1140/1190	1570/1640
Dimensions, mm	950x400x237	950x400x237	950x400x237
Rated maximum current, A	3.7/4.1	5.2/5.8	6.0/6.6
Starting current, A	20 A	24 A	26 A
Fuse, A	8	8	12
Absorption according to DIN 3168, W (L35/L35)	490/570 W	660/760 W	930/1070 W
Absorption according to DIN 3168, W (L35/L35)	540/650 W	760/920 W	1080/1300 W
Temperature adjustment range, °C	from +30 to +40	from +30 to +40	from +30 to +40
External dust and moisture protection degree	IP56	IP56	IP56
Noise level, dB	69	69	69
Weight, g	45	47	50
Coolant type	R134a	R134a	R134a

Accessories for coolers

Air filter


Purpose:

- filtration of the input airflow.

Material:

- aluminium;
- polyurethane.

Distinctive features:

- it is recommended to use an aluminum oxide filter during operation of the cooler in the aggressive media.

Scope of supply:

- filter.

Wall-mounted cooler power	Ceiling-mounted cooler power	Code	
		aluminium filter	polyurethane filter
300–500–800 W 230 V	–	R5KLMFA1	R5KLMFP1
500–800 W 400 V	–	R5KLMFA2	R5KLMFP2
1000–1500–2000 W	–	R5KLMFA3	R5KLMFP3
3000–4000 W	–	R5KLMFA4	R5KLMFP4
–	1000–1500–2000 W	R5KLMFA5	R5KLMFP5
–	3000–4000 W	R5KLMFA6	R5KLMFP6

Air deflector


Purpose:

- change of the airflow direction.

Material:

- metal.

Distinctive features:

- used only with the wall-mounted coolers;
- ease of installation.

Scope of supply:

- deflector, mounting accessories.

Cooler power, W	Code
300–500–800	R5KLMDI1
1000–1500–2000	R5KLMDI2
3000–4000	R5KLMDI3

Reinforced door hinges


Purpose:

- reinforcement of doors during installation of the coolers on them.

Material:

- steel.

Distinctive features:

- used for reinforcement of doors of CQE/DAE series enclosures;
- it is recommended to use power from 3000 to 4000 W during installation of the coolers.

Scope of supply:

- hinges, mounting accessories.

Cooler power, W	Code
3000–4000	R5KLRCR

Frame for wall-mounted cooler embedding


Purpose:

- change of depth of installation of the cooler.

Material:

- steel.

Distinctive features:

- used only with the wall-mounted coolers;
- attached to the enclosure using bolts;
- reduces projection of the cooler from an external panel of the enclosure.

Scope of supply:

- frame, mounting accessories.

Cooler power	Code
300 W 230/400 V	R5KLMCSI1
500–800 W 230 V	R5KLMCSI2
500 W 400 V	R5KLMCSI3
800 W 400 V	R5KLMCSI4
1000–1500–2000 W 230 V	R5KLMCSI5
3000–4000 W 400/460 V	R5KLMCSI6
1000–1500–2000 W 400/460 V	R5KLMCSI7

Heaters

Prevention of condensate formation using heaters



Heaters, included to "RAM klima" climate control system, provide protection of the equipment against overcooling and prevent temperature from achieving the dew point, at which moisture condensation occurs on current-carrying elements, that leads to formation of corrosion and possibility of short circuit.

Wide range of powers from 5 to 2000 W and operating temperature from -40 to $+70$ °C makes it possible to protect the elements located within the electrotechnical enclosures against adverse environmental conditions.

A compact version of heaters is intended for reduction of volume occupied inside the enclosure without functional loss.

Built-in protection prevents occurrence of an emergency situation and cuts expenses on repairs in case of a failure of a heater fan.

A version with a plastic shell is intended for protection of maintenance personnel against burns upon contact with the heater.

Basic advantages



Aluminium profile

Special form of the fins of the aluminium profile makes it possible to perform adequate heating of space with high figure of efficiency



Decrease of size without power loss

A compact series of heaters allows solving a task of heat of the equipment in confined space



Contact protection

High duty heaters are equipped with the plastic shell, which prevents personnel injury in case of a contact



Low energy consumption

The main element of the heater is a heat resistor with PTC technology, which reduces energy consumption during further activation to support the air temperature within the enclosure



Emergency power outage

Built-in temperature fuse deenergizes the heater in case of its overheating due to the failure of a dissipating fan



Ease of installation

All the models of the heaters are equipped with a clip for installation on the DIN rail, allowing performing installation within a short space of time (installation of a version on increased powers is performed on a mounting plate)

Air heating

Standard heaters with power from 25 to 150 W


Purpose:

- increase of environmental temperature.

Material:

- aluminium alloy.

Distinctive features:

- installed on the DIN rail;
- heating element is made of a PTC-type self-regulated resistor;
- provided with the fuse holder, maximum cable section: 2x2.5 mm²;
- rated voltage is 110–230 W, AC/DC;
- protection degree is IP20;
- operating temperature is from -45 to +70 °C;
- storage temperature is from -45 to +70 °C.

Scope of supply:

- heater.

Drawings:

- see on the disk.

Power, W	Max. current consumption, A	Weight, g	Dimensions, mm (HxWxD)	Code
25	2	0.25	90x80x50	R5SHT025
50		0.30	110x80x50	R5SHT050
75	4	0.45	160x80x50	R5SHT075
100		0.50	110x80x90	R5SHT100
150	6	1.1	220x80x90	R5SHT150

Standard fan assisted heater with power from 250 to 750 W


Purpose:

- increase of environmental temperature.

Material:

- aluminium alloy.

Distinctive features:

- installed on the DIN rail;
- equipped with the fan for effective heat dissipation;
- built-in temperature fuse for protection of the heater in case of the fan failure;
- work LED indication;
- heating element is made of the PTC-type self-regulated resistor;
- fitted with the fuse holder, maximum cable section: 3x2.5 mm²;
- rated voltage is 110 or 230 V, AC;
- protection degree is IP20;
- operating temperature is from -25 to +70 °C;
- storage temperature is from -25 to +70 °C.

Scope of supply:

- heater.

Drawings:

- see on the disk.

Power, W	Voltage, V	Max. current consumption, A	Weight, g	Dimensions, mm (HxWxD)	Code
250	110	2.4	0.88	135x82x112	R5FSHT251
	230	1.2			R5FSHT250
500	110	4.8	0.97	165x82x112	R5FSHT501
	230	2.4			R5FSHT500
750	110	7.2	1.35	225x82x112	R5FSHT751
	230	3.6			R5FSHT750

Compact heaters


Purpose:

- increase of environmental temperature.

Material:

- aluminium alloy.

Distinctive features:

- installed on the DIN rail;
- small size of a product makes it possible to perform installation in confined space;
- the heating element consists of a PTC-type self-regulated resistor;
- protection degree is IP20;
- supplied in 2 versions:
 - with a cable up to 30 W (inclusively);
 - with a cable up from 75 W to 300 W (inclusively);
- rated voltage:
 - for a heater: 110–250 W(AC/DC);
 - for a fan: 24 W (AC/DC);
- cable 0.5 mm² with from 2 to 4 conductors and length of 400 mm are used;
- operating temperature is from –20 to +70 °C;
- storage temperature is from –25 to +70 °C.

Scope of supply:

- heater.

Recommendations for selection:

- page 239.

Drawings:

- see on the disk.

Power, W	Maximum current, A	Weight, g	Dimensions, mm (HxWxD)	Code	Fan power supply is 230 V
5	1.5	0.11	55x40x40	R5MHT5	–
15	2	0.12	55x40x40	R5MHT15	–
30	2	0.14	65x40x40	R5MHT30	–
75	4	0.20	97x40x40	R5FMHT75	–
100	4	0.21	97x40x40	R5FMHT100	R5FMHT100S
150	6	0.28	132x40x40	R5FMHT150	R5FMHT150S
230	6	0.30	142x40x40	R5FMHT230	R5FMHT230S
300	8	0.42	157x40x40	R5FMHT300	R5FMHT300S

Compact fan assisted ptc heater


Purpose:

- increase of environmental temperature.

Material:

- aluminium alloy; plastic.

Distinctive features:

- installed on the DIN rail;
- the heating element consists of the PTC-type self-regulated resistor;
- protection degree is IP20;
- air flow value is 30 m³/hour;
- cable section for the terminal block is 3x2.5 mm²;
- rated voltage is 230 V;
- operating temperature is from –40 to +70 °C;
- storage temperature is from –40 to +70 °C.

Scope of supply:

- heater

Recommendations for selection:

- page 239.

Drawings:

- see on the disk.

Power, W	Maximum current, A	Weight, g	Dimensions, mm (HxWxD)	Code
300	5	0.35	88x66x97	R5TMx300
400	6			R5TMx400

High duty heaters


Purpose:

- increase of environmental temperature.

Material:

- aluminium alloy; plastic, UL94V0.

Distinctive features:

- installed on the mounting plate;
- the heating element consists of the PTC-type self-regulated resistor;
- supplied without the thermostat;
- dust and moisture protection degree is IP20;
- air flow value is 160 m³/hour;
- cable section for the terminal block is 3x2.5 mm²;
- rated voltage is 230 V;
- rated temperature is from -40 to +70 °C;
- storage temperature is from -40 to +70 °C.

Scope of supply:

- heater.

Recommendations for selection:

- page 239.

Drawings:

- see on the disk.

Power, W	Maximum current, A	Weight, g	Dimensions, mm (HxWxD)	Code
1200	5.73	1.27	95x120x160	R5FPH1200
1500	7.17			R5FPH1500
2000	9.56			R5FPH2000

Equipment for control of temperature

Thermostats


Purpose:

- control of environmental temperature.

Material:

- plastic (PA6), flame-retardant, UL94V0.

Distinctive features:

- bimetal mechanism;
- installed on the DIN rail;
- color is RAL 7035;
- protection level is IP20;
- fitted with the fuse holder, maximum cable section: 2x2.5 mm²;
- pitch of temperature scale change is 5 °C;
- commutation wear resistance: >100000 cycles;
- operating temperature is from -25 to +80 °C;
- storage temperature is from -45 to +80 °C.
- dimensions (HxWxD): 61x34x35;
- supplied in 2 versions:
 - with normally open (NO) contact;
 - with normally closed (NC) contact.

Scope of supply:

- thermostat.

Technical information:

- page 248.

Drawings:

- see on the disk.

Rated current, A	Rated voltage, V	Temperature range, °C	Accuracy, °C	Contact type	Code
10 (2*)	110-250	from 0 to +60	±4	NO – for ventilation	R5THV2
10 (2*)	110-250	from 0 to +60	±4	NC – for heating	R5THR2

* At $\cos \varphi = 0.6$

Dual thermostat


Purpose:

- control of environmental temperature.

Material:

- plastic (PA6), flame-retardant, UL94V0.

Distinctive features:

- bimetal mechanism;
- installed on the DIN rail;
- color is RAL 7035;
- protection level is IP20;
- rated voltage is 110–250 V;
- fitted with the fuse holder, maximum cable section: 4x2.5 mm²;
- pitch of temperature scale change is 5 °C;
- commutation wear resistance: >100000 cycles;
- operating temperature is from -25 to +80 °C;
- storage temperature is from -45 to +80 °C.
- dimensions (HxWxD): 61x53x35.

Scope of supply:

- thermostat.

Technical information:

- page 248.

Drawings:

- see on the disk.

Rated current, A		Temperature range, °C		Accuracy, °C	Code
at 110 V	at 250 V	NC	NO		
15 (2.5*)	10 (1.6*)	from -10 to +50	from +20 to +80	±4	R5THRV13

* At $\cos \varphi = 0.6$

Thermostats with fixed setpoint



Purpose:

- control of environmental temperature.

Material:

- plastic (PA6), flame-retardant, UL94V0.

Distinctive features:

- bimetal mechanism;
- installed on the DIN rail;
- color is RAL 7035;
- protection level is IP20;
- rated voltage is 110–250 V;
- fitted with the fuse holder, maximum cable section: 2x2.5 mm²;
- commutation wear resistance: >100000 cycles;
- operating temperature is from –40 to +80 °C;
- storage temperature is from –45 to +80 °C.
- dimensions (HxWxD): 43x27x35.

Scope of supply:

- thermostat.

Technical information:

- page 248.

Drawings:

- see on the disk.

Rated current, A		Temperature, °C	Contact type	Accuracy, °C	Code
at 110 V	at 250 V				
10 (2*)	5 (1.6*)	+5	NC	±4	R5THRF05
		+35	NO		R5THVF35
		+50	NO		R5THVF50

* At $\cos \varphi = 0.6$

Humidistat



Purpose:

- control of environmental moisture.

Material:

- plastic (PA6), flame-retardant, UL94V0.

Distinctive features:

- mechanical device;
- installed on the DIN rail;
- color is RAL 7035;
- protection level is IP20;
- rated voltage is 110–250 V;
- fitted with the fuse holder, maximum cable section: 3x2.5 mm²;
- contact type: Break-before-make (NO/NC);
- pitch of moisture scale change is 5 %;
- commutation wear resistance: >100000 cycles;
- operating temperature is from –10 to +50 °C;
- dimensions (HxWxD): 96x54x42.

Scope of supply:

- humidistat.

Technical information:

- page 248.

Drawings:

- see on the disk.

Rated current, A		For a contact type	Range of scale values, %	Accuracy, %	Contact type	Code
at 250 V	at 110 V					
2.2	4.4	NO	10-90	5	NO/NC	R5MUH01
5	10	NC				

Electronic Thermohygrostat


Purpose:

- environmental temperature and moisture control.

Material:

- plastic (PA6), flame-retardant, UL94V0.

Distinctive features:

- represents an electronic device;
- installed on the DIN rail;
- color is RAL 7035;
- protection level is IP20;
- rated voltage is 230 V/50-60 Hz;
- fitted with the fuse holder, maximum cable section: 6x2.5 mm²;
- contact type: Break-before-make (NO/NC);
- pitch of temperature scale change is 10 °C, 10 % rH;
- commutation wear resistance: >100000 cycles;
- operating temperature is from -20 to +80 °C;
- storage temperature is from -20 to +80 °C;
- dimensions (HxWxD): 68x53x38.

Scope of supply:

- humidity meter.

Technical information:

- page 248.

Drawings:

- see on the disk.

Maximum commutated current, A		Range of adjustable values		Accuracy	Code
NO at 250 V	NC at 250 V	T, °C	rH, %		
10 (1.7*)		from 0 to +60	from 30 to 90	±1	R5ETUH22

* At $\cos \varphi = 0.6$

Heat insulation


Purpose:

- heat insulation.

Material:

- self-stick foil-coated heat retainer made of polyethylene foam.

Distinctive features:

- size of the heat retainer is 1000*1200 mm;
- thickness of the heat retainer is 10 mm;
- thickness of aluminium coating is 14 µm;
- operating temperature is from -60 to +100 °C;
- heat conductivity factor λ at 20 °C: 0.038 W/(m*K);
- heat exchange resistance R is 0.26 m²*K/W;
- adhesion of a glue line to a metal surface is at least 300 g/cm².

Scope of supply:

- heat retarder.

Description	Code
Heat retarder 1200x1000 mm, thickness is of 10 mm	R5THP1001

Aluminum tape


Purpose:

- heat insulation, gluing of joints.

Material:

- aluminium foil with acrylic glue line and a protective film.

Distinctive features:

- tape width is 50 mm;
- tape length is 50 mm;
- thickness is 50 µm;
- operating temperature is from -40 to +50 °C;
- installation temperature is from +5 to +40 °C;
- adhesion of the glue line to the metal surface is at least 8 N/cm.
- tear strength is 2 N/cm.

Scope of supply:

- 6 rollers.

Description	Code
Aluminium tape, width is 50 mm, length is 25 m.	R5ALTP25

RAM group technical information

Recommendations on bus clamp installation

Edgewise installation of buses with thickness of 5 mm

1 bus per phase

Buses per phase	I _{pk} , kA	I _{cw} , kA	Distance between phases, mm	Minimum distance between bus clamps, mm						
				30x5	40x5	50x5	63x5	80x5	100x5	120x5
1	53	25	50	225	265	295	330	375	415	465
			75	280	325	360	405	455	510	570
			100	320	375	415	470	530	590	660
			125	360	415	465	525	590	660	740
	74	35	50	160	190	210	235	265	300	335
			75	200	230	260	290	325	365	385
			100	230	265	300	335	380	425	475
			125	260	300	335	375	425	475	530
	110	50	50	110	125	140	160	180	200	225
			75	135	155	175	195	220	245	285
			100	155	180	200	225	255	285	315
			125	175	200	225	250	285	315	355
	143	65	50	–	–	110	120	135	155	170
			75	–	–	130	150	170	190	210
			100	–	–	155	170	195	220	245
				–	–	170	195	220	245	275
Rated current of copper flat buses according to DIN 43671			T=65 °C	379	482	583	718	885	1080	1300
			T=85 °C	502	639	772	951	1173	1431	1723

2 buses per phase

Buses per phase	Ipk, kA	Icw, kA	Distance between phases, mm	Minimum distance between bus clamps, mm						
				30x5	40x5	50x5	63x5	80x5	100x5	120x5
2	53	25	50	220	270	320	375	455	540	645
			75	240	295	345	410	490	580	690
			100	245	310	365	430	515	610	730
			125	245	310	375	450	540	640	760
	74	35	50	160	195	230	270	325	380	400
			75	170	210	250	295	350	420	450
			100	175	220	260	310	370	440	500
			125	175	220	270	325	385	460	540
	110	50	50	105	130	150	180	215	260	310
			75	115	140	165	195	235	280	330
			100	115	145	175	205	250	295	350
			125	115	150	180	215	260	305	365
	143	65	50	–	100	115	140	165	200	240
			75	–	100	125	150	180	215	255
			100	–	100	135	160	190	225	270
			125	–	100	135	165	200	235	280
Rated current of copper flat buses according to DIN 43671			T=65 °C	672	836	994	1197	1450	1730	2022
			T=85 °C	890	1108	1317	1586	1921	2292	2679

3 buses per phase

Buses per phase	I _{pk} , kA	I _{cw} , kA	Distance between phases, mm	Minimum distance between bus clamps, mm						
				30x5	40x5	50x5	63x5	80x5	100x5	120x5
3	53	25	75	285	345	405	475	570	675	815
			100	285	355	425	500	600	710	860
			125	285	355	425	510	620	735	910
			150	285	355	425	510	620	755	945
	74	35	75	200	245	290	340	375	380	380
			100	200	255	300	360	405	415	445
			125	200	255	300	365	445	525	625
			150	200	255	300	365	450	540	645
	110	50	75	135	165	195	230	275	325	345
			100	135	170	200	240	285	340	355
			125	135	170	200	245	295	355	360
			150	135	170	200	245	300	365	365
	143	65	75	105	125	150	175	210	245	255
			100	105	130	155	185	220	260	290
			125	105	130	155	190	230	270	320
			150	105	130	155	190	230	280	330
	165	75	75	–	110	130	150	175	185	195
			100	–	110	135	160	190	225	235
			125	–	110	135	165	195	235	265
			150	–	110	135	165	200	240	285
Rated current of copper flat buses according to DIN 43671			T=65 °C	896	1090	1260	1494	1750	2050	2381
			T=85 °C	1187	1444	1670	1980	2319	2716	3155

4 buses per phase

Buses per phase	Ipk, kA	Icw, kA	Distance between phases, mm	Minimum distance between bus clamps, mm						
				30x5	40x5	50x5	63x5	80x5	100x5	120x5
4	53	25	75	330	400	465	545	650	770	960
			100	330	410	485	575	685	820	1030
			125	330	410	485	585	710	860	1080
			150	330	410	485	585	710	890	1120
	74	35	75	235	285	330	370	375	380	380
			100	235	295	350	390	405	415	445
			125	235	295	350	420	470	600	710
			150	235	295	350	420	510	615	730
	110	50	75	155	190	220	260	310	345	345
			100	160	195	235	275	330	350	355
			125	160	195	235	280	340	360	360
			150	160	195	235	280	340	365	365
	143	65	75	120	145	170	200	230	245	255
			100	120	150	180	210	250	280	290
			125	120	150	180	215	260	310	320
			150	120	150	180	215	260	315	340
	165	75	75	105	125	145	165	170	180	200
			100	105	130	155	185	215	230	235
			125	105	130	155	185	225	260	270
			150	105	130	155	185	225	275	295
Rated current of copper flat buses according to DIN 43671			T=65 °C	1003	1220	1411	1673	1960	2296	2666
			T=85 °C	1329	1617	1870	2217	2597	3042	3532

Edgewise installation of buses with thickness of 10 mm

1 bus per phase

Buses per phase	Ipk, kA	Icw, kA	Distance between phases, mm	Minimum distance between bus clamps, mm						
				30x10	40x10	50x10	60x10	80x10	100x10	120x10
1	53	25	50	455	530	545	545	545	545	545
			100	550	650	720	810	915	1025	1135
			125	560	750	830	940	1055	1200	1370
			150	720	835	935	1050	1210	1410	1605
	74	35	50	325	380	425	480	500	500	500
			100	400	460	520	525	525	525	525
			125	460	530	560	560	560	560	560
			150	520	600	670	750	850	955	1030
	110	50	50	220	255	285	320	335	335	335
			100	265	310	350	390	440	440	440
			125	310	360	400	450	495	495	495
			150	350	400	450	505	505	505	505
	143	65	50	170	195	195	195	195	200	200
			100	205	240	265	295	295	275	275
			125	240	275	310	345	360	375	375
			150	260	310	345	390	410	425	425
Rated current of copper flat buses according to DIN 43671			T=65 °C	573	715	852	985	1240	1490	1740
			T=85 °C	756	944	1129	1305	1643	1974	2306

2 buses per phase

Buses per phase	Ipk, kA	Icw, kA	Distance between phases, mm	Minimum distance between bus clamps, mm						
				30x10	40x10	50x10	60x10	80x10	100x10	120x10
2	53	25	75	530	620	740	860	1020	1230	1230
			100	570	680	790	920	1050	1300	1300
			125	590	710	820	960	1100	1350	1350
			150	590	720	840	1000	1200	1400	1400
	74	35	75	380	460	510	510	510	520	520
			100	400	480	525	530	530	535	535
			125	425	500	540	545	545	555	560
			150	425	510	570	630	630	640	650
	110	50	75	255	310	350	385	395	410	435
			100	275	330	380	440	450	470	490
			125	280	340	390	460	495	495	495
			150	285	350	410	480	495	505	505
	143	65	75	190	220	235	245	255	275	285
			100	215	250	290	310	325	335	345
			125	220	260	305	350	375	385	390
			150	220	270	315	370	420	425	435
	165	75	75	170	170	175	180	190	205	215
			100	180	210	220	235	240	250	265
			125	190	225	265	275	285	305	315
			150	190	225	270	300	315	350	360
	187	85	75	130	130	135	140	150	160	160
			100	155	170	175	180	190	200	205
			125	160	200	215	220	230	230	235
			150	165	205	240	260	270	280	280
Rated current of copper flat buses according to DIN 43671			T=65 °C	986	1230	1510	1720	2110	2480	2860
			T=85 °C	1300	1624	2001	2279	2796	3286	3790

3 buses per phase

Buses per phase	Ipk, kA	Icw, kA	Distance between phases, mm	Minimum distance between bus clamps, mm						
				30x10	40x10	50x10	60x10	80x10	100x10	120x10
3	53	25	100	670	810	930	1050	1300	1300	1300
			125	700	840	975	1150	1200	1400	1400
			150	710	860	1000	1200	1200	1400	1400
			175	710	860	1000	1200	1200	1400	1400
	74	35	100	490	580	585	780	900	1200	1200
			125	505	610	700	810	950	1200	1200
			150	505	615	715	840	975	1200	1200
			175	505	615	715	850	1000	1200	1200
	110	50	100	330	385	450	500	500	505	505
			125	335	410	465	510	510	515	515
			150	340	410	470	520	525	525	525
			175	340	410	480	535	535	535	535
	143	65	100	250	300	345	400	410	420	435
			125	260	310	360	420	470	480	485
			150	260	315	370	435	495	495	495
			175	260	315	370	440	500	500	500
	165	75	100	220	260	300	325	335	350	360
			125	225	270	315	365	385	395	405
			150	225	275	320	375	430	440	445
			175	225	275	320	380	455	480	480
	187	85	100	190	230	245	255	260	275	285
			125	200	240	275	315	320	330	340
			150	200	240	280	330	360	375	380
			175	200	240	280	335	400	410	415
	220	100	100	165	175	180	180	190	200	200
			125	170	205	215	225	230	240	240
			150	170	205	240	270	270	280	280
			175	170	205	240	280	315	325	325
Rated current of copper flat buses according to DIN 43671			T=65 °C	1289	1609	2040	2300	2790	3260	3740
			T=85 °C	1701	2124	2703	3048	3697	4320	4956

Flatwise installation of bus

Bus thickness is 5 mm

I _{pk} , kA	I _{cw} , kA	Air distance between buses, mm	Minimum distance between bus clamps, mm					
			30x5	40x5	50x5	60x5	80x5	100x5
53	25	20	240	290	335	380	480	590
		40	330	380	430	480	570	680
		50	390	425	475	530	625	730
		60	440	480	525	575	675	780
74	35	20	120	150	170	190	240	290
		40	170	190	220	245	295	340
		50	195	200	240	270	320	370
		60	220	225	265	290	345	390
84	40	20	-	115	130	150	190	230
		40	130	150	170	190	230	265
		50	150	160	190	210	250	285
		60	170	180	210	230	265	305
110	50	20	-	-	100	105	110	130
		40	-	-	105	115	130	150
		50	-	100	110	120	145	160
		60	100	110	120	130	155	185
Rated current of copper flat buses according to DIN 43671		T=65 °C	360	457	553	682	814	993
		T=85 °C	476	607	733	903	1079	1316

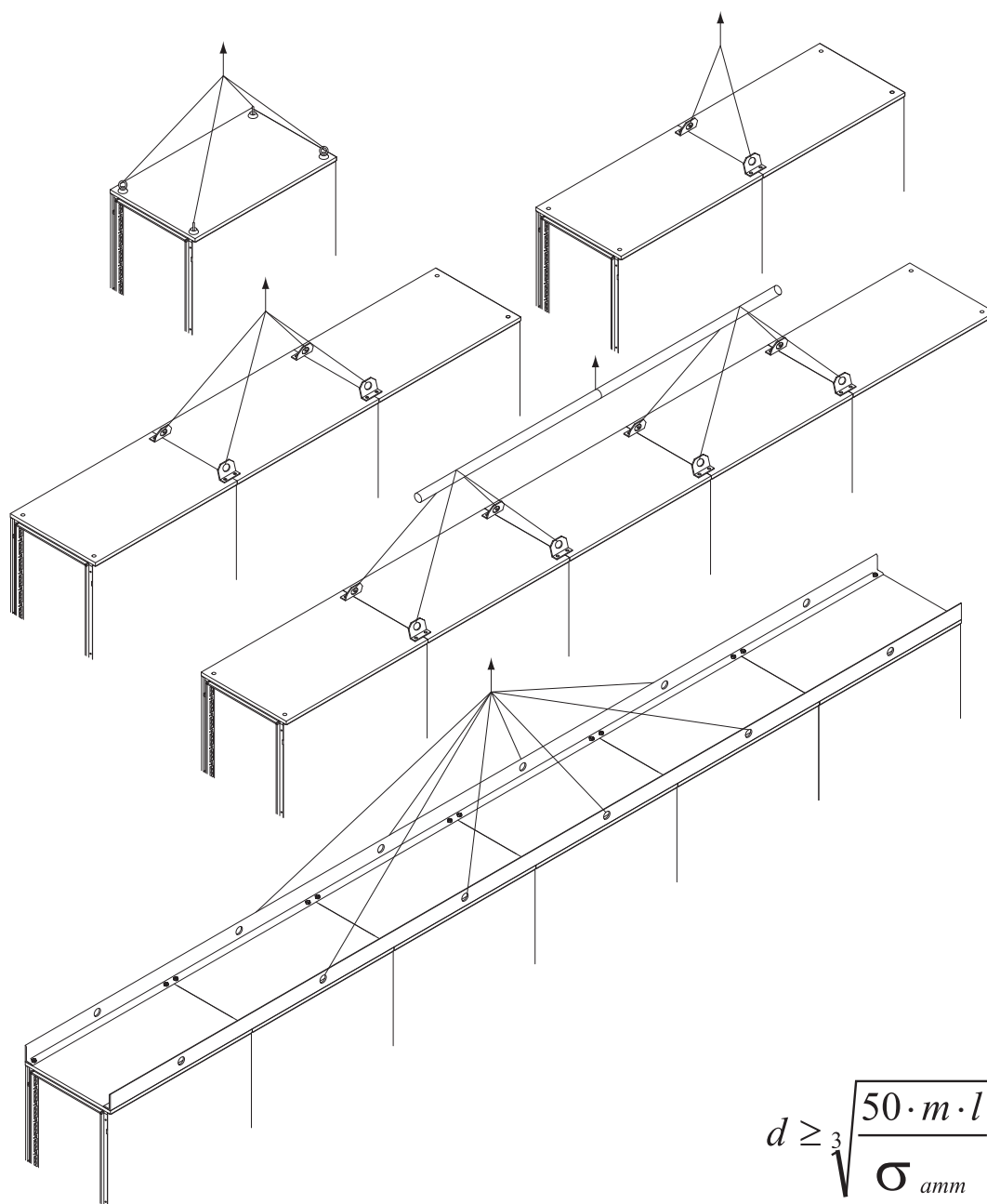
Bus thickness is 10 mm

Ipk, kA	Icw, kA	Air distance between buses, mm	Minimum distance between bus clamps, mm					
			30x10	40x10	50x10	60x10	80x10	100x10
53	25	20	240	290	335	380	480	590
		40	330	380	430	480	570	680
		50	390	425	475	530	625	730
		60	440	480	525	575	675	780
74	35	20	120	150	170	190	240	290
		40	170	190	220	245	290	340
		50	195	200	240	270	320	370
		60	220	225	265	290	345	390
84	40	20	–	115	130	150	190	230
		40	130	150	170	190	230	265
		50	150	160	190	210	250	285
		60	170	180	210	225	265	305
110	50	20	–	–	100	100	110	130
		40	–	–	105	110	130	150
		50	–	100	110	115	145	160
		60	100	110	120	130	155	185
Rated current of copper flat buses according to DIN 43671		T=65 °C	544	679	809	935	1140	1370
		T=85 °C	718	896	1072	1239	1511	1816

Installation of step-type bus clamps

I _{pk} , kA	I _{cw} , kA	Minimum distance between bus clamps, mm						
		R5BSGF250TN		R5BSGF630TN				
		15x5	20x5	15x5	20x5	32x5	20x10	30x10
11	7	561	647	682	788	980	980	980
14	8	455	526	554	640	809	980	980
24	12	258	266	314	363	410	410	410
32	15	150	150	250	261	261	261	261
48	23	–	–	100	100	100	100	100

Recommendations on transportation of assembled enclosures



$$d \geq \sqrt[3]{\frac{50 \cdot m \cdot l}{\sigma_{amm}}}$$

Diagrams in the figure are indicated for enclosures with uniform distribution of weight all over the width of enclosure assembly being transported.

The indicated formula is used for diameter determination of tube shown in the figure with 5 enclosures.

d – tube diameter, mm

m – total weight of structure, mm

l – distance between attachment points of ropes to the tube, mm

σ_{amm} – rupture strength of used metal

Maximum angle between lifting ropes: 60°

Maximum vertical load for each eye bolt: 250 kg

Maximum load during movement at an angle of 45°: 125 kg

Protection standard IP

Protection against foreign solids, dust

First IP digit (Xx)	Protection type	Testing method layout
0	no protection	–
1	protection against solids with size of ≥ 50 mm	ball with diameter of 50 mm and standard tracing probe
2	protection against solids with size of ≥ 12.5 mm	ball with diameter of 12.5 mm and standard tracing probe
3	protection against solids with size of ≥ 2.5 mm	standard tracing probe (or wire with diameter of 2.5 mm)
4	protection against solids with size of ≥ 1.0 mm	standard tracing probe (or wire with diameter of 1.0 mm)
5	partial protection against dust	dust chamber (talcum powder circulation)
6	full protection against dust	dust chamber (talcum powder circulation)

Protection against liquids

Second IP digit (Xx)	Protection type	Testing method layout
0	no protection	–
1	protection against condensation drops falling vertically	watering system in artificial rain chamber
2	protection against drops falling at an angle of up to 15°	watering system in artificial rain chamber
3	protection against drops falling at an angle of up to 60°	watering plant with rotating outlet nozzle
4	protection against splashes falling at any angle	watering plant with rotating outlet nozzle
5	protection against sprays falling at any angle	hydraulic pump with hose and final with diameter of 6.3 mm, water flow of 12.5 l/min
6	protection against dynamic force of water flows (sea wave)	hydraulic pump with hose and final with diameter of 12.5 mm, water flow of 100 l/min
7	protection against water ingress during submersion at a certain depth and time	submersion into the bath with water layer of 1 m
8	protection against water in case of limited submersion time at a certain depth	testing is according to the procedure agreed with customer and final consumer

Heat-balance calculation. Recommendations on selection of necessary equipment

Methods of heat-balance calculation for selection of specific equipment are given below.

1. Selection of cooling fan. Calculation of airflow value.

Usage of fans for active heat extraction is only possible when the environmental temperature (T_a) is lower than the temperature within the enclosure (T_i).

Two methods may be used for calculation of the required airflow V :

1) Calculation by the formula:

$$V = \frac{W}{\Delta T} \times f$$

V – airflow value, [m^3/h];

W – total power of heat emissions of all components within the enclosure, [W]. Tables of values of mean power values for different equipment are given on pages 253-254.

$\Delta T = T_i - T_a$, difference between the maximum temperature value within the enclosure and the environmental temperature, [K];

f – factor considering altitude, [$(m^3 \cdot K)/(W \cdot h)$]. Given below.

Value of factor f

Altitude, m	Value of factor f , [$(m^3 \cdot K)/(W \cdot h)$]
0-100	3.1
100-250	3.2
250-500	3.3
500-750	3.4
750-1000	3.5

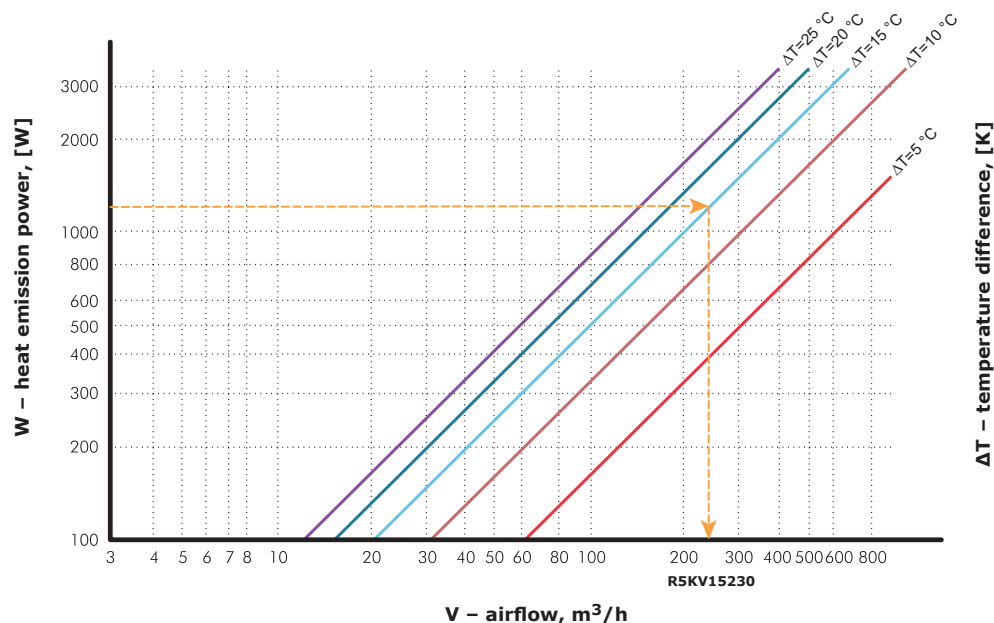
Example: Select the corresponding model of fan and ventilation grid for heat emission total power of the equipment installed within the enclosure equal to $W = 1200 W$. Maximum environmental temperature $T_a = 30^\circ C$, temperature within the enclosure $T_i = 45^\circ C$, altitude is up to 100 m, power system voltage is 230 V.

Calculation by the formula:

$$V = \frac{1200}{45-30} \times 3.1 = 248 [m^3/h]$$

Select R5KV15230 fan and R5KF15 ventilation grid additionally. Select R5THV2 bimetal thermostat with normally open contact for temperature control.

2) Selection of airflow value according to the diagram given below at $f(0-100) = 3.1 [(m^3 \cdot K)/(W \cdot h)]$:



2. Heater selection. Calculation of required power value.

Main purpose of the heater is to provide protection of equipment against overcooling and to prevent reaching of dew point temperature at which moisture condensation occurs on current-carrying elements.

Reference values of dew point temperature are determined according to table values on page 252.

Calculation of enclosure calorific power depends on equipment operation type and is performed in the following manner:

1) Periodic operation of installed equipment:

$$P_h = k \times S \times (T_i - T_a)$$

2) Continuous operation of installed equipment:

$$P_h = k \times S \times (T_i - T_a) - W$$

k – heat exchange factor, [W/(m²*K)]. Depends on the shell. Reference values are given in the table below.








S – reference area of shell surface, [m²]. Depends on the method of its installation and shows the amount of heat that will be emitted into the environment and the amount that will be adsorbed from the environment. Calculation formulas for standard cases of installation are given in the table below.

Tables of surface area values for standard dimensions of "RAM block" enclosures are given on pages 249-252.

T_i-T_a – value difference of the required temperature within the enclosure and the minimum environmental temperature, [K].

W – total power of heat emissions of all components within the enclosure, [W]. Tables of values of mean power values for different equipment are given on pages 253-254.

Reference area of the shell surface – S, [m²]

Shell installation	Description	Calculation formula
	access from all sides	$S = 1.8 \times H \times (W + D) + 1.4 \times W \times D$
	installed near the wall	$S = 1.4 \times W \times (H + D) + 1.8 \times D \times H$
	installed in the end of linear assembly	$S = 1.4 \times D \times (H + W) + 1.8 \times W \times H$
	installed in the corner	$S = 1.4 \times H \times (W + D) + 1.4 \times W \times D$
	installed within the linear assembly	$S = 1.8 \times W \times H + 1.4 \times W \times D + D \times H$
	installed in recess	$S = 1.4 \times W \times (H + D) + D \times H$
	installed in recess, closed from the top	$S = 1.4 \times W \times H + 0.7 \times W \times D + D \times H$

Heat exchange factor value k, [W/(m²*K)]

Shell material	Heat exchange factor k, [W/(m ² *K)]
Painted sheet steel	5.5
Painted sheet steel thermal insulation made of PE foam	4
Stainless steel	4.5
Aluminium	12
Polycarbonate and fiberglass	3.5

Example: Select the corresponding model of heater for provision of correct equipment operation at the set range of operating temperature of 0 to +40°C. Minimum value of environmental temperature T_a = -20°C. Equipment is installed within ST series enclosures, item R5ST0669 (600x600x250 mm), wall-mounted, with heat emission total power W of 10 W minimum and operating in 24/7 mode.

Use the formula for power calculation during continuous operation of equipment:

$$P_h = 5.5 \times 0.98 \times (0 - (-20)) = 107.8 \text{ W}$$

Select R5SHT150 heater. Select R5THR2 bimetal thermostat with normally closed contact for temperature control. R5MUH01 humidistat shall be additionally used for humidity control.

3. Selection of coolers and calculation of required cooling performance value.

Cooling of the equipment within the enclosure by means of the cooler is used for solution of the following tasks:

- 1) Extraction of large volume of the emitted heat;
- 2) The environmental temperature (T_a) is much higher than the required temperature within the enclosure (T_i);
- 3) Prevention of aggressive agent ingress from contaminated atmosphere into the enclosure.

Attention! Dust and moisture protection degree of the enclosure shall be at least IP54 in order to prevent excessive condensate formation.

The following equation is used for calculation of cooling performance value of the cooler P_c

$$P_c = W + Q \quad Q = k \times S \times (T_a - T_i)$$

W – total power of heat emissions of all components within the enclosure, [W]. Tables of values of mean power values for different equipment are given on pages 253-254.

Q – adsorbed power from the environment inside the enclosure, [W].

k – heat exchange factor, [W/(m²*K)]. Depends on the shell. Reference values are given on page 239.

S – reference area of shell surface, [m²]. Depends on the method of its installation and shows the amount of heat that will be emitted into the environment and the amount that will be adsorbed from the environment. Calculation formulas for standard cases of installation are given on page 239. Tables of surface area values for standard dimensions of "RAM block" enclosures are given on pages 249-252.

T_a-T_i – value difference of the required temperature within the enclosure and the required environmental temperature, [K].

Example: Select the corresponding model of cooler for heat emission total power of the equipment installed within the enclosure equal to **W = 1200 W**. Maximum environmental temperature **T_a = 40°C**, temperature within the enclosure **T_i = 35°C**, voltage/frequency of power system is 230 V/50 Hz. Equipment is installed within CQE series floor-mounted enclosure with dimensions of 2000x600x600 mm (HxWxD) with angular placement.

At first, calculate the value of adsorbed power:

$$Q = 5.5 \times 3.86 \times (40 - 35) = 106.15 \text{ W}$$

Calculation of cooling performance value:

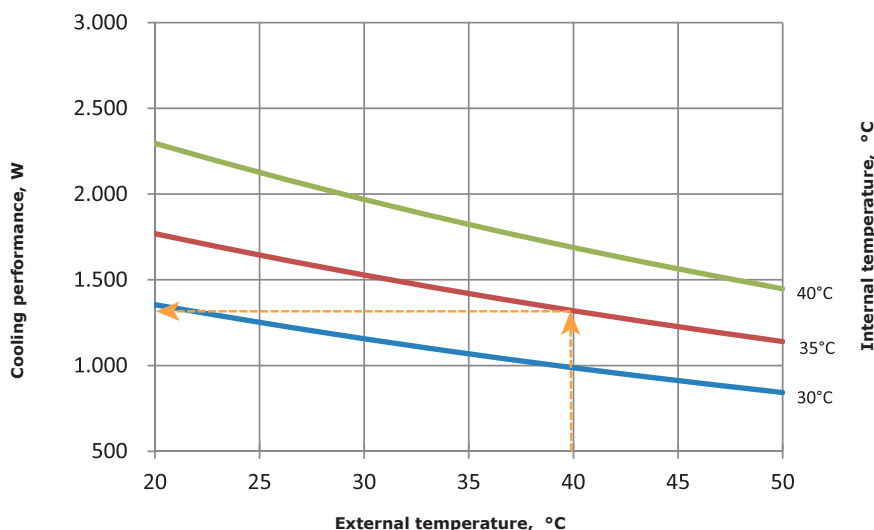
$$P_c = 1200 + 106.15 = 1306.15 \text{ W}$$

Select the nearest cooler model according to the calculated values rounded upward. In this case cooling rated power is equal to 1500 W. Considering that the installation method of cooling unit is not indicated it is possible to select both ceiling-mounted version R5KLM15021RT and wall-mounted version R5KLM15021LT.

Cooling performance of all the coolers is indicated for the environmental temperature of 35 °C and the maintained temperature within the enclosure of 35 °C (L35/L35).

When the environmental temperature is equal to 40°C power generated by the cooler will be lower than the rated temperature. The diagrams given on pages 241-246 shall be used for determination of accurate value of generated cooling power.

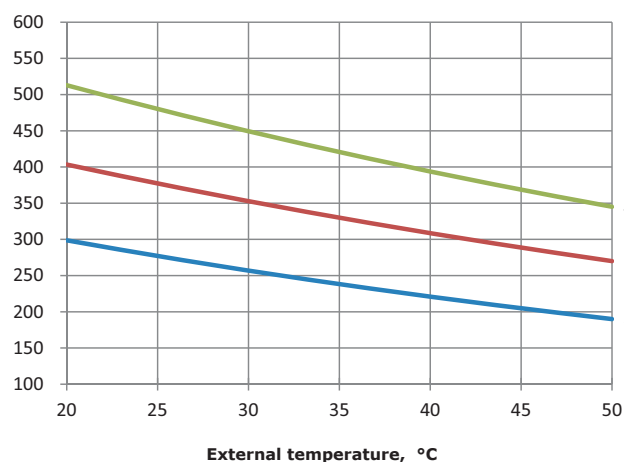
Diagram of power generated by R5KLM15021RT ceiling-mounted cooler, 230 V/50 Hz is given below:



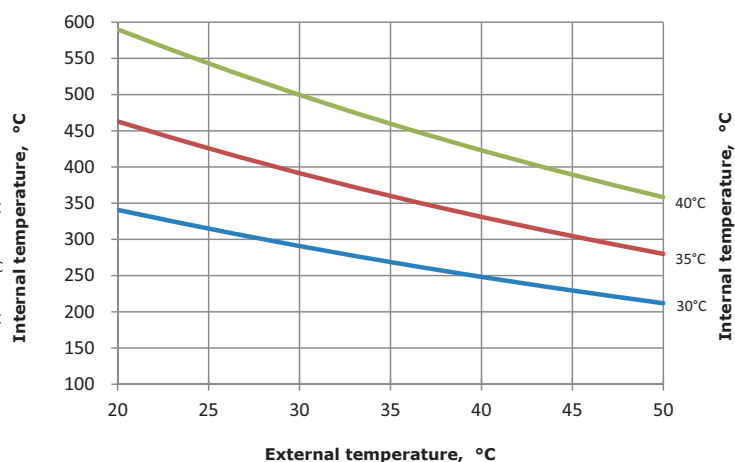
Technical information

Cooling power for wall-mounted cooler P=300 W

W, 50 Hz

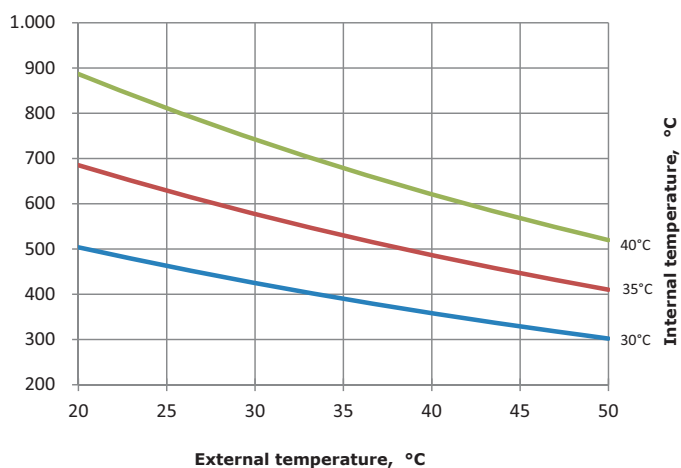


W, 60 Hz

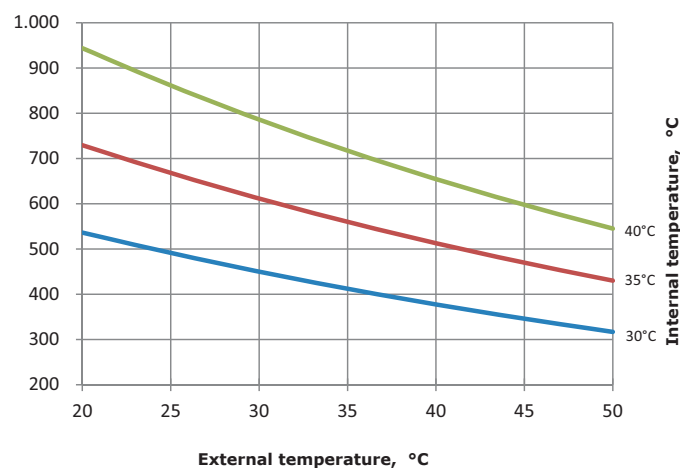


Cooling power for wall-mounted cooler P=500 W

W, 50 Hz

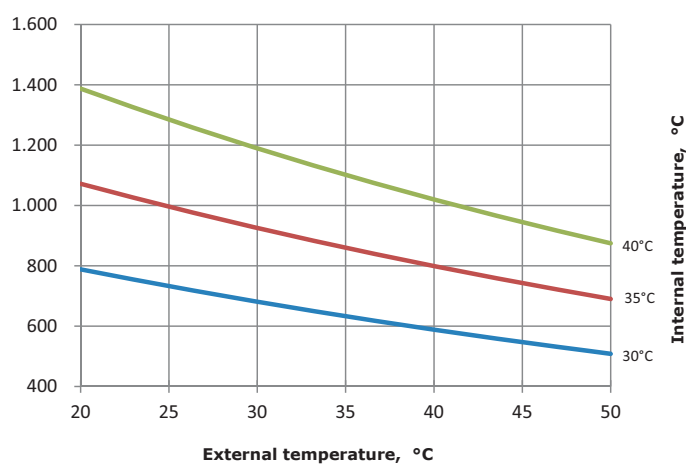


W, 60 Hz

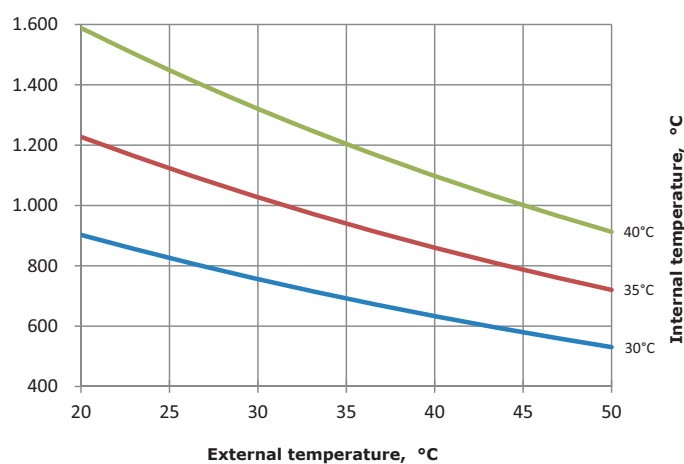


Cooling power for wall-mounted cooler P=800 W

W, 50 Hz

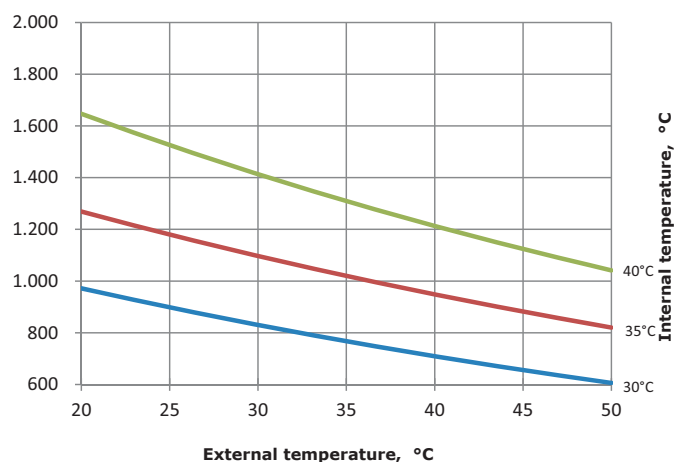


W, 60 Hz

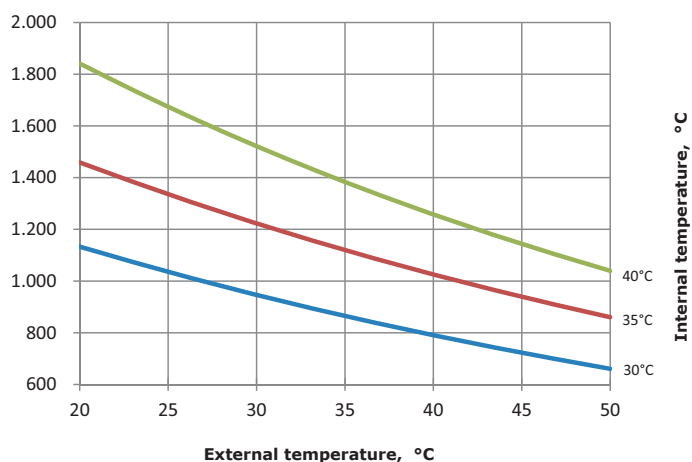


Cooling power for wall-mounted cooler P=1000 W

W, 50 Hz

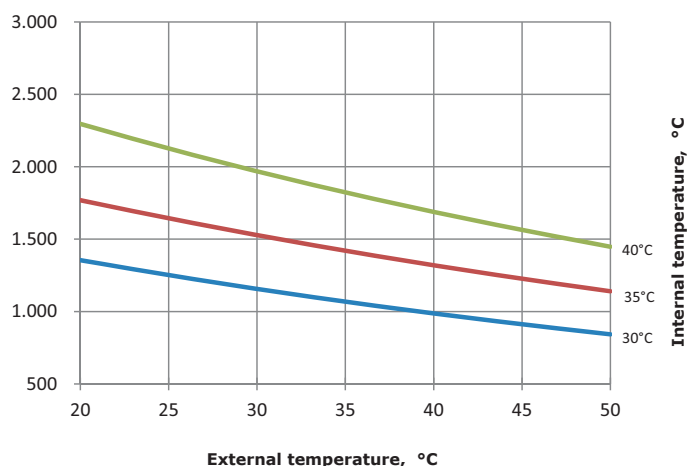


W, 60 Hz

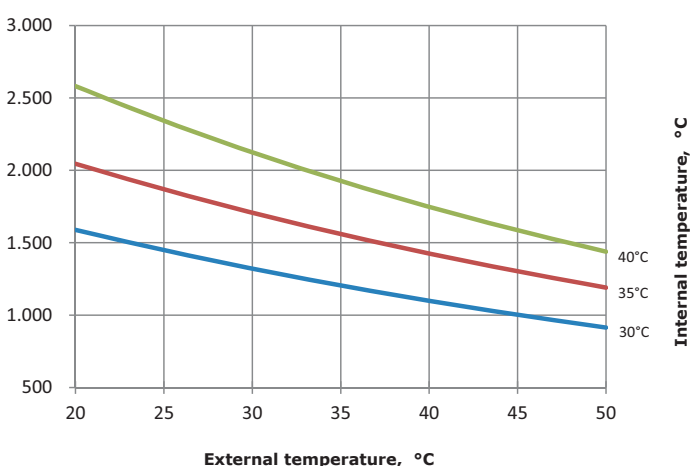


Cooling power for wall-mounted cooler P=1500 W

W, 50 Hz

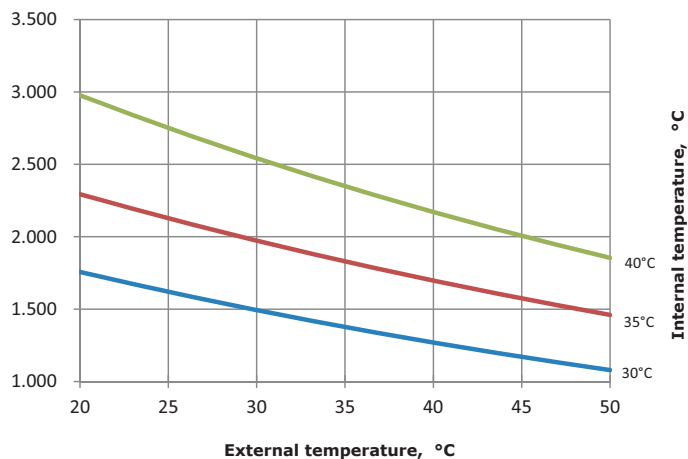


W, 60 Hz

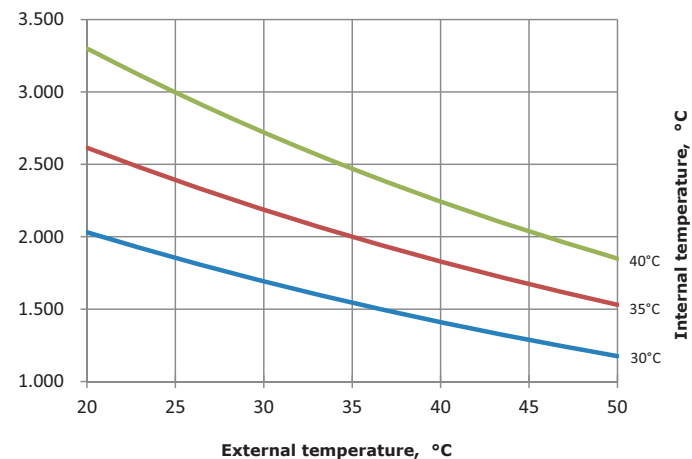


Cooling power for wall-mounted cooler P=1500 W (400/440 V – 3 phases)

W, 50 Hz

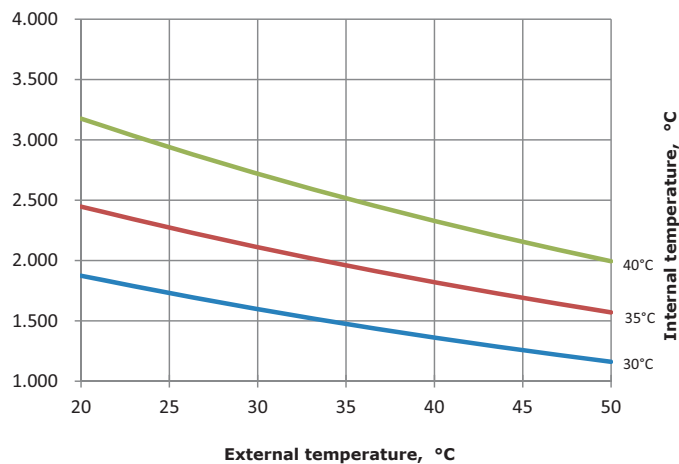


W, 60 Hz

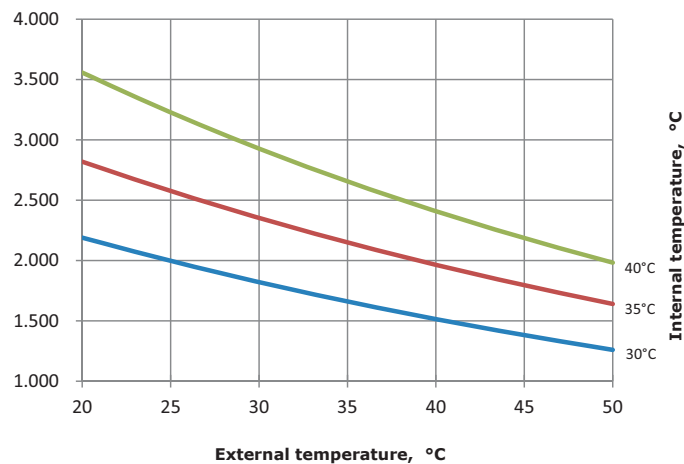


Cooling power for wall-mounted cooler P=2000 W

W, 50 Hz

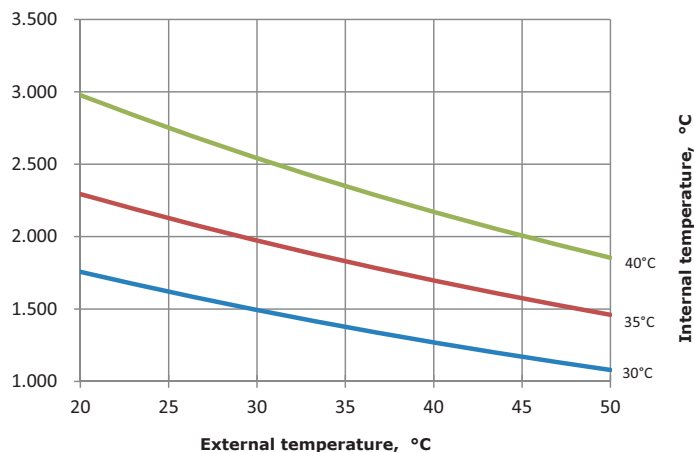


W, 60 Hz

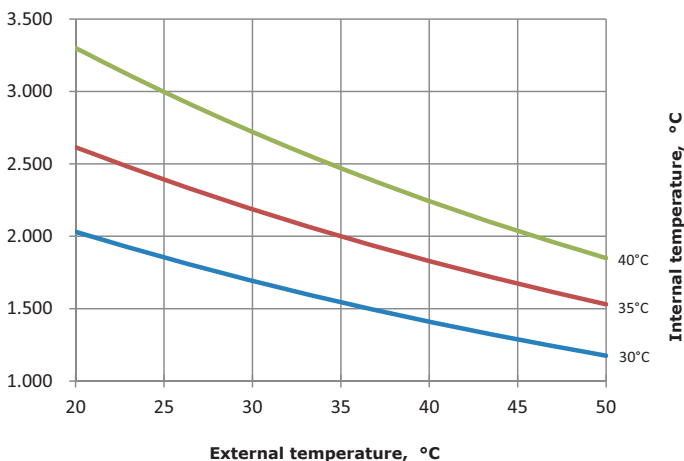


Cooling power for wall-mounted cooler P=2000 W (400/440 V – 3 phases)

W, 50 Hz

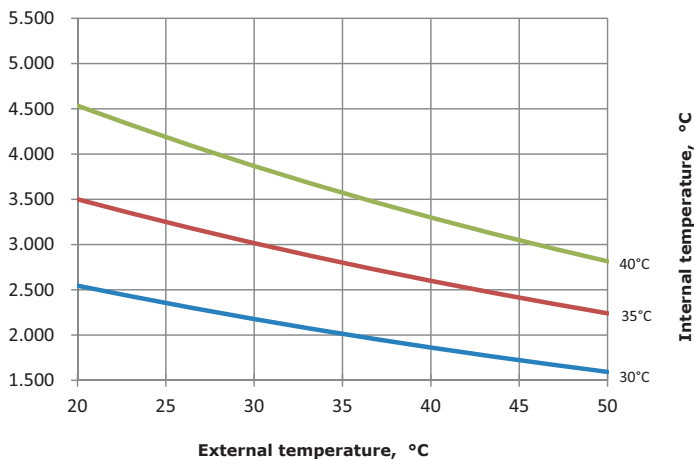


W, 60 Hz

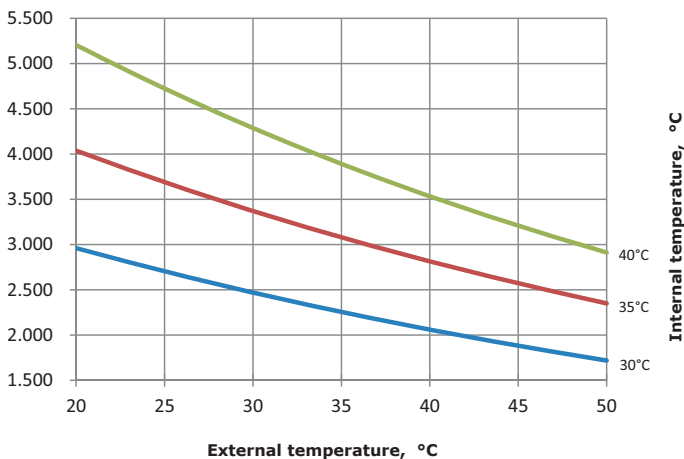


Cooling power for wall-mounted cooler P=3000 W

W, 50 Hz

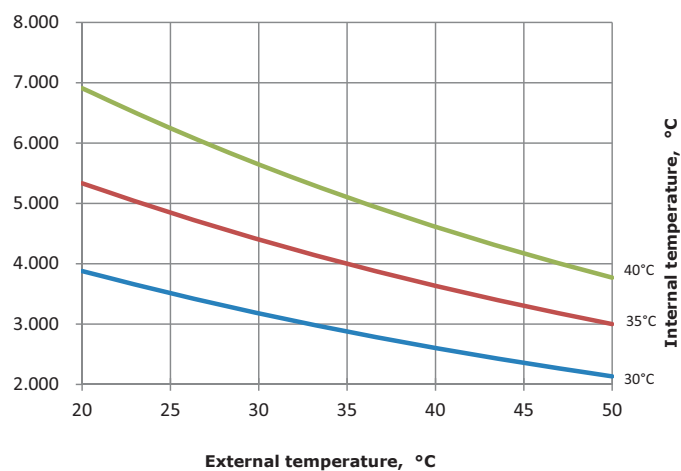


W, 60 Hz

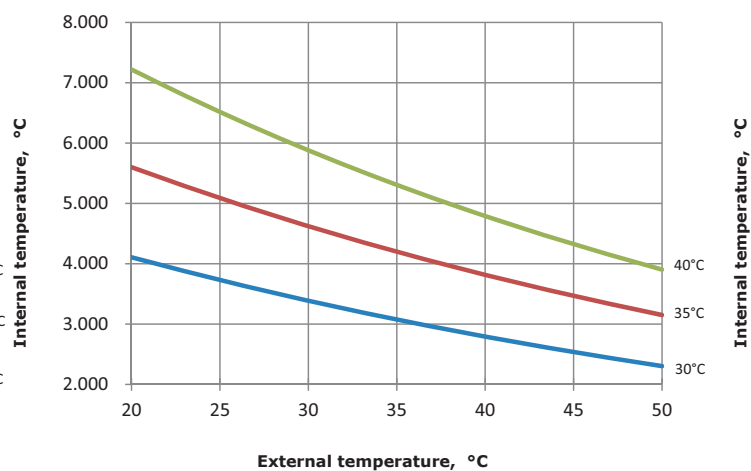


Cooling power for wall-mounted cooler P=4000 W

W, 50 Hz

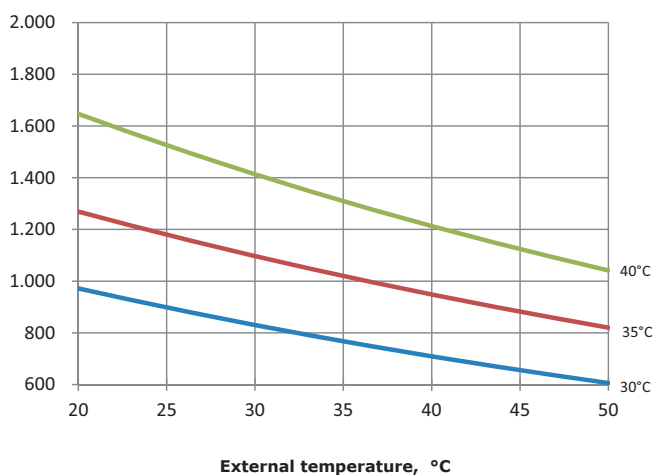


W, 60 Hz

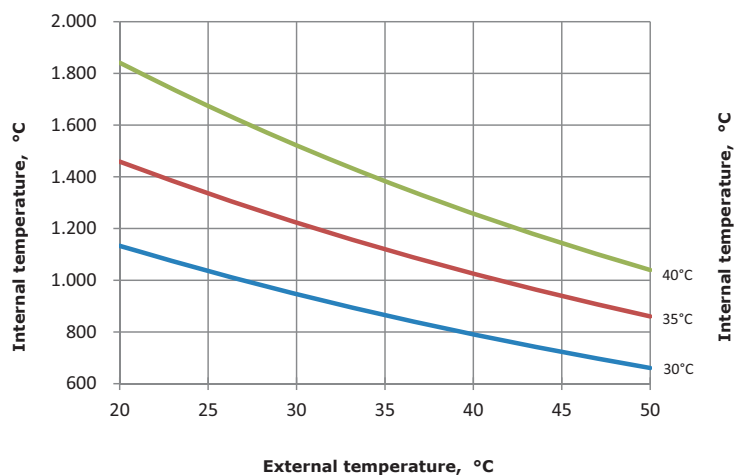


Cooling power for ceiling-mounted cooler P=1000 W

W, 50 Hz

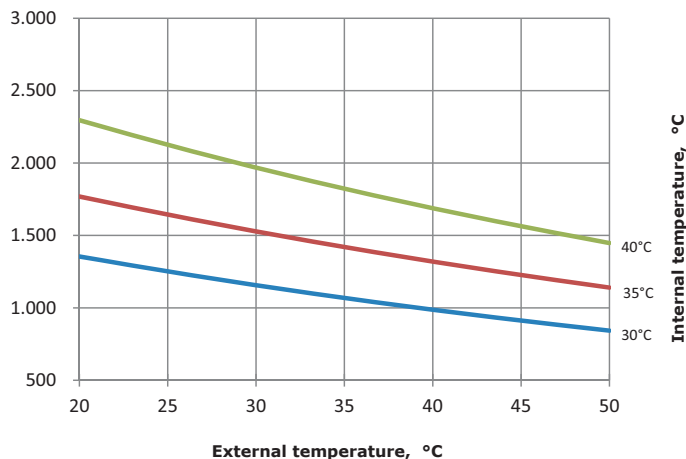


W, 60 Hz

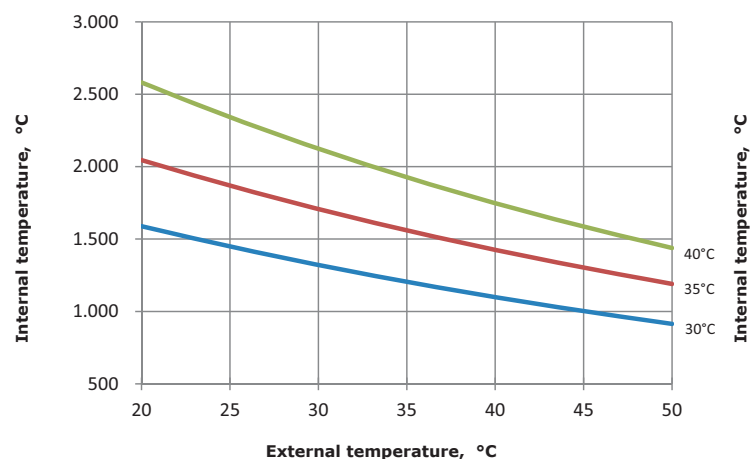


Cooling power for ceiling-mounted cooler P=1500 W

W, 50 Hz

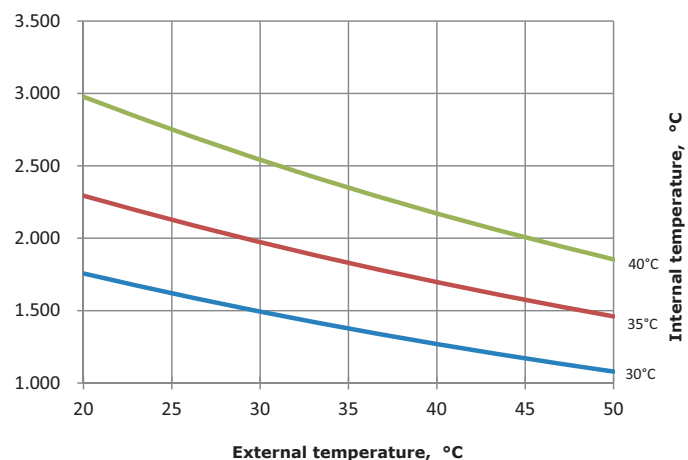


W, 60 Hz

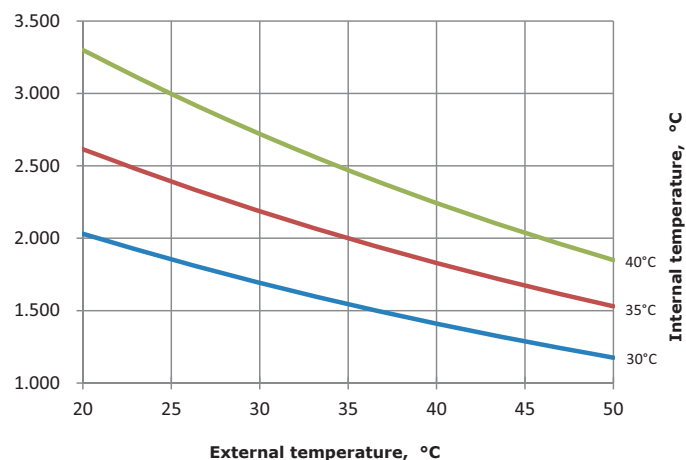


Cooling power for ceiling-mounted cooler P=1500 W (400/440 V – 3 phases)

W, 50 Hz

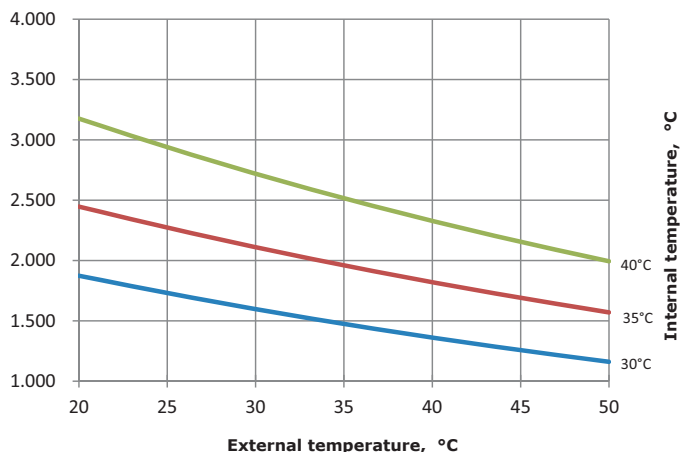


W, 60 Hz

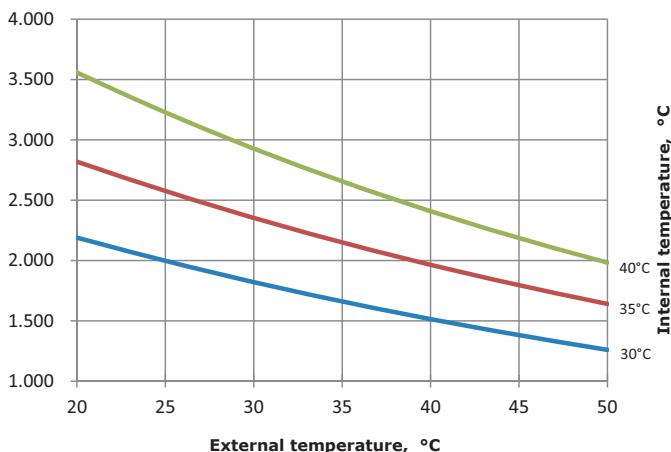


Cooling power for ceiling-mounted cooler P=2000 W

W, 50 Hz

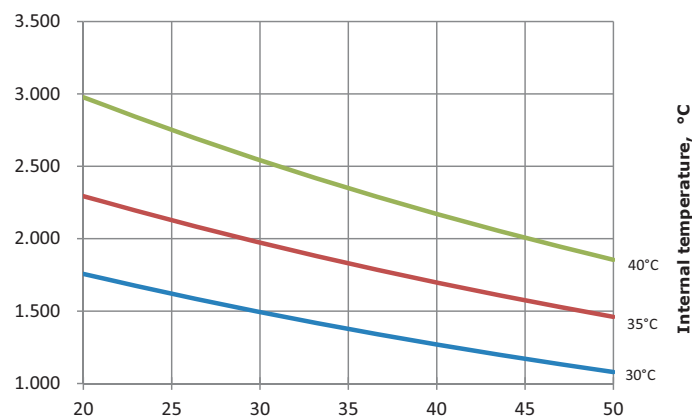


W, 60 Hz

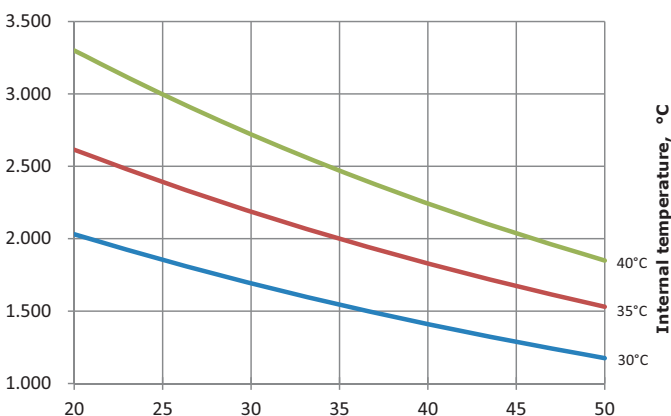


Cooling power for ceiling-mounted cooler P=2000 W (400/440 V – 3 phases)

W, 50 Hz

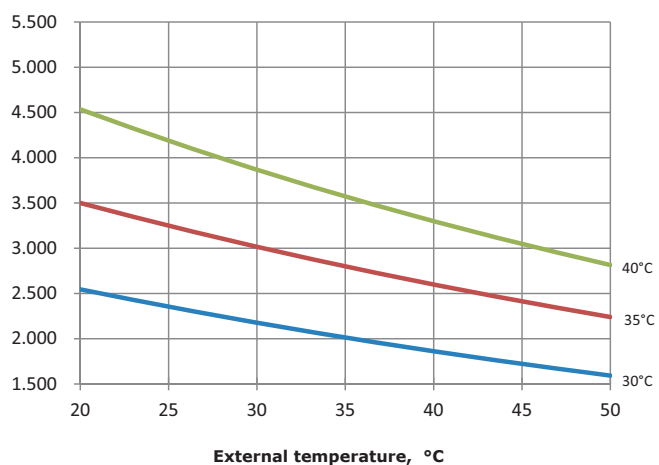


W, 60 Hz

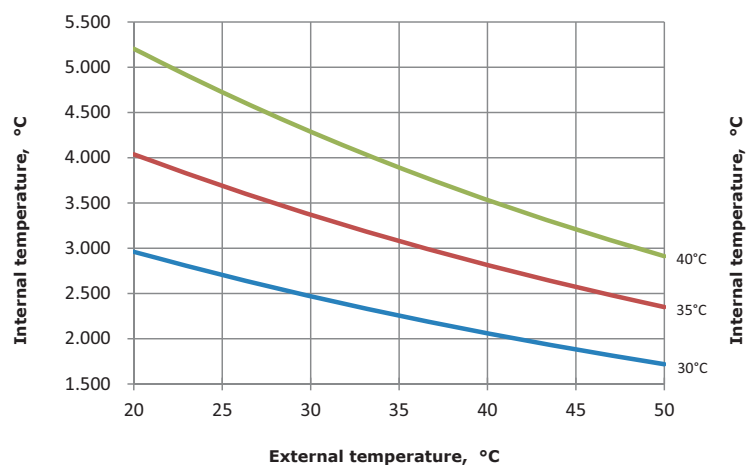


Cooling power for ceiling-mounted cooler P=3000 W

W, 50 Hz

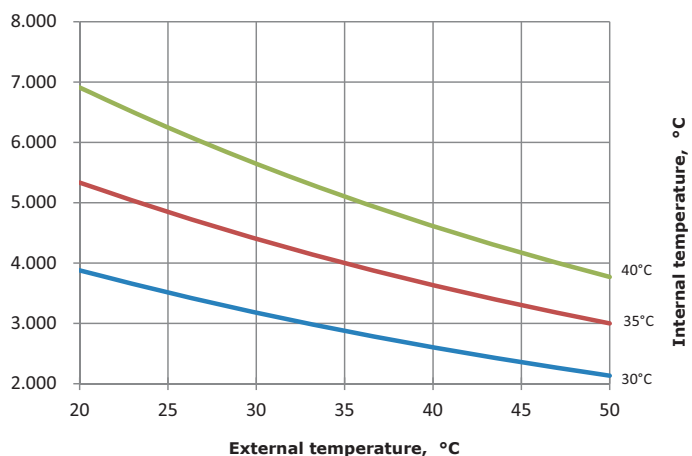


W, 60 Hz

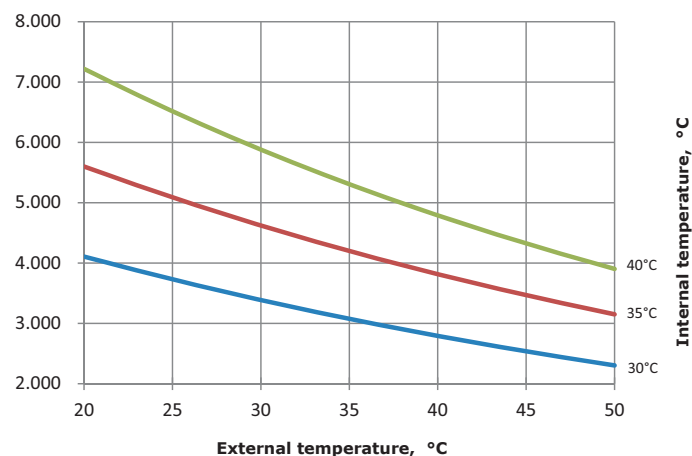


Cooling power for ceiling-mounted cooler P=4000 W

W, 50 Hz

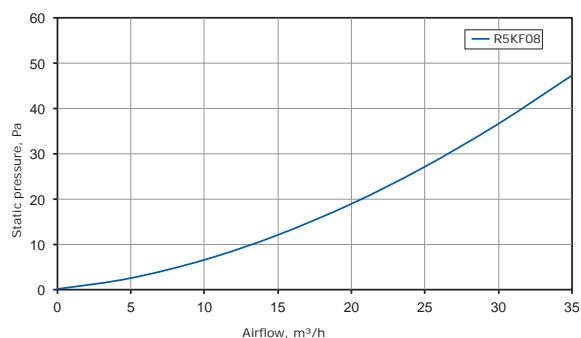


W, 60 Hz

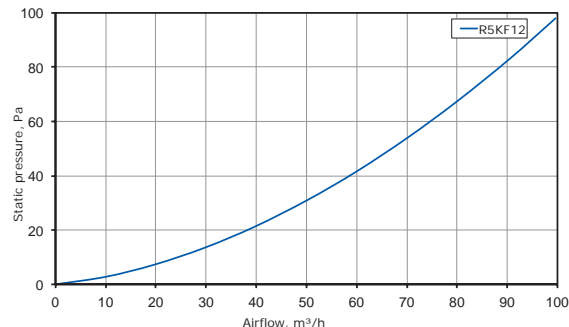


Parameters of airflow for ventilation grids

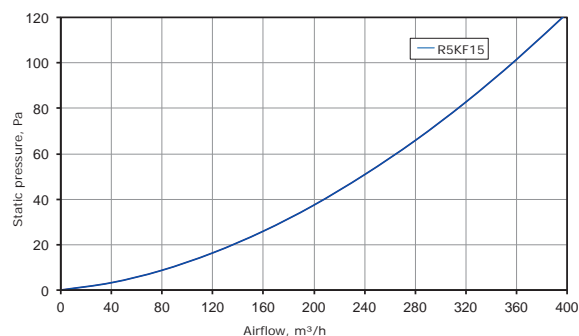
R5KF08



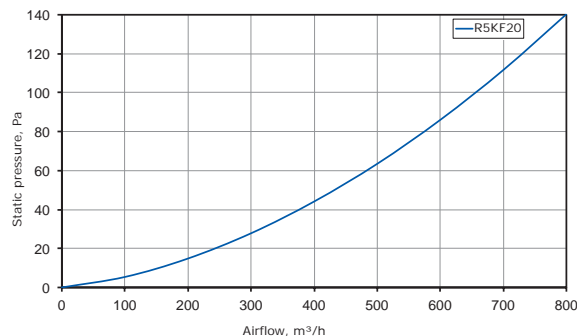
R5KF12



R5KF15

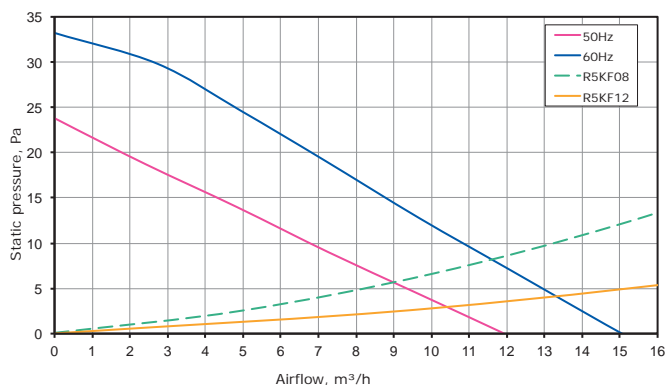


R5KF20

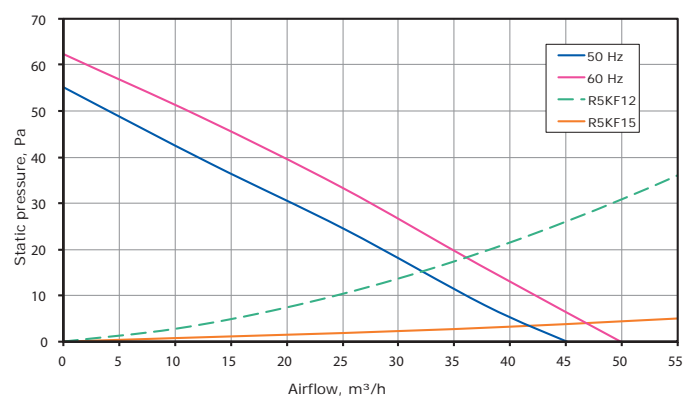


Parameters of airflow for fans

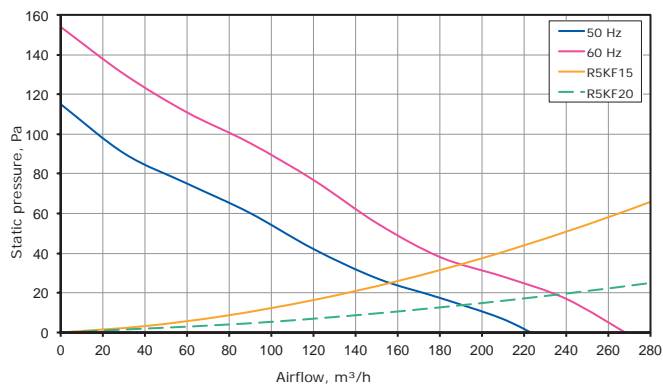
R5KV08*



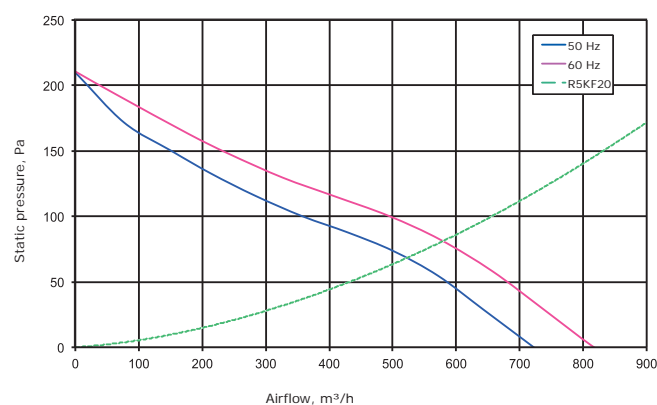
R5KV12*



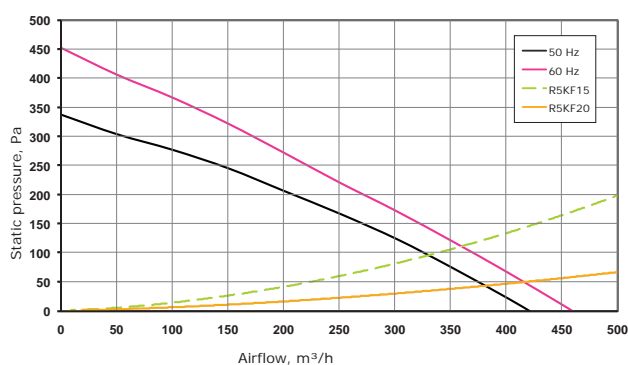
R5KV15*



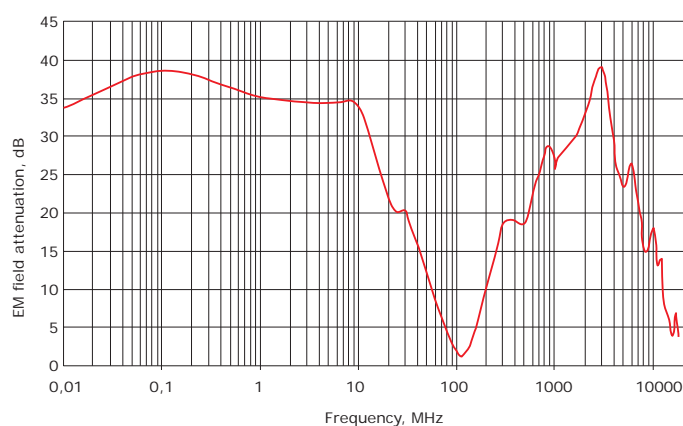
R5KV20*



R5KTEV*



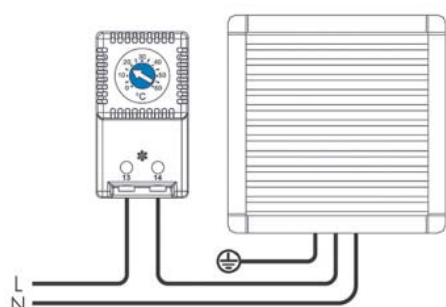
Attenuation diagram of electromagnetic disturbances from the frequency



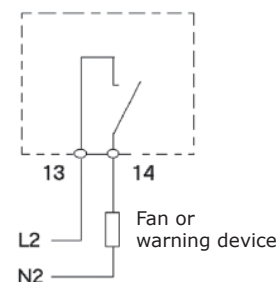
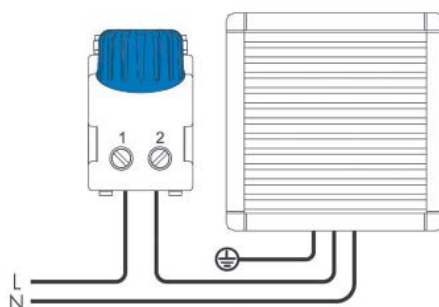
Electrical schematic diagrams and installation examples of equipment for control of temperature

Thermostats

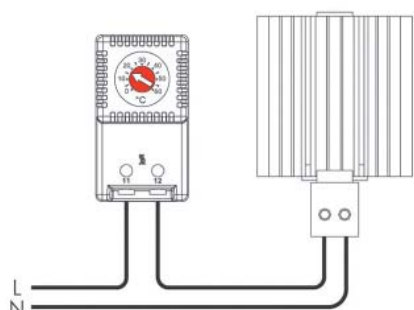
R5THV2



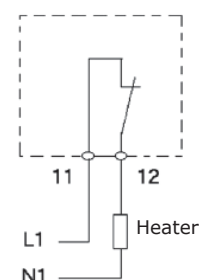
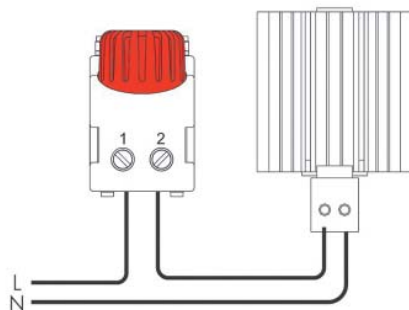
R5THVF**



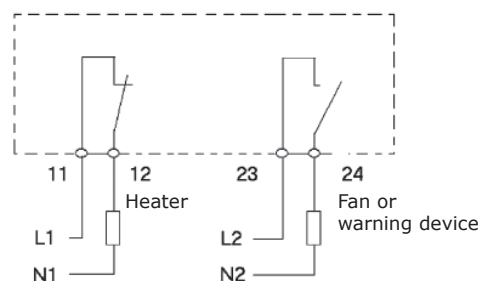
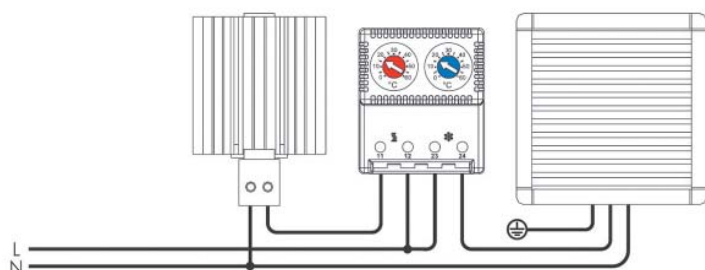
R5THR2



R5THRF**

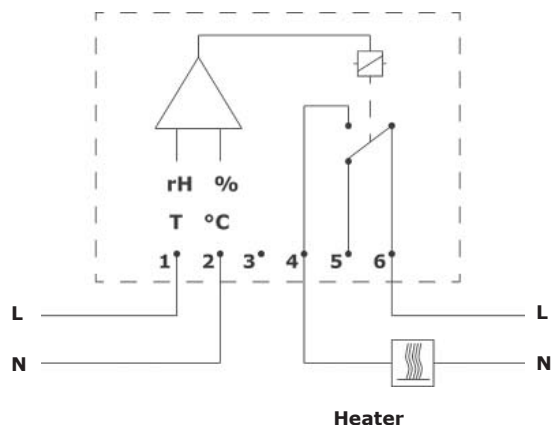
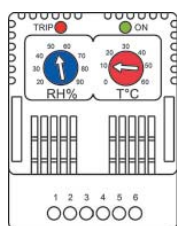


R5THRV13



Humidistat and humidity meter

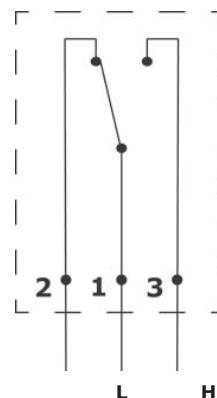
R5ETUH22



R5MUH01










Air drier










Humidifier








Values of surface area for standard dimensions of "RAM block"enclosures

Enclosure dimensions, mm			Enclosure surface area, mm ²						
Depth, D	Height, H	Width, W							
150	200	300	0.23	0.20	0.21	0.19	0.20	0.18	0.15
150	300	250	0.27	0.24	0.25	0.22	0.23	0.20	0.18
150	300	300	0.31	0.27	0.29	0.25	0.27	0.23	0.20
150	300	400	0.38	0.33	0.36	0.32	0.35	0.30	0.26
150	400	300	0.39	0.34	0.36	0.32	0.34	0.29	0.26
150	500	300	0.47	0.41	0.44	0.38	0.41	0.35	0.32
200	300	400	0.44	0.39	0.41	0.36	0.39	0.34	0.28
200	400	300	0.44	0.40	0.41	0.36	0.38	0.33	0.29
200	400	400	0.54	0.48	0.51	0.45	0.48	0.42	0.36
200	400	600	0.74	0.65	0.71	0.62	0.68	0.58	0.50
200	500	300	0.53	0.47	0.49	0.43	0.45	0.39	0.35
200	500	400	0.65	0.57	0.61	0.53	0.57	0.49	0.44
200	500	500	0.77	0.67	0.73	0.63	0.69	0.59	0.52
200	500	600	0.89	0.77	0.85	0.73	0.81	0.69	0.60
200	600	400	0.76	0.66	0.71	0.62	0.66	0.57	0.51
200	600	500	0.90	0.78	0.85	0.73	0.80	0.68	0.61
200	700	500	1.02	0.88	0.97	0.83	0.91	0.77	0.70
200	800	600	1.32	1.13	1.26	1.06	1.19	1.00	0.92
200	800	800	1.66	1.41	1.60	1.34	1.54	1.28	1.17
250	500	400	0.73	0.65	0.68	0.60	0.63	0.55	0.48
250	600	400	0.84	0.75	0.78	0.69	0.72	0.63	0.56
250	600	600	1.13	0.98	1.07	0.92	1.01	0.86	0.76
250	700	500	1.12	0.98	1.05	0.91	0.98	0.84	0.75
250	800	600	1.43	1.24	1.35	1.16	1.27	1.08	0.98
250	1000	600	1.74	1.50	1.64	1.40	1.54	1.30	1.20
300	500	500	0.93	0.83	0.87	0.77	0.81	0.71	0.61
300	500	600	1.06	0.94	1.00	0.88	0.94	0.82	0.70
300	800	600	1.55	1.36	1.45	1.26	1.36	1.16	1.04
300	800	800	1.92	1.66	1.82	1.57	1.73	1.47	1.30
300	1000	600	1.87	1.63	1.75	1.51	1.63	1.39	1.27
300	1000	800	2.32	2.00	2.20	1.88	2.08	1.76	1.59
300	1200	600	2.20	1.91	2.05	1.76	1.91	1.62	1.49
300	1200	800	2.71	2.33	2.57	2.18	2.42	2.04	1.87
300	1400	600	2.52	2.18	2.35	2.02	2.18	1.85	1.72
300	1400	800	3.11	2.66	2.94	2.49	2.77	2.32	2.16
400	600	400	1.09	0.99	0.99	0.90	0.90	0.80	0.69
400	600	600	1.42	1.27	1.32	1.18	1.22	1.08	0.91
400	800	600	1.78	1.58	1.65	1.46	1.52	1.33	1.16
400	800	800	2.18	1.92	2.05	1.79	1.92	1.66	1.44
400	1000	600	2.14	1.90	1.98	1.74	1.82	1.58	1.41
400	1000	800	2.61	2.29	2.45	2.13	2.29	1.97	1.74
200	800	1000	2.01	1.69	1.94	1.62	1.88	1.56	1.42
300	600	800	1.52	1.33	1.45	1.26	1.38	1.19	1.02
300	800	1000	2.29	1.97	2.20	1.88	2.10	1.78	1.57
300	1000	1000	2.76	2.36	2.64	2.24	2.52	2.12	1.91
300	1200	1000	3.23	2.75	3.08	2.60	2.94	2.46	2.25








Values of surface area for standard dimensions of "RAM block"enclosures

Enclosure dimensions, mm			Enclosure surface area, m ²						
Depth, D	Height, H	Width, W							
300	1400	1000	3.70	3.14	3.53	2.97	3.36	2.80	2.59
300	1200	1200	3.74	3.17	3.60	3.02	3.46	2.88	2.63
400	1400	600	2.86	2.52	2.63	2.30	2.41	2.07	1.90
500	1400	600	3.19	2.86	2.91	2.58	2.63	2.30	2.09
400	1400	800	3.47	3.02	3.25	2.80	3.02	2.58	2.35
500	1400	800	3.84	3.39	3.56	3.11	3.28	2.83	2.55
400	1400	1200	4.70	4.03	4.48	3.81	4.26	3.58	3.25
500	1400	1200	5.12	4.45	4.84	4.17	4.56	3.89	3.47
400	1400	1600	5.94	5.04	5.71	4.82	5.49	4.59	4.14
500	1400	1600	6.41	5.52	6.13	5.24	5.85	4.96	4.40
400	1600	400	2.53	2.27	2.27	2.02	2.02	1.76	1.65
500	1600	400	2.87	2.62	2.55	2.30	2.23	1.98	1.84
600	1600	400	3.22	2.96	2.83	2.58	2.45	2.19	2.02
400	1600	600	3.22	2.83	2.96	2.58	2.70	2.32	2.15
500	1600	600	3.59	3.20	3.27	2.88	2.95	2.56	2.35
600	1600	600	3.96	3.58	3.58	3.19	3.19	2.81	2.56
400	1600	800	3.90	3.39	3.65	3.14	3.39	2.88	2.66
500	1600	800	4.30	3.79	3.98	3.47	3.66	3.15	2.87
600	1600	800	4.70	4.19	4.32	3.81	3.94	3.42	3.09
400	1600	1000	4.59	3.95	4.34	3.70	4.08	3.44	3.16
500	1600	1000	5.02	4.38	4.70	4.06	4.38	3.74	3.39
600	1600	1000	5.45	4.81	5.06	4.42	4.68	4.04	3.62
400	1600	1200	5.28	4.51	5.02	4.26	4.77	4.00	3.66
500	1600	1200	5.74	4.97	5.42	4.65	5.10	4.33	3.91
600	1600	1200	6.19	5.42	5.81	5.04	5.42	4.66	4.15
400	1800	400	2.82	2.53	2.53	2.24	2.24	1.95	1.84
500	1800	400	3.20	2.91	2.84	2.55	2.48	2.19	2.05
600	1800	400	3.58	3.29	3.14	2.86	2.71	2.42	2.26
800	1800	400	4.34	4.05	3.76	3.47	3.18	2.90	2.67
1000	1800	400	5.10	4.81	4.38	4.09	3.66	3.37	3.09
1200	1800	400	5.86	5.57	4.99	4.70	4.13	3.84	3.50
400	1800	600	3.58	3.14	3.29	2.86	3.00	2.57	2.40
500	1800	600	3.98	3.55	3.62	3.19	3.26	2.83	2.62
600	1800	600	4.39	3.96	3.96	3.53	3.53	3.10	2.84
800	1800	600	5.21	4.78	4.63	4.20	4.06	3.62	3.29
1000	1800	600	6.02	5.59	5.30	4.87	4.58	4.15	3.73
1200	1800	600	6.84	6.41	5.98	5.54	5.11	4.68	4.18
400	1800	800	4.34	3.76	4.05	3.47	3.76	3.18	2.96
500	1800	800	4.77	4.20	4.41	3.84	4.05	3.48	3.20
600	1800	800	5.21	4.63	4.78	4.20	4.34	3.77	3.43
800	1800	800	6.08	5.50	5.50	4.93	4.93	4.35	3.90
1000	1800	800	6.95	6.38	6.23	5.66	5.51	4.94	4.38
1200	1800	800	7.82	7.25	6.96	6.38	6.10	5.52	4.85
400	1800	1000	5.10	4.38	4.81	4.09	4.52	3.80	3.52
500	1800	1000	5.56	4.84	5.20	4.48	4.84	4.12	3.77
600	1800	1000	6.02	5.30	5.59	4.87	5.16	4.44	4.02

Values of surface area for standard dimensions of "RAM block" enclosures

Enclosure dimensions, mm			Enclosure surface area, m ²						
Depth, D	Height, H	Width, W							
800	1800	1000	6.95	6.23	6.38	5.66	5.80	5.08	4.52
1000		1000	7.88	7.16	7.16	6.44	6.44	5.72	5.02
1200		1000	8.81	8.09	7.94	7.22	7.08	6.36	5.52
400		1200	5.86	4.99	5.57	4.70	5.28	4.42	4.08
500		1200	6.35	5.48	5.99	5.12	5.63	4.76	4.34
600		1200	6.84	5.98	6.41	5.54	5.98	5.11	4.61
800		1200	7.82	6.96	7.25	6.38	6.67	5.81	5.14
1000		1200	8.81	7.94	8.09	7.22	7.37	6.50	5.66
1200		1200	9.79	8.93	8.93	8.06	8.06	7.20	6.19
400	2000	400	3.10	2.78	2.78	2.46	2.46	2.14	2.03
500		400	3.52	3.20	3.12	2.80	2.72	2.40	2.26
600		400	3.94	3.62	3.46	3.14	2.98	2.66	2.49
800		400	4.77	4.45	4.13	3.81	3.49	3.17	2.94
1000		400	5.60	5.28	4.80	4.48	4.00	3.68	3.40
1200		400	6.43	6.11	5.47	5.15	4.51	4.19	3.86
400		600	3.94	3.46	3.62	3.14	3.30	2.82	2.65
500		600	4.38	3.90	3.98	3.50	3.58	3.10	2.89
600		600	4.82	4.34	4.34	3.86	3.86	3.38	3.13
800		600	5.71	5.23	5.07	4.59	4.43	3.95	3.62
1000		600	6.60	6.12	5.80	5.32	5.00	4.52	4.10
1200		600	7.49	7.01	6.53	6.05	5.57	5.09	4.58
400		800	4.77	4.13	4.45	3.81	4.13	3.49	3.26
500		800	5.24	4.60	4.84	4.20	4.44	3.80	3.52
600		800	5.71	5.07	5.23	4.59	4.75	4.11	3.78
800		800	6.66	6.02	6.02	5.38	5.38	4.74	4.29
1000		800	7.60	6.96	6.80	6.16	6.00	5.36	4.80
1200		800	8.54	7.90	7.58	6.94	6.62	5.98	5.31
400		1000	5.60	4.80	5.28	4.48	4.96	4.16	3.88
500		1000	6.10	5.30	5.70	4.90	5.30	4.50	4.15
600		1000	6.60	5.80	6.12	5.32	5.64	4.84	4.42
800		1000	7.60	6.80	6.96	6.16	6.32	5.52	4.96
1000		1000	8.60	7.80	7.80	7.00	7.00	6.20	5.50
1200		1000	9.60	8.80	8.64	7.84	7.68	6.88	6.04
400		1200	6.43	5.47	6.11	5.15	5.79	4.83	4.50
500		1200	6.96	6.00	6.56	5.60	6.16	5.20	4.78
600		1200	7.49	6.53	7.01	6.05	6.53	5.57	5.06
800		1200	8.54	7.58	7.90	6.94	7.26	6.30	5.63
1000		1200	9.60	8.64	8.80	7.84	8.00	7.04	6.20
1200		1200	10.66	9.70	9.70	8.74	8.74	7.78	6.77
400		1400	7.26	6.14	6.94	5.82	6.62	5.50	5.11
500		1400	7.82	6.70	7.42	6.30	7.02	5.90	5.41
600		1400	8.38	7.26	7.90	6.78	7.42	6.30	5.71
800		1400	9.49	8.37	8.85	7.73	8.21	7.09	6.30
400		1600	8.10	6.82	7.78	6.50	7.46	6.18	5.73
500		1600	8.68	7.40	8.28	7.00	7.88	6.60	6.04
600		1600	9.26	7.98	8.78	7.50	8.30	7.02	6.35
800		1600	10.43	9.15	9.79	8.51	9.15	7.87	6.98

Values of surface area for standard dimensions of "RAM block"enclosures

Enclosure dimensions, mm			Enclosure surface area, m²						
depth, D	height, H	width, W							
500	2200	400	3.84	3.49	3.40	3.05	2.96	2.61	2.47
600		400	4.30	3.94	3.77	3.42	3.24	2.89	2.72
800		400	5.20	4.85	4.50	4.14	3.79	3.44	3.22
1000		400	6.10	5.75	5.22	4.87	4.34	3.99	3.71
1200		400	7.01	6.66	5.95	5.60	4.90	4.54	4.21
500		600	4.78	4.25	4.34	3.81	3.90	3.37	3.16
600		600	5.26	4.73	4.73	4.20	4.20	3.67	3.42
800		600	6.22	5.69	5.51	4.98	4.81	4.28	3.94
1000		600	7.18	6.65	6.30	5.77	5.42	4.89	4.47
1200		600	8.14	7.61	7.08	6.55	6.02	5.50	4.99
500		800	5.71	5.00	5.27	4.56	4.83	4.12	3.84
600		800	6.22	5.51	5.69	4.98	5.16	4.46	4.12
800		800	7.23	6.53	6.53	5.82	5.82	5.12	4.67
1000		800	8.25	7.54	7.37	6.66	6.49	5.78	5.22
1200		800	9.26	8.56	8.21	7.50	7.15	6.45	5.78
500		1000	6.64	5.76	6.20	5.32	5.76	4.88	4.53
600		1000	7.18	6.30	6.65	5.77	6.12	5.24	4.82
800		1000	8.25	7.37	7.54	6.66	6.84	5.96	5.40
1000		1000	9.32	8.44	8.44	7.56	7.56	6.68	5.98
1200		1000	10.39	9.51	9.34	8.46	8.28	7.40	6.56
500		1200	7.57	6.52	7.13	6.08	6.69	5.64	5.22
600		1200	8.14	7.08	7.61	6.55	7.08	6.02	5.52
800		1200	9.26	8.21	8.56	7.50	7.86	6.80	6.13
1000		1200	10.39	9.34	9.51	8.46	8.63	7.58	6.74
1200		1200	11.52	10.46	10.46	9.41	9.41	8.35	7.34

Dew point

Relative humidity, %	Environmental temperature, °C							
	20	25	30	35	40	45	50	55
40	6	11	15	19	24	28	33	37
50	9	14	19	23	28	32	37	41
60	12	17	21	26	31	36	40	45
70	14	19	24	29	34	38	43	48
80	16	21	26	31	36	41	46	51
90	18	23	38	33	38	43	48	53
100	20	25	30	35	40	45	50	55

Medium power of heat emission

For frequency converter

Engine power, kW	Emitted heat, W
1.1	85
2.2	110
5	195
11	360
15	480
22	650
37	850
45	1100
75	1700
90	2000
110	2400

For transformer at maximum power ($\cos \varphi=0.8$)

Power, VA	Emitted heat, W
63	15
100	25
250	45
400	70
1000	110
1600	140
2000	399
4000	445
6300	550
10000	1000
12500	1390
16000	1600
20000	2000
25000	2500

For power supply

Current, A	Emitted heat (at 24 V), W	Emitted heat (at 48 V), W
2.5	18	26
5	35	45
10	50	85
15	110	100
20	120	160
25	–	210

For busbar with length of 1 m (copper)

Rated current, A	Number of buses	Bus section, mm	Emitted heat, W
220	1	20x3	33
400	1	30x5	50
600	1	50x5	96
700	1	63x5	104
900	1	80x5	136
1000	2	50x5	134
1050	1	100x5	148
1200	1	125x5	154
1150	2	63x5	141
1450	2	80x5	176
1600	2	100x5	171

For circuit breakers and contactors without inductive load

Rated current, A	Emitted heat from circuit breaker, W	Emitted heat form contactor, W
16	3	6
25	4	9
50	8	17
100	11	50
160	16	70
250	18	85
500	35	220
800	45	290
1000	50	370
1600	110	800
2500	175	1050
3200	233	1350

Electronic directory of standard solutions

Electronic directory of standard solutions for "RAM block" enclosures developed specifically for design institutes, energy management departments of industrial enterprises, and engineering departments of companies manufacturing electric control room equipment.

Purpose

This directory can reduce time expenditures for development of engineering and design documentation for DKC equipment. With its help engineers and designers can spend far less time on development of design documentation in relation to power supply system.

Contents

Electronic directory contains examples of solutions:

- for power distribution systems for currents of up to 3200 A (MDB, BOP SG, ISD, SG);
- for automatic transfer switch (ATS) for currents of up to 250 A;
- for engine control enclosures (Ya5000, RUSM).

Basic advantages:

1. availability of document package including equipment specification and 2D drawings in dwg format;
2. power and active equipment of any manufacturer that is present on the domestic market may be used;
3. solutions have wide range of application in various branches of industry: petroleum, power engineering, metallurgy, civil construction, etc.
4. development time of projects on power supply to industrial and civil facilities is reduced to a significant degree;
5. all proposed solutions are built using the latest developments for "RAM block" enclosures.

Obtaining the directory:

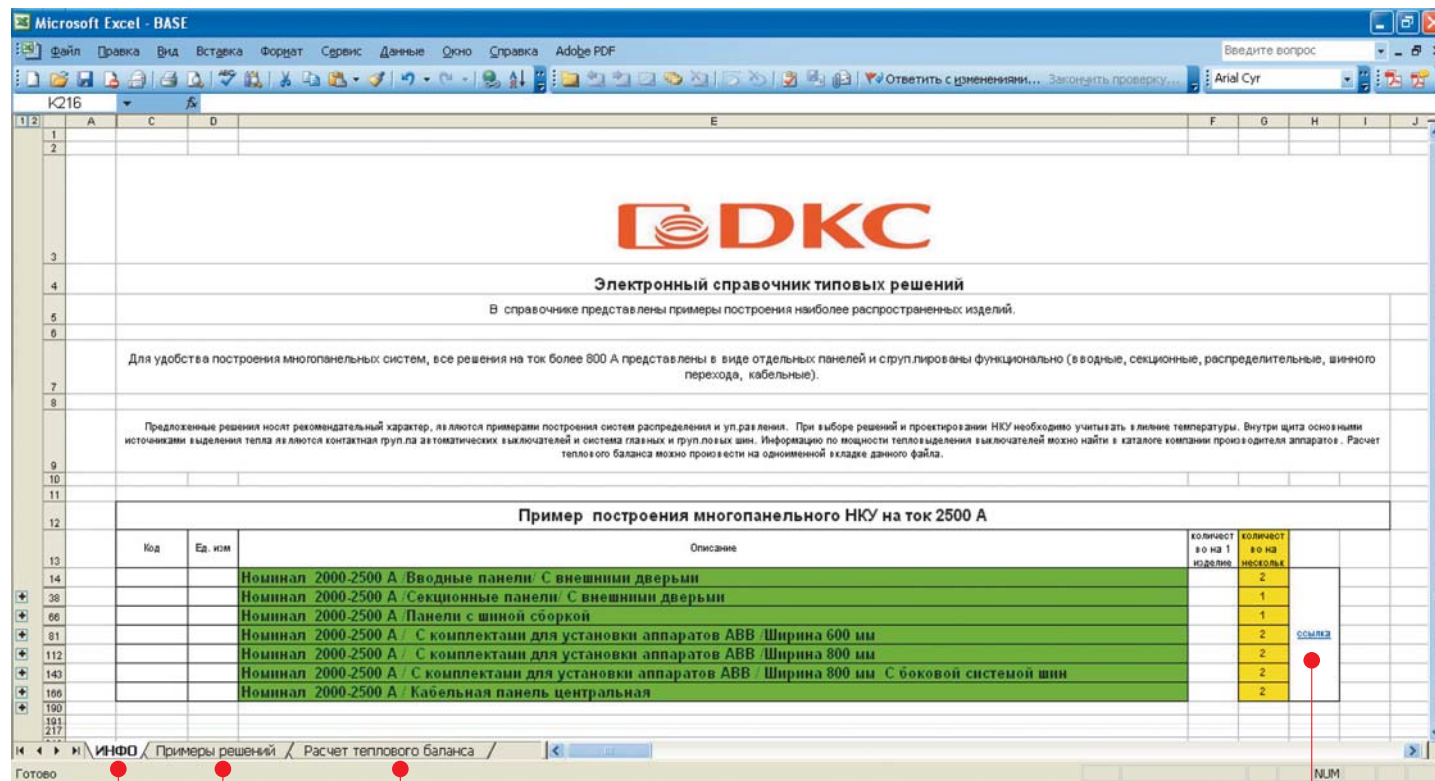
1. contact the representative of DKC in your region;
2. individually download the directory from DKC website: www.dkc.ru (in the section "Support");
3. on any exhibition where DKC participates.

Operation manual

In the Directory file (base.xls) the following 3 tabs are available: Info, Solution examples, Heat-balance calculation.

"Info" tab

Contains construction examples of complex devices with rated current of 2500 A which are the completed solutions with usage of all possible versions on the basis of "RAM block" enclosures. Link to 2D drawings in dwg format can be found in the table.



Код	Ед. изм.	Описание	количество в 0 на 1 изделии	количество в 0 на несколько	Ссылка
Номинал 2000-2500 А		Вводные панели С внешними дверьми	2		
Номинал 2000-2500 А		Секционные панели С внешними дверьми	1		
Номинал 2000-2500 А		Панели с шиной сборкой	1		
Номинал 2000-2500 А		С комплектами для установки аппаратов АВВ Ширина 600 мм	2		
Номинал 2000-2500 А		С комплектами для установки аппаратов АВВ Ширина 800 мм	2		
Номинал 2000-2500 А		С комплектами для установки аппаратов АВВ Ширина 800 мм С боковой системой шин	2		
Номинал 2000-2500 А		Кабельная панель центральная	2		

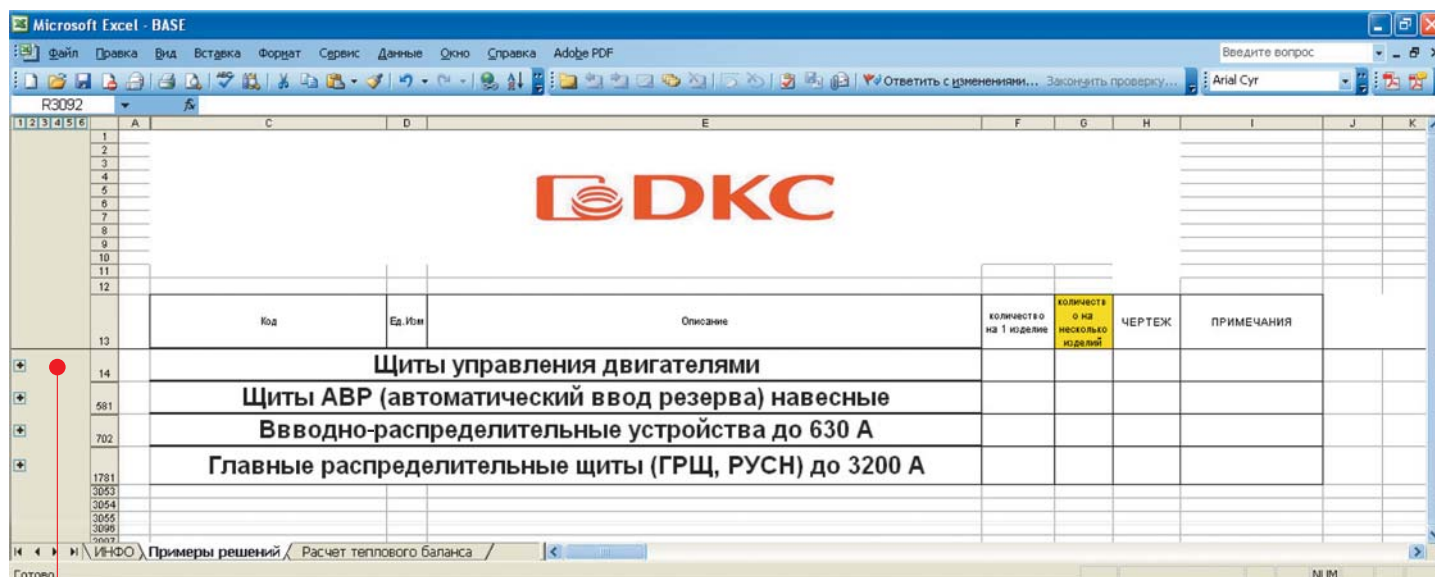
On the desktop (base.xls file) the following 3 tabs are available:

1. Info;
2. Solution examples;
3. Heat-balance calculation.

Link to 2D drawings in *DWG format can also be found in the table.

"Solution examples" tab

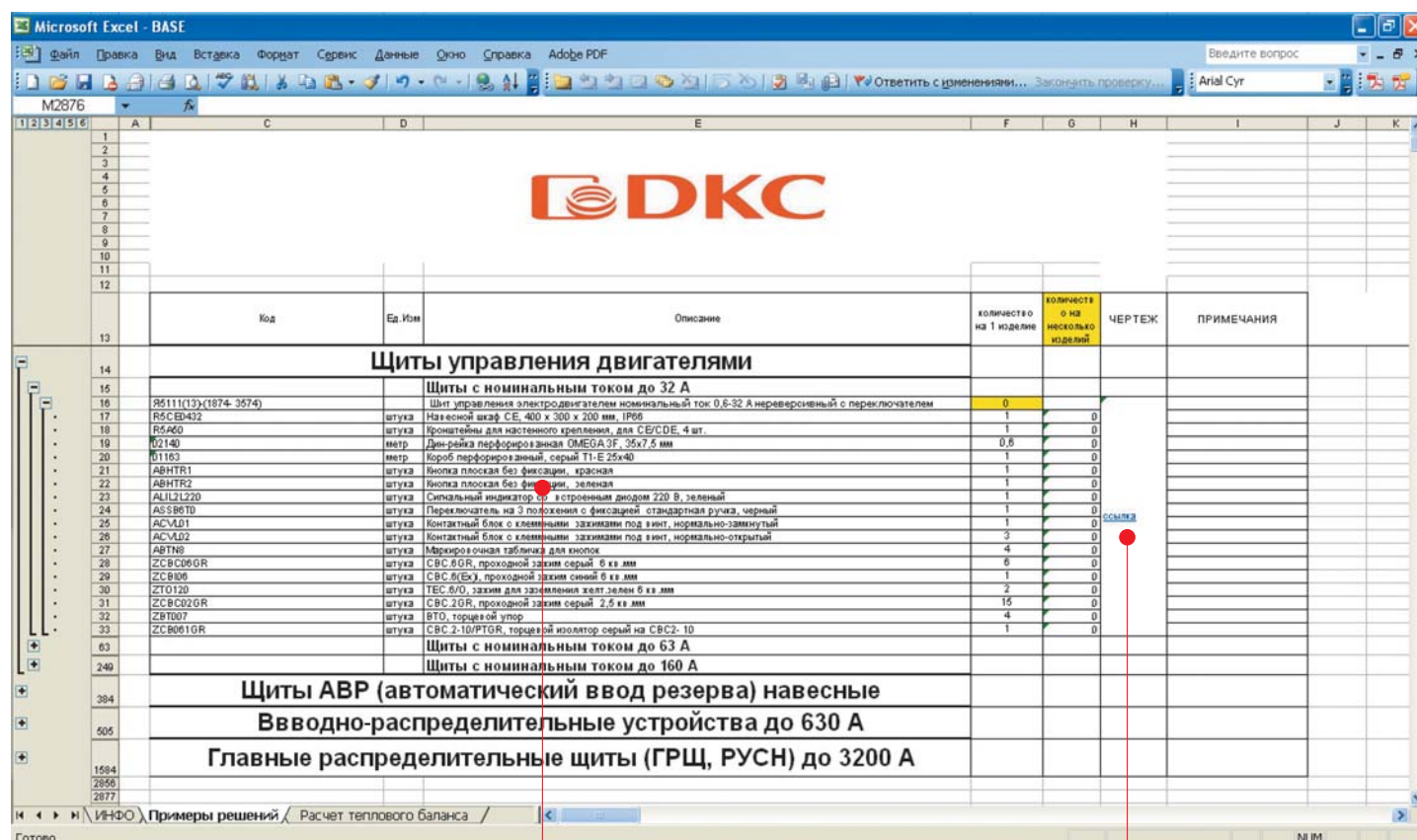
Contains construction examples of power distribution systems for currents of up to 3200 A (MDB, BOP SG, ISD, SG), solutions for automatic transfer switch (ATS) for currents of up to 250 A and for engine control enclosures (Ya5000, RUSM). Link for downloading of 2D drawings in dwg format for each solution is given in the table.



Код	Наим.	Описание	количество на 1 изделие	количество на несколько изделий	ЧЕРТЕЖ	ПРИМЕЧАНИЯ
Щиты управления двигателями						
Щиты АВР (автоматический ввод резерва) навесные						
Вводно-распределительные устройства до 630 А						
Главные распределительные щиты (ГРЩ, РУСН) до 3200 А						

It is possible to choose the solution you are interested in and get acquainted with the information about it using the built-in navigation.

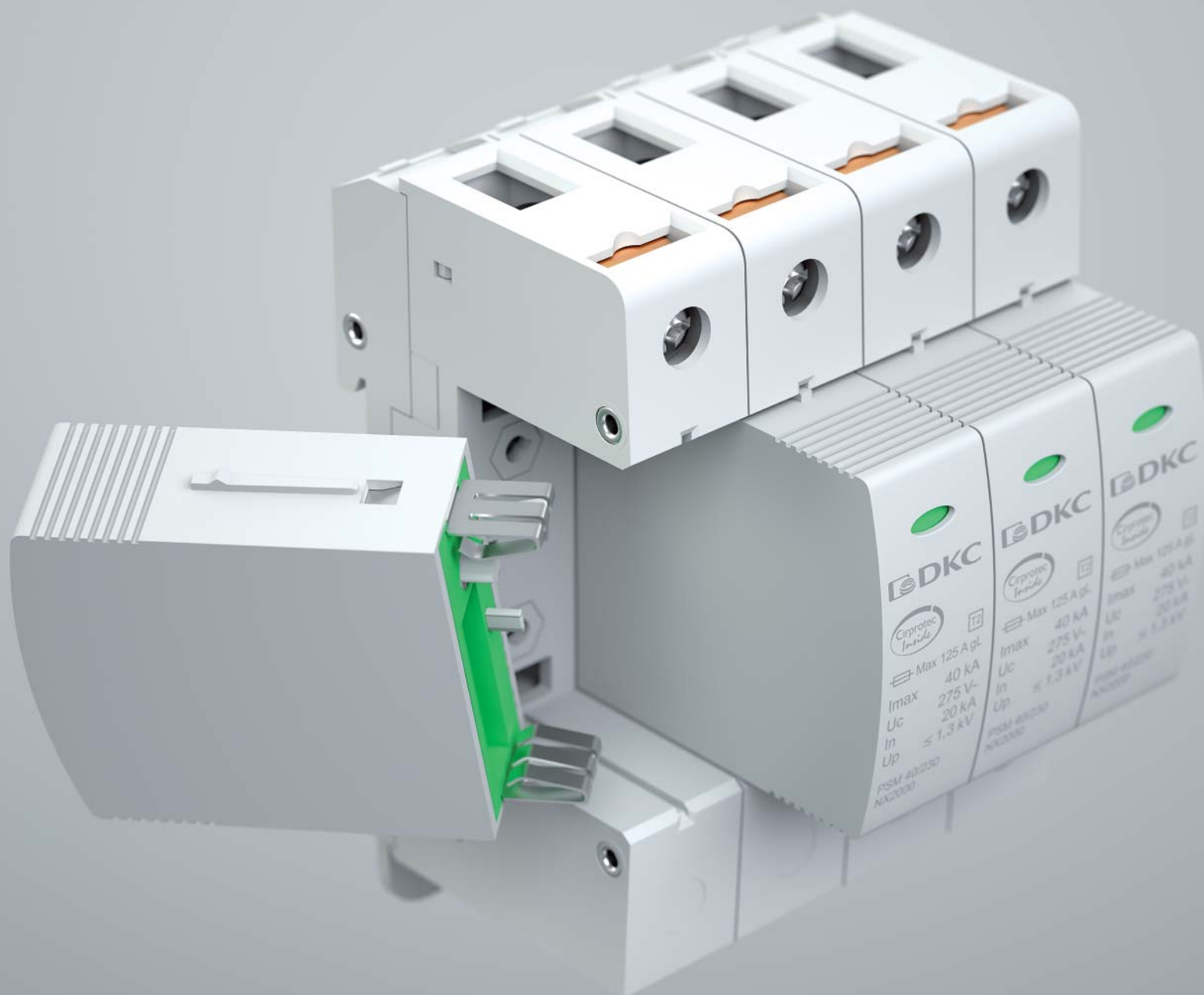
It is possible to choose the solution you are interested in and get acquainted with the information about it using the built-in navigation. Equipment specification and link to the drawing can be found here.



Код	Наим.	Описание	количество на 1 изделие	количество на несколько изделий	ЧЕРТЕЖ	ПРИМЕЧАНИЯ
Щиты управления двигателями						
Щиты с номинальным током до 32 А						
R5111(13)(1874-3574)	Щит управления электродвигателем номинальный ток 0,6-32 А неавтоматический с переключателем		0	0		
R5CDB432	Навесной шкаф СЕ, 400 x 300 x 200 мм, IP66	штука	1	0		
R5A60	Прочистки для настенного крепления, для СЕ/CDE, 4 шт.	штука	1	0		
U2140	Дин-рейка перфорированная OMEGA 3F, 35x7,5 мм	метр	0,8	0		
U1183	Короб перфорированный, серый Т1-E 25x40	штука	1	0		
ABNTR1	Вилка плоская без фиксации, красная	штука	1	0		
ABNTR2	Вилка плоская без фиксации, зеленая	штука	1	0		
ALIL21220	Сигнальный индикатор с встроенным диодом 220 В, зеленый	штука	1	0		
ASSB6T0	Переключатель на 3 положения с фиксацией, стандартная ручка, черный	штука	1	0		
ACVLD1	Контактный блок с клеммными зажимами под винт, нормально-замкнутый	штука	1	0		
ACVLD2	Контактный блок с клеммными зажимами под винт, нормально-открытый	штука	3	0		
ABTN6	Микропереключатель для кнопки	штука	4	0		
ZCVC06GR	СВС 6GR, проходной зажим серый 6 кв. мм	штука	6	0		
ZCVC06GR	СВС 6GR, проходной зажим серый 6 кв. мм	штука	1	0		
ZTO120	ТЕС 6/0, зажим для зацепления желт. зелен 6 кв. мм	штука	2	0		
ZCVC02GR	СВС 2GR, проходной зажим серый 2,5 кв. мм	штука	15	0		
ZBT007	БТО, торцевой упор	штука	4	0		
ZCVC01GR	СВС 2-10/PTGR, торцевой изолятор серый на СВС2-10	штука	1	0		
Щиты с номинальным током до 63 А						
Щиты с номинальным током до 160 А						
Щиты АВР (автоматический ввод резерва) навесные						
Вводно-распределительные устройства до 630 А						
Главные распределительные щиты (ГРЩ, РУСН) до 3200 А						

Equipment specification and link to the drawing can be found here.



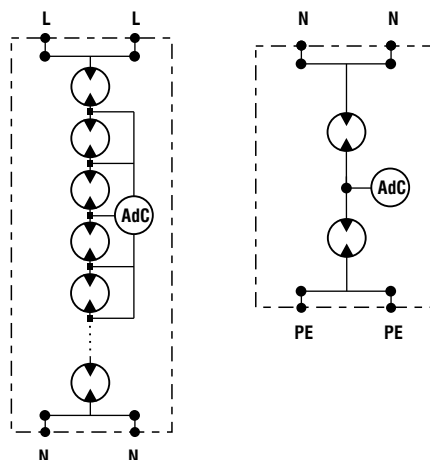


"Jupiter" surge protection

Surge protection devices	260
SPD circuit diagrams	263

Surge protection devices

Type I SPD



Purpose:

- installation on the level of cable and air lines input in the building.

Characteristics:

- SPD based on gas-filled arrester is recommended for use in buildings with external lightning protection system or electricity supplied by air lines.

Version	Grounding scheme	Number of poles	I_{imp} (10/350), kA	I_n (8/20), kA	U_p , kV	t_a , ns	I_{fi} , kA	U_n , V	Max. backup fuse, A [gL]	Code
L-N	TT, TNS, TNC	1	50	50	≤ 2	100	50	230	200	NX1001
N-PE	TT	1	100	100	≤ 2	100	0.1	–	200	NX1012

Type I isolating spark gap



Purpose:

- equipotential bonding between isolated metal elements.

Characteristics:

- spark gap is used as separating insert of isolated metal structures to avoid dangerous sparking and step voltage between them in case of lightning strike.

Dimension, mm	I _{imp} (10/350), kA	Weight, g	U _p , kV	t _a , ns	Code
Ø55x146	100	195	≤5	100	NX0001

TYPE I+II SPD

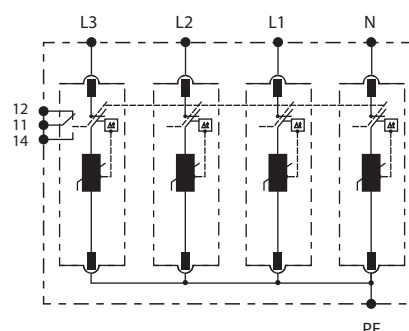
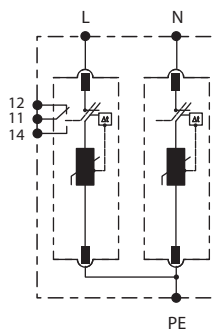
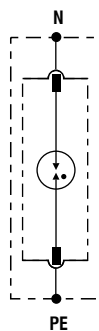
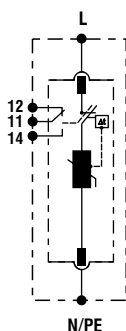


Purpose:

- installation on the main switchboard level.

Characteristics:

- SPD based on gas-filled arrestors and zinc oxide varistors is recommended for use in any buildings and structures subject to lightning strikes.



Version	Grounding scheme	Number of poles	I_{imp} (10/350), kA	I_n (8/20), kA	U_p , kV	t_a , ns	U_n , V	Remote control	Max. backup fuse, A [gL]	Code
L-N	TT, TNS, TNC, IT	1	12.5	20	≤ 1.3	25	230	-	125	NX1211
L-N	TT, TNS, TNC, IT	1	12.5	20	≤ 1.3	25	230	+	125	NX1212
N-PE	TT	1	50	50	≤ 1.5	100	-	-	125	NX1213
L-N-PE	TT, TNS	2	12.5	20	≤ 1.3	25	230	-	125	NX1221
L-N-PE	TT, TNS	2	12.5	20	≤ 1.3	25	230	+	125	NX1222
L1-L2-L3-N-PE	TT, TNS	4	12.5	20	≤ 1.3	25	230/400	-	125	NX1241
L1-L2-L3-N-PE	TT, TNS	4	12.5	20	≤ 1.3	25	230/400	+	125	NX1242

Plug-in replacement modules for Type I+II SPD



Purpose:

- replacement module makes it possible to keep SPD operable in case of one of unit's breakdown.

Version	I_{imp} (10/350), kA	I_n (8/20), kA	U_p , kV	t_a , ns	U_n , V	Code
L-N	12.5	20	≤ 1.3	25	230	NX1200
N-PE	50	50	≤ 1.5	100	-	NX1201

TYPE II SPD

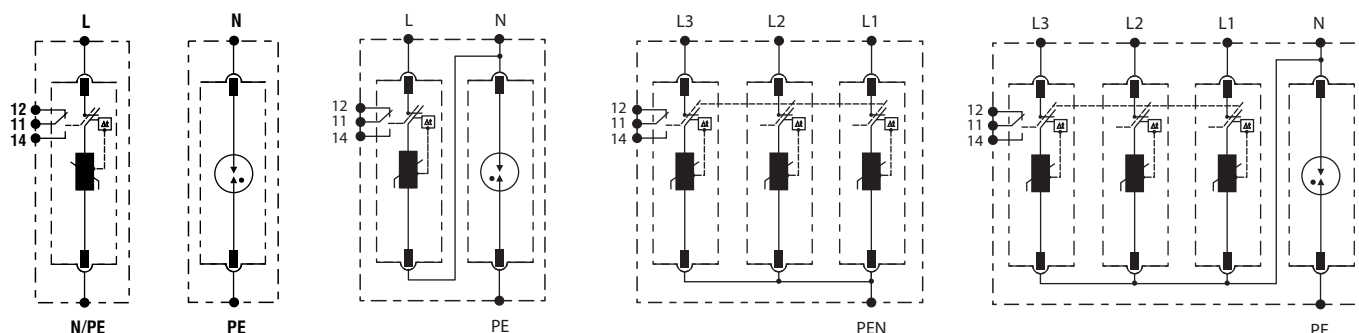


Purpose:

- installation on the panel board level.

Characteristics:

- SPD based on zinc oxide varistors is recommended for protection of low-voltage systems against surges during the short circuits, switching of energy-intensive equipment or remote lightning strike in the power system.



Version	Grounding scheme	Number of poles	I_n (8/20), kA	I_{max} (8/20), kA	U_p , kV	t_a , ns	U_n , V	Remote control	Max. backup fuse, A [gL]	Code
L-N	TT, TNS, TNC, IT	1	20	40	≤ 1.3	25	230	-	125	NX2011
L-N	TT, TNS, TNC, IT	1	20	40	≤ 1.3	25	230	+	125	NX2012
N-PE	TT	1	20	40	≤ 1.5	100	-	-	125	NX2013
L-N-PE	TT, TNS	2	20	40	≤ 1.3	25	230/400	-	125	NX2021
L-N-PE	TT, TNS	2	20	40	≤ 1.3	25	230/400	+	125	NX2022
L1-L2-L3-PEN	TNC	3	20	40	≤ 1.3	25	400	-	125	NX2031
L1-L2-L3-PEN	TNC	3	20	40	≤ 1.3	25	400	+	125	NX2032
L1-L2-L3-N-PE	TT, TNS	4	20	40	≤ 1.3	25	230/400	-	125	NX2041
L1-L2-L3-N-PE	TT, TNS	4	20	40	≤ 1.3	25	230/400	+	125	NX2042

Plug-in replacement modules for Type II SPD

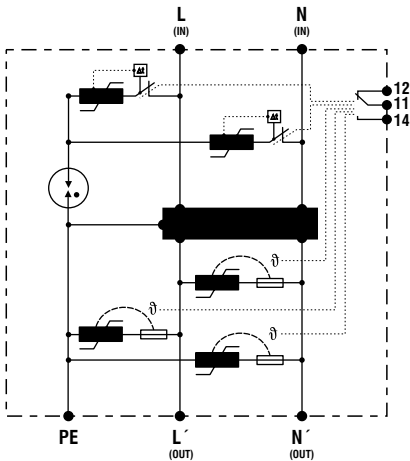


Purpose:

- replacement module makes it possible to keep SPD operable in case of one of unit's breakdown.

Version	I_n (8/20), kA	I_{max} (8/20), kA	U_p , kV	t_a , ns	U_n , V	Code
L-N	20	40	≤ 1.3	25	230	NX2000
N-PE	20	40	≤ 1.5	100	-	NX2001

TYPE II+III SPD

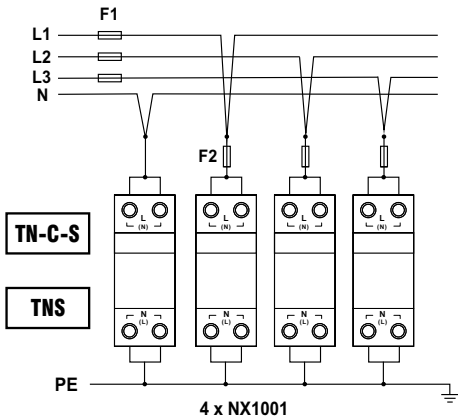
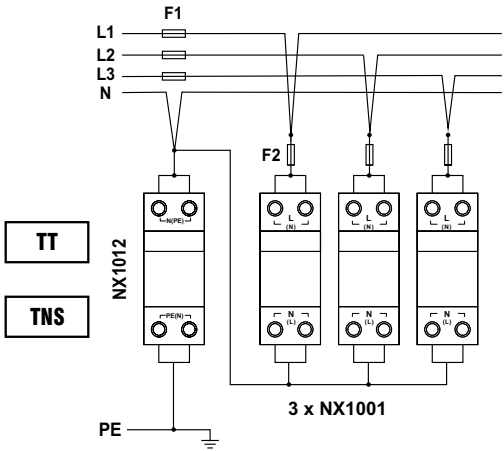


- Purpose:**
- installation near the protecting equipment.
- Characteristics:**
- SPD based on zinc oxide varistors with electromagnetic interference filter is recommended for additional protection of high-sensitive electronics;
 - rated current passing through filter $I_n = 20\text{ A}$.

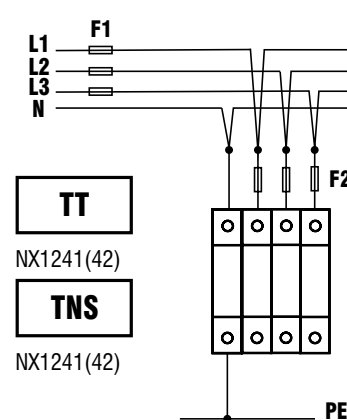
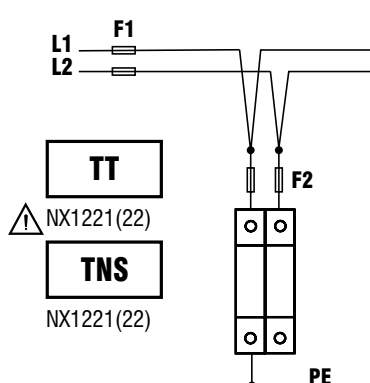
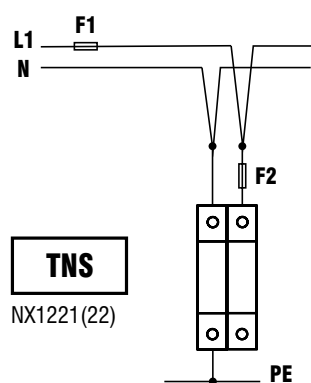
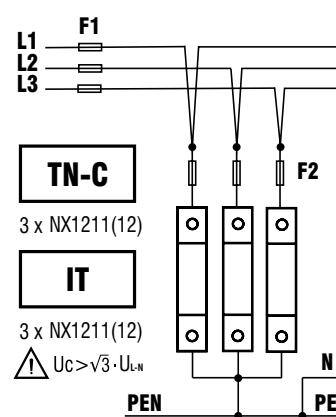
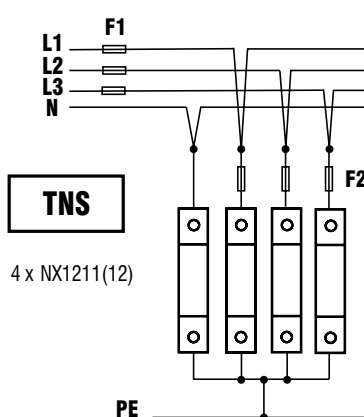
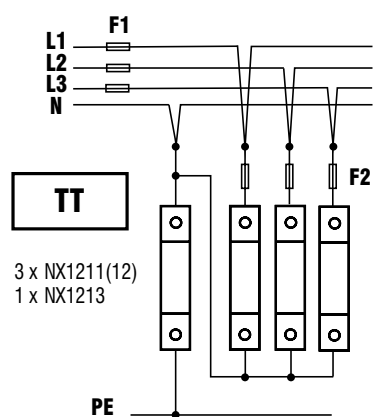
Version	Grounding scheme	Number of poles	$I_n\text{ (8/20), kA}$	$I_{max}\text{ (8/20), kA}$	$U_p\text{, kV}$	$t_a\text{, ns}$	Attenuation band, dB	Remote control	Max. backup fuse, A [gL]	Code
L-N-PE	TT, TNS	2	10	20	≤ 1.2	25	≤ 82	+	20	NX3011

SPD circuit diagrams

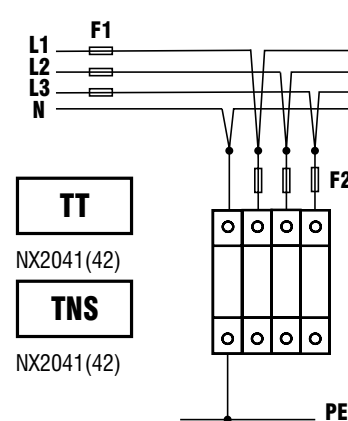
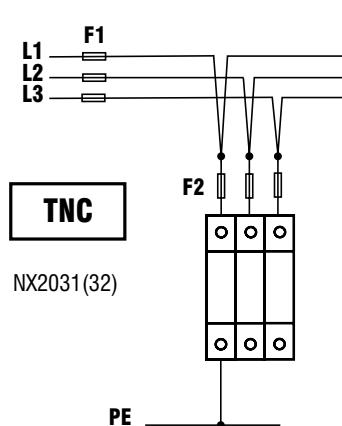
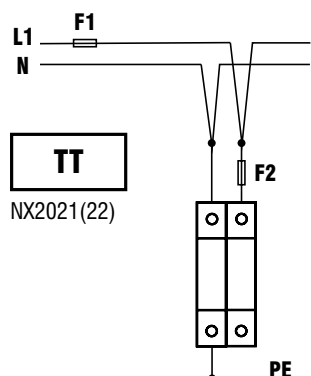
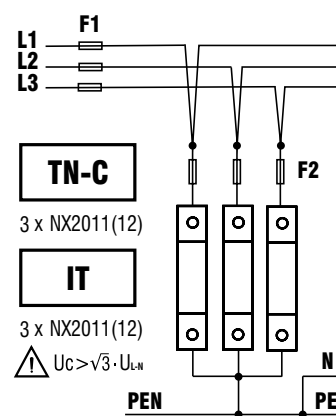
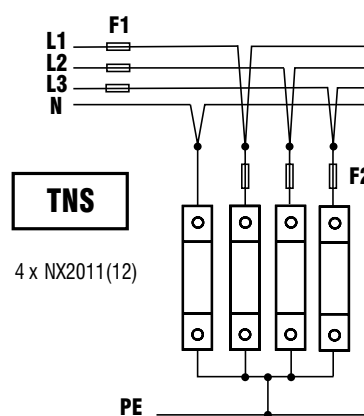
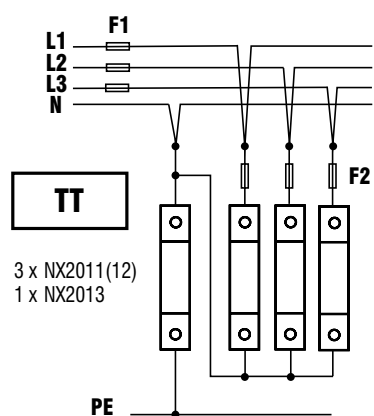
Type I SPD circuit diagrams



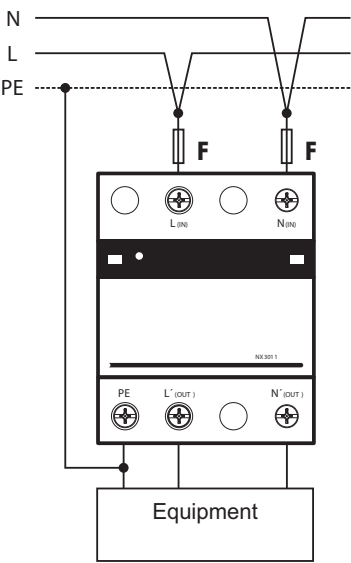
Type I+II SPD circuit diagrams



Type II SPD circuit diagrams



Type II+III SPD circuit diagrams







Wiring system for electric plants and control boards "Quadro"

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Perforated ducts

Description

Perforated ducts are designed for cabling within the electric automation and distribution enclosures. They allow for significant reduction of time expenditures for equipment assembly, increase safety and make the product assembly finished.

DKC is the first and sole Russian serial manufacturer of perforated duct, during its manufacturing unique coextrusion technology is used ensuring more convenient installation and removal of cover and its more firm adherence during horizontal and vertical installation of perforated duct.



Assortment

DKC manufactures the widest standard series of perforated ducts and accessories in Russia:

- more than 60 standard sizes: from 15x18 to 150x100 mm;
- three series distinguished by perforation pitch: 10; 12,5; 20 mm;
- gray and blue.

The system also includes great number of additional accessories: cable retainers, dielectric retainers for mounting plate, supports, etc.

Conformity with regulations

DKC perforated ducts have certificate of conformity and fire certificate. They have successfully passed all necessary climatic and shock tests.

Ease of installation

Special notches on the inside of duct ensure easy breaking of teeth and walls of perforated duct without burrs and special tools.

Teeth edges are rounded to facilitate wires layout operation as well as have special circular holes designed for temporary attachment of wires and cable during the installation. The duct base has additional perforation for attachment of bundle of wires using tie.

Operation

DKC perforated ducts can be used for all the types of climatic areas ensuring reliable equipment operation within the ambient temperature range from -40 to +60 °C.

Logistics

Own manufacturing, large warehouse stock and wide distributor network allow for DKC to provide final consumers with its products within a short time in all the regions of Russia.

Quality package of products prevents damage during long-term storage and transportation as well as reduces time period during the loading and unloading operations.

Basic advantages

Special material on cover edges

Facilitates cover installation and removal and ensures firm adherence to the duct

Two duct version colors

For color identification of power and low amperage circuits

Projections on teeth

For circuit splitting during vertical installation of perforated ducts

RoHS standard

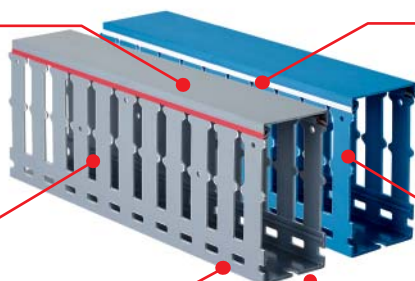
Complies with the most severe requirements of European environmental standard

Special circular holes

Used for temporary attachment of wires and cables during the installation

Special notches

Allow for easy removal of teeth and walls of duct for cable entry and outlet in the necessary place



Perforated ducts

Perforated ducts and accessories are designed for cabling within the electric distribution enclosures.

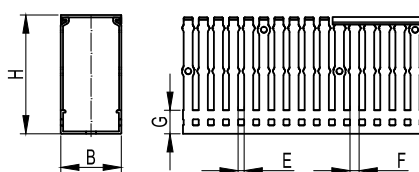
Use of perforated duct allows for significant reduction of time expenditures for equipment assembly, increases safety and makes the product assembly finished.

Dimensions and impact strength of teeth allow for maintenance of duct properties at frequent dynamic loads during cabling and different accessories ensure easy installation and secure attachment.

Technical characteristics

Material	PVC
Mounting temperature, °C	from -15 to +30 as per DIN 53460 standard
Operating temperature, °C	from -40 to +60
Fire resistance	UL 94 V0
Color	Color gray

RL6 series



Purpose:

- wiring within the enclosure.

Characteristics:

- perforation pitch is 10 mm; tooth width is 6 mm; notch width is 4 mm.

Distinctive features:

- characterized by special projection on teeth for cable support; facilitates cabling and allows for circuit splitting during vertical installation of perforated ducts.

Scope of supply:

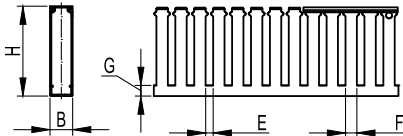
- supplied in segments with a length of 2 m;
- supplied with cover in a kit.

Drawings of cable retainers:

- page 276.

Duct										Accessories		
color	name	dimensions, mm					cross section, mm ²	package, m	code	code		
		B	H	E	F	G				cable retainer	tie	cover
Gray	RL6 25x40	25	40	4	6	13.3	781	72	01163RL	–	–	00702RL
	RL6 25x60	25	60	4	6	15.4	1206	48	01166RL	–	–	00702RL
	RL6 25x80	25	80	4	6	17.4	1652	48	01126RL	–	–	00702RL
	RL6 40x40	40	40	4	6	13.3	1314	40	01134RL	05204RL	01024	00703RL
	RL6 40x60	40	60	4	6	15.5	2019	36	01107RL	05204RL	01024	00703RL
	RL6 40x80	40	80	4	6	17.6	2745	32	01127RL	05204RL	01024	00703RL
	RL6 60x40	60	40	4	6	13.4	2025	16	01135RL	05206RL	01024	00704RL
	RL6 60x60	60	60	4	6	15.6	3113	24	01108RL	05206RL	01024	00704RL
	RL6 60x80	60	80	4	6	17.8	4219	24	01128RL	05206RL	01024	00704RL
	RL6 80x40	80	40	4	6	13.4	2740	24	01153RL	05208RL	01024	00705RL
	RL6 80x60	80	60	4	6	15.6	4155	24	01139RL	05208RL	01024	00705RL
	RL6 80x80	80	80	4	6	17.9	5645	24	01129RL	05208RL	01024	00705RL
	RL6 100x40	100	40	4	6	13.4	3450	16	01155RL	–	01025	00706RL
	RL6 100x60	100	60	4	6	15.8	5304	16	01140RL	–	01025	00706RL
	RL6 100x80	100	80	4	6	18	7198	16	01130RL	–	01025	00706RL
	RL6 120x60	120	60	4	6	16	6389	16	01141RL	–	01025	00707RL
	RL6 120x80	120	80	4	6	18.2	8673	12	01131RL	–	01025	00707RL

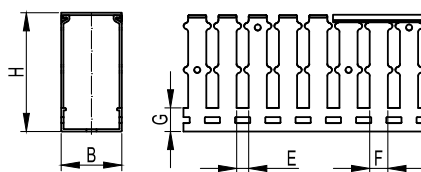
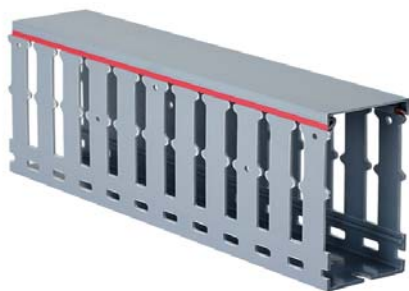
RL75 series



- Purpose:**
- wiring within the enclosure.
- Characteristics:**
- perforation pitch is 12.5 mm; tooth width is 7.5 mm; notch width is 5 mm.
- Distinctive features:**
- duct cover with a width of 15 mm is made without coextrusion;
 - functional profile optimizing duct size and cable capacity ratio.
- Scope of supply:**
- supplied in segments with a length of 2 m;
 - supplied with cover in a kit.

Duct										Accessories		
color	name	dimensions, mm					cross section, mm²	package, m	code	code		
		B	H	E	F	G				cable retainer	tie	cover
Gray	RL75 15x18	15	18	5	7.5	6	187	84	00670RL	–	–	00701RL
	RL75 15x30	15	30	5	7.5	9	345	52	00672RL	–	–	00701RL
	RL75 15x40	15	40	5	7.5	9	447	40	00674RL	–	–	00701RL
	RL75 15x60	15	60	5	7.5	9	741	28	00676RL	–	–	00701RL
	RL75 25x30	25	30	5	7.5	9.1	578	72	00126RL	–	–	00702RL
Blue	RL75 25x30 BL	25	30	5	7.5	9.1	578	72	00278RL	–	–	00702BL

RL12 series



Purpose:

- wiring within the enclosure.

Characteristics:

- perforation pitch is 20 mm; tooth width is 12 mm; notch width is 8 mm;
- color: gray.

Distinctive features:

- characterized by special projection on teeth for cable support; facilitates cabling and allows for circuit splitting during the vertical installation of perforated ducts.

Scope of supply:

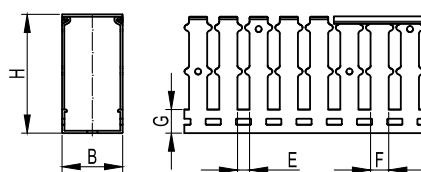
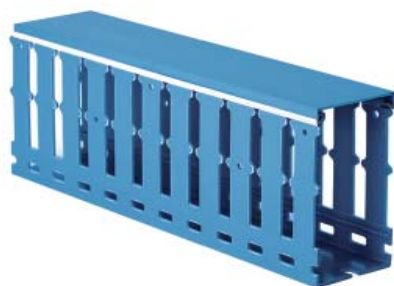
- supplied in segments with a length of 2 m;
- supplied with cover in a kit.

Drawings of cable retainers:

- page 276.

Duct										Accessories		
color	name	dimensions, mm					cross section, mm ²	package, m	code	code		
		B	H	E	F	G				cable retainer	tie	cover
Gray	RL12 25x30	25	30	8	12	9.1	578	72	00127RL	–	–	00702RL
	RL12 25x40	25	40	8	12	13.3	781	72	00128RL	–	–	00702RL
	RL12 25x60	25	60	8	12	15.4	1206	48	00136RL	–	–	00702RL
	RL12 25x80	25	80	8	12	17.4	1652	48	00146RL	–	–	00702RL
	RL12 40x40	40	40	8	12	13.3	1314	40	00134RL	05203RL	01022	00703RL
	RL12 40x60	40	60	8	12	15.5	2019	36	00107RL	05203RL	01022	00703RL
	RL12 40x80	40	80	8	12	17.6	2745	32	00149RL	05203RL	01022	00703RL
	RL12 40x100	40	100	8	12	19.8	3461	16	00161RL	05203RL	01022	00703RL
	RL12 60x40	60	40	8	12	13.4	2025	16	00135RL	05205RL	01022	00704RL
	RL12 60x60	60	60	8	12	15.6	3114	24	00108RL	05205RL	01022	00704RL
	RL12 60x80	60	80	8	12	17.8	4219	24	00151RL	05205RL	01022	00704RL
	RL12 60x100	60	100	8	12	20	5337	16	00162RL	05205RL	01022	00704RL
	RL12 80x40	80	40	8	12	13.4	2740	24	00163RL	05207RL	01022	00705RL
	RL12 80x60	80	60	8	12	15.6	4216	24	00139RL	05207RL	01022	00705RL
	RL12 80x80	80	80	8	12	17.9	5706	24	00152RL	05207RL	01022	00705RL
	RL12 80x100	80	100	8	12	20	7248	12	00170RL	05207RL	01022	00705RL
	RL12 100x40	100	40	8	12	13.6	3450	16	00165RL	–	01023	00706RL
	RL12 100x60	100	60	8	12	15.8	5304	16	00140RL	–	01023	00706RL
	RL12 100x80	100	80	8	12	18	7198	16	00153RL	–	01023	00706RL
	RL12 100x100	100	100	8	12	20.2	8920	8	00171RL	–	01023	00706RL
	RL12 120x60	120	60	8	12	16	6388	16	00142RL	–	01023	00707RL
	RL12 120x80	120	80	8	12	18.2	8673	12	00159RL	–	01023	00707RL
	RL12 150x100	150	100	8	12	20.4	13876	8	00172RL	–	01023	00708RL

RL12 series



Purpose:

- wiring within the enclosure.

Characteristics:

- perforation pitch is 20 mm; tooth width is 12 mm; notch width is 8 mm;
- color: blue.

Distinctive features:

- characterized by special projection on teeth for cable support; facilitates cabling and allows for circuit splitting during the vertical installation of perforated ducts.

Scope of supply:

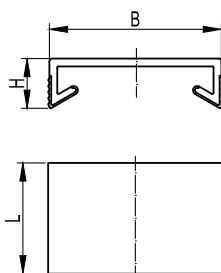
- supplied in segments with a length of 2 m;
- supplied with cover in a kit.

Drawings of cable retainers:

- page 276.

Duct										Accessories		
color	name	dimensions, mm					cross section, mm ²	package, m	code	code		
		B	H	E	F	G				cable retainer	tie	cover
Blue	RL12 25x30	25	30	8	12	9.1	578	72	00227RL	–	–	00702BL
	RL12 25x40	25	40	8	12	13.3	781	72	00228RL	–	–	00702BL
	RL12 25x60	25	60	8	12	15.4	1206	48	00280RL	–	–	00702BL
	RL12 25x80	25	80	8	12	17.4	1652	48	01137RL	–	–	00702BL
	RL12 40x40	40	40	8	12	13.3	1314	40	00283RL	05203RL	01022	00703BL
	RL12 40x60	40	60	8	12	15.5	2019	36	00284RL	05203RL	01022	00703BL
	RL12 40x80	40	80	8	12	17.6	2745	32	01160RL	05203RL	01022	00703BL
	RL12 40x100	40	100	8	12	19.8	3461	16	00261RL	05203RL	01022	00703BL
	RL12 60x40	60	40	8	12	13.4	2025	16	00235RL	05205RL	01022	00704BL
	RL12 60x60	60	60	8	12	15.6	3114	24	00288RL	05205RL	01022	00704BL
	RL12 60x80	60	80	8	12	17.8	4219	24	01162RL	05205RL	01022	00704BL
	RL12 60x100	60	100	8	12	20	5337	16	00262RL	05205RL	01022	00704BL
	RL12 80x40	80	40	8	12	13.4	2740	24	00263RL	05207RL	01022	00705BL
	RL12 80x60	80	60	8	12	15.6	4216	24	00239RL	05207RL	01022	00705BL
	RL12 80x80	80	80	8	12	17.9	5706	24	01168RL	05207RL	01022	00705BL
	RL12 80x100	80	100	8	12	20	7248	12	00270RL	05207RL	01022	00705BL
	RL12 100x40	100	40	8	12	13.6	3450	16	00265RL	–	01023	00706BL
	RL12 100x60	100	60	8	12	15.8	5304	16	00240RL	–	01023	00706BL
	RL12 100x80	100	80	8	12	18	7198	16	01173RL	–	01023	00706BL
	RL12 100x100	100	100	8	12	20.2	8920	8	00271RL	–	01023	00706BL
	RL12 120x60	120	60	8	12	16	6388	16	00242RL	–	01023	00707BL
	RL12 120x80	120	80	8	12	18.2	8673	12	00259RL	–	01023	00707BL
	RL12 150x100	150	100	8	12	20.4	13876	8	00272RL	–	01023	00708BL

Cover for RL series perforated duct



Purpose:

- wiring protection against external effects.

Installation conditions:

- suitable for RL6, RL75, RL12 series perforated ducts.

Distinctive features:

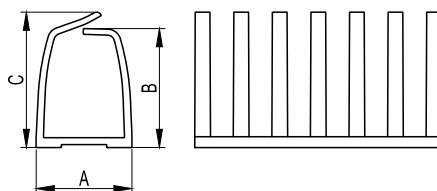
- coextrusion on the side walls with a width of 25, 40, 60, 80, 100, 120, 150 mm.

Scope of supply:

- supplied in segments with a length of 2 m.

Dimensions, mm			Color	Package, m	Code
B	H	L			
15	4.6	2,000	gray	200	00701RL
25	7.3	2,000	gray	100	00702RL
40	7.8	2,000	gray	50	00703RL
60	7.8	2,000	gray	50	00704RL
80	8.2	2,000	gray	50	00705RL
100	8.2	2,000	gray	80	00706RL
120	8.8	2,000	gray	24	00707RL
150	9.2	2,000	gray	40	00708RL

Flexible self-adhesive DN-A series perforated ducts



Purpose:

- for compact cabling they can be installed on the different levels.

Installation conditions:

- before use of adhesive part it is necessary to make sure that surface is squeaky clean and dry.

Distinctive features:

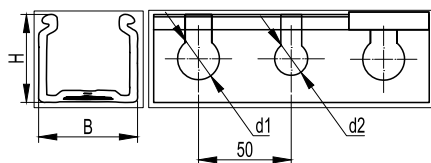
- perforation pitch is 12.5 mm;
- tooth width is 5 mm;
- increased strength and flexibility characteristics.

Scope of supply:

- supplied in segments with a length of 0.5 m.

Name	Dimensions, mm			Cross section, mm ²	Package, pcs	Code
	A	B	C			
DN-AS	17.5	23	28	275	24	02181
DN-AM	32	38.5	43	900	24	02182
DN-AL	42.5	48.5	55	1550	14	02183

TPD series with pressed out holes



Purpose:

- offset of flexible and rigid tubes.

Characteristics:

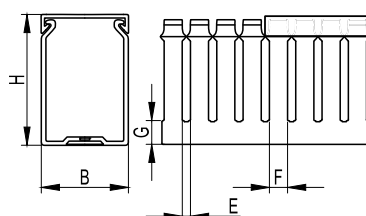
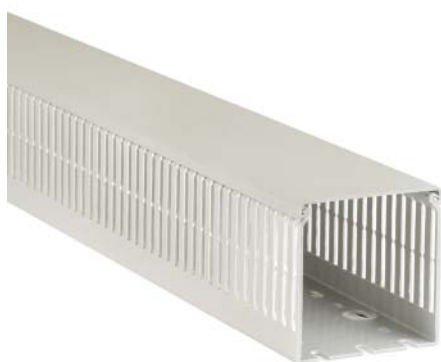
- hole diameter is 18 and 23 mm.

Distinctive features:

- pre-perforation on the duct walls allows for offset of flexible and rigid tubes using holes;
- supplied in segments with a length of 2 meters.

Name	B base, mm	H height, mm	Section, mm ²	Package, m	Code
TPD 37.5x50	37.5	50	1500	40	08203
TPD 50x50	50	50	2060	24	08213
TPD 75x50	75	50	3200	24	08204
TPD 100x50	100	50	4330	16	08214
TPD 125x50	125	50	5370	16	08205

TD series



Purpose:

- wiring within the enclosure.

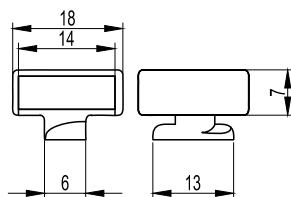
Distinctive features:

- teeth edges are rounded to facilitate cabling operation;
- supplied in segments with a length of 2 meters.

Name	B base, mm	H side height, mm	G base height, mm	E notch, mm	F tooth, mm	Cross section, mm ²	Package, m	Code
TD 25x25	25	25	7	5	7.5	460	48	08121
TD 25x37.5	37.5	25	7	5	7.5	660	64	08103
TD 37.5x50	50	37.5	10	5	7.5	1490	20	08115
TD 50x25	25	50	11	5	7.5	990	32	08122
TD 50x37.5	37.5	50	11	5	7.5	1500	40	08105
TD 50x50	50	50	11	5	7.5	2060	24	08107
TD 50x75	75	50	11	5	7.5	3200	24	08109
TD 50x100	100	50	11	5	7.5	4330	16	08111
TD 75x37.5	37.5	75	13	5	7.5	2330	24	08106
TD 75x50	50	75	13	5	7.5	3200	24	08108
TD 75x75	75	75	13	5	7.5	4940	16	08110
TD 75x100	100	75	13	5	7.5	6650	16	08112

Accessories for perforated ducts

ZP2 fastener


Purpose:

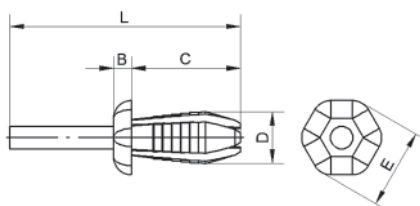
- attachment of bundle of wires to base of perforated duct by inserting tie.

Distinctive features:

- used for TD and TPD series perforated ducts.

Name	Package, pcs	Code
ZP2	500	06561

Duct retainers


Purpose:

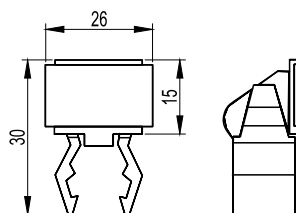
- fast and secure attachment of duct to mounting plate.

Distinctive features:

- in contrast to self-tapping screws they do not carry electrical current and exclude possibility of disruptive discharge in case of wire damage;
- installed using special tool (page 279).

Name	Diameter, mm	Dimensions, mm					Color	Package, pcs	Code
		L	B	C	D	E			
DUCTAFIX RL4	4	25.5	2	12	4	9	green	1000	06502RL
DUCTAFIX RL6	6.5	29.5	2	14	6.25	11	red	500	06511RL

Marking


Purpose:

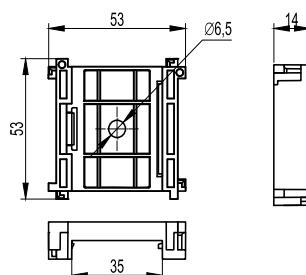
- identification of devices within the electric board.

Distinctive features:

- used for marking of RL12 series perforated duct.

Name	For duct	Package, pcs	Code
DUCTAMARK 1	RL12	100	07501

Support


Purpose:

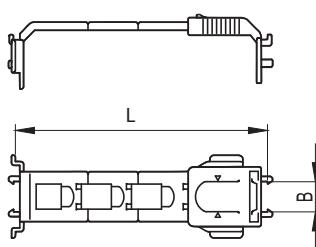
- perforated duct attachment on a DIN rail.

Distinctive features:

- allows for duct installation on DIN rails both in horizontal and vertical position.

Name	Package, pcs	Code
DINBLOCK	100	07104RL
DINBLOCK 3	100	07103

Tie for wire



Purpose:

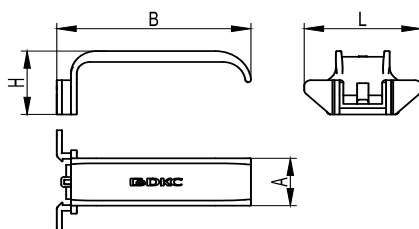
- ensures maximum wire clamp.

Distinctive features:

- color is gray RAL 7030.

Name	For duct	L	V	Package, pcs	Code
TR1-EN 40-80	RL6	40-60-80	16	100	01024
TR1-EN 100-150	RL6	100-120-150	16	50	01025
TR1-N 40-80	RL12	40-60-80	12	100	01022
TR1-N 100-150	RL12	100-120-150	12	50	01023

Cable retainers for RL6 series



Purpose:

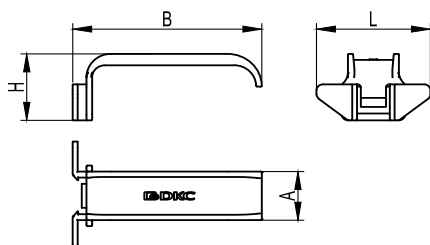
- ease of installation during the cabling.

Distinctive features:

- fast installation owing to convenient profile.

Name	For duct	B	A	L	H	Package, pcs	Code
Cable retainer	RL6	40	16.6	36.2	20.2	70	05204RL
Cable retainer	RL6	60	16.6	36.2	22.2	50	05206RL
Cable retainer	RL6	80	16.6	36.2	22.2	60	05208RL

Cable retainers for RL12 series



Purpose:

- ease of installation during the cabling.

Distinctive features:

- fast installation owing to convenient profile.

Name	For duct	B	A	L	H	Package, pcs	Code
Cable retainer	RL12	40	16.2	36.2	20.2	70	05203RL
Cable retainer	RL12	60	16.2	36.2	22.2	50	05205RL
Cable retainer	RL12	80	16.2	36.2	22.2	60	05207RL

CL cable holder for RL series perforated duct



Purpose:

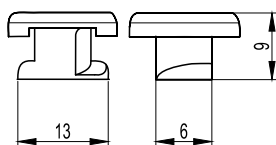
- secure attachment of many wires.

Distinctive features:

- these holders are suitable for RL6 and RL12 series ducts.

Name	Package, pcs	Code
CL 40x40 cable holder	60	05104RL
CL 40x60 cable holder	60	05107RL
CL 60x60 cable holder	60	05108RL

ZP1 fastener



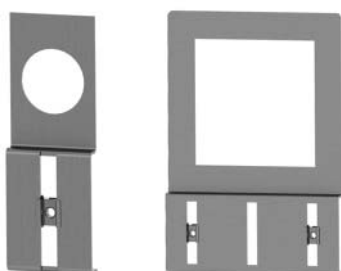
Purpose:

- ZP1 accessory allows for attachment of smaller perforated duct within the greater channel splitting electric circuits with different voltage and/or functions.

Name	Package, pcs	Code
ZP1	1000	06560

Perforated duct holders

For installation on door



Purpose:

- perforated duct installation on the internal door surface.

Material:

- galvanized steel with thickness of 1 mm.

Scope of supply:

- holder.

Drawing:

- see on the disk.

Mounting hole, mm	Package, pcs	Code
72x72	10	R5DPC72
96x96	10	R5DPC96
ø 22	50	R5DPC22
ø 30	30	R5DPC30

For installation on R5TE** frame



Purpose:

- installation of perforated duct on the frame for installation of internal doors.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- maximum duct width is 60 mm.

Scope of supply:

- 4 holders.

Drawing:

- see on the disk.

Description	Code
Retainer for perforated duct attachment to R5TE*** frame	R5DSF01

For installation on DIN rail



Purpose:

- perforated duct installation on a DIN rail or R5DSF01 element.

Material:

- galvanized steel with thickness of 2 mm.

Distinctive features:

- it is necessary to use P KLIP clips for installation on a DIN rail (page 287);
- maximum duct width is 60 mm.

Scope of supply:

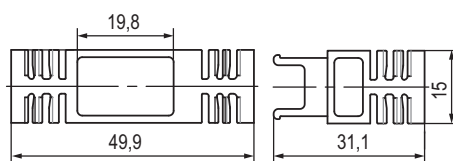
- 10 holders.

Drawing:

- see on the disk.

Description	Code
Retainer for perforated duct attachment to DIN rail	R5DSF02

Stopper for cable



Purpose:

- stopper is designed for secure attachment of many wires within DKC perforated ducts.

Distinctive features:

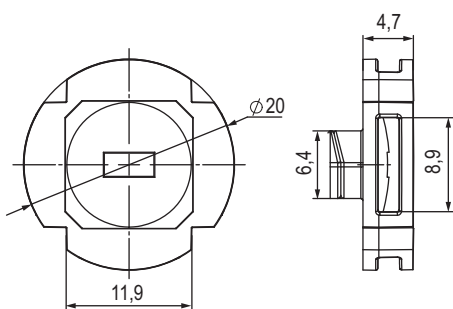
- owing to extension cords it can be used with all the standard sizes with a width from 40 mm.

Characteristics:

- colors: yellow.

Name	Code
Cable stopper	08100RL
Cable stopper extension cord	08101RL

ZP2 fastener for RL duct



Purpose:

- attachment of bundle of wires to base of perforated duct by inserting tie.

Distinctive features:

- used for RL series perforated ducts

Characteristics:

- colors: white.

Name	Code
ZP2 fastening element for RL duct	06561RL

Tools

Tools for retainer

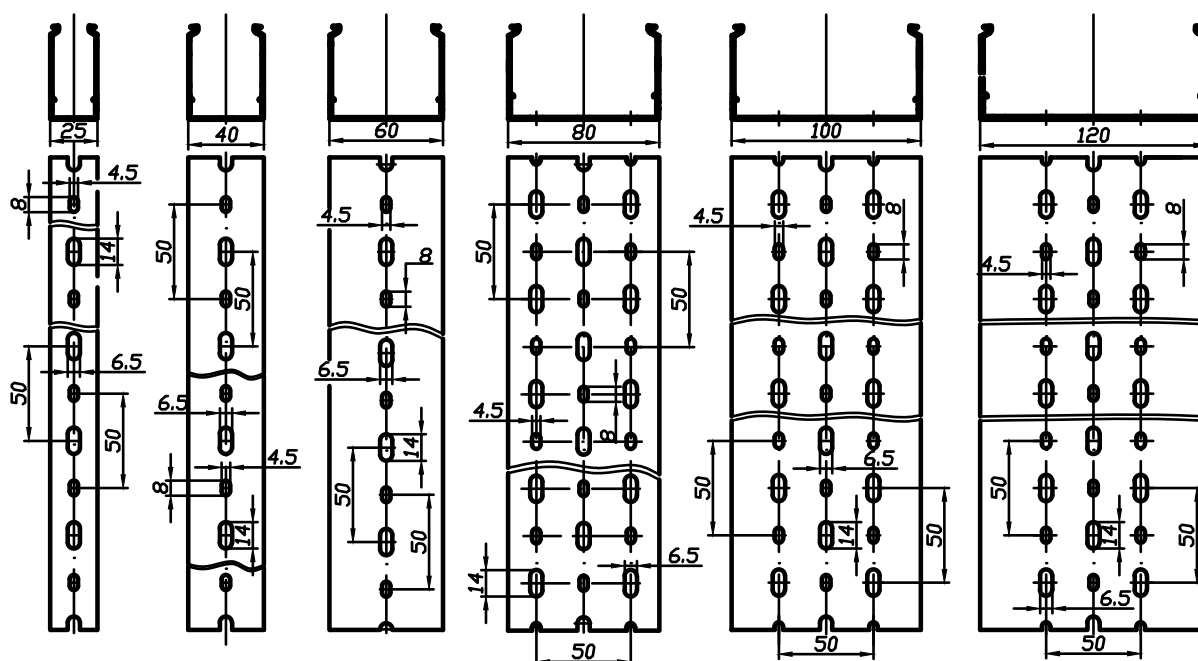


- Purpose:**
- installation of DUCTAFIX RL4 and RL6 retainers (page 275).
- Distinctive features:**
- aluminium enclosure facilitates installation of retainers in the duct;
 - the upper part of tool corresponds to the retainer color that facilitates identification.

Name	Package, pcs	Code
FIXO RL4	1	06500RL
FIXO RL6	1	06501RL
FIXO RT4	4	06500
FIXO RT6	4	06501

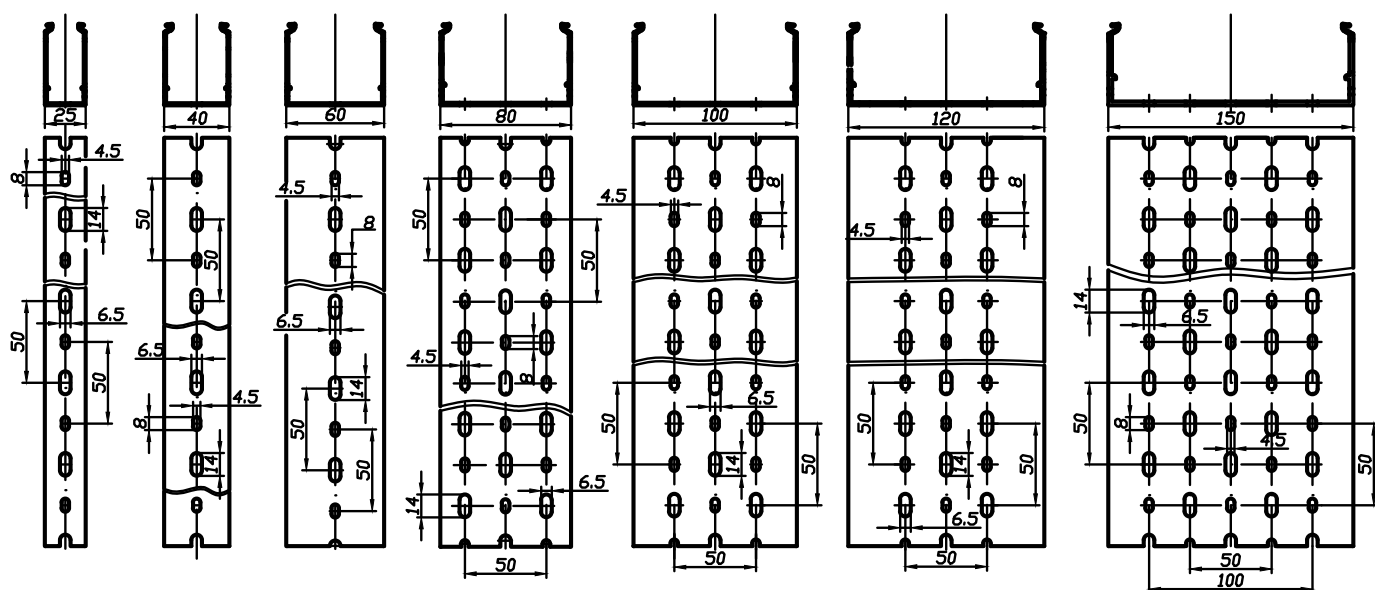
Selection table

Useful section of RL6 series duct

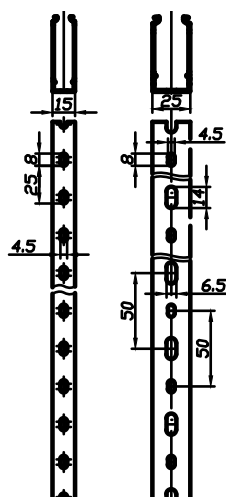


RL6 series perforated duct		Section, mm ²	PV3 cable, pcs					
height, mm	width, mm		0.75	1	1.5	2.5	4	6
40	25	781	99	91	60	39	30	23
	40	1314	167	153	102	65	51	39
	60	2025	257	236	157	101	78	61
	80	2740	348	319	213	137	106	83
	100	3450	439	402	268	172	134	105
60	25	1206	153	140	93	60	46	36
	40	2019	256	235	157	100	78	61
	60	3113	396	363	242	155	121	94
	80	4155	536	491	327	210	163	128
	100	5304	675	618	412	265	206	161
	120	6389	813	745	496	319	248	194
80	25	1652	210	192	128	82	64	50
	40	2745	349	320	213	137	106	83
	60	4219	536	492	328	210	164	128
	80	5645	726	665	443	285	221	173
	100	7198	916	839	559	359	279	219
	120	8673	1103	1011	674	433	337	263
100	100	8920	1161	1064	709	456	354	277

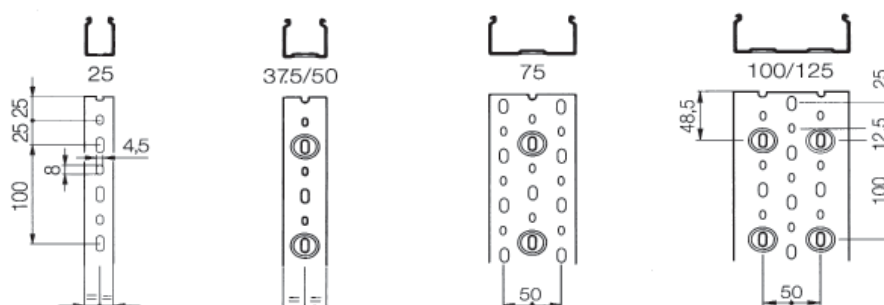
Useful section of RL12 series duct



RL12 series perforated duct		Section, mm ²	PV3 cable, pcs					
height, mm	width, mm		0.75	1	1.5	2.5	4	6
40	25	781	99	91	60	39	30	23
	40	1314	167	153	102	65	51	39
	60	2025	257	236	157	101	78	61
	80	2740	348	319	213	137	106	83
	100	3450	439	402	268	172	134	105
60	25	1206	153	140	93	60	46	36
	40	2019	256	235	157	100	78	61
	60	3114	396	363	242	155	121	94
	80	4216	536	491	327	210	163	128
	100	5304	675	618	412	265	206	161
	120	6388	813	745	496	319	248	194
80	25	1652	210	192	128	82	64	50
	40	2745	349	320	213	137	106	83
	60	4219	536	492	328	210	164	128
	80	5706	726	665	443	285	221	173
	100	7198	916	839	559	359	279	219
	120	8673	1103	1011	674	433	337	263
100	100	9127	1161	1064	709	456	354	277
	150	13876	1766	1618	1079	693	539	422

Useful section of RL75 series duct


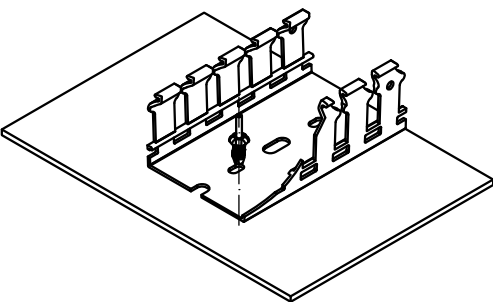
RL75 series perforated duct		Section, mm ²	PV3 cable, pcs					
height, mm	width, mm		0.75	1	1.5	2.5	4	6
18	15	187	23	21	14	9	7	5
30	15	345	43	40	26	17	13	10
	25	578	73	67	44	28	22	17
40	15	447	56	52	34	22	17	13
60	15	741	94	86	57	37	28	22

Useful section of TD/TPD series duct


TD/TPD series perforated duct		Section, mm ²	PV3 cable, pcs					
height, mm	width, mm		0.75	1	1.5	2.5	4	6
25	25	460	59	54	36	23	18	14
	37.5	660	84	77	51	33	26	20
37.5	50	1490	190	174	116	75	58	45
50	25	990	126	116	77	50	39	30
	37.5	1500	191	175	117	75	58	46
	50	2060	262	240	160	103	80	63
	75	3200	407	373	249	160	124	97
	100	4330	551	505	337	217	168	132
	37.5	2330	297	272	181	117	91	71
75	50	3200	407	373	249	160	124	97
	75	4940	629	576	384	247	192	150
	100	6650	846	776	517	333	259	202
125	100	11415	1453	1332	888	571	444	347

Scheme installation

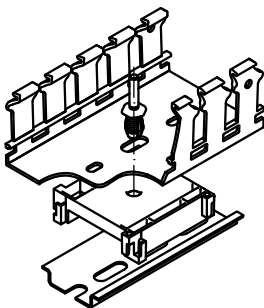
Duct attachment to mounting plate



During the installation of perforated duct to mounting plate in order to avoid disruptive discharge in case of wire damage, it is necessary to use nylon retainers DUCTAFIX. Attachment is performed with special mounting tool FIXO.

Description	Code
RL12 40x40 perforated duct	00134RL
DUCTAFIX R4 retainer	06502RL
FIXO RT4 tool	06500RL

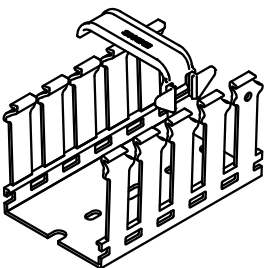
Duct attachment on a DIN rail



During the installation of perforated duct on a DIN rail it is necessary to latch special DINBLOCK support on a DIN rail and then attach perforated duct using special DUCTAFIX fastening elements.

Description	Code
RL12 40x40 perforated duct	00134RL
DINBLOCK	07104RL
DUCTAFIX R6 retainer	06511RL

Installation of cable retainer



To facilitate installation during the cabling it is necessary to use special cable retainers. For this purpose it is necessary to unbend one tooth of perforated duct slightly with a finger and attach retainer on the tooth.

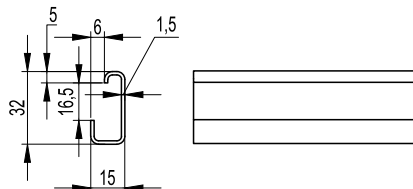
Description	Code
RL12 40x40 perforated duct	00134RL
Cable retainer	05203RL

DIN rails

DIN rails are supplied in the following versions:

- version 1 – standard series with a solid bottom, has continuous line in the base center to facilitate hole drilling;
- version 2 – F series with holes for equipment attachment.

G1 DIN rail



Material:

- galvanized steel.

Distinctive features:

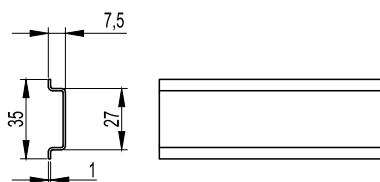
- G-rail with continuous line in the base center;
- high strength and corrosion resistance (up to 40 minutes in salt solution).

Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
G1	24	02120

OMEGA 3 DIN rail



Material:

- galvanized steel.

Distinctive features:

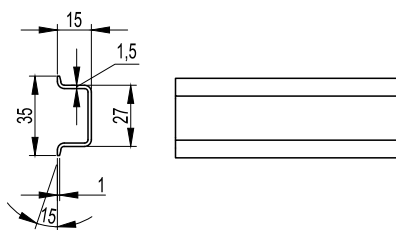
- O-rail with continuous line in the base center;
- high strength and corrosion resistance (up to 40 minutes in salt solution).

Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
Omega 3	40	02135

OMEGA 3A DIN rail



Material:

- galvanized steel.

Distinctive features:

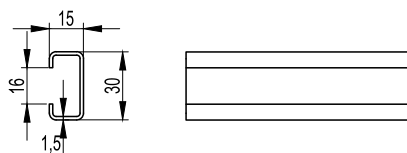
- O-rail with continuous line in the base center;
- high strength and corrosion resistance (up to 40 minutes in salt solution).

Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
Omega 3A	20	02145

C1 DIN rail



Material:

- galvanized steel.

Distinctive features:

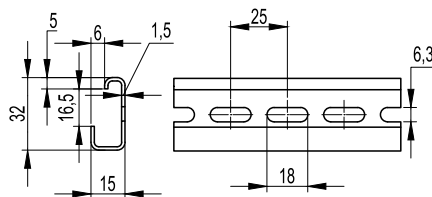
- C-rail with continuous line in the base center;
- high strength and corrosion resistance (up to 40 minutes in salt solution).

Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
C1	20	02160

G1F DIN rail



Material:

- galvanized steel.

Distinctive features:

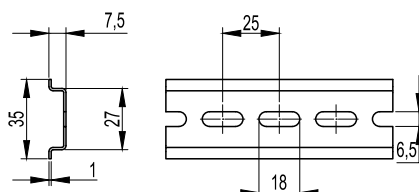
- G-rail with perforation;
- high strength and corrosion resistance (up to 40 minutes in salt solution).

Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
G1F	24	02125

OMEGA 3F DIN rail



Material:

- galvanized steel.

Distinctive features:

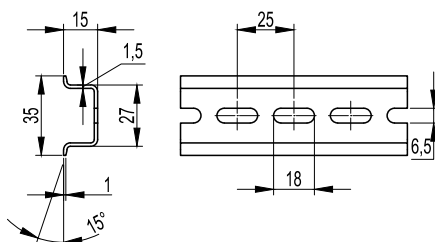
- O-rail with perforation;
- high strength and corrosion resistance (up to 40 minutes in salt solution).

Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
Omega 3F	40	02140

OMEGA 3AF DIN rail



Material:

- galvanized steel.

Distinctive features:

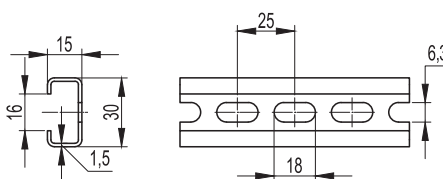
- O-rail with perforation;
- high strength and corrosion resistance (up to 40 minutes in salt solution).

Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
Omega 3AF	20	02150

C1F DIN rail



Material:

- galvanized steel.

Distinctive features:

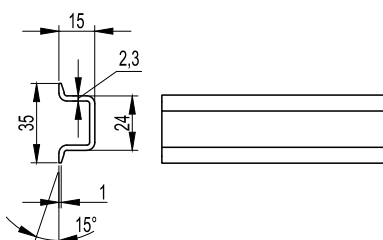
- C-rail with perforation;
- high strength and corrosion resistance (up to 40 minutes in salt solution).

Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
C1F	20	02165

OMEGA 3B DIN rail



Material:

- galvanized steel.

Distinctive features:

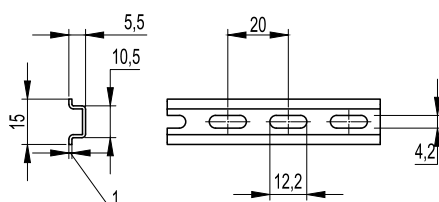
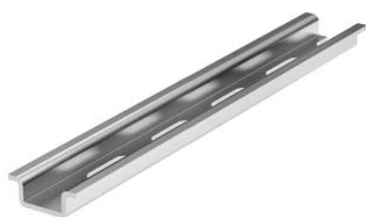
- O-rail with continuous line in the base center;
- high strength and corrosion resistance (up to 40 minutes in salt solution).

Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
Omega 3B	20	02155

OMEGA 2F DIN rail



Material:

- galvanized steel.

Distinctive features:

- O-rail with perforation;
- high strength and corrosion resistance (up to 40 minutes in salt solution).

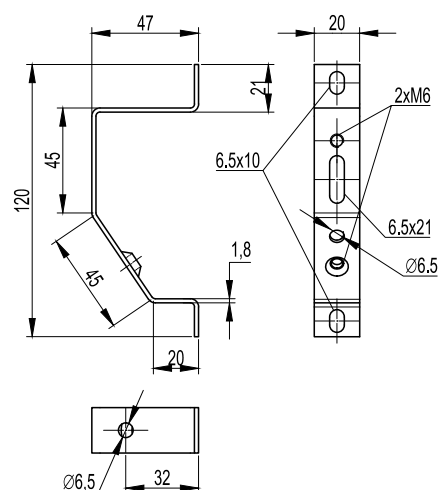
Technical specifications:

- comply with DIN 50021SS.

Type	Package, m	Code
Omega 2F	40	02130

Accessories

TSL bracket



Material:

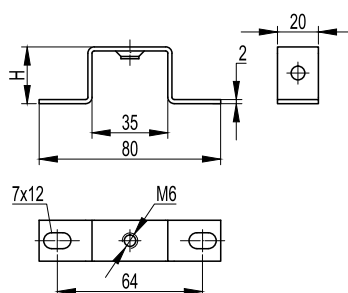
- galvanized steel.

Distinctive features:

- allows for installation to three mounting points.

Name	H, mm	Screw	Package, pcs	Code
TSL	-	M6	10	02195

TST bracket



Material:

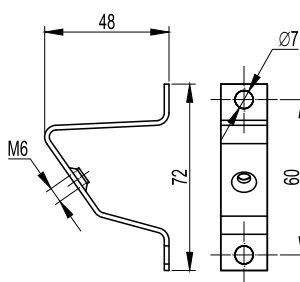
- galvanized steel.

Distinctive features:

- designed for rail installation at a certain height.

Name	H, mm	Screw	Package, pcs	Code
TST 20	20	M6	10	03120
TST 30	30	M6	10	03130
TST 50	50	M6	10	03150

ST bracket



Material:

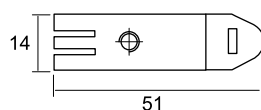
- galvanized steel.

Distinctive features:

- designed for rail installation at an angle.

Name	H, mm	Screw	Package, pcs	Code
TS	-	M6	10	02190

FIX KLIP clips



Material:

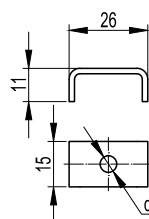
- galvanized steel.

Distinctive features:

- embedding clips for OMEGA profile.

Name	Screw	Package, pcs	Code
FIX KLIP	M4	100	03504
	M5	100	03505

C KLIP clips



Material:

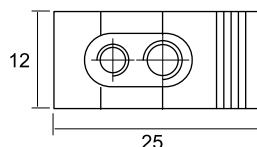
- galvanized steel.

Distinctive features:

- embedding clips for C-profile.

Name	Screw	Package, pcs	Code
C KLIP	M4	100	03574
	M5	100	03575
	M6	100	03576

P KLIP clips



Material:

- polyamide 6.6 with galvanized steel.

Distinctive features:

- embedding clips for G-profile.

Name	Screw	Package, pcs	Code
P KLIP	M3-M5	100	03535
	M5-M3	100	03553
	M4-M6	100	03546
	M6-M4	100	03564

Test strip cutter for cutting of DIN rails



Purpose:

- used for cutting of DIN rails of the following types: G1, G1F, OMEGA 2F, OMEGA 3, OMEGA 3F, OMEGA 3A, OMEGA 3AF, C1F and C1.

Distinctive features:

- new matrix allowed for horizontal and vertical holes in DIN-rail (only for OMEGA 3 and OMEGA 3A profiles) with dimensions of: 6.4 x 12 mm.

Dimensions, mm	Weight, g	Package, pcs	Code
180x110x192	14	1	209056

Cable ties

Ties are supplied in the following versions:

version 1 – polyamide 6.6;

version 2 – stainless steel (AISI 304 and AISI 316);

version 3 – polyamide 12.

Technical characteristics

Characteristics	Polyamide 12	Stainless steel	Polyamide 6.6
Moisture adsorption	<1%	–	2.7%/(50% relative humidity)
Operating temperature, °C	from –45 to +85	from –80 to +538	from –40 to +85
Mounting temperature, °C	from –30 to +60	–	from –10 to +60
Maximum allowable temperature, °C	to +120 for short term	–	to +110 for short term
Melting temperature, °C	+186	–	+256
Flammability rating	UL 94 HB class	–	UL 94 V2 class
Dielectric strength	28.000 V/mm	–	50.000 V/mm

Standard ties made of polyamide 6.6



Purpose:

- designed for wire attachment.

Installation conditions:

- it is recommended to use black ties outdoors;
- it is recommended to use white ties indoors.

Distinctive features:

- do not contain halogens;
- smooth and rounded edges allow for more convenient and safe installation;
- high resistance to oils, oil-containing products and solvents;
- restricted resistance to acids;
- ultraviolet radiation resistance (only black color according to ISO 4892).

Tie, mm		Coverage diameter, mm		Rupture resistance		Package, pcs	Code	
width	length	minimum	maximum	kg	H		colorless	black
2.2	75	0.75	15	6.12	60	100	25201	25301
2.5	98	1	21	8.16	80	100	25203	25303
2.5	135	1	10	8.16	80	100	25205	25305
2.6	160	1	40	8.16	80	100	25206	25306
2.6	200	1	52	8.16	80	100	25207	25307
3.6	140	2	35	13.26	130	100	25209	25309
3.6	200	2	50	13.26	130	100	25214	25314
3.6	290	2	80	13.26	130	100	25210	25310
4.5	120	2.5	24	22.44	220	100	25212	25312
4.5	160	2.5	40	22.44	220	100	25211	25311
4.8	178	2	45	22.44	220	100	25213	25313
4.8	200	3	50	22.44	220	100	25215	25315
4.8	250	3	68	22.44	220	100	25216	25316
3.6	370	2	103	13.26	130	100	25208	25308
4.8	290	3.5	79	22.44	220	100	25217	25317
4.8	390	3.5	106	22.44	220	100	25218	25318
4.8	360	3.5	103	22.44	220	100	25219	25319
4.8	430	3.5	115	22.44	220	100	25220	25320
7.8	120	3.5	25	55.08	540	100	25221	25321
7.8	180	3.5	45	55.08	540	100	25223	25323
7.8	240	3.5	63	55.08	540	100	25225	25325
7.8	300	4	80	55.08	540	100	25226	25326
7.8	365	8	100	55.08	540	100	25227	25327
7.8	450	35	130	55.08	540	100	25229	25329
7.8	540	35	158	55.08	540	100	25231	25331
7.8	750	35	200	55.08	540	100	25233	25333
9	780	32	233	71.4	700	100	25234	25334
12.5	225	7.5	57	110	1080	50	25235	25335
12.5	500	30	143	110	1080	50	25237	25337
12.5	720	30	213	110	1080	50	25239	25339
12.5	850	40	255	110	1080	50	25241	25341
12.5	1000	40	302	110	1080	50	25243	25343

Cable ties made of stainless steel

**Purpose:**

• for severe operating conditions where high corrosion, high temperature and chemical substances resistance is required. They are mostly used in shipbuilding, mining industry, at oil platforms and in food industry.

Distinctive features:

- high resistance to acids, oils, greases, chemicals and solvents;
- high resistance to seawater, aggressive atmospheric exposure and ultraviolet radiation;
- high corrosion resistance;
- high rupture strength.

Steel	Tie, mm		Package, pcs	Code
	width	length		
AISI 304	4.6	150	50	27403
	4.6	175	50	27404
	4.6	240	50	27405
	4.6	300	50	27406
	4.6	350	30	27407
	4.6	400	30	27408
	8	150	50	27409
	8	175	50	27410
	8	240	50	27411
	8	300	30	27412
	8	350	30	27413
	8	400	30	27414
	8	500	30	27415
	8	600	20	27416
	13	200	30	27417
	13	240	30	27418
	13	300	20	27419
	13	350	20	27420
	13	400	20	27421
	13	500	20	27422
AISI 316	4.6	150	50	27603
	4.6	175	50	27604
	4.6	240	50	27605
	4.6	300	50	27606
	4.6	350	30	27607
	4.6	400	30	27608
	8	150	50	27609
	8	175	50	27610
	8	240	50	27611
	8	300	30	27612
	8	350	30	27613
	8	400	30	27614
	8	500	30	27615
	8	600	20	27616

With plain lock

**Distinctive features:**

- high ultraviolet radiation resistance according to ISO 4892 maintains the stated characteristics for more than 3 years;
- plain lock with external teeth system make these cable ties perfect for suspended lines preventing insulation damage.

Tie, mm		Latch	Coverage diameter, mm		Rupture resistance		Package, pcs	Code, black
width	length		minimum	maximum	kg	H		
9	200	single	15	40	36.72	360	100	26501
9	290	double	25	70	55.08	540	100	26502
9	380	double	25	100	55.08	540	100	26503

With mounting hole

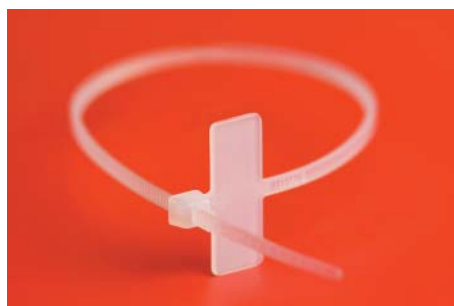


Purpose:

- attachment of bundle of wires using screws or bolts.

Tie, mm		Coverage diameter, mm		Rupture resistance		Mounting hole, mm	Package, pcs	Code
width	length	minimum	maximum	kg	H			
3.6	150	1.5	32	13	130	4.5	100	252150-I
4.8	200	3.5	50	22	220	5.2	100	252200-S
7.8	200	4	44	55	540	6.5	100	252200-H
7.8	300	4	75	55	540	6.5	100	252300-H
7.8	380	4	104	55	540	6.5	100	252380-H

Marking



Purpose:

- fast identification of bundle of wires.

Distinctive features:

- transverse plate is located under tie lock.

Tie, mm		Plate, mm		Coverage diameter, mm		Rupture resistance, kg	Package, pcs	Code
width	length	height	width	minimum	maximum			
2.5	100	8	25.4	6	20	8.16	100	252100-M
2.5	200	8	25.4	5	50	8.16	100	252200-M

Marking



Purpose:

- fast identification of bundle of wires.

Distinctive features:

- transverse plate is located over tie lock.

Tie, mm		Plate, mm		Coverage diameter, mm		Rupture resistance, kg	Package, pcs	Code
width	length	height	width	minimum	maximum			
2.5	110	9.1	20.4	1	20	8.16	100	252110-M
2.5	210	9.1	20.4	1	52	8.16	100	252210-M

With double lock made of stainless steel



Distinctive features:

- lack of stiffening plates makes this tie very elastic and allows for installation at a temperature of -40°C ;
- double lock made of stainless steel is placed in the forms for ties and filled with polyamide 6.6 – it ensures secure lock attachment within the tie and reliable operation during the product service life;
- supplied in special packs with possibility of frequent access to maintain quality of ties after the first use.

Tie, mm		Coverage diameter, mm	Rupture resistance		Package, pcs	Code	
width	length		kg	H		colorless	black
2.5	100	21	18.34	180	100	21203	21303
2.5	200	50	18.34	180	100	21207	21307
3.5	140	35	25.51	250	100	21209	21309
3.5	200	50	25.51	250	100	21214	21314
3.5	290	80	25.51	250	100	21210	21310
4.5	200	50	36.70	360	100	21215	21315
4.5	250	68	36.70	360	100	21216	21316
4.5	290	80	36.70	360	100	21217	21317
4.5	360	101	36.70	360	100	21219	21319
7.5	220	56	79.51	780	100	21225	21325
7.5	360	101	79.51	780	100	21227	21327

High temperature resistant



Distinctive features:

- ties composition includes special additives which allow for maintenance of properties even at a temperature to 145°C within a short term.

Tie, mm		Coverage diameter, mm		Rupture resistance		Package, pcs	Code	
width	length	minimum	maximum	kg	H		green	black
2.5	98	1	21	8.16	80	100	25203CT	25303CT
3.6	140	2	35	13.26	130	100	25209CT	25309CT
	200	2	50	13.26	130	100	25214CT	25314CT
4.8	200	3	50	22.44	220	100	25215CT	25315CT
	290	3.5	79	22.44	220	100	25217T	25317T
7.8	365	8	100	55.08	540	100	25227T	25327T

Reusable



Distinctive features:

- suitable for temporary attachment of bundle of wires if wire addition or removal is required in future.

Tie, mm		Coverage diameter, mm		Rupture resistance, kg	Package, pcs	Color, code	
width	length	minimum	maximum			colorless	black
7.5	200	6	50	22	100	25250	25350
	250	6	65	22	100	25252	25352
	350	6	100	22	100	25254	25354

With base



Purpose:

- wire attachment to panels with a thickness up to 3 mm.

Tie, mm		Fastener, mm		Coverage diameter, mm		Rupture resistance, kg	Package, pcs	Code
width	length	hole diameter	panel thickness	minimum	maximum			
3.5	150	5.2	2.7	1.5	38	13	100	252155-M
4.8	200	6.3	3	2	50	22	100	252205-M

Marking



Purpose:

- fast identification of bundle of wires.

Distinctive features:

- longitudinal plate is located under tie lock.

Tie, mm		Plate, mm		Coverage diameter, mm		Rupture resistance, kg	Package, pcs	Code
width	length	height	width	minimum	maximum			
4.8	190	28	13	10	48	22	100	252190-M
4.8	270	28	13	10	68	22	100	252270-M

Colored



Purpose:

- identification of bundles of wires.

Tie, mm		Coverage diameter, mm		Rupture resistance		Package, pcs	Code			
width	length	minimum	maximum	kg	H		red RAL 3000	yellow RAL 1021	green RAL 6032	blue RAL 5010
2.5	98	1	21	8.16	80	100	25203CR	25203CG	25203CV	25203CB
3.6	140	2	35	13.26	130	100	25209CR	25209CG	25209CV	25209CB
3.6	200	2	50	13.26	130	100	25214CR	25214CG	25214CV	25214CB
4.8	200	3	50	22.44	220	100	25215CR	25215CG	25215CV	25215CB
4.8	290	3.5	79	22.44	220	100	25217R	25217G	25217V	25217B

Frost-resistant made of polyamide 12



Purpose:

- wire attachment outdoors.

Distinctive features:

- do not contain halogens;
- plain lock with external teeth system make these cable ties perfect for suspended lines preventing insulation damage;
- high ultraviolet radiation resistance. They are made of special composition according to ISO 4892 that allows for maintenance of the stated characteristics for more than 10 years in the open air when exposed to sunlight and UV radiation;
- high resistance to oils, oil-containing products and solvents;
- restricted resistance to acids.

Tie, mm		Lock	Coverage diameter, mm		Rupture resistance		Package, pcs	Code, black
width	length		minimum	maximum	kg	H		
6	115	single	5	25	25	280	100	26449
	180	single	9	45	25	280	100	26450
	290	single	20	78	25	280	100	26452
	360	single	20	100	25	280	100	26454
9	132	single	10	27	36.72	390	100	26447
	180	single	15	40	36.72	390	100	26451
	265	double	30	60	54	540	100	26453
	300	double	30	80	54	540	100	26448
	360	double	30	93	54	540	100	26455
	510	double	70	140	54	540	100	26456
	760	double	70	220	54	540	100	26457

Mounting tools

Tool for ties from 2.2 to 4.8 mm, metal enclosure



Purpose:

- tightening of cable ties with a width from 2.2 to 4.8 mm.

Distinctive features:

- function of automatic cutting of tie "tail".

Length, mm	Height, mm	Weight, g	Package, pcs	Code
160	130	310	1	25401

Tool for ties from 2.2 to 4.8 mm, plastic enclosure



Purpose:

- tightening of cable ties with a width from 2.2 to 4.8 mm.

Distinctive features:

- plastic enclosure, mechanism is made of metal;
- function of automatic cutting of tie "tail".

Length, mm	Height, mm	Weight, g	Package, pcs	Code
170	140	220	1	25403

Professional tool for ties from 4.8 to 9 mm


Purpose:

- tightening of cable ties with a width from 4.8 to 9 mm.

Distinctive features:

- metal enclosure.

Length, mm	Height, mm	Weight, g	Package, pcs	Code
190	110	290	1	25400

Professional tool for ties from 7.8 to 12.5 mm


Purpose:

- tightening of cable ties with a width from 7.8 to 12.5 mm.

Distinctive features:

- possible adjustment of tie tension degree.

Length, mm	Height, mm	Weight, g	Package, pcs	Code
220	90	330	1	25405

Tool for ties made of stainless steel


Purpose:

- tightening of ties made of stainless steel with a width to 8 mm.

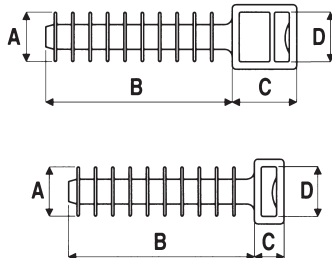
Distinctive features:

- function of automatic cutting of tie "tail";
- possible adjustment of tie tension degree from 31 to 65 kg.

Length, mm	Height, mm	Weight, g	Package, pcs	Code
175	1400	564	1	25407

Accessories

Dowel for cable bonding


Purpose:

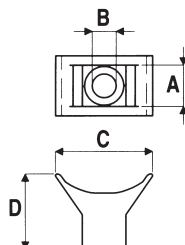
- tie attachment to gypsum plasterboard.

Material:

- material is polyamide 6.6.

Dimensions, mm				Package, pcs	Code
A	B	C	D		
10	37	6.5	9.7	100	25458
10	37	13	9.7	100	25459

Holder


Purpose:

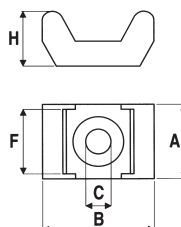
- tie attachment to plane.

Material:

- material is polyamide 6.6.

Dimensions, mm				Package, pcs	Code
A	B	C	D		
9.4	5	13.7	17.6	100	21041301

Base


Purpose:

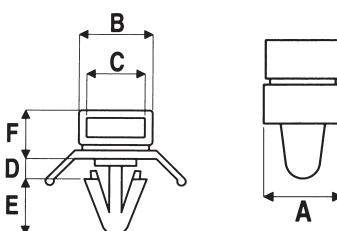
- tie attachment to plane.

Material:

- material is polyamide 6.6.

Width of tie, mm	Dimensions, mm					Package, pcs	Code	
	A	B	C	F	H		colorless	black
5	9.5	15	3.5	5	7	100	25498	25499
9	14.6	22.5	5	9.3	11	100	25496	25497

Dowel type holder


Purpose:

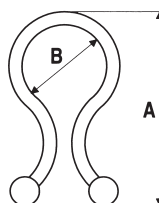
- tie attachment to plane.

Material:

- material is polyamide 6.6.

Hole diameter, mm	Dimensions, mm						Package, pcs	Code
	A	B	C	D	H	F		
6.2	10	10.6	8.1	3.2	8	7.1	100	2104300

Lock



Purpose:

- cable attachment and combination of wires into bundle.

Material:

- material is polyamide 6.6.

A, mm	B, mm	Package, pcs	Code	
			colorless	black
22.9	5.1-7.6	100	21043105	21043106
26.2	7.6-10.2	100	21043108	21043109
30.5	10.2-12.7	100	21043111	21043112
34.5	13.5-16.0	100	21043113	21043114
39.4	17.8-20.3	100	21043115	21043116

Marking plate



A type



D type



B type



C type

Purpose:

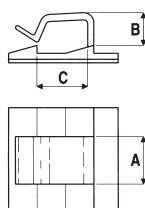
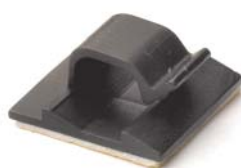
- identification of bundles and cable.

Material:

- material is polyamide 6.6.

Width, mm	Type	Length, mm	Hole diameter, mm	Package, pcs	Code
26.4	B	16.2	5.2	100	2104291
40.3	C	20.5	5.1	100	2104292
60.5	A	25.2	4.9	100	2104293
59.9	D	49.9	4.9	100	2104294

Self-adhesive clip for circular cable



Purpose:

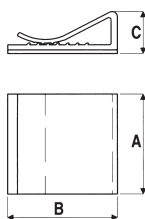
- safe attachment of circular cable to plane without screws and bolts.

Material:

- material is polyamide 6.6.

Width of clip, mm	Dimensions, mm			Package, pcs	Code	
	A	B	C		colorless	black
19x19	10	5	4.9	100	25430	25431
19x19	10	5	4.9	100	254303MV	-
26x26	12.3	12	12	100	25432	25433
26x26	12.3	12	12	100	254323MV	-
26x26	16	15	18	100	25436	25439
26x26	16	15	18	100	254363MV	-

Self-adhesive clip for flat cable


Purpose:

- safe attachment of flat cable to plane without screws and bolts.

Material:

- PVC.

Dimensions, mm			Package, pcs	Code
A	B	C		
20	26	9.6	100	2AFC-20
25	26	9.6	100	2AFC-25
30	26	9.6	50	2AFC-30

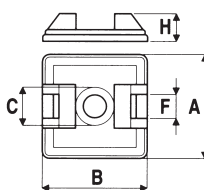
Mounting bases

Technical characteristics of adhesive compounds

Parameters	Standard	Acrylic
Density, kg/m ³	67	320
Static loads on adhesion (adherence) (500 hours)*, kg/cm ²	0.65	0.3
Maximum recommended weight loads*, g/cm ²	32	15
Dynamic loads on adhesion*, kg/cm ²	4.1	8
Tear force, kg/cm ²	>8	>20
Operating temperature, °C	-20/50	-40/120
Installation temperature, °C	15/40	15/40
Operational readiness	immediately after installation	24 hours after installation

* Degreased galvanized metal surface

Standard mounting bases


Purpose:

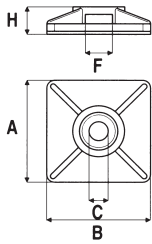
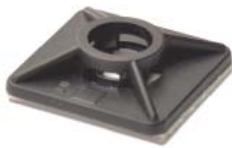
- tie attachment to plane.

Material:

- ABS plastic.

Type	Width of tie, mm	Dimensions, mm					Package, pcs	Code
		A	B	C	F	H		black
Self-adhesive (special acrylic compound)	3.6	19	19	4.2	4	5	100	254283MV
	4.8	27	27	4.2	6	7.4	100	254293MV

Mounting bases for two ties



- Purpose:**
- attachment of two ties to plane.
- Material:**
- ABS plastic.

Type	Width of tie, mm	Dimensions, mm					Package, pcs	Code	
		A	B	C	F	H		colorless	black
Simple base	3.6	19	19	4.1	4	5	100	25466	25468
	4.8	27	27	4.8	6	6.5	100	25472	25474
Self-adhesive	3.6	19	19	4.1	4	5	100	25467	25469
	4.8	27	27	4.8	6	6.5	100	25473	25475
Self-adhesive (special acrylic compound)	3.6	19	19	4.1	4	5	100	254673MV	254693MV
	4.8	27	27	4.8	6	6.5	100	254733MV	254753MV

Cable sleeve

Technical characteristics

Material	Polyamide	Polyester	Polyethylene	Flame-resistant polyethylene
Flammability classification	UL 94 V2	UL 94 V0	UL 94 HB	UL 94 V2/ PV-2
Operating temperature, °C	from -55 to +130	from -55 to +150	from -40 to +90	from -40 to +90
Maximum temperature, °C	+150 for short term	+200 for short term	+100 for short term	+100 for short term

SPIRALITE universal spiral binding


Purpose:

- formation and protection of bundles of wires of any diameter.

Distinctive features:

- owing to spiral structure binding can expand at any time and in any direction;
- standard version – transparent; black; white color.

Code	Color	Diameter, mm	Binding width, mm	Package, m	Flammability classification
00921RL	black	3	5	50	UL 94 HB
00922RL	black	6	8	25	UL 94 HB
00923RL	black	10	12	25	UL 94 HB
00924RL	black	12	12	20	UL 94 HB
00941RL	black	3	5	50	UL 94 V2/ PV-2
00942RL	black	6	8	25	UL 94 V2/ PV-2
00943RL	black	10	12	25	UL 94 V2/ PV-2
00944RL	black	12	12	20	UL 94 V2/ PV-2
00961RL	transparent	3	5	50	UL 94 HB
00962RL	transparent	6	8	25	UL 94 HB
00963RL	transparent	10	12	25	UL 94 HB
00964RL	transparent	12	12	20	UL 94 HB
00981RL	white	3	5	50	UL 94 V2/ PV-2
00982RL	white	6	8	25	UL 94 V2/ PV-2
00983RL	white	10	12	25	UL 94 V2/ PV-2
00984RL	white	12	12	20	UL 94 V2/ PV-2

Sleeve made of polyester and polyamide


Purpose:

- formation of flexible connections.

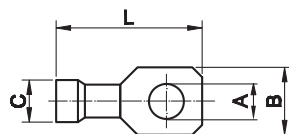
Distinctive features:

- does not contain halogens;
- ultraviolet radiation resistance.

Nominal diameter, mm	Maximum diameter, mm	Package, m	Code	
			polyamide 6.6	polyester
3	6	200	GTRPA-03	GTRVO-03
4	8	200	GTRPA-04	GTRVO-04
5	10	100	GTRPA-05	GTRVO-05
6	12	100	GTRPA-06	GTRVO-06
8	16	100	GTRPA-08	GTRVO-08
10	20	100	GTRPA-10	GTRVO-10
12	24	100	GTRPA-12	GTRVO-12
15	30	100	GTRPA-15	GTRVO-15
20	40	50	GTRPA-20	GTRVO-20
25	50	50	GTRPA-25	GTRVO-25
30	60	50	GTRPA-30	GTRVO-30
40	80	50	GTRPA-40	GTRVO-40
50	100	50	GTRPA-50	GTRVO-50

Cable lugs

NKI lugs with screw hole with insulated flange


Material:

- electrical copper.

Coating:

- tin coating.

Insulator:

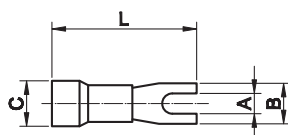
- self-extinguishing PVC.

Tool:

- 2ART60.

Color	Wire section, mm ²	Dimension, mm				Package, pcs	Code
		A	B	C	L		
Red	0.25-1.5	2.4	5.7	1.85	18.5	100	2A2P
	0.25-1.5	3.6	5.7	1.85	18.5	100	2A3P
	0.25-1.5	4.2	6.5	1.85	20.5	100	2A4P
	0.25-1.5	5.2	8	1.85	22	100	2A5P
	0.25-1.5	6.2	11	1.85	25	100	2A6P
	0.25-1.5	8.2	11	1.85	25	100	2A8P
Blue	0.25-1.5	10.2	13	1.85	28.5	100	2A10P
	1.5-2.5	3.7	6.4	2.4	21.5	100	2B3P
	1.5-2.5	4.2	6.4	2.4	21.5	100	2B4P
	1.5-2.5	5.2	8.8	2.4	23	100	2B5P
	1.5-2.5	6.2	9.4	2.4	24	100	2B6P
	1.5-2.5	8.2	13	2.4	28.5	100	2B8P
Yellow	1.5-2.5	10.2	13	2.4	28.5	100	2B10P
	2.5-6	4.2	9.9	3.6	27	50	2C4P
	2.5-6	5.2	9.9	3.6	27	50	2C5P
	2.5-6	6.2	9.9	3.6	27	50	2C6P
	2.5-6	8.2	13.8	3.6	31	50	2C8P
	2.5-6	10.2	13.8	3.6	31	50	2C10P
	2.5-6	12.2	18	3.6	38	50	2C12P

NVI spade screw lugs with insulated flange


Material:

- electrical copper.

Coating:

- tin coating.

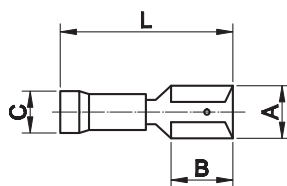
Tool:

- 2ART60.



Color	Wire section, mm ²	Dimension, mm				Package, pcs	Code
		A	B	C	L		
Red	0.25-1.5	3	4.8	1.85	20	100	2A13P
	0.25-1.5	3.5	5.9	1.85	18.5	100	2A135P
	0.25-1.5	3.5	7.8	1.85	19.5	100	2A135GP
	0.25-1.5	3.5	6.5	1.85	19	100	2A135SP
	0.25-1.5	4.1	6.6	1.85	21	100	2A14P
	0.25-1.5	5.2	8.5	1.85	21	100	2A15P
	0.25-1.5	6.2	10.5	1.85	25	100	2A16P
Blue	1.5-2.5	3	5.5	2.4	21.5	100	2B13P
	1.5-2.5	3.5	6.3	2.4	21.5	100	2B135P
	1.5-2.5	3.5	6.3	2.4	24	100	2B135LP
	1.5-2.5	4.1	6	2.4	21.4	100	2B14P
	1.5-2.5	5.2	9	2.4	23	100	2B15P
	1.5-2.5	6.2	10.5	2.4	25	100	2B16P
	1.5-2.5	8.2	12	2.4	28	100	2B18P
Yellow	1.5-2.5	10.2	13	2.4	29	50	2B110P
	2.5-6	4.3	7.5	3.6	27	50	2C14P
	2.5-6	5.2	10	3.6	28	50	2C15P
	2.5-6	6.4	13	3.6	29	50	2C16P
	2.5-6	8.5	13	3.6	31	50	2C18P
	2.5-6	10.5	15	3.6	31	50	2C110P
	2.5-6	12.2	18	3.6	38	50	2C112P

RPI-M quick connect flat lugs (female socket)

**Material:**

- electrical copper.

Coating:

- tin coating.

Insulator:

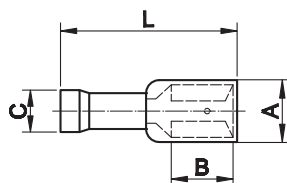
- self-extinguishing PVC.

Tool:

- 2ART60.

Color	Wire section, mm ²	Dimension, mm				Package, pcs	Code
		A	B	C	L		
Red	0.25-1.5	2.8x0.8	6	1.8	18	100	2A00P
	0.25-1.5	4.8x0.8	6	1.8	18.5	100	2A01P
	0.25-1.5	6.3x0.8	7.8	1.8	19.5	100	2A02P
	0.25-1.5	5.2x0.8	7.8	1.8	19.5	100	2A03P
	0.25-1.5	2.8x0.5	6	1.8	18	100	2A04P
	0.25-1.5	4.8x0.5	6	1.8	18.5	100	2A05P
Blue	1.5-2.5	2.8x0.8	6	2.3	20	100	2B00P
	1.5-2.5	4.8x0.8	6	2.3	20	100	2B01P
	1.5-2.5	6.3x0.8	7.8	2.3	20.5	100	2B02P
	1.5-2.5	5.2x0.8	7.8	2.3	20.5	100	2B03P
	1.5-2.5	2.8x0.5	6	2.3	20	100	2B04P
	1.5-2.5	4.8x0.5	6	2.3	20	100	2B05P
Yellow	2.5-6	4.8x0.8	6	3.4	25	50	2C01P
	2.5-6	6.3x0.8	7.8	3.4	25	50	2C02P
	2.5-6	9.9x1.1	12.5	3.4	28.5	50	2C09P

RPPI-M all-insulated quick connect flat lugs (female socket)

**Material:**

- electrical copper.

Coating:

- tin coating.

Insulator:

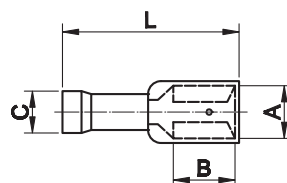
- self-extinguishing PVC.

Tool:

- 2ART60.

Color	Wire section, mm ²	Dimension, mm				Package, pcs	Code
		A	B	C	L		
Red	0.25-1.5	2.8x0.8	6	1.8	18.5	100	2A00TP
	0.25-1.5	4.8x0.8	6	1.8	18.5	100	2A01TP
	0.25-1.5	6.3x0.8	7.8	1.8	20.5	100	2A02TP
	0.25-1.5	2.8x0.5	6	1.8	18.5	100	2A04TP
	0.25-1.5	4.8x0.5	6	1.8	20.5	100	2A05TP
Blue	1.5-2.5	2.8x0.8	6	2.3	20.5	100	2B00TP
	1.5-2.5	4.8x0.8	6	2.3	18.5	100	2B01TP
	1.5-2.5	6.3x0.8	7.8	2.3	22	100	2B02TP
	1.5-2.5	4.8x0.5	6	2.3	20.5	100	2B05TP
Yellow	2.5-6	6.3x0.8	7.8	3.4	26	50	2C02TP

RPI-O insulated quick connect flat lugs (combined)

**Material:**

- electrical copper.

Coating:

- tin coating.

Insulator:

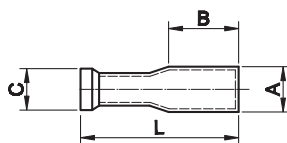
- self-extinguishing PVC.

Tool:

- 2ART60.

Color	Wire section, mm ²	Dimension, mm				Package, pcs	Code
		A	B	C	L		
Red	0.25-1.5	6.3x0.8	7.8	1.8	22.2	50	2A30P
Blue	1.5-2.5	6.3x0.8	8	2.3	22.2	50	2B30P
Yellow	2.5-6	6.3x0.8	8	3.6	27	50	2C30P

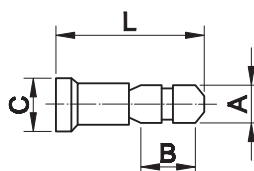
RShI-M cylindrical lugs (female socket)



Material:
• electrical copper.
Coating:
• tin coating.
Insulator:
• self-extinguishing PVC.
Tool:
• 2ART60.

Color	Wire section, mm ²	Dimension, mm				Package, pcs	Code
		A	B	C	L		
Red	0.25-1.5	4	8.5	1.8	25	50	2A69P
Blue	1.5-2.5	5	8.5	2.3	25	50	2B69P
Yellow	2.5-6	5	12	3.6	25	50	2C69P

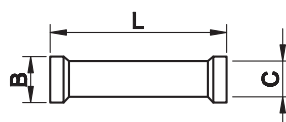
RShI-P cylindrical male lugs (male connector)



Material:
• electrical copper.
Coating:
• tin coating.
Insulator:
• self-extinguishing PVC.
Tool:
• 2ART60.

Color	Wire section, mm ²	Dimension, mm				Package, pcs	Code
		A	B	C	L		
Red	0.25-1.5	4	8.7	1.8	20	100	2A96P
Blue	1.5-2.5	5	8.7	2.3	20	100	2B96P
Yellow	2.5-6	5	12	3.6	24	50	2C96P

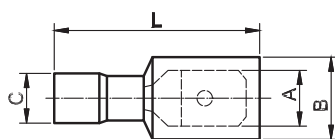
GSI connector



Material:
• electrical copper.
Coating:
• tin coating.
Insulator:
• self-extinguishing PVC.
Tool:
• 2ART60.

Color	Wire section, mm ²	Dimension, mm			Package, pcs	Code
		B	C	L		
Red	0.25-1.5	5	1.8	21.5	100	2A20P
Blue	1.5-2.5	5.5	2.4	23	100	2B20P
Yellow	2.5-6	6	3.6	27	50	2C20P

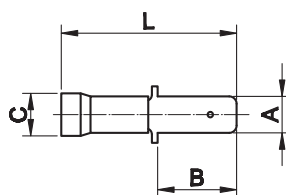
All-insulated quick connect flat lugs (male connector)



Material:
• electrical copper.
Coating:
• tin coating.
Insulator:
• self-extinguishing PVC.
Tool:
• 2ART60.

Color	Wire section, mm ²	Dimension, mm				Package, pcs	Code
		A	B	C	L		
Red	0.25-1.5	6.3x0.8	7.8	1.8	20.5	50	2A22TP
Blue	1.5-2.5	6.3x0.8	7.8	2.3	20.5	50	2B22TP
Yellow	2.5-6	6.3x0.8	7.8	3.4	25	50	2C22TP

RPI-P quick connect flat lugs (male connector)

**Material:**

- electrical copper.

Coating:

- tin coating.

Insulator:

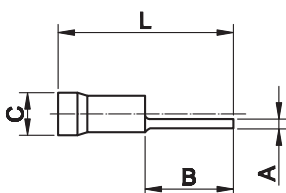
- self-extinguishing PVC.

Tool:

- 2ART60.

Color	Wire section, mm ²	Dimension, mm				Package, pcs	Code
		A	B	C	L		
Red	0.25-1.5	6.3x0.8	8	1.8	21	100	2A22P
	0.25-1.5	4.8x0.8	8	1.8	21	100	2A32P
Blue	1.5-2.5	6.3x0.8	8	2.3	21	100	2B22P
	1.5-2.5	4.8x0.8	8	2.3	21	100	2B32P
Yellow	2.5-6	6.3x0.8	8	3.6	25	50	2C22P

NShKI circular male lugs with insulated flange (male connector)

**Material:**

- electrical copper.

Coating:

- tin coating.

Insulator:

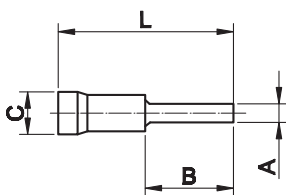
- self-extinguishing PVC.

Tool:

- 2ART60.

Color	Wire section, mm ²	Dimension, mm				Package, pcs	Code
		A	B	C	L		
Red	0.25-1.5	1.7	9	1.8	20.5	100	2A1CP
	0.25-1.5	1.7	11.5	1.8	22.5	100	2A1P
Blue	1.5-2.5	1.8	7	2.3	19	100	2B1CP
	1.5-2.5	1.8	11	2.3	22	100	2B1P
Yellow	2.5-6	2.6	13	3.6	27.5	50	2C1P

NShPI flat male lugs with insulated flange (male connector)

**Material:**

- electrical copper.

Coating:

- tin coating.

Insulator:

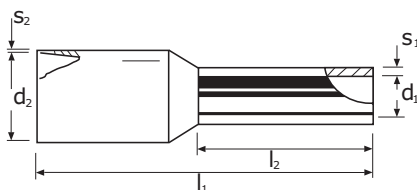
- self-extinguishing PVC.

Tool:

- 2ART60.

Color	Wire section, mm ²	Dimension, mm				Package, pcs	Code
		A	B	C	L		
Red	0.25-1.5	3	12	1.8	22	100	2A11P
	0.25-1.5	3	9	1.8	22	100	2A11CP
	0.25-1.5	2.5	17	1.8	28	100	2A11LP
Blue	1.5-2.5	3	12	2.3	24.5	100	2B11P
	1.5-2.5	2.5	17	2.3	28	100	2B11LP
	2.5-6	3.9	9	3.6	25	50	2C11CP
Yellow	2.5-6	3.9	13	3.6	30	50	2C11P

NShVI lugs-liners with insulated flange



Material:

- electrical tinned copper.

Insulator:

- polypropylene, without halogens, operating temperature: from -10 to +105 °C, to +120 °C within a short term.

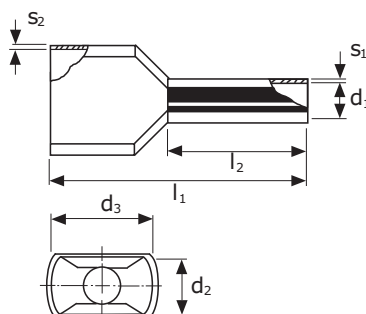
Standard:

- DIN 46228/4 – DIN 47002 for insulating part.

Wire section* – I2	AWG	DIN color	DIN code	Color 1	Code 1	Color 2	Code 2	Dimension, mm						Package, pcs
								d1	d2	l1	l2	s1	s2	
0.14 – 6	26	–	–	brown	2ART501BRN	gray	2ART501GRN	0.70	1.6	10	6	0.15	0.25	500
0.14 – 8		–	–		2ART501BRL		2ART501GRL	0.70	1.6	10	6	0.15	0.25	500
0.25 – 6	24	–	–	violet	2ART501NP	light-blue	2ART501NB	0.75	1.8	10	6	0.15	0.25	500
0.25 – 6		–	–	violet	2ART501NCP	–	–	0.75	1.8	10	6	0.15	0.25	100
0.25 – 6		–	–	yellow	2ART501YN	–	–	0.75	1.8	10	6	0.15	0.25	500
0.25 – 8		–	–	violet	2ART501	light-blue	2ART501LB	0.75	1.8	12	8	0.15	0.25	500
0.25 – 8		–	–	yellow	2ART501YL	–	–	0.75	1.8	12	8	0.15	0.25	500
0.34 – 6		–	–	pink	2ART5013NR	turquoise	2ART5013NT	0.8	2	10	6	0.15	0.25	500
0.34 – 6	22	–	–	pink	2ART5013NCR	–	–	0.8	2	10	6	0.15	0.25	100
0.34 – 6		–	–	pale green	2ART5013TUN	–	–	0.8	2	12	6	0.15	0.25	500
0.34 – 6		–	–	yellow	2ART5013YN	–	–	0.8	2	12	6	0.15	0.25	500
0.34 – 8		–	–	pink	2ART5013LR	turquoise	2ART5013LT	0.8	2	12	8	0.15	0.25	500
0.34 – 8		–	–	pale green	2ART5013TUL	–	–	0.8	2	12	8	0.15	0.25	500
0.34 – 8		–	–	yellow	2ART5013YL	–	–	0.8	2	12	8	0.15	0.25	500
0.50 – 6	20	white	2ART502KW	white	2ART502KW	orange	2ART502KO	1	2.6	12	6	0.15	0.25	500
0.50 – 8		white	2ART502	white	2ART502	orange	2ART502KCO	1	2.6	14	8	0.15	0.25	500
0.50 – 8		white	2ART502NCW	white	2ART502NCW	–	–	1	2.6	14	8	0.15	0.25	100
0.50 – 10		white	2ART502HLW	white	2ART502HLW	orange	2ART502HLO	1	2.6	16	10	0.15	0.25	500
0.75 – 6	18	gray	2ART503KG	light-blue	2ART503KB	white	2ART503NG	1.2	2.8	12	6	0.15	0.25	500
0.75 – 8		gray	2ART503	light-blue	2ART503NB	white	2ART503NW	1.2	2.8	14	8	0.15	0.25	500
0.75 – 8		–	–	light-blue	2ART503NCB	–	–	1.2	2.8	14	8	0.15	0.25	100
0.75 – 9		gray	2ART503GRL	light-blue	2ART503BLL	white	2ART503WL	1.2	2.8	15	9	0.15	0.25	500
0.75 – 10		gray	2ART503HLG	light-blue	2ART503HLB	white	2ART503HLW	1.2	2.8	16	10	0.15	0.25	500
0.75 – 12		gray	2ART503GRXL	light-blue	2ART503LB	white	2ART503LW	1.2	2.8	18	12	0.15	0.25	500
1.00 – 6	18	red	2ART504KR	red	2ART504KR	yellow	2ART504KY	1.4	3	12	6	0.15	0.25	500
1.00 – 8		red	2ART504	red	2ART504	yellow	2ART504NY	1.4	3	14	8	0.15	0.25	500
1.00 – 8		–	–	red	2ART504NCR	–	–	1.4	3	14	8	0.15	0.25	100
1.00 – 10		red	2ART504HLR	red	2ART504HLR	yellow	2ART504HLY	1.4	3	16	10	0.15	0.25	500
1.00 – 12		red	2ART504LR	red	2ART504LR	yellow	2ART504LY	1.4	3	18	12	0.15	0.25	500
1.5 – 6	16	black	2ART505BLK	black	2ART505BLK	red	2ART505RK	1.7	3.5	12	6	0.15	0.25	500
1.5 – 8		black	2ART505	black	2ART505	red	2ART505NR	1.7	3.5	14	8	0.15	0.25	500
1.5 – 8		–	–	black	2ART505NCB	–	–	1.7	3.5	14	8	0.15	0.25	100
1.5 – 10		black	2ART505HLB	black	2ART505HLB	red	2ART505HLR	1.7	3.5	16	10	0.15	0.25	500
1.5 – 12		black	2ART505HLSB	black	2ART505HLSB	red	2ART505HLSR	1.7	3.5	24	12	0.15	0.25	500
1.5 – 18		black	2ART505LB	black	2ART505LB	red	2ART505LR	1.7	3.5	24	18	0.15	0.25	500
2.5 – 8	14	blue	2ART506NB	gray	2ART506NG	blue	2ART506NB	2.2	4.2	14	8	0.15	0.25	500
2.5 – 8		–	–	gray	2ART506NCG	–	–	2.2	4.2	14	8	0.15	0.25	100
2.5 – 10		blue	2ART506	–	–	blue	2ART506	2.2	4.2	16	10	0.15	0.25	500
2.5 – 12		blue	2ART506HLB	gray	2ART506HLG	blue	2ART506HLB	2.2	4.2	18	12	0.15	0.25	500
2.5 – 18		blue	2ART506LB	gray	2ART506LG	blue	2ART506LB	2.2	4.2	24	18	0.15	0.25	500
4.0 – 10	12	gray	2ART507NG	orange	2ART507NO	gray	2ART507NG	2.8	4.8	16.5	10	0.2	0.3	500
4.0 – 10		–	–	orange	2ART507NCO	–	–	2.8	4.8	16.5	10	0.2	0.3	100
4.0 – 12		gray	2ART507	orange	2ART507HLO	gray	2ART507	2.8	4.8	19.5	12	0.2	0.3	500
4.0 – 18		gray	2ART507LG	orange	2ART507LO	gray	2ART507LG	2.8	4.8	25.5	18	0.2	0.3	500
6.0 – 12	10	yellow	2ART508NY	green	2ART508NG	black	2ART508NB	3.5	6.3	20	12	0.2	0.3	100
6.0 – 14		yellow	2ART508	–	–	–	–	3.5	6.3	22	14	0.2	0.3	100
6.0 – 18		yellow	2ART508LY	green	2ART508LG	black	2ART508LB	3.5	6.3	26	18	0.2	0.3	100
10 – 12	8	red	2ART509NR	brown	2ART509NB	beige	2ART509NBE	4.5	7.6	22	12	0.2	0.4	100
10 – 14		red	2ART509	–	–	–	–	4.5	7.6	24	14	0.2	0.4	100
10 – 18		red	2ART509LR	brown	2ART509LB	beige	2ART509LBE	4.5	7.6	28	18	0.2	0.4	100
16 – 12	6	blue	2ART510NB	beige	2ART510NBE	green	2ART510NG	5.8	8.8	22	12	0.2	0.4	100
16 – 14		blue	2ART510	–	–	–	–	5.8	8.8	24	14	0.2	0.4	100
16 – 18		blue	2ART510LB	beige	2ART510LBE	green	2ART510LG	5.8	8.8	28	18	0.2	0.4	100

Wire section* – I2	AWG	DIN color	DIN code	Color 1	Code 1	Color 2	Code 2	Dimension, mm						Package, pcs
								d1	d2	l1	l2	s1	s2	
25 – 16	4	yellow	2ART511	black	2ART511ND	brown	2ART511NB	7.3	11.2	30	16	0.2	0.4	50
25 – 18		yellow	2ART511YL	black	2ART511BLL	brown	2ART511BRL	7.3	11.2	30	18	0.2	0.4	50
25 – 22		yellow	2ART511LY	black	2ART511LD	brown	2ART511LB	7.3	11.2	36	22	0.2	0.4	50
35 – 16	2	red	2ART512	red	2ART512	cream-colored	2ART512NC	8.3	12.7	30	16	0.2	0.4	50
35 – 18		red	2ART512RL	red	2ART512RL	cream-colored	2ART512ML	8.3	12.7	30	18	0.2	0.4	50
35 – 25		red	2ART512LR	red	2ART512LR	cream-colored	2ART512LC	8.3	12.7	39	25	0.2	0.4	50
50 – 16	1	blue	2ART513	blue	2ART513	–	–	10.3	15	36	16	0.3	0.5	50
50 – 20		blue	2ART513NB	blue	2ART513NB	malachite	2ART513NM	10.3	15	36	20	0.3	0.5	50
50 – 25		–	–	–	–	malachite	2ART513LM	10.3	15	40	25	0.3	0.5	50
70 – 21	2/0	yellow	2ART514	yellow	2ART514	yellow	2ART514	13.5	16	37	21	0.4	0.6	25
95 – 25	3/0	red	2ART515	red	2ART515	red	2ART515	14.5	18	44	25	0.4	0.6	25
120 – 27	4/0	blue	2ART516	blue	2ART516	blue	2ART516	16.5	20	48	27	0.45	0.7	25
150 – 32	300MCM	yellow	2ART517	yellow	2ART517	yellow	2ART517	19.5	23	58	32	0.5	1.0	25

Double lugs-liners with insulated flange



Material:

- electrical tinned copper.

Insulator:

- polypropylene, without halogens, operating temperature – from –10 to +105 °C, to +120 °C within a short term.

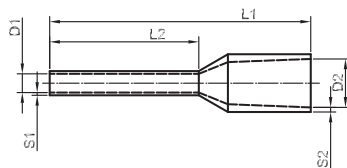
Standard:

- DIN 46228/4 – DIN 47002 for insulating part.

Wire section* – I2	AWG	DIN color	DIN code	Color 1	Code 1	Color 2	Code 2	Dimension, mm								Package, pcs
								d1	d2	d3	l1	l2	s1	s2		
2x2.50 – 8	2x24			violet	2ART5020PN	light-blue	2ART5020BLN	1.15	1.80	3.4	15.0	8.0	0.15	0.25	500	
2x0.34 – 8	2x22					light-blue	2ART5021BLN				15.0	8.0	0.15	0.25	500	
2x0.50 – 8	2x20	white	2ART5022	white	2ART5022	red	2ART5022R	1.40	2.50	4.7	15.0	8.0	0.15	0.25	500	
2x0.75 – 8	2x18	gray	2ART5032	light-blue	2ART5032BLN	white	2ART5032WN	1.70	2.80	5.0	15.0	8.0	0.15	0.25	500	
2x0.75 –10			2ART5032GRL		2ART5032BLL		2ART5032WL				17.0	10.0	0.15	0.25	500	
2x1.0 – 8		red	2ART5042	red	2ART5042	yellow	2ART5042YN	1.95	3.40	5.4	15.0	8.0	0.15	0.3	500	
2x1.0 – 10			2ART5042RL		2ART5042RL		2ART5042YL				17.0	10.0	0.15	0.3	500	
2x1.0 – 12			2ART5042RXL		2ART5042RXL		2ART5042YXL				19.0	12.0	0.15	0.3	500	
2x1.0 – 18			2ART5042RXXL		2ART5042RXXL		2ART5042YXXL				25.0	18.0	0.15	0.3	500	
2x1.5 – 8	2x16	black	2ART5052	black	2ART5052	red	2ART5052RN	2.20	3.60	6.6	16.0	8.0	0.15	0.3	500	
2x1.5 – 12			2ART5052BL		2ART5052BL		2ART5052RL				20.0	12.0	0.15	0.3	500	
2x1.5 – 18			2ART5052BXL		2ART5052BXL		2ART5052RXL				26.0	18.0	0.15	0.3	500	
2x2.5 – 10	2x14	blue	2ART5062	gray	2ART5062GRN	blue	2ART5062	2.80	4.20	7.8	18.5	10.0	0.20	0.3	500	
2x2.5 – 13			2ART5062BLL		2ART5062GRL		2ART5062BLL				21.5	13.0	0.20	0.3	500	
2x4.0 – 12	2x12	gray	2ART5072	orange	2ART5072OR	gray	2ART5072	3.70	4.9	8.8	23.0	12.0	0.20	0.4	100	
2x6.0 – 14	2x10	yellow	2ART5082	green	2ART5082GN	black	2ART5082BLN	4.80	6.9	10.0	26.0	14.0	0.20	0.4	100	
2x10 – 14	2x8	red	2ART5092	brown	2ART5092BRN	white	2ART5092WN	6.40	7.2	13.0		14.0	0.20	0.4	100	
2x16 – 14	2x6	blue	2ART5102	white	2ART5102WN	green	2ART5102GRN	8.20	9.6	18.4	30.0	14.0	0.20	0.4	50	

* Wire section for flexibility class 1–3

Lugs-liners with insulated flanges in containers



Material:

- electrical tinned copper.

Insulator:

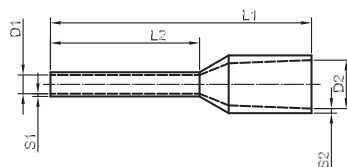
- polypropylene, without halogens, operating temperature: from -10 to +105 °C, to +120 °C within a short term.

Standard:

- DIN 46228/4 – DIN 47002 for insulating part.

Wire section**	AWG	Color	Dimension, mm						Package, pcs	Container type	Lug code	Container code
			L1	L2	D1	S1	D2	S2				
0.5	20	white	14	8	1	0.15	2.6	0.25	50	standard	2ART502	2ARTD111
0.75	18	gray	14	8	1.2	0.15	2.8	0.25	100		2ART503	
1	18	red	14	8	1.4	0.15	3	0.25	100		2ART504	
1.5	16	black	14	8	1.7	0.15	3.5	0.25	100		2ART505	
2.5	14	blue	14	8	2.2	0.15	4.2	0.25	50		2ART506NB	
4	12	gray	16.5	10	2.8	0.2	4.8	0.3	50	standard	2ART507NG	2ARTD222
6	10	yellow	20	12	3.5	0.2	6.3	0.3	20		2ART508NY	
10	8	red	22	12	4.5	0.2	7.6	0.4	20		2ART509NR	
16	6	blue	24	12	5.8	0.2	8.8	0.4	10		2ART510NB	
0.25	24	violet	10	6	0.75	0.15	1.8	0.25	30		2ART501NP	
0.34	22	pink	10	6	0.8	0.15	2	0.25	30	standard	2ART5013NR	2ARTD999
0.5	20	white	14	8	1	0.15	2.6	0.25	30		2ART502	
0.75	18	gray	14	8	1.2	0.15	2.8	0.25	30		2ART503	
1	18	red	14	8	1.4	0.15	3	0.25	30		2ART504	
0.75	18	gray	14	8	1.2	0.15	2.8	0.25	50	standard for double lugs	2ART5032	2ARTD555
1	18	red	14	8	1.4	0.15	3	0.25	50		2ART5042	
1.5	16	black	14	8	1.7	0.15	3.5	0.25	50		2ART5052	
2.5	14	blue	14	10	2.2	0.15	4.2	0.25	50		2ART5062	
4	12	gray	19.5	12	2.8	0.2	4.8	0.3	20		2ART5072	
6	10	yellow	20	14	3.5	0.2	6.3	0.3	10	standard for double lugs	2ART5082	2ARTD666
10	8	red	22	14	4.5	0.2	7.6	0.4	10		2ART5092	
16	6	blue	24	14	5.8	0.2	8.8	0.4	5		2ART5102	
0.5	20	white	14	8	1	0.15	2.6	0.25	1000	large	2ART502	2ARTD10050
0.75	18	gray	14	8	1.2	0.15	2.8	0.25	1000	large	2ART503	2ARTD10075
1	18	red	14	8	1.4	0.15	3	0.25	1000	large	2ART504	2ARTD10010
1.5	16	black	14	8	1.7	0.15	3.5	0.25	1000	large	2ART505	2ARTD10015
2.5	14	blue	14	8	2.2	0.15	4.2	0.25	1000	large	2ART506NB	2ARTD10025
0.75	18	gray	14	8	1.2	0.15	2.8	0.25	200	large	2ART503	2ARTD103
1	18	red	14	8	1.4	0.15	3	0.25	300		2ART504	
1.5	16	black	14	8	1.7	0.15	3.5	0.25	300		2ART505	
2.5	14	blue	14	8	2.2	0.15	4.2	0.25	200		2ART506NB	

Lugs-liners with insulated flange in the form of tape



Material:

- electrical tinned copper.

Insulator:

- polypropylene, without halogens, operating temperature – from -10 to +105 °C, to +120 °C within a short term.

Standard:

- DIN 46228/4 – DIN 47002 for insulating part.

Wire section	AWG	Color	Dimension, mm						Package, pcs	Code
			L1	L2	D1	S1	D2	S2		
0.5	20	white	14	8	1	0.15	2.6	0.25	500	2ART701
0.75	18	blue	14	8	1.2	0.15	2.8	0.25	500	2ART702
1	18	red	14	8	1.4	0.15	3	0.25	500	2ART703
1.5	16	black	14	8	1.7	0.15	3.5	0.25	500	2ART704
2.5	14	gray	14	8	2.2	0.15	4.2	0.25	500	2ART705

** Wire section for flexibility class 1–3

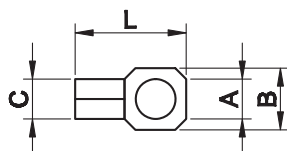
NShV lugs-liners



Material:
• electrical copper.
Coating:
• tin coating.

Wire section, mm ² *	Length, mm	Package, pcs	Code
0.5	6	500	2ART92
0.75	8	500	2ART93
1	8	500	2ART94
1.5	10	500	2ART95
2.5	10	500	2ART96
4	9	500	2ART97
4	12	500	2ART97L
6	12	500	2ART98
10	12	500	2ART99
10	15	500	2ART99L
16	12	500	2ART100
16	15	500	2ART100L
25	15	500	2ART101
35	18	500	2ART102
50	18	500	2ART103
70	25	100	2ART104

PM lugs with screw hole

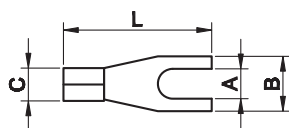


Material:
• electrical copper.
Coating:
• tin coating.
Tool:
• 2ART52

Wire section, mm ²	Dimension, mm				Package, pcs	Code
	A	B	C	L		
0.25-1.5	2.4	5.7	1.85	12	100	2A2
	3.6	5.7	1.85	12	100	2A3
	4.2	6.5	1.85	14	100	2A4
	5.4	8	1.85	16	100	2A5
	6.2	11	1.85	19	100	2A6
	8.2	11	1.85	19	100	2A8
	10.2	13	1.85	24	100	2A10
1.5-2.5	3.7	6.4	2.4	15	100	2B3
	4.2	6.4	2.4	15	100	2B4
	5.2	8.8	2.4	17	100	2B5
	6.2	9.4	2.4	19	100	2B6
	8.2	13	2.4	24	100	2B8
	10.2	13	2.4	24	100	2B10
2.5-6	4.2	9.9	3.6	20	100	2C4
	5.2	9.9	3.6	20	100	2C5
	6.2	9.9	3.6	20.5	100	2C6
	8.2	13.8	3.6	24.5	50	2C8
	10.2	13.8	3.6	24.5	50	2C10
	12.2	18	3.6	30	50	2C12

* Wire section for flexibility class 1-3

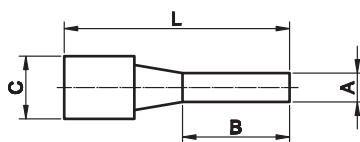
NV spade screw lugs



Material:
• electrical copper.
Coating:
• tin coating.
Tool:
• 2ART52

Wire section, mm ²	Dimension, mm				Package, pcs	Code
	A	B	C	L		
0.25-1.5	3	4.8	1.85	15	100	2A13
	3.6	5.9	1.85	12	100	2A135
	3.6	6.4	1.85	15	100	2A135S
	4.1	6.4	1.85	15	100	2A14
	5.2	8.5	1.85	16	100	2A15
	6.2	10.5	1.85	18	100	2A16
1.5-2.5	3	5.5	2.4	16	100	2B13
	3.5	6.4	2.4	16	100	2B135
	3.5	6.3	2.4	20	100	2B135L
	4.1	6.4	2.4	15	100	2B14
	5.2	9.2	2.4	18	100	2B15
	6.2	10.5	2.4	19	100	2B16
	8.2	12	2.4	19	100	2B18
	10.2	14	2.4	23	100	2B110
2.5-6	4.3	7.5	3.6	19.5	100	2C14
	5.2	10	3.6	21	100	2C15
	6.4	11	3.6	21.5	100	2C16
	8.5	13	3.6	24.5	100	2C18
	10.5	15	3.6	24.5	100	2C110
	13	18	3.6	30	50	2C112

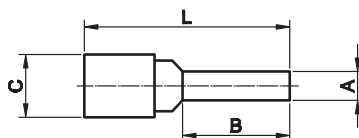
NShK circular male lugs



Material:
• electrical copper.
Coating:
• tin coating.
Tool:
• 2ART52

Wire section, mm ²	Dimension, mm				Package, pcs	Code
	A	B	C	L		
0.25-1.5	1.7	9	1.8	12	100/1000	2A1C
	1.7	11.5	1.8	16	100/1000	2A1
1.5-2.5	1.8	7	2.3	13.5	100/1000	2B1C
	1.8	11	2.3	17	100/1000	2B1
2.5-6	2.6	13	3.6	20	100/1000	2C1

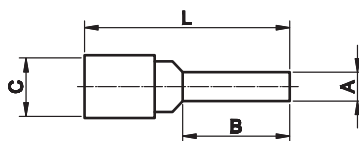
NShP flat male lugs



Material:
• electrical copper.
Coating:
• tin coating.
Tool:
• 2ART52

Wire section, mm ²	Dimension, mm				Package, pcs	Code
	A	B	C	L		
0.25-1.5	3	12	1.8	16.5	100/1000	2A11
	2.5	17	1.8	22	100/1000	2A11L
1.5-2.5	3	13	2.3	18	100/1000	2B11
	2.5	17	2.3	22	100/1000	2B11L
2.5-6	3.9	13	3.6	22	100/1000	2C11
	3.9	9	3.6	20	100/1000	2C11C

NShP male lugs


Material:

- electrical copper.

Coating:

- tin coating.

Distinctive features:

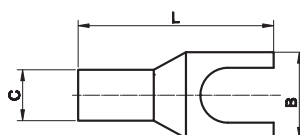
- copper more plastic owing to annealing;
- precise bushing configuration, does not require conductor moulding.

Tool:

- 2ART55, 2ARTHX50.

Wire section, mm ² *	Dimension, mm				Package, pcs	Code
	A	B	C	L		
10	4.2	12	4.5	22	100	2D1
16	5.6	13	5.8	26	100	2E1
25	6.9	16	7	34.1	50	2F1
35	8.1	20	8.4	41	50	2G1
50	9.5	21	9.5	45.7	50	2H1
70	11	24	11.2	55	50	2I1
95	12.3	22	13.5	55.5	25	2L1

NVP spade screw lugs


Material:

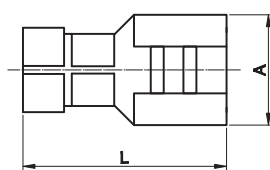
- electrical copper.

Coating:

- tin coating.

Wire section, mm ² *	Screw diameter	Dimension, mm			Package, pcs	Code
		C	B	L		
10	6	4.6	11	29	100	2D106
16	6	6	12	30	100	2E106
25	6	7	13	33	100	2F106
35	8	9	17	41	100	2G108
50	8	10	20	42	50	2H108
70	8	12	22	50	50	2I108

Quick connect lugs (pin connector – socket)


Material:

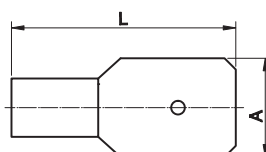
- brass.

Tool:

- 2ART50

Wire section, mm ²	Dimension, mm		Package, pcs	Code
	A	L		
1.5-2.5	6.3x0.8	19.8	100/1000	2B02L
2.5-6	6.3x0.8	19.4	100/1000	2C02L

Quick connect lugs (pin connector – plug)


Material:

- brass;
- 2ART50.

Wire section, mm ²	Dimension, mm		Package, pcs	Code
	A	L		
0.25-1.5	6.3x0.8	15.8	100/1000	2A22
0.25-1.5	4.8x0.8	15	100/1000	2A32
1.5-2.5	6.3x0.8	16.6	100/1000	2B22
1.5-2.5	4.8x0.8	14	100/1000	2B32
2.5-6	6.3x0.8	16.9	100/1000	2C22

Grounding loops

Flat section


Purpose:

- grounding of moving elements in metal boards.

Material:

- electrical copper.

Distinctive features:

- ensures electrical shock hazard protection in case of insulation breakdown on board enclosure;
- connected to grounding bolts and designed for voltage up to 1,000 V.

Wire section, mm ²	Length, mm	Contact area width, mm	Screw hole, mm	Package, pcs	Code
10	150	15	8.4	5	2T1
	200	15	8.4	5	2T2
	250	15	8.4	5	2T3
16	150	17	8.4	5	2T4
	200	17	8.4	5	2T5
	250	17	8.4	5	2T6
	320	17	8.4	5	2T7
	350	17	8.4	5	2T8
	420	17	8.4	5	2T9
	570	17	8.4	5	2T10
	660	17	8.4	5	2T11
25	150	23	8.4	5	2T12
	200	23	8.4	5	2T13
	250	23	8.4	5	2T14
	300	23	8.4	5	2T15

Circular section


Purpose:

- grounding of moving elements in metal boards.

Material:

- electrical copper.

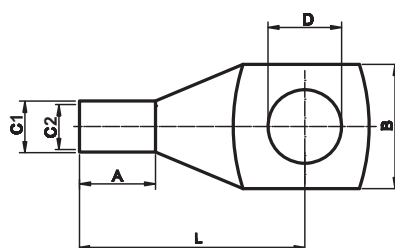
Distinctive features:

- ensures electrical shock hazard protection in case of insulation breakdown on board enclosure;
- connected to grounding bolts and designed for voltage up to 1,000 V.

Wire section, mm ²	Length, mm	Screw hole, mm	Package, pcs	Code
6	150	6	5	2TR1
	200	6	5	2TR2
10	300	10	5	2TR3

* Wire section for flexibility class 1–3

Tubular cable lug for pressure moulding, installation under TML screw


Material:

- electrical copper, standard DIN EN 13600.

Coating:

- tin coating.

Insulator:

- no.

Tool:

- 2ART55, 2ARTHX50.

Distinctive features:

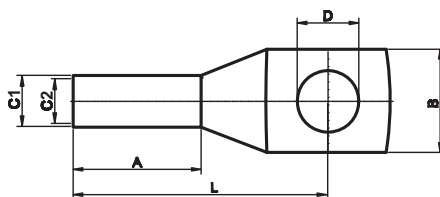
- availability of check hole, except for section 1.5-4.

Wire section, mm ² *	Screw diameter	Dimension, mm						Package, pcs	Code
		C2	C1	L	A	B	D		
1.5	3	1.8	3.7	16	5	8	3.2	100	2AT3
	4			16		8	4.2	100	2AT4
	5			16		8	5.2	100	2AT5
	6			18.5		10	6.5	100	2AT6
2.5	4	2.4	4	18	7	8	4.2	100	2BT4
	5			20		10	5.2	100	2BT5
	6			21.5		10	6.5	100	2BT6
	8			24		12	8.4	100	2BT8
6	4	3.8	5.5	27.5	9	10	4.3	100	2CT4
	5			27.5		10	5.5	100	2CT5
	6			27.5		10.8	6.6	100	2CT6
	8			30.5		13	9	100	2CT8
	10			33.5		18	10.5	100	2CT10
10	4	4.5	6.2	30.8	9.5	11	4.3	100	2D4
	5			30.8		11	5.5	100	2D5
	6			30.8		11	6.6	100	2D6
	8			30.8		13	9	100	2D8
	10			30.8		14.5	11	100	2D10
	12			30.8		20	13	100	2D12
16	4	5.5	7.2	34.2	13	13	4.3	100	2E4
	5			34.2		13	5.5	100	2E5
	6			34.2		13	6.6	100	2E6
	8			34.2		13	9	100	2E8
	10			36.4		15	11	100	2E10
	12			36.4		19	13	100	2E12
25	5	6.9	8.8	38.5	13.5	14	5.3	100	2F5
	6			38.5		14	6.5	100	2F6
	8			38.5		15.5	8.4	100	2F8
	10			38.5		15.5	10.5	100	2F10
	12			38.5		20	13	100	2F12
35	6	8.2	10.4	42.5	16	15.5	6.5	100	2G6
	8			42.5		15.5	8.4	100	2G8
	10			42.5		15.5	10.5	100	2G10
	12			48		21.5	13	100	2G12
	14			48		23	15	100	2G14
	16			48		28	17	100	2G16
50	6	9.8	12.3	47.5	18.8	18	6.4	50	2H6
	8			47.5		18	8.4	50	2H8
	10			47.5		18	10.5	50	2H10
	12			51		23	13	50	2H12
	14			51		23	15	50	2H14
	16			51		27	17	50	2H16

Wire section, mm ² *	Screw diameter	Dimension, mm						Package, pcs	Code
		C2	C1	L	A	B	D		
70	6	11.5	14.2	54.5	20.5	20.8	6.6	50	2I6
	8			54.5		20.8	9	50	2I8
	10			54.5		20.8	11	50	2I10
	12			54.5		20.8	14	50	2I12
	14			54.5		20.8	15	50	2I14
	16			54.5		20.8	17	50	2I16
	20			54.5		20.8	21	50	2I21
95	6	13.5	16.5	60.5	23	24.5	6.4	50	2L6
	8			60.5		24.5	9	25	2L8
	10			60.5		24.5	11	25	2L10
	12			60.5		24.5	14	25	2L12
	14			60.5		24.5	15	25	2L14
	16			60.5		24.5	18	25	2L16
	20			60.5		24.5	21	25	2L21
120	8	15.2	18.6	64.5	24.5	27.5	9	25	2M8
	10			64.5		27.5	11	25	2M10
	12			64.5		27.5	14	25	2M12
	14			64.5		27.5	15	25	2M14
	16			64.5		27.5	18	25	2M16
	20			64.5		27.5	21	25	2M21
150	8	16.5	21	71	25.5	30.5	9	20	2N8
	10			71		30.5	11	20	2N10
	12			71		30.5	14	20	2N12
	14			71		30.5	15	20	2N14
	16			71		30.5	18	20	2N16
	20			74.5		30.5	22	20	2N21
185	10	18.6	23	73	26.2	33.5	11	10	2O10
	12			73		33.5	14	10	2O12
	14			73		33.5	15	10	2O14
	16			73		33.5	18	10	2O16
	20			78		33.5	22	10	2O21
240	8	20.8	26	87	33	37.5	9	10	2P8
	10			87		37.5	11	10	2P10
	12			87		37.5	14	10	2P12
	14			87		37.5	15	10	2P14
	16			87		37.5	18	10	2P16
	20			87		37.5	22	10	2P21
300	12	23.5	29	94.5	38.3	42.5	14	10	2Q12
	14			94.5		42.5	15	10	2Q14
	16			94.5		42.5	18	10	2Q16
	20			94.5		42.5	22	10	2Q21
400	16	27	34.5	107.5	44.3	49.5	18	5	2R16
	20			107.5		49.5	22	5	2R21
500	16	31	40	122	45.5	57.5	18	5	2S16
	20			122		57.5	22	5	2S21
630	16	34.5	44	133	55.2	63	18	5	2T16
	20			133		63	22	5	2T21

* Wire section for flexibility class 1–3

Tubular cable lug for pressure moulding with increased mounting liner, installation under TML DIN 46235 screw

**Material:**

- electrical copper, standard DIN EN 13600.

Coating:

- tin coating.

Insulator:

- no.

Distinctive features:

- marking for correct pressure moulding;
- copper more plastic owing to annealing;
- precise bushing configuration, does not require conductor moulding.

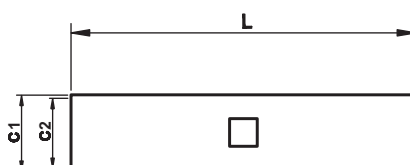
Tool:

- 2ART55, 2ARTHX50.

Wire section, mm ² *	Screw diameter	Dimension, mm						Package, pcs	Code
		C2	C1	L	A	B	D		
6	5	3.7	5.5	24	10	8.5	5.3	100	2K5L
	6			24		9	6.4	100	2K6L
	8			26		13	8.4	100	2K8L
10	5	4.5	6	27	10	9	5.3	100	2D5L
	6			27		10	6.4	100	2D6L
	8			28		13	8.4	100	2D8L
	10			29		15	10.5	100	2D10L
16	6	5.5	8.5	36	20	13	6.4	100	2E6L
	8			37		13	8.4	100	2E8L
	10			38		16.5	10.5	100	2E10L
25	6	7	10	39	20	14	6.4	100	2F6L
	8			39		17	8.4	100	2F8L
	10			40.5		17	10.5	100	2F10L
	12			40.5		18	13	100	2F12L
35	8	8.2	12.5	42	20	18	8.4	100	2G8L
	10			42.5		20	10.5	100	2G10L
	12			44		21	13	100	2G12L
	16			47		28	17	100	2G16L
50	8	9.8	14.5	52	28	20	8.4	50	2H8L
	10			52		22	10.5	50	2H10L
	12			52		23	13	50	2H12L
	14			53.5		26	15	50	2H14L
	16			53.5		28	17	50	2H16L
70	8	11.3	16.5	56	28	24	8.4	50	2I8L
	10			56		24	10.5	50	2I10L
	12			56.5		24	13	50	2I12L
	14			55.5		24	15	50	2I14L
	16			57		29	17	50	2I16L
	20			61		31	21	50	2I20L
95	8	13.5	19	65	35	28	8.4	25	2L8L
	10			65		28	10.5	25	2L10L
	12			65		28	13	25	2L12L
	14			65		28	15	25	2L14L
	16			65		30	17	25	2L16L
	20			71		33	21	25	2L21L
120	8	15.5	21	70	35	31	8.4	20	2M8L
	10			70		31	10.5	20	2M10L
	12			70		31	13	20	2M12L
	14			70		31	15	20	2M14L
	16			70		31.5	17	20	2M16L
	20			72		36	21	20	2M21L
150	8	17	23.5	78	35	34	8.4	20	2N8L
	10			78		34	10.5	20	2N10L
	12			78		34	13	20	2N12L
	14			78		34	15	20	2N14L
	16			78		34	17	20	2N16L
	20			78		38	21	20	2N21L

Wire section, mm²*	Screw diameter	Dimension, mm						Package, pcs	Code
		C2	C1	L	A	B	D		
185	12	19	25.5	82	40	37	13	10	2O12L
	82			37		15	10	2O14L	
	82			37		17	10	2O16L	
	82			40		21	10	2O21L	
240	10	21.5	29	92	40	42	10.5	10	2P10L
	92			42.5		13	10	2P12L	
	92			42.5		15	10	2P14L	
	92			42.5		17	10	2P16L	
	92			45		21	10	2P21L	
	92			45		21	10	2P21L	
300	10	24.5	32	100	50	48.5	10.5	5	2Q10L
	100			48.5		13	5	2Q12L	
	100			48.5		15	5	2Q14L	
	100			48.5		17	5	2Q16L	
	100			48.5		21	5	2Q21L	
	100			48.5		21	5	2Q21L	
400	10	27.5	38.5	115	70	55	10.5	5	2R10L
	115			55		13	5	2R12L	
	115			55		15	5	2R14L	
	115			55		17	5	2R16L	
	115			55		21	5	2R21L	
	115			55		21	5	2R21L	
500	12	31	42	125	70	60	13	5	2S12L
	125			60		15	5	2S14L	
	125			60		17	5	2S16L	
	125			60		21	5	2S21L	
625	12	34.5	44	135	80	63	13	5	2T12L
	135			63		15	5	2T14L	
	135			63		17	5	2T16L	
	135			63		21	5	2T21L	

GMLO tinned copper tube



Material:

- electrical copper, standard DIN EN 13600.

Coating:

- tin coating.

Insulator:

- no.

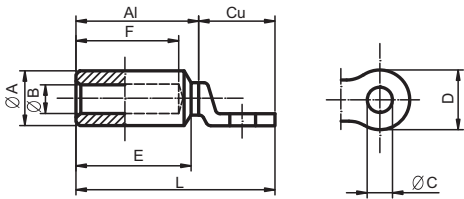
Tool:

- 2ART55, 2ARTHX50.

Wire section, mm ² *	L, mm	C2, mm	C1, mm	Package, pcs	Code
1.5	12	1.8	3.7	100	2A20
2.5	15	2.4	4	100	2B20
6	30	3.8	5.5	100	2C20
10	30	4.5	6.2	50	2D20
16	35	5.5	7.2	100	2E20
25	36	6.90	8.8	100	2F20
35	36	8.2	10.4	100	2G20
50	49	9.8	12.30	100	2H20
70	52	11.5	14.2	50	2I20
95	54	13.5	16.5	25	2L20
120	57	15.2	18.6	25	2M20
150	57	16.5	21	20	2N20
185	61	18.6	23	10	2O20
240	72	20.8	26	10	2P20
300	75	27	29	10	2Q20
400	95	27.5	34.5	5	2R20
500	96	31	40	5	2S20
630	131	34.5	44	5	2T20

* Wire section for flexibility class 1-3

Tubular aluminium-copper cable lug for pressure moulding, installation under screw



Description:

- bimetallic lugs for aluminium conductors with a solid copper ring under screw.

Material:

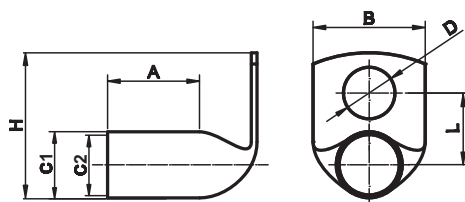
- electrical copper and aluminium – 99.5 %.

Distinctive features:

- covered with special grease for better electric contact.

Wire section, mm ² *	Screw diameter	Dimension, mm						Package, pcs	Code
		A	B	D	E	F	L		
25	12.5	20	6.5	25.5	46	42.5	86	50	2F12B
35	12.5	20	8	25.5	46	42.5	85	50	2G12B
50	12.5	20	9.5	25.5	46	42.5	83.5	50	2H12B
70	12.5	20	11	25.5	46	42.5	84	50	2I12B
95	12.5	20	12.5	25.5	46.5	41	85	25	2L12B
120	13	25	14	30.5	64	62	113	25	2M12B
150	12.5	25	15.5	31	63	57	108	20	2N12B
185	12.5	32	17.5	36	64.5	62	121	10	2O12B
240	12.5	32	19.5	36	63	57	170	10	2P12B
300	16.5	36	23.5	42	90	85	157	10	2Q16B
400	16.5	36	26	42	90	85	157	5	2R16B

Tubular cable lug for pressure moulding, bent at an angle of 90°, installation under screw



Material:

- electrical copper, standard DIN EN 13600.

Coating:

- tin coating.

Insulator:

- no.

Tool:

- 2ART55, 2ARTX50.

Wire section, mm ² *	Screw diameter	Dimension, mm						Package, pcs	Code
		C2	C1	L	A	B	D		
10	5	4.5	6.2	9.8	10	11	5.5	100	2D5C
	6			9.8		11	6.6	100	2D6C
	8			8.5		13	9	100	2D8C
	10			8.5		14.5	11	100	2D10C
	12			8.5		16.5	13	100	2D12C
16	5	6	7.6	10.3	13.5	13	5.5	100	2E5C
	6			10.3		13	6.6	100	2E6C
	8			10.3		13	9	100	2E8C
	10			10.2		16	11	100	2E10C
	12			10.2		18	13	100	2E12C
25	6	7.3	9.1	10	14	14	6.5	100	2F6C
	8			10		15.5	8.4	100	2F8C
	10			10		15.5	10.5	100	2F10C
	12			10		16.5	13	100	2F12C
35	6	8.9	10.9	12.3	16.5	15.5	6.5	100	2G6C
	8			12.3		15.5	8.4	100	2G8C
	10			12.3		15.5	10.5	100	2G10C
	12			14.5		21.5	13	100	2G12C
	14			16.5		23	15	100	2G14C
50	6	9.8	12.3	11.5	19.3	18	6	50	2H6C
	8			11.5		18	9	50	2H8C
	10			11.5		18	11	50	2H10C
	12			14		23	14	50	2H12C
	14			16		23	15	50	2H14C
	16			18		27	17	50	2H16C
70	6	12.2	15	14.5	22.3	20.8	6.6	50	2I6C
	8			14.5		20.8	9	50	2I8C
	10			14.5		20.8	11	50	2I10C
	12			14.5		20.8	14	50	2I12C
	14			16.5		20.8	15	50	2I14C
	16			18.5		20.8	17	50	2I16C
	20			22.5		20.8	21	50	2I21C
	25			26.5		20.8	25	50	2I25C
185	12	18.6	23	17.5	26.2	33.5	14	10	2O12C
	14			17.5		33.5	17	10	2O14C
	16			17.5		33.5	18	10	2O16C
	18			17.5		33.5	19	10	2O18C
	20			21		33.5	22	10	2O21C

* Wire section for flexibility class 1–3

Insulators for lugs


Material:

- PVC.

Wire section, mm ²	Package, pcs	Code
10	100	2PD
16	100	2PE
25	100	2PF
35	100	2PG
50	100	2PH
70	100	2PI
95	100	2PL
20	50	2PM
150	50	2PN
240	25	2PP
185	50	2PO
300	25	2PQ
400	25	2PR
500	25	2PS
630	20	2PT

2ART-series tools

Pinchers for pressing of lugs-liners 0.14-10 mm²


Distinctive features:

- trapezoidal pressing;
- ratchet mechanism;
- side lug feed.

Wire section, mm ²	Weight, g	Code
0.14-10	530	2ART9304

Pinchers for pressing of lugs-liners 0.14-16 mm²


Distinctive features:

- trapezoidal double-sided pressing;
- ratchet mechanism.

Wire section, mm ²	Weight, g	Code
0.14-16	480	2ART40

Pinchers for pressing of lugs-liners 10-50 mm²


Distinctive features:

- trapezoidal double-sided pressing;
- ratchet mechanism.

Wire section, mm ²	Weight, g	Code
10-50	600	2ART42

Pinchers for pressing of lugs-liners 0.14-6 mm²


Distinctive features:

- frontal feed;
- one cell for all the sections;
- ratchet mechanism.

Wire section, mm ²	Weight, g	Code
0.14-6	490	2ART9305

Pinchers for pressing of lugs-liners 10-16 mm²


Distinctive features:

- frontal feed;
- one cell for all the sections;
- ratchet mechanism.

Wire section, mm ²	Weight, g	Code
10-16	600	2ART9306

Pinchers for pressing of insulated lugs 0.25-6 mm²


Distinctive features:

- oval pressing;
- ratchet mechanism;
- red color for pressing 0.25-1.5 mm²;
- blue color for pressing 1.5-2.5 mm²;
- yellow color for pressing 2.5-6 mm².

Wire section, mm ²	Weight, g	Code
0.25-6	470	2ART60

Pinchers for pressing of insulated lugs and stripping of wires 0.25-6 mm²


Distinctive features:

- wire stripping and cutting;
- oval pressing;
- ratchet mechanism.

Wire section, mm ²	Weight, g	Code
0.25-6	520	2ART54

Pinchers for pressing of non-insulated lugs 0.1-16 mm²


Distinctive features:

- indentation pressing;
- ratchet mechanism.

Wire section, mm ²	Weight, g	Code
0.1-16	470	2ART52

Pinchers for pressing of non-insulated lugs (pin connectors) 0.25-6 mm²


Distinctive features:

- wire stripping and cutting;
- indentation pressing;
- ratchet mechanism.

Wire section, mm ²	Weight, g	Code
0.25-6	520	2ART50

Accessory for stripping and cutting of wires 0.5-6 mm²


Distinctive features:

- installed on the upper internal tool knob;
- compatible with tools, codes: 2ART60, 2ART54, 2ART50, 2ART52, 2ART40, 2ART42;
- manual pull-off.

Wire section, mm ²	Weight, g	Code
0.5-6	50	2ART81

Pinchers for pressing of non-insulated lugs 0.25–6 mm²


Distinctive features:

- indentation pressing.

Wire section, mm ²	Weight, g	Code
0.25–6	190	2ART51B

Pinchers for pressing of liners, frontal feed (square)


Distinctive features:

- frontal feed;
- one cell for all the sections;
- ratchet mechanism.

Wire section, mm ²	Weight, g	Code
0.25–6	220	2ART9303

Pinchers for pressing of liners 0.08–10 mm² (square)


Distinctive features:

- side feed;
- one cell for all the sections;
- ratchet mechanism.

Wire section, mm ²	Weight, g	Code
0.08–10	300	2ART9302

Professional pinchers for stripping and cutting of wires 0.3–6 mm²


Distinctive features:

- automatic pull-off.

Wire section, mm ²	Weight, g	Code
0.3–6	200	2ART80

Pinchers for pressing of non-insulated lugs 10–50 mm²


Distinctive features:

- hexagonal pressing;
- rotation matrix setting.

Wire section, mm ²	Weight, g	Code
10–50	1600	2ARTHX50

Pinchers for pressing of non-insulated lugs 10–50 mm²


Distinctive features:

- indentation pressing;
- rotation matrix setting.

Wire section, mm ²	Weight, g	Code
10–50	4000	2ARTCT38

Pinchers for pressing of non-insulated lugs 10–150 mm²


Distinctive features:

- indentation pressing.

Wire section, mm ²	Weight, g	Code
10–150	4000	2ARTCT150

Pinchers for pressing of non-insulated lugs 10–120 mm²


Distinctive features:

- hexagonal pressing;
- rotation matrix setting.

Wire section, mm ²	Weight, g	Code
10–120	4000	2ARTHX120B

Pinchers for pressing of non-insulated lugs 25–120 mm²


Distinctive features:

- indentation pressing;
- rotation matrix setting.

Wire section, mm ²	Weight, g	Code
25–120	5000	2ARTCT100

Mechanical manual scissors for cutting of cable up to 32 mm


Distinctive features:

- suitable only for flexible copper and aluminium wires;
- step-type cutting.

Maximum diameter, mm	Weight, g	Code
32	700	2ART62

Mechanical manual scissors for cutting of cable up to 52 mm

Distinctive features:

- suitable only for flexible copper and aluminium wires;
- step-type cutting.

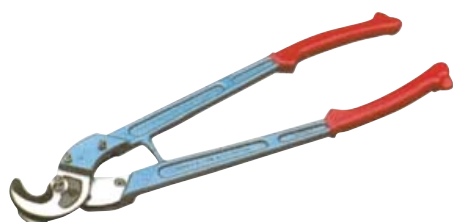
Maximum diameter, mm	Weight, g	Code
52	900	2ART64

Mechanical manual scissors with latching for cutting of cable with diameter up to 54 mm

Distinctive features:

- for flexible copper and aluminium wires;
- step-type cutting;
- with fasteners for attachment to surface.

Maximum diameter, mm	Weight, g	Code
54	1000	2ART65

Tool for cutting of cable 10–300 mm²

Distinctive features:

- suitable only for flexible copper and aluminium wires.

Wire section, mm ²	Weight, g	Code
10-300	2200	2ARTRYC325

Tools with replaceable matrices

Manual tool for CSV matrices


Purpose:

- designed for pressure moulding of lugs, liners and connectors.

Distinctive features:

- matrices are not included into the scope of supply;
- ratchet mechanism.

Weight, g	Code
335	2ART360

Electric and hydraulic tool with CSV adapter in the case


Purpose:

- designed for pressure moulding of lugs, liners and connectors.

Distinctive features:

- matrices are not included into the scope of supply;
- pressure moulding cycle: 2 s;
- pressure moulding effort is 10 kN;
- battery voltage is 9.6 V;
- battery capacity is 2.0 Ah;
- scope of supply includes: CSV adapter, plastic box, additional storage battery 9.6 V/ 2.0 Ah and battery charger 230 V.

Weight, g	Code
1500	2ART215

CSV adapter


Purpose:

- designed for 2ART215 electric and hydraulic tool, operation with CSV matrices is impossible without this adapter.

Weight, g	Code
50	2ART210A

CSV replaceable matrices


Purpose:

- Matrices are designed for manual tool, 2ART360 code as well as for electric and hydraulic tool, 2ART215 code.

Matrix purpose	Profile/Wire section, mm ²	Code
For pressure moulding of connectors	4P (RG11)	2ART3714
	6P (RG12)	2ART3716
	8P (RG45)	2ART3718
For pressure moulding of insulated lugs	0.5-2.5	2ART3722
	4-6	2ART3724

Universal manual tool with replaceable matrices 10–120 mm²


Purpose:

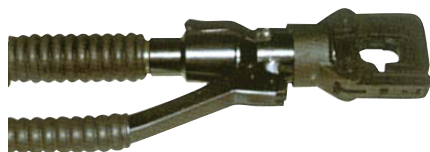
- designed for pressure moulding of non-insulated lugs and liners.

Distinctive features:

- scope of supply includes plastic box, 8 matrices (10–120 mm²) and adapter for matrix setting.

Wire section, mm ²	Weight, g	Code
10-120	1200	2ARTHX120GEB

Hydraulic pinchers for pressing of non-insulated lugs 10-240 mm²


Purpose:

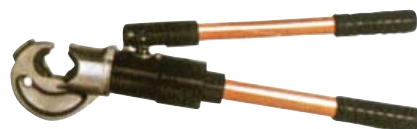
- designed for pressure moulding of lugs and liners.

Distinctive features:

- matrices are not included into the scope of supply;
- designed for pressing of non-insulated lugs 10–240 mm²;
- pressing head turns 360°;
- convenient semiautomatic piston raise.

Code	Matrix selection, section mm ²											
	10	16	25	35	50	70	95	120	150	185	240	
	Matrix code											
2ART55	M35510E	M35516E	M35525E	M35535E	M35550E	M35570E	M35595E	M355120E	M355150E	M355185E	M355240E	

Hydraulic pinchers for pressing of non-insulated lugs 10–300/400 mm²


Purpose:

- designed for pressure moulding of lugs and liners.

Distinctive features:

- matrices are not included into the scope of supply;
- designed for pressing of non-insulated lugs 10–300/400 mm²;
- pressing head turns 360°;
- convenient semiautomatic piston raise;
- C-pressing head;
- pressing force is 130 kN.

Code	Matrix selection, section mm ²												
2ART58	10	16	25	35	50	70	95	120	150	185	240	300	400
	Matrix code												
	M35810E	M35816E	M35825E	M35835E	M35850E	M35870E	M35895E	M358120E	M358150E	M358185E	M358240E	M358300E	M358400E

Insulating tape

PVC tape



Purpose:

- electric insulation;
- overall insulation;
- marking and color coding;
- sealing.

Technical characteristics

Properties	Insulating tape	
Material	PVC	PVC
Thickness, mm	0.13	0.15
Adhesion strength, N/cm	1.8	1.8
Tear strength, N/cm	19.5	24
Tensile elongation, %	125	125
Electric strength, kV/mm	40	40
Operating temperature, °C	from -18 to +90	from -18 to +90
Fire resistance	self-extinguishing	self-extinguishing

Tape type	Thickness, mm	Color	Width, mm	Length, m	Package, pcs	Code
PVC	0.13	yellow-green	15	10	200	2NI20T
		white	15	10	200	2NI20BI
		blue	15	10	200	2NI20BL
		yellow	15	10	200	2NI20GI
		black	15	10	200	2NI20N
		red	15	10	200	2NI20R
		green	15	10	200	2NI20V
	0.15	yellow-green	19	25	120	2NI16T
		white	19	25	120	2NI16BI
		blue	19	25	120	2NI16BL
		yellow	19	25	120	2NI16GI
		black	19	25	120	2NI16N
		red	19	25	120	2NI16R
		green	19	25	120	2NI16V

Self-adhering rubber tape



Purpose:

- electric insulation;
- repair works;
- sealing.

Properties	Self-adhering rubber tape
Material	ethylene-propylene rubber
Thickness, mm	0.75
Adhesion strength, N/cm	3.92
Tear strength, MPa	3
Tensile elongation	> 900%
Electric strength, kV/mm	42
Operating temperature, °C	from -40 to 90
Fire resistance	self-extinguishing

Tape type	Thickness, mm	Color	Width, mm	Length, m	Package, pcs	Code
Self-adhering rubber	0.75	black	19	10	48	2NI69A

Heat-shrink tubing

Application

It is recommended to use heat-shrink tubing for electric insulation, identification, attachment and protection of wires. It is recommended to use medium-wall and thick-wall series for repair or connection of different tubes and cable, if additional protection and sealing are required, it is recommended to use series with thermal and adhesive compound. This compound fills all the irregularities and cavities.



Machine-building industry



Aircraft and rocket production



Oil and gas industry

Technical characteristics

Characteristics	2NA series	Series 2NZH	2NF series	2NS series	2NFD series	2CPTFE series	2CRT/A series	2CRM/A series
Shrinking factor	2:1	2:1	2:1/3:1	2:1	3:1/4:1	3-4:1	3-4:1	3-4:1
Operating temperature according to test ASTM D 2671C, °C	From -30 to +105	From -30 to +105	From -55 to +135	From -55 to +135	From -55 to +110	From -70 to +260	From -40 to +120	From -40 to +120
Shrinking temperature, °C	> 90	> 90	> 90	> 90	> 100	> 330	> 110	> 110
Flammability	ASTM 645, UL94-HB, FMVSS 302	ASTM D635-HB	UL 224	UL 224 VW-1	ASTM D 2671 B	UL94-V0	–	–
Halogens contents	does not contain	does not contain	contains	contains	contains	contains	does not contain	does not contain
Chemical resistance according to test AMS-DTL 23053/5	resistant	resistant	resistant	resistant	resistant (23053/4C)	–	–	–
Dielectric strength according to test ASTM D 2671, kV/mm	20	20	20	20	15	40-80 (DIN 53481)	17	17
Specific electric resistance according to test ASTM D 257, Ohm cm	10 ¹⁴	10 ¹⁴	10 ¹⁶	10 ¹⁶	10 ¹⁴	10 ¹⁸ (DIN 53482)	10 ¹⁴	10 ¹⁴
Rupture strength before destruction according to test ASTM D 638, N/mm ²	10	10	13	13	11	29-39 (DIN 53455 at 23 °C)	14	14
Tensile elongation according to test ASTM D 638, %	200	200	350	300	300	200-500 (DIN 53455 at 23 °C)	400	400
Longitudinal shrinkage according to test ASTM D 2671, %	From -10 to +5	From -10 to +5	From -5 to +5	From -5 to +5	From -15 to +1	From -10 to +10	From -10 to 0	From -10 to 0
Glue properties, tear strength, N/ 25 mm ²	–	–	–	–	PVC 85 steel 44 copper 35	–	PE 40 steel 30 lead 30 PVC 40	PE 40 steel 30 lead 30 PVC 40

Self-extinguishing thin-walled tubes



Purpose:

- electric insulation, identification, attachment and protection of wires.

Distinctive features:

- high flexibility;
- high physical and mechanical and fire-resistant properties;
- fast shrinking without deviations when exposed to low temperatures. This feature prevents formation of bubbles during the shrinking that ensures reliable short-circuit protection.

Ø before shrinking, mm	Ø after shrinking, mm	Wall thickness after shrinking, mm	Bagging, pcs (cutting within 1 meter)	Rolling, m*	Code (codes in table are specified only for cutting of 1 piece = 1 meter ± 0.5%)*						
					blue color	white color	red color	yellow color	yellow-green color	transparent color	black color
Solution for electric control room market, 2NF201 series*											
1.2	0.6	0.41	100	300	2NF20112B	2NF20112W	2NF20112R	2NF20112Y	2NF20112GY	2NF20112CL	2NF20112
1.6	0.8	0.43	100	300	2NF20116B	2NF20116W	2NF20116R	2NF20116Y	2NF20116GY	2NF20116CL	2NF20116
2.4	1.2	0.51	100	300	2NF20124B	2NF20124W	2NF20124R	2NF20124Y	2NF20124GY	2NF20124CL	2NF20124
3.2	1.6	0.51	50	300	2NF20132B	2NF20132W	2NF20132R	2NF20132Y	2NF20132GY	2NF20132CL	2NF20132
4.8	2.4	0.51	50	300	2NF20148B	2NF20148W	2NF20148R	2NF20148Y	2NF20148GY	2NF20148CL	2NF20148

Ø before shrinking, mm	Ø after shrinking, mm	Wall thickness after shrinking, mm	Bagging, pcs (cutting within 1 meter ± 0.5%)	Rolling, m*	Code (codes in table are specified only for cutting of 1 piece = 1 meter ± 0.5%)*						
					blue color	white color	red color	yellow color	yellow-green color	transparent color	black color
Solution for electric control room market, 2NF201 series*											
6.4	3.2	0.64	50	300	2NF20164B	2NF20164W	2NF20164R	2NF20164Y	2NF20164GY	2NF20164CL	2NF20164
9.5	4.7	0.64	50	150	2NF20195B	2NF20195W	2NF20195R	2NF20195Y	2NF20195GY	2NF20195CL	2NF20195
12.7	6.4	0.64	50	150	2NF201127B	2NF201127W	2NF201127R	2NF201127Y	2NF201127GY	2NF201127CL	2NF201127
15.9	7.9	0.70	50	50	2NF201159B	2NF201159W	2NF201159R	2NF201159Y	2NF201159GY	2NF201159CL	2NF201159
19.1	9.5	0.77	50	50	2NF201191B	2NF201191W	2NF201191R	2NF201191Y	2NF201191GY	2NF201191CL	2NF201191
25.4	12.7	0.89	25	50	2NF201254B	2NF201254W	2NF201254R	2NF201254Y	2NF201254GY	2NF201254CL	2NF201254
31.8	15.9	0.95	25	50	2NF201318B	2NF201318W	2NF201318R	2NF201318Y	2NF201318GY	2NF201318CL	2NF201318
38.1	19.1	1.02	25	50	2NF201381B	2NF201381W	2NF201381R	2NF201381Y	2NF201381GY	2NF201381CL	2NF201381
50.8	25.4	1.14	10	50	2NF201508B	2NF201508W	2NF201508R	2NF201508Y	2NF201508GY	2NF201508CL	2NF201508
76.2	38.1	1.27	10	25	2NF201762B	2NF201762W	2NF201762R	2NF201762Y	2NF201762GY	2NF201762CL	2NF201762
101.6	50.8	1.40	5	25	2NF2011016B	2NF2011016W	2NF2011016R	2NF2011016Y	–	2NF2011016CL	2NF2011016
Increased shrinking factor 3:1, 2NF301 series**											
1.5	0.5	0.45	100	300	2NF30115B	2NF30115W	2NF30115R	2NF30115Y	2NF30115GY	–	2NF30115
3	1	0.55	50	300	2NF30130B	2NF30130W	2NF30130R	2NF30130Y	2NF30130GY	–	2NF30130
4.8	1.5	0.60	50	300	2NF30148B	2NF30148W	2NF30148R	2NF30148Y	2NF30148GY	–	2NF30148
6	2	0.70	50	300	2NF30160B	2NF30160W	2NF30160R	2NF30160Y	2NF30160GY	–	2NF30160
9	3	0.70	50	150	2NF30190B	2NF30190W	2NF30190R	2NF30190Y	2NF30190GY	–	2NF30190
12	4	0.70	50	150	2NF301120B	2NF301120W	2NF301120R	2NF301120Y	2NF301120GY	–	2NF301120
18	6	0.80	50	50	2NF301180B	2NF301180W	2NF301180R	2NF301180Y	2NF301180GY	–	2NF301180
24	8	1.00	25	50	2NF301240B	2NF301240W	2NF301240R	2NF301240Y	2NF301240GY	–	2NF301240
39	13	1.15	25	50	2NF301390B	2NF301390W	2NF301390R	2NF301390Y	2NF301390GY	–	2NF301390
Fire-resistant 2NS201 series*											
1.6	0.8	0.43	100	300	2NS20116B	2NS20116W	2NS20116R	2NS20116Y	2NS20116GY	–	2NS20116
2.4	1.2	0.51	100	300	2NS20124B	2NS20124W	2NS20124R	2NS20124Y	2NS20124GY	–	2NS20124
3.2	1.6	0.51	50	300	2NS20132B	2NS20132W	2NS20132R	2NS20132Y	2NS20132GY	–	2NS20132
4.8	2.4	0.51	50	300	2NS20148B	2NS20148W	2NS20148R	2NS20148Y	2NS20148GY	–	2NS20148
6.4	3.2	0.64	50	300	2NS20164B	2NS20164W	2NS20164R	2NS20164Y	2NS20164GY	–	2NS20164
9.5	4.7	0.64	50	150	2NS20195B	2NS20195W	2NS20195R	2NS20195Y	2NS20195GY	–	2NS20195
12.7	6.4	0.64	50	150	2NS201127B	2NS201127W	2NS201127R	2NS201127Y	2NS201127GY	–	2NS201127
19.1	9.5	0.77	50	50	2NS201191B	2NS201191W	2NS201191R	2NS201191Y	2NS201191GY	–	2NS201191
25.4	12.7	0.89	25	50	2NS201254B	2NS201254W	2NS201254R	2NS201254Y	2NS201254GY	–	2NS201254
38.1	19.1	1.02	25	50	2NS201381B	2NS201381W	2NS201381R	2NS201381Y	2NS201381GY	–	2NS201381
50.8	25.4	1.14	10	50	2NS201508B	2NS201508W	2NS201508R	2NS201508Y	2NS201508GY	–	2NS201508
76.2	38.1	1.27	10	25	2NS201762B	2NS201762W	2NS201762R	2NS201762Y	2NS201762GY	–	2NS201762
101.6	50.8	1.40	5	25	2NS2011016B	2NS2011016W	2NS2011016R	2NS2011016Y	–	–	2NS2011016
Increased shrinking factor 3:1 with adhesive compound, 2NFD301 series*											
3	1	1.00	100	300	–	–	–	–	–	2NFD30130CL	2NFD30130
4.8	1.6	1.00	50	300	–	–	–	–	–	2NFD30148CL	2NFD30148
6	2	1.10	50	300	–	–	–	–	–	2NFD30160CL	2NFD30160
9	3	1.30	50	150	–	–	–	–	–	2NFD30190CL	2NFD30190
12	4	1.70	50	150	–	–	–	–	–	2NFD301120CL	2NFD301120
18	6	2.00	50	50	–	–	–	–	–	2NFD301180CL	2NFD301180
24	8	2.50	25	50	–	–	–	–	–	2NFD301240CL	2NFD301240
39	13	2.50	25	50	–	–	–	–	–	2NFD301390CL	2NFD301390
Increased shrinking factor 4:1 with adhesive compound, 2NFD401 series*											
4	1	1.02	50	300	–	–	–	–	–	2NFD40140CL	2NFD40140
8	2	1.02	50	150	–	–	–	–	–	2NFD40180CL	2NFD40180
12	3	1.30	50	150	–	–	–	–	–	2NFD401120CL	2NFD401120
16	4	1.78	50	150	–	–	–	–	–	2NFD401160CL	2NFD401160
24	6	2.10	25	50	–	–	–	–	–	2NFD401240CL	2NFD401240
32	8	2.50	25	50	–	–	–	–	–	2NFD401320CL	2NFD401320
52	13	2.50	25	50	–	–	–	–	–	2NFD401520CL	2NFD401520

* To order products in rolls with the same length for 2NF201, 2NF301, 2NS201, 2NFD301 and 2NFD401 series it is necessary to specify R letter in the code after series designation, for example, 2NF201R12, instead of 2NF20112; codes in table are specified only for cutting of 1 piece = 1 meter ± 0.5%

** To order products of 2NF3 series for thermal transfer printing (in flat version) it is necessary to specify FL and P letters in the code, for example, 2FLNF301P15 instead of 2NF30115

Halogen-free thin-walled tubes



Purpose:

- electric insulation, identification, attachment and protection of wires.

Distinctive features:

- high flexibility;
- high physical and mechanical properties;
- fast shrinking without deviations when exposed to low temperatures. This feature prevents formation of bubbles during the shrinking that ensures reliable short-circuit protection;
- 2NC series is designed for use in motor vehicle industry, complies with the Federal Standard on Fire Safety of Motor Vehicles FMVSS 302;
- 2NZH series is designed for use in aircraft industry and railway construction as well as complies with the necessary aircraft and railway standards UNI CEI 11170-3, class LR3; CEN/TS 45545-2 class HL3; DIN 5510-2 Annex – C, low smoke toxicity; DIN 5510-2 smoke spread class SR2; standard Boeing BS6853 and BS 7239, test for release of toxic gases M7.

Ø before shrinking, mm	Ø after shrinking, mm	Wall thickness after shrinking, mm	Bagging, pcs (cutting within 1 meter ± 0.5%)	Rolling, m*	Code (codes in table are specified for 2NA201 series only for cutting of 1 piece = 1 meter ± 0.5%)*						
					blue color	red color	yellow-green color	green color	white color	yellow color	black color

Solution for electric control room market, 2NA201 series*

1.2	0.6	0.41	100	300	2NA20112B	2NA20112R	2NA20112GY	2NA20112G	–	2NA20112Y	2NA20112
1.6	0.8	0.43	100	300	2NA20116B	2NA20116R	2NA20116GY	2NA20116G	–	2NA20116Y	2NA20116
2.4	1.2	0.51	100	300	2NA20124B	2NA20124R	2NA20124GY	2NA20124G	–	2NA20124Y	2NA20124
3.2	1.6	0.51	50	300	2NA20132B	2NA20132R	2NA20132GY	2NA20132G	–	2NA20132Y	2NA20132
4.8	2.4	0.51	50	300	2NA20148B	2NA20148R	2NA20148GY	2NA20148G	–	2NA20148Y	2NA20148
6.4	3.2	0.65	50	300	2NA20164B	2NA20164R	2NA20164GY	2NA20164G	–	2NA20164Y	2NA20164
9.5	4.7	0.65	50	150	2NA20195B	2NA20195R	2NA20195GY	2NA20195G	–	2NA20195Y	2NA20195
12.7	6.4	0.65	50	150	2NA201127B	2NA201127R	2NA201127GY	2NA201127G	–	2NA201127Y	2NA201127
19.1	9.5	0.77	50	50	2NA201191B	2NA201191R	2NA201191GY	2NA201191G	–	2NA201191Y	2NA201191
25.4	12.7	0.89	25	50	2NA201254B	2NA201254R	2NA201254GY	2NA201254G	–	2NA201254Y	2NA201254
38.1	19.1	1	25	50	2NA201381B	2NA201381R	2NA201381GY	2NA201381G	–	2NA201381Y	2NA201381
50.8	25.4	1.10	10	50	2NA201508B	2NA201508R	2NA201508GY	2NA201508G	–	2NA201508Y	2NA201508

Solution for aircraft industry market, 2NZH201 series**

1.2	0.6	0.41	–	300	–	–	–	–	2NZH201B12W	2NZH201B12Y	2NZH201B12
1.6	0.8	0.43	–	300	–	–	–	–	2NZH201B16W	2NZH201B16Y	2NZH201B16
2.4	1.2	0.51	–	300	–	–	–	–	2NZH201B24W	2NZH201B24Y	2NZH201B24
3.2	1.6	0.51	–	300	–	–	–	–	2NZH201B32W	2NZH201B32Y	2NZH201B32
4.8	2.4	0.51	–	300	–	–	–	–	2NZH201B48W	2NZH201B48Y	2NZH201B48
6.4	3.2	0.65	–	300	–	–	–	–	2NZH201B64W	2NZH201B64Y	2NZH201B64
9.5	4.8	0.65	–	150	–	–	–	–	2NZH201B95W	2NZH201B95Y	2NZH201B95
12.7	6.4	0.65	–	150	–	–	–	–	2NZH201B127W	2NZH201B127Y	2NZH201B127
19.1	9.5	0.77	–	50	–	–	–	–	2NZH201B191W	2NZH201B191Y	2NZH201B191
25.4	12.7	0.89	–	50	–	–	–	–	2NZH201B254W	2NZH201B254Y	2NZH201B254
38.1	19.1	1.00	–	50	–	–	–	–	2NZH201B381W	2NZH201B381Y	2NZH201B381
50.8	25.4	1.00	–	50	–	–	–	–	2NZH201B504W	2NZH201B504Y	2NZH201B504

* To order products in rolls with the same length for 2NA201 series it is necessary to specify R letter in the code after series designation, for example, 2NA201R12; codes in table are specified only for cutting of 1 piece = 1 meter ± 0.5%

** To order products for thermal transfer printing (in flat version) it is necessary to specify FL letters in the code, for example, 2FLZH201B24 instead of 2NZH201B24

Specialized series

**Purpose:**

- repair or connection of different types of tubes and cable.

Distinctive features:

- possible supply with thermal and adhesive compound which internal surface of tubes is covered with. This compound fills all the irregularities and cavities ensuring high protection;
- standard color for medium-wall and thick-wall series is black;
- standard color for teflon series is transparent;
- high strength and abrasion resistance;
- 2CRM/A and 2CRT/A series are widely used during the laying of telecommunications systems, 2CRT/A series differs from 2CRM/A with greater strength;
- 2CPTFE series is used under extreme chemical and thermal conditions.

Ø before shrinking, mm	Ø after shrinking, mm	Wall thickness after shrinking, mm	Wall thickness with adhesive compound after shrinking, mm	Packing (cutting within 1 meter), m	Code	
					with thermal and adhesive compound	standard version
Medium-wall 2CRM/A series						
12	3	1.90	2.20	10	2CRMA12	2CRM12
22	6	2.20	2.30	10	2CRMA22	2CRM22
33	8	2.50	2.60	10	2CRMA33	2CRM33
40	12	2.50	2.60	10	2CRMA40	2CRM40
55	17	2.80	2.90	5	2CRMA55	2CRM55
72	22	3.00	3.15	5	2CRMA72	2CRM72
92	29	3.00	3.15	5	2CRMA92	2CRM92
115	35	3.10	3.35	5	2CRMA115	2CRM115
140	45	3.15	3.40	5	2CRMA140	2CRM140
160	55	3.15	3.40	5	2CRMA160	2CRM160
180	60	3.25	3.50	5	2CRMA180	–
200	65	3.25	3.50	5	2CRMA200	–
235	65	3.25	3.50	5	2CRMA235	–
Thick-wall 2CRT/A series						
13	4	2.20	2.65	10	2CRTA12	2CRT12
19	6	2.40	2.65	10	2CRTA19	2CRT19
30	8	3.00	3.30	10	2CRTA30	2CRT30
45	13	3.00	3.70	10	2CRTA45	2CRT45
52	16	3.60	4.10	5	2CRTA52	2CRT52
72	22	3.80	4.10	5	2CRTA72	2CRT72
92	29	3.80	4.10	5	2CRTA92	2CRT92
115	35	4.00	4.20	5	2CRTA120	2CRT120
130	45	4.00	4.20	5	2CRTA130	2CRT130
160	55	4.00	4.20	5	2CRTA160	2CRT160
180	55	4.00	4.20	5	2CRTA180	2CRT180
200	60	4.00	4.20	5	2CRTA200	2CRT200
Teflon 2CPTFE series						
1.98	0.64	0.22	–	10	–	2CPTFE19
3.18	0.94	0.25	–	10	–	2CPTFE31
4.75	1.27	0.30	–	10	–	2CPTFE47
6.35	1.60	0.30	–	10	–	2CPTFE63
7.92	2.00	0.30	–	5	–	2CPTFE79
9.52	2.44	0.30	–	5	–	2CPTFE95
12.70	3.66	0.30	–	5	–	2CPTFE127
15.88	4.52	0.38	–	5	–	2CPTFE158
19.05	5.70	0.38	–	5	–	2CPTFE190
25.40	7.06	0.38	–	5	–	2CPTFE254

Busbar insulator

Characteristics

Technical characteristics

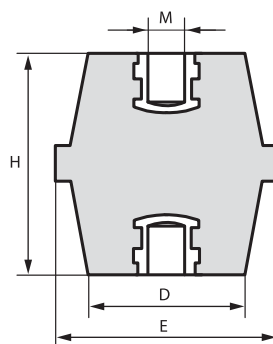
Operating temperature	From -40 to +130 °C
Heat resistance under load	up to 200 °C
Arc resistance	180 s
Moisture adsorption	<0.3%
Flammability classification	UL94, class V0

Electrical characteristics

VeAC	Rated alternating-current voltage, V
VeDC	Rated direct-current voltage, V
VtAC	Maximum alternating-current voltage, V
VtDC	Maximum direct-current voltage, V
VtP	Disruptive voltage, V

Mechanical characteristics

Kgf	Maximum tensile force, kg
Kgt	Maximum shear force, kg
N/m	Maximum tightening torque, N/m



Purpose:

- used as support busbar insulator.

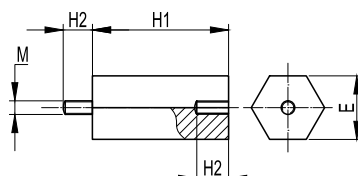
Busbar insulator material:

- polyester with reinforced fiberglass.

Dimensions				Electrical characteristics					Mechanical characteristics			Package, pcs	Code
H	E	M	D	VeAC	VeDC	VtAC	Vt P	VtDC	Kgf	Kgt	N/m		
35	41	6	35	1400	1600	9000	16000	12500	900	1100	10	80	ISBK3890
35	41	8	35	1400	1600	9000	16000	12500	900	1100	25	80	ISBK3916
35	41	10	35	1400	1600	9000	16000	12500	900	1100	50	80	ISBK3924
40	46	8	40	1600	1900	10000	18000	14000	1000	1100	25	64	ISBK4112
40	46	10	40	1600	1900	10000	18000	14000	1000	1100	50	64	ISBK4120
40	46	12	40	1600	1900	10000	18000	14000	1000	1100	85	64	ISBK4160
45	46	8	38	1800	2100	11000	20000	15500	1000	1500	25	48	ISBK4617
45	46	10	38	1800	2100	11000	20000	15500	1000	1500	50	48	ISBK4625
45	46	12	38	1800	2100	11000	20000	15500	1000	1500	85	48	ISBK4633
50	50	8	40	2000	2400	13000	23500	18000	1100	1800	25	36	ISBK5531
50	50	10	40	2000	2400	13000	23500	18000	1100	1800	50	36	ISBK5549
50	50	12	40	2000	2400	13000	23500	18000	1100	1800	85	36	ISBK5556
60	55	8	43	2400	2800	15000	27000	21000	1100	2200	25	24	ISBK6059
60	55	10	43	2400	2800	15000	27000	21000	1100	2200	50	24	ISBK6067
60	55	12	43	2400	2800	15000	27000	21000	1100	2200	85	24	ISBK6075
70	60	8	48	3000	3600	18000	32500	25000	1200	2500	25	15	ISBK7057
70	60	10	48	3000	3600	18000	32500	25000	1200	2500	50	15	ISBK7065
70	60	12	48	3000	3600	18000	32500	25000	1200	2500	85	15	ISBK7073
70	60	16	48	3000	3600	18000	32500	25000	1200	2500	200	15	ISBK7099
80	65	10	52	3500	4200	22000	39500	31000	1600	3000	50	12	ISBK8063
80	65	12	52	3500	4200	22000	39500	31000	1600	3000	85	12	ISBK8071
80	65	16	52	3500	4200	22000	39500	31000	1600	3000	200	12	ISBK8089

Dimensions				Electrical characteristics					Mechanical characteristics			Package, pcs	Code
H	E	M	D	VeAC	VeDC	VtAC	Vt P	VtDC	Kgf	Kgt	N/m		
12	10	3	10	125	150							100	ISBK1209
16	15	4	12	500	600	3000	5500	4200	100	150	3	100	ISBK1506
16	15	5	12	500	600	3000	5500	4200	100	150	3	100	ISBK1563
20	19	4	15	750	900	5000	9000	7000	200	300	3	100	ISBK2009
20	19	5	15	750	900	5000	9000	7000	200	300	6	100	ISBK2017
20	19	6	15	750	900	5000	9000	7000	200	400	10	100	ISBK2033
25	22	4	18	1000	1200	6000	11000	8500	180	400	3	100	ISBK2801
25	22	5	18	1000	1200	6000	11000	8500	180	400	6	100	ISBK2819
25	22	6	18	1000	1200	6000	11000	8500	180	600	10	100	ISBK2827
30	30	6	26	1200	1500	8000	14000	11000	300	600	10	175	ISBK3049
30	30	8	26	1200	1500	8000	14000	11000	300	600	25	175	ISBK3056
35	32	6	29	1400	1600	9000	16000	12500	500	900	10	120	ISBK3544
35	32	8	29	1400	1600	9000	16000	12500	500	900	25	120	ISBK3551
35	32	10	29	1400	1600	9000	16000	12500	500	900	50	120	ISBK3569
40	41	6	34	1600	1900	10000	18000	14000	900	1100	10	60	ISBK4047
40	41	8	34	1600	1900	10000	18000	14000	900	1100	25	60	ISBK4054
40	41	10	34	1600	1900	10000	18000	14000	900	1100	50	60	ISBK4062
40	41	12	34	1600	1900	10000	18000	14000	900	1100	85	60	ISBK4070
50	36	6	30	2000	2400	12000	21500	17000	600	1000	10	75	ISBK5044
50	36	8	30	2000	2400	12000	21500	17000	600	1000	25	75	ISBK5051
50	36	10	30	2000	2400	12000	21500	17000	600	1000	50	75	ISBK5069
65	41	8	32	2500	3000	12000	29000	22000	600	1000	25	36	ISBK6554
65	41	10	32	2500	3000	12000	29000	22000	600	1000	50	36	ISBK6562
65	41	12	32	2500	3000	12000	29000	22000	600	1000	85	36	ISBK6570
75	50	8	38	3200	3800	20000	36000	28000	950	2400	25	24	ISBK7552
75	50	10	38	3200	3800	20000	36000	28000	950	2400	50	24	ISBK7560
75	50	12	38	3200	3800	20000	36000	28000	950	2400	85	24	ISBK7578
100	65	10	52	5000	6000	26000	47000	36000	1500	4000	50	9	ISBK9962
100	65	12	52	5000	6000	26000	47000	36000	1500	4000	85	9	ISBK9970
100	65	16	52	5000	6000	26000	47000	36000	1500	4000	200	9	ISBK9988

Metal spacers



Purpose:

- attachment of equipment and mounting plate at the set level.

Material:

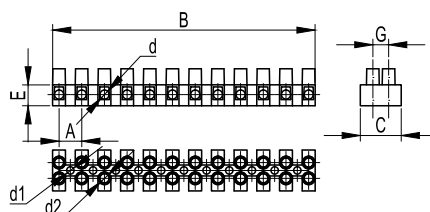
- galvanized steel with anti-corrosive coating without VI-valent chrome.

Base length H1, mm	Thread length H2=E, mm	Thread	Package, pcs	Code
10	7	M4	12	QSP0104
30	7	M4	12	QSP0304
50	7	M4	12	QSP0504
70	7	M4	12	QSP0704
15	8	M5	12	QSP0155
50	8	M5	12	QSP0505
80	8	M5	12	QSP0805
15	10	M6	12	QSP0156
20	10	M6	12	QSP0206
30	10	M6	12	QSP0306
40	10	M6	12	QSP0406
50	10	M6	12	QSP0506
60	10	M6	12	QSP0606
70	10	M6	12	QSP0706
80	10	M6	8	QSP0806
90	10	M6	8	QSP0906
100	10	M6	8	QSP1006
20	12	M8	12	QSP0208
30	12	M8	12	QSP0308
40	12	M8	12	QSP0408
50	12	M8	12	QSP0508
100	12	M8	8	QSP1008

Terminal blocks

Wiring device designed for quality wire connection. It is a dielectric enclosure with several attached metal contacts with points of wire attachment to them. Contact part of terminal blocks is made of brass and covered with a layer of nickel that ensures reliable contact with high current-conducting properties unchanged during the operation period.

Terminal blocks made of polyamide 6.6



Distinctive features:

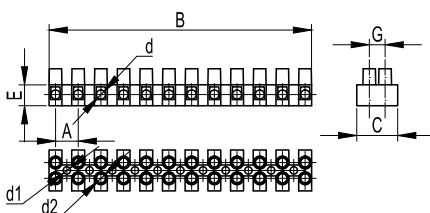
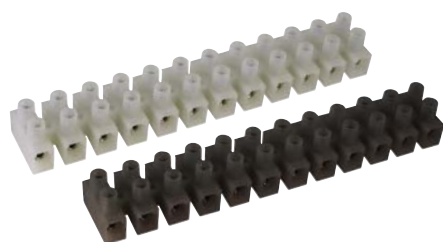
- rated voltage is 450 V;
- maintain their mechanical properties to -20 °C. Within the range from -20 to -40 °C reduction of mechanical characteristics is possible by 15-20 %;
- maximum operating temperature is 110 °C.

Material:

- polyamide 6.6.

Wire section, mm ²	Number of sections	Current, A	Installation dimensions, mm								Package, pcs	Code
			A	B	C	E	G	d2	d	d1		
2.5	12	24	8	94	16.4	9.2	3	3	2.9	2.6	480	43112NY
	2	24	8		16.4	9.2	3	3	2.9	2.6	3000	43102NY
	2	24	8		16.4	9.2	3	3	2.9	2.6	50	43102NYr
	3	24	8		16.4	9.2	3	3	2.9	2.6	2500	43103NY
	3	24	8		16.4	9.2	3	3	2.9	2.6	50	43103NYr
4	12	24	10	116.3	18	9.5	3	3	3.1	3.1	320	43212NY
	12	32	10	116.7	20.2	10.1	3	3	3.4	3.2	420	43312NY
	2	32	10		20.2	10.1	3	3	3.4	3.2	2200	43302NY
	2	32	10		20.2	10.1	3	3	3.4	3.2	50	43302NYr
	3	32	10		20.2	10.1	3	3	3.4	3.2	1800	43303NY
10	3	32	10		20.2	10.1	3	3	3.4	3.2	50	43303NYr
	12	57	12	139.1	23.1	10.8	3	3.5	4.4	3.2	260	43412NY
	16	76	14.5	171.2	31.8	14.7	3.8	4	5.8	4.2	130	43512NY
25	12	101	18	208.5	37.5	20	5	5	7.4	4.5	54	43812NY

Polypropylene terminal blocks



Distinctive features:

- rated voltage is 450 V;
- maximum operating temperature is 85 °C.

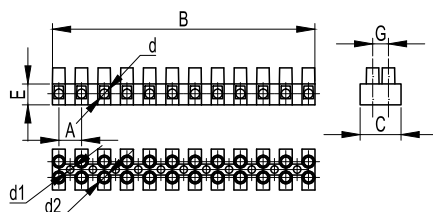
Material:

- polypropylene.

Wire section, mm ²	Number of sections	Current, A	Installation dimensions, mm								Package, pcs	Code
			A	B	C	E	G	d2	d	d1		
2.5	12	24	8	94.9	16.3	9.4	6	3	2.9	2.8	480	43112PL/*
	2	24	8		16.3	9.4	6	3	2.9	2.8	3000	43102PL/*
	2	24	8		16.3	9.4	6	3	2.9	2.8	50	43102PL/*r
	3	24	8		16.3	9.4	6	3	2.9	2.8	2500	43103PL/*
	3	24	8		16.3	9.4	6	3	2.9	2.8	50	43103PL/*r
4	12	24	10	115.3	17.8	9.2	7	3	3.1	3	320	43212PL/*
6	12	32	10	117	20.2	10.2	10	3	3.4	3.4	300	43312PL/*
	2	32	10		20.2	10.2	10	3	3.4	3.4	3000	43302PL/*
	2	32	10		20.2	10.2	10	3	3.4	3.4	50	43302PL/*r
	3	32	10		20.2	10.2	10	3	3.4	3.4	2000	43303PL/*
	3	32	10		20.2	10.2	10	3	3.4	3.4	50	43303PL/*r
10	12	57	12	140.4	23.2	11	10	3.5	4.4	3.2	260	43412PL/*
16	12	76	14.5	171.4	31.8	14.5	13	4	5.8	4.2	130	43512PL/*
25	12	101	18	208.4	37.2	19.8	17	5	7.4	4.5	54	43812PL/*

* B – white, R – black

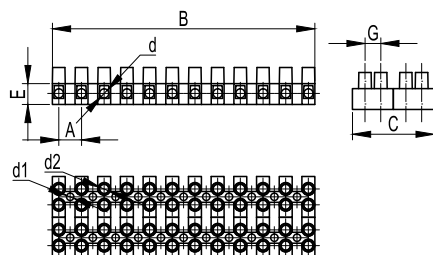
Fiberglass terminal blocks



- Distinctive features:**
- maximum operating temperature is 150 °C;
 - rated voltage is 450 V.
- Material:**
- fiberglass.

Wire section, mm ²	Number of sections	Current, A	Installation dimensions, mm								Package, pcs	Code
			A	B	C	E	F	d2	d	d1		
2.5	12	24	8	94.5	16.5	9.2	3.1	3	2.9	2.6	480	43112FV
	2	24	8		16.5	9.2	3.1	3	2.9	2.6	3000	43102FV
	2	24	8		16.5	9.2	3.1	3	2.9	2.6	50	43102FVr
	3	24	8		16.5	9.2	3.1	3	2.9	2.6	2500	43103FV
	3	24	8		16.5	9.2	3.1	3	2.9	2.6	50	43103FVr
4	12	24	10	116.8	18	9.5	2.9	3	3.1	3.1	320	43212FV
	12	32	10	117.2	20.3	10.3	3	3	3.4	3.2	300	43312FV
	2	32	10		20.3	10.3	3	3	3.4	3.2	3000	43302FV
	3	32	10		20.3	10.3	3	3	3.4	3.2	2000	43303FV
	3	32	10		20.3	10.3	3	3	3.4	3.2	50	43303FVr
10	12	57	12	140.3	23.2	11	3.1	3.5	4.4	3.2	260	43412FV
16	12	76	14.5	173.5	32.2	14.8	3.9	4	5.8	4.2	130	43512FV

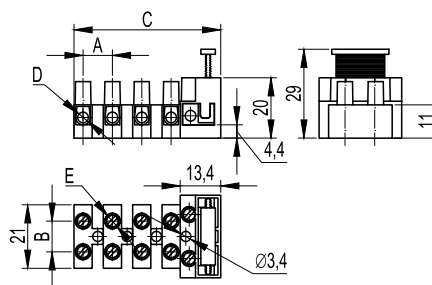
Split type



- Purpose:**
- switching and quick connection/opening of electric circuits.
- Distinctive features:**
- maximum operating temperature is 85 °C;
 - rated voltage is 450 V.
- Material:**
- polypropylene.

Wire section, mm ²	Number of sections	Current, A	Installation dimensions, mm								Package, pcs	Code
			A	B	C	E	G	d2	d	d1		
2.5	12	24	8	94.9	32.6	9.4	6	3	2.9	2.8	384	43112PLSP
4	12	32	10	117	40.4	10.2	10	3	3.4	3.4	198	43312PLSP
10	12	57	12	140.4	46.4	11	10	3.5	4.3	4.1	120	43412PLSP

With fuse link



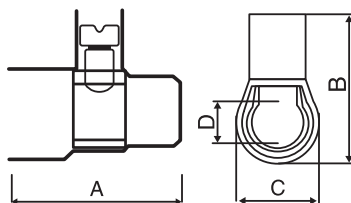
- Purpose:**
- ensuring the necessary coupling and current protection in any device. Irreplaceable for use in power supply circuits of consumer devices.
- Distinctive features:**
- maximum operating temperature is 125 °C;
 - rated voltage is 450 V;
 - without fuses.
- Material:**
- polyamide 6.8.

For block with fuse link (U = 250 V)		For terminal block (U = 450 V)		Number of sections	Installation dimensions, mm				Package, pcs	Code
section, mm ²	current	section, mm ²	current		A-B	C	D	E		
2.5	6.3	4	32	1	10	16.6	3.4	3	1000	1331LP
				2	10	21	3.4	3	800	1332
				3	10	31	3.4	3	600	1333
				4	10	41	3.4	3	500	1334
				5	10	51	3.4	3	400	1335

Junction blocks

They are used for routing of power circuits in distribution boxes and cable ducts. High quality and ease of installation make it possible to use blocks at critical sites with minimum costs.

With one hole


Material:

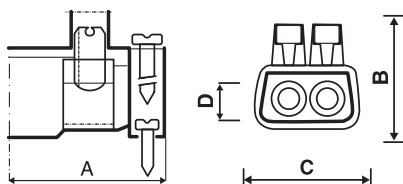
- of contacts: brass;
- of busbar insulator: polycarbonate;
- of screws: galvanized steel.

Distinctive features:

- maximum operating temperature is 85 °C;
- heat resistance is 130 °C.

Wire section, mm ²	Terminals clustered, pcs	IP	Number of wires	Dimensions, mm				U _{rated} , V	Clusters in package, pcs	Code
				A	V	C	D			
2.5	10	20	2	20	18	10	4	450	25	B25
1.5			2-3							
1			2-4							
4	10	20	2	22	19	11	4.5	450	25	B40
2.5			2-3							
1.5			2-4							
6	10	20	2	25	22	12	6	450	25	B60
4			2							
2.5			2-4							
10	10	20	2	29	25	14	7.7	500	10	B100
6			2-3							
4										
16	5	00	2	35	31	19	9.5	500	10	B160
10			2							
6			2-3							
25	1	00	2	38	40	22	12	500	5	B250
16			2							
10			2-3							
35	1	00	2	46	43	24	14	500	5	B350
25			2							
16			2-3							

With two holes


Material:

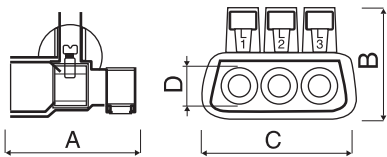
- of contacts: brass;
- of busbar insulator: polycarbonate;
- of screws: galvanized steel.

Distinctive features:

- maximum operating temperature is 85 °C;
- heat resistance is 130 °C.

Wire section, mm ²	IP	Number of wires	Dimensions, mm				U _{rated} , V	Package, pcs	Code
			A	V	C	D			
6	20	2	18	17	15	4	450	20	B42
4									
2.5									
16	00	2	23	22	20	6	500	20	B62
10									
6									
25	00	2	29	27	25	7.5	500	10	B102
16									
10									
35	00	2	32	31	32	9.5	500	5	B162
25									
16									

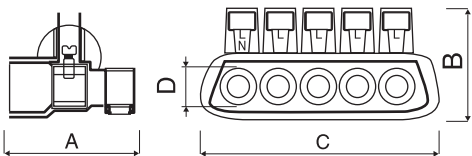
With three holes



- Material:**
- of contacts: brass;
 - of busbar insulator: polycarbonate;
 - of screws: galvanized steel.
- Distinctive features:**
- maximum operating temperature is 85 °C;
 - heat resistance is 130 °C.

Wire section, mm ²	IP	Number of wires	Dimensions, mm				U _{rated} , V	Package, pcs	Code
			A	V	C	D			
6	20	3	23	23	27	4.5	450	10	B63
4		3							
2.5		6							
16	20	3	25	27	35	6	500	5	B163
10		3							
6		6							
25	20	3	29	27	41	7.5	500	5	B253
16		3							
10		6							

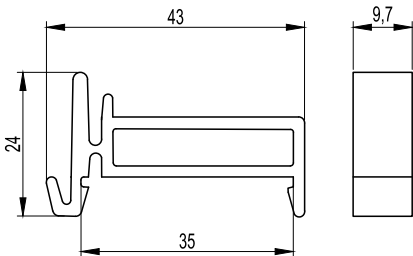
With five holes



- Material:**
- of contacts: brass;
 - of busbar insulator: polycarbonate;
 - of screws: galvanized steel.
- Distinctive features:**
- maximum operating temperature is 85 °C;
 - heat resistance is 130 °C.

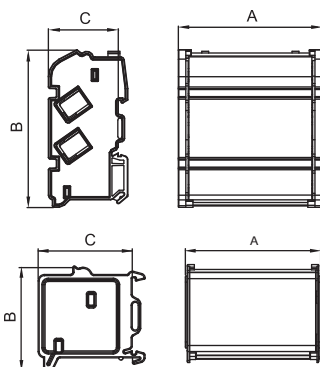
Wire section, mm ²	IP	Number of wires	Dimensions, mm				U _{rated} , V	Package, pcs	Code
			A	V	C	D			
6	20	5	23	23	42	4.5	450	10	B65
4		5							
2.5		10							
16	20	5	25	27	50	6	500	5	B165
10		5							
6		10							
25	20	5	29	27	65	7.5	500	5	B255
16		5							
10		10							

Support on a DIN rail



- Purpose:**
- attachment of terminal blocks with 2, 3, 5 holes to DIN rail.

Package, small/large, pcs	Code
10/40	159SM

Distribution units

Purpose:

- switching of a power line, wire and cable conductors in electric boards.

Distinctive features:

- units are installed on the DIN rail or mounting plate.

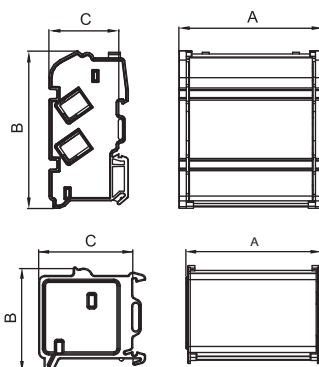
Material:

- of contacts: brass;
- of busbar insulator: polycarbonate;
- of screws: galvanized steel.

Distinctive features:

- maximum operating temperature is 85 °C;
- heat resistance is 130 °C.

Q-ty of buses	Number of holes	Hole diameter, mm	IP	Dimensions			I _{rated}	I _{pk} , kA	I _{cc} rms, kA	I _{cw} rms 1s, kA	U _{imp} , kV	U _{rated} V	Package, pcs	Code
				A	V	C								
2	7	5x6 1x8 1x9	00	68	47	45	100	20	10	6	8	750	4	BD10072
4	7	5x6 1x8 1x9	00	72	98	45	100	20	10	6	8	750	2	BD10074
2	11	6x6 2x6.9 2x8 1x9	00	105	47	45	125	22	11	6	8	750	2	BD125112
4	11	6x6 2x6.9 2x8 1x9	00	109	98	45	125	22	11	6	8	750	2	BD125114
2	15	10x6 2x6.9 2x8 1x9	00	134	47	45	125	22	11	6	8	750	2	BD125152
4	15	10x6 2x6.9 2x8 1x9	00	138	98	45	125	22	11	6	8	750	2	BD125154
4	8	5x7 1x8 1x9 1x12	00	133	136	70	160	24	12	6.2	8	750	2	BD16084
5	8	5x7 1x8 1x9 1x12	00	133	136	70	160	24	12	6.2	8	750	1	BD16085
4	13	8x7 2x8 2x9 1x12	00	186	136	70	160	24	12.1	6.2	8	750	2	BD160134
5	13	8x7 2x8 2x9 1x12	00	186	136	70	160	24	12.1	6.2	8	750	1	BD160135

Distribution units 160 A with removable terminal

Purpose:

- switching of a power line, wire and cable conductors in electric boards.

Material:

- of contacts: brass;
- of busbar insulator: polycarbonate;
- of screws: galvanized steel.

Distinctive features:

- owing to compact dimensions (C=45 mm) they can be installed on one DIN rail with modular equipment that allows for their use in the closed rooms;
- maximum operating temperature is 85 °C;
- heat resistance is 130 °C.

Q-ty of buses	Number of holes	Hole diameter, mm	IP	Dimensions			I _{rated}	I _{pk} , kA	I _{cc} rms, kA	I _{cw} rms 1s, kA	U _{imp} , kV	U _{rated} V	Package, pcs	Code
				A	V	C								
4	10	7x7 1x8 1x9 1x12	00	168	107	45	160	24	12	10	8	750	1	BD3160104
4	16	11x7 2x8 2x9 1x12	00	233	107	45	160	24	12	10	8	750	1	BD3160164

Brass buses



Purpose:

- switching of a power line, wire and cable conductors in electric boards.

Material:

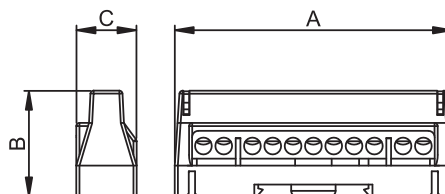
- brass;
- material of screws is galvanized steel;

Distinctive features:

- buses are supplied without busbar insulator.

Number of holes	Diameter, mm						Package, pcs	Code
	6	7	7.5	8	9	12		
7	5	–	2	–	–	–	04/12	BD1007
11	7	–	2	–	2	–	04/12	BD12511
15	11	–	2	–	2	–	04/12	BD12515
8	–	5	–	1	1	1	04/12	BD1608
13	–	8	–	2	2	1	04/12	BD16013

Junction terminal blocks on the DIN rail



Material:

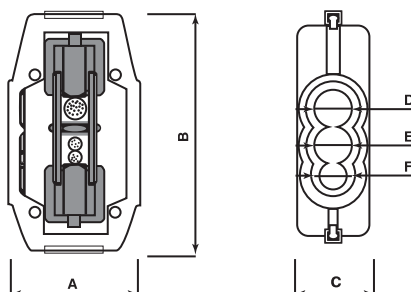
- brass;
- of busbar insulator: polycarbonate;
- of screws: white galvanized steel.

Distinctive features:

- maximum operating temperature is 85 °C;
- heat resistance is 130 °C.

Number of holes	Hole diameter, q-ty x ø mm	IP	Dimensions, mm			I _{rated} / A	I _{pk} , kA	I _{cc} rms, kA	I _{cw} rms 1s, kA	U _{imp} , kV	U _{rated} / V	Pole	Package, pcs	Code		
			A	V	C									color: gray	color: blue	color: green
7	5x5.3 mm, 2x6 mm	00	59	34	19	63	12	6	1.9	8	750	1	20	507F	507N	T167
11	9x5.3 mm, 2x6 mm	00	88	34	19	63	12	6	1.9	8	750	1	12	5011F	5011N	T1611
15	13x5.3 mm, 2x6 mm	00	114	34	19	63	22	6	1.9	8	750	1	10	5015F	5015N	T1615

Universal junction block



Material:

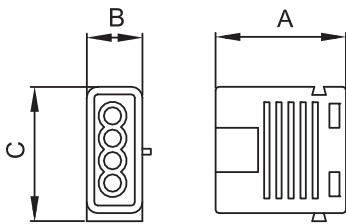
- brass with nickel coating.
- of busbar insulator: polycarbonate;
- of screws: brass.

Distinctive features:

- maximum operating temperature is 85 °C;
- heat resistance is 130 °C.

Wire section, mm ²	Installation dimensions, mm						Package, pcs	Code
	A	B	C	D	E	F		
2x16 (76A)	45.2	67	25.2	13	13	7	2/24	BK616
2x35 (125A)	46.5	84	25.6	15	15	11	2/12	BK635
2x50 (151A)	49.7	94.7	29	18	18	13	2/8	BK650
2x70 (192A)	51.9	105.8	31.2	19	19	14	2/8	BK670

Screwless terminal blocks



- Enclosure material:**
- polyamide;
 - material of springs: galvanized steel.
- Distinctive features:**
- operating temperature is from -5 to +85°C.

Wire section, mm ²	IP	Number of wires	Dimensions, mm			U _{rated} , V	I _{rated} , A	Package, pcs	Code
			A	V	C				
1.5-2.5	20	3	15	9.3	19	450	24	100	B273/3
	20	4	18.5	9.3	19			100	B273/4
	20	5	22	9.3	19			100	B273/5

Hexagon wrench



- Purpose:**
- connection (disconnection) of threaded joint by screwing in (screwing out).

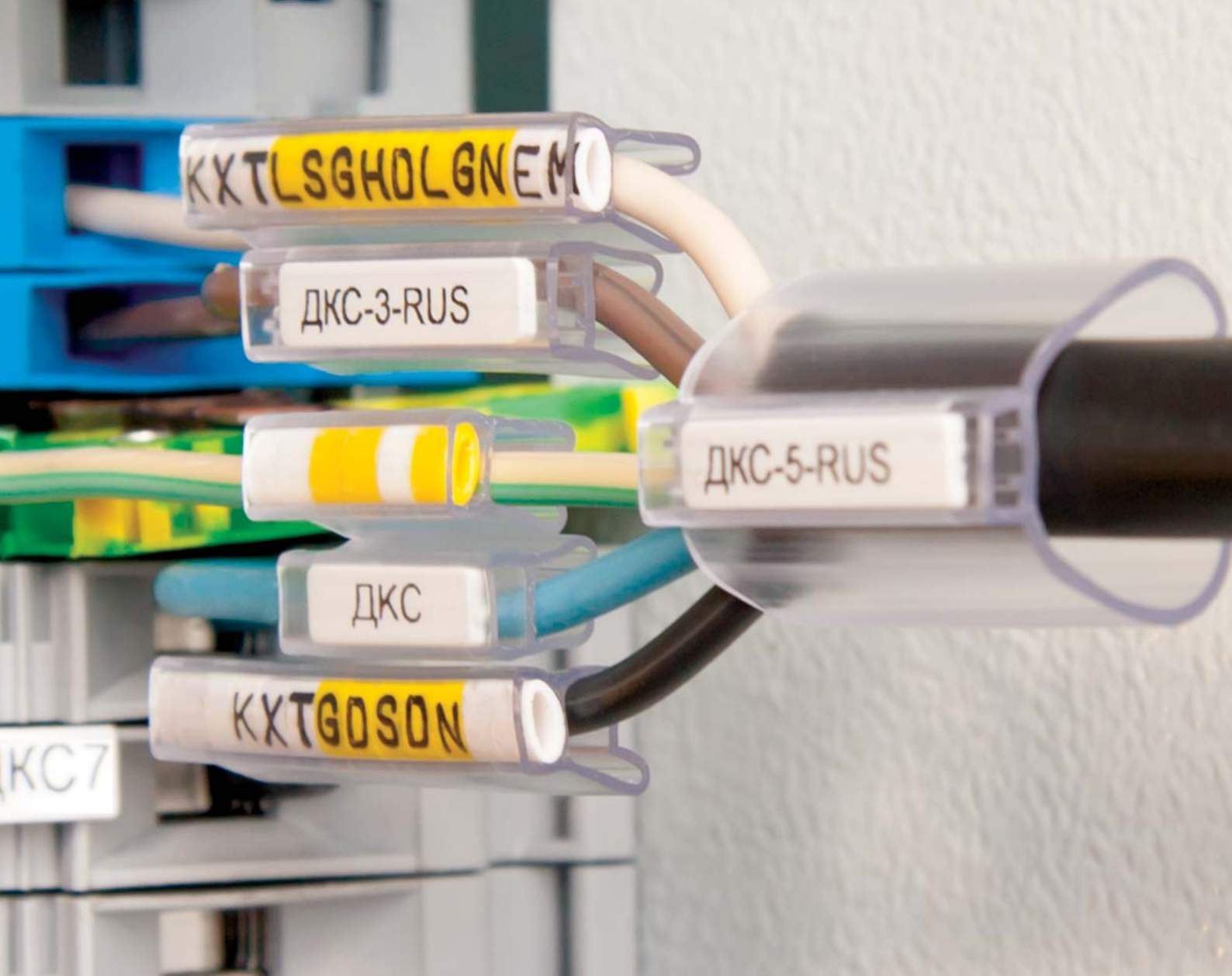
Package, pcs	Code
2	BKC1

Cap for wire twisting



- Purpose:**
- busbar insulator.
- Distinctive features:**
- maximum total section is 3 mm².
- Material:**
- polycarbonate.

Package, pcs	Code
100	B15



Marking system

Portable marking printers.....	340
Cable markers	342
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Portable marking printers

Characteristics

Technical characteristics

Alphabet	Latin
Print orientation	horizontal, vertical
Power supply	6 batteries of AA type or 230 V adapter (delivered separately)
Operating temperature	from +4 to +40 °C
Humidity	from 10 to 90 %

EGO1PRO printer


Purpose:

- marking of cables, wires, IT enclosures, control consoles.

Distinctive features:

- width of tapes is 6, 9, 12, and 19 mm;
- ergonomic design;
- two-line liquid-crystal display;
- printing of EAN 39 and 128 bar-codes using 19 mm tape;
- additional display backlight;
- 5 type sizes;
- printing of 4 lines using 19 mm; 2 lines using 12 and 9 mm; 1 line using 6 mm.

Scope of supply:

- rubber wrapper for shock protection;
- 19 mm vinyl test cartridge.

Description	Dimensions, mm	Weight, g	Package, pcs	Code
EGO1PRO portable marking printer	114x212x70	519	1	GR1PRO

EGO1PRO accessories

Description	Package, pcs	Code
220 V adapter	1	GRAADAPTER

EGO4YOU printer


Purpose:

- marking of cables, wires, IT enclosures, control consoles.

Distinctive features:

- width of tapes is 9 and 12 mm;
- ergonomic design;
- automatic printer shutdown extends service life of batteries.

Scope of supply:

- 12 mm vinyl test cartridge.

Description	Dimensions, mm	Weight, g	Package, pcs	Code
EGO4YOU portable marking printer	100x150x65	340	1	GR4YOU

Cartridges

Heat-shrinkable tubing



Purpose:

- marking of cables by the method of fitting on of a marked tube with further attachment thereof (shrinking).

Distinctive features:

- colors: white, yellow;
- 3 sizes.

Width before shrinking, mm	Diameter before shrinking, mm	Diameter after shrinking, mm	Length, m	Color	Code
9	5.2	1.8	1.5	yellow	GRCHS09Y
	5.2	1.8	1.5	white	GRCHS09W
12	7.2	3	1.5	yellow	GRCHS12Y
	7.2	3	1.5	white	GRCHS12W
19	12	4.6	1.5	yellow	GRCHS19Y
	12	4.6	1.5	white	GRCHS19W

Tape with glued base surface



Purpose:

- the tape is used for marking of modular equipment, cable, tubes, and group marking of small section cables.

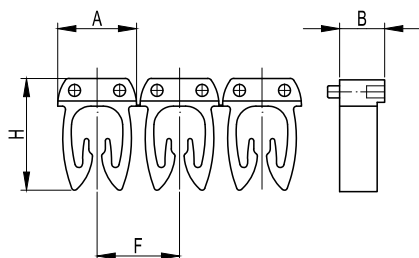
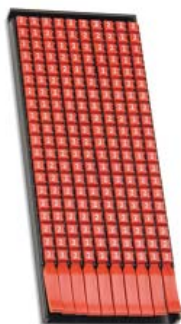
Distinctive features:

- the material is polyester;
- wide range of tape colors.

Material	Width, mm	Length, m	Tape color	Color of printed symbols	Code
Polyester	9	5.5	green	black	GRCP009G
	9	5.5	blue	black	GRCP009BL
	9	5.5	red	black	GRCP009R
	9	5.5	white	black	GRCP009W
	9	5.5	yellow	black	GRCP009Y
	9	5.5	metallic	black	GRCP009M
	9	5.5	black	white	GRCP009B
	12	5.5	green	black	GRCP012G
	12	5.5	blue	black	GRCP012BL
	12	5.5	red	black	GRCP012R
	12	5.5	white	black	GRCP012W
	12	5.5	yellow	black	GRCP012Y
	12	5.5	metallic	black	GRCP012M
	12	5.5	transparent	black	GRCP012T
	12	5.5	black	white	GRCP012B
	19	5.5	green	black	GRCP019G
	19	5.5	blue	black	GRCP019BL
	19	5.5	red	black	GRCP019R
	19	5.5	white	black	GRCP019W
	19	5.5	yellow	black	GRCP019Y
	19	5.5	transparent	black	GRCP019T
	19	5.5	black	white	GRCP019B

Cable markers

MARK 3 system



Purpose:

- for cable marking without breaking an electric circuit.

Distinctive features:

- side pins securely attach to each other and allow for precise aligning of markers;
- all marker colors conform to international coding.

Material:

- material is polyamide 6.6.

Operating temperature:

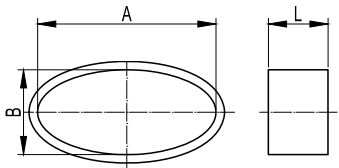
- from -30 to +70 °C

Symbol	Color of symbol	Color of marker	Cable section, 0.5-1.5 mm ²				Code	Cable section 1.5-2.5 mm ²				Code	Cable section, 4-6 mm ²				Code	Number of symbols in a package, pcs*
			A	B	F	H		A	B	F	H		A	B	F	H		
0	white	black					MKF0S1					MKF0S2					MKF0S3	200/160
1	white	brown					MKF1S1					MKF1S2					MKF1S3	200/160
2	white	red					MKF2S1					MKF2S2					MKF2S3	200/160
3	black	orange					MKF3S1					MKF3S2					MKF3S3	200/160
4	black	yellow					MKF4S1					MKF4S2					MKF4S3	200/160
5	white	green					MKF5S1					MKF5S2					MKF5S3	200/160
6	black	light-blue					MKF6S1					MKF6S2					MKF6S3	200/160
7	white	violet					MKF7S1					MKF7S2					MKF7S3	200/160
8	black	gray					MKF8S1					MKF8S2					MKF8S3	200/160
9	black	white					MKF9S1					MKF9S2					MKF9S3	200/160
A	black	yellow					MKCAS1					MKCAS2					MKCAS3	200/160
B	black	yellow					MKCBS1					MKCBS2					MKCBS3	200/160
C	black	yellow					MKCCS1					MKCCS2					MKCCS3	200/160
D	black	yellow					MKCDS1					MKCDS2					MKCDS3	200/160
E	black	yellow					MKCES1					MKCES2					MKCES3	200/160
F	black	yellow					MKCFS1					MKCFS2					MKCFS3	200/160
G	black	yellow					MKCGS1					MKCGS2					MKCGS3	200/160
H	black	yellow					MKCHS1					MKCHS2					MKCHS3	200/160
I	black	yellow					MKCIS1					MKCIS2					MKCIS3	200/160
J	black	yellow					MKCJS1					MKCJS2					MKCJS3	200/160
K	black	yellow					MKCKS1					MKCKS2					MKCKS3	200/160
L	black	yellow					MKCLS1					MKCLS2					MKCLS3	200/160
M	black	yellow	4.6	3.0	4.75	6.55	MKCMS1	5.35	3.0	6.15	9.4	MKCMS2	7.6	3.0	6.15	9.4	MKCMS3	200/160
N	black	yellow					MKCNS1					MKCNS2					MKCNS3	200/160
O	black	yellow					MKCOS1					MKCOS2					MKCOS3	200/160
P	black	yellow					MKCPS1					MKCPS2					MKCPS3	200/160
Q	black	yellow					MKCQS1					MKCQS2					MKCQS3	200/160
R	black	yellow					MKCRS1					MKCRS2					MKCRS3	200/160
S	black	yellow					MKCSS1					MKCSS2					MKCSS3	200/160
T	black	yellow					MKCTS1					MKCTS2					MKCTS3	200/160
U	black	yellow					MKCUS1					MKCUS2					MKCUS3	200/160
V	black	yellow					MKCVS1					MKCVS2					MKCVS3	200/160
W	black	yellow					MKCWS1					MKCWS2					MKCWS3	200/160
X	black	yellow					MKCXS1					MKCXS2					MKCXS3	200/160
Y	black	yellow					MKCYS1					MKCYS2					MKCYS3	200/160
Z	black	yellow					MKCZS1					MKCZS2					MKCZS3	200/160
Mp	black	yellow					MKMPS1					MKMPS2					MKMPS3	200/160
+	black	yellow					MKSPS1					MKSPS2					MKSPS3	200/160
-	black	yellow					MKSMS1					MKSMS2					MKSMS3	200/160
*	black	yellow					MKSGS1					MKSGS2					MKSGS3	200/160
(black	yellow					MKSAS1					MKSAS2					MKSAS3	200/160
.	black	yellow					MKSFS1					MKSFS2					MKSFS3	200/160
/	black	yellow					MKSBS1					MKSBS2					MKSBS3	200/160
ground	black	yellow					MKSGS1EARTH					MKSGS2EARTH					MKSGS3EARTH	200/160

* Section of 0.5-2.5 – ratio of 200, section of 4-6 – ratio of 160

Tubelet marking system

Rails with digits



Purpose:

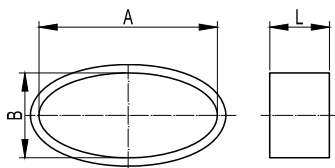
- designed to facilitate the process of identification of low-voltage equipment and cable routes.

Distinctive features:

- made with size of 2.3 mm with digits (from 0 to 9) using Latin alphabet (26 capital or initial letters) and symbols (+, -, / etc.);
- each rail consists of 24 marking elements with pre-printed symbols on them.

Symbol	Symbol color	Base color	A, mm	B, mm	L, mm	Number of digits on a rail, pcs	Code
0	black	white	4	1.5	2.3	24	BL117M00BW
	black	yellow	4	1.5	2.3	24	BL117M00BY
1	black	white	4	1.5	2.3	24	BL117M01BW
	black	yellow	4	1.5	2.3	24	BL117M01BY
2	black	white	4	1.5	2.3	24	BL117M02BW
	black	yellow	4	1.5	2.3	24	BL117M02BY
3	black	white	4	1.5	2.3	24	BL117M03BW
	black	yellow	4	1.5	2.3	24	BL117M03BY
4	black	white	4	1.5	2.3	24	BL117M04BW
	black	yellow	4	1.5	2.3	24	BL117M04BY
5	black	white	4	1.5	2.3	24	BL117M05BW
	black	yellow	4	1.5	2.3	24	BL117M05BY
6	black	white	4	1.5	2.3	24	BL117M06BW
	black	yellow	4	1.5	2.3	24	BL117M06BY
7	black	white	4	1.5	2.3	24	BL117M07BW
	black	yellow	4	1.5	2.3	24	BL117M07BY
8	black	white	4	1.5	2.3	24	BL117M08BW
	black	yellow	4	1.5	2.3	24	BL117M08BY
9	black	white	4	1.5	2.3	24	BL117M09BW
	black	yellow	4	1.5	2.3	24	BL117M09BY

Rails with symbols



Purpose:

- designed to facilitate the process of identification of low-voltage equipment and cable routes.

Distinctive features:

- made with size of 2.3 mm with digits (from 0 to 9) using Latin alphabet (26 capital or initial letters) and symbols (+, -, / etc.);
- each rail consists of 24 marking elements with pre-printed symbols on them.

Symbol	Symbol color	Base color	A, mm	B, mm	L, mm	Number of digits on a rail, pcs	Code
+	black	white	4	1.5	2.3	24	BL117M10BW
	black	yellow	4	1.5	2.3	24	BL117M10BY
-	black	white	4	1.5	2.3	24	BL117M11BW
	black	yellow	4	1.5	2.3	24	BL117M11BY
ground	black	white	4	1.5	2.3	24	BL117M12BW
	black	yellow	4	1.5	2.3	24	BL117M12BY
/	black	white	4	1.5	2.3	24	BL117M13BW
	black	yellow	4	1.5	2.3	24	BL117M13BY
.	black	white	4	1.5	2.3	24	BL117M14BW
	black	yellow	4	1.5	2.3	24	BL117M14BY
A	black	white	4	1.5	2.3	24	BL117MAABW
	black	yellow	4	1.5	2.3	24	BL117MAABY
B	black	white	4	1.5	2.3	24	BL117MBBBW
	black	yellow	4	1.5	2.3	24	BL117MBBBY
C	black	white	4	1.5	2.3	24	BL117MCCBW
	black	yellow	4	1.5	2.3	24	BL117MCCBY
D	black	white	4	1.5	2.3	24	BL117MDDBW
	black	yellow	4	1.5	2.3	24	BL117MDDBY
E	black	white	4	1.5	2.3	24	BL117MEEBW
	black	yellow	4	1.5	2.3	24	BL117MEEBY
F	black	white	4	1.5	2.3	24	BL117MFFBW
	black	yellow	4	1.5	2.3	24	BL117MFFBY
G	black	white	4	1.5	2.3	24	BL117MGGBW
	black	yellow	4	1.5	2.3	24	BL117MGGBY
H	black	white	4	1.5	2.3	24	BL117MHHBW
	black	yellow	4	1.5	2.3	24	BL117MHHBY
I	black	white	4	1.5	2.3	24	BL117MIIBW
	black	yellow	4	1.5	2.3	24	BL117MIIBY
J	black	white	4	1.5	2.3	24	BL117MJJBW
	black	yellow	4	1.5	2.3	24	BL117MJJBY
K	black	white	4	1.5	2.3	24	BL117MKKBW
	black	yellow	4	1.5	2.3	24	BL117MKKBY
L	black	white	4	1.5	2.3	24	BL117MLLBW
	black	yellow	4	1.5	2.3	24	BL117MLLBY
M	black	white	4	1.5	2.3	24	BL117MMM BW
	black	yellow	4	1.5	2.3	24	BL117MMM BY
N	black	white	4	1.5	2.3	24	BL117MNNBW
	black	yellow	4	1.5	2.3	24	BL117MNNBY
O	black	white	4	1.5	2.3	24	BL117MOOBW
	black	yellow	4	1.5	2.3	24	BL117MOOBY
P	black	white	4	1.5	2.3	24	BL117MPPBW
	black	yellow	4	1.5	2.3	24	BL117MPPBY
Q	black	white	4	1.5	2.3	24	BL117MQQBW
	black	yellow	4	1.5	2.3	24	BL117MQQBY
R	black	white	4	1.5	2.3	24	BL117MRRBW
	black	yellow	4	1.5	2.3	24	BL117MRRBY
S	black	white	4	1.5	2.3	24	BL117MSSBW
	black	yellow	4	1.5	2.3	24	BL117MSSBY
T	black	white	4	1.5	2.3	24	BL117MTTBW
	black	yellow	4	1.5	2.3	24	BL117MTTBY
U	black	white	4	1.5	2.3	24	BL117MUUBW
	black	yellow	4	1.5	2.3	24	BL117MUUBY
V	black	white	4	1.5	2.3	24	BL117MVVBW
	black	yellow	4	1.5	2.3	24	BL117MVVBY
W	black	white	4	1.5	2.3	24	BL117MWVBW
	black	yellow	4	1.5	2.3	24	BL117MWVBY
X	black	white	4	1.5	2.3	24	BL117MXXBW
	black	yellow	4	1.5	2.3	24	BL117MXXBY
Y	black	white	4	1.5	2.3	24	BL117MYVBW
	black	yellow	4	1.5	2.3	24	BL117MYVBY
Z	black	white	4	1.5	2.3	24	BL117MZZBW
	black	yellow	4	1.5	2.3	24	BL117MZZBY

Pallets for rails with symbols



- Purpose:**
- more efficient usage of marking system.
- Distinctive features:**
- rails with symbols are inserted into a quadrangle pallet;
 - convenient angle of pallet stops makes removal of marking elements easy;
 - a pallet may house 24 rails with marking elements of any type: letters, digits, symbols, and colors.
- Material:**
- plastic.

Dimension, mm	Color	Package, pcs	Code
147x190x18	black	1	118

Lug



119M/15

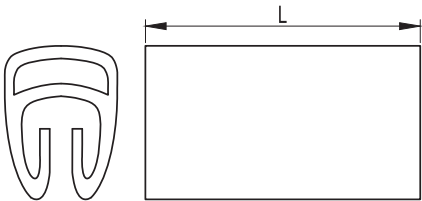


119M/30

- Purpose:**
- removal of marking elements from pallets with further entry thereof into a required tubelet cavity.
- Distinctive features:**
- delivered in two sizes: with length of 15 mm that is used for making a marking code, and with length of up to 15 mm and 30 mm for making a marking code of up to 30 mm.

Dimension, mm	Package, pcs	Code
15	1	119M/15
30	1	119M/30

Tubular holder latching for hard and manual marking



- Purpose:**
- for cable marking without breaking an electric circuit.
- Material:**
- PVC.
- Distinctive features:**
- contains two parts. The lower part is transparent, resilient and elastic, and it is fitted on a wire by slight pressing on the top. The upper part is transparent and elastic, and it is designed for entry of marking elements.

Diameter, mm	L, mm	Code
2-3.5	10	301/10
	15	301/15
	23	301/23
	30	301/30
2.8-5	10	302/10
	15	302/15
	23	302/23
	30	302/30
5-8	10	303/10
	15	303/15
	23	303/23
	30	303/30
8-10	10	304/10
	15	304/15
	23	304/23
	30	304/30

Tubular holder for flexible marking



Material:

- PVC.

Distinctive features:

- it has two cavities: the lower cavity is designed for fitting on an electric wire or a cable, and the upper one is for entry of marking elements;
- the holder has 2 supports to hold soft tags
- technical characteristics of the material make this product water resistant and oil, dust and acid proof;
- allowable temperature limit is from -50 to +80 °C.

Diameter, mm	L, mm	Code
1.5-2.5	10	TUB1001FL
	12	TUB1201FL
	15	TUB1501FL
	18	TUB1801FL
	23	TUB2301FL
	30	TUB3001FL
2.0-4.0	10	TUB1002FL
	12	TUB1202FL
	15	TUB1502FL
	18	TUB1802FL
	23	TUB2302FL
	30	TUB3002FL
4.0-7.0	10	TUB1003FL
	12	TUB1203FL
	15	TUB1503FL
	18	TUB1803FL
	23	TUB2303FL
	30	TUB3003FL
6.0-10.0	10	TUB1004FL
	12	TUB1204FL
	15	TUB1504FL
	18	TUB1804FL
	23	TUB2304FL
	30	TUB3004FL
10.0-14.0	10	TUB1005FL
	12	TUB1205FL
	15	TUB1505FL
	18	TUB1805FL
	23	TUB2305FL
	30	TUB3005FL
14.0-22.0	10	TUB1006FL
	12	TUB1206FL
	15	TUB1506FL
	18	TUB1806FL
	23	TUB2306FL
	30	TUB3006FL

Tubular holder for hard and manual marking



Material:

- PVC.

Distinctive features:

- it has two cavities: the lower cavity is designed for fitting on an electric wire or a cable, and the upper one is for entry of marking elements;
- technical characteristics of the material make this product water resistant and oil, dust and acid proof;
- allowable temperature limit is from -50 to +80 °C.

Diameter, mm	L, mm	Code
1.5-2.5	12	TUB1201
	15	TUB1501
	18	TUB1801
	23	TUB2301
	30	TUB3001
2.0-4.0	12	TUB1202
	15	TUB1502
	18	TUB1802
	23	TUB2302
	30	TUB3002
4.0-7.0	12	TUB1203
	15	TUB1503
	18	TUB1803
	23	TUB2303
	30	TUB3003
6.0-10.0	12	TUB1204
	15	TUB1504
	18	TUB1804
	23	TUB2304
	30	TUB3004
10.0-14.0	12	TUB1205
	15	TUB1505
	18	TUB1805
	23	TUB2305
	30	TUB3005
14.0-22.0	12	TUB1206
	16	TUB1506
	18	TUB1806
	23	TUB2306
	30	TUB3006

Sets

"STARTER KIT" set



Distinctive features:

- set of required marking system elements developed specially for the initial stage of work.

Name	Q-ty, pcs	Code	Description
"STARTER KIT" set	1	001SK/02	starter kit of marking products
Components	1	012A	briefcase for marking products
	10	BL117M00BW	2.3 rail with black 0 digits in white background
	10	BL117M01BW	2.3 rail with black 1 digits in white background
	10	BL117M02BW	2.3 rail with black 2 digits in white background
	10	BL117M03BW	2.3 rail with black 3 digits in white background
	10	BL117M04BW	2.3 rail with black 4 digits in white background
	10	BL117M05BW	2.3 rail with black 5 digits in white background
	10	BL117M06BW	2.3 rail with black 6 digits in white background
	10	BL117M07BW	2.3 rail with black 7 digits in white background
	10	BL117M08BW	2.3 rail with black 8 digits in white background
	10	BL117M09BW	2.3 rail with black 9 digits in white background
	10	BL117MAABW	2.3 rail with black A letters in white background
	10	BL117MBBBW	2.3 rail with black B letters in white background
	10	BL117MCCBW	2.3 rail with black C letters in white background
	10	BL117MDDBW	2.3 rail with black D letters in white background
	10	BL117MEEBW	2.3 rail with black E letters in white background
	10	BL117MFFBW	2.3 rail with black F letters in white background
	10	BL117MGBBW	2.3 rail with black G letters in white background
	10	BL117MHBBW	2.3 rail with black H letters in white background
	10	BL117MIIBW	2.3 rail with black I letters in white background
	10	BL117MJJBW	2.3 rail with black J letters in white background
	10	BL117MKKBW	2.3 rail with black K letters in white background
	10	BL117MLLBW	2.3 rail with black L letters in white background
	10	BL117MMMBW	2.3 rail with black M letters in white background
	10	BL117MNNBW	2.3 rail with black N letters in white background
	10	BL117MPPBW	2.3 rail with black P letters in white background
	10	BL117MQQBW	2.3 rail with black Q letters in white background
	10	BL117MRRBW	2.3 rail with black R letters in white background
	10	BL117MSSBW	2.3 rail with black S letters in white background
	10	BL117MTTBW	2.3 rail with black T letters in white background
	10	BL117MUUBW	2.3 rail with black U letters in white background
	10	BL117MVVBW	2.3 rail with black V letters in white background
	10	BL117MWWBW	2.3 rail with black W letters in white background
	10	BL117MXXBW	2.3 rail with black X letters in white background
	10	BL117MYYBW	2.3 rail with black Y letters in white background
	10	BL117MZZBW	2.3 rail with black Z letters in white background
	10	BL117M10BW	2.3 rail with black "+" symbols in white background
	10	BL117M11BW	2.3 rail with black "-" symbols in white background
	10	BL117M12BW	2.3 rail with black "ground" symbols in white background
	10	BL117M13BW	2.3 rail with black "/" symbols in white background
	10	BL117MOOBW	2.3 rail with black "O" letters in white background
	10	BL117M999B	black 2.3 rail
	10	BL117M999R	red 2.3 rail
	10	BL117M999G	green 2.3 rail
	10	BL117M999Y	yellow 2.3 rail
	10	BL117M999U	blue 2.3 rail
	1000	202/15	transparent marking tubelet, 2-4 mm, with length of 15 mm
	1	T-shirt	T-shirt

"MICRO KIT" set



Distinctive features:

- compact set for convenience of marking system use. All necessary marking elements can be conveniently placed in this set.

Name	Q-ty, pcs	Code	Description
"MICRO KIT" set	1	003A	box for marking products
Components	1	118	pallet for rails
	1	119M/15	lug tool made of metal, working part is 15 mm

"TRASP BOX" briefcase for marking elements



Purpose:

- enhancement of convenience of marking system application. Required marking elements can be compactly located within compact space.

The advantage of the briefcase is that it may house a set of elements for marking of many cables. Briefcase dimensions: 275x150x60 mm

Name	Q-ty, pcs	Code	Description
"TRASP BOX" briefcase	1	012A	briefcase for marking products
Components	1	118	pallet for rails
	1	119M/15	lug tool made of metal, working part is 15 mm
	1	119M/30	lug tool made of metal, working part is 30 mm
	1	120	crotchet tool made of metal

Installation example

Working with the tubelet marking system



Insert rails with symbols into a pallet for rails. Code 188. Once rails with required symbols are inserted marking elements may be removed using the crotchet (codes 199M/15 or 119M/30) depending on the length of a tubelet.



Marking comprised of one or several elements shall be collected by the lug by means of which it shall then be inserted into the upper tubelet cavity.



Once marking elements are inserted into the tubelet cavity the lug shall be removed, and marking elements shall be held inside by slightly pressing the tip of the tubelet with finger at the entry side during removal of the lug.

Marking rings



Purpose:

- making an integral marking inscription on cables.

Material:

- PVC.

Distinctive features:

- flexible and elastic production material (PVC) allows for easy connection of rings.

Symbol	Cable diameter, mm	Symbol color	Base color	Code
0	1.3-2.5	black	yellow	AZO200BY
1	1.3-2.5	black	yellow	AZO201BY
2	1.3-2.5	black	yellow	AZO202BY
3	1.3-2.5	black	yellow	AZO203BY
4	1.3-2.5	black	yellow	AZO204BY
5	1.3-2.5	black	yellow	AZO205BY
6	1.3-2.5	black	yellow	AZO206BY
7	1.3-2.5	black	yellow	AZO207BY
8	1.3-2.5	black	yellow	AZO208BY
9	1.3-2.5	black	yellow	AZO209BY
+	1.3-2.5	black	yellow	AZO210BY
-	1.3-2.5	black	yellow	AZO211BY
ground	1.3-2.5	black	yellow	AZO212BY
/	1.3-2.5	black	yellow	AZO213BY
.	1.3-2.5	black	yellow	AZO214BY
A	1.3-2.5	black	yellow	AZO2AABY
B	1.3-2.5	black	yellow	AZO2BBBY
C	1.3-2.5	black	yellow	AZO2CCBY
D	1.3-2.5	black	yellow	AZO2DDBY
E	1.3-2.5	black	yellow	AZO2EEBY
F	1.3-2.5	black	yellow	AZO2FFBY
G	1.3-2.5	black	yellow	AZO2GGBY
H	1.3-2.5	black	yellow	AZO2HHBY
I	1.3-2.5	black	yellow	AZO2IIBY
J	1.3-2.5	black	yellow	AZO2JJBY
K	1.3-2.5	black	yellow	AZO2KKBY
L	1.3-2.5	black	yellow	AZO2LLBY
M	1.3-2.5	black	yellow	AZO2MMBY
N	1.3-2.5	black	yellow	AZO2NNBY
O	1.3-2.5	black	yellow	AZO2OUBY
P	1.3-2.5	black	yellow	AZO2PPBY
Q	1.3-2.5	black	yellow	AZO2QQBY
R	1.3-2.5	black	yellow	AZO2RRBY
S	1.3-2.5	black	yellow	AZO2SSBY
T	1.3-2.5	black	yellow	AZO2TTBY
U	1.3-2.5	black	yellow	AZO2UUBY
V	1.3-2.5	black	yellow	AZO2VVBY
W	1.3-2.5	black	yellow	AZO2WWBY
X	1.3-2.5	black	yellow	AZO2XXBY
Y	1.3-2.5	black	yellow	AZO2YYBY
Z	1.3-2.5	black	yellow	AZO2ZZBY
0	2.5-4	black	yellow	AZO300BY
1	2.5-4	black	yellow	AZO301BY
2	2.5-4	black	yellow	AZO302BY
3	2.5-4	black	yellow	AZO303BY
4	2.5-4	black	yellow	AZO304BY
5	2.5-4	black	yellow	AZO305BY
6	2.5-4	black	yellow	AZO306BY
7	2.5-4	black	yellow	AZO307BY
8	2.5-4	black	yellow	AZO308BY
9	2.5-4	black	yellow	AZO309BY
+	2.5-4	black	yellow	AZO310BY
-	2.5-4	black	yellow	AZO311BY
ground	2.5-4	black	yellow	AZO312BY
/	2.5-4	black	yellow	AZO313BY
.	2.5-4	black	yellow	AZO314BY
A	2.5-4	black	yellow	AZO3AABY
B	2.5-4	black	yellow	AZO3BBBY
C	2.5-4	black	yellow	AZO3CCBY
D	2.5-4	black	yellow	AZO3DDBY
E	2.5-4	black	yellow	AZO3EEBY
F	2.5-4	black	yellow	AZO3FFBY

Symbol	Cable diameter, mm	Symbol color	Base color	Package, pcs	Code
G	2.5-4	black	yellow	1000	AZO3GGBY
H	2.5-4	black	yellow	1000	AZO3HHBY
I	2.5-4	black	yellow	1000	AZO3IIBY
J	2.5-4	black	yellow	1000	AZO3JJBY
K	2.5-4	black	yellow	1000	AZO3KKBY
L	2.5-4	black	yellow	1000	AZO3LLBY
M	2.5-4	black	yellow	1000	AZO3MMBY
N	2.5-4	black	yellow	1000	AZO3NNBY
O	2.5-4	black	yellow	1000	AZO3OUBY
P	2.5-4	black	yellow	1000	AZO3PPBY
Q	2.5-4	black	yellow	1000	AZO3QQBY
R	2.5-4	black	yellow	1000	AZO3RRBY
S	2.5-4	black	yellow	1000	AZO3SSBY
T	2.5-4	black	yellow	1000	AZO3TTBY
U	2.5-4	black	yellow	1000	AZO3UUBY
V	2.5-4	black	yellow	1000	AZO3VVBY
W	2.5-4	black	yellow	1000	AZO3WWBY
X	2.5-4	black	yellow	1000	AZO3XXBY
Y	2.5-4	black	yellow	1000	AZO3YYBY
Z	2.5-4	black	yellow	1000	AZO3ZZBY
0	4-8	black	yellow	500	AZS400BY
1	4-8	black	yellow	500	AZS401BY
2	4-8	black	yellow	500	AZS402BY
3	4-8	black	yellow	500	AZS403BY
4	4-8	black	yellow	500	AZS404BY
5	4-8	black	yellow	500	AZS405BY
6	4-8	black	yellow	500	AZS406BY
7	4-8	black	yellow	500	AZS407BY
8	4-8	black	yellow	500	AZS408BY
9	4-8	black	yellow	500	AZS409BY
+	4-8	black	yellow	500	AZS410BY
-	4-8	black	yellow	500	AZS411BY
ground	4-8	black	yellow	500	AZS412BY
/	4-8	black	yellow	500	AZS413BY
.	4-8	black	yellow	500	AZS414BY
A	4-8	black	yellow	500	AZS4AABY
B	4-8	black	yellow	500	AZS4BBBY
C	4-8	black	yellow	500	AZS4CCBY
D	4-8	black	yellow	500	AZS4DDBY
E	4-8	black	yellow	500	AZS4EEBY
F	4-8	black	yellow	500	AZS4FFBY
G	4-8	black	yellow	500	AZS4GGBY
H	4-8	black	yellow	500	AZS4HHBY
I	4-8	black	yellow	500	AZS4IIBY
J	4-8	black	yellow	500	AZS4JJBY
K	4-8	black	yellow	500	AZS4KKBY
L	4-8	black	yellow	500	AZS4LLBY
M	4-8	black	yellow	500	AZS4MMBY
N	4-8	black	yellow	500	AZS4NNBY
O	4-8	black	yellow	500	AZS4OUBY
P	4-8	black	yellow	500	AZS4PPBY
Q	4-8	black	yellow	500	AZS4QQBY
R	4-8	black	yellow	500	AZS4RRBY
S	4-8	black	yellow	500	AZS4SSBY
T	4-8	black	yellow	500	AZS4TTBY
U	4-8	black	yellow	500	AZS4UUBY
V	4-8	black	yellow	500	AZS4VVBY
W	4-8	black	yellow	500	AZS4WWBY
X	4-8	black	yellow	500	AZS4XXBY
Y	4-8	black	yellow	500	AZS4YYBY
Z	4-8	black	yellow	500	AZS4ZZBY

Laser printer consumables

Marking tape for printing using a laser printer



Purpose:

- cable identification.

Material:

- PVC;
- has the protective transparent part.

Distinctive features:

- from -10 to +80 °C;
- resistance to gasoline, heptane, fats, kerosene, JP4;
- high resistance to oils, oil-containing products and solvents.

Tape dimension, mm	Inscription field, mm	Package, pcs	Code
12.7x25.4	6.35x12.7	880 (5 A4 sheets)	LB10064
12.7x38.1	10.58x12.7	560 (5 A4 sheets)	LB10264
12.7x63.5	19.05x12.7	320 (5 A4 sheets)	LB10462
25.4x38.1	12.7x25.4	240 (5 A4 sheets)	LB20264
25.4x63.5	19.05x25.4	160 (5 A4 sheets)	LB20462
38.1x63.5	19.05x38.1	100 (5 A4 sheets)	LB20464
25.4x88.9	25.4x25.4	120 (5 A4 sheets)	LB20662
38.1x88.9	25.4x38.1	75 (5 A4 sheets)	LB20664
38.1x279.4	76.2x38.1	25 (5 A4 sheets)	LB20962

Marking tapes for printing using a laser printer



Purpose:

- for A4 size laser printer.

Material:

- polyester.

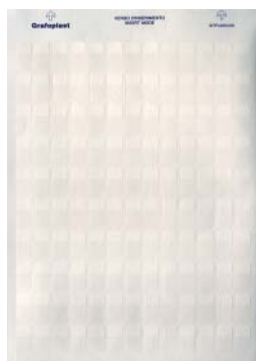
Operating temperature:

- from -40 to +150 °C.

Dimensions, mm	Package, pcs	Code
6x15	3,300 (10 A4 sheets)	SITFP0615*
9x12	2,860 (10 A4 sheets)	SITFP0912*
9x15	2,420 (10 A4 sheets)	SITFP0915*
9x60	660 (10 A4 sheets)	SITFP0960*
10x20	1,680 (10 A4 sheets)	SITFP1020*
27x15	990 (10 A4 sheets)	SITFP2715*
27x27	540 (10 A4 sheets)	SITFP2727*
278x210	10 (10 A4 sheets)	SITFP278210*

* E – gray, M – metallic, W – white, Y – yellow (except SITFP2727)

Self-laminated plates for cable marking for printing using a laser printer



Purpose:

- for A4 size laser printer.

Distinctive features:

- availability of the protective transparent part.

Material:

- polyester.

Operating temperature:

- from -40 to +150 °C.

Plate dimensions, mm	Inscription field, mm	Package, pcs	Code
23x12	12x9.5	1,300 (10 A4 sheets)	SITFL02312*
38x12	12x12	910 (10 A4 sheets)	SITFL03812*
44x20	20x12	480 (10 A4 sheets)	SITFL04420*
62x25	25x18	280 (10 A4 sheets)	SITFL06225*
104x25	25x25	140 (10 A4 sheets)	SITFL10425*
150x25	25x38	70 (10 A4 sheets)	SITFL15025*

* W – white, Y – yellow

Permanent ball-point pens (markers)



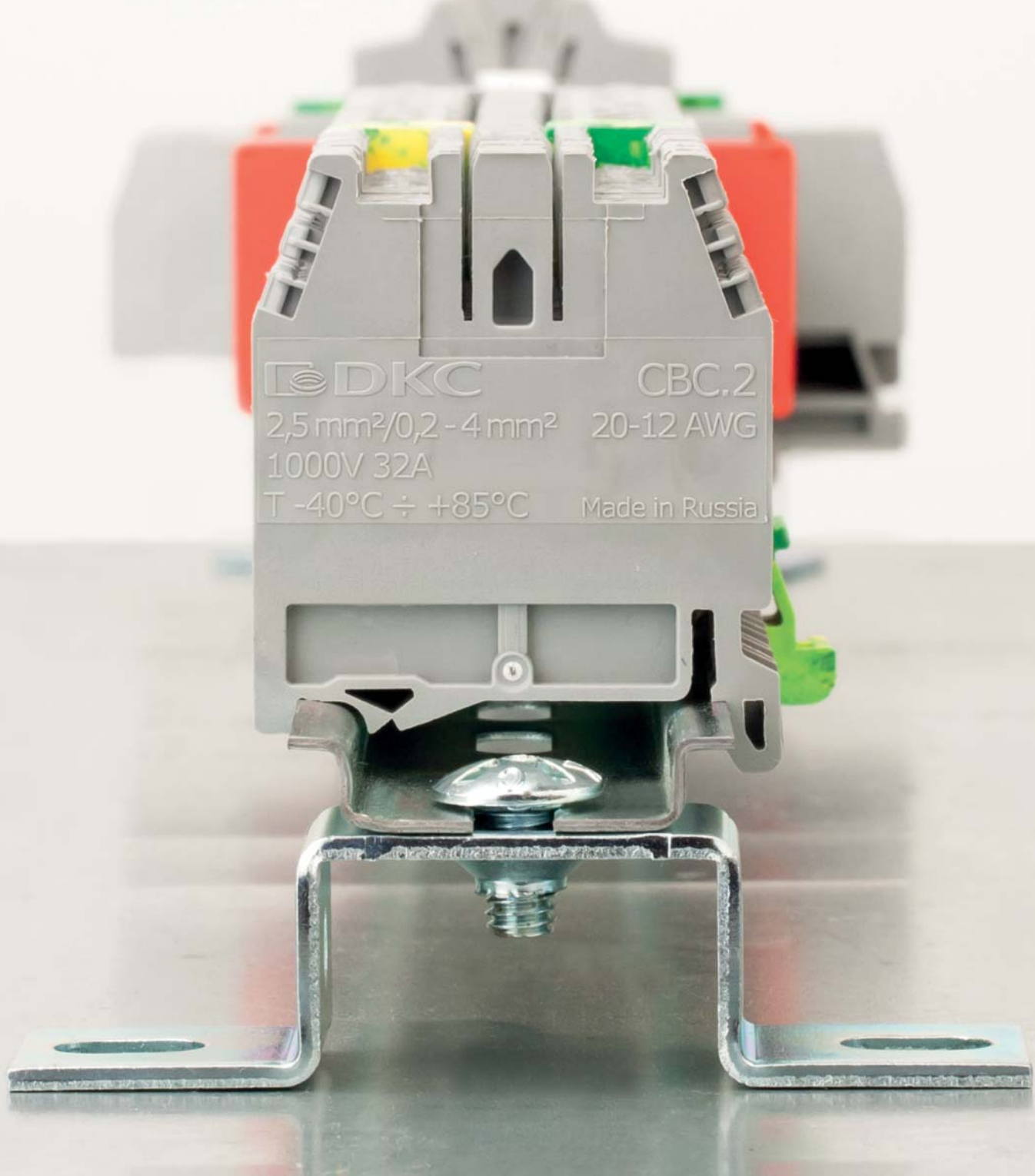
Purpose:

- application of symbols on marking tapes and self-adhesive labels.

Distinctive features:

- water resistance;
- high resistance to UV radiation, black and blue light.

Color	Line thickness, mm	Package, pcs	Code
Black	0.4	5	UP1S
	0.7	5	UP1F
	1	5	UP1M
Red	0.4	5	UP2S
	0.7	5	UP2F
	1	5	UP2M
Blue	0.4	5	UP3S
	0.7	5	UP3F
	1	5	UP3M
Green	0.4	5	UP4S
	0.7	5	UP4F
	1	5	UP4M



Terminal blocks for DIN rails

Screw type terminal blocks.....	358
Spring type terminal blocks.....	397
Insulation displacement blocks	427
Accessories	432

Terminal blocks for DIN rails

Application

The system of terminal blocks and accessories manufactured by DKC is designed for switching of signal and power circuits. Terminal blocks are applied in various branches of industry posing high requirements to reliability of contacts.



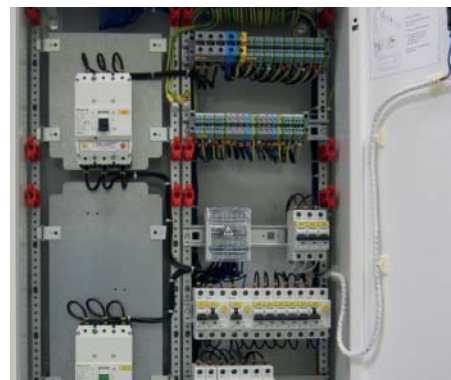
Automation systems

Internal switching in industrial robot control systems



Control systems

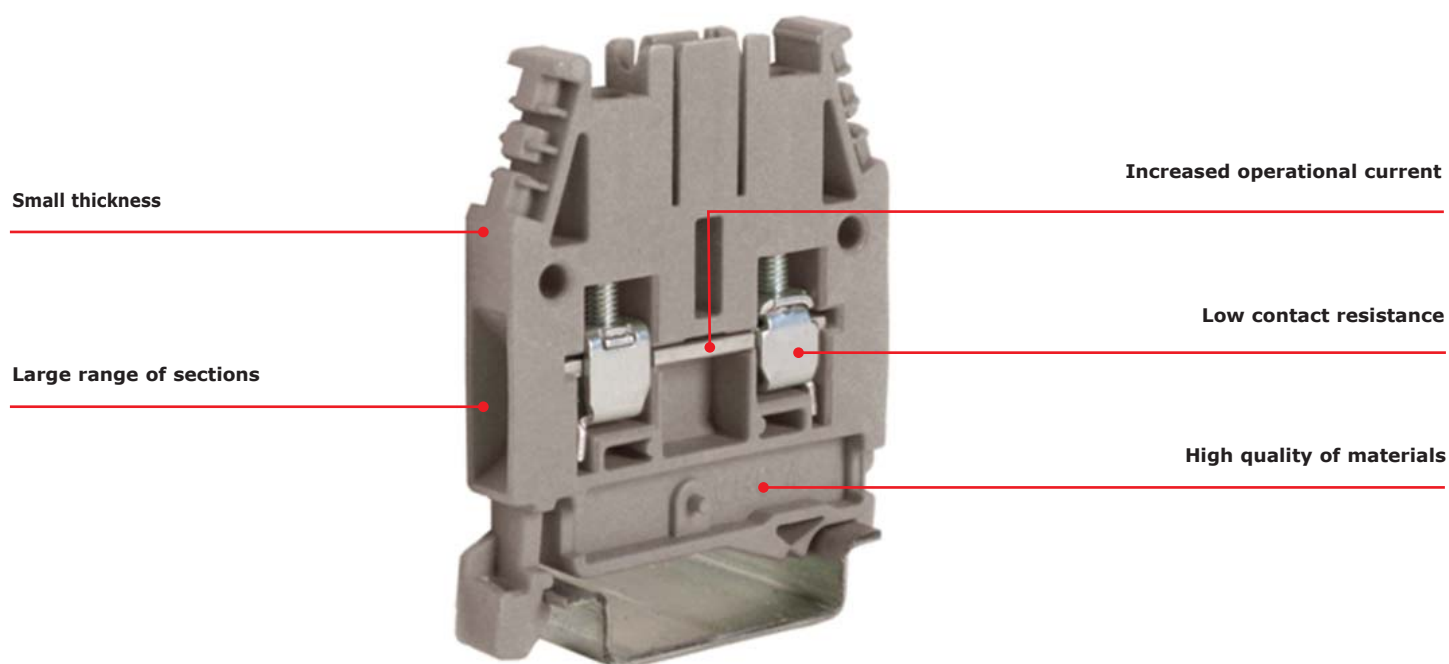
Switching in industrial equipment control enclosures



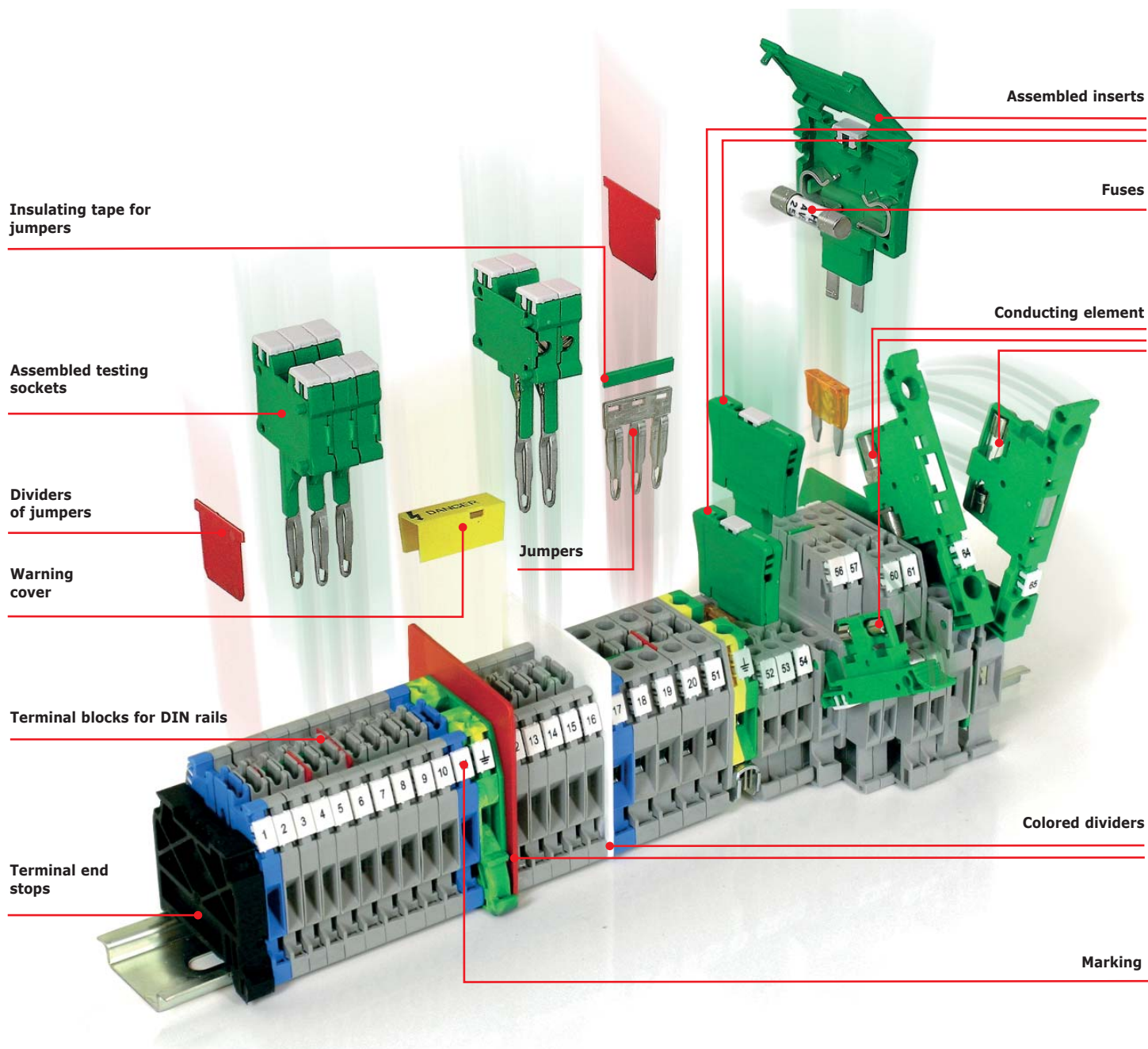
Distribution systems

Switching of power distribution systems

Distinctive features



System composition



The system comprises the following:

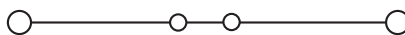
through screw type terminal blocks;
 through spring type terminal blocks;
 terminal blocks with functional elements;
 fuse holders;
 disconnectors.

Through terminal blocks

CBC series



Appearance



Electric diagram

Purpose:

- switching of conductors with section of 0.2 to 50 mm².

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- system of plug-in jumpers.

Characteristics:

- colors are gray, blue.

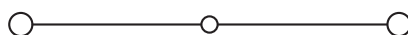
Characteristics	Values
Rated voltage, V	1000
Rated impulse voltage Uimp, kV	12
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5	4	6	10	16	35
Terminal block type		CBC.2	CBC.4	CBC.6	CBC.10	CBC.16	CBC.35
Terminal block code	gray	ZCBC02GR	ZCBC04GR	ZCBC06GR	ZCBC10GR	ZCBC16GR	ZCBC35GR
	blue	ZCBI02	ZCBI04	ZCBI06	ZCBI10	ZCBI16	ZCBI35
Section range, mm ²	1 conductor	0.2-4	0.2-6	0.2-10	1.5-16	1.5-25	2.5-50
	2 conductors with the same section	0.2-1.5	0.2-1.5	0.2-2.5	1.5-4	1-6	2-16
	1 conductor with a lug	0.2-2.5	0.2-4	0.2-6	1.5-10	1-16	2-35
	2 conductors in a double lug	0.5-1.5	0.5-2.5	0.5-4	1.5-6	1-10	2-16
Rated current, A		32	41	57	76	101	150
Maximum current, A		37	45	64	85	114	160
Jumper current, A		24	32	41	57	76	125
Dimensions after installation on DIN rail, mm		OMEGA 3: 52x44x5	OMEGA 3: 52x44x6	OMEGA 3: 52x44x8	OMEGA 3: 52x44x10	OMEGA 3: 56x47x12	OMEGA 3: 63x56x16
Accessories							
End insulator	gray	ZCB061GR	ZCB061GR	ZCB061GR	ZCB061GR	ZCB161GR	ZCB351GR
	blue	ZCBI061	ZCBI061	ZCBI061	ZCBI061	ZCBI161	ZCBI351
Non-insulated jumpers	2 poles	ZPTC0202	ZPTC0402	ZPTC0602	ZPTC1002	ZPOF53	ZPOF06
	3 poles	ZPTC0203	ZPTC0403	ZPTC0603	ZPTC1003	-	-
	5 poles	ZPTC0205	ZPTC0405	ZPTC0605	ZPTC1005	-	-
	10 poles	ZPTC0210	ZPTC0410	ZPTC0610	ZPTC1010	-	-
	X poles	ZPTC0200 (50 poles)	ZPTC0400 (42 poles)	ZPTC0600 (31 poles)	ZPTC1000 (25 poles)	ZPMP05 – jumper for 21 poles ZCPM53 – screw	ZPMP06 – jumper for 16 poles ZCPM06 – screw
Jumper marking		ZPTC0990	ZPTC0990	ZPTC0990	ZPTC0990	-	-
Insulated jumpers (red)	2 poles	ZPTP0202R	ZPTP0402R	-	-	-	-
	3 poles	ZPTP0203R	ZPTP0403R	-	-	-	-
	5 poles	ZPTP0205R	ZPTP0405R	-	-	-	-
	10 poles	ZPTP0210R	ZPTP0410R	-	-	-	-
	30 poles	ZPTP0230R	ZPTP0430R	-	-	-	-
Insulating dividers for jumpers	for insulation of 1 jumper	ZDF800	ZDF800	ZDF800	ZDF800	-	-
	for insulation of 2 jumpers	ZDF900	ZDF900	ZDF900	ZDF900	ZDF700	ZDF700
Divider		ZDU04R	ZDU04R	ZDU04R	ZDU04R	ZDU06R	ZDU06R
Tracing probe		ZDC005	ZDC006	-	-	ZDD002	ZDD002
Testing socket		-	-	-	-	ZPD002	ZPD015
Marking (page 441)		CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61
DIN rail		02135	02135	02135	02135	02135	02135
Screwdriver		ZCCH02	ZCCH02	ZCCH02	ZCCH02	-	-

CBD series



Appearance



Electric diagram

Purpose:

- switching of conductors with section of 0.5 to 95 mm².

Distinctive features:

- system of screw type jumpers;
- universal attachment on rails of OMEGA and G types;
- reduced sizes;
- low transient resistance.

Characteristics:

- colors are beige, blue.

Characteristics	Values
Rated voltage, V	800
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5	4	6	10	16	35	50	70
Terminal block type		CBD.2	CBD.4	CBD.6	CBD.10	CBD.16	CBD.35	CBD.50	CBD.70
Terminal block code	beige	ZCB110	ZCB240	ZCB340	ZCB440	ZCB510	ZCB610	ZCB710	ZCB810
	blue	ZCBX12	ZCBX24	ZCBX34	ZCBX45	ZCBX52	ZCBX62	ZCBX72	ZCBX82
Section range, mm ²	1 conductor	0.5-4	0.5-6	0.5-10	0.5-16	0.5-25	0.5-50	1.5-70	1.5-95
	2 conductors with the same section	0.5-1.5	0.5-1.5	0.5-2.5	1-4	1-6	2-16	2-16	2-25
	1 conductor with a lug	0.5-2.5	0.5-4	0.5-6	0.5-10	0.5-16	0.5-35	1-50	2-70
	2 conductors in a double lug	0.5-1.5	0.5-2.5	0.5-4	1.5-6	1-10	2-16	-	-
Rated current, A		24	32	41	57	76	125	150	192
Jumper current, A		24	32	41	57	76	125	150	192
Dimensions after installation on DIN rail, mm		OMEGA 3: 47x40.5x5.5 G1: 51x40.5x5.5	OMEGA 3: 52x44x6.5 G1: 56x44x6.5	OMEGA 3: 52x44x8 G1: 56x44x8	OMEGA 3: 52x44x10 G1: 59x44x10	OMEGA 3: 57x47x12 G1: 61x47x12	OMEGA 3: 60x52x16 G1: 64x52x16	OMEGA 3: 62x57x18 G1: 66x57x18	OMEGA 3: 71x62x20.5 G1: 75x62x20.5

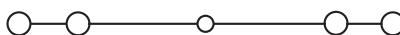
Accessories

End insulator	beige	ZCB111	ZCB241	ZCB241	ZCB431	ZCB511	ZCB611	ZCB711	ZCB811
	blue	ZCBX13	ZCBX25	ZCBX25	ZCBX44	ZCBX53	ZCBX63	ZCBX73	ZCBX83
Non-insulated jumpers	2 poles	ZPM202	ZPM402	ZPM602	ZPM102	ZPOF44	ZPOF06	ZPOF07	ZPOF08
	3 poles	ZPM203	ZPM403	ZPM603	ZPM103	-	-	-	-
	5 poles	ZPM205	ZPM405	ZPM605	ZPM105	-	-	-	-
	10 poles	ZPM210	ZPM400	ZPM610	ZPM100	-	-	-	-
	X poles	ZPMP01 – jumper for 45 poles ZCPM21 – screw	ZPMP42 – jumper for 38 poles ZCPM12 – screw	ZPMP13 – jumper for 31 poles ZCPM83 – screw	ZPMP04 – jumper for 25 poles ZCPM03 – screw	ZPMP05 – jumper for 21 poles ZCPM44 – screw	ZPMP06 – jumper for 16 poles ZCPM06 – screw	ZPMP07 – jumper for 14 poles ZCPM07 – screw	ZPMP08 – jumper for 12 poles ZCPM08 – screw
Releasable jumper (2 poles)		ZPOS11	ZPOS42	ZPOS93	ZPOS44	ZPOS44	ZPOS66	ZPOS07	ZPOS08
Protective cover for jumpers		ZPRP06	ZPRP06	ZPRP07	ZPRP07	ZPRP07	ZPRP08	ZPRP08	ZPRP08
Insulating divider for jumpers		ZDF600	ZDF600	ZDF600	ZDF700	ZDF700	ZDF700	ZDF700	ZDF700
Divider		ZDU01R	ZDU04R	ZDU04R	ZDU04R	ZDU04R	ZDU05R	ZDU05R	ZDU06R
Tracing probe		ZDD001	ZDD001	ZDD001	ZDD002	ZDD002	ZDD002	ZDD002	ZDD002
Testing socket		ZPD004	ZPD001	ZPD013	ZPD002	ZPD002	ZPD002	ZPD003	ZPD003
Marking (page 441)		CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61
DIN rail		02135 02120	02135 02120	02135 02120	02135 02120	02135 02120	02135 02120	02135 02120	02135 02120
Screwdriver		ZCCH02	ZCCH02	ZCCH02	ZCCH02	-	-	-	-

CBR series



Appearance



Electric diagram

Purpose:

- switching of conductors with section of 0.2 to 4 mm².

Installation conditions:

- attachment on rails of OMEGA and G types.

Distinctive features:

- "2 inputs" – "2 outputs".

Characteristics:

- colors are gray, beige.

Characteristics	Values
Rated voltage, V	500
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Operating temperature, °C	from –40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

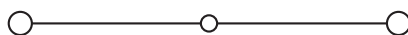
Nominal section, mm ²		2.5
Terminal block type		CBR.2
Terminal block code	gray	ZCR110GR
	beige	ZCR110
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24
Jumper current, A		24
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 52x43x5 G: 56x43x5

Accessories		
End insulator	gray	ZCR111GR
	beige	ZCR111
Non-insulated jumpers	2 poles	ZPM252
	3 poles	ZPM253
	5 poles	ZPM255
	10 poles	ZPM250
	X poles	ZPMP25 – jumper for 50 poles ZCPM25 – screw
Protective cover for jumpers		ZPRP05R
Divider		ZDU04R
Tracing probe		ZDD001
Testing socket		ZPD011
Marking (page 441)		CNU/08/51 CNU/08/61
DIN rail		02135 02120
Screwdriver		ZCCH02

Terminal miniblocks



Appearance



Electric diagram

Purpose:

- switching of conductors with section of 0.2 to 6 mm².

Installation conditions:

- attachment on a rail of OMEGA 2F type.

Distinctive features:

- small sizes.

Characteristics:

- colors are gray, blue.

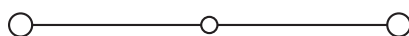
Characteristics	Values
Rated voltage, V	500
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		1.5	2.5	4
Terminal block type		RN.1	RN.2	RP.4
Terminal block code	gray	ZRN300GR	ZRN500GR	ZRP300GR
	blue	ZRN400	ZRN510	ZRP400
Section range, mm ²	1 conductor	0.2-2.5	0.2-4	0.2-6
	2 conductors with the same section	0.2-0.75	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-1.5	0.2-2.5	0.2-4
	2 conductors in a double lug	0.2-0.75	0.5-1.5	0.2-2.5
Rated current, A		17.5	24	32
Jumper current, A		17.5	24	32
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 2F: 32x27x4.2	OMEGA 2F: 32x27x5	OMEGA 2F: 35x31x6
Accessories				
End insulator	gray	ZRF101GR	ZRF101GR	ZRP301GR
	blue	ZRF201	ZRF201	ZRP401
Non-insulated jumpers	2 poles	ZPM112	ZPM122	ZPM412
	3 poles	ZPM113	ZPM123	ZPM513
	5 poles	ZPM115	ZPM125	ZPM515
	10 poles	ZPM110	ZPM120	ZPM510
	X poles	ZPMP16 – jumper for 59 poles ZCPM16 – screw	ZPMP25 – jumper for 50 poles ZCPM16 – screw	ZPMP58 – jumper for 42 poles ZCPM01 – screw
Protective cover for jumpers		ZPRP06	ZPRP06	ZPRP06
Divider		ZDFP2R	ZDFP2R	ZDFP2R
Tracing probe		ZDD001	ZDD001	ZDD001
Testing socket		ZPD011	ZPD001	ZPD001
Marking (page 441)		ZSN008	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61
DIN rail		02130	02130	02130
Screwdriver		ZCCH02	ZCCH02	ZCCH02

GPA series



Appearance



Electric diagram

Purpose:

- switching of power mains with conductors with section of 50 to 300 mm².

Installation conditions:

- on a rail of OMEGA type;
- on a rail of G type;
- on a mounting plate.

Distinctive features:

- do not require an additional end insulator;
- system of screw type jumpers.

Characteristics:

- colors are gray, beige, blue.

Characteristics	Values
Rated voltage, V	1000
Rated impulse voltage Uimp, kV	12
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

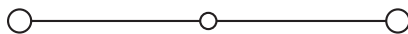
Nominal section, mm ²		70		95		150		240	
Installation type		on a DIN rail	on a mounting plate	on a DIN rail	on a mounting plate	on a DIN rail	on a mounting plate	on a DIN rail	on a mounting plate
Terminal block type		GPA.70	GPA.70/FIX	GPA.95	GPA.95/FIX	GPA.150	GPA.150/FIX	GPA.240	GPA.240/FIX
Terminal block code	gray	ZGA400GR	ZGF400GR	ZGA100GR	ZGF100GR	ZGA200GR	ZGF200GR	ZGA300GR	ZGF300GR
	beige	ZGA400	ZGF400	ZGA100	ZGF100	ZGA200	ZGF200	ZGA300	ZGF300
	blue	ZGA410	-	ZGA110	-	-	-	-	-
Section range, mm ²	1 conductor	10-95	10-95	10-120	10-120	50-185	50-185	50-300	50-300
	2 conductors with the same section	10-25	10-25	10-35	10-35	35-50	35-50	35-90	35-90
	1 conductor with a lug	10-70	10-70	10-95	10-95	50-150	50-150	50-240	50-240
Rated current, A		192	192	232	232	309	309	415	415
Jumper current, A		192	-	-	-	-	-	-	-
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3A: 78x91x20.5 G1: 75x91x20.5	75x102x20.5	OMEGA 3A: 95x98x26 G1: 91x98x26	91x111x26	OMEGA 3: 107x108x31 G1: 103x108x31	94x122x31	OMEGA 3A: 128x119x37 G1: 124x119x37	115x134x37
Accessories									
End insulator	gray	-	-	-	-	-	-	-	-
	beige	-	-	-	-	-	-	-	-
Non-insulated jumpers	2 poles	ZPOF70	ZPOF70	-	-	-	-	-	-
	3 poles	-	-	-	-	-	-	-	-
	5 poles	-	-	-	-	-	-	-	-
	10 poles	-	-	-	-	-	-	-	-
	X poles	ZPMP08 – jumper for 12 poles ZCPM70 – screw	ZPMP08 – jumper for 12 poles ZCPM70 – screw	-	-	-	-	-	-
Protective cover for jumpers		ZPRP08	ZPRP08R	-	-	-	-	-	-
Divider		ZDU07R	ZDU07R	-	-	-	-	-	-
Tracing probe		ZDD002	ZDD002	-	-	-	-	-	-
Testing socket		ZPD003	ZPD003	-	-	-	-	-	-
Marking (page 441)		CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61
DIN rail		02145 02120	-	02145 02120	-	02145 02120	-	02145 02120	-
Screwdriver		-	-	-	-	-	-	-	-

GPM series



"For a bolt"

Appearance



Electric diagram

Purpose:

- switching of power mains with conductors with section of 95 to 300 mm².

Installation conditions:

- on a rail of OMEGA type;
- on a rail of G type;
- on a mounting plate.

Distinctive features:

- do not require an additional end insulator;
- it is possible to connect a bus or a cable;
- with a bolt lug;
- system of screw type jumpers.

Characteristics:

- color is beige.

Characteristics	Values
Rated voltage, V	1000
Rated impulse voltage Uimp, kV	12
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass
IP level	IPXXB

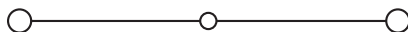
Nominal section, mm ²	95		150		240	
Installation type	on a DIN rail	on a mounting plate	on a DIN rail	on a mounting plate	on a DIN rail	on a mounting plate
Terminal block type	GPM.95/BB	GPM.95/BB/FIX	GPM.150/BB	GPM.150/BB/FIX	GPM.240/BB	GPM.240/BB/FIX
Terminal block code beige	ZGP100	ZGP110	ZGP400	ZGP410	ZGP700	ZGP710
Connection point parameters	Aperture width is 22 mm Bolt is M8	Aperture width is 22 mm Bolt is M8	Aperture width is 32 mm Bolt is M10	Aperture width is 32 mm Bolt is M10	Aperture width is 40 mm Bolt is M12	Aperture width is 40 mm Bolt is M12
Rated current, A	269	269	353	353	452	452
Dimensions after installation on DIN rail, mm Height x Length x Thickness	OMEGA 3: 81x176x32 G1: 85x176x32	76x176x32	OMEGA 3: 81x200x42 G1: 85x200x42	76x200x42	OMEGA 3: 89x250x52 G1: 93x250x52	84x250x52
Accessories						
End insulator	gray	-	-	-	-	-
	beige	-	-	-	-	-
Non-insulated jumpers	2 poles	ZPO952	ZPO952	ZPO152	ZPO152	ZPO242
	3 poles	ZPO953	ZPO953	ZPO153	ZPO153	ZPO243
	5 poles	-	-	-	-	-
	10 poles	-	-	-	-	-
	X poles	-	-	-	-	-
Protective cover for jumpers	-	-	-	-	-	-
Divider	-	-	-	-	-	-
Tracing probe	-	-	-	-	-	-
Testing socket	-	-	-	-	-	-
Marking (page 441)	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61
DIN rail	02145 02120	-	02145 02120	-	02145 02120	-
Screwdriver	-	-	-	-	-	-

GPM series



"For a liner"

Appearance



Electric diagram

Purpose:

- switching of power mains with conductors with section of 95 to 300 mm².

Installation conditions:

- on a rail of OMEGA type;
- on a rail of G type;
- on a mounting plate.

Distinctive features:

- do not require an additional end insulator;
- system of screw type jumpers.

Characteristics:

- available in beige color.

Characteristics	Values
Rated voltage, V	1000
Rated impulse voltage Uimp, kV	12
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass
IP level	IPXXB

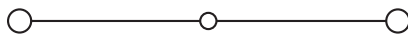
Nominal section, mm²		95		150		240	
Installation type		on a DIN rail	on a mounting plate	on a DIN rail	on a mounting plate	on a DIN rail	on a mounting plate
Terminal block type		GPM.95/CC	GPM.95/CC/FIX	GPM.150/CC	GPM.150/CC/FIX	GPM.240/CC	GPM.240/CC/FIX
Terminal block code	beige	ZGP300	ZGP310	ZGP600	ZGP610	ZGP900	ZGP910
Connection point parameters		35-120 – flexible wire 25-120 – rigid wire		50-185 – flexible wire 35-185 – rigid wire		95-300 – flexible wire 95-300 – rigid wire	
Rated current, A		269	269	353	353	452	452
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 113x140x32 G1: 117x140x32	108x173x32	OMEGA 3: 134x140x42 G1: 138x140x42	129x173x42	OMEGA 3: 150x154x52 G1: 154x154x52	144x187x52

Accessories							
End insulator	gray	-	-	-	-	-	-
	beige	-	-	-	-	-	-
Non-insulated jumpers	2 poles	ZPO952	ZPO952	ZPO152	ZPO152	ZPO242	ZPO242
	3 poles	ZPO953	ZPO953	ZPO153	ZPO153	ZPO243	ZPO243
	5 poles	-	-	-	-	-	-
	10 poles	-	-	-	-	-	-
	X poles	-	-	-	-	-	-
Protective cover for jumpers		-	-	-	-	-	-
Divider		-	-	-	-	-	-
Tracing probe		-	-	-	-	-	-
Testing socket		-	-	-	-	-	-
Marking (page 441)		CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61
DIN rail		02145 02120	-	02145 02120	-	02145 02120	-
Screwdriver		-	-	-	-	-	-

GPM series



Combined terminal block
"Liner - bolt"
Appearance



Electric diagram

Purpose:

- switching of power mains with conductors with section of 95 to 300 mm².

Installation conditions:

- on a rail of OMEGA type;
- on a rail of G type;
- on a mounting plate.

Distinctive features:

- do not require an additional end insulator;
- it is possible to connect a bus or a cable with a bolt lug;
- system of screw type jumpers.

Characteristics:

- available in beige color.

Characteristics	Values
Rated voltage, V	1000
Rated impulse voltage Uimp, kV	12
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass
IP level	IPXXB

Nominal section, mm ²		95		150		240	
Installation type		on a DIN rail	on a mounting plate	on a DIN rail	on a mounting plate	on a DIN rail	on a mounting plate
Terminal block type		GPM.95/BC	GPM.95/BC/FIX	GPM.150/BC	GPM.150/BC/FIX	GPM.240/BC	GPM.240/BC/FIX
Terminal block code	beige	ZGP200	ZGP210	ZGP500	ZGP510	ZGP800	ZGP810
Connection point parameters		Aperture width is 22 mm Bolt is M8		Aperture width is 32 mm Bolt is M10		Aperture width is 40 mm Bolt is M12	
		35-120 – flexible wire 25-120 – rigid wire		50-185 – flexible wire 35-185 – rigid wire		95-300 – flexible wire 95-300 – rigid wire	
Rated current, A		269	269	353	353	452	452
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 113x158x32 G1: 117x158x32	108x176x32	OMEGA 3: 134x170x42 G1: 138x170x42	129x187x42	OMEGA 3: 150x202x52 G1: 154x202x52	144x219x52
Accessories							
End insulator	gray	-	-	-	-	-	-
	beige	-	-	-	-	-	-
Non-insulated jumpers	2 poles	ZPO952	ZPO952	ZPO152	ZPO152	ZPO242	ZPO242
	3 poles	ZPO953	ZPO953	ZPO153	ZPO153	ZPO243	ZPO243
	5 poles	-	-	-	-	-	-
	10 poles	-	-	-	-	-	-
	X poles	-	-	-	-	-	-
Protective cover for jumpers		-	-	-	-	-	-
Divider		-	-	-	-	-	-
Tracing probe		-	-	-	-	-	-
Testing socket		-	-	-	-	-	-
Marking (page 441)		CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61
DIN rail		02145 02120	-	02145 02120	-	02145 02120	-
Screwdriver		-	-	-	-	-	-

ACB series



Appearance



Electric diagram

Purpose:

- switching of power mains with conductors with section of 6 to 185 mm².

Installation conditions:

- attachment on a rail of G type.

Distinctive features:

- reduced-weight design;
- it is possible to connect non-terminated cables using an additional retainer;
- it is required to use dividers and protective covers for the purpose of safety;
- cross connection is not provided.

Characteristics:

- available in beige color.

Characteristics	Values
Rated voltage, V	800
Rated impulse voltage Uimp, kV	8
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

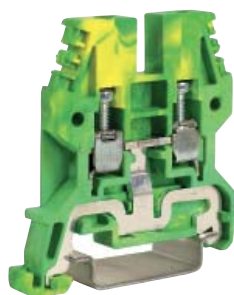
Nominal section, mm ²	70	120	185
Terminal block type	ACB.70/BB	ACB.120/BB	ACB.185/BB
Terminal block code	ZAC100	ZAC400	ZAC700
Connection point parameters	M6	M8	M12
Rated current, A	192	269	353
Dimensions after installation on DIN rail, mm Height x Length x Thickness	G1: 45x90x35	G1: 46x100x35	G1: 47x120x35
Accessories			
Protective cover	ZPRT01 (*) ZPRT03 (**)	ZPRT01 (*) ZPRT03 (**)	ZPRT01 (*) ZPRT03 (**)
Divider/cover holder	ZSPS01	ZSPS01	ZSPS03
Terminal end stop	ZBT005	ZBT005	ZBT005
Marking (page 441)	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61
DIN rail	02120	02120	02120

* When laying a conductor parallel to the mounting plane

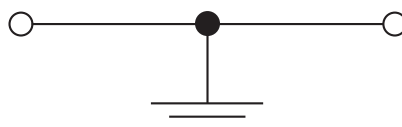
** When laying a cable perpendicularly to the mounting plane from the side of a DIN rail

Terminal blocks for grounding

TEO, TEC series



Appearance



Electric diagram

Purpose:

- connection of ground loops.

Installation conditions:

- attachment on rails of OMEGA and G types.

Characteristics	Values
Maximum voltage, kV	12
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm²		2.5	4		6		10		16		35		70	
Terminal block type		TEO.2	TEO.4	TED.4	TEC.6/O	TED.6/D	TEC.10/O	TEC.10/D	TEC.16/O	TEC.16/D	TEC.35/O	TEC.35/D	TEC.70/O	TEC.70/D
DIN rail type		OMEGA	OMEGA	G	OMEGA	G	OMEGA	G	OMEGA	G	OMEGA	G	OMEGA	G
Terminal block code		ZTO910	ZTO430	ZTE400	ZTO120	ZTE120	ZTO510	ZTE510	ZTO220	ZTE220	ZTO320	ZTE320	ZTO810	ZTE820
Section range, mm²	1 conductor	0.2-4	0.2-6		0.2-10		1.5-16		1.5-25		2.5-50		1.5-95	
	2 conductors with the same section	0.2-1.5	0.2-1.5		0.2-2.5		1.5-4		1-6		2-16		2-25	
	1 conductor with a lug	0.2-2.5	0.2-4		0.2-6		1.5-10		1-16		2-35		2-70	
	2 conductors in a double lug	0.5-1.5	0.5-2.5		0.5-4		1.5-6		1-10		2-16		-	
Dimensions after installation on DIN rail, mm Height x Length x Thickness		47x50x 5.5	52x50x 6.5	56x50x 6.5	52x44x 8	53x44x 8	52x44x 10	53x44x 10	56x47x 12	57x47x 12	63x56x 16	64x56x 16	74x70x 20.5	75x70x 20.5
Accessories														
End insulator		ZTO911	ZTO431	ZTO431	Built into a terminal block									
Terminal end stop		ZBT007	ZBT007	ZBT005	ZBT007	ZBT005	ZBT007	ZBT005	ZBT003	ZBT005	ZBT003	ZBT005	ZBT003	ZBT005
Marking (page 441)		CNU/08/51 CNU/08/61												
DIN rail		02135	02135	02120	02135	02120	02135	02120	02135	02120	02135	02120	02135	02120
Screwdriver		ZCCH02	ZCCH02	ZCCH02	ZCCH02	ZCCH02	-	-	-	-	-	-	-	-

DIN rail capacity

Rail type	Rail material	Equivalent copper conductor section, mm ²	Maximum short-circuit current (1 s, kA)
OMEGA 2F	steel	10	1.2
	copper	25	3
	aluminium	16	1.92
G1/G1F	steel	35	4.2
	copper	120	14.4
	aluminium	70	8.4
OMEGA 3/OMEGA 3F	steel	16	1.92
	copper	50	6
	aluminium	35	4.2
OMEGA 3A/OMEGA 3AF	steel	50	6
	copper	150	18
	aluminium	95	11.4

CBE series



Appearance



Electric diagram

- Purpose:**
- connection of ground loops.
- Installation conditions:**
- attachment on rails of OMEGA and G types.

Characteristics	Values
Maximum voltage, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm²		2.5
Terminal block type		CBE.2
Terminal block code		ZCE110
Section range, mm²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 52x50x5.5 G1: 56x50x5.5

Accessories	
End insulator	ZCR111
Terminal end stop	ZBT007
Marking (page 441)	CNU/08/51 CNU/08/61
DIN rail	02135 02120
Screwdriver	ZCCH02

Grounding terminal miniblocks



Appearance



Electric diagram

Purpose:

- connection of ground loops.

Installation conditions:

- attachment on rails of OMEGA 2F type.

Characteristics	Values
Maximum voltage, kV	6
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

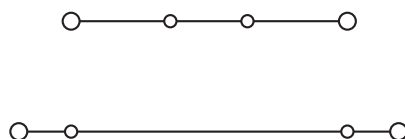
Nominal section, mm ²		2.5	4
Terminal block type		TR.2	TR.4
Terminal block code		ZTR110	ZTR200
Section range, mm ²	1 conductor	0.2-4	0.2-6
	2 conductors with the same section	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-2.5	0.2-4
	2 conductors in a double lug	0.5-1.5	0.2-2.5
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 2F: 32x27x5	OMEGA 2F: 35x35x7.3
Accessories			
End insulator		ZTR111	built into a terminal block
Terminal end stop		ZBT006	ZBT006
Marking (page 441)		CNU/08/51 CNU/08/61	
Divider		ZDFP2R	ZDFP2R
DIN rail		02130	02130
Screwdriver		ZCCH02	ZCCH02

Multilevel through terminal blocks

Two-level



Appearance



Electric diagram

Purpose:

- multilevel switching of low current circuits.

Installation conditions:

- attachment on rails of OMEGA type.

Distinctive features:

- system of plug-in jumpers.

Characteristics:

- colors: gray, beige, blue.

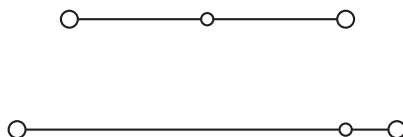
Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5	4
Terminal block type		DBC.2	DBC.4
Terminal block code	gray	ZDB100GR	ZDB400GR
	beige	ZDB100	-
	blue	ZDB200	ZDB500
Section range, mm ²	1 conductor	0.2-4	0.2-6
	2 conductors with the same section	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-2.5	0.2-4
	2 conductors in a double lug	0.5-1.5	0.5-2.5
Rated current, A		24	32
Maximum current, A		34	-
Jumper current, A		24	32
Dimensions after installation, mm		OMEGA 3:	OMEGA 3:
Height x Length x Thickness		66x70x5	66x70x6
Accessories			
End insulator	gray	ZDB101GR	ZDB401GR
	beige	ZDB101	-
	blue	ZDB201	ZDB402
Non-insulated jumpers	2 poles	ZPTC0202	ZPTC0402
	3 poles	ZPTC0203	ZPTC0403
	5 poles	ZPTC0205	ZPTC0405
	10 poles	ZPTC0210	ZPTC0410
	X poles	ZPTC0200 (50 poles)	ZPTC0400 (42 poles)
Jumper marking		ZPTC0990	ZPTC0990
Insulating dividers for upper level jumpers	for insulation of 1 jumper	ZDF800	ZDF800
	for insulation of 2 jumpers	ZDF900	ZDF900
Insulating divider for lower level jumpers		ZDF500	ZDF500
Divider		ZDU07R	ZDU07R
Tracing probe		ZDC005	ZDC005
Marking (page 441)		CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61

Two-level



Appearance



Electric diagram

Purpose:

- multilevel switching of low current circuits.

Installation conditions:

- attachment on rails of OMEGA and G types.

Distinctive features:

- internal level bridging is possible;
- system of jumpers: plug-in ones for DBC terminal blocks, screw type ones for DAS terminal blocks.

Characteristics:

- colors are gray, beige, blue.

Characteristics		Values
Rated voltage, V		630
Rated impulse voltage Uimp, kV		8
Flammability classification		V0
Operating temperature, °C		from -40 to +80
Enclosure material		polyamide
Material of current-carrying elements		Nickel-plated brass

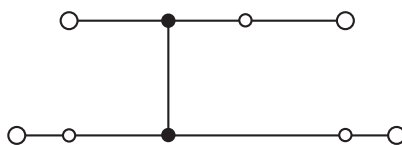
Nominal section, mm ²		4
Terminal block type		DAS.4
Terminal block code	gray	ZDS100GR
	beige	ZDS100
	blue	ZDS200
Section range, mm ²	1 conductor	0.2-6
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-4
	2 conductors in a double lug	0.5-2.5
Rated current, A		32
Jumper current, A		32
Dimensions after installation, mm		OMEGA 3: 62x64x6
Height x Length x Thickness		G1: 66x64x6

Accessories		
End insulator	gray	ZDS101GR
	beige	ZDS101
	blue	ZDS201
Non-insulated jumpers	2 poles	ZPM412
	3 poles	ZPM513
	5 poles	ZPM515
	10 poles	ZPM510
	42 poles	ZPMP58 – jumper ZCPM01 – screws
Releasable jumper		ZPOS43
Testing socket		ZPD001
Tracing probe		ZDD001
Level bridging shunt		ZDS107
Level bridging shunt capable of bridging of terminal blocks		ZDS108
Protective cover for jumpers		ZPRP05
Divider		ZDU07R
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT005 ZBT007
DIN rail		02135 02120
Screwdriver		ZCCH02

Two-level with bridging



Appearance



Electric diagram

Purpose:

- multilevel switching of low current circuits.

Installation conditions:

- attachment on rails of OMEGA type.

Distinctive features:

- internal level bridging is possible;
- system of plug-in jumpers.

Characteristics:

- colors: gray, beige.

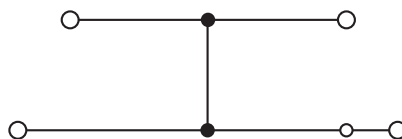
Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5	4
Terminal block type		DBC.2/CI	DBC.4/CI
Terminal block code	gray	ZDB117GR	ZDB417GR
	beige	ZDB1117	-
	blue		ZDB517
Section range, mm ²	1 conductor	0.2-4	0.2-6
	2 conductors with the same section	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-2.5	0.2-4
	2 conductors in a double lug	0.5-1.5	0.5-2.5
Rated current, A		24	32
Maximum current, A		34	-
Jumper current, A		24	32
Dimensions after installation, mm		OMEGA 3:	OMEGA 3:
Height x Length x Thickness		66x70x5	66x70x6
Accessories			
End insulator	gray	ZDB101GR	ZDB401GR
	beige	ZDB101	-
	blue	-	ZDB402
Non-insulated jumpers	2 poles	ZPTC0202	ZPTC0402
	3 poles	ZPTC0203	ZPTC0403
	5 poles	ZPTC0205	ZPTC0405
	10 poles	ZPTC0210	ZPTC0410
	X poles	ZPTC0200 (50 poles)	ZPTC0400 (42 poles)
Jumper marking		ZPTC0990	ZPTC0990
Insulating dividers for upper level jumpers	for insulation of 1 jumper	ZDF800	ZDF800
	for insulation of 2 jumpers	ZDF900	ZDF900
Insulating divider for lower level jumpers		ZDF500	ZDF500
Divider		ZDU07R	ZDU07R
Tracing probe		ZDC005	ZDC005
Marking (page 441)		CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61

Two-level with bridging



Appearance



Electric diagram

Purpose:

- multilevel switching of low current circuits.

Installation conditions:

- attachment on rails of OMEGA and G types.

Distinctive features:

- internal level bridging is possible;
- system of screw type jumpers.

Characteristics:

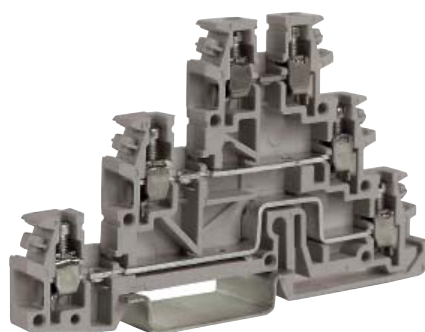
- colors are gray, beige, blue.

Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

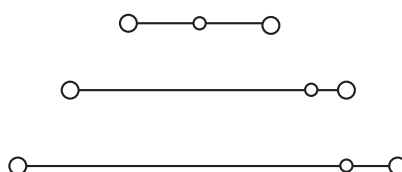
Nominal section, mm ²		4
Terminal block type		DAS.4/CI
Terminal block code	gray	ZDS117GR
	beige	ZDS117
	blue	ZDS217
Section range, mm ²	1 conductor	0.2-6
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-4
	2 conductors in a double lug	0.5-2.5
Rated current, A		32
Jumper current, A		32
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 62x64x6 G1: 66x64x6

Accessories		
End insulator	gray	ZDS101GR
	beige	ZDS101
	blue	ZDS201
Non-insulated jumpers	2 poles	ZPM412
	3 poles	ZPM513
	5 poles	ZPM515
	10 poles	ZPM510
	42 poles	ZPMP58 – jumper ZCPM01 – screws
Releasable jumper		ZPOS43
Testing socket		ZPD001
Tracing probe		ZDD001
Level bridging shunt capable of bridging of terminal blocks		ZDS108
Protective cover for jumpers		ZPRP05
Divider		ZDU07R
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT005 ZBT007
DIN rail		02135 02120
Screwdriver		ZCCH02

Three-level terminal blocks



Appearance



Electric diagram

Purpose:

- multilevel switching of low current circuits.

Installation conditions:

- attachment on a rail of OMEGA type.

Characteristics:

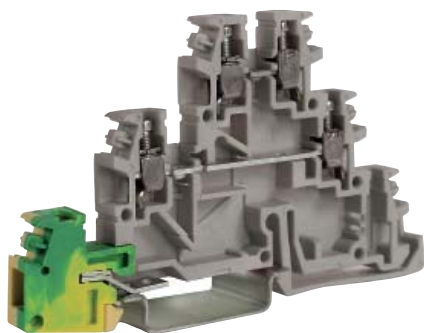
- colors are gray, beige, blue.

Characteristics	Values
Rated voltage, V	250
Rated impulse voltage Uimp, kV	4
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

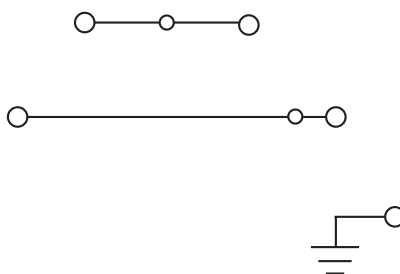
Nominal section, mm ²		2.5
Terminal block type		TLD.2
Terminal block code	gray	ZTL200GR
	beige	ZTL200
	blue	ZTL300
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24
Jumper current, A		24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 52x85x6.2

Accessories		
End insulator	gray	ZTL201GR
	beige	ZTL201
	blue	ZTL301
Partial end insulator	beige	ZTL202
Non-insulated jumpers	2 poles	ZPM202
	3 poles	ZPM303
	5 poles	ZPM305
	10 poles	ZPM310
	40 poles	ZPMP02 – jumper ZCPM21 – screws
Releasable jumper		ZPOS41
Protective cover for jumpers		ZPRP05
Divider		ZDU03R
Insulating divider for jumpers		ZDF400
Testing socket		ZPD004
Tracing probe		ZDD001
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT007
DIN rail		02135
Screwdriver		ZCCH02

Three-level terminal blocks with grounding



Appearance



Electric diagram

Purpose:

- multilevel switching of low current circuits.

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- availability of a ground contact at the lower level.

Characteristics:

- colors are gray, beige.

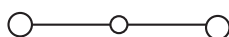
Characteristics	Values
Rated voltage, V	250
Rated impulse voltage Uimp, kV	4
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		TDE.2
Terminal block code	gray	ZTL500GR
	beige	ZTL500
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24
Jumper current, A		24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 52x85x6.2
Accessories		
End insulator	gray	ZTL201GR
	beige	ZTL201
Non-insulated jumpers	2 poles	ZPM202
	3 poles	ZPM303
	5 poles	ZPM305
	10 poles	ZPM310
	40 poles	ZPMP02 – jumper ZCPM21 – screws
Releasable jumper		ZPOS41
Protective cover for jumpers		ZPRP05
Divider		ZDU03R
Insulating divider for jumpers		ZDF400
Testing socket		ZPD004
Tracing probe		ZDD001
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT007
DIN rail		02135
Screwdriver		ZCCH02

For connection of sensors



Appearance



Electric diagram

Purpose:

- connection of sensors and actuating elements.

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- built-in permanent system of jumpers for the middle and lower levels;
- availability of a voltage indicator between levels.

Characteristics:

- colors are gray, beige.

Characteristics	Values
Rated voltage, V	250
Rated impulse voltage Uimp, kV	4
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

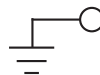
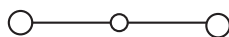
Nominal section, mm ²		2.5
Terminal block type		TLS.2
Terminal block code	gray	ZTL100GR
	beige	ZTL100
	with voltage indicators between the lower and upper levels (20-30 VDC)	ZTL110
	with a voltage indicator between the middle and upper levels (20-30 VDC)	ZTL120
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24
Jumper current, A		24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 52x85x6.2

Accessories		
End insulator	gray	ZTL101GR
	beige	ZTL101
Non-insulated jumpers	2 poles	ZPM202
	3 poles	ZPM303
	5 poles	ZPM305
	10 poles	ZPM310
	40 poles	ZPMP02 – jumper ZCPM21 – screws
Releasable jumper		ZPOS41
Protective cover for jumpers		ZPRP05
Divider		ZDU03R
Insulating divider for jumpers		ZDF400
Testing socket		ZPD004
Tracing probe		ZDD001
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT007
DIN rail		02135
Screwdriver		ZCCH02

For connection of sensors. With grounding



Appearance



Electric diagram

Purpose:

- connection of sensors and actuating elements.

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- built-in permanent system of jumpers for the middle and lower levels.

Characteristics:

- colors are gray, beige.

Characteristics	Values
Rated voltage, V	250
Rated impulse voltage Uimp, kV	4
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		TLE.2
Terminal block code	gray	ZTL400GR
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24
Jumper current, A		24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 52x85x6.2

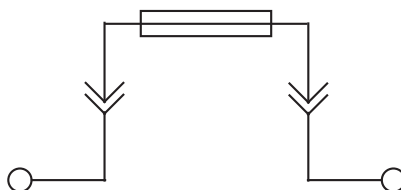
Accessories		
End insulator	gray	ZTL101GR
	beige	ZTL101
Non-insulated jumpers	2 poles	ZPM202
	3 poles	ZPM303
	5 poles	ZPM305
	10 poles	ZPM310
	40 poles	ZPMP02 – jumper ZCPM21 – screws
Releasable jumper		ZPOS41
Protective cover for jumpers		ZPRP05
Divider		ZDU03R
Insulating divider for jumpers		ZDF400
Testing socket		ZPD004
Tracing probe		ZDD001
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT007
DIN rail		02135
Screwdriver		ZCCH02

Terminal blocks with fuse holder

In lever



Appearance



Electric diagram

Purpose:

- installation of functional elements: fuses, tinned elements, diodes.

Installation conditions:

- attachment on rails of OMEGA and G types.

Distinctive features:

- it is possible to install a LED indicator for fuse state monitoring;
- may be used as a disconnecter when installing a tinned element;
- not capable of cross connection.

Characteristics:

- colors are gray, beige, blue.

Characteristics		Values
Rated voltage, V		630 V
Rated impulse voltage Uimp, kV		6 kV
Flammability classification		V0
Enclosure material		polyamide
Material of current-carrying elements		Nickel-plated brass

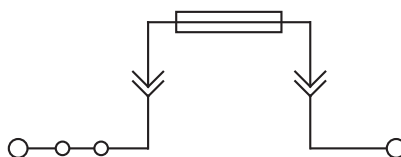
Nominal section, mm ²		4
Terminal block type		SFR.4
Fuse type		5x20 mm
Terminal block code	gray	ZSF900GR
	beige	ZSF900
	blue	ZSF850
Type of a terminal block with fuse state indication (LED, 12-48 V, AC/DC, non-polar)	beige	ZSF948
Type of a terminal block with fuse state indication (LED, 115-230 V, AC/DC, non-polar)	beige	ZSF923
Code of a terminal block with a diode (1A, 1N4007 type)	beige	ZSF901
Code of a terminal block with a diode (3A, BY 255 type)	beige	ZSF903
Section range, mm ²	1 conductor	0.2-6
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-4
	2 conductors in a double lug	0.5-2.5
Rated current, A		6.3 when using a fuse 20 when using a tinned element
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 52x52x8 G1: 56x52x8

Accessories		
End insulator	gray	ZSF701GR
	beige	ZSF701
	blue	ZSF801
LED indicator	12-48 V (AC/DC)	ZSF518
	115-230 V (AC/DC)	ZSF510
Tinned insert		ZVL103
Divider		ZDU03R
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT005 ZBT007
DIN rail		02135 02120
Screwdriver		ZCCH02

In lever. With possibility of cross connection



Appearance



Electric diagram

Purpose:

- installation of functional elements: fuses, tinned elements, diodes.

Installation conditions:

- attachment on rails of OMEGA type.

Distinctive features:

- it is possible to install a LED indicator for fuse state monitoring;
- may be used as a disconnecter when installing a tinned element.

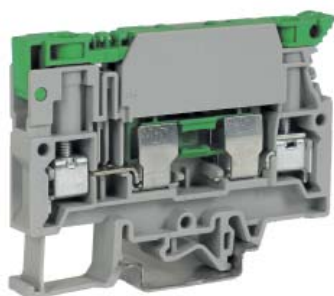
Characteristics:

- colors are gray, blue.

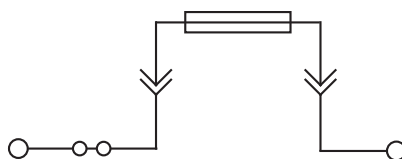
Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		4
Terminal block type		CBF.4
Fuse type		5x20 mm
Terminal block code	gray	ZCBF04GR
	blue	ZCBF04I
Type of a terminal block with fuse state indication (LED, 12-48 V, AC/DC, non-polar)	beige	ZCBF448GR
Type of a terminal block with fuse state indication (LED, 110-230 V, AC/DC, non-polar)	beige	ZCBF423GR
Section range, mm ²	1 conductor	0.2-6
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-4
	2 conductors in a double lug	0.5-2.5
Rated current, A		6.3 when using a fuse
Rated jumper current, A		32
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 76x57x6
Accessories		
End insulator	gray	ZCB401GR
	blue	ZCB402
Non-insulated jumpers	2 poles	ZPTC0402
	3 poles	ZPTC0403
	5 poles	ZPTC0405
	10 poles	ZPTC0410
	42 poles	ZPTC0400
LED indicator	12-48 V (AC/DC)	ZCB518
	115-230 V (AC/DC)	ZCB523
Tinned insert		ZVL103
Divider		ZDU07R
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT007
DIN rail		02135
Screwdriver		ZCCH02

In lever. With possibility of cross connection



Appearance



Electric diagram

Purpose:

- installation of functional elements: fuses, tinned elements, diodes.

Installation conditions:

- attachment on rails of OMEGA and G types.

Distinctive features:

- it is possible to install a neon indicator for fuse state monitoring;
- may be used as a disconnecter when installing a tinned element.

Characteristics:

- colors are gray, beige, blue.

Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

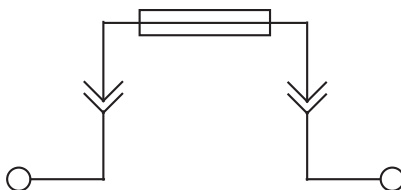
Nominal section, mm ²	6		
Terminal block type	SFR.6		
Fuse type	5x20 mm		6.3x32
Terminal block code	gray	ZSR500GR	ZSR300GR
	beige	ZSR500	ZSR300
	blue	ZSR600	ZSR400
Section range, mm ²	1 conductor	0.2-6	0.2-6
	2 conductors with the same section	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-4	0.2-4
	2 conductors in a double lug	0.5-2.5	0.5-2.5
Rated current, A	10 when using a fuse 19 when using a tinned element		10 when using a fuse 33 when using a tinned element
Rated jumper current, A	24		24
Dimensions after installation, mm Height x Length x Thickness	OMEGA 3: 59x79x10 G1: 63x79x10		

Accessories			
End insulator	gray	ZSR301GR	ZSR301GR
	beige	ZSR301	ZSR301
	blue	ZSR401	ZSR401
Non-insulated jumpers	2 poles	ZPTC2002	ZPTC2002
	3 poles	ZPTC2003	ZPTC2003
	5 poles	ZPTC2005	ZPTC2005
	10 poles	ZPTC2010	ZPTC2010
	25 poles	ZPTC2000	ZPTC2000
Jumper marking		ZPTC0990	ZPTC0990
Neon indicator	12-48 V (AC/DC)	ZKIT1224	ZKIT1224
	115-230 V (AC/DC)	ZKIT70380	ZKIT70380
Tracing probe		ZDD001	ZDD001
Tinned insert		ZVL103	-
Divider		ZDU07R	ZDU07R
Insulating divider for jumpers		ZDF300	ZDF300
Marking (page 441)		CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61
Terminal end stop		ZBT005	ZBT005
		ZBT007	ZBT007
DIN rail		02135	02135
		02120	02120
Screwdriver		ZCCH02	ZCCH02

In lever



Appearance



Electric diagram

Purpose:

- installation of functional elements: fuses, tinned elements.

Installation conditions:

- attachment on rails of OMEGA and G types.

Distinctive features:

- it is possible to install LED or neon indicators for fuse state monitoring;
- may be used as a disconnecter when installing a tinned element;
- not capable of cross connection.

Characteristics:

- available in beige color.

Characteristics	Values
Rated voltage, V	800
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		10		
Terminal block type		FPC.10	FPL.10/C	FPL.10/L
Fuse type		6.3x32		
Fuse state indication method		Without indication	LED indicator	Neon indicator
Terminal block code		ZFP100	ZFP300	ZFP200
Type of a terminal block with fuse state indication (LED, 12-48 V, AC/DC, non-polar)	beige	-	ZFP948	-
Type of a terminal block with fuse state indication (LED, 115-230 V, AC/DC, non-polar)	beige	-	ZFP923	-
Section range, mm ²	1 conductor	1.5-16	1.5-16	1.5-16
	2 conductors with the same section	1.5-4	1.5-4	1.5-4
	1 conductor with a lug	1.5-10	1.5-10	1.5-10
	2 conductors in a double lug	1.5-6	1.5-6	1.5-6
Rated current, A		10 A when using a fuse 20 when using a tinned element		
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 70x63x12 G1: 74x63x12	OMEGA 3: 71x63x12 G1: 75x63x12	

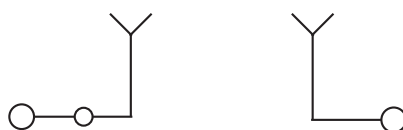
Accessories				
End insulator	gray	not required.		
LED indicator	12-48 V (AC/DC)	-	ZSF518	-
	115-230 V (AC/DC)	-	ZSF510	-
Neon indicator	12-48 V (AC/DC)	-	-	ZFL201
	70-380 V (AC/DC)	-	-	ZFL202
Combining handle		ZFC103	ZFC103	ZFC103
Tracing probe		ZDD002*	-	-
Tinned insert		ZFC102	ZFC102	ZFC102
Divider		ZDU06R	ZDU06R	ZDU06R
Marking (page 441)		CNU/08/51 CNU/08/61		
Terminal end stop		ZBT005 ZBT007		
DIN rail		02135 02120		

* It is possible to use a tracing probe only together with the ZFC102 tinned insert. For installation example see page 457

For a knife fuse



Appearance



Electric diagram

Purpose:

- installation of functional elements with a knife contact.

Installation conditions:

- attachment on rails of OMEGA and G types.

Distinctive features:

- use of standard knife fuses according to DIN 72581/3F standard;
- possibility of cross connection.

Characteristics:

- colors are gray, beige.

Characteristics	Values
Rated voltage, V	400
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

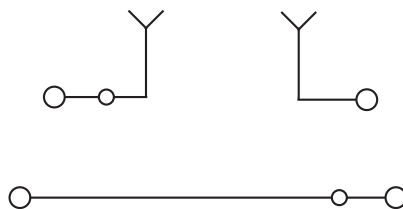
Nominal section, mm ²		4
Terminal block type		MPFA.4
Fuse type		Knife (according to DIN 72581/3F – ISO 8820 standard)
Terminal block code	gray	ZMF100GR
	beige	ZMF100
Type of a terminal block with fuse state indication (LED, 12 V, AC/DC, non-polar)	beige	ZMF112
Type of a terminal block with fuse state indication (LED, 24 V, AC/DC, non-polar)	beige	ZMF124
Section range, mm ²	1 conductor	0.2-6
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-4
	2 conductors in a double lug	0.5-2.5
Rated current, A		15
Rated jumper current, A		32
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 47x47x6 G1: 51x47x6

Accessories		
End insulator	gray	ZMP901GR
	beige	ZMP901
Non-insulated jumpers	2 poles	ZPTC0402
	3 poles	ZPTC0403
	5 poles	ZPTC0405
	10 poles	ZPTC0410
	42 poles	ZPTC0400
Jumper marking		ZPTC0990
Divider		ZDU03R
Insulating divider for jumpers		ZDF500
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT005 ZBT007
DIN rail		02135 02120
Screwdriver		ZCCH02

For a knife fuse



Appearance



Electric diagram

Purpose:

- installation of functional elements with a knife contact.

Installation conditions:

- attachment on rails of OMEGA and G types.

Distinctive features:

- use of standard knife fuses according to DIN 72581/3F standard;
- possibility of cross connection.

Characteristics:

- colors are gray, beige.

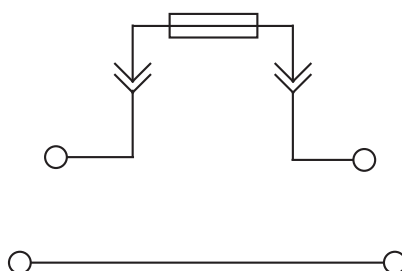
Characteristics		Values
Rated voltage, V		400
Rated impulse voltage Uimp, kV		6
Flammability classification		V0
Enclosure material		polyamide
Material of current-carrying elements		Nickel-plated brass

Nominal section, mm ²		4
Terminal block type		DSFA.4
Fuse type		Knife (according to DIN 72581/3F – ISO 8820 standard)
Terminal block code	gray	ZDA100GR
	beige	ZDA100
Type of a terminal block with fuse state indication (LED, 12 V, AC/DC, non-polar)	beige	ZDA112
Type of a terminal block with fuse state indication (LED, 24 V, AC/DC, non-polar)	beige	ZDA124
Section range, mm ²	1 conductor	0.2-6
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-4
	2 conductors in a double lug	0.5-2.5
Rated current, A		15 for the upper level 32 for the lower level
Rated jumper current, A		32
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 68x78x6 G1: 72x78x6
Accessories		
End insulator	gray	ZDS301GR
	beige	ZDS301
Non-insulated jumpers	2 poles	ZPTC0402
	3 poles	ZPTC0403
	5 poles	ZPTC0405
	10 poles	ZPTC0410
	42 poles	ZPTC0400
Jumper marking		ZPTC0990
Divider		ZDU07R
Insulating divider for jumpers		ZDF500
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT005 ZBT007
DIN rail		02135 02120
Screwdriver		ZCCH02

Multilevel terminal blocks with fuse holder



Appearance



Electric diagram

Purpose:

- terminal block combines a through contact at the lower level and fuse holder 5x20 at the upper level.

Installation conditions:

- attachment on rails of OMEGA type.

Distinctive features:

- use of standard fuses 5x20 mm.

Characteristics:

- colors are gray, beige.

Characteristics	Values
Rated voltage, V	800
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		4
Terminal block type		DSF.4
Fuse type		5x20 mm
Terminal block code	gray	ZDA200GR
	beige	ZDA200
Type of a terminal block with fuse state indication (12-48 V, AC/DC, non-polar)	gray	ZDA518GR
Type of a terminal block with fuse state indication (115-230 V, AC/DC, non-polar)	gray	ZDA510GR
Section range, mm ²	1 conductor	0.2-6
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-4
	2 conductors in a double lug	0.5-2.5
Rated current, A		6.3 for the upper level with possibility of increase up to 10 when using a tinned element 32 for the lower level
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 69x79.5x8

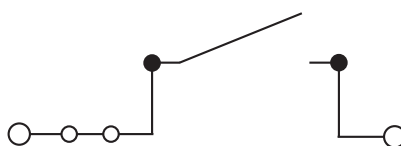
Accessories		
End insulator	gray	ZDS401GR
LED indicator	12-48 V (AC/DC)	ZSF518
	115-230 V (AC/DC)	ZSF510
Tinned insert		ZVL103
Divider		ZDU07R
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT007
DIN rail		02135
Screwdriver		ZCCH02

Terminal blocks with disconnecter

With knife disconnecter



Appearance



Electric diagram

Purpose:

- arrangement of a releasable connection.

Installation conditions:

- attachment on rails of OMEGA type.

Distinctive features:

- possibility of cross connection;
- testing socket is inserted into a hole for cross connection in terminal blocks of MPS.2/SW type;
- testing socket is inserted into a hole for cross connection or a clamp screw head in terminal blocks of MPS.2/SWP type.

Characteristics:

- colors are gray, beige, blue.

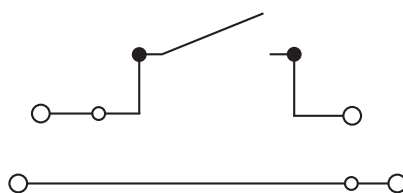
Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5	4
Terminal block type		CBS.2	CBS.4
Disconnecter type		Knife	Knife
Terminal block code	gray	ZCBS02GR	ZCBS04GR
	beige	ZCBS02	ZCBS04
	blue	ZCBS02I	ZCBS04I
Section range, mm ²	1 conductor	0.2-4	0.2-6
	2 conductors with the same section	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-2.5	0.2-4
	2 conductors in a double lug	0.5-1.5	0.5-2.5
Rated current, A		22	24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 52x57x5	OMEGA 3: 52x57x6
Accessories			
End insulator	gray	ZCB401GR	
	beige	ZCB401	
	blue	ZCB402	
Non-insulated jumpers	2 poles	ZPTC0202	ZPTC0402
	3 poles	ZPTC0203	ZPTC0403
	5 poles	ZPTC0205	ZPTC0405
	10 poles	ZPTC0210	ZPTC0410
	X poles	ZPTC0200 (50 poles)	ZPTC0400 (42 poles)
Jumper marking		ZPTC0990	ZPTC0990
Insulating dividers for upper level jumpers	for insulation of 1 jumper	ZDF800	ZDF800
	for insulation of 2 jumpers	ZDF900	ZDF900
Divider		ZDU03R	
Marking (page 441)		CNU/08/51 CNU/08/61	
Terminal end stop		ZBT007	
DIN rail		02135	
Screwdriver		ZCCH02	

Two-level with knife disconnecter



Appearance



Electric diagram

Purpose:

- arrangement of a releasable connection.

Installation conditions:

- attachment on rails of OMEGA and G types.

Distinctive features:

- possibility of cross connection.

Characteristics:

- colors are gray, beige.

Characteristics	Values
Rated voltage, V	400
Rated impulse voltage Uimp, kV	4
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

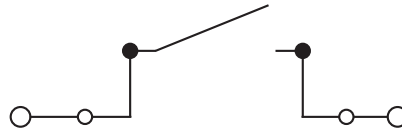
Nominal section, mm ²	4
Terminal block type	DSS.4
Disconnecter type	Knife
Terminal block code	gray ZDS400GR
	beige ZDS400
Section range, mm ²	1 conductor 0.2-6
	2 conductors with the same section 0.2-1.5
	1 conductor with a lug 0.2-4
	2 conductors in a double lug 0.5-2.5
Rated current, A	24 for the upper level 32 for the lower level
Rated jumper current, A	32
Dimensions after installation, mm Height x Length x Thickness	OMEGA 3: 68x78x6 G1: 72x78x6

Accessories		
End insulator	gray	ZDS301GR
	beige	ZDS301
Non-insulated jumpers	2 poles	ZPTC0402
	3 poles	ZPTC0403
	5 poles	ZPTC0405
	10 poles	ZPTC0410
	42 poles	ZPTC0400
Jumper marking		ZPTC0990
Divider		ZDU07R
Insulating divider for jumpers		ZDF500
Marking (page 441)		CNU/08/51 CNU/08/61
Terminal end stop		ZBT005 ZBT007
DIN rail		02135 02120
Screwdriver		ZCCH02

Terminal blocks with disconnecter for measuring equipment



Appearance



Electric diagram

Purpose:

- performance of measurements in secondary circuits of current transformers.

Installation conditions:

- attachment on rails of OMEGA and G types.

Distinctive features:

- possibility of cross connection.

Characteristics:

- colors are gray, beige, blue.

Characteristics	Values
Rated voltage, V	800 (for SCB.4, SCB.6), 1000 (for SCB.10)
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		4	6	10
Terminal block type		SCB.4	SCB.6	SCB.10
Disconnecter type		Sliding	Sliding	Sliding
Terminal block code	gray	ZSB300GR	ZSB200GR	ZSB400GR
	beige	ZSB300	ZSB200	ZSB400
Kit with two testing sockets	gray	–	ZSB210GR	ZSB410GR
	beige	–	ZSB210	ZSB410
Kit with one testing socket and one screw for a releasable jumper	gray	–	ZSB220GR	ZSB420GR
	beige	–	ZSB220	ZSB420
Section range, mm ²	1 conductor	0.2-6	0.5-10	0.5-16
	2 conductors with the same section	0.2-1.5	0.2-2.5	0.5-4
	1 conductor with a lug	0.2-4	0.5-6	0.5-10
	2 conductors in a double lug	0.5-2.5	0.5-4	0.5-6
Rated current, A		32	41	57
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 44x58x6.5 G1: 48x58x6.5	OMEGA 3: 77x69x8 G1: 80x69x8	OMEGA 3: 59.5x75x10.5 G1: 63.5x75x10.5

Accessories

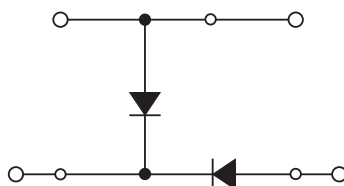
End insulator	gray	ZSB301GR	ZSB201GR	ZSB401GR
	beige	ZSB301	ZSB201	ZSB401
Non-insulated jumpers	2 poles	ZPM402	ZPOF57	ZPOF56
	3 poles	ZPM403	–	–
	5 poles	ZPM405	–	–
	10 poles	ZPM410	–	–
	X poles	ZPMP42 (jumper for 38 poles) ZCPM12 – screws	ZPMP13 (jumper for 31 poles) ZCPM57 – screws	ZPMP56 (jumper for 25 poles) ZCPM56 – screws
Releasable jumper	2 poles	ZSB303	ZSB203	ZSC103
	4 poles	ZSB304	ZSB204	ZSC104
Screw and sleeve for a releasable jumper		ZSB305 – black	ZSB205 – black ZSB205R – red	ZSC105 – black
Tracing probe		ZDD001	ZDD002	ZDD002
Testing socket		ZPD001	ZPD015	ZPD009
Divider		ZDU03R	ZDU06R	ZDU07R
Marking (page 441)		CNU/08/51, CNU/08/61		
Terminal end stop		ZBT005, ZBT007		
DIN rail		02135, 02120		
Screwdriver		ZCCH02	ZCCH02	ZCCH02

Terminal blocks with electronic components

Two-level



Appearance



Electric diagram

Purpose:

- integration of electronic components into a circuit.

Installation conditions:

- attachment on rails of OMEGA type.

Characteristics:

- colors are gray, beige.

Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		DBC.2/L
Purpose		for testing of lamps/diode indicators
Installed electronic components		1N4007 diodes
Terminal block code	gray	ZDB130GR
	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Section range, mm ²		
Rated current, A		-
Maximum current, A		-
Jumper current, A		24
Dimensions after installation, mm		OMEGA 3:
Height x Length x Thickness		66x70x5

Accessories		
End insulator	gray	ZDB101GR
	beige	ZDB101
Non-insulated jumpers	2 poles	ZPTC0202
	3 poles	ZPTC0203
	5 poles	ZPTC0205
	10 poles	ZPTC0210
	50 poles	ZPTC0200
Jumper marking		ZPTC0990
Insulating dividers for jumpers	full	ZDF800
	partial	ZDF900
Divider		ZDU04R
Tracing probe		ZDC005
Marking (page 441)		CNU/08/51 CNU/08/61

Two-level terminal blocks

**Purpose:**

- integration of electronic components into a circuit.

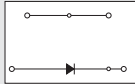
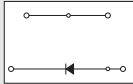
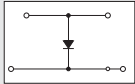
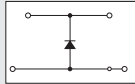
Installation conditions:

- attachment on rails of OMEGA and G types.

Characteristics:

- colors are gray, beige.

Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		4			
Terminal block type		DAS.4/A	DAS.4/B	DAS.4/C	DAS.4/D
Purpose		protection against polarity reversal		protection against induced currents	
Electric diagram					
Installed electronic components		1N4007 diode	1N4007 diode	1N4007 diode	1N4007 diode
Terminal block code	gray	ZDS111GR	ZDS112GR	ZDS113GR	ZDS114GR
	beige	ZDS111	ZDS112	ZDS113	ZDS114
Section range, mm ²	1 conductor	0.2-6			
	2 conductors with the same section	0.2-1.5			
	1 conductor with a lug	0.2-4			
	2 conductors in a double lug	0.5-2.5			
Rated current, A		-			
Jumper current, A		-			
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 62x64x6 G1: 66x64x6			
Accessories					
End insulator	gray	ZDS101GR			
	beige	ZDS101			
Non-insulated jumpers	2 poles	ZPM412			
	3 poles	ZPM513			
	5 poles	ZPM515			
	10 poles	ZPM510			
	42 poles	ZPMP58 – jumper (ZCPM01 – screws)			
Releasable jumper		-			
Testing socket		ZPD001			
Tracing probe		ZDD001			
Level bridging shunt		-			
Level bridging shunt capable of bridging of terminal blocks.		-			
Protective cover for jumpers		ZPRP05			
Divider		ZDU07R			
Marking (page 441)		CNU/08/51, CNU/08/61			
Terminal end stop		ZBT005 ZBT007			
DIN rail		02135 02120			
Screwdriver		ZCCH02			

Two-level terminal blocks



Purpose:

- integration of electronic components into a circuit.

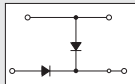
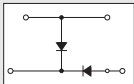
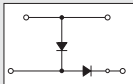
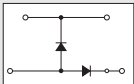
Installation conditions:

- attachment on rails of OMEGA and G types.

Characteristics:

- colors are gray, beige.

Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		4			
Terminal block type		DAS.4/I	DAS.4/L	DAS.4/LI	DAS.4/DD
Purpose		for testing of lamps/diode indicators			
Electric diagram					
Installed electronic components		2 1N4007 diodes	2 1N4007 diodes	2 1N4007 diodes	2 1N4007 diodes
Terminal block code	gray	ZDS119GR	ZDS130GR	ZDS123GR	ZDS120GR
	beige	ZDS119	ZDS130	ZDS123	ZDS120
Section range, mm ²	1 conductor	0.2-6			
	2 conductors with the same section	0.2-1.5			
	1 conductor with a lug	0.2-4			
	2 conductors in a double lug	0.5-2.5			
Rated current, A		–			
Jumper current, A		–			
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 62x64x6 G1: 66x64x6			
Accessories					
End insulator	gray	ZDS101GR			
	beige	ZDS101			
Non-insulated jumpers	2 poles	ZPM412			
	3 poles	ZPM513			
	5 poles	ZPM515			
	10 poles	ZPM510			
	42 poles	ZPMP58 – jumper (ZCPM01 – screws)			
Releasable jumper		–			
Testing socket		ZPD001			
Tracing probe		ZDD001			
Level bridging shunt		–			
Level bridging shunt capable of bridging of terminal blocks		–			
Protective cover for jumpers		ZPRP05			
Divider		ZDU07R			
Marking (page 441)		CNU/08/51, CNU/08/61			
Terminal end stop		ZBT005, ZBT007			
DIN rail		02135, 02120			
Screwdriver		ZCCH02			

Two-level terminal blocks

**Purpose:**

- integration of electronic components into a circuit.

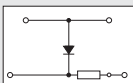
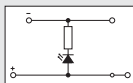
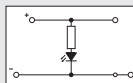
Installation conditions:

- attachment on rails of OMEGA and G types.

Characteristics:

- colors are gray, beige.

Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		4			
Terminal block type		DAS.4/E	DAS.4/T		DAS.4/U
Purpose		for testing of lamps/diode indicators designed for 24 VDC	voltage availability indication		
Electric diagram					
Installed electronic components		1 1N4007 diode 1 resistance	1 resistance 1 green LED		1 resistance 1 green LED
Rated voltage		20-30 VDC	20-30 VDC		20-30 VDC
Terminal block code	gray	ZDS115GR	ZDS128GR		ZDS129GR
	beige	ZDS115	ZDS128		ZDS129
Section range, mm ²	1 conductor	0.2-6			
	2 conductors with the same section	0.2-1.5			
	1 conductor with a lug	0.2-4			
	2 conductors in a double lug	0.5-2.5			
Rated current, A		-			
Jumper current, A		-			
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 62x64x6 G1: 66x64x6			
Accessories					
End insulator	gray	ZDS101GR			
	beige	ZDS101			
Non-insulated jumpers	2 poles	ZPM412			
	3 poles	ZPM513			
	5 poles	ZPM515			
	10 poles	ZPM510			
	42 poles	ZPMP58 – jumper (ZCPM01 – screws)			
Releasable jumper		-			
Testing socket		ZPD001			
Tracing probe		ZDD001			
Level bridging shunt		-			
Level bridging shunt capable of bridging of terminal blocks.		-			
Protective cover for jumpers		ZPRP05			
Divider		ZDU07R			
Marking (page 441)		CNU/08/51, CNU/08/61			
Terminal end stop		ZBT005, ZBT007			
DIN rail		02135, 02120			
Screwdriver		ZCCH02			

For surge protection of circuits



Purpose:

- voltage surge protection of devices.

Installation conditions:

- attachment on rails of OMEGA and G types.

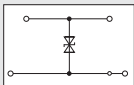
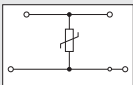
Distinctive features:

- protection may be provided by means of a suppressor diode or a varistor.

Characteristics:

- colors are gray, beige.

Characteristics	Values
Protection class	D
Nominal section, mm ²	4
Operating temperature, °C	from -40 to +80
Flammability classification	V0
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

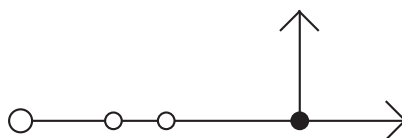
Nominal section, mm ²		4							
Terminal block type		DAS.4/D5	DAS.4/D12	DAS.4/D24	DAS.4/D60	DAS.4/V24	DAS.4/V48	DAS.4/V120	DAS.4/V230
Purpose		protection of instrumentation circuits							
Electric diagram									
Installed electronic components		suppressor diode				varistor			
Rated voltage, V		5	12	24	60	24	48	120	230
Maximum long-term operating voltage	VDC	6.45	15.2	28.5	77.9	31	85	180	350
	VAC					25	60	140	275
Pulse current (8/20 μs), A		750	350	160	70	500	2500	2500	2500
Pickup voltage, V		6.8 ± 5%	16 ± 5%	30 ± 5%	82 ± 5%	39 ± 10%	100 ± 10%	220 ± 10%	430 ± 10%
Pickup time, ns		<1	<1	<1	<1	<25	<25	<25	<25
Capacity (1 kHz), nF		5	3	1.5	0.6	4.6	1.65	0.61	0.32
Terminal block code	gray	ZDSD005GR	ZDSD012GR	ZDSD024GR	ZDSD060GR	ZDSV024GR	ZDSV048GR	ZDSV120GR	ZDSV230GR
	beige	ZDSD005	ZDSD012	ZDSD024	ZDSD060	ZDSV024	ZDSV048	ZDSV120	ZDSV230
Section range, mm ²	1 conductor	0.2-6							
	2 conductors with the same section	0.2-1.5							
	1 conductor with a lug	0.2-4							
	2 conductors in a double lug	0.5-2.5							
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 62x64x6 G1: 66x64x6							
Accessories									
End insulator	gray	ZDS101GR							
	beige	ZDS101							
Non-insulated jumpers	2 poles	ZPM412							
	3 poles	ZPM513							
	5 poles	ZPM515							
	10 poles	ZPM510							
	42 poles	ZPMP58 – jumper (ZCPM01 – screws)							
Testing socket		ZPD001							
Tracing probe		ZDD001							
Protective cover for jumpers		ZPRP05							
Divider		ZDU07R							
Marking (page 441)		CNU/08/51, CNU/08/61							
Terminal end stop		ZBT005, ZBT007							
DIN rail		02135, 02120							
Screwdriver		ZCCH02							

Terminal blocks with male contacts

Single-level terminal block



Appearance



Electric diagram

Purpose:

- arrangement of a "male-female"* detachable connection.

Installation conditions:

- attachment on rails of OMEGA and G types.

Distinctive features:

- contact pitch in case of group installation of terminal blocks is 5.08 mm;
- possibility of bridging.

Characteristics:

- colors are gray, beige, blue.

Characteristics	Values
Rated voltage, V	320
Rated impulse voltage Uimp, kV	4
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		VPC.2
Terminal block code	gray	ZVP300GR
	beige	ZVP300
	blue	ZVP310
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24 (through a terminal block)/12 (through a male contact)
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 51x44x5.08 G1: 55x44x5.08

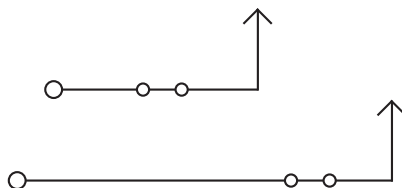
Accessories		
End insulator	gray	ZVP101GR
	beige	ZVP101
	blue	ZVP201
End insulator with a divider for sockets	gray	ZDU02SGR
	beige	ZDU02S
Non-insulated jumpers	2 poles	ZPTC2002
	3 poles	ZPTC2003
	5 poles	ZPTC2005
	10 poles	ZPTC2010
	25 poles	ZPTC2000
Jumper marking		ZPTC0990
Female socket	2 poles	ZVP902
	3 poles	ZVP903
	4 poles	ZVP904
	5 poles	ZVP905
	6 poles	ZVP906
	7 poles	ZVP907
	8 poles	ZVP908
Protection of male contacts		ZVP102
Divider		ZDU05R
Insulating divider for jumpers		ZDF300
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT005, ZBT007

* GOST 14312-79

Two-level terminal block



Appearance



Electric diagram

Purpose:

- arrangement of a "male-female"* detachable connection.

Installation conditions:

- attachment on rails of OMEGA type.

Distinctive features:

- contact pitch in case of group installation of terminal blocks is 5.08 mm;
- possibility of bridging.

Characteristics:

- colors are gray, blue.

Characteristics	Values
Rated voltage, V	320
Rated impulse voltage Uimp, kV	4
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

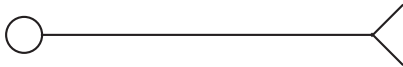
Nominal section, mm ²		2.5
Terminal block type		VPD.2
Terminal block code	gray	ZVP500GR
	blue	ZVP560
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24 (through a terminal block)/12 (through a male contact)
Dimensions after installation, mm		OMEGA 3:
Height x Length x Thickness		64x74x5.08
Accessories		
End insulator	gray	ZVP501GR
	blue	ZVP561
Non-insulated jumpers	2 poles	ZPTC2002
	3 poles	ZPTC2003
	5 poles	ZPTC2005
	10 poles	ZPTC2010
	25 poles	ZPTC2000
Jumper marking		ZPTC0990
Female socket	2 poles	ZVP902
	3 poles	ZVP903
	4 poles	ZVP904
	5 poles	ZVP905
	6 poles	ZVP906
	7 poles	ZVP907
	8 poles	ZVP908
	9 poles	ZVP909
	10 poles	ZVP910
	11 poles	ZVP911
Protection of male contacts		ZVP502
Divider		ZDU07R
Insulating divider for jumpers		ZDF300
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT005, ZBT007

* GOST 14312-79

Female sockets for terminal blocks with male contacts



Appearance



Electric diagram

- Purpose:**
- arrangement of a "male-female"* detachable connection.
- Distinctive features:**
- contact pitch in case of group installation of sockets is 5.08 mm;
 - inserted all the way in by slight pressing and fixed in a terminal block with a latch;
 - compatible with terminal blocks of VPC, VPD, HCD types.
- Characteristics:**
- color is green.

Number of poles	Socket type	Socket code
2	VPC/F02	ZVP902
3	VPC/F03	ZVP903
4	VPC/F04	ZVP904
5	VPC/F05	ZVP905
6	VPC/F06	ZVP906
7	VPC/F07	ZVP907
8	VPC/F08	ZVP908
9	VPC/F09	ZVP909
10	VPC/F10	ZVP910
11	VPC/F11	ZVP911
12	VPC/F12	ZVP912
13	VPC/F13	ZVP913
14	VPC/F14	ZVP914
15	VPC/F15	ZVP915
16	VPC/F16	ZVP916

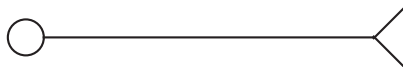
* GOST 14312-79

Terminal blocks with neutral disconnector

CNT series



Appearance



Electric diagram

Purpose:

- for neutral conductor disconnection according to requirements of safety standards.

Installation conditions:

- attachment on rails of OMEGA and G types.

Characteristics:

- color is blue.

Characteristics	Values
Rated voltage, V	400
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass
Bus section	10x3 mm

Nominal section, mm ²		6	16	35
Terminal block type		CNT.6	CNT.16	CNT.35
Terminal block code	blue	ZCNT06	ZCNT16	ZCNT35
	1 conductor	0.5-10	0.5-25	2.5-50
	2 conductors with the same section	0.2-2.5	0.5-6	2-16
	1 conductor with a lug	0.2-6	0.5-16	2-35
	2 conductors in a double lug	0.5-4	0.5-10	2-16
Section range, mm ²				
Rated current, A		41	76	125
Dimensions after installation on DIN rail, mm				
Height x Length x Thickness		OMEGA 3: 52x51x8 G1: 56x51x8	OMEGA 3: 56x53x12 G1: 61x53x12	OMEGA 3: 62x56x16 G1: 66x56x16

Accessories

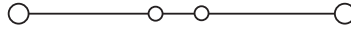
End insulator	blue	ZCNT601	ZCNT161	ZCNT351
Bus clamp code		ZCNTSU	ZCNTSU	ZCNTSU
Divider		ZDU04R	ZDU04R	ZDU04R
Marking (page 441)		CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61	CNU/08/51 CNU/08/61
DIN rail		02135	02135	02135
Screwdriver		ZCCH02	-	-

Through terminal blocks

HMM series. 1 input and 1 output



Appearance



Electric diagram

Purpose:

- switching of conductors with section of 0.2 to 25 mm².

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- system of plug-in jumpers.

Characteristics:

- colors are gray and blue.

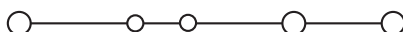
Characteristics	Values
Rated voltage, V	500 for terminal blocks for section of 1.5 mm ² 800 for terminal blocks for section of 2.5 to 16 mm ²
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		1.5	2.5	4	6	10	16
Terminal block type		HMM.1	HMM.2	HMM.4	HMM.6	HMM.10	HMM.16
Terminal block code	gray	ZHM400GR	ZHM500GR	ZHM250GR	ZHM320GR	ZHM330GR	ZHM340GR
	blue	ZHI400	ZHI500	ZHI250	ZHI320	ZHI330	ZHI340
Section range, mm ²	1 conductor	0.2-2.5	0.2-4	0.2-6	0.2-10	1.5-16	1.5-25
	2 conductors with the same section	0.2-0.75	0.2-1.5	0.2-1.5	0.2-2.5	1.5-4	1-6
	1 conductor with a lug	0.2-1.5	0.2-2.5	0.2-4	0.2-6	1.5-10	1-16
	2 conductors in a double lug	0.5-0.75	0.5-1.5	0.5-2.5	0.5-4	1.5-6	1-10
Rated current, A		17.5	24	32	41	57	76
Jumper current, A		17.5	24	32	41	57	76
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 43x45x4.2	OMEGA 3: 41x50x5.2	OMEGA 3: 45x58x6.2	OMEGA 3: 44x62x8.2	OMEGA 3: 53x71x10	OMEGA 3: 56x80x12
Accessories							
End insulator	gray	ZHM401GR	ZHM501GR	ZHM251GR	ZHM321GR	ZHM331GR	ZHM341GR
	blue	ZHI401	ZHI501	ZHI251	ZHI321	ZHI331	ZHI341
Non-insulated jumpers	2 poles	ZPTC0102	ZPTC0302	ZPTC0502	ZPTC0802	ZPTC1102	ZPTC1602
	3 poles	ZPTC0103	ZPTC0303	ZPTC0503	ZPTC0803	ZPTC1103	ZPTC1603
	5 poles	ZPTC0105	ZPTC0305	ZPTC0505	ZPTC0805	ZPTC1105	ZPTC1605
	10 poles	ZPTC0110	ZPTC0310	ZPTC0510	ZPTC0810	ZPTC1110	ZPTC1610
	X poles	ZPTC0100 (50 poles)	ZPTC0300 (47 poles)	ZPTC0500 (40 poles)	ZPTC0800 (30 poles)	ZPTC1100 (25 poles)	ZPTC1600 (20 poles)
Jumper marking		ZPTC0990	ZPTC0990	ZPTC0990	ZPTC0990	ZPTC0990	ZPTC0990
Insulated jumpers (red)	2 poles	-	ZPTP0302R	ZPTP0502R	-	-	-
	3 poles	-	ZPTP0303R	ZPTP0503R	-	-	-
	5 poles	-	ZPTP0305R	ZPTP0505R	-	-	-
	10 poles	-	ZPTP0310R	ZPTP0510R	-	-	-
	30 poles	-	ZPTP0330R	ZPTP0530R	-	-	-
Insulating dividers for jumpers	for separation of 2 jumpers	ZDF500	-	-	-	-	-
Divider		ZDH01R	ZDH01R	ZDH01R	ZDH01R	ZDH04R	ZDH04R
Tracing probe		-	ZDD001	ZDD001	ZDD001	ZDD001	ZDD001
Tracing probe (modular)		ZDH004	ZDH005	ZDH006	-	-	-
Probe end insulator		ZDH401	ZDH501	ZDH601	-	-	-
Marking (page 441)		SHZ/1	CNU/08/51, CNU/08/61				
DIN rail		02135	02135	02135	02135	02135	02135
Screwdriver		ZCCH02	ZCCH02	ZCCH02	ZCCH02	ZCCH02	-

HMM series. 1 input and 2 outputs



Appearance



Electric diagram

Purpose:

- switching of conductors with section of 0.2 to 6 mm².

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- system of plug-in jumpers.

Characteristics:

- colors are gray, blue.

Characteristics	Values
Rated voltage, V	500 for terminal blocks for section of 1.5 mm ² 800 for terminal blocks for section of 2.5 to 6 mm ²
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

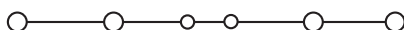
Nominal section, mm ²		1.5	2.5	4
Terminal block type		HMM.1/1+2	HMM.2/1+2	HMM.4/1+2
Terminal block code	gray	ZHM410GR	ZHM510GR	ZHM210GR
	blue	ZHI410	ZHI510	ZHI210
Section range, mm ²	1 conductor	0.2-2.5	0.2-4	0.2-6
	2 conductors with the same section	0.2-0.75	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-1.5	0.2-2.5	0.2-4
	2 conductors in a double lug	0.5-0.75	0.5-1.5	0.5-2.5
Rated current, A		17.5	24	32
Jumper current, A		17.5	24	32
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 43x56x4.2	OMEGA 3: 41x66x5.2	OMEGA 3: 45x78x6.2

Accessories				
End insulator	gray	ZHM411GR	ZHM511GR	ZHM211GR
	blue	ZHI411	ZHI511	ZHI211
Non-insulated jumpers	2 poles	ZPTC0102	ZPTC0302	ZPTC0502
	3 poles	ZPTC0103	ZPTC0303	ZPTC0503
	5 poles	ZPTC0105	ZPTC0305	ZPTC0505
	10 poles	ZPTC0110	ZPTC0310	ZPTC0510
	X poles	ZPTC0100 (50 poles)	ZPTC0300 (47 poles)	ZPTC0500 (40 poles)
Jumper marking		ZPTC0990	ZPTC0990	ZPTC0990
Insulated jumpers (red)	2 poles	-	ZPTP0302R	ZPTP0502R
	3 poles	-	ZPTP0303R	ZPTP0503R
	5 poles	-	ZPTP0305R	ZPTP0505R
	10 poles	-	ZPTP0310R	ZPTP0510R
	30 poles	-	ZPTP0330R	ZPTP0530R
Insulating dividers for jumpers	for separation of 2 jumpers	ZDF500	-	-
Divider		ZDH02R	ZDH02R	ZDH04R
Tracing probe		-	ZDD001	ZDD001
Tracing probe (modular)		ZDH004	ZDH005	ZDH006
Probe end insulator		ZDH401	ZDH501	ZDH601
Marking (page 441)		SHZ/1	CNU/08/51, CNU/08/61	
DIN rail		02135	02135	02135
Screwdriver		ZCCH02	ZCCH02	ZCCH02

HMM series, 2 inputs and 2 outputs



Appearance



Electric diagram

Purpose:

- switching of conductors with section of 0.2 to 6 mm².

Installation conditions:

- attachment on a rail of OMEGA type (TH35).

Distinctive features:

- system of plug-in jumpers.

Characteristics:

- colors are gray, blue.

Characteristics	Values
Rated voltage, V	500 for terminal blocks for section of 1.5 mm ² 800 for terminal blocks for section of 2.5 to 6 mm ²
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		1.5	2.5	4
Terminal block type		HMM.1/2+2	HMM.2/2+2	HMM.4/2+2
Terminal block code	gray	ZHM420GR	ZHM520GR	ZHM220GR
	blue	ZHI420	ZHI520	ZHI220
Section range, mm ²	1 conductor	0.2-2.5	0.2-4	0.2-6
	2 conductors with the same section	0.2-0.75	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-1.5	0.2-2.5	0.2-4
	2 conductors in a double lug	0.5-0.75	0.5-1.5	0.5-2.5
Rated current, A		17.5	24	32
Jumper current, A		17.5	24	32
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 43x65x4.2	OMEGA 3: 41x82x5.2	OMEGA 3: 45x98x6.2
Accessories				
End insulator	gray	ZHM421GR	ZHM521GR	ZHM221GR
	blue	ZHI421	ZHI521	ZHI221
Non-insulated jumpers	2 poles	ZPTC0102	ZPTC0302	ZPTC0502
	3 poles	ZPTC0103	ZPTC0303	ZPTC0503
	5 poles	ZPTC0105	ZPTC0305	ZPTC0505
	10 poles	ZPTC0110	ZPTC0310	ZPTC0510
	X poles	ZPTC0100 (50 poles)	ZPTC0300 (47 poles)	ZPTC0500 (40 poles)
Jumper marking		ZPTC0990	ZPTC0990	ZPTC0990
Insulated jumpers (red)	2 poles	–	ZPTP0302R	ZPTP0502R
	3 poles	–	ZPTP0303R	ZPTP0503R
	5 poles	–	ZPTP0305R	ZPTP0505R
	10 poles	–	ZPTP0310R	ZPTP0510R
	30 poles	–	ZPTP0330R	ZPTP0530R
Insulating dividers for jumpers	for separation of 2 jumpers	ZDF500	–	–
Divider		ZDH03R	ZDH03R	ZDH04R
Tracing probe		–	ZDD001	ZDD001
Tracing probe (modular)		ZDH004	ZDH005	ZDH006
Probe end insulator		ZDH401	ZDH501	ZDH601
Marking (page 441)		SHZ/1	CNU/08/51, CNU/08/61	
DIN rail		02135	02135	02135
Screwdriver		ZCCH02	ZCCH02	ZCCH02

Terminal miniblocks



Appearance



Electric diagram

Purpose:

- switching of conductors with section of 0.2 to 4 mm².

Installation conditions:

- attachment on a rail of OMEGA 2F type;
- on a perforated mounting plate.

Distinctive features:

- small sizes.

Characteristics:

- colors are gray and blue.

Characteristics	Values
Rated voltage, V	800 for terminal blocks for section of 2.5 to 6 mm ²
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

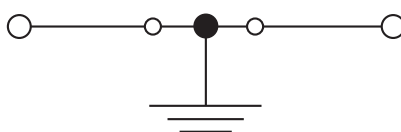
Nominal section, mm ²		2.5		
Terminal block type		HPP.2	HP.2	HPC.2
Terminal block attachment method		On an OMEGA 2F rail	On an adjacent terminal block	In a hole Ø 3.5 mm
Terminal block code	gray	ZHP170GR	ZHP150GR	ZHP160GR
	blue	ZHI132	ZHI130	ZHI131
Section range, mm ²	1 conductor	0.2-4	0.2-4	0.2-4
	2 conductors with the same section	0.2-1.5	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-2.5	0.2-2.5	0.2-2.5
	2 conductors in a double lug	0.5-1.5	0.5-1.5	0.5-1.5
Rated current, A		24	24	24
Jumper current, A				
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 2F: 35x36x5.2	30x36x5.2	30x36x5.2
Accessories				
End insulator	gray	ZHP101GR	ZHV111GR	ZHV111GR
	blue	ZHP201	-	-
Non-insulated jumpers	2 poles	ZPTC0302	ZPTC0302	ZPTC0302
	3 poles	ZPTC0303	ZPTC0303	ZPTC0303
	5 poles	ZPTC0305	ZPTC0305	ZPTC0305
	10 poles	ZPTC0310	ZPTC0310	ZPTC0310
	X poles	ZPTC0300 (47 poles)	ZPTC0300 (47 poles)	ZPTC0300 (47 poles)
Jumper marking		ZPTC0990	ZPTC0990	ZPTC0990
Divider		ZDFP2R	ZDFP2R	ZDFP2R
Tracing probe		ZDD001	ZDD001	ZDD001
Tracing probe (modular)		ZDH005	ZDH005	ZDH005
Probe end insulator		ZDH501	ZDH501	ZDH501
Marking (page 441)			SHZ/2	
Terminal end stop		ZBT006	-	-
DIN rail		02130	-	-
Screwdriver		ZCCH02	ZCCH02	ZCCH02

Terminal blocks for grounding

HTE series. 1 input and 1 output



Appearance



Electric diagram

Purpose:

- connection of ground loops

Installation conditions:

- attachment on rails of OMEGA type.

Characteristics:

- color is yellow-green.

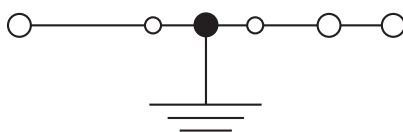
Characteristics	Values
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		1.5	2.5	4	6	10	16
Terminal block type		HTE.1	HTE.2	HTE.4	HTE.6	HTE.10	HTE.16
Terminal block code		yellow-green	ZHT400	ZHT500	ZHT250	ZHT320	ZHT340
Section range, mm ²	1 conductor	0.2-2.5	0.2-4	0.2-6	0.2-10	1.5-16	1.5-25
	2 conductors with the same section	0.2-0.75	0.2-1.5	0.2-1.5	0.2-2.5	1.5-4	1-6
	1 conductor with a lug	0.2-1.5	0.2-2.5	0.2-4	0.2-6	1.5-10	1-16
	2 conductors in a double lug	0.5-0.75	0.5-1.5	0.5-2.5	0.5-4	1.5-6	1-10
Jumper current, A		17.5	24	32	41	57	76
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 43x50x4.2	OMEGA 3: 41x54x5.2	OMEGA 3: 45x58x6.2	OMEGA 3: 44x62x8.2	OMEGA 3: 53x71x10	OMEGA 3: 56x80x12
Accessories							
End insulator	gray	ZHM401GR	ZHM501GR	ZHM251GR	ZHM321GR	ZHM331GR	ZHM341GR
	blue	ZHI401	ZHI501	ZHI251	ZHI321	ZHI331	ZHI341
Non-insulated jumpers	2 poles	ZPTC0102	ZPTC0302	ZPTC0502	ZPTC0802	ZPTC1102	ZPTC1602
	3 poles	ZPTC0103	ZPTC0303	ZPTC0503	ZPTC0803	ZPTC1103	ZPTC1603
	5 poles	ZPTC0105	ZPTC0305	ZPTC0505	ZPTC0805	ZPTC1105	ZPTC1605
	10 poles	ZPTC0110	ZPTC0310	ZPTC0510	ZPTC0810	ZPTC1110	ZPTC1610
	X poles	ZPTC0100 (50 poles)	ZPTC0300 (47 poles)	ZPTC0500 (40 poles)	ZPTC0800 (30 poles)	ZPTC1100 (25 poles)	ZPTC1600 (20 poles)
Jumper marking		ZPTC0990	ZPTC0990	ZPTC0990	ZPTC0990	ZPTC0990	ZPTC0990
Insulating dividers for jumpers	for separation of 2 jumpers	ZDF500	-	-	-	-	-
Divider		ZDH01R	ZDH01R	ZDH01R	ZDH01R	ZDH04R	ZDH04R
Tracing probe		-	ZDD001	ZDD001	ZDD001	ZDD001	ZDD001
Tracing probe (modular)		ZDH004	ZDH005	ZDH006	-	-	-
Probe end insulator		ZDH401	ZDH501	ZDH601	-	-	-
Marking (page 441)		SHZ/1	CNU/08/51, CNU/08/61				
DIN rail		02135	02135	02135	02135	02135	02135
Screwdriver		ZCCH02	ZCCH02	ZCCH02	ZCCH02	ZCCH02	-

HTE series, 1 input and 2 outputs



Appearance



Electric diagram

Purpose:

- connection of ground loops.

Installation conditions:

- attachment on a rail of OMEGA type.

Characteristics:

- color is yellow-green.

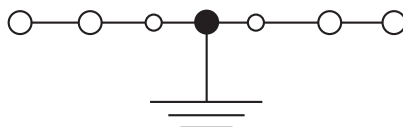
Characteristics	Values
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		1.5	2.5	4
Terminal block type		HTE.1/1+2	HTE.2/1+2	HTE.4/1+2
Terminal block code		yellow-green ZHT410	ZHT510	ZHT260
Section range, mm ²	1 conductor	0.2-2.5	0.2-4	0.2-6
	2 conductors with the same section	0.2-0.75	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-1.5	0.2-2.5	0.2-4
	2 conductors in a double lug	0.5-0.75	0.5-1.5	0.5-2.5
Jumper current, A		17.5	24	32
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 43x61x4.2	OMEGA 3: 41x70x5.2	OMEGA 3: 45x78x6.2
Accessories				
End insulator	gray	ZHM411GR	ZHM511GR	ZHM211GR
	blue	ZHI411	ZHI511	ZHI211
Non-insulated jumpers	2 poles	ZPTC0102	ZPTC0302	ZPTC0502
	3 poles	ZPTC0103	ZPTC0303	ZPTC0503
	5 poles	ZPTC0105	ZPTC0305	ZPTC0505
	10 poles	ZPTC0110	ZPTC0310	ZPTC0510
	X poles	ZPTC0100 (50 poles)	ZPTC0300 (47 poles)	ZPTC0500 (40 poles)
Jumper marking		ZPTC0990	ZPTC0990	ZPTC0990
Insulating dividers for jumpers	for separation of 2 jumpers	ZDF500	–	–
Divider		ZDH02R	ZDH02R	ZDH04R
Tracing probe		–	ZDD001	ZDD001
Tracing probe (modular)		ZDH004	ZDH005	ZDH006
Probe end insulator		ZDH401	ZDH501	ZDH601
Marking (page 441)		SHZ/1	CNU/08/51, CNU/08/61	
DIN rail		02135	02135	02135
Screwdriver		ZCCH02	ZCCH02	ZCCH02

HTE series, 2 inputs and 2 outputs



Appearance



Electric diagram

Purpose:

- connection of ground loops.

Installation conditions:

- attachment on rails of OMEGA type.

Characteristics:

- color is yellow-green.

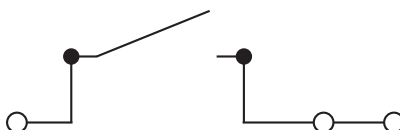
Characteristics	Values
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		1.5	2.5	4
Terminal block type		HTE.1/2+2	HTE.2/2+2	HTE.4/2+2
Terminal block code	yellow-green	ZHT420	ZHT520	ZHT270
Section range, mm ²	1 conductor	0.2-2.5	0.2-4	0.2-6
	2 conductors with the same section	0.2-0.75	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-1.5	0.2-2.5	0.2-4
	2 conductors in a double lug	0.5-0.75	0.5-1.5	0.5-2.5
Jumper current, A		17.5	24	32
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 43x65x4.2	OMEGA 3: 41x82x5.2	OMEGA 3: 45x98x6.2
Accessories				
End insulator	gray	ZHM421GR	ZHM521GR	ZHM221GR
	blue	ZHI421	ZHI521	ZHI221
Non-insulated jumpers	2 poles	ZPTC0102	ZPTC0302	ZPTC0502
	3 poles	ZPTC0103	ZPTC0303	ZPTC0503
	5 poles	ZPTC0105	ZPTC0305	ZPTC0505
	10 poles	ZPTC0110	ZPTC0310	ZPTC0510
	X poles	ZPTC0100 (50 poles)	ZPTC0300 (47 poles)	ZPTC0500 (40 poles)
Jumper marking		ZPTC0990	ZPTC0990	ZPTC0990
Insulating dividers for jumpers	for separation of 2 jumpers	ZDF500	-	-
Divider		ZDH03R	ZDH03R	ZDH04R
Tracing probe		-	ZDD001	ZDD001
Tracing probe (modular)		ZDH004	ZDH005	ZDH006
Probe end insulator		ZDH401	ZDH501	ZDH601
Marking (page 441)		SHZ/1	CNU/08/51, CNU/08/61	
DIN rail		02135	02135	02135
Screwdriver		ZCCH02	ZCCH02	ZCCH02

Terminal block with disconnecter



Appearance



Electric diagram

Purpose:

- arrangement of a releasable connection.

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- cross connection is possible (except for a disconnecter with a lever).

Characteristics:

- color is gray.

Characteristics	Values
Rated voltage, V	400
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		HMM.2/1+2/S
Terminal block code		ZHMS20GR
Section range, mm ²	gray	
	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		16
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 48x66x5.2
Accessories		
End insulator	gray	ZHM511GR
Divider		ZDH02R
Tracing probe		ZDD001
Tracing probe (modular)		ZDH005
Probe end insulator		ZDH501
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT003, ZBT005, ZBT007
DIN rail		02135
Screwdriver		ZCCH02

Terminal block with disconnecter



Appearance



Electric diagram

Purpose:

- arrangement of a releasable connection.

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- cross connection is possible (except for a disconnecter with a lever).

Characteristics:

- color is gray.

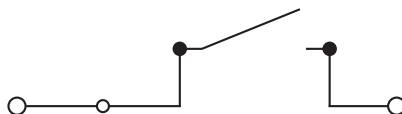
Characteristics	Values
Rated voltage, V	400
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		HMM.2/2+2/S
Terminal block code		gray
Terminal block without an insert-disconnector		ZHMS10GR
Section range, mm ²	1 conductor	ZHM170GR
	2 conductors with the same section	0.2-4
	1 conductor with a lug	0.2-1.5
	2 conductors in a double lug	0.2-2.5
Rated current, A		0.5-1.5
Dimensions after installation on DIN rail, mm Height x Length x Thickness		16
		OMEGA 3: 37x82x5.2
Accessories		
End insulator	gray	ZHM521GR
Divider		ZDH03R
Tracing probe		ZDD001
Tracing probe (modular)		ZDH005
Probe end insulator		ZDH501
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT003, ZBT005, ZBT007
DIN rail		02135
Screwdriver		ZCCH02

Terminal block with knife disconnecter



Appearance



Electric diagram

Purpose:

- arrangement of a releasable connection.

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- cross connection is possible (except for a disconnecter with a lever).

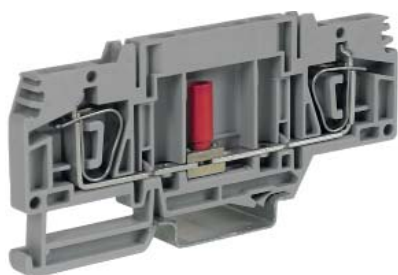
Characteristics:

- color is gray.

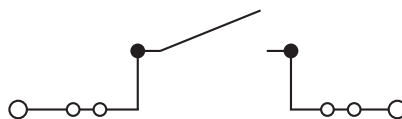
Characteristics	Values
Rated voltage, V	400
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		HMS.2/GR
Terminal block code		ZHS200GR
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		16
Jumper current, A		24
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 37x66x5.2
Accessories		
End insulator	gray	ZHM511GR
Non-insulated jumpers	2 poles	ZPTC0302
	3 poles	ZPTC0303
	5 poles	ZPTC0305
	10 poles	ZPTC0310
	X poles	ZPTC0300 (47 poles)
Jumper marking		ZPTC0990
Insulated jumpers (red)	2 poles	ZPTP0302R
	3 poles	ZPTP0303R
	5 poles	ZPTP0305R
	10 poles	ZPTP0310R
	30 poles	ZPTP0330R
Divider		ZDH02R
Tracing probe		ZDD001
Tracing probe (modular)		ZDH005
Probe end insulator		ZDH501
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT003, ZBT005, ZBT007
DIN rail		02135
Screwdriver		ZCCH02

Terminal blocks with disconnecter for measuring equipment



Appearance



Electric diagram

Purpose:

- performance of measurements in secondary circuits of current transformers.

Installation conditions:

- attachment on rails of OMEGA type.

Distinctive features:

- possibility of cross connection.

Characteristics:

- color is gray.

Characteristics	Values
Rated voltage, V	800
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		4	6
Terminal block type		HSCB.4	HSCB.6
Disconnecter type		Sliding	Sliding
Terminal block code	gray	ZHB100GR	ZHB200GR
Section range, mm ²	1 conductor	0.2-6	0.2-10
	2 conductors with the same section	0.2-1.5	0.2-2.5
	1 conductor with a lug	0.2-4	0.5-6
	2 conductors in a double lug	0.5-2.5	0.5-4
Rated current, A		32	41
Jumper current, A		32	41
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 45x86x6.2	OMEGA 3: 48x97x8.2
Accessories			
End insulator	gray	ZHB101GR	ZHB201GR
Non-insulated jumpers	2 poles	ZPTC0502	ZPTC0802
	3 poles	ZPTC0503	ZPTC0803
	5 poles	ZPTC0505	ZPTC0805
	10 poles	ZPTC0510	ZPTC0810
	X poles	ZPTC0500 (40 poles)	ZPTC0800 (30 poles)
Jumper marking		ZPTC0990	ZPTC0990
Insulated jumpers (red)	2 poles	ZPTP0502R	-
	3 poles	ZPTP0503R	-
	5 poles	ZPTP0505R	-
	10 poles	ZPTP0510R	-
	30 poles	ZPTP0530R	-
Releasable jumper	2 poles	-	ZHB203
	4 poles	-	ZHB204
Screw and sleeve for a releasable jumper		-	ZHB205
Tracing probe		-	ZDD001
Testing socket		-	ZPD017
Divider		ZDH04R	-
Marking (page 441)		CNU/08/51, CNU/08/61	
Terminal end stop		ZBT003, ZBT005, ZBT007	
DIN rail		02135	
Screwdriver		ZCCH02	-

Fuse holders



Appearance



Electric diagram

Purpose:

- installation of fuses, diodes and other functional elements.

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- terminal blocks of HMFA and HFR types allow bridging with all terminal blocks of HMFA, HFR, HTE, HMM, HMS series for a wire with the same or closest smaller section. Bridging conditions:
 - standard jumpers are used when bridging with terminal blocks for a wire with the same section. The number of combined terminal blocks depends on a jumper used;
 - it is possible to combine only two terminal blocks with a ZPTC0302 bridge when bridging with a terminal block for a wire with the smaller section;
 - bridging conditions are specified on page 456.

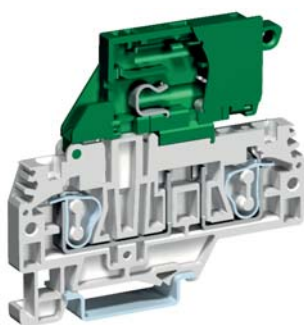
Characteristics:

- color is gray.

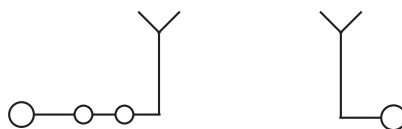
Characteristics	Values
Rated voltage, V	400
Rated impulse voltage Uimp, kV	4
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		HMFA.2
Fuse type		Knife (according to DIN 72581/3F – ISO 8820 standard)
Terminal block code	gray	ZHF300GR
Type of a terminal block with fuse state indication (LED, 12 V, AC/DC, non-polar)	gray	ZHF312GR
Type of a terminal block with fuse state indication (LED, 24 V, AC/DC, non-polar)	gray	ZHF324GR
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		6.3
Rated jumper current, A		24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 41x66x5.2
Accessories		
End insulator	gray	ZHM511GR
Non-insulated jumpers	2 poles	ZPTC0302
	3 poles	ZPTC0303
	5 poles	ZPTC0305
	10 poles	ZPTC0310
	X poles	ZPTC0300 (47 poles)
Jumper marking		ZPTC0990
Tracing probe		ZDD001
Tracing probe (modular)		ZDH005
Probe end insulator		ZDH501
Divider		ZDH02R
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT003, ZBT005, ZBT007
DIN rail		02135
Screwdriver		ZCCH02

Fuse holders



Appearance



Electric diagram

Purpose:

- installation of fuses, diodes and other functional elements.

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- terminal blocks of HMFA and HFR types allow bridging with all terminal blocks of HMFA, HFR, HTE, HMM, HMS series for a wire with the same or closest smaller section. Bridging conditions:
 - standard jumpers are used when bridging with terminal blocks for a wire with the same section. The number of combined terminal blocks depends on a jumper used;
 - it is possible to combine only two terminal blocks with a ZPTC0302 bridge when bridging with a terminal block for a wire with the smaller section;
 - bridging conditions are specified on page 455.

Characteristics:

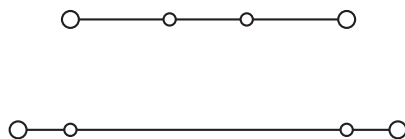
- color is gray.

Characteristics		Values	
Rated voltage, V		500	
Rated impulse voltage Uimp, kV		4	
Flammability classification		V0	
Operating temperature, °C		from –40 to +80	
Enclosure material		polyamide	
Material of current-carrying elements		Nickel-plated brass	
Nominal section, mm ²		4	
Terminal block type		HFR.4/M	HFR.4
Fuse type		5x20 mm	6x20 mm
Terminal block code	gray	ZHF310GR	ZHF210GR
Type of a terminal block with fuse state indication (LED, 12-48 V, AC/DC, non-polar)	gray	ZHF918MGR	ZHF918GR
Type of a terminal block with fuse state indication (LED, 115-230 V, AC/DC, non-polar)	gray	ZHF910MGR	ZHF910GR
Section range, mm ²	1 conductor	0.2-6	0.2-6
	2 conductors with the same section	0.2-1.5	0.2-1.5
	1 conductor with a lug	0.2-4	0.2-4
	2 conductors in a double lug	0.5-2.5	0.5-2.5
Rated current, A		6.3 when using a fuse 10 when using a tinned element (ZVL103)	10
Rated jumper current, A		32	32
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 70x78x6.2	OMEGA 3: 70x78x8.2
Accessories			
End insulator	gray	ZHF211GR	ZHF211GR
Non-insulated jumpers	2 poles	ZPTC0502	ZPTC5102
	3 poles	ZPTC0503	ZPTC5103
	5 poles	ZPTC0505	ZPTC5105
	10 poles	ZPTC0510	ZPTC5110
	X poles	ZPTC0500 (40 poles)	ZPTC5100 (30 poles)
Jumper marking		ZPTC0990	ZPTC0990
LED indicator	12-48 V (AC/DC)	ZHF518M	ZHF518
	115-230 V (AC/DC)	ZHF510M	ZHF510
Tracing probe		ZDD001	ZDD001
Tinned insert		ZVL103	–
Divider		ZDH04R	ZDH04R
Marking (page 441)		CNU/08/51, CNU/08/61	
Terminal end stop		ZBT003, ZBT005, ZBT007	

Two-level terminal blocks



Appearance



Electric diagram

Purpose:

- multilevel switching of low current circuits.

Installation conditions:

- attachment on a rail of OMEGA type.

Characteristics:

- colors are gray, blue.

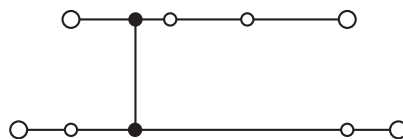
Characteristics		Values	
Rated voltage, V		500 for terminal blocks for section of 1.5 mm ² 630 for terminal blocks for section of 2.5 mm ²	
Rated impulse voltage Uimp, kV		8 (6 for two-level terminal blocks for section of 1.5 mm ²)	
Flammability classification		V0	
Operating temperature, °C		from -40 to +80	
Enclosure material		polyamide	
Material of current-carrying elements		Nickel-plated brass	

Nominal section, mm ²		1.5	2.5
Terminal block type		HMD.1	HMD.2N
Terminal block code	gray	ZHD200GR	ZHD400GR
	blue	ZHD300	ZHD410
Section range, mm ²	1 conductor	0.2-2.5	0.2-2.5
	2 conductors with the same section	0.2-0.75	0.2-0.75
	1 conductor with a lug	0.2-1.5	0.2-1.5
	2 conductors in a double lug	0.5-0.75	0.5-0.75
Rated current, A		17.5	24
Jumper current, A		17.5	24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 59x73x4.2	OMEGA 3: 59x73x5.2
Accessories			
End insulator	gray	ZHD201GR	ZHD201GR
	blue	ZHD301	ZHD301
Non-insulated jumpers	2 poles	ZPTC0102	ZPTC0302
	3 poles	ZPTC0103	ZPTC0303
	5 poles	ZPTC0105	ZPTC0305
	10 poles	ZPTC0110	ZPTC0310
	X poles	ZPTC0100 (50 poles)	ZPTC0300 (47 poles)
Jumper marking		ZPTC0990	ZPTC0990
Insulated jumpers (red)	2 poles	-	ZPTP0302R
	3 poles	-	ZPTP0303R
	5 poles	-	ZPTP0305R
	10 poles	-	ZPTP0310R
	30 poles	-	ZPTP0330R
Insulating dividers for jumpers	for insulation of 2 jumpers	ZDF500	ZDF500
Divider		ZDU07R	ZDU07R
Tracing probe (modular)		ZDH004	ZDH007
Probe end insulator		ZDH401	ZDH701
Marking (page 441)		SHZ/1	CNU/08/51 CNU/08/61
Terminal end stop		ZBT003, ZBT005, ZBT007	
DIN rail		02135	
Screwdriver		ZCCH02	

Two-level terminal blocks with level bridging



Appearance



Electric diagram

Purpose:

- multilevel switching of low current circuits.

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- it is possible to bridge levels in HMD.2 series terminal blocks promptly.

Characteristics:

- colors are gray, blue.

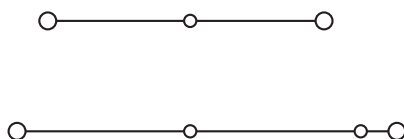
Characteristics	Values
Rated voltage, V	500 for terminal blocks for section of 1.5 mm ² 630 for terminal blocks for section of 2.5 mm ²
Rated impulse voltage Uimp, kV	8 (6 for two-level terminal blocks for section of 1.5 mm ²)
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		1.5	2.5
Terminal block type		HMD.1/CI/GR	HMD.2N/CI/GR
Terminal block code	gray	ZHD120GR	ZHD450GR
Section range, mm ²	1 conductor	0.2-2.5	0.2-2.5
	2 conductors with the same section	0.2-0.75	0.2-0.75
	1 conductor with a lug	0.2-1.5	0.2-1.5
	2 conductors in a double lug	0.5-0.75	0.5-0.75
Rated current, A		17.5	24
Jumper current, A		17.5	24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 59x73x4.2	OMEGA 3: 59x73x5.2
Accessories			
End insulator	gray	ZHD201GR	ZHD201GR
	blue	ZHD301	ZHD301
Non-insulated jumpers	2 poles	ZPTC0102	ZPTC0302
	3 poles	ZPTC0103	ZPTC0303
	5 poles	ZPTC0105	ZPTC0305
	10 poles	ZPTC0110	ZPTC0310
	X poles	ZPTC0100 (50 poles)	ZPTC0300 (47 poles)
Jumper marking		ZPTC0990	ZPTC0990
Insulated jumpers (red)	2 poles	-	ZPTP0302R
	3 poles	-	ZPTP0303R
	5 poles	-	ZPTP0305R
	10 poles	-	ZPTP0310R
	30 poles	-	ZPTP0330R
Insulating dividers for jumpers	for insulation of 2 jumpers	ZDF500	ZDF500
Divider		ZDU07R	ZDU07R
Tracing probe (modular)		ZDH004	ZDH007
Probe end insulator		ZDH401	ZDH701
Marking (page 441)		SHZ/1	CNU/08/51 CNU/08/61
Terminal end stop		ZBT003, ZBT005, ZBT007	
DIN rail		02135	
Screwdriver		ZCCH02	

Two-level terminal block



Appearance



Electric diagram

Purpose:

- multilevel switching of low current circuits.

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- it is possible to bridge levels promptly.

Characteristics:

- color is gray.

Characteristics	Values
Rated voltage, V	800
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

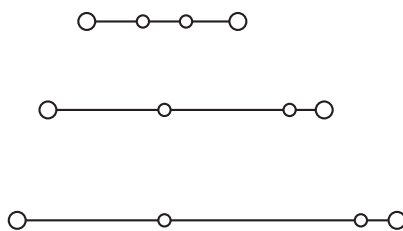
Nominal section, mm ²		2.5
Terminal block type		HMD.2
Terminal block code	gray	ZHD100GR
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24
Jumper current, A		24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 49x91x5.2

Accessories		
End insulator	gray	ZHD101GR
Non-insulated jumpers	2 poles	ZPH100
Interlevel jumper		ZPHD02
Divider		ZDH04R
Tracing probe		ZDD001
Probe end insulator		ZDH701
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT003, ZBT005, ZBT007
DIN rail		02135
Screwdriver		ZCCH02

Three-level terminal block



Appearance



Electric diagram

Purpose:

- multilevel switching of low current circuits.

Installation conditions:

- attachment on a rail of OMEGA type.

Characteristics:

- color is gray.

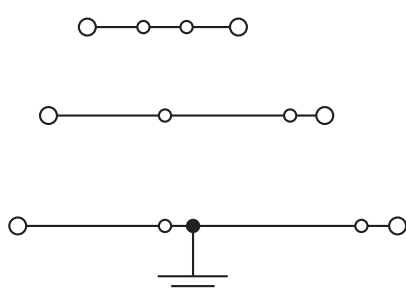
Characteristics	Values
Rated voltage, V	500
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		HLD.2
Terminal block code	gray	ZHL200GR
Section range, mm ²	1 conductor	0.2-2.5
	2 conductors with the same section	0.2-0.75
	1 conductor with a lug	0.2-1.5
	2 conductors in a double lug	0.5-0.75
Rated current, A		24
Jumper current, A		24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 75x95x5.2
Accessories		
End insulator	gray	ZHL201GR
Non-insulated jumpers	2 poles	ZPTC0302
	3 poles	ZPTC0303
	5 poles	ZPTC0305
	10 poles	ZPTC0310
	X poles	ZPTC0300 (47 poles)
Jumper marking		ZPTC0990
Insulated jumpers (red)	2 poles	ZPTP0302R
	3 poles	ZPTP0303R
	5 poles	ZPTP0305R
	10 poles	ZPTP0310R
	30 poles	ZPTP0330R
Insulating dividers for jumpers	for insulation of 2 jumpers	ZDF500
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT003, ZBT005, ZBT007
DIN rail		02135
Screwdriver		ZCCH02

Three-level terminal block with grounding



Appearance



Electric diagram

Purpose:

- multilevel switching of low current circuits.

Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- grounding at the lower level.

Characteristics:

- color is gray.

Characteristics	Values
Rated voltage, V	500
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		HDE.2
Terminal block code	gray	ZHL500GR
Section range, mm ²	1 conductor	0.2-2.5
	2 conductors with the same section	0.2-0.75
	1 conductor with a lug	0.2-1.5
	2 conductors in a double lug	0.5-0.75
Rated current, A		24
Jumper current, A		24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 75x95x5.2

Accessories		
End insulator	gray	ZHL201GR
Non-insulated jumpers	2 poles	ZPTC0302
	3 poles	ZPTC0303
	5 poles	ZPTC0305
	10 poles	ZPTC0310
	X poles	ZPTC0300 (47 poles)
Jumper marking		ZPTC0990
Insulated jumpers (red)	2 poles	ZPTP0302R
	3 poles	ZPTP0303R
	5 poles	ZPTP0305R
	10 poles	ZPTP0310R
	30 poles	ZPTP0330R
Insulating dividers for jumpers	for insulation of 2 jumpers	ZDF500
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT003, ZBT005, ZBT007
DIN rail		02135
Screwdriver		ZCCH02

Terminal blocks with electronic components

Two-level empty


Purpose:

- integration of electronic components into a circuit.






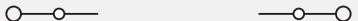
Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- cross connection is possible;
- level bridging is possible.

Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		1.5	2.5	2.5
Terminal block type		HMD.1/X	HMD.2N/X	HMD.2N/X1
Electric diagram				
				
Maximum thickness of installed components		3.4	3.9	3.9
Terminal block code	gray	ZHD130GR	ZHD440GR	ZHD441GR
Section range, mm ²	1 conductor	0.2-2.5	0.2-2.5	0.2-2.5
	2 conductors with the same section	0.2-0.75	0.2-0.75	0.2-0.75
	1 conductor with a lug	0.2-1.5	0.2-1.5	0.2-1.5
	2 conductors in a double lug	0.5-0.75	0.5-0.75	0.5-0.75
Rated current, A		17.5	24	24
Jumper current, A		17.5	24	24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 59x73x4.2	OMEGA 3: 59x73x5.2	OMEGA 3: 59x73x5.2
Accessories				
End insulator	gray	ZHD201GR	ZHD201GR	ZHD201GR
Non-insulated jumpers	2 poles	ZPTC0102	ZPTC0302	ZPTC0302
	3 poles	ZPTC0103	ZPTC0303	ZPTC0303
	5 poles	ZPTC0105	ZPTC0305	ZPTC0305
	10 poles	ZPTC0110	ZPTC0310	ZPTC0310
	X poles	ZPTC0100 (50 poles)	ZPTC0300 (47 poles)	ZPTC0300 (47 poles)
Jumper marking		ZPTC0990	ZPTC0990	ZPTC0990
Insulated jumpers (red)	2 poles	–	ZPTP0302R	ZPTP0302R
	3 poles	–	ZPTP0303R	ZPTP0303R
	5 poles	–	ZPTP0305R	ZPTP0305R
	10 poles	–	ZPTP0310R	ZPTP0310R
	30 poles	–	ZPTP0330R	ZPTP0330R
Insulating dividers for jumpers	for insulation of 2 jumpers	ZDF500	ZDF500	ZDF500
Divider		ZDU07R	ZDU07R	ZDU07R
Tracing probe (modular)		ZDH004	ZDH007	ZDH007
Probe end insulator		ZDH401	ZDH701	ZDH701
Marking		SHZ/1	CNU/08/51, CNU/08/61	
Terminal end stop		ZBT003, ZBT005, ZBT007		

Two-level with pre-installed components



Purpose:

- integration of electronic components into a circuit.

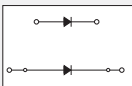
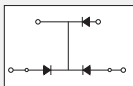
Installation conditions:

- attachment on a rail of OMEGA type.

Distinctive features:

- cross connection is possible;
- level bridging is possible.

Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5	2.5
Terminal block type		HMD.2N/DD	HMD.2/3DC
Electric diagram			
Installed electronic components		2 1N4007 diodes	3 1N4007 diodes
Terminal block code	gray	ZHD420GR	ZHD430GR
Section range, mm ²	1 conductor	0.2-2.5	0.2-2.5
	2 conductors with the same section	0.2-0.75	0.2-0.75
	1 conductor with a lug	0.2-1.5	0.2-1.5
	2 conductors in a double lug	0.5-0.75	0.5-0.75
Rated current, A		24	24
Jumper current, A		24	24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 59x73x5.2	OMEGA 3: 59x73x5.2

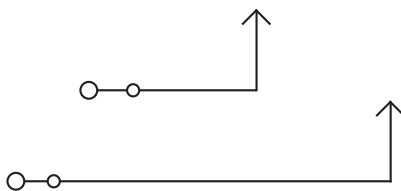
Accessories			
End insulator	gray	ZHD201GR	
Non-insulated jumpers	2 poles	ZPTC0302	
	3 poles	ZPTC0303	
	5 poles	ZPTC0305	
	10 poles	ZPTC0310	
	X poles	ZPTC0300 (47 poles)	
Jumper marking		ZPTC0990	
Insulated jumpers (red)	2 poles	ZPTP0302R	
	3 poles	ZPTP0303R	
	5 poles	ZPTP0305R	
	10 poles	ZPTP0310R	
	30 poles	ZPTP0330R	
Insulating dividers for jumpers	for insulation of 2 jumpers	ZDF500	
Divider		ZDU07R	
Tracing probe (modular)		ZDH007	
Probe end insulator		ZDH701	
Marking		CNU/08/51, CNU/08/61	
Terminal end stop		ZBT003, ZBT005, ZBT007	
DIN rail		02135	
Screwdriver		ZCCH02	

Terminal blocks with male contacts

Two-level terminal block



Appearance



Electric diagram

Purpose:

- arrangement of a "male-female"* detachable connection.

Installation conditions:

- attachment on rails of OMEGA type.

Distinctive features:

- contact pitch in case of group installation of terminal blocks is 5.08 mm;
- possibility of bridging.

Characteristics:

- colors are gray, beige, blue.

Characteristics	Values
Rated voltage, V	320
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

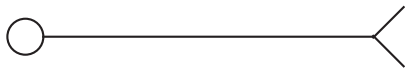
Nominal section, mm ²		1.5
Terminal block type		HCD.1
Terminal block code	gray	ZHC200GR
	blue	ZHC210
Code of a terminal block with a jumper between the upper and lower levels	gray	ZHC290GR
Section range, mm ²	1 conductor	0.2-2.5
	2 conductors with the same section	0.2-0.75
	1 conductor with a lug	0.2-1.5
	2 conductors in a double lug	0.5-0.75
Rated current, A		12
Jumper current, A		24
Dimensions after installation, mm Height x Length x Thickness		OMEGA 3: 59x72x5.08
Accessories		
End insulator	gray	ZHC201GR
	blue	ZHC211
Non-insulated jumpers	2 poles	ZPTC0202
	3 poles	ZPTC0203
	5 poles	ZPTC0205
	10 poles	ZPTC0210
	X poles	ZPTC0200 (50 poles)
Jumper marking		ZPTC0990
Female socket	2 poles	ZVP902
	3 poles	ZVP903
	4 poles	ZVP904
	5 poles	ZVP905
	6 poles	ZVP906
Protection of male contacts		ZVP102
Insulating dividers for jumpers	for insulation of 2 jumpers	ZDF500
Divider		ZDU07R
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT003, ZBT007
DIN rail		02135
Screwdriver		ZCCH02

* GOST 14312-79

Female sockets for terminal blocks with male contacts



Appearance



Electric diagram

- Purpose:**
- arrangement of a "male-female"* detachable connection.
- Distinctive features:**
- contact pitch in case of group installation is 5.08 mm;
 - inserted all the way in by slight pressing and fixed in a terminal block with a latch;
 - compatible with terminal blocks of VPC, VPD, HCD types.
- Characteristics:**
- color is green.

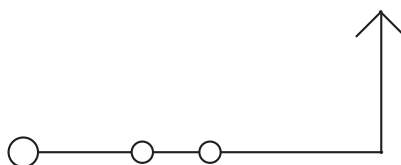
Number of poles	Socket type	Socket code
2	VPC/F02	ZVP902
3	VPC/F03	ZVP903
4	VPC/F04	ZVP904
5	VPC/F05	ZVP905
6	VPC/F06	ZVP906
7	VPC/F07	ZVP907
8	VPC/F08	ZVP908
9	VPC/F09	ZVP909
10	VPC/F10	ZVP910
11	VPC/F11	ZVP911
12	VPC/F12	ZVP912
13	VPC/F13	ZVP913
14	VPC/F14	ZVP914
15	VPC/F15	ZVP915
16	VPC/F16	ZVP916

* GOST 14312-79

HVPC series. 1 input and 1 output



Appearance



Electric diagram

Purpose:

- arrangement of a "male-female"* detachable connection.

Installation conditions:

- attachment on rails of OMEGA type.

Distinctive features:

- possibility of bridging;
- protection against contact with current-carrying parts.

Characteristics:

- color is gray.

Characteristics	Values
Rated voltage, V	800
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

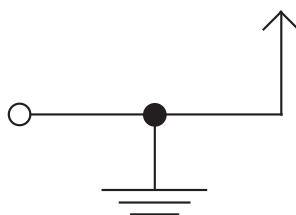
Nominal section, mm ²		2.5
Terminal block type		HVPC.2
Terminal block code	gray	ZHVP300GR
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24
Jumper current, A		24
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 41x50x5.2
Accessories		
End insulator	gray	ZHVP301GR
Non-insulated jumpers	2 poles	ZPTC0302
	3 poles	ZPTC0303
	5 poles	ZPTC0305
	10 poles	ZPTC0310
	X poles	ZPTC0300 (47 poles)
Jumper marking		ZPTC0990
Insulated jumpers (red)	2 poles	ZPTP0302R
	3 poles	ZPTP0303R
	5 poles	ZPTP0305R
	10 poles	ZPTP0310R
	30 poles	ZPTP0330R
Female socket	with 1 connection point	ZHVP900GR
	with 2 connection points	ZHVP910GR
Divider		ZDH01R
Tracing probe		ZDD001
Tracing probe (modular)		ZDH005
Probe end insulator		ZDH501
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT003, ZBT005, ZBT007
DIN rail		02135
Screwdriver		ZCCH02

* GOST 14312-79

HVTE series. 1 input and 1 output



Appearance



Electric diagram

Purpose:

- connection of ground loops.

Installation conditions:

- attachment on rails of OMEGA type.

Distinctive features:

- contact for a DIN rail;
- protection against contact with current-carrying parts.

Characteristics:

- color is yellow-green.

Characteristics	Values
Rated voltage, V	800
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

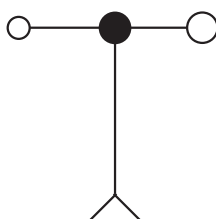
Nominal section, mm ²		2.5
Terminal block type		HVTE.2
Terminal block code	yellow-green	ZHVT500
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24
Jumper current, A		24
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 41x50x5.2
Accessories		
End insulator	gray	ZHVP301GR
Female socket	with 1 connection point	ZHVT900
	with 2 connection points	ZHVT910
Divider		ZDH01R
Tracing probe		ZDD001
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT003, ZBT005, ZBT007
DIN rail		02135
Screwdriver		ZCCH02

Terminal blocks with female contacts

One connection point of conductors



Appearance



Electric diagram

Purpose:

- arrangement of a "male-female"* detachable connection.

Distinctive features:

- contact pitch in case of group installation is 5.2 mm;
- compatible with terminal blocks of HVPC, HVTE types bridging is possible, combination into assemblies with a random number of poles is possible;
- not attached with a latch on a terminal.

Installation conditions:

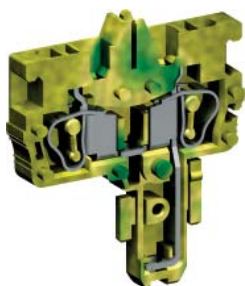
- for installation example see page 459.

Characteristics	Values
Rated voltage, V	800
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

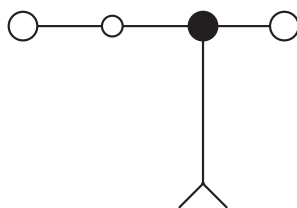
Nominal section, mm ²		2.5
Terminal block type		CHP.2/CHTE.2
Terminal block code	gray	ZHVP900GR (CHP.2 type)
	yellow-green	ZHVT900 (CHTE.2 type)
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24
Jumper current, A		24
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 67x58x5.2
Accessories		
End insulator	gray	ZHVP901GR
Non-insulated jumpers	2 poles	ZPTC0302
	3 poles	ZPTC0303
	5 poles	ZPTC0305
	10 poles	ZPTC0310
	X poles	ZPTC0300 (47 poles)
Jumper marking		ZPTC0990
Insulated jumpers (red)	2 poles	ZPTP0302R
	3 poles	ZPTP0303R
	5 poles	ZPTP0305R
	10 poles	ZPTP0310R
	30 poles	ZPTP0330R
Divider		ZDH01R
Tracing probe		ZDD001
Tracing probe (modular)		ZDH005
Probe end insulator		ZDH501
Marking (page 441)		CNU/08/51, CNU/08/61
Screwdriver		ZCCH02

* GOST 14312-79

Two connection points of conductors



Appearance



Electric diagram

Purpose:

- arrangement of a "male-female"* detachable connection.

Distinctive features:

- contact pitch in case of group installation is 5.2 mm;
- compatible with terminal blocks of HVPC, HVTE types bridging is possible, combination into assemblies with a random number of poles is possible;
- not attached with a latch on a terminal.

Installation conditions:

- for installation example see page 457.

Characteristics	Values
Rated voltage, V	800
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		CHP.2D/CHTE.2D
Terminal block code	gray	ZHVP910GR (CHP.2D type)
	yellow-green	ZHVT910 (CHTE.2D type)
Section range, mm ²	1 conductor	0.2-4
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-2.5
	2 conductors in a double lug	0.5-1.5
Rated current, A		24
Jumper current, A		24
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 67x58x5.2

Accessories		
End insulator	gray	ZHVP911GR
Non-insulated jumpers	2 poles	ZPTC0302
	3 poles	ZPTC0303
	5 poles	ZPTC0305
	10 poles	ZPTC0310
	X poles	ZPTC0300 (47 poles)
Jumper marking		ZPTC0990
Insulated jumpers (red)	2 poles	ZPTP0302R
	3 poles	ZPTP0303R
	5 poles	ZPTP0305R
	10 poles	ZPTP0310R
	30 poles	ZPTP0330R
Divider		ZDH01R
Tracing probe		ZDD001
Tracing probe (modular)		ZDH005
Probe end insulator		ZDH501
Marking (page 441)		CNU/08/51, CNU/08/61
Screwdriver		ZCCH02

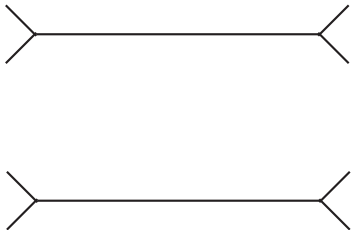
* GOST 14312-79

Terminal blocks with flat contacts

AFO type



Appearance



Electric diagram

- Purpose:**
- arrangement of a quick-release connection.
- Installation conditions:**
- attachment on rails of OMEGA and G types.
- Characteristics:**
- color is beige.

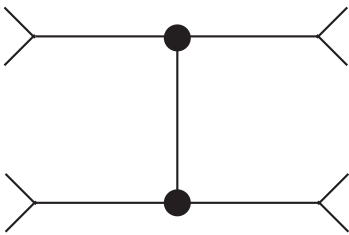
Characteristics	Values
Rated voltage, V	400
Rated impulse voltage Uimp, kV	4
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		2.5
Terminal block type		AFO.2/1+1
Terminal block code	beige	ZAF500
Rated current, A		20
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 49x44x6.5
Accessories		
End insulator	gray	ZAF201
Divider		ZDU01R
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT001, ZBT003, ZBT005, ZBT007
DIN rail		02135, 02120
Screwdriver		ZCCH02

AFO type



Appearance



Electric diagram

- Purpose:**
- arrangement of a quick-release connection.
- Installation conditions:**
- attachment on rails of OMEGA and G types.
- Characteristics:**
- color is beige.

Characteristics		Values
Rated voltage, V		400
Rated impulse voltage Uimp, kV		4
Flammability classification		V0
Operating temperature, °C		from -40 to +80
Enclosure material		polyamide
Material of current-carrying elements		Nickel-plated brass

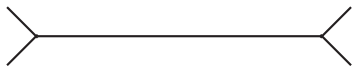
Nominal section, mm ²		2.5
Terminal block type		AFO.2/2+2
Terminal block code	beige	ZAF400
Rated current, A		20
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 49x44x6.5

Accessories		
End insulator	gray	ZAF201
Divider		ZDU01R
Marking (page 441)		CNU/08/51, CNU/08/61
Terminal end stop		ZBT001, ZBT003, ZBT005, ZBT007
DIN rail		02135, 02120
Screwdriver		ZCCH02

CF type



Appearance



Electric diagram

- Purpose:**
- arrangement of a quick-release connection.
- Installation conditions:**
- installed on a panel;
 - tightened with a M4 stud.
- Mounting features:**
- may be installed both one by one and with several blocks;
 - when installing by groups, a ZCF102 insulating bushing should be placed between adjacent blocks.
- Characteristics:**
- color is beige;
 - distance between holes for studs is 69.5 mm.

Characteristics		Values
Rated voltage, V		500
Rated impulse voltage Uimp, kV		6
Flammability classification		V0
Operating temperature, °C		from -40 to +80
Enclosure material		polyamide
Material of current-carrying elements		Nickel-plated brass

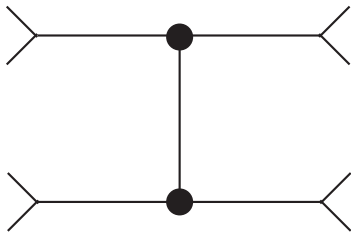
Nominal section, mm²		2.5
Terminal block type		CF.12/1+1
Terminal block code	with an upper cover	ZCF900
	without an upper cover	ZCF100
Number of poles in a block		12
Rated current, A		20
Dimensions after installation on DIN rail, mm Height x Length x Thickness		109x34x16.5

Accessories	
Upper cover code	ZCF101
Insulating bushing	ZCF102

CF type



Appearance



Electric diagram

- Purpose:**
- arrangement of a quick-release connection.
- Installation conditions:**
- installed on a panel;
 - tightened with a M4 stud.
- Mounting features:**
- may be installed both one by one and with several blocks;
 - when installing by groups, a ZCF102 insulating bushing should be placed between adjacent blocks;
 - it is required to install a ZCF201 shortened bushing on a tightening stud between a nut and a block for ease of tightening of CF.12/2+2 type blocks.
- Characteristics:**
- color is beige;
 - distance between holes for studs is 69.5 mm.

Characteristics	Values
Rated voltage, V	500
Rated impulse voltage Uimp, kV	6
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

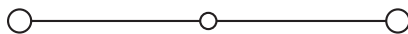
Nominal section, mm²	2.5
Terminal block type	CF.12/2+2
Terminal block code	ZCF200
Number of poles in a block	12
Rated current, A	20
Dimensions after installation on DIN rail, mm Height x Length x Thickness	109x34x24
Accessories	
Insulating bushing	ZCF102
Shortened insulating bushing	ZCF201

Insulation displacement blocks

NCS/V type



Appearance



Electric diagram

Purpose:

- arrangement of a quick connection.

Installation conditions:

- attachment on rails of OMEGA type.

Characteristics:

- color is beige.

Characteristics	Values
Rated voltage, V	800
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²		1.5
Terminal block type		NCS
Terminal block code		ZNC100
Section range, mm ²	beige	
	1 polyconductor	0.5-1.5
	1 single conductor	0.5-1
	1 conductor with a lug	-
	2 conductors in a double lug	-
Rated current, A		15
Jumper current, A		24
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 53x48x5.2

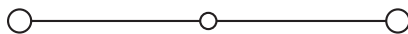
Accessories		
End insulator	beige	ZNC101
Non-insulated jumpers	2 poles	ZPOF99
	X poles	ZPMP02 – jumper for 40 poles ZCPM99 – screw
Divider		ZDU02R
Marking (page 441)		CNU/08/51 CNU/08/61
DIN rail		02135 02120
Screwdriver		ZCCH02

Insulation displacement blocks

NCS/V type



Appearance



Electric diagram

Purpose:

- arrangement of a quick connection.

Installation conditions:

- attachment on rails of OMEGA type.

Characteristics:

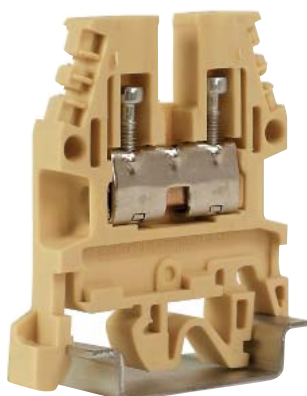
- color is beige.

Characteristics		Values
Rated voltage, V		800
Rated impulse voltage Uimp, kV		8
Flammability classification		V0
Operating temperature, °C		from -40 to +80
Enclosure material		polyamide
Material of current-carrying elements		Nickel-plated brass

Nominal section, mm ²		4 / 1.5
Terminal block type		NCV
Terminal block code		ZNC200
Section range for connection with insulation displacement, mm ²	1 polyconductor	0.5-1.5
	1 single conductor	0.5-1
	1 conductor with a lug	-
	2 conductors in a double lug	-
Section range for screw type connection, mm ²	1 conductor	0.2-6
	2 conductors with the same section	0.2-1.5
	1 conductor with a lug	0.2-4
	2 conductors in a double lug	0.5-2.5
Rated current, A		15
Jumper current, A		24
Dimensions after installation on DIN rail, mm Height x Length x Thickness		OMEGA 3: 53x48x5.2
Accessories		
End insulator		ZNC101
Non-insulated jumpers	2 poles	ZPOF99
	X poles	ZPMP02 – jumper for 40 poles ZCPM99 – screw
Divider		ZDU02R
Marking (page 441)		CNU/08/51 CNU/08/61
DIN rail		02135 02120
Screwdriver		ZCCH02

Terminal blocks for connection of thermal elements

TC/PO type



Appearance



Electric diagram

Purpose:

- connection of thermal elements in measuring circuits.

Mounting features:

- conductors shall be stripped for length of 20 mm;
- installed conductors are overlapped within the terminal and contact directly with each other owing to increased stripping length and absence of an internal partition wall;
- two clamp screws and direct contact between conductors allow reducing probability of interference.

Installation conditions:

- attachment on rails of OMEGA and G types.

Characteristics:

- color is beige.

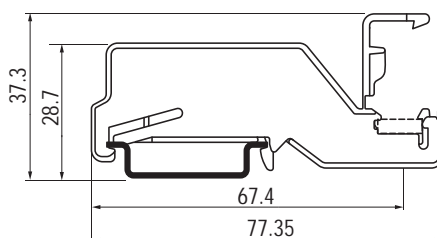
Characteristics	Values
Rated voltage, V	630
Rated impulse voltage Uimp, kV	8
Flammability classification	V0
Operating temperature, °C	from -40 to +80
Enclosure material	polyamide
Material of current-carrying elements	Nickel-plated brass

Nominal section, mm ²	1
Terminal block type	TC/PO
Terminal block code	beige ZTC500 blue ZTC510
Section range, mm ²	1 conductor 0.8-1.3
Dimensions after installation on DIN rail, mm Height x Length x Thickness	OMEGA 3: 47x40.5x5.5 G1: 51x40.5x5.5

Accessories		
End insulator	gray blue	ZCB111 ZCBX13
Divider		ZDU01R
Marking (page 441)		CNU/08/51
Terminal end stop		ZBT005, ZBT007
DIN rail		02135, 02120
Screwdriver		ZCCH02

Accessories for cable shield connection

Bus clamp for DIN rail



Purpose:

- installation of a bus 10x3 with a contact on a DIN rail.

Installation condition:

- installed on a rail of OMEGA type.

Distinctive features:

- used in arrangement of functional grounding or for potential equalization;
- rack ensures reliable contact between a bus being installed and a DIN rail;
- may be used as a terminal end stop.

Installation example:

- page 457.

Rack type	Dimensions after installation on DIN rail, mm Height x Length x Thickness	Rack code
BS.1L	28.7x77.35x6.2	ZBS1L

Insulated bus clamp



Purpose:

- installation of buses 10x3 or 6x6 on a mounting plate.

Installation condition:

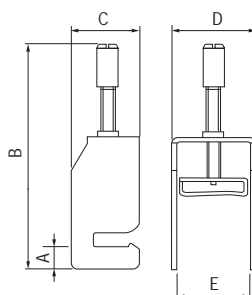
- bus is attached to a rack with two self-tapping screws (included);
- attached on a mounting plate with a self-tapping screw or a screw (not included).

Distinctive features:

- used in arrangement of functional grounding or for potential equalization.

Rack type	Dimensions, mm Height x Length x Thickness	Rack code
BS.I	18.4x23x19.17	ZBSI

Shield connection clamp



Purpose:

- cable shield connection to a bus 10x3 mm.

Installation condition:

- terminal block is installed on a bus and attached together with cable shield using a screw by means of a profiled groove.

Distinctive features:

- used in arrangement of functional grounding or for potential equalization.

Installation example:

- page 457.

Terminal block type	Diameter of connected cable, mm	Dimensions, mm					Terminal block code
		A	B (max)	C	D	E	
CC.8	8	6.5	48.7	19.5	12	9	ZCC8
CC.14	14	6.5	59.3	19.5	17	14	ZCC14
CC.20	20	6.5	75	19.5	24	21	ZCC20
CC.35	35	6.5	110	19.5	42	36.2	ZCC35

Shield connection contact



- Purpose:**
- switching of a shielded portion of conductors.
- Distinctive features:**
- installed at the lower part of through screw type terminal blocks for 2.5-10 mm².

Terminal block type	Shield code
CBC.2, CBC.4, CBC.6, CBC.10 CBD.2, CBD.4, CBD.6, CBD.10	ZCB009

Accessories

Terminal end stops

BT/DIN/PO type



Purpose:

- attachment of a set of terminal blocks on a rail.

Installation conditions:

- attachment on a rail of G type.

Characteristics:

- thickness is 8 mm;
- material is polyamide.

Color	End stop code
Black	ZBT001

BT/3 type



Purpose:

- attachment of a set of terminal blocks on a rail.

Installation conditions:

- attachment on a rail of OMEGA 3 type.

Characteristics:

- thickness is 8 mm;
- attached with a screw;
- material is polyamide.

Color	End stop code
Black	ZBT003

BTU type



Purpose:

- attachment of a set of terminal blocks on a rail.

Installation conditions:

- attachment on rails of OMEGA 3 and G types.

Characteristics:

- thickness is 8 mm;
- material is polyamide.

Color	End stop code
Black	ZBT005

BT/2 type



Purpose:

- attachment of a set of terminal blocks on a rail.

Installation conditions:

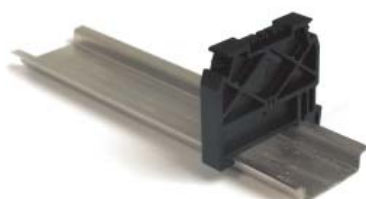
- attachment on a rail of OMEGA 2 type.

Characteristics:

- thickness is 8 mm;
- material is polyamide.

Color	End stop code
Black	ZBT006

BTO type



Purpose:

- attachment of a set of terminal blocks on a rail.

Installation conditions:

- attachment on a rail of OMEGA 3 type.

Characteristics:

- thickness is 8 mm;
- material is polyamide.

Color	End stop code
Black	ZBT007

Screw type jumpers


Purpose:

- bridging of a random number of terminal blocks.

Distinctive features:

- number of terminal blocks being bridged is 2 to 59;
- jumpers for 2, 3, 5 and 10 poles are supplied complete with screws.

Characteristics:

- attachment method is screws;
- conductive part material is nickel-plated brass;
- screws are supplied under an individual code for jumpers with length of 250 mm.

Terminal block type	2-pole	3-pole	5-pole	10-pole	Jumper with length of 250 mm		
					number of poles	jumper code	screw+sleeve
CBD.2	ZPM202	ZPM203	ZPM205	ZPM210	45	ZPMP01	ZCPM21
CBD.4	ZPM402	ZPM403	ZPM405	ZPM400	38	ZPMP42	ZCPM12
CBD.6	ZPM602	ZPM603	ZPM605	ZPM610	31	ZPMP13	ZCPM83
CBD.10	ZPM102	ZPM103	ZPM105	ZPM100	25	ZPMP04	ZCPM03
CBC.16	ZPOF53	–	–	–	21	ZPMP05	ZCPM53
CBC.35	ZPOF06	–	–	–	16	ZPMP06	ZCPM06
CBD.16	ZPOF44	–	–	–	21	ZPMP05	ZCPM44
CBD.35	ZPOF06	–	–	–	16	ZPMP06	ZCPM06
CBD.50	ZPOF07	–	–	–	14	ZPMP07	ZCPM07
CBD.70	ZPOF08	–	–	–	12	ZPMP08	ZCPM08
NCS	ZPOF99	–	–	–	40	ZPMP02	ZCPM99
NCV	ZPOF99	–	–	–	40	ZPMP02	ZCPM99
CBR.2	ZPM252	ZPM253	ZPM255	ZPM250	50	ZPMP25	ZCPM25
DAS.4	ZPM412	ZPM513	ZPM515	ZPM510	42	ZPMP58	ZCPM01
GPM.95	ZPO952	ZPO953	–	–	–	–	–
GPM.150	ZPO152	ZPO153	–	–	–	–	–
GPM.240	ZPO242	ZPO243	–	–	–	–	–
GPA.70 - GPA.70/FIX	ZPOF70	–	–	–	12	ZPMP08	ZCPM70
MPS.2/SW	ZPM912	ZPM913	ZPM915	ZPM910	45	ZPMP01	ZCPM11
MPS.2/SWP	ZPM912	ZPM913	ZPM915	ZPM910	45	ZPMP01	ZCPM11
RN.1	ZPM112	ZPM113	ZPM115	ZPM110	59	ZPMP16	ZCPM16
RN.2	ZPM122	ZPM123	ZPM125	ZPM120	50	ZPMP25	ZCPM16
RP.4	ZPM412	ZPM513	ZPM515	ZPM510	42	ZPMP58	ZCPM01
SCB.4	ZPM412	ZPM413	ZPM415	ZPM410	40	ZPMP02	ZCPM01
SCB.6	ZPOF57	–	–	–	31	ZPMP13	ZCPM57
SCB.10	ZPOF56	–	–	–	31	ZPMP13	ZCPM57
SFO.4	ZPM902	ZPM903	ZPM905	ZPM900	31	ZPMP20	ZCPM20
TDE.2	ZPM202	ZPM303	ZPM305	ZPM310	40	ZPMP02	ZCPM21
TLD.2	ZPM202	ZPM303	ZPM305	ZPM310	40	ZPMP02	ZCPM21
TLS.2	ZPM202	ZPM303	ZPM305	ZPM310	40	ZPMP02	ZCPM21

Releasable screw type jumpers for through terminal blocks


Purpose:

- creation of a releasable contact between adjacent terminal blocks.

Characteristics:

- attachment method is screws;
- material is nickel-plated brass.

Scope of supply:

- 2 screws; 2 sleeves; tie with a lock.

Installation example:

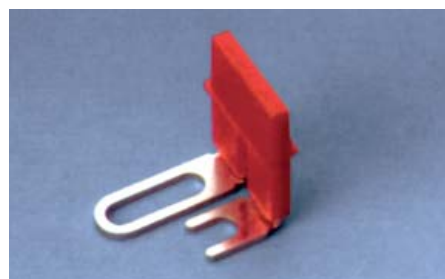
- page 457.

Terminal block type	Jumper code
CBC.16	ZPOS53
CBC.35	ZPOS66
CBD.2	ZPOS11
CBD.4	ZPOS42
CBD.6	ZPOS93
CBD.10	ZPOS44
CBD.16	ZPOS44
CBD.35	ZPOS66
CBD.50	ZPOS07
CBD.70	ZPOS08
DAS.4	ZPOS43
MPS.2/SW	ZPOS91
MPS.2/SWP	ZPOS91
RP.4	ZPOS43
TLD.2	ZPOS41
TLS.2	ZPOS41

Releasable screw type jumpers for testing terminal blocks



2-pole jumper of SCB/4, HSCB/6 types



2-pole jumper of SCB/6 type

Purpose:

- simultaneous closing or opening of contacts near testing terminal blocks.

Characteristics:

- attachment method is screws;
- material is nickel-plated brass.



Screw + sleeve



4-pole jumper of SCX/PO/4 type

Terminal block type	Jumper type for 2 poles	Jumper code for 2 poles	Jumper type for 4 poles	Jumper code for 4 poles	Type of "screw+sleeve" kit	Code of "screw+sleeve" kit
SCB.4	SCB/4/PO/2	ZSB303	SCB/4/PO/4	ZSB304	SCB/4/CPM	ZSB305
SCB.6	SCB/6/PO/2	ZSB203	SCB/6/PO/4	ZSB204	SCB/6/CPM	ZSB205 ZSB205R (with red socket)
SCB.10	SCX/PO/2	ZSC103	SCX/PO/4	ZSC104	SCX/CPM	ZSC105
HSCB.6	HSCB/6/PO/2	ZHB203	HSCB/6/PO/4	ZHB204	HSCB.6/ZCPM	ZHB205

Non-insulated plug-in jumpers


Purpose:

- fast and reliable bridging of terminal blocks.

Distinctive features:

- screw-less installation;
- various bridging schemes;
- standard jumper installation provides for IP20;
- does not require installation of additional insulation.

Characteristics:

- material is nickel-plated brass.

Instructions:

- page 454.

Terminal block type	2-pole jumper	3-pole jumper	5-pole jumper	10-pole jumper	Jumper with length of 250 mm	
					number of poles	code
CBC.2, CBS.2	ZPTC0202	ZPTC0203	ZPTC0205	ZPTC0210	50	ZPTC0200
CBC.4, CBS.4, CBF.4, DBC.4	ZPTC0402	ZPTC0403	ZPTC0405	ZPTC0410	42	ZPTC0400
CBC.6	ZPTC0602	ZPTC0603	ZPTC0605	ZPTC0610	31	ZPTC0600
CBC.10	ZPTC1002	ZPTC1003	ZPTC1005	ZPTC1010	25	ZPTC1000
DBC.2	ZPTC0202	ZPTC0203	ZPTC0205	ZPTC0210	50	ZPTC0200
DSFA.4	ZPTC0402	ZPTC0403	ZPTC0405	ZPTC0410	42	ZPTC0400
DSS.4	ZPTC0402	ZPTC0403	ZPTC0405	ZPTC0410	42	ZPTC0400
HDE.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
HLD.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
HMM.1	ZPTC0102	ZPTC0103	ZPTC0105	ZPTC0110	50	ZPTC0100
HMM.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
HMM.4	ZPTC0502	ZPTC0503	ZPTC0505	ZPTC0510	40	ZPTC0500
HMM.6	ZPTC0802	ZPTC0803	ZPTC0805	ZPTC0810	30	ZPTC0800
HMM.10	ZPTC1102	ZPTC1103	ZPTC1105	ZPTC1110	25	ZPTC1100
HMM.16	ZPTC1602	ZPTC1603	ZPTC1605	ZPTC1610	20	ZPTC1600
HTE.1	ZPTC0102	ZPTC0103	ZPTC0105	ZPTC0110	50	ZPTC0100
HTE.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
HTE.4	ZPTC0502	ZPTC0503	ZPTC0505	ZPTC0510	40	ZPTC0500
HTE.6	ZPTC0802	ZPTC0803	ZPTC0805	ZPTC0810	30	ZPTC0800
HTE.10	ZPTC1102	ZPTC1103	ZPTC1105	ZPTC1110	25	ZPTC1100
HTE.16	ZPTC1602	ZPTC1603	ZPTC1605	ZPTC1610	20	ZPTC1600
HMD.1	ZPTC0102	ZPTC0103	ZPTC0105	ZPTC0110	50	ZPTC0100
HMD.2N	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
HMS.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
HMFA.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
HFR.4/M	ZPTC0502	ZPTC0503	ZPTC0505	ZPTC0510	40	ZPTC0500
HFR.4	ZPTC5102	ZPTC5103	ZPTC5105	ZPTC5110	30	ZPTC5100
HSCB.4	ZPTC0502	ZPTC0503	ZPTC0505	ZPTC0510	40	ZPTC0500
HSCB.6	ZPTC0802	ZPTC0803	ZPTC0805	ZPTC0810	30	ZPTC0800
HPP.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
HP.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
HPC.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
MPS.4	ZPTC0402	ZPTC0403	ZPTC0405	ZPTC0410	42	ZPTC0400
MPFA.4	ZPTC0402	ZPTC0403	ZPTC0405	ZPTC0410	42	ZPTC0400
SFR.6	ZPTC2002	ZPTC2003	ZPTC2005	ZPTC2010	25	ZPTC2000
VPC.2	ZPTC0202	ZPTC0203	ZPTC0205	ZPTC0210	50	ZPTC0200
HCD.1	ZPTC0202	ZPTC0203	ZPTC0205	ZPTC0210	50	ZPTC0200
VPD.2	ZPTC0202	ZPTC0203	ZPTC0205	ZPTC0210	50	ZPTC0200
HVPC.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
CHP.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
CHP.2D	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
CHTE.2	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300
CHTE.2D	ZPTC0302	ZPTC0303	ZPTC0305	ZPTC0310	47	ZPTC0300

Insulated plug-in jumpers


Purpose:

- fast and reliable bridging of terminal blocks.

Distinctive features:

- screw-less installation;
- various bridging schemes;
- standard jumper installation provides for IP20;
- without installation of additional insulation;
- there is no need to use PTC/SP marking.

Characteristics:

material is nickel-plated brass.

Instructions:

- page 454.

Terminal block type	2-pole jumper		3-pole jumper		5-pole jumper		10-pole jumper		30-pole jumper	
	red	blue	red	blue	red	blue	red	blue	red	blue
CBC.2, CBS.2	ZPTP0202R	ZPTP0202B	ZPTP0203R	ZPTP0203B	ZPTP0205R	ZPTP0205B	ZPTP0210R	ZPTP0210B	ZPTP0230R	ZPTP0230B
CBC.4, CBS.4, CBF.4, DBC.4	ZPTP0402R	ZPTP0402B	ZPTP0403R	ZPTP0403B	ZPTP0405R	ZPTP0405B	ZPTP0410R	ZPTP0410B	ZPTP0430R	ZPTP0430B
CHP.2	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
CHP.2D	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
HDE.2	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
HLD.2	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
HMM.2	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
HMM.2/1+2	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
HMM.2/2+2	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
HMM.4	ZPTP0502R	ZPTP0502B	ZPTP0503R	ZPTP0503B	ZPTP0505R	ZPTP0505B	ZPTP0510R	ZPTP0510B	ZPTP0530R	ZPTP0530B
HMM.4/1+2	ZPTP0502R	ZPTP0502B	ZPTP0503R	ZPTP0503B	ZPTP0505R	ZPTP0505B	ZPTP0510R	ZPTP0510B	ZPTP0530R	ZPTP0530B
HMM.4/2+2	ZPTP0502R	ZPTP0502B	ZPTP0503R	ZPTP0503B	ZPTP0505R	ZPTP0505B	ZPTP0510R	ZPTP0510B	ZPTP0530R	ZPTP0530B
HTE.2	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
HTE.4	ZPTP0502R	ZPTP0502B	ZPTP0503R	ZPTP0503B	ZPTP0505R	ZPTP0505B	ZPTP0510R	ZPTP0510B	ZPTP0530R	ZPTP0530B
HMD.2N	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
HMS.2	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
HMFA.2	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
HFR.4	ZPTP0502R	ZPTP0502B	ZPTP0503R	ZPTP0503B	ZPTP0505R	ZPTP0505B	ZPTP0510R	ZPTP0510B	ZPTP0530R	ZPTP0530B
HSCB.4	ZPTP0502R	ZPTP0502B	ZPTP0503R	ZPTP0503B	ZPTP0505R	ZPTP0505B	ZPTP0510R	ZPTP0510B	ZPTP0530R	ZPTP0530B
HVPC.2	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B
HFR.4	ZPTP0302R	ZPTP0302B	ZPTP0303R	ZPTP0303B	ZPTP0305R	ZPTP0305B	ZPTP0310R	ZPTP0310B	ZPTP0330R	ZPTP0330B

Insulated two-pole plug-in jumpers


Purpose:

- bridging of two adjacent terminal blocks.

Distinctive features:

- availability of insulation.

Material:

- nickel-plated brass.

Terminal block type	Jumper code
HMD.2	ZPH100
HMF.4	ZPH100
FDP.2	ZPH100

Plug-in interlevel jumper


Purpose:

- bridging of the upper and lower levels of multilevel terminal blocks.

Distinctive features:

- availability of insulation.

Material:

nickel-plated brass.

Installation example:

- page 457.

Terminal block type	Jumper code
HMD.2	ZPHD02

Screw type interlevel jumpers


Purpose:

- bridging of the upper and lower levels of multilevel terminal blocks.

Material:

- nickel-plated brass.

Terminal block type	Internal level bridging		Internal level bridging with possibility of arrangement of external bridging between terminal blocks	
	jumper type	jumper code	jumper type	jumper code
DAS.4	DAS/VCI	ZDS107	DAS/VCE	ZDS108

Accessories for reading of terminal blocks

Modular tracing probes



Probe for CBD terminal blocks



Probe for HMM terminal blocks



Probe for CBC terminal blocks

Purpose:

- reading of a terminal block.

Distinctive features:

- installed in special holes on a terminal block;
- tracing probes may be combined into groups with any number of elements.

Terminal block type	Installation method	Method of attachment of conductor in probe	Probe type	Probe code
CBD.2	instead of a screw type jumper	soldering	SDD/5	ZDD005
CBD.4	instead of a screw type jumper	soldering	SDD/6	ZDD006
CBC.2	instead of a plug-in jumper	spring type terminal block	SDC/5	ZDC005
CBC.2	above a plug-in jumper	spring type terminal block	SDC/5P	ZDC05P
CBC.2	intermediate element	spring type terminal block	SDC/5V	ZDC05V
CBC.2	intermediate element	spring type terminal block	SDC/POL	ZDCPOL
CBC.4	instead of a plug-in jumper	spring type terminal block	SDC/6	ZDC006
CBC.4	above a plug-in jumper	spring type terminal block	SDC/6P	ZDC06P
CBC.4	intermediate element	spring type terminal block	SDC/6V	ZDC06V
HMM.1 HMM.1/1+2 HMM.1/2+2 HMD.1	in a special hole	soldering	SDH/4	ZDH004
HMM.2 HMM.2/1+2 HMM.2/2+2 HMD.2 HMS.2 HP.2 HP.2P	in a special hole	soldering	SDH/5	ZDH005
HMM.4	in a special hole	soldering	SDH/6	ZDH006
HMD.2N	in a special hole	spring type terminal block	SDH/7	ZDH007

End insulators for modular probes



- Purpose:**
- insulation of an end part of a tracing probe.
- Distinctive features:**
- installed on special mounting seats.

Terminal block type	Probe type	End insulator code
CBD.2	SDD/5	ZDD501
CBD.4	SDD/6	ZDD601
HMM.1 HMM.1/1+2 HMM.1/2+2 HMD.1	SDH/4	ZDH401
HMM.2 HMM.2/1+2 HMM.2/2+2 HMD.2 HMS.2 HP.2 HP.2P	SDH/5	ZDH501
HMM.4	SDH/6	ZDH601
HMD.2N	SDH/7	ZDH701

Tracing probes and testing sockets



Socket



Probe

Purpose:

- reading of a terminal block.

Distinctive features:

- installed in special holes on a terminal block;
- probes are made of silver-plated brass;
- testing socket is screwed in a terminal block;
- tracing probe is installed either in a socket or in a special hole in a terminal block.

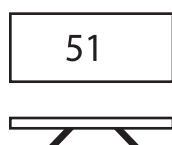
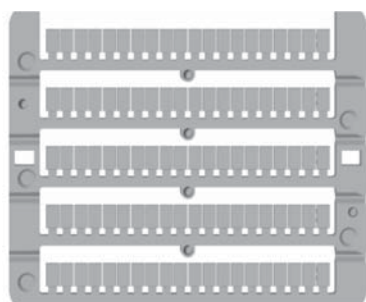
Instructions:

- page 456.

Terminal block type	Socket code	Probe code
CBC.16	ZPD002	ZDD002
CBC.35	ZPD015	ZDD002
CBD.2	ZPD004	ZDD001
CBD.4	ZPD001	ZDD001
CBD.6	ZPD013	ZDD001
CBD.10	ZPD002	ZDD002
CBD.16	ZPD002	ZDD002
CBD.35	ZPD002	ZDD002
CBD.50	ZPD003	ZDD002
CBD.70	ZPD003	ZDD002
GPA.70	ZPD003	ZDD002
CBR.2	ZPD011	ZDD001
DAS.4	ZPD001	ZDD001
FPC.10	-	ZDD002
HMD.2	-	ZDD001
HMF.4	-	ZDD001
HMM.2	-	ZDD001
HMM.4	-	ZDD001
HMM.6	-	ZDD001
HMM.10	-	ZDD001
HMM.16	-	ZDD001
HMS.2	-	ZDD001
HSCB.6	ZPD017	ZDD001
HTE.2	-	ZDD001
HTE.4	-	ZDD001
HTE.6	-	ZDD001
MPS.2	ZPD005	ZDD001
RN.1	ZPD011	ZDD001
RN.2	ZPD001	ZDD001
RP.4	ZPD001	ZDD001
SCB.4	ZPD001	ZDD001
SCB.6	ZPD015	ZDD002
SCB.10	ZPD009	ZDD002
SFO.4	ZPD014	ZDD001
SFR.4	ZPD014	ZDD001
TDE.2	ZPD004	ZDD001
TLD.2	ZPD004	ZDD001
TLS.2	ZPD004	ZDD001

Marking systems

CNU/8/51



Horizontal
printing



Vertical
printing

Purpose:

- marking of terminal blocks of all types.

Distinctive features:

- 100 elements in one plate;
- element size is 8x5.1 mm;
- group marking is possible for terminal blocks of CBC.2 and HMM.2 types.

Characteristics:

- marking is made of white polycarbonate with black-and-white printing of values on elements.

Value	Type	Number of elements in a package	Code for vertical printing	Code for horizontal printing
blank	CNU/8/030	1500	ZNU008	ZNU008
0	CNU/8/000	500	ZN8000	ZN8000H
1	CNU/8/111	500	ZN8111	ZN8111H
2	CNU/8/222	500	ZN8222	ZN8222H
3	CNU/8/333	500	ZN8333	ZN8333H
4	CNU/8/444	500	ZN8444	ZN8444H
5	CNU/8/555	500	ZN8555	ZN8555H
6	CNU/8/666	500	ZN8666	ZN8666H
7	CNU/8/777	500	ZN8777	ZN8777H
8	CNU/8/888	500	ZN8888	ZN8888H
9	CNU/8/999	500	ZN8999	ZN8999H
10	CNU/8/010	500	ZN8010	ZN8010H
11	CNU/8/11	500	ZN8Y11	ZN8Y11H
12	CNU/8/12	500	ZN8Y12	ZN8Y12H
13	CNU/8/13	500	ZN8Y13	ZN8Y13H
14	CNU/8/14	500	ZN8Y14	ZN8Y14H
15	CNU/8/15	500	ZN8Y15	ZN8Y15H
16	CNU/8/16	500	ZN8Y16	ZN8Y16H
17	CNU/8/17	500	ZN8Y17	ZN8Y17H
18	CNU/8/18	500	ZN8Y18	ZN8Y18H
19	CNU/8/19	500	ZN8Y19	ZN8Y19H
20	CNU/8/20	500	ZN8Y20	ZN8Y20H
1-10	CNU/8/510	500	ZN8510	ZN8510H
1-50	CNU/8/001	500	ZN8001	ZN8001H
A	CNU/8/031	500	ZN8031	ZN8031H
B	CNU/8/032	500	ZN8032	ZN8032H
C	CNU/8/033	500	ZN8033	ZN8033H
D	CNU/8/034	500	ZN8034	ZN8034H
E	CNU/8/035	500	ZN8035	ZN8035H
F	CNU/8/036	500	ZN8036	ZN8036H
G	CNU/8/037	500	ZN8037	ZN8037H
H	CNU/8/038	500	ZN8038	ZN8038H
J	CNU/8/049	500	ZN8049	ZN8049H
K	CNU/8/050	500	ZN8050	ZN8050H
I	CNU/8/043	500	ZN8043	ZN8043H
L	CNU/8/044	500	ZN8044	ZN8044H
M	CNU/8/045	500	ZN8045	ZN8045H
N	CNU/8/016	500	ZN8016	ZN8016H
O	CNU/8/046	500	ZN8046	ZN8046H
P	CNU/8/047	500	ZN8047	ZN8047H
Q	CNU/8/048	500	ZN8048	ZN8048H
R	CNU/8/013	500	ZN8013	ZN8013H
S	CNU/8/014	500	ZN8014	ZN8014H
T	CNU/8/015	500	ZN8015	ZN8015H
U	CNU/8/017	500	ZN8017	ZN8017H
V	CNU/8/018	500	ZN8018	ZN8018H
W	CNU/8/019	500	ZN8019	ZN8019H
X	CNU/8/020	500	ZN8020	ZN8020H
Y	CNU/8/021	500	ZN8021	ZN8021H
Z	CNU/8/022	500	ZN8022	ZN8022H

Value	Type	Number of elements in a package	Code for vertical printing	Code for horizontal printing
11-20	CNU/8/520	500	ZN8520	ZN8520H
21-30	CNU/8/530	500	ZN8530	ZN8530H
31-40	CNU/8/540	500	ZN8540	ZN8540H
41-50	CNU/8/550	500	ZN8550	ZN8550H
51-60	CNU/8/560	500	ZN8560	ZN8560H
61-70	CNU/8/570	500	ZN8570	ZN8570H
71-80	CNU/8/580	500	ZN8580	ZN8580H
81-90	CNU/8/590	500	ZN8590	ZN8590H
91-100	CNU/8/600	500	ZN8600	ZN8600H
51-100	CNU/8/051	500	ZN8051	ZN8051H
101-150	CNU/8/101	500	ZN8101	ZN8101H
151-200	CNU/8/151	500	ZN8151	ZN8151H
201-250	CNU/8/201	500	ZN8201	ZN8201H
251-300	CNU/8/251	500	ZN8251	ZN8251H
301-350	CNU/8/301	500	ZN8301	ZN8301H
351-400	CNU/8/351	500	ZN8351	ZN8351H
401-450	CNU/8/401	500	ZN8401	ZN8401H
451-500	CNU/8/451	500	ZN8451	ZN8451H
501-550	CNU/8/501	500	ZN8501	ZN8501H
551-600	CNU/8/551	500	ZN8551	ZN8551H
601-650	CNU/8/601	500	ZN8601	ZN8601H
651-700	CNU/8/651	500	ZN8651	ZN8651H
701-750	CNU/8/701	500	ZN8701	ZN8701H
751-800	CNU/8/751	500	ZN8751	ZN8751H
801-850	CNU/8/801	500	ZN8801	ZN8801H
851-900	CNU/8/851	500	ZN8851	ZN8851H
901-950	CNU/8/901	500	ZN8901	ZN8901H
951-999	CNU/8/951	500	ZN8951	ZN8951H
L1	CNU/8/0L1	500	ZN80L1	ZN80L1H
L2	CNU/8/0L2	500	ZN80L2	ZN80L2H
L3	CNU/8/0L3	500	ZN80L3	ZN80L3H
NI	CNU/8/NI	500	ZN80NI	ZN80NIH
PE	CNU/8/PE	500	ZN80PE	ZN80PEH
R1	CNU/8/R1	500	ZN80R1	ZN80R1H
S1	CNU/8/S1	500	ZN80S1	ZN80S1H
S2	CNU/8/S2	500	ZN80S2	ZN80S2H
S3	CNU/8/S3	500	ZN80S3	ZN80S3H
U1	CNU/8/U1	500	ZN80U1	ZN80U1H
U2	CNU/8/U2	500	ZN80U2	ZN80U2H
V1	CNU/8/V1	500	ZN80V1	ZN80V1H
V2	CNU/8/V2	500	ZN80V2	ZN80V2H
W1	CNU/8/W1	500	ZN80W1	ZN80W1H
W2	CNU/8/W2	500	ZN80W2	ZN80W2H
+	CNU/8/023	500	ZN8023	ZN8023H
-	CNU/8/024	500	ZN8024	ZN8024H
=	CNU/8/025	500	ZN8025	ZN8025H
⊕	CNU/8/027	500	ZN8027	ZN8027H
⊖	CNU/8/028	500	ZN8028	ZN8028H

CNU/8/61



Horizontal printing



Vertical printing

Purpose:

- marking of screw type and spring type terminal blocks with width from 5.1 mm.

Distinctive features:

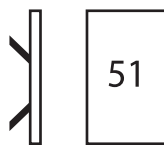
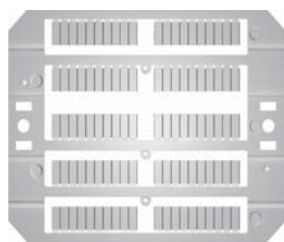
- 80 elements in one plate;
- element size is 8x5.1 mm;
- group installation is possible for terminal blocks of CBC.4 and HMM.4 types.

Characteristics:

- material is polycarbonate;
- color is white.

Value	Type	Q-ty in a package	Code for vertical printing	Code for horizontal printing
Blank	CNU/8/61	1200	ZNU0861	ZNU0861

SHZ/1

Vertical
printing**Purpose:**

- marking of spring type terminal blocks for a wire with section of 1.5 mm².

Distinctive features:

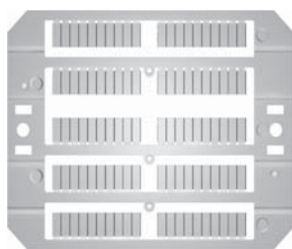
- 100 elements in a plate;
- element size is 4x10 mm.

Characteristics:

- material is polycarbonate;
- color is white.

Value	Type	Q-ty in a package	Code
Blank	SHZ/1/00	1500	ZSH004
1-10	SHZ/1/10	1500	ZSH410
11-20	SHZ/1/11	1500	ZSH411
21-30	SHZ/1/21	1500	ZSH421
31-40	SHZ/1/31	1500	ZSH431
41-50	SHZ/1/41	1500	ZSH441
51-60	SHZ/1/51	1500	ZSH451
61-70	SHZ/1/61	1500	ZSH461
71-80	SHZ/1/71	1500	ZSH471
81-90	SHZ/1/81	1500	ZSH481
91-100	SHZ/1/91	1500	ZSH491
Symbol A	SHZ/1/AA	1500	ZSH4AA
Symbol B	SHZ/1/BB	1500	ZSH4BB
Symbol C	SHZ/1/CC	1500	ZSH4CC
Symbol D	SHZ/1/DD	1500	ZSH4DD
Symbol E	SHZ/1/EE	1500	ZSH4EE
Symbol F	SHZ/1/FF	1500	ZSH4FF
Symbol G	SHZ/1/GG	1500	ZSH4GG
Symbol H	SHZ/1/HH	1500	ZSH4HH
Symbol I	SHZ/1/II	1500	ZSH4II
Symbol J	SHZ/1/JJ	1500	ZSH4JJ
Symbol K	SHZ/1/KK	1500	ZSH4KK
Symbol L	SHZ/1/LL	1500	ZSH4LL
Symbol M	SHZ/1/MM	1500	ZSH4MM
Symbol N	SHZ/1/NN	1500	ZSH4NN
Symbol O	SHZ/1/OO	1500	ZSH4OO
Symbol P	SHZ/1/PP	1500	ZSH4PP
Symbol Q	SHZ/1/QQ	1500	ZSH4QQ
Symbol R	SHZ/1/RR	1500	ZSH4RR
Symbol S	SHZ/1/SS	1500	ZSH4SS
Symbol T	SHZ/1/TT	1500	ZSH4TT
Symbol U	SHZ/1/UU	1500	ZSH4UU
Symbol V	SHZ/1/VV	1500	ZSH4VV
Symbol W	SHZ/1/WW	1500	ZSH4WW
Symbol X	SHZ/1/XX	1500	ZSH4XX
Symbol Y	SHZ/1/YY	1500	ZSH4YY
Symbol Z	SHZ/1/ZZ	1500	ZSH4ZZ
Symbol =	SHZ/1/G1	1500	ZSH4G1
Symbol +	SHZ/1/G2	1500	ZSH4G2
Symbol -	SHZ/1/G3	1500	ZSH4G3
Symbol ~	SHZ/1/G4	1500	ZSH4G4
Symbol \perp	SHZ/1/G5	1500	ZSH4G5
Symbol \oplus	SHZ/1/G6	1500	ZSH4G6
Symbol \pm	SHZ/1/G7	1500	ZSH4G7
Symbol /	SHZ/1/G8	1500	ZSH4G8
Symbol (SHZ/1/G9	1500	ZSH4G9

SHZ/2


Purpose:

- marking of spring type terminal miniblocks, as well as all other spring type terminal blocks with width from 5 mm.

Distinctive features:

- may be installed on the side surface or upper part of a terminal block;
- accounting is carried out on the basis of tapes. One tape comprises 10 marking plates;
- element size is 5x8 mm.

Characteristics:

- material is polycarbonate;
- color is white.

Value	Type	Number of tapes in a package	Code
Blank	SHZ/2/00	60	ZSH001

SNZ/4


Purpose:

- marking of terminal miniblocks, screw type terminal blocks with width from 4 mm.

Distinctive features:

- accounting is carried out on the basis of tapes. One tape comprises 10 marking plates;
- element size is 4x7 mm.

Characteristics:

- material is polycarbonate;
- color is white.

Value	Type	Number of tapes in a package	Code
Blank	SNZ/4/00	60	ZSN008

Warning profile


Purpose:

- allocation of warning information on terminal blocks of CBC.2-CBC.10 series.

Distinctive features:

- installed in a socket for plug-in jumpers;
- may close several terminal blocks.

Characteristics:

- made of self-extinguishing material;
- length is 100 mm.

Terminal block type	Plate code
CBC.2	ZPRP070G
CBC.4	ZPRP070G
CBC.6	ZPRP070G
CBC.10	ZPRP070G

Warning plate


Purpose:

- allocation of warning information on terminal blocks of CBC.50 series

Distinctive features:

- installed above a terminal block;
- may close several terminal blocks;
- attached using plastic screws.

Characteristics:

- made of self-extinguishing plastic.

Terminal block type	Plate dimension, mm	Screw dimension, mm	Plate code
CBC.50	72x42	5x30	ZTUM07

Warning sticker



Sticker with surface of 120 mm



Sticker with surface of 60 mm

Purpose:

- warning sticker.

Distinctive features:

- self-adhesive base.

Dimension, mm	Sticker code
60	ZTA001
120	ZTA002

Marking for groups of terminal blocks



Marking holders



Inscription application plates

Purpose:

- marking of groups of terminal blocks.

Distinctive features:

- independent installation on a DIN rail;
- inscription is applied on polycarbonate plates included.

Scope of supply:

- marking holder;
- inscription application plate.

Material:

- marking holder is made of polyamide;
- inscription application plate is made of polycarbonate.

Type	Marking field dimension, mm	Code
PTMS	40x7	ZPTMS
PTM	40x16	ZPTM

Identification plates for groups of terminal blocks


Purpose:

marking of groups of terminal blocks.

Distinctive features:

- installed at proper locations for marking of terminal blocks and terminal end stops.

Material:

- polyamide.

Type	Code
TIM	ZTIM02

Marking band for plug-in jumpers


Purpose:

- for indication of a bridging event of terminal blocks with non-insulated plug-in jumpers.

Distinctive features:

- universal for all terminal blocks.

Characteristics:

- material is polyamide;
- color is green.

Marking band type	Dimension, mm Height x Length x Thickness	Code
PTC/SP	100x3x1.2	ZPTC0990

Functional elements

Fuses


Purpose:

- overload protection of electric circuits.

Distinctive features:

- installed into terminal blocks of "fuse holder" type.

Characteristics:

- enclosure material is steatite ceramics;
- filler material is arc-extinguishing powder;
- arc-extinguishing capacity is 1500 A.

Characteristics	Values
Fuse dimension, mm	5x20
Test current, 1.5xIn	> 1 h
Test current, 2.1xIn	< 30 min
Test current, 4xIn	< 300 ms
Test current, 10xIn	< 20 ms
Fuse class	F

Rated current	Fuse type	Fuse code
100 mA	F5/100 mA	ZFN001ST
200 mA	F5/200mA	ZFN002ST
315 mA	F5/315mA	ZFN003ST
500 mA	F5/500mA	ZFN004ST
630 mA	F5/630mA	ZFN005ST
1 A	F5/1 A	ZFN006ST
1.6 A	F5/1.6 A	ZFN007ST
2 A	F5/2 A	ZFN008ST
2.5 A	F5/2.5 A	ZFN009ST
3.15 A	F5/3.15 A	ZFN010ST
4 A	F5/4 A	ZFN011ST
5 A	F5/5 A	ZFN012ST
6.3 A	F5/6.3 A	ZFN013ST
8 A	F5/8 A	ZFN014ST
10 A	F5/10 A	ZFN015ST
12 A	F5/12 A	ZFN016ST

Fuse adapter


Purpose:

- for installation of a fuse 5x20 into a socket of a knife fuse.

Distinctive features:

- it is possible to use it together with terminal blocks of MPFA.4, DSFA.4, HMFA.2 types;
- may be equipped with a fuse state diode indicator;
- it is possible to place a spare fuse 5x20 in an empty adapter.

Characteristics:

- height is 33 mm.
- thickness is 6 mm.

Pre-installed components	Type	Operating voltage (direct/alternating current)	Operational current, A	Adapter code
Empty	CPF/5	320	6.3	ZCPF05
With a non-polarized diode indicator of fuse state	CPF/5L12	12	–	ZCPF512
	CPF/5L24	24	–	ZCPF524
	CPF/5L48	48	–	ZCPF548
	CPF/5L115	115	–	ZCPF511
	CPF/5L230	230	–	ZCPF523
With a diode	CPF/5D1A	up to 320	1	ZCPF501
	CPF/5D3A	up to 320	3	ZCPF503
With resistance of 1200 Ohm (1 W)	CPF/5R	–	–	ZCPR05

CIL indicator


Purpose:

- used for fuse state indication.

Distinctive features:

- may be used under direct-current and alternating-current voltage.

Scope of supply:

- 2 contact plates;
- non-polarized LED indicator on a laminated substrate;
- transparent protection.

Instructions:

- page 456.

Terminal block type	Voltage, V (AC/DC)	Element type	Element code
SFR.4 SFO.4 FPL.10/C DSF.4/GR DSF.4	12-48	CIL/12-48	ZSF518
	115-230	CIL/115-230	ZSF510
HFR.4/M/GR	12-48	CIL/HFR/M/12-48	ZHF518M
	115-230	CIL/HFR/M/115-230	ZHF510M
HFR.4/GR	12-48	CIL/HFR/12-48	ZHF518
	115-230	CIL/HFR/115-230	ZHF510

LSN indicators


Purpose:

- used for indication of fuse blowing in terminal blocks of SFR.6, SFR.6/M and FPL.10/L types.

Distinctive features:

- used for alternating-current voltage.

Scope of supply:

- 2 contact plates;
- neon indicator;
- transparent protective plate.

Terminal block type	Voltage, V	Indicator code
FPL.10/L	12-48	ZFL201
	70-380	ZFL202
SFR.6 SFR.6/M	12-24	ZKIT1224
	70-380	ZKIT70380

Tinned insert



5x20



6x32

Purpose:

- circuit closing. Used in fuse holders.

Characteristics:

- material is nickel-plated brass.

Insert dimension	Insert type	Insert code
5x20	CO/5	ZVL103
6x32	SFC/CO	ZFC102

Diodes


Purpose:

- rectifier diode.

Distinctive features:

- diode is integrated into the enclosure 5x20.

Maximum forward current, A	Diode series	Type	Code
1	1N4007	SFR/I1A	ZSF992
3	BY 255	SFR/I3A	ZSF993

Dividers

DFU, DFH, DFP


Purpose:

- separation of groups of terminal blocks.

Characteristics:

- material is polyamide;
- color is red.

Terminal block type	Divider type	Dimension, mm	Divider code
AFO.2/1+1	DFU/1	52x51x1.5	ZDU01R
AFO.2/2+2	DFU/1	52x51x1.5	ZDU01R
CBC.2	DFU/4	52x62x1.5	ZDU04R
CBC.4	DFU/4	52x62x1.5	ZDU04R
CBC.6	DFU/4	52x62x1.5	ZDU04R
CBC.10	DFU/4	52x62x1.5	ZDU04R
CBC.16	DFU/6	52x62x1.5	ZDU06R
CBC.35	DFU/4	72x74x1.5	ZDU04R
CBD.2	DFU/1	52x51x1.5	ZDU01R
CBD.4	DFU/4	52x62x1.5	ZDU04R
CBD.6	DFU/4	52x62x1.5	ZDU04R
CBD.10	DFU/4	52x62x1.5	ZDU04R
CBD.16	DFU/4	52x62x1.5	ZDU04R
CBD.35	DFU/5	62x68x1.5	ZDU05R
CBD.50	DFU/5	62x68x1.5	ZDU05R
CBD.70	DFU/6	72x74x1.5	ZDU06R
GPA.70	DFU/7	80x64x1.5	ZDU07R
CBE.2	DFU/4	52x62x1.5	ZDU04R
CBR.2	DFU/4	52x62x1.5	ZDU04R
CVF.4	DFU/3	68x57x1.5	ZDU03R
DAS.4	DFU/7	80x64x1.5	ZDU07R
DBC.2	DFU/7	80x64x1.5	ZDU07R
DSS.4	DFU/7	80x64x1.5	ZDU07R
DSFA.4	DFU/7	80x64x1.5	ZDU07R
FDP.2	DFU/5	62x68x1.5	ZDU05R
FPC.10	DFU/6	72x74x1.5	ZDU06R
FPL.10	DFU/6	72x74x1.5	ZDU06R
MPFA.4	DFU/3	68x57x1.5	ZDU03R
MPS.2/SV	DFU/2	52x54x1.5	ZDU02R
MPS.2/SW	DFU/2	52x54x1.5	ZDU02R
MPS.2/SWP	DFU/2	52x54x1.5	ZDU02R
MPS.4	DFU/3	80x64x1.5	ZDU03R
MPS.4/SV	DFU/3	80x64x1.5	ZDU03R
NCS	DFU/2	52x54x1.5	ZDU02R
NCV	DFU/2	52x54x1.5	ZDU02R

Terminal block type	Divider type	Dimension, mm	Divider code
PDF.2	DFU/5	62x68x1.5	ZDU05R
RFI.2	DFP/2	37x38x1.5	ZDFP2R
RN.1	DFP/2	37x38x1.5	ZDFP2R
RN.2	DFP/2	37x38x1.5	ZDFP2R
RP.4	DFP/2	37x38x1.5	ZDFP2R
SCB.4	DFU/3	68x57x1.5	ZDU03R
SCB.6	DFU/6	72x74x1.5	ZDU06R
SCB.6/DD	DFU/6	72x74x1.5	ZDU06R
SCB.6/CD	DFU/6	72x74x1.5	ZDU06R
SFO.4	DFU/7	80x64x1.5	ZDU07R
SFR.4	DFU/3	68x57x1.5	ZDU03R
SFR.6	DFU/7	80x64x1.5	ZDU07R
TC/PO	DFU/1	52x51x1.5	ZDU01R
TDE.2	DFU/3	68x57x1.5	ZDU03R
TLD.2	DFU/3	68x57x1.5	ZDU03R
TLE.2	DFU/3	68x57x1.5	ZDU03R
TLS.2	DFU/3	68x57x1.5	ZDU03R
VPC.2	DFU/5	62x68x1.5	ZDU05R
VPD.2	DFU/7	80x64x1.5	ZDU07R
HCD.1	DFU/7	80x64x1.5	ZDU07R
HMD.2	DFH/4	97x51.5x1.5	ZDH04R
HMF.4	DFH/4	97x51.5x1.5	ZDH04R
HMFA.2	DFH/2	76x42.5x1.5	ZDH02R
HMM.2	DFH/1	64x42.5x1.5	ZDH01R
HMM.2/1+2	DFH/2	76x42.5x1.5	ZDH02R
HMM.2/2+2	DFH/3	88x42.5x1.5	ZDH03R
HMM.2/2+2/S	DFH/3	88x42.5x1.5	ZDH03R
HMM.4	DFH/1	64x42.5x1.5	ZDH01R
HMM.4/1+2	DFH/1	64x42.5x1.5	ZDH01R
HMM.4/2+2	DFH/1	64x42.5x1.5	ZDH01R
HMM.6	DFH/1	64x42.5x1.5	ZDH01R
HMM.10	DFH/4	97x51.5x1.5	ZDH04R
HMM.16	DFH/4	97x51.5x1.5	ZDH04R
HMS.2	DFH/2	76x42.5x1.5	ZDH02R
HPP.2	DFP/2	37x38x1.5	ZDFP2R
HPP.2/P	DFP/2	37x38x1.5	ZDFP2R
HTE.2	DFH/1	64x42.5x1.5	ZDH01R
HCD.1	DFU/7	80x64x1.5	ZDU07R

Jumper divider



With full insulation



With partial insulation

Purpose:

- formation of an insulating partition wall between adjacent jumpers.

Characteristics:

- material is polyamide;
- color is red.

Terminal block	Configuration	Type	Dimension, mm	Code
CBC.2	with partial insulation	DFM/800	11x18x0.5	ZDF800
CBC.4	with partial insulation	DFM/800	11x18x0.5	ZDF800
CBC.6	with partial insulation	DFM/800	11x18x0.5	ZDF800
CBC.10	with partial insulation	DFM/800	11x18x0.5	ZDF800
DBC.2	with partial insulation	DFM/800 (for insulation of jumpers at the upper level)	11x18x0.5	ZDF800
CBC.2	with full insulation	DFM/900	17x18x0.5	ZDF900
CBC.4	with full insulation	DFM/900	17x18x0.5	ZDF900
CBC.6	with full insulation	DFM/900	17x18x0.5	ZDF900
CBC.10	with full insulation	DFM/900	17x18x0.5	ZDF900
CBC.16	with full insulation	DFM/700	28x32x0.5	ZDF700
CBC.35	with full insulation	DFM/700	28x32x0.5	ZDF700
CBD.2	with full insulation	DFM/600	24x31x0.5	ZDF600
CBD.4	with full insulation	DFM/600	24x31x0.5	ZDF600
CBD.6	with full insulation	DFM/600	24x31x0.5	ZDF600
CBD.10	with full insulation	DFM/700	28x32x0.5	ZDF700
CBD.16	with full insulation	DFM/700	28x32x0.5	ZDF700
CBD.35	with full insulation	DFM/700	28x32x0.5	ZDF700
CBD.50	with full insulation	DFM/700	28x32x0.5	ZDF700
CBD.70	with full insulation	DFM/700	28x32x0.5	ZDF700
DBC.2	with full insulation	DFM/900 (for insulation of jumpers at the upper level)	17x18x0.5	ZDF900
	with full insulation	DFM/500 (for insulation of jumpers at the lower level)	4.6x13.5x0.5	ZDF500
DSS.4	with full insulation	DFM/500	4.6x13.5x0.5	ZDF500
DSFA.4	with full insulation	DFM/500	4.6x13.5x0.5	ZDF500
HMM.1	with full insulation	DFM/500	4.6x13.5x0.5	ZDF500
HMM.1/1+2	with full insulation	DFM/500	4.6x13.5x0.5	ZDF500
HMM.1/2+2	with full insulation	DFM/500	4.6x13.5x0.5	ZDF500
HMD.1	with full insulation	DFM/500	4.6x13.5x0.5	ZDF500
HMD.2/N	with full insulation	DFM/500	4.6x13.5x0.5	ZDF500
MPS.4	with full insulation	DFM/500	4.6x13.5x0.5	ZDF500
MPFA.4	with full insulation	DFM/500	4.6x13.5x0.5	ZDF500
TLD.2	with full insulation	DFM/400	10x18x0.5	ZDF400
TLS.2	with full insulation	DFM/400	10x18x0.5	ZDF400
VPC.2	with full insulation	DFM/300	9.4x12.9x0.4	ZDF300
VPD.2	with full insulation	DFM/300	9.4x12.9x0.4	ZDF300
HCD.1	with full insulation	DFM/500	4.6x13.5x0.5	ZDF500

Protection of terminal blocks and conducting elements

Protection for ACB series terminal blocks


Purpose:

- for protection against accidental contact.

Installation conditions:

- installation on rails of G or C types.

Distinctive features:

- protection comprises a cover and a support;
- one cover closes only one side of a terminal block. Two covers shall be used for protection of a terminal block on both sides.

Cover characteristics:

- material is polycarbonate;
- cover thickness is 2.3 mm, length is 200 mm. It is sufficient for covering of 4 terminal blocks.

Support characteristics:

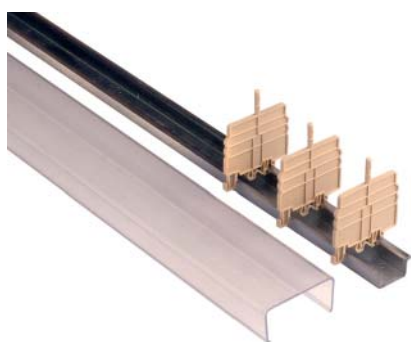
- material is ABS plastic;
- thickness is 5 mm;
- flammability classification is V0.

Instructions:

- page 457.

Terminal block type	Conductor connection method	Cover type	Cover code	Support type	Support code
ACB.70	Direct connection of a clamped conductor or bus	PRT/P	ZPRT01	SPS/1	ZSPS01
	Rear connection of a clamped conductor, bus, or protection of an unused pole	PRT/G	ZPRT03	SPS/1	ZSPS01
	Direct connection of non-clamped conductor using a restraining retainer	PRT/M	ZPRT02	SPS/5	ZSPS05
ACB.120	Direct connection of a clamped conductor or bus	PRT/P	ZPRT01	SPS/1	ZSPS01
	Rear connection of a clamped conductor, bus, or protection of an unused pole	PRT/G	ZPRT03	SPS/1	ZSPS01
	Direct connection of non-clamped conductor using a restraining retainer	PRT/M	ZPRT02	SPS/5	ZSPS05
ACB.185	Direct connection of a clamped conductor or bus	PRT/P	ZPRT01	SPS/3	ZSPS03
	Rear connection of a clamped conductor, bus, or protection of an unused pole	PRT/G	ZPRT03	SPS/3	ZSPS03
	Direct connection of non-clamped conductor using a restraining retainer	PRT/M	ZPRT02	SPS/7	ZSPS07

Universal protection


Purpose:

- for protection against accidental contact.

Installation conditions:

- installation on rails of OMEGA or G types.

Distinctive features:

- protection comprises a cover and a support;
- protection of terminal blocks with section of up to 70 mm².

Characteristics:

- material is self-extinguishing plastic;
- standard cover length is 2000 mm.

Terminal block height (with account of a DIN rail), mm	Dimensions when installing on a DIN rail, mm (height x width)	Cover side height b, mm	Cover		Support	
			cover type	cover code	support type	support code
Up to 58	attachment of a cover to a lower fastener OMEGA 3: 65x66 G1: 70x66 attachment of a cover to an upper fastener OMEGA 3: 77x66 G1: 82x66	32	PZM.4	ZPZ330	PZD.4/SO	ZPZ331
Over 58	attachment of a cover to a lower fastener OMEGA 3: 78x87 G1: 82x87 attachment of a cover to an upper fastener OMEGA 3: 90x87 G1: 94x87	36	PZM.6	ZPZ110	PZD.6/SO	ZPZ112

Protection for jumpers


Purpose:

- for protection against accidental contact of jumpers with ZPMP* code.

Distinctive features:

- inscriptions may be applied above protection.

Characteristics:

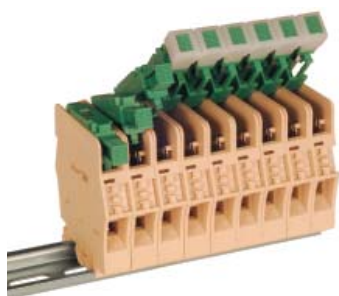
- material is nylon;
- standard cover length is 100 mm.

Installation example:

- page 457.

Terminal block type	Protection color	Protection type	Protection code
CBD.2; CBD.4; RN.1; RN.2; RP.4; SCB.4; SFO.4; MPS.2/SW; MPS.2/SWP	white	PRP/6	ZPRP06
CBD.6; CBD.10; CBD.16; CBC.16; SCB.6	white	PRP/7	ZPRP07
CBC.35; CBD.35; CBD.50; CBD.70	white	PRP/8	ZPRP08
TLD.2; CBR.2; DAS.4; TDE.2; TLS.2	white	PRP/5/Bianco	ZPRP05
	red	PRP/5/Rosso	ZPRP05R
	blue	PRP/5/Blue	ZPRP05B

Combining handle


Purpose:

- grouping of terminal block levers for simultaneous closing/opening.

Distinctive features:

- combines 6 levers.

Terminal block type	Combining handle code
FPL.10	ZFC103

Tool

Screwdriver


Purpose:

- operating of terminal miniblocks of all types with spring type and screw type terminal blocks for conductors with section of up to 10 mm².

Distinctive features:

- lug dimensions are 0.5x3x80 mm;
- total screwdriver length is 160 mm.

Type	Code
CCH/2,5-4	ZCCH02

Protection of male contacts


Purpose:

- for protection of male contacts.

Installation conditions:

- attached on a terminal block with formation of a hinged mechanism.

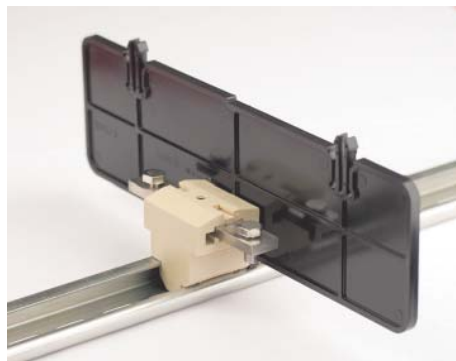
Characteristics:

- material is polycarbonate;
- protective cover length is 10 poles;
- color is transparent.

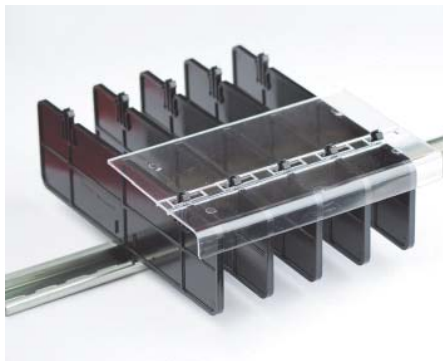
Terminal block type	Protection type	Protection code
HCD.1	VPC/VT	ZVP102
VPD.2	VPD/VT	ZVP502

Instructions

Example of installation of protective covers on ACB series terminal blocks



1. Install terminal blocks and a support on a DIN rail

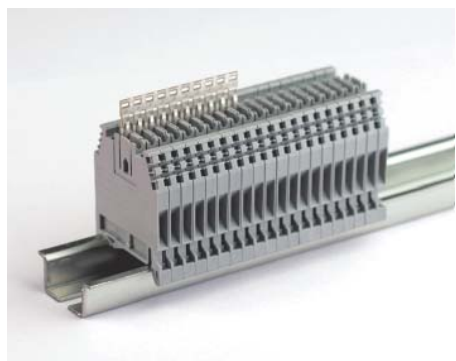


2. Close terminal blocks with a cover on one side



3. Close terminal blocks with a cover on the opposite side

Installation of plug-in jumpers



1. Cut the necessary number of jumpers and install them into a special hole



2. Take a screwdriver and press on a jumper, while lowering it all the way down



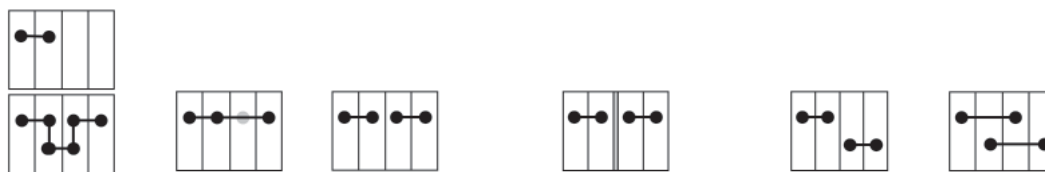
3. Cut a ZPTC0990 marking tape with necessary length and install it above a jumper

Removal of plug-in jumpers



Remove a jumper using a screwdriver

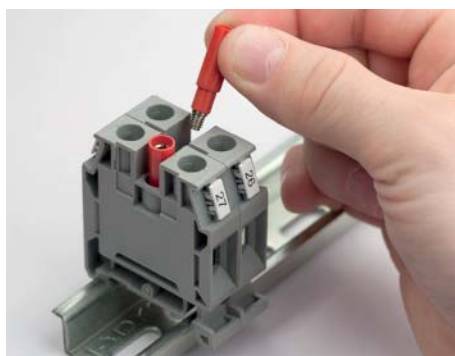
Plug-in jumpers. Wiring diagrams



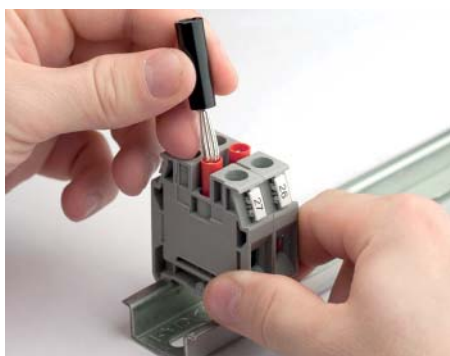
Terminal block type	Rated voltage in selected wiring diagram, V						Maximum current, A
CBC.2	630 (400)	630 (400)	–	1000 (400)	500 (320)	500 (320)	24 (21)
CBC.4	630 (320)	500 (320)	–	800 (320)	500 (320)	500 (320)	32 (25)
CBC.6	630 (320)	630 (320)	–	800 (320)	630 (250)	630 (250)	41 (35)
CBC.10	800 (250)	630 (320)	–	800 (250)	800 (250)	630 (250)	57 (47)
DBC.2	630	500	–	250 – lower jumpers 630 – upper jumpers	500	500	24
DSS.4	400	400	–	400	–	–	32
DSFA.4	400	400	–	400	–	–	32
HDE.2	500	500	–	500	500	500	24
HLD.2	500	500	–	500	500	500	24
HMD.1	500	500	–	320	500	500	17.5
HMD.2N	500	500	–	320	500	500	24
HMFA.2	630	500	–	500 (when using an end insulator)	–	–	24
HFR.4	500	500	–	500 (when using an end insulator)	500	500	32
HMS.2	630	500	–	500 (when using an end insulator)	–	–	24
HMM.1	630	630	–	320	630	630	17.5
HMM.2	630	630	–	320	630	630	24
HMM.4	500	500	–	500	500	500	32
HMM.6	500	500	–	500	500	500	41
HMM.10	1000	1000	–	800	1000	800	57
HMM.16	1000	1000	–	800	1000	800	76
HTE.1	–	–	–	–	–	–	17.5
HTE.2	–	–	–	–	–	–	24
HTE.4	–	–	–	–	–	–	32
HTE.6	–	–	–	–	–	–	41
HTE.10	–	–	–	–	–	–	57
HTE.16	–	–	–	–	–	–	76
HPP.2	400	400	–	800 (when using an end insulator)	500	400	24
HP.2	400	400	–	800 (when using an end insulator)	500	400	24
HPC.2	400	400	–	800 (when using an end insulator)	400	400	24
HSCB.4	500	500	–	500 (when using an end insulator)	500	500	32
HSCB.6	500	500	–	400	500	500	41
MPS.4	400	400	–	400	–	–	32
MPFA.4	400	400	–	400	–	–	32
SFR.6	630	630	400	630	630	500	25
VPC.2	320	320	–	320	320	320	

* Values in parentheses are parameters for operation under explosive environment conditions, Ex e

Installation of single tracing probes and sockets



1. Sockets are screwed in terminal blocks into holes for jumpers

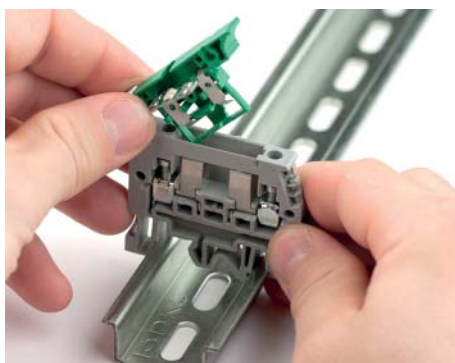


2. Install a probe

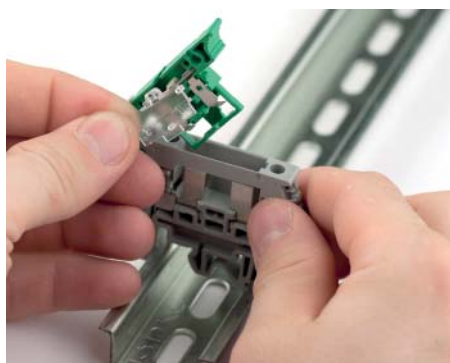


3. Secure a conductor in a probe with a clamp screw

Installation of a CIL indicator into a fuse holder



1. Install contacts and a plate of a LED indicator



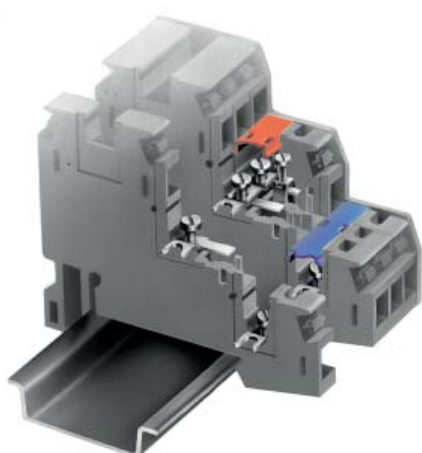
2. Install a protective screen



3. Install a fuse

Installation of TLS series terminals

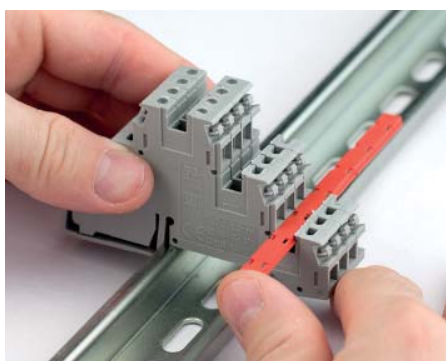
It will be reasonable to use 2-level or 3-level terminal blocks under conditions of space constraint and high installation density. TLS series terminals are commonly used when connecting sensors and actuating elements, whereas a signal wire is switched at the upper level, and power wiring is made at two lower ones. The distinctive feature of this series is an embedded system of jumpers that allows combining terminal blocks without the need to purchase additional jumpers. Marking of levels and power supply polarity may be performed using protective covers of PRP/5 type.



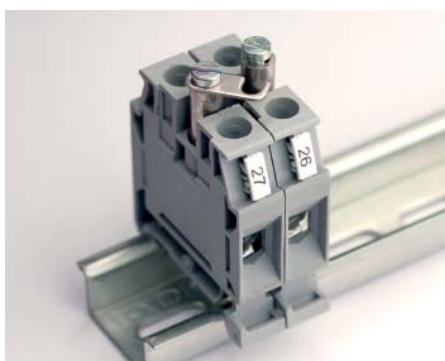
1. Combination of terminal blocks is carried out by means of forked jumpers

2. TLS series terminal blocks are compatible with TLD series terminal blocks, through which power supply to the middle and lower levels is possible

Installation examples



Protection for jumpers

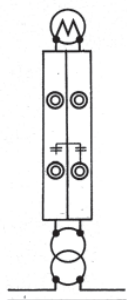


Releasable screw type jumper
for through terminal blocks



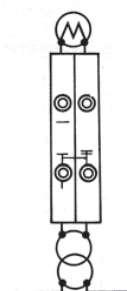
Plug-in interlevel jumper

Options of use of measuring terminals with a disconnecter as exemplified by the SCB.6 terminal



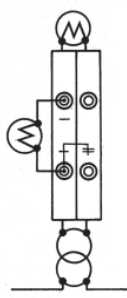
Normal mode

- disconnecter at the right and left SCB.6 terminals are closed;
- ZSB203 two-pole releasable jumper between terminal blocks is open.



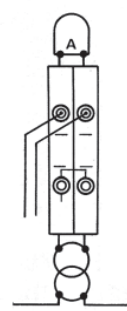
Shorting of secondary winding.

- disconnecter at the right SCB.6 terminal is closed;
- disconnecter at the left SCB.6 terminal is open;
- ZSB203 two-pole releasable jumper closes secondary winding of a measuring current transformer.



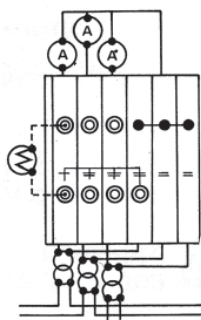
Measurements

- disconnecter at the right SCB.6 terminal is closed;
- disconnecter at the left SCB.6 terminal is open;
- ZSB203 two-pole releasable jumper between terminal blocks is open;
- measuring equipment is connected in break of the left terminal.



Equipment/relay check

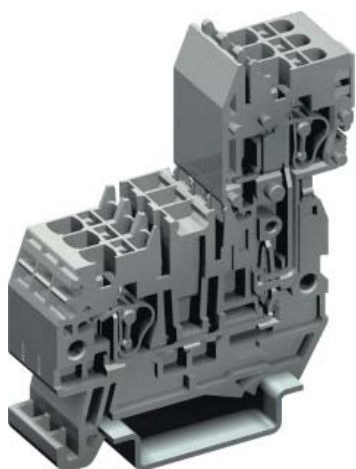
- disconnecter at the right SCB.6 terminal is open;
- disconnecter at the left SCB.6 terminal is open;
- ZSB203 two-pole releasable jumper closes secondary winding of a measuring current transformer.



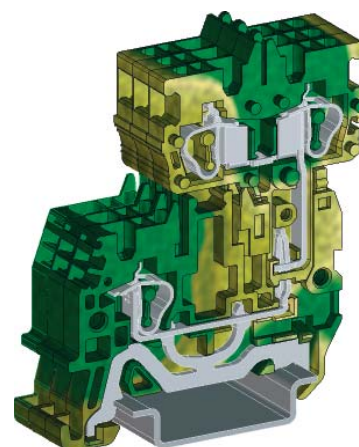
Connection of linked three-phase current transformers

- 6 SCB.6 terminals;
- ZSB204 four-pole releasable jumper;
- ZPMP13 jumper and ZCPM57 screws;
- ZPD015 testing sockets and ZDD002 probes.

Example of installation of HVPC - CHP terminal blocks

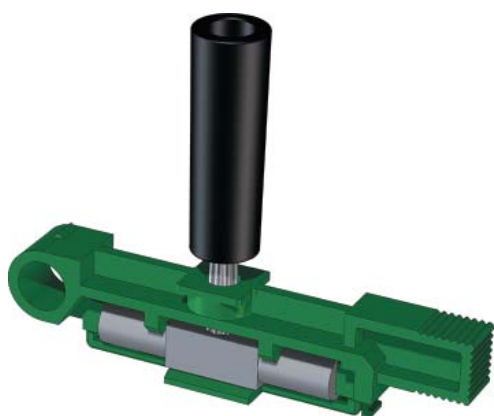


Example of CHP.2/GR installation

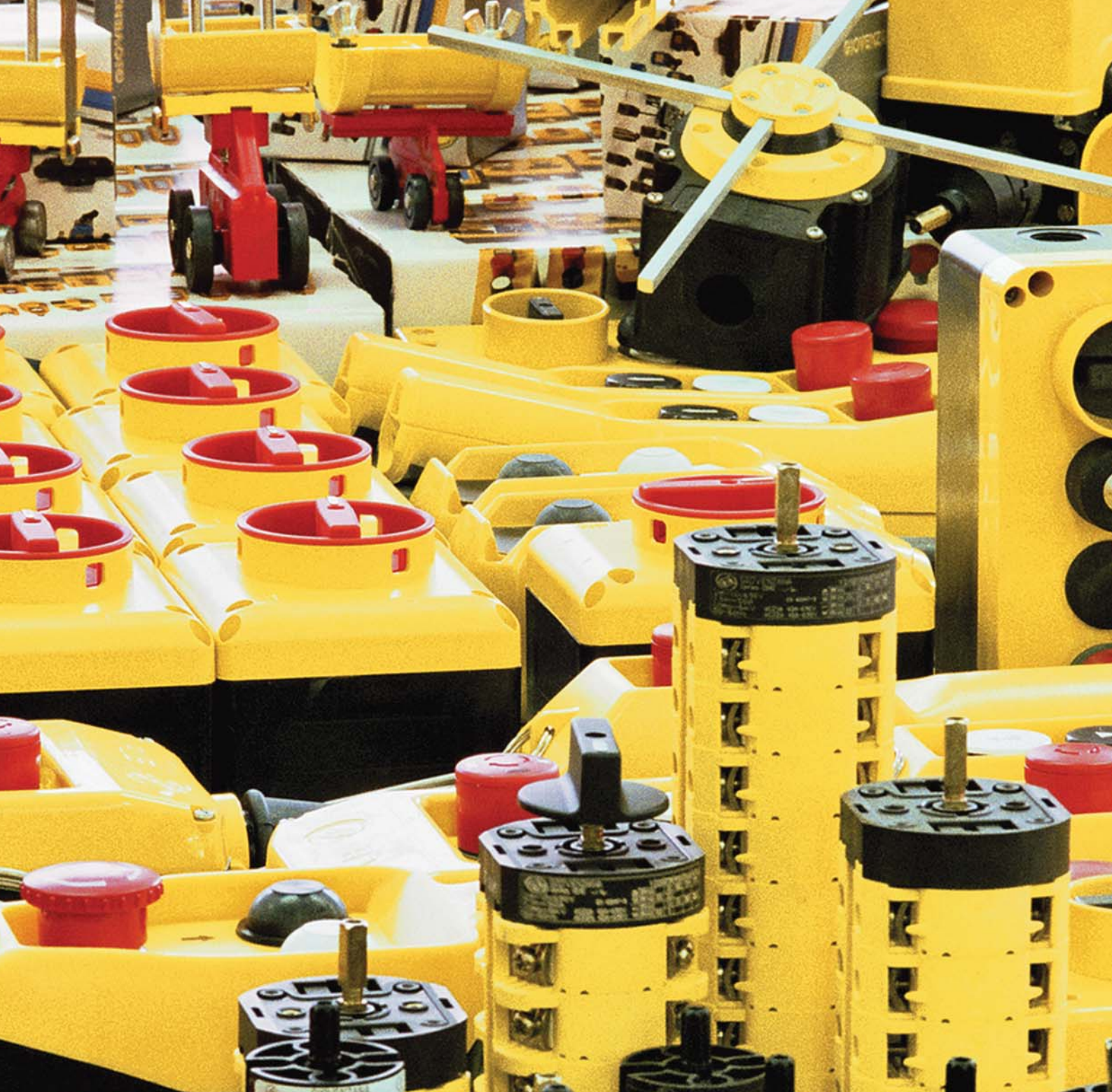


Example of CHTE.2D installation

Example of installation of a tracing probe in terminal blocks of FPC.10 type







Control and signaling devices

Cam switches	462
Disconnectors	477
Push-buttons and pilot lights	488

Cam switches

Technical characteristics

Characteristics	AS12	AS16	AS20	AS25	AS32	AS40	AS63	AS80
Operating voltage U _e , V	690	690	690	690	690	690	690	690
Voltage across insulation U _i , V	690	690	690	690	690	690	690	690
Rated impulse voltage U _{imp} , kV	4	4	4	6	6	6	8	8
Thermal current I _{th} , A	12	16	20	32	40	50	85	100
Thermal current in the shell I _{th} , A	12	16	20	25	32	40	85	100
Impulse frequency F, Hz	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Electrical service life at load of 120 operations per hour, mln. cycles/failure	1	0.75	0.75	1	0.75	0.75	0.5	0.25
Mechanical service life at load of 120 operations per hour, mln. cycles/failure	1	1	1	1	1	1	1	1
Single wire, mm ²	2x0.75 – 4			2x2.25 – 10			2.5-35	
Flexible wire, mm ²	2x0.75 – 2.5			2x2.25 – 6			2.5-35	

Operating conditions

Characteristics	Voltage	AS12	AS16	AS20	AS25	AS32	AS40	AS63	AS80
AC-21A switching of active load including overloads, A	690	12	16	20	25	32	40	63	80
AC-22A switching of combined active and inductive load including overloads, A	690	12	16	20	25	32	40	63	80
AC-23A switching of motor load and other high inductive overloads, 3 phases, 3 poles, kW	230	3	4	5	7.5	9	11	15	18.5
	400	5	7.5	9	11	15	18.5	22	30
	500	7.5	10	11	15	18.5	22	30	37
	690	7.5	10	12.5	15	18.5	22	30	37
AC3 direct start of electric motors with square-cage rotor, 3 phases, 3 poles, kW	230	2	3	4	5	5.5	7.5	11	15
	400	4	5	6	7.5	11	15	18.5	22
	500	5	7.5	8	11	15	18.5	22	30
	690	5	7.5	9	11	15	18.5	22	30
DC-21A switching of active load including overloads, A	50 V/pole	8	10	12	20	25	32	–	–
DC-22A switching of combined active and inductive load including overloads, A	30 V/pole	6	7.5	10	16	20	25	–	–
Temperature storage conditions, °C	from –30 to +70								
Temperature operating conditions, °C	from –25 to +55								



AS12, AS16, AS20 series



AS25, AS32, AS40 series



AS63, AS80 series



Standard knob

Purpose:

- control of drives in single-phase and three-phase circuits;
- switching according to specific program.

Installation conditions:

- on a door;
- on a panel;
- on a DIN rail;
- knob is ordered separately.

Characteristics:

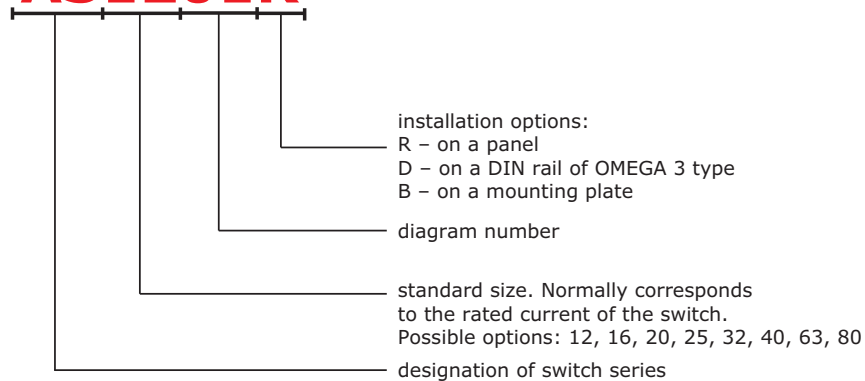
- working part protection is IP20;
- protection on the side of front surface of the device assembly in case of use of grips with graded plates is IP65.

Drawings:

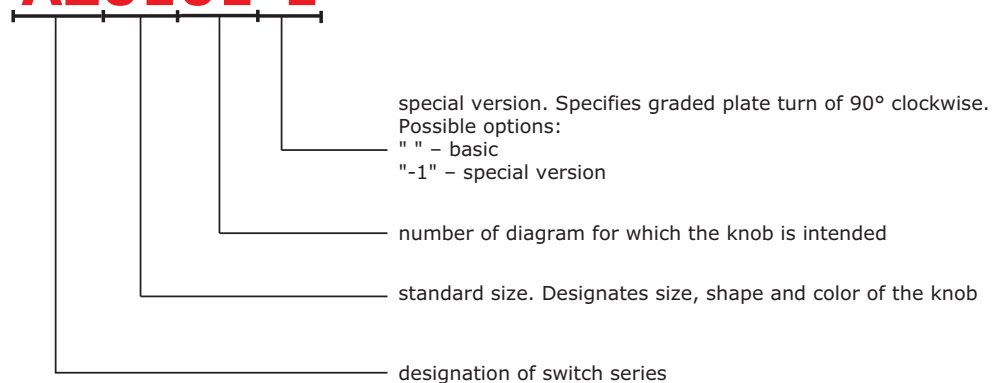
- see on the disk.

Code structure

Code formation rule for cam mechanism

AS1201R

Code formation rule for knob

AZ0101-1

Code formation rule for cam mechanism kit with knob

AS1201R-0101-1

Selection table of mechanism for installation on a door

Mechanism selection procedure:

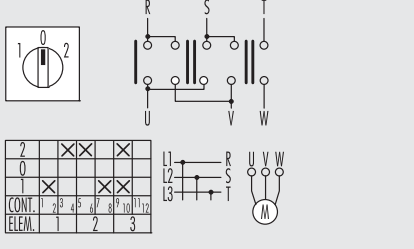
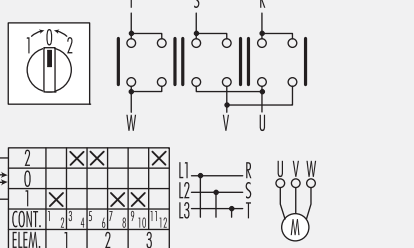
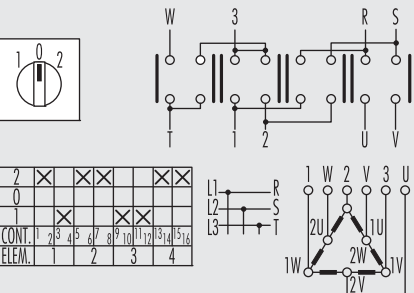
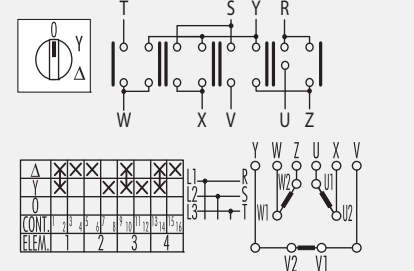
- 1) select the necessary connection diagram;
- 2) select operational current depending on system operating condition;
- 3) select mounting method;
- 4) code of mechanism kit and standard knob is indicated in the rightmost column. Standard knob is a knob with black grip, gray graded plate with protection level IP65 and screw attachment. Knob size depends on the mechanism rating. See table of knob selection for detailed information and selection of alternative knob.

Contact closure diagram	Number of diagram	Quantity of wafers	Rated current, (AC21)	Mechanism code	Standard knob code	Code of mechanism with standard knob
	1	1	12	AS1201R	AZ0101	AS1201R-0101
			16	AS1601R	AZ0101	AS1601R-0101
			20	AS2001R	-	-
			25	AS2501R	-	-
			32	AS3201R	AZ0701	AS3201R-0701
			40	AS4001R	AZ0701	AS4001R-0701
			63	AS6301R	AZ3201	AS6301R-3201
			75	AS8001R	AZ3201	AS8001R-3201
	2	1	12	AS1202R	AZ0101	AS1202R-0101
			16	AS1602R	AZ0101	AS1602R-0101
			20	AS2002R	AZ0101	AS2002R-0101
			25	AS2502R	AZ0701	AS2502R-0701
			32	AS3202R	AZ0701	AS3202R-0701
			40	AS4002R	AZ0701	AS4002R-0701
			63	AS6302R	AZ3201	AS6302R-3201
			75	AS8002R	AZ3201	AS8002R-3201
	3	2	12	AS1203R	AZ0101	AS1203R-0101
			16	AS1603R	AZ0101	AS1603R-0101
			20	AS2003R	AZ0101	AS2003R-0101
			25	AS2503R	AZ0701	AS2503R-0701
			32	AS3203R	AZ0701	AS3203R-0701
			40	AS4003R	AZ0701	AS4003R-0701
			63	AS6303R	AZ3201	AS6303R-3201
			75	AS8003R	AZ3201	AS8003R-3201
	4	2	12	AS1204R	AZ0101	AS1204R-0101
			16	AS1604R	AZ0101	AS1604R-0101
			20	AS2004R	AZ0101	AS2004R-0101
			25	AS2504R	AZ0701	AS2504R-0701
			32	AS3204R	AZ0701	AS3204R-0701
			40	AS4004R	AZ0701	AS4004R-0701
			63	AS6304R	AZ3201	AS6304R-3201
			75	AS8004R	AZ3201	AS8004R-3201
	5	3	16	AS1605R	AZ0101	AS1605R-0101
			25	AS2505R	-	-
			32	AS3205R	-	-
			40	AS4005R	-	-
	6	3	12	AS1206R	AZ0101	AS1206R-0101
			16	AS1606R		
			20	AS2006R	AZ0101	AS2006R-0101
			25	AS2506R	-	-
			32	AS3206R	-	-
			40	AS4006R	-	-

Linear

Contact closure diagram	Number of diagram	Quantity of wafers	Rated current, (AC21)	Mechanism code	Standard knob code	Code of mechanism with standard knob
	8	1	12	AS1208R	-	-
			16	AS1608R	-	-
			20	AS2008R	AZ0108	AS2008R-0108
			25	AS2508R	AZ0708	AS2508R-0708
			32	AS3208R	AZ0708	AS3208R-0708
			40	AS4008R	AZ0708	AS4008R-0708
			75	AS8008R	-	-
	9	2	12	AS1209R		
			16	AS1609R		
			20	AS2009R		
			40	AS4009R		
			75	AS8009R		
	10	3	12	AS1210R		
			16	AS1610R		
			20	AS2010R		
			40	AS4010R		
	11	4	12	AS1211R		
			16	AS1611R	AZ0108	AS1611R-0108
			20	AS2011R	AZ0108	AS2011R-0108
			25	AS2511R	AZ0708	AS2511R-0708
			32	AS3211R	AZ0708	AS3211R-0708

Switches for motors

Contact closure diagram	Number of diagram	Quantity of wafers	Rated current, (AC21)	Mechanism code	Standard knob code	Code of mechanism with standard knob
 <p>Reverse switch</p>	12	3	20	AS2012R	AZ0108	AS2012R-0108
			25	AS2512R	AZ0708	AS2512R-0708
			32	AS3212R	AZ0708	AS3212R-0708
			40	AS4012R	AZ0708	AS4012R-0708
 <p>Reverse switch with return to zero</p>	13	3	25	AS2513R	AZ0713	AS2513R-0713
			32	AS3213R	AZ0713	AS3213R-0713
			40	AS4013R	AZ0713	AS4013R-0713
 <p>Dual speed switch in Delander system</p>	14	3	15 kW	AS3214R	AZ0708	AS3214R-0708
 <p>Star-delta switch</p>	15	4	5.5 kW	AS1215R	AZ0115	AS1215R-0115
			7.5 kW	AS1615R	AZ0115	AS1615R-0115
			11 kW	AS2515R	AZ0715	AS2515R-0715
			15 kW	AS3215R	AZ0715	AS3215R-0715
			18.5 kW	AS4015R	AZ0715	AS4015R-0715

Switches for motors

Contact closure diagram	Number of diagram	Quantity of wafers	Rated current, (AC21)	Mechanism code	Standard knob code	Code of mechanism with standard knob
<p>Reverse switch</p>	17	3	16	AS1617R	AZ0117	AS1617R-0117
			20	AS2017R	AZ0117	AS2017R-0117
<p>Reverse switch</p>	18	3	12	AS1218R	AZ0118	AS1218R-0118
			16	AS1618R	AZ0118	AS1618R-0118
			20	AS2018R	AZ0118	AS2018R-0118

For amperemeter

Contact closure diagram	Number of diagram	Quantity of wafers	Rated current, (AC21)	Mechanism code	Standard knob code	Code of mechanism with standard knob
<p></p>	19	3	12	AS1219R	AZ0119	AS1219R-0119
			16	AS1619R	AZ0119	AS1619R-0119
			20	AS2019R	AZ0119	AS2019R-0119

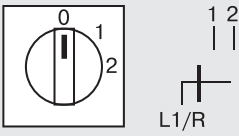
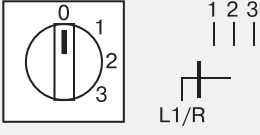
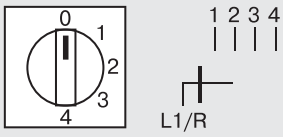
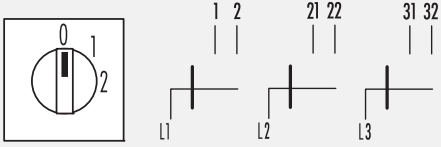
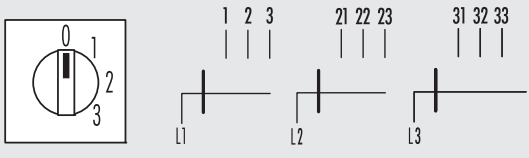
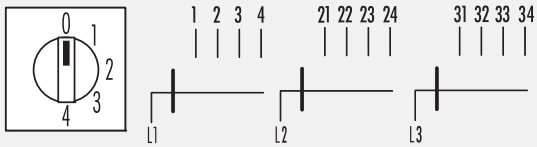
For voltmeter

Contact closure diagram	Number of diagram	Quantity of wafers	Rated current, (AC21)	Mechanism code	Standard knob code	Code of mechanism with standard knob
	20	2	12	AS1220R	AZ0120	AS1220R-0120
			16	AS1620R	AZ0120	AS1620R-0120
			20	AS2020R	AZ0120	AS2020R-0120
	21	2	16	AS1621R	AZ0121	AS1621R-0121
			20	AS2021R	AZ0121	AS2021R-0121
	22	4	12	AS1222R	AZ0122	-
	23	3	12	AS1223R	-	-
			16	AS1623R	-	-
			20	AS2023R	-	-

Toggle

Contact closure diagram	Number of diagram	Quantity of wafers	Rated current, (AC21)	Mechanism code	Standard knob code	Code of mechanism with standard knob
	25	1	12	AS1225R	-	-
			16	AS1625R	-	-
			20	AS2025R	AZ0125	AS2025R-0125
	26	2	12	AS1226R	-	-
			16	AS1626R	AZ0125	AS1626R-0125
			20	AS2026R	-	-
	27	3	12	AS1227R	AZ0125	AS1227R-0125
			16	AS1627R	AZ0125	AS1627R-0125
			20	AS2027R	AZ0125	AS2027R-0125
	38	2	12	AS1238R	-	-
			16	AS1638R	-	-
			20	AS2038R	-	-
	39	3	12	AS1239R	-	-
			16	AS1639R	-	-
			20	AS2039R	-	-
	40	5	12	AS1240R	-	-
			16	AS1640R	-	-
			20	AS2040R	-	-
	41	2	12	AS1241R	-	-
			16	AS1641R	-	-
			20	AS2041R	-	-
	42	4	12	AS1242R	-	-
			16	AS1642R	-	-
			20	AS2042R	-	-
	43	6	12	AS1243R	-	-
			16	AS1643R	-	-
			20	AS2043R	-	-

Step-type

Contact closure diagram	Number of diagram	Quantity of wafers	Rated current, (AC21)	Mechanism code	Standard knob code	Code of mechanism with standard knob
	28	1	12	AS1228R	AZ0128	AS1228R-0128
			16	AS1628R	AZ0128	AS1628R-0128
			20	AS2028R	AZ0128	AS2028R-0128
	29	2	12	AS1229R	AZ0129	AS1229R-0129
			20	AS2029R		
			40	AS4029R	AZ0729	-
	30	2	12	AS1230R		
			16	AS1630R		
			20	AS2030R		
	33	3	20	AS2033R		
	35	5	20	AS2035R		
	37	6	12	AS1237R		
			16	AS1637R		
			20	AS2037R		

Selection table of mechanism for installation on a mounting plate

Standard knob for these mechanisms is a knob with pin placed on a door and with ability to block the opening.

Contact closure diagram	Number of diagram	Quantity of wafers	Rated current, (AC21)	Mechanism code	Standard knob code	Code of mechanism with standard knob
	3	2	16	AS1603B	AZ0501	AS1603B-0501
	4	2	16	AS1604B	AZ0501	AS1604B-0501
			20	AS2004B	AZ0501	AS2004B-0501
			63	AS6304B	AZ2101	AS6304B-2101

Selection table of mechanism for installation on a DIN rail

These mechanisms have fixed height of 58 mm (3 wafers) and are designed for installation for vanity panel of modular boxes together with modular circuit breakers.

Contact closure diagram	Number of diagram	Rated current, (AC21)	Mechanism code	Standard knob code	Code of mechanism with standard knob
	2	20	AS2002D	AZ2701	AS2002D-2701
	3	16	AS1603D	AZ2701	AS1603D-2701
		20	AS2003D	AZ2701	AS2003D-2701
	4	12	AS1204D	AZ2701	AS1204D-2701
		16	AS1604D	AZ2701	AS1604D-2701
		20	AS2004D	AZ2701	AS2004D-2701

Knob selection table

For screw attachment to a door

Grip selection procedure

Switch grip consists of two parts: twist handle and graded plate (except knobs for which absence of plate in the scope of supply is indicated clearly). Possible variants of cam position are shown on the plate.

- 1) Find the diagram of selected cam mechanism in the leftmost column.
- 2) Select the necessary grip design in the table head taking into account first 4 symbols of mechanism code.



Marking	Diagram number	Plate size, mm/Appropriate cam mechanisms			
		48x48 (AS12*-AS20*)	64x64 (AS12*-AS40*)	88x88 (AS63*-AS80*)	48x48 (AS12*-AS20*)
	01-06	AZ0101	-	AZ3201	AZ0201
	01-06 rev.	-	-	-	AZ0201-1
	07	-	AZ0707	-	-
	08-12, 14, 16	AZ0108	AZ0708	AZ3208	-
	13	AZ0113	AZ0713	-	-
	15	AZ0115	AZ0715	-	-
	17	AZ0117	AZ0717	-	-
	18	AZ0118	AZ0718	-	-
	19	AZ0119	AZ0719	-	-
	20	AZ0120	AZ0720	-	-
	21	AZ0121	AZ0721	-	-
	22	AZ0122	AZ0722	-	-
	23	AZ0123	AZ0723	-	-
	24	AZ0124	AZ0724	-	-
	25-27	AZ0125	AZ0725	-	-
	28, 32-33	AZ0128	AZ0728	-	-
	29, 34-35	AZ0129	AZ0729	-	-
	30, 36-37	-	AZ0730	-	-

For screw attachment to a door



Marking	Diagram number	Plate size, mm/Appropriate cam mechanisms					
		48x48 (AS12*-AS40*)	67x67 (AS12*-AS40*)	67x67 (AS12*-AS40*)	92x92 (AS63*-AS80*)	d.52 (AS12*-AS40*) protection degree IP20;	d.59 (AS63*-AS80*) protection degree IP20;
	01-06	AZ0401	AZ0901	-	AZ21001	-	-
	01-06 rev.	-	-	AZ1001-1	-	-	-
	07	-	-	-	-	AZ1407	AZ1307
	08-12, 14, 16	-	-	-	-	AZ1408	AZ1308
	15	-	-	-	-	-	AZ1315
	17	-	-	-	-	-	AZ1317
	18	-	-	-	-	-	AZ1318

Drawings: see on the disk.

For attachment on a door into the hole with diameter of 22.5 mm



Marking	Diagram number	Plate size, mm/Appropriate cam mechanisms		
		48x48 (AS12*-AS20*)	48x48 (AS12*-AS20*)	48x48 (AS12*-AS20*)
	01-06	-	AZ5801	AZ6001
	01-06 rev	-	AZ5801-1	-
	08-12, 14, 16	AZ5608	-	-
	13	AZ5613	-	-
	24	AZ5624	-	-
	30, 36-37	AZ5630	-	-

Drawings: see on the disk.

For attachment on a door into the hole with diameter of 22.5 mm



Marking	Diagram number	Plate size, mm/Appropriate cam mechanisms	Without plate, IP20
		67x67 (AS12*-AS20*)	(AS12*-AS20*)
	01-06	AZ6101	AZ2801
	01-06 rev	AZ6101-1	

Drawings: see on the disk.

For screw attachment to a door with pin, installation of the working part on a mounting plate and possibility of door blocking (pin with length of 85 mm complete with the knob)



Marking	Diagram number	Plate size, mm/Appropriate cam mechanisms			
		48x48 (AS12-AS40)	48x48 (AS12-AS20)	48x48 (AS12-AS40)	92x92 (AS63-AS80)
	01-06	-	AZ0501	AZ0601	AZ21201
	01-06 rev	AZ2001-1	-	-	-

Drawings: see on the disk.

For screw attachment to a door into the hole with diameter of 22.5 mm with pin, installation of the working part on a mounting plate and possibility of door blocking (pin with length of 85 mm complete with the knob)



Marking	Diagram number	Plate size, mm/Appropriate cam mechanisms	
		48x48 (AS12*-AS40*)	67x67 (AS12*-AS40*)
	01-06	AZ6901	AZ6301
	01-06 rev	-	AZ6301-1

Drawings: see on the disk.

For loose installation, IP20



Marking	Diagram number	Appropriate cam mechanisms. Plate size 46x46 mm
		AS12* - AS20*
	01-06	AZ2701
	23	AZ2723

Drawings: see on the disk.

Grip without graded plate for cam switches



Marking	Appropriate cam mechanisms
	Ø34 mm AS12*-AS40*
Black	AZ1801

Drawings: see on the disk.

Plastic enclosure for installation of cam switches, IP65



Purpose:

- protection of cam switches against environmental exposure.

Drawings:

- see on the disk.

Mechanism installation method	Allowable mechanisms	Maximum allowable quantity of wafers	Package, pcs	Code
From the front	AS16*-AS20*	3	1	AF1/2NGO
From the end	AS16*-AS20*	6	1	AL1/0NGO
From the front	AS25*-AS40*	3	1	AF4/GNGO

Extended pin


Purpose:

- transfer of turning force from knob to mechanism in case of their separate installation. For example, in case of installation of knob on a door and mechanism on a mounting plate.

Section, mm	Length, mm	Package, pcs	Code
□ 5 (for AS12*-AS40* mechanisms)	185	10	A20401089
	300	10	A20401164

Seals


Purpose:

- for increase of protection degree IP65 in case of usage of grips without plates.

Knob type	Mechanism type	Code
AZ13-AZ14-AZ18-AZ72-AZ81	AS12-16-20	A28000012
AZ40*	AS25-32-40	A15000015

Protective case for wafers


Purpose:

- additional protection of contact part against accidental contact.

Mechanism type	Maximum allowable quantity of wafers	Code
AS12* - AS20*	3	A11706031
AS25* - AS40*	3	A20101005

Adapter for case


Purpose:

- makes it possible to increase the allowable quantity of wafers protected with case.

Mechanism type	Maximum allowable quantity of wafers	Code
AS12* - AS20*	+2	A11702038

Disconnectors

Technical characteristics

Power supply	AE16	AE32	AE63	AE80	AE100
Operating voltage Ue, V	690				
Voltage across insulation Ui, V	690				
Rated impulse voltage Uimp, kV	4	4	4	8	8
Thermal current Ith, A	32	40	63	86	100
Thermal current in the shell Ith, A	32	40	63	86	86
Impulse frequency F, Hz	50				
Electrical service life, cycle/hour	120				
Mechanical service life, cycles	2 x 10				
Standard wire, mm ²	1.5/16 10/35				
Storage temperature, °C	From -30 to +70				
Operating temperature, °C	From -25 to +55				
Flexible wire, mm ²	1.5/10 6/25				

Operating conditions	Voltage, V	AE16	AE32	AE63	AE80	AE100
AC-21A switching of active load including overloads, A	690	32	40	63	86	100
AC-22A switching of combined active and inductive load including overloads, A	500 690	25	32	63	80	100 86
AC-23A switching of motor load and other high inductive overloads, 3 phases, 3 poles, A/kW	230 400 500 690	25/7.5 25/15 25/15 20/18.5	32/10 32/18.5 32/22 25/22	50/15 50/30 50/37 32/30	63/18.5 60/33 60/40 35/33	70/22 67/37 67/45 38/37
AC3 direct start of electric motors with square-cage rotor, 3 phases, 3 poles, A/kW	230 400 500 690	22/7.5 22/11 22/11 22/11	30/9 30/15 30/18.5 22/18.5	40/11 40/22 40/30 25/22	50/15 50/25 50/33 27/25	60/18.5 55/30 55/37 32/30
AC-23A switching of active load including overloads, A/kW	110 230 230 400	8	10	12	20	25

Low voltage circuit characteristics	Voltage, V	AE16	AE32	AE63	AE80	AE100
Rated short-time withstand current Icw, A	–	400	400	1500	1500	1500
Rated short-circuit breaking capacity Icm, A	–	1500	1500	2840	2840	2840
Rated withstand short circuit current, A/kW	–	10	10	10	10	10
Current on fuse link gG, A	500 690	40	40	80	80	100 40

Disconnectors for installation on a door



AE16, AE32 series (type R)



AE63, AE80, AE100 series (type R)



AM25, AM32 series (type R)



Standard knob

Purpose:

- load starting/tripping;
- control of drives in single-phase and three-phase circuits.

Installation conditions:


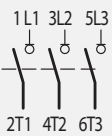
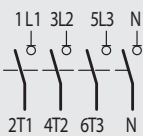
- on a door.

Characteristics:

- working part protection is IP20;
- protection on the side of front surface of the device assembly in case of use of grips with graded plates is IP65.

Drawings:

- see on the disk.

Q-ty of poles	Connection diagram	Current AC21A 690V, A	Current AC23A 400V, A	Series	Mechanism code	Standard knob code	Code of compatible enclosure
2		63	50	AE63	AE6302R	AZ1001	531210
3		32	25	AM25	AM2503R	AZ1001	531210
		40	32	AE32	AE3203R	AZ1001	AF1/2NGO
		40	32	AM32	AM3203R	AZ1001	531210
		63	50	AE63	AE6303R	AZ1001	531210
		80	60	AE80	AE8003R	AZ1001	531210
		100	67	AE100	AE10003R	AZ1001	533210
4		32	25	AE16	AE1604R	AZ1001	AF1/2NGO
		63	50	AE63	AE6304R	AZ1001	531210
		80	60	AE80	AE8004R	AZ1001	531210
		100	67	AE100	AE10004R	AZ1001	533210

Disconnectors for installation of a DIN rail.



AE16, AE32 series (type B)



AE63, AE80, AE100 series (type B)



AM25, AM32 series (type B)



Standard knob

Purpose:

- load starting/tripping;
- control of drives in single-phase and three-phase circuits.

Installation conditions:

- on a DIN rail;
- for attachment of disconnectors in boxes of 531201 or 533301 type 02140 DIN rail shall be used.

Characteristics:

- working part protection is IP20;
- protection on the side of front surface of the device assembly in case of use of grips with graded plates is IP65.

Distinctive features:

- AE16, AE32 disconnectors for installation on a DIN rail may be installed on a mounting plate. For this purpose it is necessary to order the accessory with A11814005 code "Attachment platform for enclosure installation on a mounting plate" for the selected disconnector (type B).

Drawings:

- see on the disk.

Q-ty of poles	Connection diagram	Current AC21A 690V, A	Current AC23A 400V, A	Series	Mechanism code	Standard knob code	Code of compatible enclosure
2		40	32	AE32	AE3202B	AZ1201	AF1/1NGO
3		32	25	AM25	AM2503B	AZ1201	531210
		40	32	AE32	AE3203B	AZ1201	AF1/1NGO
		40	32	AM32	AM3203B	AZ1201	531210
		63	50	AE63	AE6303B	AZ4201	531210
4		32	25	AE16	AE1604B	AZ1201	AF1/1NGO
		40	32	AE32	AE3204B	AZ1201	AF1/1NGO
		63	50	AE63	AE6304B	AZ4201	531210
		100	67	AE100	AE10004B	AZ4201	533310

Disconnectors for installation of a DIN rail for vanity panel



- Purpose:**
- load starting/tripping;
 - control of drives in single-phase and three-phase circuits.
- Installation conditions:**
- on a DIN rail.

Q-ty of poles	Connection diagram	Current AC21A 690V, A	Current AC23A 400V, A	Series	Mechanism code	Knob code
2		40	32	AE32	AE3202B	A590YMDIN
3		32	25	AE16	AE1603B	A590YMDIN
		40	32	AE32	AE3203B	A590YMDIN
4		32	25	AE16	AE1604B	A590YMDIN
		40	32	AE32	AE3204B	A590YMDIN

Grip selection table



Disconnecter code	Grip code					
	48x48 Gray platform Black grip	48x48 Gray platform Black grip with fixation, for lock	67x67 Gray platform Black grip with holes for three locks	48x48 Yellow platform Red grip	48x48 Yellow platform Red grip with fixation, for lock	67x67 Yellow platform Red grip with holes for three locks
AE1602R	AZ0101	-	AZ0901	AZ0201	AZ0401	AZ1001-1
AE1603R						
AE1604R						
AE3203R						
AE3204R						
AM2503R						
AM3203R						
AE6303R	-	-	AZ4901	-	-	AZ1001-1
AE6302R						
AE6304R						
AE8003R						
AE8004R						
AE10003R						
AE10004R						
AE1602B	AZ2001-1	AZ0501	AZ6301*	-	AZ0601 AZ6901*	AZ4201 AZ6601*
AE1603B						
AE1604B						
AE3202B						
AE3203B						
AE3204B						
AM2503B						
AE6303B	-	-	AZ6501*	-	-	AZ4201 AZ6601*
AE6302B						
AE6304B						
AE8004B						
AE10004B						

*This knob is attached to the hole with diameter of 22.5 mm

The scope of supply of disconnectors for installation on a DIN rail/mounting plate includes pin. Pin length is 85 mm

Drawings: see on the disk.

Accessories

Enclosures made of thermoplastic with installation of disconnectors



Boxes of AF* type



Boxes of 53**01 type

Purpose:

- protection of disconnectors against environmental exposure.

Drawings:

- see on the disk.

Disconnector type	Package, pcs	Code	Mounting feature
AE16**R, AE32**R	1	AF1/2NGO	
AE16**B, AE32**B	1	AF1/1NGO	It is required to use A11706237 "Pin" and A11814005 "Attachment platform" accessories additionally
AM25**R; AM32**R; AE63**R, AE80**R	1	531210	Any "RAM box" enclosure with dimensions of 300x150x146 mm may be also used
AE100**R	1	531210	Any "RAM box" enclosure with dimensions of 300x300x146 mm may be also used
AM25**B; AM32**B; AE63**B, AE80**B	1	531210	Any "RAM box" enclosure with dimensions of 300x150x146 mm may be also used DIN rail (code 02135) or mounting plate (code 503310) may be used for disconnector installation on the basis of the enclosure
AE100**B	1	531210	Any "RAM box" enclosure with dimensions of 300x300x146 mm may be also used DIN rail (code 02135) or mounting plate (code 503330) may be used for disconnector installation on the basis of the enclosure

Pin


Purpose:

- transfer of turning force from knob to mechanism in case of disconnector installation into AF1/1NGO enclosure.

Type	Package, pcs	Code
For installation into AF1/1NGO enclosures	10	A11706237

Extended pin for door blocking


Purpose:

- transfer of turning force from knob to mechanism in case of their separate installation. For example, in case of installation of knob on a door and mechanism on a mounting plate.

Section, mm	Length, mm	Package, pcs	Code
□ 5 for SE16-40 mechanisms	185	10	A20401089
	300	10	A20401164

Attachment platform


Purpose:

- for installation of AE16, AE32 disconnectors of type "B" on a mounting plate.

Type	Package, pcs	Code
For mechanism installation on a mounting plate	10	A11814005

Additional pole for disconnectors of AM series


Purpose:

- additional pole operating together with disconnector.

Contact type	Mounting method, code	
	on a door	on a mounting plate
N — N	AM32ANPR	AM32ANPB
N — N	AM32ANIR	AM32ANIB

Protective case


Purpose:

- additional protection for disconnector contacts.

For AM25-AM32 series mechanisms	Package, pcs	Code
For 3 poles Mechanism is installed on a DIN rail	1	APP03B
For 3 poles Mechanism is installed on a door	1	APP03R
For 1 pole Universal	1	APP01

Platform for additional pole attachment


Purpose:

- additional protection for disconnector contacts.

Distinctive features:

- contact blocks ACVL** are used as the additional poles (page 493).

Type	Package, pcs	Code
For AE16-AE32 series disconnectors	10	A11814021

Knob for disconnector installation for vanity panel


Purpose:

- knob is used in case of disconnector installation of "B" type for vanity panel.

Installation conditions:

- attached to disconnector enclosure.

Characteristics:

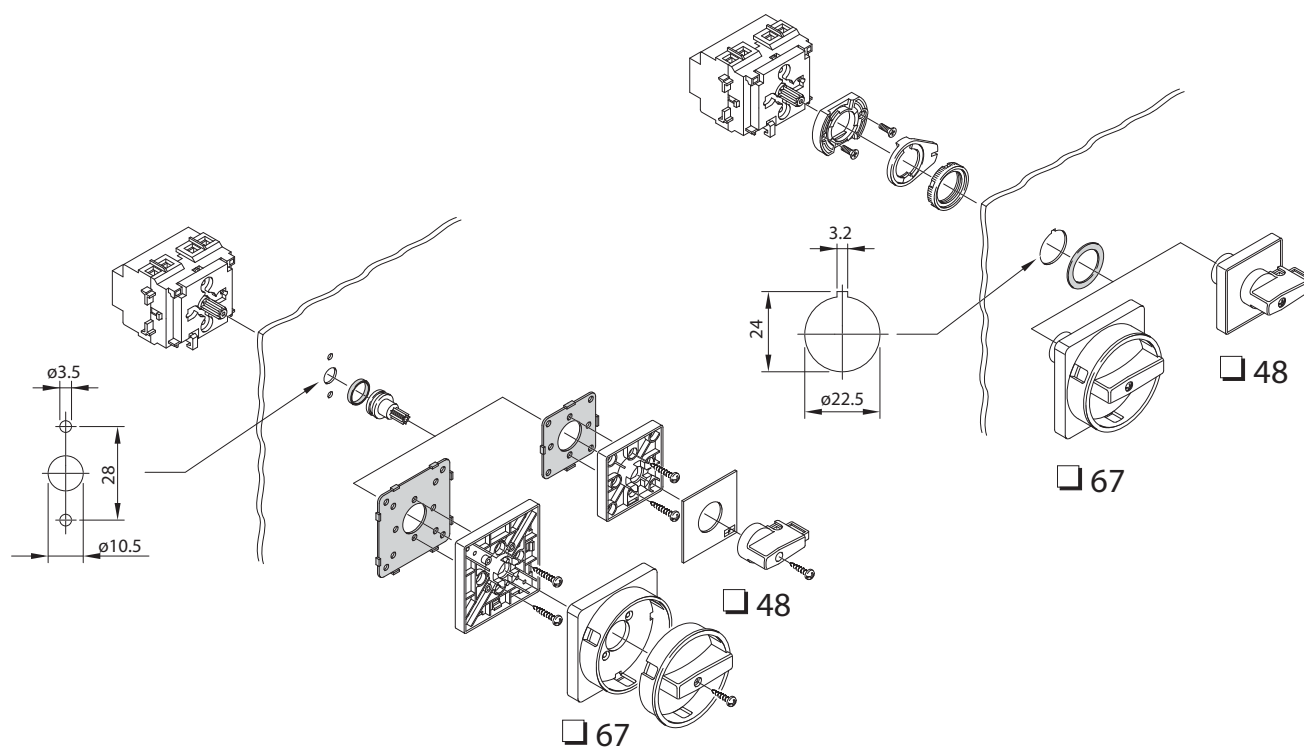
- material: ABS plastic.

Distinctive features:

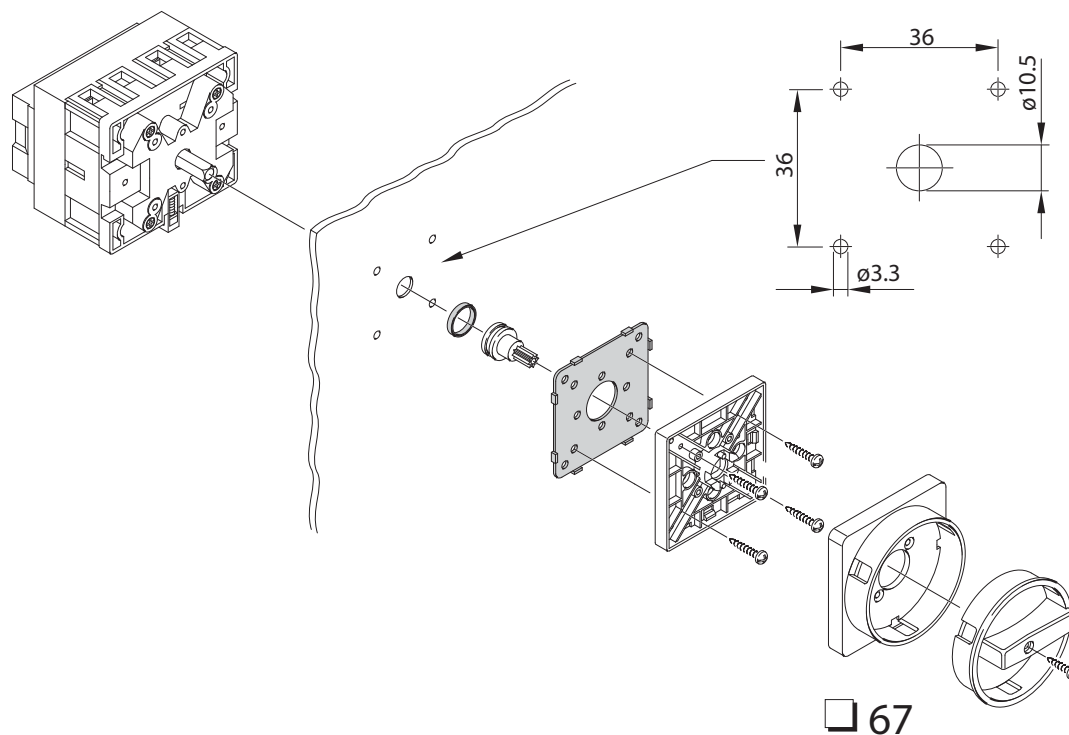
- plate width may be reduced to 4 modules (70 mm).

Compatible disconnectors	Width	Code
AE16, AE32	5 modules (98 mm)	A590YMDIN

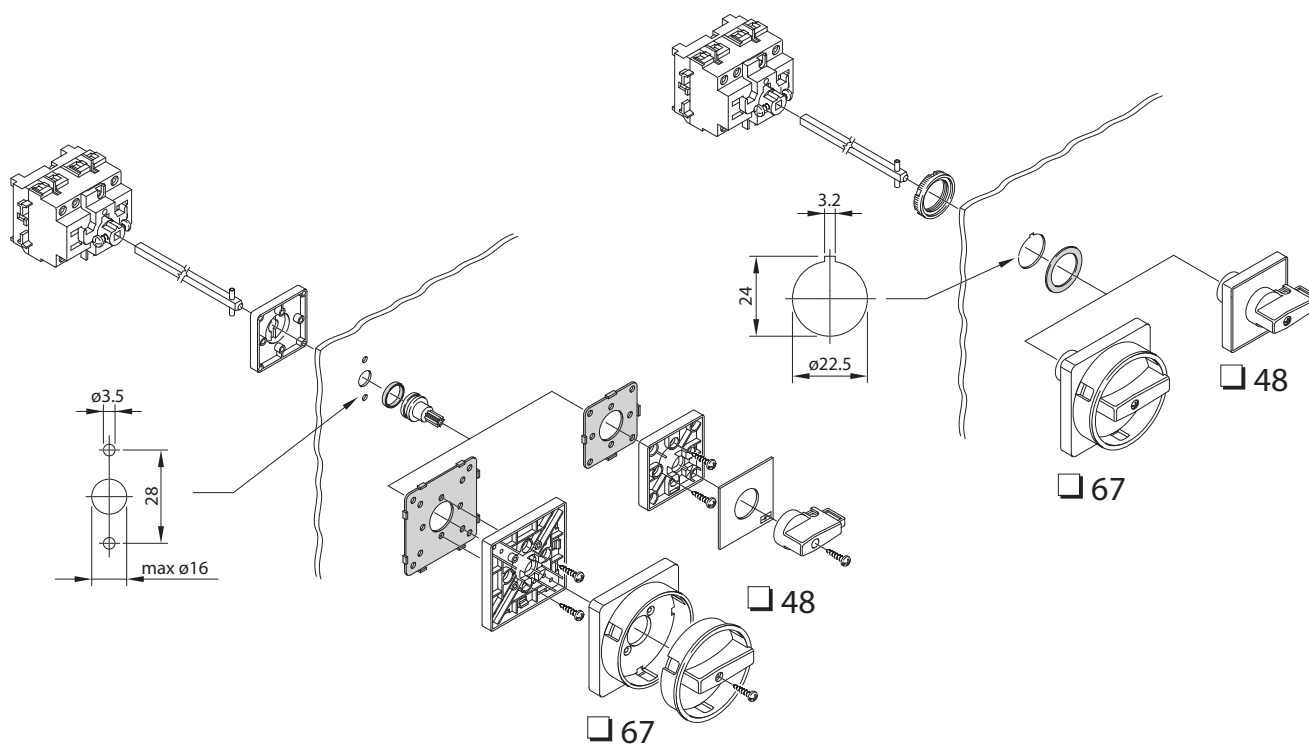
Scheme installation of AE16-32 disconnectors on a door



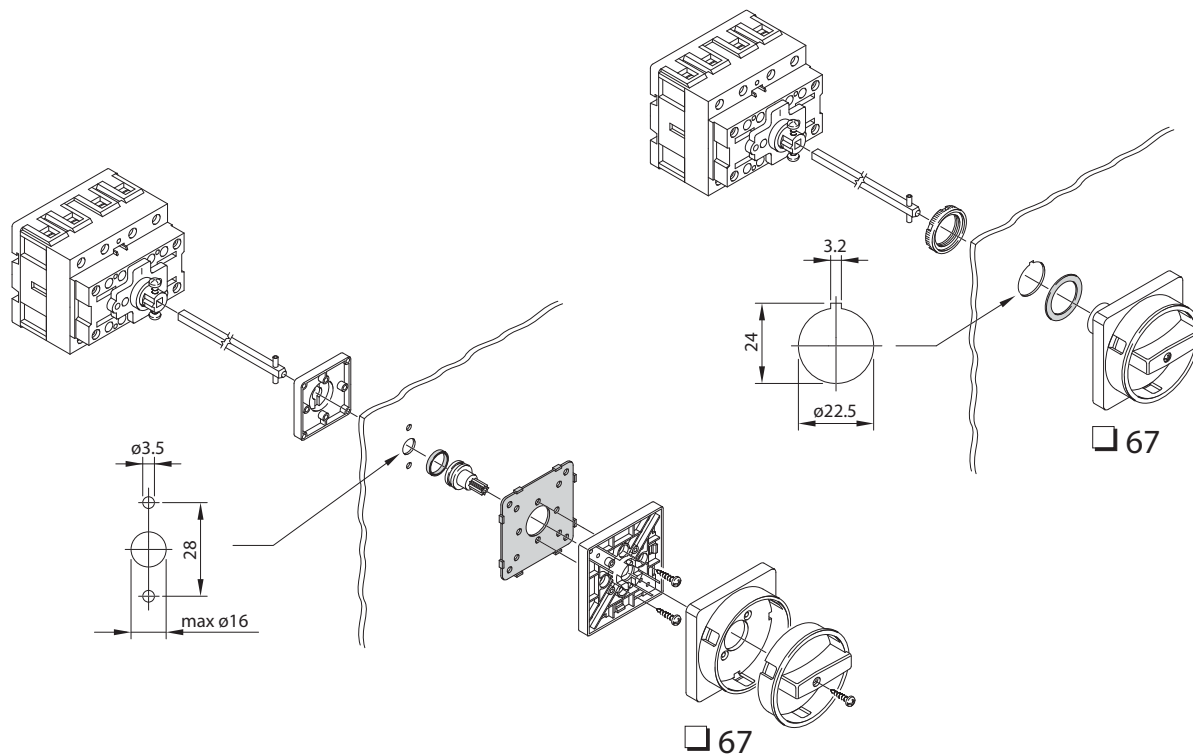
Scheme installation of AE63-100 disconnectors on a door



Scheme installation of AE16-32 disconnectors on a mounting plate/DIN rail



Scheme installation of AE63-100 disconnectors on a mounting plate/DIN rail



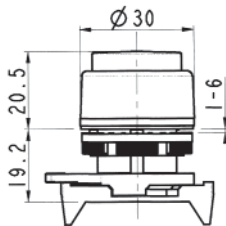
Push-buttons and pilot lights

Technical characteristics

Characteristics	Values
Enclosure and attachment platform material	ABS plastic
Installation method	on the hole of 22.5 mm
Number of installed contact blocks	4 rows with 3 pieces in each
Scope of supply	Pressing mechanism and mounting platform
Storage temperature, °C	From -30 to +70
Operating temperature, °C	From -25 to +70

Raised

Without attachment

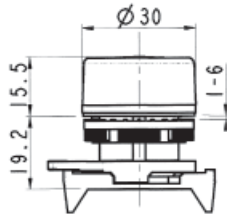


- Purpose:**
- plastic pressing mechanism for raised button without attachment.
- Characteristics:**
- protection degree is IP65.

Type	Color	Code
Non-transparent	red	ABDTR1
	green	ABDTR2
Transparent	red	ABDLR1
	yellow	ABDLR3

Flat

Without attachment

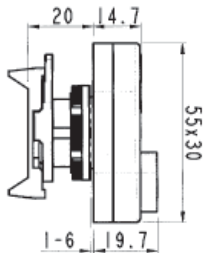


- Purpose:**
- plastic pressing mechanism for flat button without attachment.
- Characteristics:**
- protection degree is IP65.

Type	Color	Code
Non-transparent	red	ABHTR1
	green	ABHTR2
	yellow	ABHTR3
	blue	ABHTR4
	white	ABHTR5
	black	ABHTR6
Transparent	red	ABHLR1
	green	ABHLR2
	yellow	ABHLR3
	blue	ABHLR4

Multi-purpose without attachment

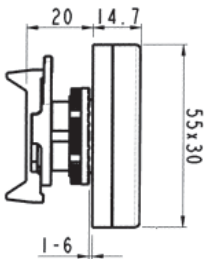
Double. Raised



- Purpose:**
- plastic pressing mechanism for double button.
- Characteristics:**
- protection degree is IP40.

Type	Carrier color	Code
Without indication	black	ABFT
With indication	black	ABFL

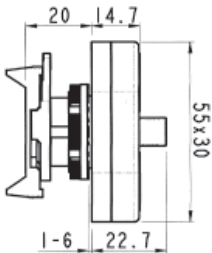
Double. Flat



- Purpose:**
- plastic pressing mechanism for double button.
- Characteristics:**
- protection degree is IP40.

Type	Carrier color	Code
Without indication	black	ABFTM
With indication	black	ABFLM

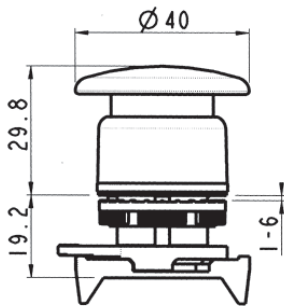
Triple. Raised



- Purpose:**
- plastic pressing mechanism for triple button.
- Characteristics:**
- protection degree is IP40.

Type	Carrier color	Code
Without indication	black	ABMN

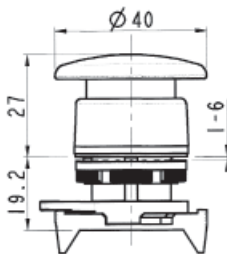
Emergency, mushroom shaped Antirotating
With latching



Purpose:
• plastic pressing mechanism for mushroom shaped button with latching.
Characteristics:
• protection degree is IP65.

Type	Diameter	Code
Without indication	40	ABHT1M4N
With indication	40	ABHL1M4N

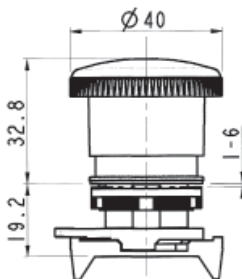
Without latching



Purpose:
• plastic pressing mechanism for mushroom shaped button without attachment.
Characteristics:
• protection degree is IP65.

Type	Diameter	Code
Without indication	40	ABHT1R4N

"P-P"

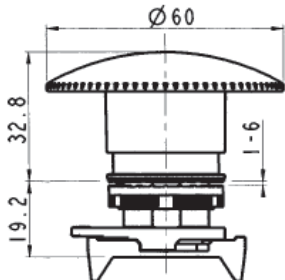
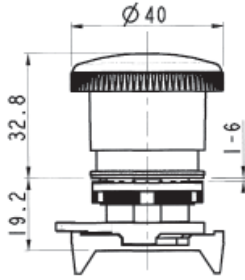
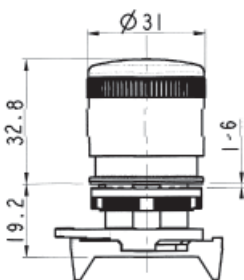


Purpose:
• plastic pressing mechanism for mushroom shaped P-P button.
Characteristics:
• protection degree is IP65.

Type	Diameter	Code
With mechanical indication	40	ABHT1P4S

Emergency, mushroom shaped Rotating

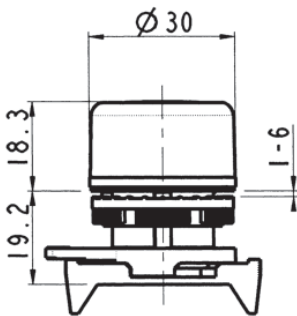
With latching



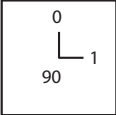
Type	Diameter	Code
Without indication	40	ABHT1C4N
With mechanical indication	40	ABHT1C4S
	60	ABHT1C6S

Assembled switches

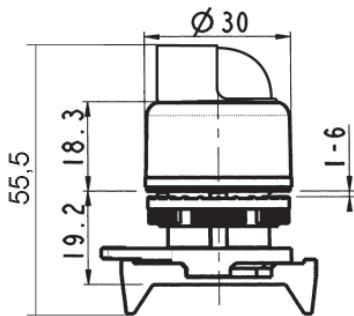
Grip with key



- Purpose:**
- plastic pressing mechanism for switch with short knob.
- Characteristics:**
- protection degree is IP66.

Connection	Mechanism	Number of positions	Position of blocking key removal	Code
	with latching	2	0, 1	ASKRB8DON

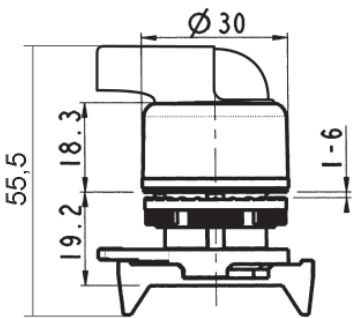
Standard grip for switch



- Purpose:**
- plastic pressing mechanism for switch with short knob.
- Characteristics:**
- protection degree is IP66.

Connection	Mechanism	Number of positions	Color	Code
	with latching	2	red	ASSB1D0
			green	ASSB2D0
			yellow	ASSB3D0
			blue	ASSB4D0
			black	ASSB6D0
	with return to zero from one	2	red	ASSB1D2
			yellow	ASSB3D2
			blue	ASSB4D2
			white	ASSB5D2
	with latching	3	red	ASSB1T0
			green	ASSB2T0
			white	ASSB5T0
			black	ASSB6T0
	with return to zero from two	3	red	ASSB1T1
			green	ASSB2T1
	with return to zero from one	3	red	ASSB1T2
			green	ASSB2T2
	with return from one and two	3	white	ASSB5T3
			black	ASSB6T3

Standard grip for switch



- Purpose:**
- plastic pressing mechanism for switch with short knob.
- Characteristics:**
- protection degree is IP66.

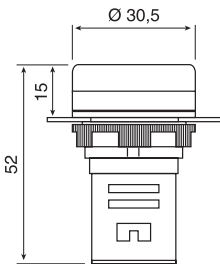
Connection	Mechanism	Number of positions	Color	Code
	with latching	2	red	ASLB1D0
			blue	ASLB4D0
	with return to zero from one	2	red	ASLB1D2
			green	ASLB2D2
			blue	ASLB4D2
			white	ASLB5D2
			black	ASLB6D2
	with latching	3	yellow	ASLB3T0
			blue	ASLB4T0
	with return from one and two	3	red	ASLB1T3
			green	ASLB2T3
			yellow	ASLB3T3
			blue	ASLB4T3
			black	ASLB6T3

Standard indicators

Technical characteristics for LEDs and block with BA9s lamp

Power supply	ALIL1...5 L...	ACVAD ALVL07
Operating voltage Ui AC/DC, B	6-12-24-48-110 (AC 220-380)	250
Current frequency f, Hz	50/60	50/60
Current strength, A	less than 50 at voltage of 6-12 V less than 20 at voltage of 24-380 V	-
Luminance, cd/m ²	up to 40	-
Resource, hours	30000	-

With LED



- Purpose:**
- indicator with LED lamp.
- Characteristics:**
- protection degree is IP65.

Mechanism	Blocking position	Code
With LED of 220 V	red	ALIL1L220
	green	ALIL2L220
	yellow	ALIL3L220
	blue	ALIL4L220
	white	ALIL5L220
With LED of 24 V	red	ALIL1L24
	green	ALIL2L24
	yellow	ALIL3L24
	blue	ALIL4L24
	white	ALIL5L24

Contact blocks

Technical characteristics for contact blocks

Characteristics	Values
Enclosure material	ABS plastic
Protection class	IP20
Color-coded indication	green color is for normally open contacts red color is for normally closed contact yellow is for contacts of increased security

Power supply	ACV* - ACVL*
Rated insulation voltage Ui, V	690
Rated impulse voltage Uimp, kV	4
Current strength, A	16
Current strength in closed shell Ith, A	10
Voltage type	AC/DC


Operating conditions	ACVL01-ACVL02								ACV01-ACV10							
AC15. Ue(V)	24	60	110	230	400	440	500	690	24	60	110	230	400	440	500	690
AC15. Ie(A)	16	12	8	6	4.5	3.5	1	1	16	12	5	5	4	4	4	2
DC15. Ue(V)	24		48		60		110		24	48		60		110		250
DC15. Ie(A)	2		1.2		0.85		0.4		2	2		1		0.4		0.4

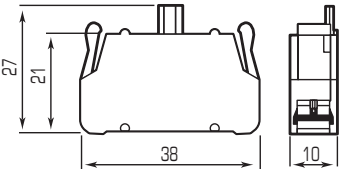
Operating conditions	ACVL* - ACV*
Operating temperature, °C	From -25 to +70
Storage temperature, °C	From -30 to +70
Resource (mln. cycles) depending on current strength	1 A - 1.5 mln., 2 A - 0.5 mln., 3 A - 0.25 mln.

Technical characteristics for fuse holders with LEDs

Power supply	ALV**, ALVL**
Operating voltage Ui AC/DC, B	12-24-48-110 (AC 220)
Current frequency f, Hz	50/60

With screwless type terminal blocks





Purpose:


- circuit closing/opening.

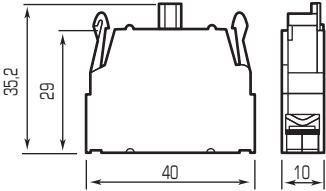
Characteristics:

- spring type terminal blocks.

Type	Code
Normally closed	ACV01
Normally open	ACV10

With screw type terminal blocks





Purpose:

- circuit closing/opening.

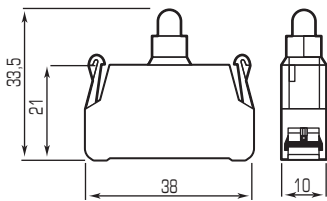
Characteristics:

- screw type terminal blocks.

Type	Code
Normally closed	ACVL01
Normally open	ACVL02

With screwless type terminal blocks

With LED

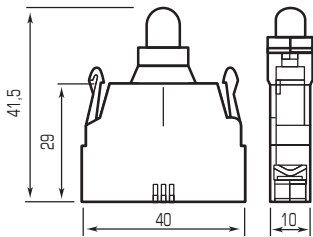


- Purpose:**
- indication of circuit operation.
- Characteristics:**
- LED;
 - spring type terminal blocks.

Voltage (AC/DC)	Code
12 V	ALV12
24 V	ALV24
220 V (AC)	ALV220

With screw type terminal blocks

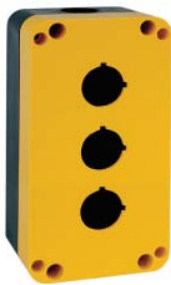
With LED



- Purpose:**
- indication of circuit operation.
- Characteristics:**
- LED;
 - screw type terminal blocks.

Voltage (AC/DC)	Code
12 V	ALVL12
24 V	ALVL24
220 V (AC)	ALVL220

Enclosure for push-button station



- Purpose:**
- for button installation.
- Characteristics:**
- material is ABS plastic;
 - protection degree is IP65.
- Drawings:**
- page 498.

Type	Code
1 place	AK01
2 places	AK02
3 places	AK03
4 places	AK04
5 places	AK05
6 places	AK06

Accessories for buttons

Marking plate



- Purpose:**
- provision of additional information on pilot lights.
- Material:**
- carrier and label are made of polycarbonate.
- Scope of supply:**
- marking plate (carrier);
 - attachable label for information.

Color	Code
Black	MKPB22

Pad for middle contact



- Purpose:**
- used for installation of contact blocks in middle position; without this pad contact blocks will not be activated.
- Characteristics:**
- material: polycarbonate.

Package, pcs	Code
10	APAC

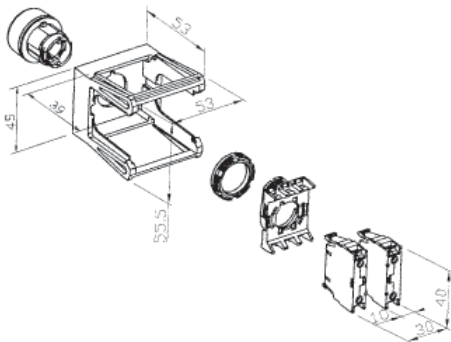
Plug



- Purpose:**
- plug of button hole.
- Characteristics:**
- material: plastic;
 - black color.

Package, pcs	Code
10	APTRN8

Adapter



- Purpose:**
- button installation on a DIN rail (OMEGA 3/TH35/DIN EN 50022-35).
- Characteristics:**
- material: plastic;
 - allowable number of contact blocks is 3.

Package, pcs	Code
1	A11708351

Protective cap


Purpose:

- protection of emergency stop push-buttons against accidental pressing.

Features:

- may be used for buttons with diameter of 40 mm.

Material:

- ABS plastic.

Color	Code
Yellow	A11706006

Silicone seal for flat buttons


Purpose:

- used for protection of pictographs on the buttons and for increase of overall protection level.

Characteristics:

- material: silicone.

Package, pcs	Code
10	APCR

Silicone seal for raised buttons


Purpose:

- used for protection of pictographs on the buttons and for increase of overall protection level.

Characteristics:

- material: silicone.

Package, pcs	Code
10	APCS

Silicone seal for multi-purpose buttons


Purpose:

- used for protection of pictographs on the buttons and for increase of overall protection level.

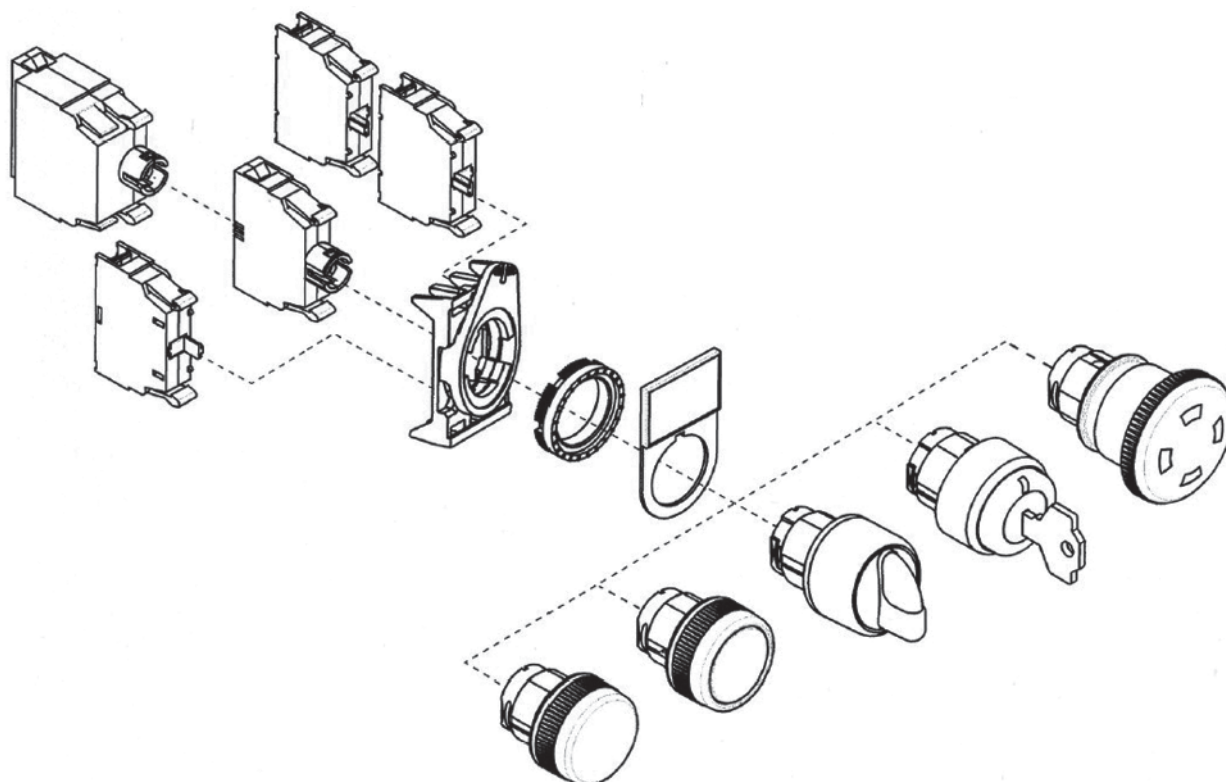
Characteristics:

- material: silicone.

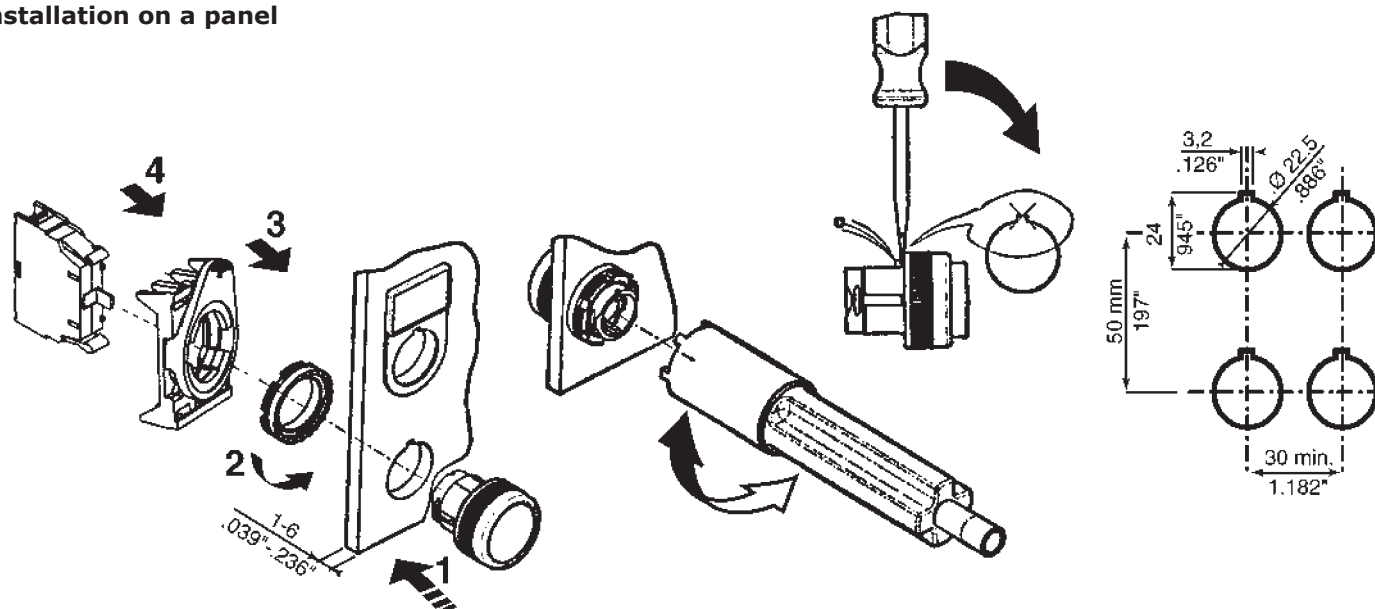
Button type	Code
ABFT, ABFTC, ABFL	APCD
ABFTM, ABFTMC, ABFLM, ABFLMC	APCN
ABMN	APCM

Instructions for assembly

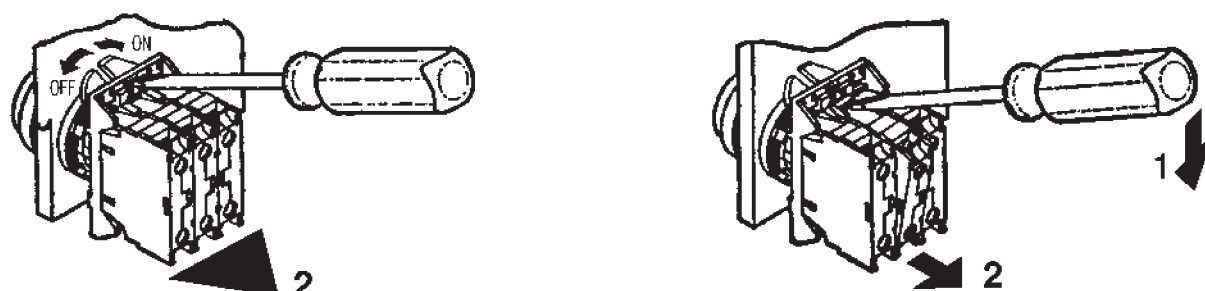
Combination variants of contact blocks and buttons



Installation on a panel

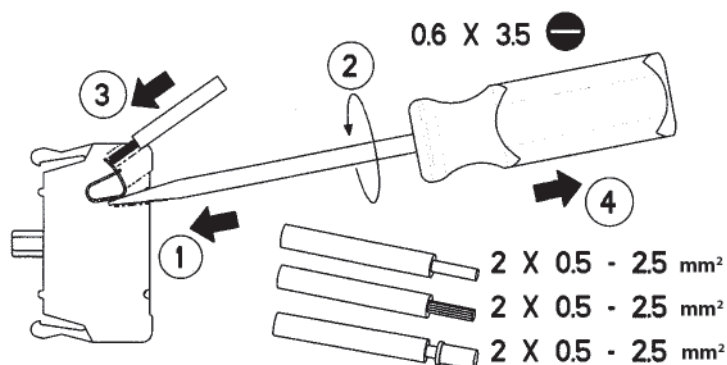


Installation and removal of contact blocks



Instructions for assembly

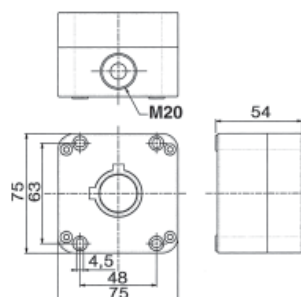
Instruction for work with contact blocks



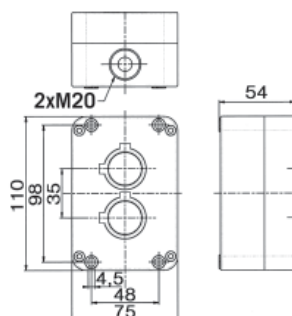
1. Insert the screwdriver (code ZCCH02) into fuse holder.
2. Turn the screwdriver around its axis.
3. Insert the conductor into fuse holder.
4. Remove the screwdriver from fuse holder.

Drawings

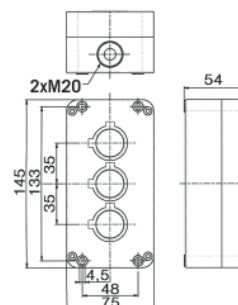
Push-button stations



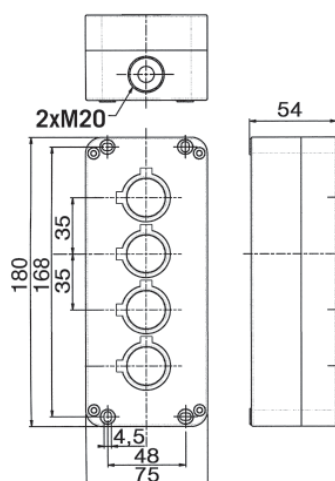
AK01



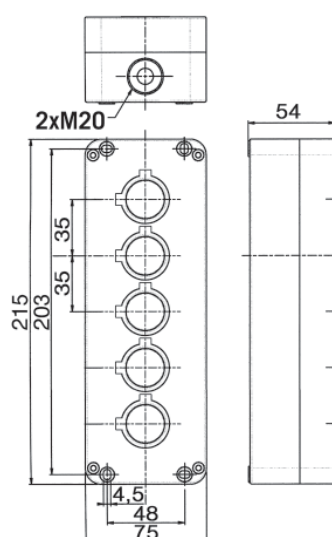
AK02



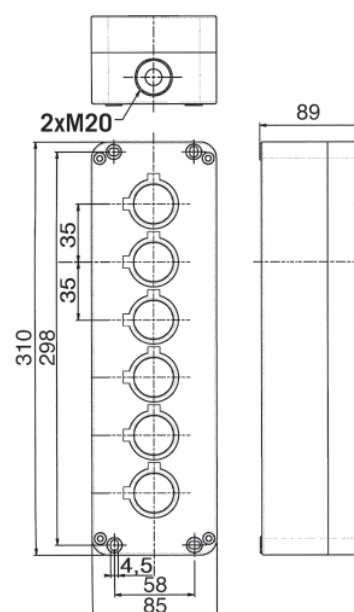
AK03



AK04



AK05



AK06

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00107RL	271	00924RL	299	03535	287	08105	274
00108RL	271	00941RL	299	03546	287	08106	274
00126RL	270	00942RL	299	03553	287	08107	274
00127RL	271	00943RL	299	03564	287	08108	274
00128RL	271	00944RL	299	03574	287	08109	274
00134RL	271	00961RL	299	03575	287	08110	274
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00161RL	271	01107RL	269	06500RL	279	095770020	131
00162RL	271	01108RL	269	06501	279	095770038	131
00163RL	271	01126RL	269	06501RL	279	095770046	131
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00170RL	271	01128RL	269	06502RL	275	095770087	131
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00228RL	272	01135RL	269	06561RL	278	095775011	130
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00242RL	272	01141RL	269	07501	275	095775300	134
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00261RL	272	01155RL	269	077501906	128	095775607	132
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00265RL	272	01163RL	269	077505105	127	095775722	132
00270RL	272	01166RL	269	077505907	128	095775748	132
00271RL	272	01168RL	272	077508109	127	095775763	132
00272RL	272	01173RL	272	077513109	127	095775805	133
00278RL	270	012A	349	077513901	128	095775813	133
00280RL	272	02120	284	077515104	127	095775821	133
00283RL	272	02125	285	077515906	128	095775839	133
00284RL	272	02130	286	077518108	127	095775854	133
00288RL	272	02135	284	077702108	127	095775862	133
003A	350	02140	285	077702900	128	095775870	133
00670RL	270	02145	284	077704104	127	095775888	133
00672RL	270	02150	285	077704906	128	095775904	133
00674RL	270	02155	286	077705101	127	095775912	133
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00703RL	273	02182	273	077712909	128	095777033	130
00704RL	273	02183	273	077714103	127	095777058	130
00705RL	273	02190	287	077714905	128	095777306	134
00706RL	273	02195	286	077715100	127	095777355	134
00707RL	273	03120	286	077715902	128	095777603	132
00708RL	273	03130	286	077718104	127	095777629	132
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1333	333	25209CG	292	25254	291	254293MV	298
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159SM	335	25209CV	292	25303CT	291	25431	297
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21041301	295	252110-M	290	25308	288	25436	297
21041302	296	25212	288	25309	288	254363MV	297
21041303	296	25213	288	25309CT	291	25439	297
2104291	297	25214	288	25310	288	25458	295
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2104294	297	25214CR	292	25313	288	25461	295
2104300	296	25214CT	291	25314	288	25466	298
21043105	296	25214CV	292	25314CT	291	25467	298
21043106	296	25215	288	25314SE	288	254673MV	298
21043108	296	252150-I	290	25315	288	25468	298
21043109	296	252155-M	290	25315CT	291	25469	298
21043111	296	25215CB	292	25316	288	254693MV	298
21043112	296	25215CG	292	25317	288	25472	298
21043113	296	25215CR	292	25317T	291	25473	298
21043114	296	25215CT	291	25318	288	254733MV	298
21043115	296	25215CV	292	25319	288	25474	298
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SITFP1020M	353	SOLOMD4A40	182	BPTM60P1A12		BPT10BB160 +	186
SITFP1020W	353	SOLOMD4A60	182	TRIOTM20A0 +	184	BS20P1A200	
SITFP2715E	353	SOLOMD5A10	182	BPTM60P3A7		TRIOTT40A0 +	
SITFP2715M	353	SOLOMD5A10 +	182	TRIOTM20A10	184	BPT6BB160 +	186
SITFP2715W	353	BBC15P2A7		TRIOTM20A120	184	BS20P1A65	
SITFP2727E	353	SOLOMD5A15	182	TRIOTM20A30	184	TRIOTT40A0 +	
SITFP2727M	353	SOLOMD5A15 +	182	TRIOTM20A60	184	BPT8BB160 +	186
SITFP278210E	353	BBC15P2A9		TRIOTM20A60	184	BS20P1A120	
SITFP278210M	353	SOLOMD5A20	182	TRIOTT10A0 +	186	TRIOTT40A0 +	
SITFP278210W	353	SOLOMD5A30	182	BPT20P4A7		BPT8BB160 +	186
SMALLB1A10S	178	SOLOMD5A30	182	TRIOTT10A10	186	BS20P1A150	
SMALLB1EXTPS	178	SOLOMD5A40	182	TRIOTT10A120	186	TRIOTT40A10	186
SMALLB1EXTS	178	SOLOMD5A60	182	TRIOTT10A30	186	TRIOTT40A120	186
SMALLB2A10S	178	SOLOMD6A10	182	TRIOTT10A30 +	186	TRIOTT40A30	186
SMALLB2EXTPS	178	SOLOMD6A10 +	182	BPT20P4A9		TRIOTT40A60	186
SMALLB2EXTS	178	BBC15P2A9		TRIOTT10A60	186	TRIOTT40A90	186
SMALLB3A10S	178	SOLOMD6A20	182	TRIOTT12A0 +	186	TRIOTT8A0 +	186
SMALLB3EXTPS	178	SOLOMD6A30	182	BPT20P3A9		BPT20P4A7	
SMALLB3EXTS	178	SOLOMD6A30 +	182	TRIOTT12A0 +	186	TRIOTT8A10	186
SMALLC1A10I	180	BBC15P2A9		BPT20P4A9		TRIOTT8A120	186
SMALLC1EXTI	180	SOLOMD6A40	182	TRIOTT12A0 +	186	TRIOTT8A30	186
SMALLC1EXTPI	180	SOLOMD6A60	182	BPT6BB63 +	186	TRIOTT8A30 +	186
SMALLC2EXTI	180	SOLOMD6A60	182	BS20P1A65		BPT20P4A9	
SMALLC2EXTPI	180	SOLOMD7A10	182	TRIOTT12A10	186	TRIOTT8A60	186
SMALLC3EXTI	180	SOLOMD7A10 +	182	TRIOTT12A120	186	TUB1001FL	347
SMALLC3EXTPI	180	BBC15P2A9		TRIOTT12A30	186	TUB1002FL	347
SNMPXTRA	190	SOLOMD7A15	182	TRIOTT12A60	186	TUB1003FL	347
SNMPMMD	190	SOLOMD7A15 +	182	TRIOTT15A0 +	186	TUB1004FL	347
SNMPSMALL	178	BBC20P2A9		BPT20P4A7		TUB1005FL	347
SOLOMD10A0 +	182	SOLOMD7A20	182	TRIOTT15A0 +	186	TUB1006FL	347
SOLOMD10A0 +	182	SOLOMD7A30	182	BPT6BB63 +	186	TUB1201	348
BBC20P2A7		SOLOMD7A40	182	BS20P1A65		TUB1201FL	347
SOLOMD10A10	182	SOLOMD7A5	182	TRIOTT15A10	186	TUB1202	348
SOLOMD10A10 +	182	SOLOMD7A5 +	182	TRIOTT15A120	186	TUB1202FL	347
BBC20P2A9		BBC15P2A7		TRIOTT15A30	186	TUB1203	348
SOLOMD10A20	182	SOLOMD7A60	182	TRIOTT15A60	186	TUB1203FL	347
SOLOMD10A30	182	SOLOMMB14A10	182	TRIOTT20A0 +	186	TUB1204	348
SOLOMD10A40	182	SOLOMMB14A30	182	BPT20P4A9		TUB1204FL	347
SOLOMD10A5	182	SOLOMMB14A30 +	182	TRIOTT20A0 +	186	TUB1205	348
SOLOMD10A5 +	182	BPT20P4A9		BPT6BB100 +	186	TUB1205FL	347
SOLOMD10A60	182	SOLOMMB14A5	182	BS20P1A65		TUB1206	348
SOLOMD12A0 +	182	SOLOMMB14A5 +	182	TRIOTT20A0 +	186	TUB1206FL	347
SOLOMD12A0 +	182	BPT20P4A9		BS20P1A100		TUB1501	348
BBC15P2A9		SOLOMMB14A60	182	TRIOTT20A10	186	TUB1501FL	347
SOLOMD12A0 +	182	SOLOMMB14A90	182	TRIOTT20A120	186	TUB1502	348
SOLOMD12A0 +	182	T1611	337	TRIOTT20A30	186	TUB1502FL	347
BBC15P2A9		T1615	337	TRIOTT20A60	186	TUB1503	348
SOLOMD12A0 +	182	T167	337	TRIOTT30A0 +	186	TUB1503FL	347
BBC20P2A9		TRIOTM10A0 +	184	TRIOTT30A0 +	186	TUB1504	348
SOLOMD12A10	182	BPTM60P2A9		BPT6BB125 +	186	TUB1504FL	347
SOLOMD12A20	182	TRIOTM10A10	184	BS20P1A80		TUB1505	348
SOLOMD12A30	182	TRIOTM10A120	184	TRIOTT30A0 +	186	TUB1505FL	347
SOLOMD12A40	182	TRIOTM10A30	184	BPT8BB125 +	186	TUB1506	348
SOLOMD12A5	182	TRIOTM10A60	184	BS20P1A120			

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TUB1806FL	347	ZCB401GR	379	ZCF100	425	ZDB400GR	370
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TUB2303	348	ZCB511	359	ZCF900	425	ZDB517	372
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TUB2304	348	ZCB523	379	ZCNT16	396	ZDC006	438
TUB2304FL	347	ZCB610	359	ZCNT161	396	ZDC05P	438
TUB2305	348	ZCB611	359	ZCNT35	396	ZDC05V	438
TUB2305FL	347	ZCB710	359	ZCNT351	396	ZDC06P	438
TUB2306	348	ZCB711	359	ZCNT601	396	ZDC06V	438
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TUB3002	348	ZCBC04GR	358	ZCPF503	447	ZDD005	438
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TUB3003	348	ZCBC10GR	358	ZCPF512	447	ZDD501	439
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TUB3005	348	ZCBF04I	379	ZCPM01	433	ZDF500	451
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