

ELMARK HOLDING SE United Kingdom



ELMARK[®]
The Brand of Electricity

CIRCUIT BREAKERS

14 - 49



14 - 24
Miniature circuit breakers (MCB)



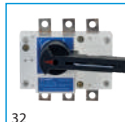
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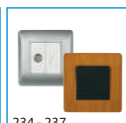
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COMPANY INFORMATION

ELMARK

is a leading European certified trademark of LOW VOLTAGE ELECTRICAL AND LIGHTING EQUIPMENT, complying with the applicable European standards, incl. the Directive 2006/95/EC (ex.73/23/EEC) Low Voltage Directives (LVD), INTERTEK, RoHS, EMC, ISO 9001:2008 and in reference with the requirements for CE marking.

The holder of the trademark ELMARK is the European company **ELMARK HOLDING SE with HEADQUARTER in LONDON, UK.**

It represents a group of 14 affiliate companies in 10 countries: United Kingdom, Bulgaria, Romania, Hungary, Slovenia, Croatia, Serbia, Bosnia and Herzegovina, Greece, United Arab Emirates.

INTERNATIONAL TRADE OFFICE

ELMARK TRADE LTD, Varna, Bulgaria

Our professional team of International Trade Managers is dedicated to expand our ELMARK sales network and establish close relations with our clients around the globe and offer quick and competent assistance on any enquiries and questions.

SOLUTIONS

Over 7000 LOW VOLTAGE ELECTRICAL AND LIGHTING SOLUTIONS

QUALITY

Up to 7 YEARS WARRANTY



EUROPEAN FACTORY AND WAREHOUSE

ELMARK INDUSTRIES SC, Dobrich, Bulgaria

The facilities manufacture and maintain significant stock availabilities and provides competitive and quick distribution throughout Europe.

MIDDLE EAST FACTORY AND WAREHOUSE

ELMARK INDUSTRIES SC Branch, Dubai, UAE

As located in Dubai Silicon Oasis, we are able to provide faster and cost effective solutions

to our clients in Middle East and Africa as well as keep close relationship with our partners to handle and satisfy all demands and requirements.

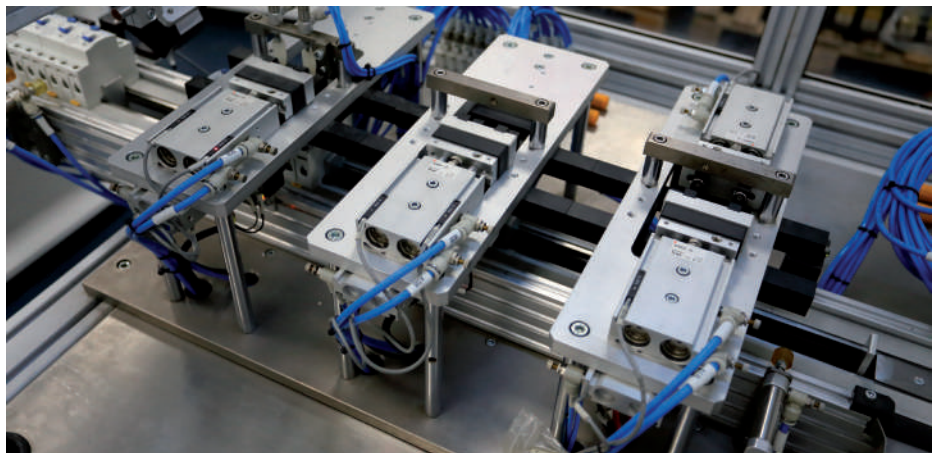
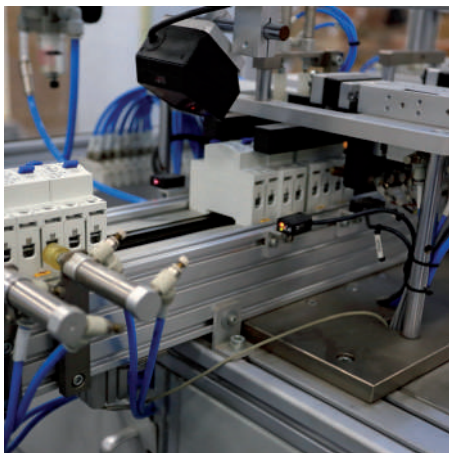
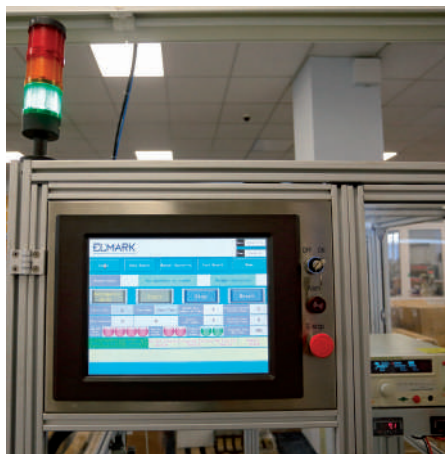
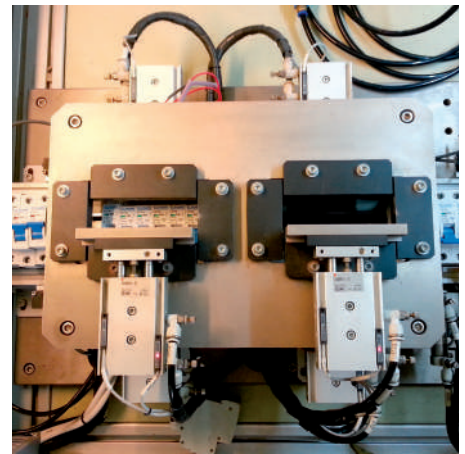
Our successful commercial policy is due to the high quality of the product range and the successful balance of supply and demand of electrical and lighting equipment. As a result, **ELMARK HOLDING SE** has been a reliable and reputable partner on the European and world market for already fifteen years, offering good quality products at competitive prices.

LIABILITY

1 500 000 EUR ALLIANZ GERMANY

CERTIFICATES

IEC JECF RoHS CE EMC LVD



Allianz Bulgaria
Insurance Co. Ltd.

General Insurance

TO WHOM IT MAY CONCERN

CERTIFICATE OF COVER

This is to certify that we, "Allianz Bulgaria" Insurance Co., Ltd., Bulgaria, Sofia, in our capacity as Insurers, have issued an insurance Policy No 13000160390000001 and effected Product Liability insurance as follows:

ASSURED: ELMARK INDUSTRIES AD, BULSTAT No. 124634156, Dobrich, Dobrudzha 2 Boul.

Interest Production of Miniature Circuit Breakers (MCB), Molded Case Circuit Breakers (MCCB), Residual Current Devices (RCD) and Contactors and Devices for Control and Protection of Electrical Motors. Assembly and testing of Fluorescent, Industrial and LED lighting.

Limits: 1 500 000 EUR any one occurrence
1 500 000 EUR in aggregate for the insurance period

PERIOD: TWELVE MONTHS with effect from 01-01-2016

Territorial Scope: Worldwide except USA and Canada and the territories under their jurisdiction

Warranties, if any :

In the event that the Assured or anyone acting on his behalf uses the above information as evidence for insurance or evidence of financial responsibility under any applicable law relating to financial responsibility, or otherwise shows or offers it to any other party as evidence of insurance, it must be clearly understood that this confirmation relates only to the dates set out above and that such insurance is subject to General Conditions of "Allianz Bulgaria", attached clauses and terms, conditions, limitations, exclusions and other provisions of the Insurance Policy issued.

Issued on December 30TH 2015

Place of issue: Varna

Nº 0106851

"ALLIANZ BULGARIA" INS Co., LTD.

Allianz Bulgaria
Insurance Co. Ltd. 039

Allianz 

ORIGINAL



BUREAU VERITAS
Certification

ELMARK INDUSTRIES SC
2, Dobrudzha Blvd., 9300 Dobrich, Bulgaria

Bureau Veritas Certification Holding SAS – UK Branch certify that the Management System of the above organization has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2008
Scope of certification

Production and trade of Miniature Circuit Breakers (MCB), Molded Case Circuit Breakers (MCCB), Residual Current Devices (RCD), Contactors and Devices for Control and Protection of Electrical Motors. Assembly and testing of Fluorescent, Industrial and LED lighting.

Certification cycle start date: **16 March 2015**

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: **16 March 2018**

Original certification date: **07 April 2009**

Certificate No: **BG120416.1Q** Version 1, Revision date: **12 January 2015**



BUREAU VERITAS
Certification

ELMARK INDUSTRIES SC
BRANCH
B-06, LIU-4, Dubai Silicon Oasis, Dubai UAE

Bureau Veritas Certification Holding SAS – UK Branch certify that the Management System of the above organization has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2008
Scope of certification

Production and trade of Miniature Circuit Breakers (MCB), Molded Case Circuit Breakers (MCCB), Residual Current Devices (RCD), Contactors and Devices for Control and Protection of Electrical Motors. Assembly and testing of Fluorescent, Industrial and LED lighting.

Certification cycle start date: **12 January 2015**

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: **11 January 2018**

Original certification date: **12 January 2015**


Certificate No: **BG120416.2Q** Version 1, Revision date: **12 January 2015**



UKAS
MANAGEMENT
SYSTEMS
008

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization. To check this certificate validity please call: +359 (2) 983 60 44

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UKAS
MANAGEMENT
SYSTEMS
008

ma Zlatarova
Signed on behalf of BVCH SAS UK Branch

Non body address: 66 Prescott Street, London, E1 8HG, United Kingdom
Local Office: 81A, Bulgaria Blvd., 1404 Sofia, Bulgaria

Clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization. To check this certificate validity please call: +359 (2) 983 60 44

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Intertek

Certificate

for European Product Safety

Reference No: 1212576

akers for overcurrent protection

Product: CB TEST CERTIFICATE

Product Name: CB TEST CERTIFICATE

Manufacturer: Elmark Industries SC, 2 Dobruška Blvd., Dobruška, BULGARIA

Same as above

Same as above

See page 2

EN 60898-1:2003 and A1+A12+A13

16 October 2013

The product satisfies the provisions for CE marking according to the Low Voltage Directive 2006/95/EC.

Elmark Industries SC, 2 Dobruška Blvd., Dobruška, BULGARIA

Production control constitutes sufficient support for an EC Declaration of conformity, according to the principle of presumption of conformity, of the product in accordance with the provisions of the CE marking according to the Low Voltage Directive 2006/95/EC.

Intertek Serbia AB, Product Certification Place: Kista - Stockholm

Paul Karmali

Date: 16 October 2013

1212576

Intertek

Certificate

for European Product Safety

Reference No: 1213818

rent operated circuit-breakers without current protection for household and similar uses (RCCB's)

Product: CB TEST CERTIFICATE

Product Name: CB TEST CERTIFICATE

Manufacturer: Elmark Industries SC, 2 Dobruška Blvd., Dobruška, BULGARIA

Same as above

Same as above

See page 2

EN 60898-1:2003 and A1+A12+A13

17 October 2013

The product satisfies the provisions for CE marking according to the Low Voltage Directive 2006/95/EC.

Elmark Industries SC, 2 Dobruška Blvd., Dobruška, BULGARIA

Production control constitutes sufficient support for an EC Declaration of conformity, according to the principle of presumption of conformity, of the product in accordance with the provisions of the CE marking according to the Low Voltage Directive 2006/95/EC.

Intertek Serbia AB, Product Certification Place: Kista - Stockholm

Paul Karmali

Date: 17 October 2013

1213818

Intertek

Certificate

for European Product Safety

Reference No: 1214640

ded case circuit-breakers

Product: CB TEST CERTIFICATE

Product Name: CB TEST CERTIFICATE

Manufacturer: Elmark Industries SC, 2 Dobruška Blvd., Dobruška, BULGARIA

Same as above

Same as above

See page 2

EN 60898-1:2003 and A1+A12+A13

9 November 2013

The product satisfies the provisions for CE marking according to the Low Voltage Directive 2006/95/EC.

Elmark Industries SC, 2 Dobruška Blvd., Dobruška, BULGARIA

Production control constitutes sufficient support for an EC Declaration of conformity, according to the principle of presumption of conformity, of the product in accordance with the provisions of the CE marking according to the Low Voltage Directive 2006/95/EC.

Intertek Serbia AB, Product Certification Place: Kista - Stockholm

Paul Karmali

Date: 9 November 2013

1214640

Intertek

Certificate

for European Product Safety

Reference No: 1214641

AC Contactor

Product: CB TEST CERTIFICATE

Product Name: CB TEST CERTIFICATE

Manufacturer: Elmark Industries SC, 2 Dobruška Blvd., Dobruška, BULGARIA

Same as above

Same as above

See page 2

EN 60898-1:2003 and A1+A12+A13

25 September 2013

The product satisfies the provisions for CE marking according to the Low Voltage Directive 2006/95/EC.

Elmark Industries SC, 2 Dobruška Blvd., Dobruška, BULGARIA

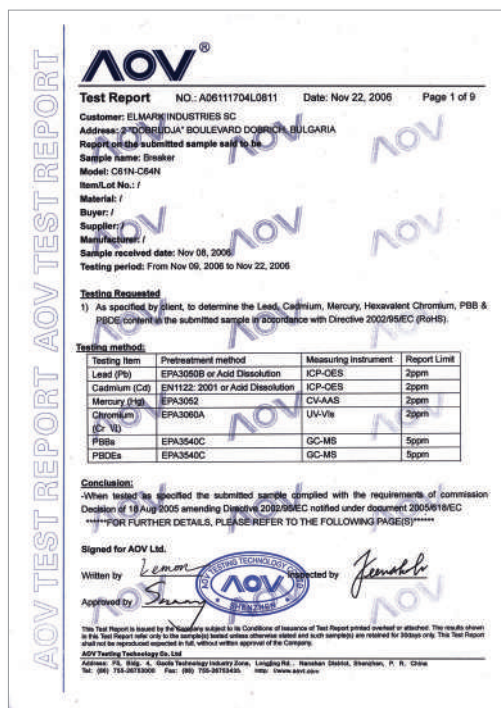
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Intertek Serbia AB, Product Certification Place: Kista - Stockholm

Paul Karmali

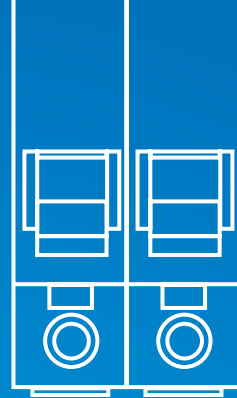
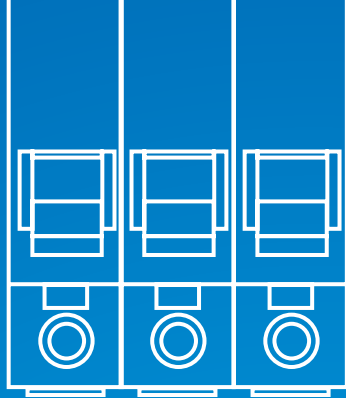
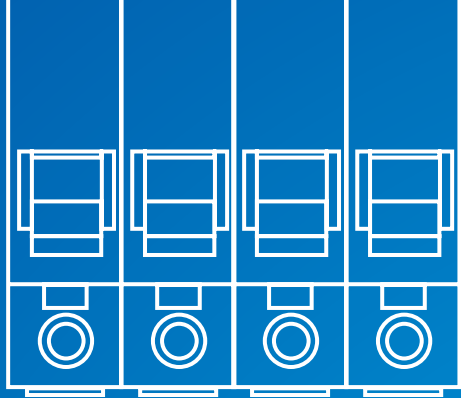
Date: 25 September 2013

1214641



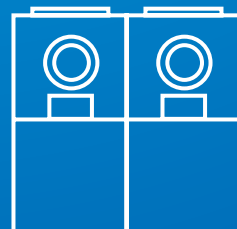
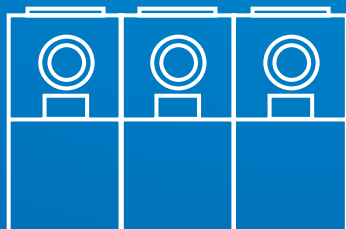
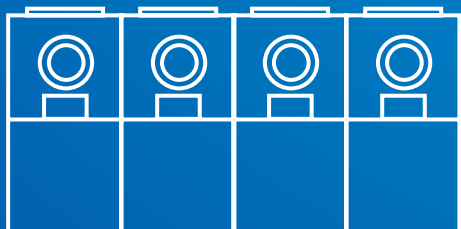
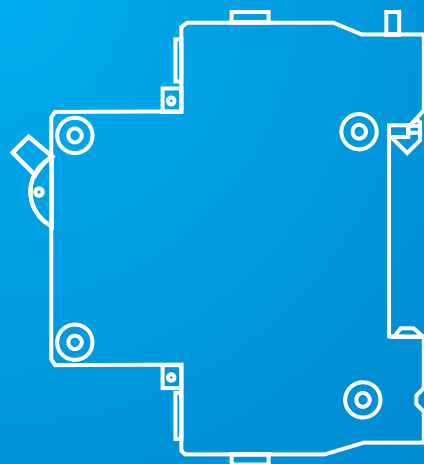
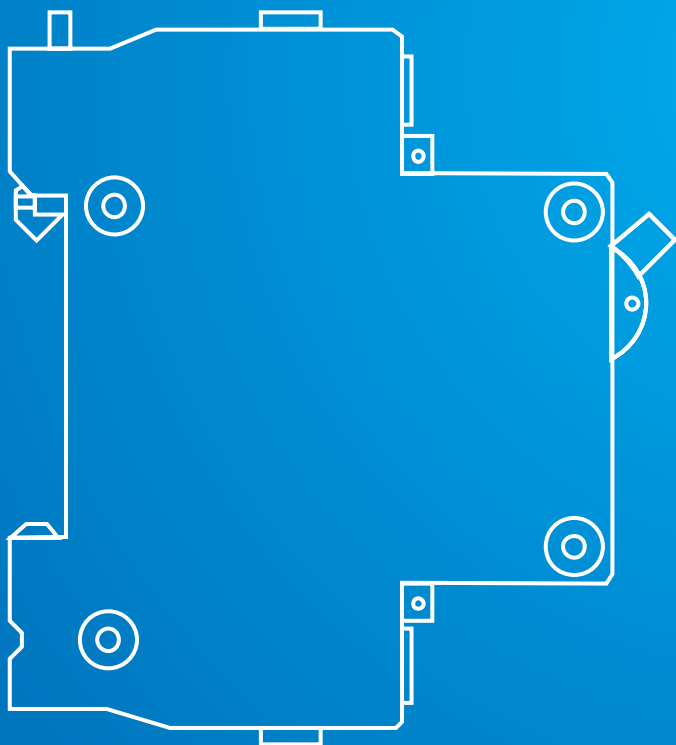






CIRCUIT BREAKERS

CIRCUIT BREAKERS



ELMARK[®]

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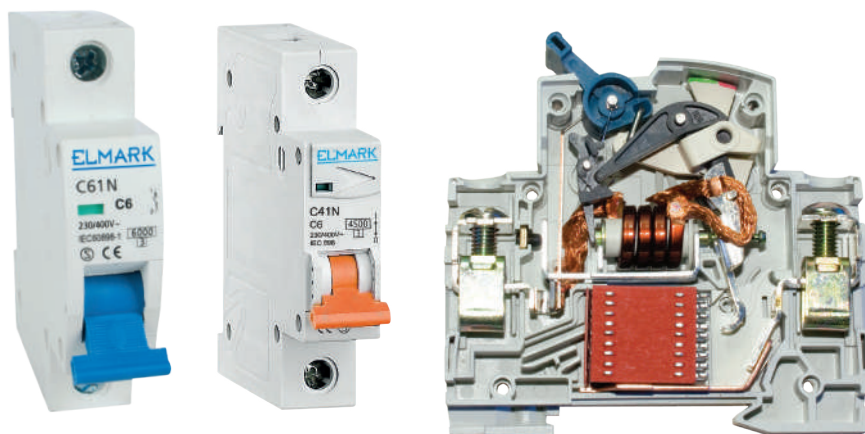
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TERMINAL 1

NON-FLAMMABLE COVER 2

JUMP KNUCKLE 3

HANDLE 4

LOCK KNUCKLE 5

MOVABLE CONTACT 6

ARC CHAMBER 7

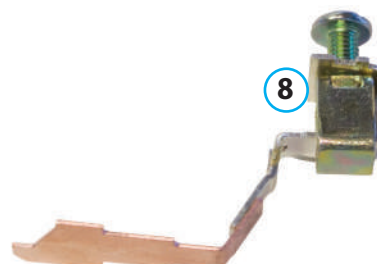
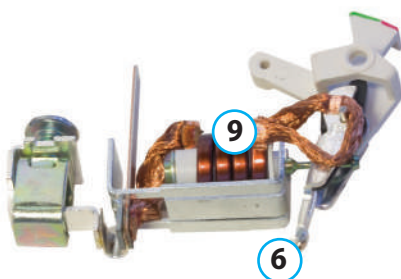
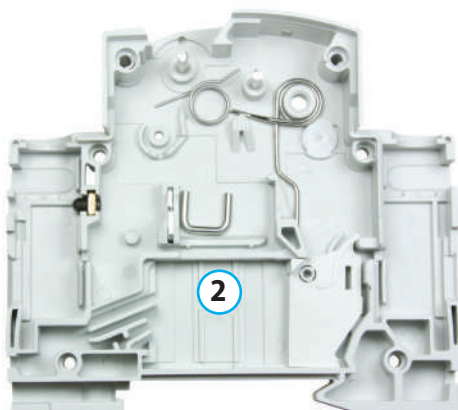
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UNDER VOLTAGE RELEASE (accessory) 11

SHUNT RELEASE (accessory) 12



10



Characteristics

Circuit breakers are automatically-operated electrical switches, designed to protect electrical circuits from damage caused by overload or short circuit. They can also be used as devices for commutation and control of electrical circuits. They differ in the following characteristics:

- Operating voltage: 230, 400V
- Number of poles: 1, 2, 3, 4
- Tripping curve:
 - curve B – breaks between 3 and 5 In, used for low voltage short circuit currents (long circuits and generators)
 - curve C – breaks between 5 and 10 In, used for protection of main power supply cables and conventional consumers
 - curve D – breaks between 10 and 20 In, used for protection of industrial consumers with high initial current flow (electric motors)
- Breaking capacity: 4.5, 6, 10kA

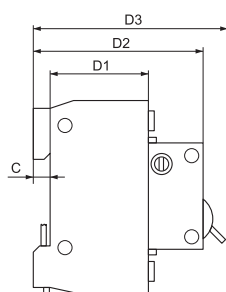
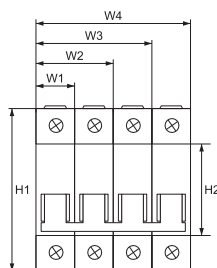
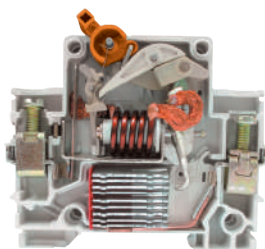
Miniature circuit breakers (MCB)

C4xN

- number of poles (1,2,3)
- breaking capacity in (kA)
- tripping curve C
- C x** — rated current in (A)
- tripping curve C

Documents corresponding to the product:

Standard EN60898-1
EN60947-2



Dimensions (mm)

C	D1	D2	D3	H1
5	40	65	72	78
H2	W1	W2	W3	W4
45	18	36	54	72

Miniature circuit breakers (MCB) C40N

7 YEAR
WARRANTY

*for industrial
usage, 3 years
warranty

Functions:

- protection of the electrical circuits from overload or short circuits of the outer circuit
- it can be used as a device for commutation and control of electrical circuits
- in combination with auxiliary devices it allows remote control, commutation or indication of the protected circuit
- for mounting in residential and industrial buildings
- for mounting at a distance from the transformer post from 150 to 850 m
- allows protection of consumers generating short circuit currents up to 4500 A

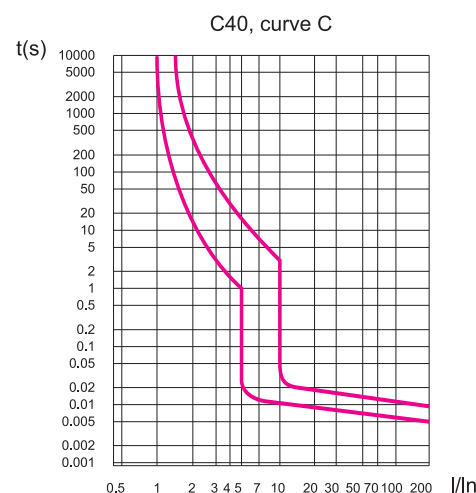
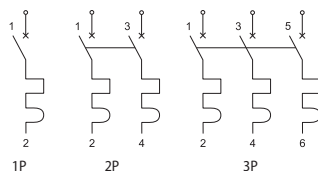
Technical data:

- Rated voltage: 230/400V; 50/60Hz
- Breaking capacity (cycle O-CO) in accordance with standard EN 60 898-1: 4500A
- Rated breaking capacity I_{cs} = 75% I_{cu}
- Isolating voltage: ≥2000V
- Electrical wear resistance (number of cycles): 4000
- Mechanical (number of cycles): 20000
- Class of current limiting: 3
- IP code: IP>20
- Tripping:
 - C – the maximum current release breaks between 5 and 10 I_n; used to protect main power supply cables and conventional consumers
- Joining terminal: flat (tunnel) screw terminal with composition 1.5 coldly draw-plated plane Q235– A
- Plastic box – not keeping the burning material nylon PA66, UV rays wear resistance
- Box permittivity strength: >18MV/m
- Abnormal heating wear resistance and fire of the outer parts: 960°C / 3s
- Maximum current release containing:
 - copper coil - composition: pure copper T2 type
 - resistance: from 0.6 to 180m
 - welding effort: <150 000 N/mm
 - bimetal plate – composition: 5J158 to TB180 depending on the current

- thickness: 0.6mm (up to 40A) and 0.8mm (up to 63A)
- magnetic core – composition: coldly draw-plated metal wire (1Gr18Ni9)
- thickness: 1.15 to 2.24μm
- drawing effort: from 200 to 400N/mm
- contact head of the movable contact – composition: silver graphite CAg(5)
- dimension 3x3x0.8 (up to 40A) and 4x4x0.8 (up to 63A)
- static contact – composition: pure copper T2Y2
- composition of the contact head: silver graphite CAg(5)
- Power supply (conducting)
 - power supply busbar 1P63, 2P63, 3P63
 - rigid conductors up to 25 mm
 - flexible conductors up to 16 mm
- Tightening moment: 1.33Nm

Mounting:

- vertical
- DIN-rail
- for mounting in housing or industrial environment without serious interference
- ambient temperature: -5°C to + 65°C±2° C





Type	Number of poles	Rated current I _n (A)	Breaking capacity (kA)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C
C41N / 2A	1P	2	4.5	1.0	12 / 240	41460C
C41N / 4A	1P	4	4.5	1.0	12 / 240	41461C
C41N / 6A	1P	6	4.5	1.0	12 / 240	41451C
C41N / 10A	1P	10	4.5	1.5	12 / 240	41452C
C41N / 16A	1P	16	4.5	2.5	12 / 240	41453C
C41N / 20A	1P	20	4.5	2.5	12 / 240	41454C
C41N / 25A	1P	25	4.5	4.0	12 / 240	41455C
C41N / 32A	1P	32	4.5	6.0	12 / 240	41456C
C41N / 40A	1P	40	4.5	10.0	12 / 240	41457C
C41N / 50A	1P	50	4.5	10.0	12 / 240	41458C
C41N / 63A	1P	63	4.5	16.0	12 / 240	41459C



Type	Number of poles	Rated current I _n (A)	Breaking capacity (kA)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C
C42N / 6A	2P	6	4.5	1.0	6 / 120	41470C
C42N / 10A	2P	10	4.5	1.5	6 / 120	41471C
C42N / 16A	2P	16	4.5	2.5	6 / 120	41472C
C42N / 20A	2P	20	4.5	2.5	6 / 120	41473C
C42N / 25A	2P	25	4.5	4.0	6 / 120	41474C
C42N / 32A	2P	32	4.5	6.0	6 / 120	41475C
C42N / 40A	2P	40	4.5	10.0	6 / 120	41476C
C42N / 50A	2P	50	4.5	10.0	6 / 120	41477C
C42N / 63A	2P	63	4.5	16.0	6 / 120	41478C



Type	Number of poles	Rated current I _n (A)	Breaking capacity (kA)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C
C43N / 6A	3P	6	4.5	1.0	4 / 80	41541C
C43N / 10A	3P	10	4.5	1.5	4 / 80	41542C
C43N / 16A	3P	16	4.5	2.5	4 / 80	41543C
C43N / 20A	3P	20	4.5	2.5	4 / 80	41544C
C43N / 25A	3P	25	4.5	4.0	4 / 80	41545C
C43N / 32A	3P	32	4.5	6.0	4 / 80	41546C
C43N / 40A	3P	40	4.5	10.0	4 / 80	41547C
C43N / 50A	3P	50	4.5	10.0	4 / 80	41548C
C43N / 63A	3P	63	4.5	16.0	4 / 80	41549C

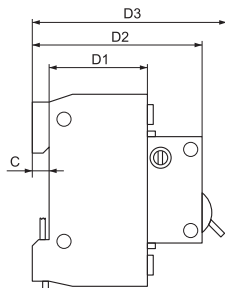
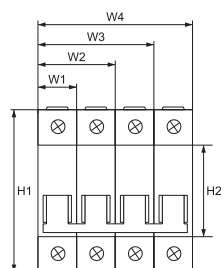
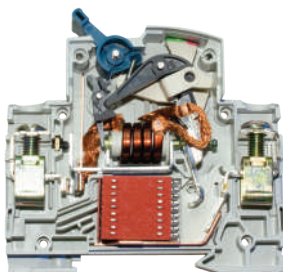
Miniature circuit breakers (MCB)

C6xN

- number of poles (1,2,3,4)
- breaking capacity in (kA)
- tripping curve C
- rated current in (A)
- tripping curve C,B

Documents corresponding to the product:

Standard EN60898-1



Dimensions (mm)

C	D1	D2	D3	H1
5	50	65	72	81
H2	W1	W2	W3	W4
45	18	36	54	72

Miniature circuit breakers (MCB) C60N

7 YEAR WARRANTY *for industrial usage, 3 years warranty

Functions:

- protection of the electrical circuits from overload or short circuits of the outer circuit
- it can be used as a device for commutation and control of electrical circuits
- in combination with auxiliary devices it allows remote control, commutation or indication of the protected circuit
- for mounting in industrial buildings with high contamination level of the electric systems
- for mounting at a distance from the transformer post from 150 to 850 m
- allows protection of consumers generating short circuit currents up to 6000 A

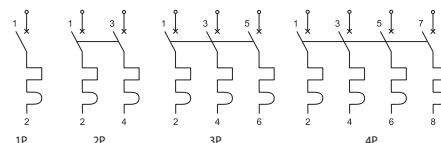
Technical data:

- Rated voltage: 230/400V; 50/60Hz
- Breaking capacity (cycle O-CO) in accordance with standard EN 60 898-1: 6000A
- Rated breaking capacity Ics= 75% Icu
- Isolating voltage: $\geq 2000V$
- Electrical wear resistance (number of cycles): 8000
- Mechanical (number of cycles): 50000
- Class of current limiting: 3
- IP code: IP>20
- Tripping curve:
 - B – the maximum current release breaks between 3 and 5 In; used to protect long circuits and generators
 - C – the maximum current release breaks between 5 and 10 In; used to protect main power supply cables and conventional consumers
- Joining terminal: Combined screw clamp made of 1.5 cold extruded Q235-A material with additional coating
- Plastic box – not keeping the burning material nylon PA66, UV rays wear resistance
- Status indicator
- Box permittivity strength: $>18MV/m$
- Abnormal heating wear resistance and fire of the outer parts: $960^{\circ}C / 3s$
- Heat resistance of internal non-electrical components: $850^{\circ}C / 10s$

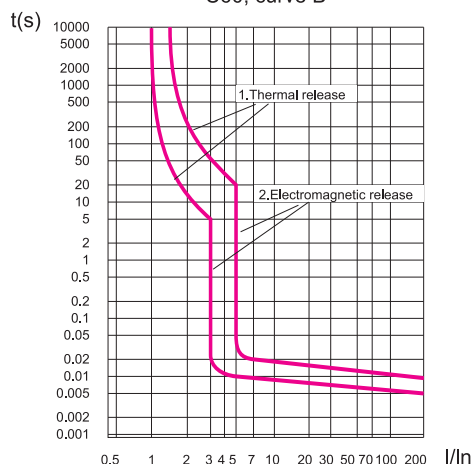
- Maximum current release containing:
 - copper coil - composition: pure copper T2 type
 - resistance: from 0.6 to 180m
 - welding effort: $<150\ 000\ N/mm$
 - bimetal plate – composition: 5J158 to TB180 depending on the current
 - thickness: 0.6mm (up to 40A) and 0.8mm (up to 63A)
 - magnetic core – composition: coldly draw-plated metal wire (1Gr18Ni9)
 - thickness: 1.15 to 2.24 μm
 - drawing effort: from 200 to 400N/mm
 - contact head of the movable contact – composition: silver graphite CAg(5)
 - dimension 3x3x0.8 (up to 40A) and 4x4x0.8 (up to 63A)
 - static contact – composition: pure copper T2Y2
 - composition of the contact head: silver graphite CAg(5)
- Power supply (conducting)
 - power supply busbar 1P63, 2P63, 3P63
 - rigid conductors up to 25 mm
 - flexible conductors up to 16 mm
- Tightening moment: 1.33Nm

Mounting:

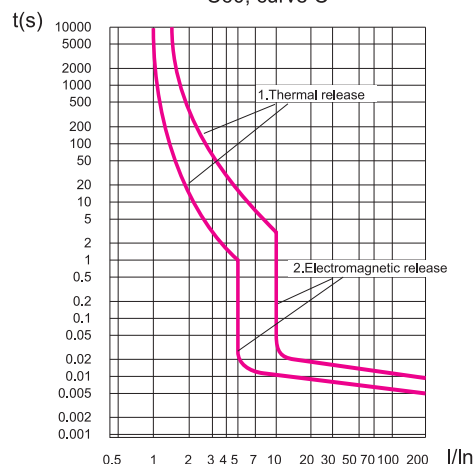
- vertical
- DIN-rail
- for mounting in housing or industrial environment without serious interference
- ambient temperature: $-5^{\circ}C$ to $+65^{\circ}C \pm 2^{\circ}C$



C60, curve B



C60, curve C





Type	Number of poles	Rated current In (A)	Breaking capacity (kA)	Recommended sections of the conductors (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C	Catalogue number Curve B
C61N / 1A	1P	1	6	1.0	12 / 240	41100N	41501N
C61N / 2A	1P	2	6	1.0	12 / 240	41102N	41502N
C61N / 4A	1P	4	6	1.0	12 / 240	41104N	41504N
C61N / 6A	1P	6	6	1.0	12 / 240	41106N	41506N
C61N / 10A	1P	10	6	1.5	12 / 240	41110N	41510N
C61N / 16A	1P	16	6	2.5	12 / 240	41116N	41516N
C61N / 20A	1P	20	6	2.5	12 / 240	41120N	41520N
C61N / 25A	1P	25	6	4.0	12 / 240	41125N	41525N
C61N / 32A	1P	32	6	6.0	12 / 240	41132N	41532N
C61N / 40A	1P	40	6	10.0	12 / 240	41140N	41540N
C61N / 50A	1P	50	6	10.0	12 / 240	41150N	41550N
C61N / 63A	1P	63	6	16.0	12 / 240	41163N	41563N

Type	Number of poles	Rated current In (A)	Breaking capacity (kA)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C	Catalogue number Curve B
C62N / 2A	2P	2	6	1.0	6 / 120	41202N	41602N
C62N / 4A	2P	4	6	1.0	6 / 120	41204N	41604N
C62N / 6A	2P	6	6	1.0	6 / 120	41206N	41606N
C62N / 10A	2P	10	6	1.5	6 / 120	41210N	41610N
C62N / 16A	2P	16	6	2.5	6 / 120	41216N	41616N
C62N / 20A	2P	20	6	2.5	6 / 120	41220N	41620N
C62N / 25A	2P	25	6	4.0	6 / 120	41225N	41625N
C62N / 32A	2P	32	6	6.0	6 / 120	41232N	41632N
C62N / 40A	2P	40	6	10.0	6 / 120	41240N	41640N
C62N / 50A	2P	50	6	10.0	6 / 120	41250N	41650N
C62N / 63A	2P	63	6	16.0	6 / 120	41263N	41663N

Type	Number of poles	Rated current In (A)	Breaking capacity (kA)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C	Catalogue number Curve B
C63N/2A	3P	2	6	1.0	4 / 80	41302N	41702N
C63N/4A	3P	4	6	1.0	4 / 80	41304N	41704N
C63N / 6A	3P	6	6	1.0	4 / 80	41306N	41706N
C63N / 10A	3P	10	6	1.5	4 / 80	41310N	41710N
C63N / 16A	3P	16	6	2.5	4 / 80	41316N	41716N
C63N / 20A	3P	20	6	2.5	4 / 80	41320N	41720N
C63N / 25A	3P	25	6	4.0	4 / 80	41325N	41725N
C63N / 32A	3P	32	6	6.0	4 / 80	41332N	41732N
C63N / 40A	3P	40	6	10.0	4 / 80	41340N	41740N
C63N / 50A	3P	50	6	10.0	4 / 80	41350N	41750N
C63N / 63A	3P	63	6	16.0	4 / 80	41363N	41763N

Type	Number of poles	Rated current In (A)	Breaking capacity (kA)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C	Catalogue number Curve B
C64N / 2A	4P	2	6	1.0	3 / 60	41402N	41802N
C64N / 4A	4P	4	6	1.0	3 / 60	41404N	41804N
C64N / 6A	4P	6	6	1.0	3 / 60	41406N	41806N
C64N / 10A	4P	10	6	1.5	3 / 60	41410N	41810N
C64N / 16A	4P	16	6	2.5	3 / 60	41416N	41816N
C64N / 20A	4P	20	6	2.5	3 / 60	41420N	41820N
C64N / 25A	4P	25	6	4.0	3 / 60	41425N	41825N
C64N / 32A	4P	32	6	6.0	3 / 60	41432N	41832N
C64N / 40A	4P	40	6	10.0	3 / 60	41440N	41840N
C64N / 50A	4P	50	6	10.0	3 / 60	41450N	41850N
C64N / 63A	4P	63	6	16.0	3 / 60	41463N	41863N

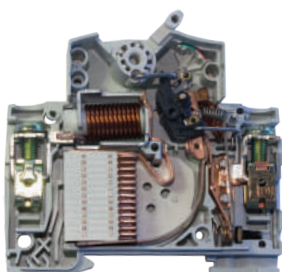
Miniature circuit breakers (MCB)

C10xL

- number of poles (1,2,3)
- breaking capacity in (kA)
- tripping curve C
- rated current in (A)
- tripping curve C

Documents corresponding to the product:

Standard EN60898-1
EN60947-2



Miniature circuit breakers (MCB) C100L

7 YEAR WARRANTY
*for industrial usage, 3 years warranty

Functions:

- protection of the electrical circuits from overload or short circuits of the outer circuit
- it can be used as a device for commutation and control of electrical circuits
- in combination with auxiliary devices it allows remote control, commutation or indication of the protected circuit

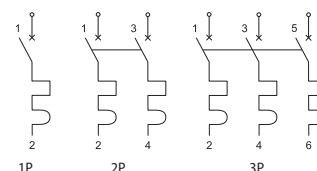
- Mechanical wear resistance (number of cycles): ≥ 20000
- Class of current limiting: 3
- IP code: IP>20
- Tripping curve: C

Mounting:

- vertical
- DIN-rail
- possibility for labeling

Technical data:

- Rated voltage: 230/400V; 50/60Hz
- Breaking capacity (cycle O-CO) in accordance with standard EN 60 898-1: 10000A
- Rated breaking capacity $I_{cs} = 75\% I_{cu}$
- Isolating voltage: $\geq 2000V$, 1 min at impulse wave 1.2/50 μs
- Electrical wear resistance (number of cycles): ≥ 4000



Type	Number of poles	Rated current I_n (A)	Breaking capacity (kA)	Recommended sections of the conductors (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C
C101L/6A	1P	6	10	1.0	12 / 240	41101
C101L/10A	1P	10	10	1.5	12 / 240	41103
C101L/16A	1P	16	10	2.5	12 / 240	41105
C101L/20A	1P	20	10	2.5	12 / 240	41107
C101L/25A	1P	25	10	4.0	12 / 240	41108
C101L/32A	1P	32	10	6.0	12 / 240	41109
C101L/40A	1P	40	10	10.0	12 / 240	41111
C101L/50A	1P	50	10	10.0	12 / 240	41112
C101L/63A	1P	63	10	16.0	12 / 240	41113

Type	Number of poles	Rated current I_n (A)	Breaking capacity (kA)	Recommended sections of the conductors (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C
C102L/6A	2P	6	10	1.0	6/120	41201
C102L/10A	2P	10	10	1.5	6/120	41203
C102L/16A	2P	16	10	2.5	6/120	41205
C102L/20A	2P	20	10	2.5	6/120	41207
C102L/25A	2P	25	10	4.0	6/120	41208
C102L/32A	2P	32	10	6.0	6/120	41209
C102L/40A	2P	40	10	10.0	6/120	41211
C102L/50A	2P	50	10	10.0	6/120	41212
C102L/63A	2P	63	10	16.0	6/120	41213

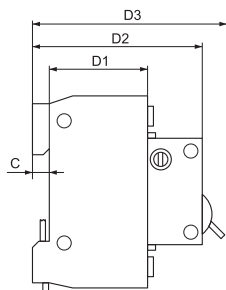
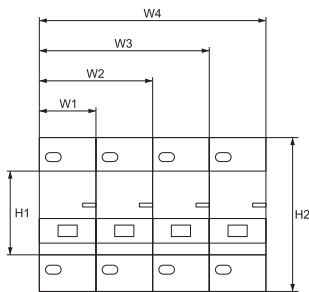
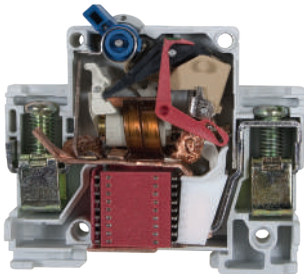
Type	Number of poles	Rated current I_n (A)	Breaking capacity (kA)	Recommended sections of the conductors (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C
C103L/6A	3P	6	10	1.0	4 / 80	41301
C103L/10A	3P	10	10	1.5	4 / 80	41303
C103L/16A	3P	16	10	2.5	4 / 80	41305
C103L/20A	3P	20	10	2.5	4 / 80	41307
C103L/25A	3P	25	10	4.0	4 / 80	41308
C103L/32A	3P	32	10	6.0	4 / 80	41309
C103L/40A	3P	40	10	10.0	4 / 80	41311
C103L/50A	3P	50	10	10.0	4 / 80	41312
C103L/63A	3P	63	10	16.0	4 / 80	41313

C100M — constructive series
 — number of poles (1;2;3;4)

D x — rated current
 — tripping curve C, D

Documents corresponding to the product:

Standard EN60898-1
 EN 60947-2



Dimensions (mm)

C	D1	D2	D3	H1
5	50	65	74	45
H2	W1	W2	W3	W4
81	27	54	81	108

Miniature circuit breakers (MCB) C100M

7 YEAR WARRANTY
 *for industrial usage, 3 years warranty

Functions:

- protection of the electrical circuits from overload or short circuits of the outer circuit
- it can be used as a device for commutation and control of electrical circuits
- in combination with auxiliary devices it allows remote control, commutation or indication of the protected circuit

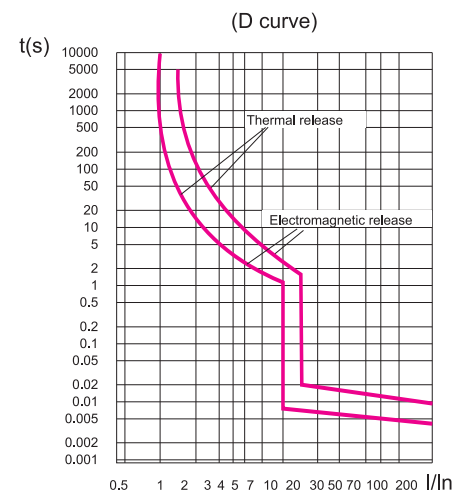
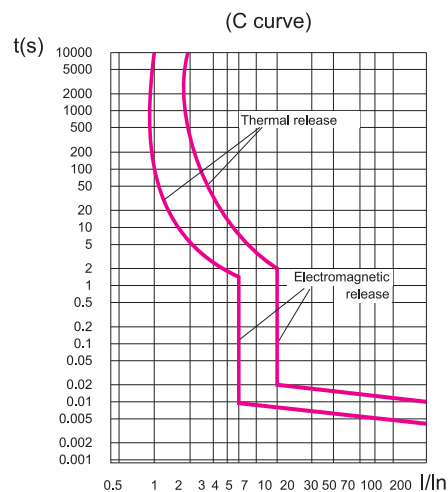
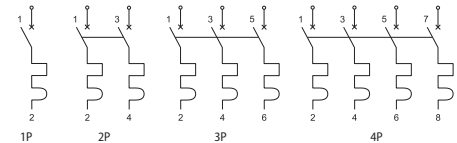
Technical data:

- Rated voltage: 230/400V; 50/60Hz
- Breaking capacity (cycle O-CO) in accordance with standard EN 60 898-1: 10000A
- Rated breaking capacity Ics = 75% Icu
- Isolating voltage: $\geq 2000V$
- Electrical wear resistance (number of cycles): ≥ 4000
- Mechanical wear resistance (number of cycles): ≥ 20000
- Class of current limiting: 3
- IP code: IP>20
- Tripping curve: C,D
- Joining terminal: flat (tunnel) screw terminal with composition 1.5 coldly draw-plated plane Q235 – A
- Plastic box – not keeping the burning material nylon PA66, UV rays wear resistance
- Box permittivity strength: $> 18MV/m$
- Abnormal heating wear resistance and fire of the outer parts: $960^{\circ}C / 3s$
- Maximum current release containing:
 - copper coil - composition: pure copper T2 type
 - resistance: from 148 to 230m
 - welding effort: $< 400 N$
 - bimetal plate – composition: TB180/0.5

- thickness: 0.8mm
- magnetic core – composition: coldly draw-plated metal wire (1Gr18Ni9)
- thickness: 1.15 to 2.24 μm
- drawing effort: 20N/mm²
- contact head of the movable contact – composition: silver graphite CAg(5)
- dimension 6x6x1
- static contact – composition: pure copper T2Y2
- composition of the contact head: silver graphite CAg(5)
- Power supply (conducting)
 - power supply busbar
 - rigid conductors up to 50
 - flexible conductors up to 35
- Tightening moment: 1.33Nm

Mounting:

- vertical
- DIN-rail
- possibility for labeling
- for mounting in industrial environment
- ambient temperature: $-5^{\circ}C$ to $+65^{\circ}C \pm 2^{\circ}C$



CIRCUIT BREAKERS

Miniature circuit breakers (MCB)



Type	Number of poles	Rated current In (A)	Breaking capacity (kA)	Packing/Box (pcs)	Catalogue number Curve C	Catalogue number Curve D
C100M	1P	80	10	9 / 180	41180	41180D
C100M	1P	100	10	9 / 180	41190	41190D
C100M	1P	125	10	9 / 180	41195	41195D



Type	Number of poles	Rated current In (A)	Breaking capacity (kA)	Packing/Box (pcs)	Catalogue number Curve C	Catalogue number Curve D
C100M	2P	80	10	6 / 120	41280	41281
C100M	2P	100	10	6 / 120	41290	41291



Type	Number of poles	Rated current In (A)	Breaking capacity (kA)	Packing/Box (pcs)	Catalogue number Curve C	Catalogue number Curve D
C100M	3P	80	10	4 / 60	41380	41381
C100M	3P	100	10	4 / 60	41390	41391



Type	Number of poles	Rated current In (A)	Breaking capacity (kA)	Packing/Box (pcs)	Catalogue number Curve C	Catalogue number Curve D
C100M	4P	80	10	3 / 60	41480	41481
C100M	4P	100	10	3 / 60	41490	41491

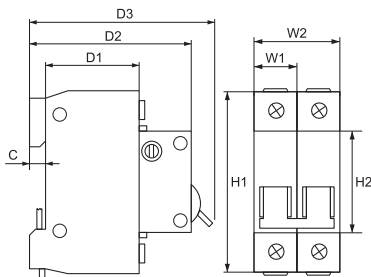
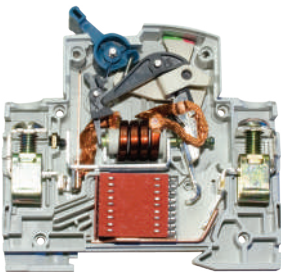
C6xDC

- number of poles (1,2)
- breaking capacity in (kA)
- tripping curve C

- C x** — rated current in (A)
- tripping curve C

Documents corresponding to the product:

Standard EN60898-1
EN60898-2

**Miniature circuit breakers (MCB) C60DC series****7****YEAR
WARRANTY***for industrial
usage, 3 years
warranty**Functions:**

- for lowering constant current voltaic arc and use of the breaker at constant current consumer protection
- protection of the electrical circuits from overload or short circuit of the outer circuit at alternating current and constant current power supply circuits
- for commutation and control of electrical circuits
- in combination with auxiliary alternating current devices for remote control, commutation or indication of the protected circuit
- for mounting in industrial buildings
- for protection of consumers generating short circuit currents to 6000 A at alternating current power supply

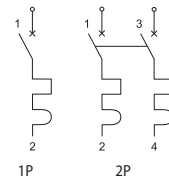
Technical data:

- Rated voltage: 240V; AC/DC
- Breaking capacity (cycle O -CO) in accordance with standard EN 60 898- 1: 6000A
- Rated breaking capacity $I_{cs}=75\% I_{cu}$
- Insulating voltage: $\geq 2000V$
- Electrical wear resistance (number of cycles): ≥ 4000
- Mechanical wear resistance (number of cycles): ≥ 20000
- Class of current limiting: 3
- IP code: IP>20
- Tripping curve: C – the maximum current release breaks between 5 and 10 I_n ; used to protect power supply cables and conventional consumers
- Joining terminal: flat (tunnel) screw terminal with composition 1.5 coldly draw-plated plane Q235– A
- Plastic box – not keeping the burning material nylon PA66, UV rays wear resistance
- Box permittivity strength: $>18MV/m$
- Abnormal heating wear resistance and fire of the outer parts: $960^{\circ}C / 3s$
- Maximum current release containing:
 - copper coil - composition: pure copper T2 type
 - resistance: from 0.6 to 180m

- welding effort: $<150\,000\,N/mm$
- bimetal plate – composition: 5J158 to TB180 according to the current
- thickness: 0.6mm (up to 40A) and 0.8mm (up to 63A)
- magnetic core – composition: coldly draw-plated metal wire (1Gr18Ni9)
- thickness: 1.15 to 2.24mm
- drawing effort: from 200 to 400N/mm
- contact head of the movable contact – composition: silver graphite CAg(5)
- dimension 3x3x0.8 (up to 40A) and 4x4x0.8 (up to 63A)
- static contact – composition: pure copper T2Y2
- composition of the contact head: silver graphite CAg(5)
- metal magnetic plate for lowering the constant current arc
- Conducting:
 - power supply busbar 1P63, 2P63
 - rigid conductors up to 25 mm
 - flexible conductors up to 16 mm
- Tightening moment: 1.33Nm

Mounting

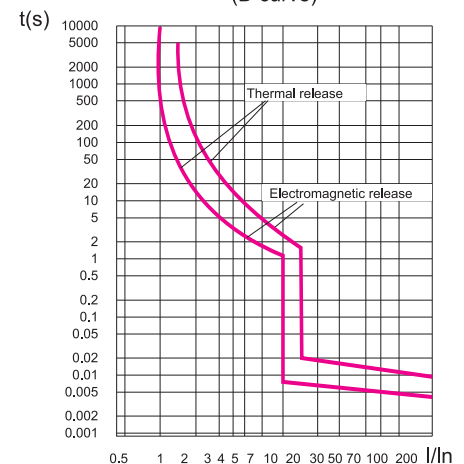
- vertical
- DIN-rail
- for mounting in housing or industrial environment without serious current interference
- Ambient temperature: $-5^{\circ}C$ to $+65^{\circ}C \pm 2^{\circ}C$



Dimensions (mm)

	C	D1	D2	D3
5		49	65	72
	H1	H2	W1	W2
78		45	18	36

(D curve)



CIRCUIT BREAKERS

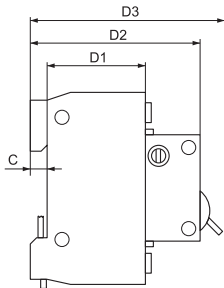
Miniature circuit breakers (MCB)



Type	Number of poles	Rated current I _n (A)	Breaking capacity (kA)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C
61DC / 1A	1P	1	6	1.0	12 / 240	41164
61DC / 2A	1P	2	6	1.0	12 / 240	41165
61DC / 4A	1P	4	6	1.0	12 / 240	41166
61DC / 6A	1P	6	6	1.0	12 / 240	41167
61DC / 10A	1P	10	6	1.5	12 / 240	41168
61DC / 16A	1P	16	6	2.5	12 / 240	41169
61DC / 20A	1P	20	6	2.5	12 / 240	41170
61DC / 25A	1P	25	6	4.0	12 / 240	41171
61DC / 32A	1P	32	6	6.0	12 / 240	41172
61DC / 40A	1P	40	6	10.0	12 / 240	41173
61DC / 50A	1P	50	6	10.0	12 / 240	41174
61DC / 63A	1P	63	6	16.0	12 / 240	41175



Type	Number of poles	Rated current I _n (A)	Breaking capacity (kA)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C
62DC / 2A	2P	2	6	1.0	6 / 120	41176
62DC / 4A	2P	4	6	1.0	6 / 120	41177
62DC / 6A	2P	6	6	1.0	6 / 120	41178
62DC / 10A	2P	10	6	1.5	6 / 120	41179
62DC / 16A	2P	16	6	2.5	6 / 120	41181
62DC / 20A	2P	20	6	2.5	6 / 120	41182
62DC / 25A	2P	25	6	4.0	6 / 120	41183



Dimensions (mm)

C	D1	D2	D3
5	40	65	72

Miniature circuit breakers (MCB) DP1N (1P + E)

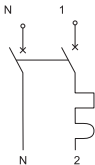
7 YEAR WARRANTY
*for industrial usage, 3 years warranty

Functions:

- protection of the electrical circuits from overload or short circuit of the outer circuit
- it can be used as a device for commutation and control of electrical circuits
- it breaks simultaneously the lead and the neutral conductor as the heat protection is only at the lead conductor

Connecting:

- Joining terminal: flat (tunnel) screw terminal
- Power supply (conducting):
 - power supply busbar DP1N
 - flexible or rigid conductor
- Mounting: on DIN-rail



Technical data:

- Rated voltage: 230V; 50/60Hz
- Breaking capacity (cycle O-CO) in accordance with standard EN 60 898-1: 4500 A
- Rated breaking capacity Ics = 50% Icu
- Insulating voltage: ≥2000V
- IP code: IP>20
- Tripping curve: C – the maximum current release breaks between 5 and 10 In; used to protect main power supply
- cables and conventional consumers

Circuit breakers DP1N (1P+N) - SIGMA design

Type	Rated current In (A)	Breaking capacity (kA)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number Curve C
DP1N / 6	6	4.5	1.0	12 / 240	41006
DP1N / 10	10	4.5	1.5	12 / 240	41010
DP1N / 16	16	4.5	2.5	12 / 240	41016
DP1N / 20	20	4.5	2.5	12 / 240	41020
DP1N / 25	25	4.5	4.0	12 / 240	41025
DP1N / 32	32	4.5	6.0	12 / 240	41032

Padlock adaptor for MCB

3 YEAR WARRANTY

An adaptor makes it possible to block the operating lever whether switched ON or OF

Type	Catalogue number
Padlock adaptor for MCB	41904



Type designation:

MN - constructive series
number of poles - 1

Documents corresponding to the product:

Standard EN60898-1

**Combined voltage circuit-breaker MN2**

7 YEAR WARRANTY

*for industrial usage, 3 years warranty

Functions:

- when the voltage is reduced below 170V operation is initiated and the automatic switch is turned off
- when the voltage is increased above 280V operation is initiated and the automatic switch is turned off
- allows manual turning on of the switch after powering is restored
- indication of the position of the device

Technical characteristics:

- Rated voltage: 230V; 50/60Hz
- Insulation voltage: $\geq 2000V$

- IP code: IP>20

Connection method:

- Double connector: flat (tunnel) screw connector
- Feeding (conducting):
 - flexible conductors up to 1.5mm²
- Tightening moment of the screw: 1.33Nm

Mounting:

- vertical, by means of two pins attached to the rivets of the circuit-breaker, while the operating mechanism is connected to the switching off mechanism of the circuit breaker after the sealing lid is demounted

Type	Rated voltage	Type breaker	Packing/Box (pcs)	Catalogue number
ELMARK MN 2 60	230V	C60	12 / 240	41909

Type designation:

MX - constructive series
number of poles - 1

Documents corresponding to the product:

Standard EN60898-1

**Shunt release MX (independent release)**

7 YEAR WARRANTY

*for industrial usage, 3 years warranty

Functions:

- remote circuit breaker switching off at voltage feed
- allows manual switching on of the breaker at voltage recovery
- indication of the device's location

Technical data:

- Rated voltage: 230V; 50/60Hz
- Isolating voltage: $\geq 2000V$
- IP code: IP>20

Connecting:

- Joining terminal: flat (tunnel) screw terminal
- Power supply (conducting):
 - flexible conductors up to 1.5mm²
- Tightening moment: 1.33Nm
- The power supply of the release is accomplished at the outlet of the breaker

Mounting:

- vertical, clamps with two pins to the breaker's rivets and the executive mechanism is joined up to the switching mechanism of the breaker after dismantling the seal cover

Type	Rated voltage	Type breaker	Packing/Box (pcs)	Catalogue number
ELMARK MX 60	230V	C60	12 / 240	41902

Type designation:

OF - constructive series
number of poles - 1

Documents corresponding to the product:

Standard EN60898-1

**Auxiliary contact OF**

7 YEAR WARRANTY

*for industrial usage, 3 years warranty

Functions:

- at circuit breaker switching off it sends a signal to the control or signalization system
- indication of the location of the auxiliary contact and the breaker

Technical data:

- Rated voltage: 230V
- Isolating voltage: $\geq 2000V$
- IP code: IP>20

Connecting:

- Joining terminal: flat (tunnel) screw terminal
- Power supply (conducting): - flexible conductors up to 1.5mm

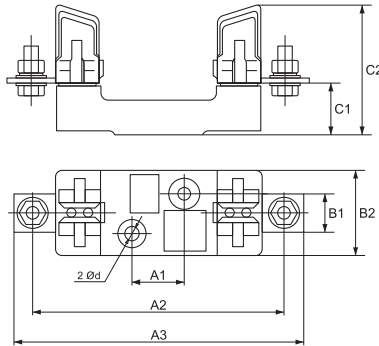
Mounting:

- vertical, clamps with two pins to breaker's rivets, and the executive mechanism is joined up to the switching mechanism of the breaker after dismantling the seal cover

Type	Rated voltage	Type breaker	Packing/Box (pcs)	Catalogue number
ELMARK OF 60	230V	C60	17 / 170	41901
ELMARK SD100	230V	C60	12 / 240	41905

Documents corresponding to the product:

Standard EN 60269-1



Bases for high power safety devices

3 YEAR WARRANTY

The series bases for high power safety device is manufactured of permittivity alloy with mounted contact jaws of electrolytic copper supplied with special springs for contact compression and easy fuse links taking out. All current leading parts are connected to inlet outlet terminals with bolts; the terminals also end with bolts, to which the power supply conductors are connected. The bases are offered in five type sizes corresponding to the five types of fuse links.

Base type	Overall dimensions (mm)							Ød
	A1	A2	A3	B1	B2	C1	C2	
SIST00	25	100	120	-	30	25	60	7.5
SIST 0	25	150	170	-	30	37	72	7.5
SIST1	25	175	200	30	58	38	84	10.5
SIST2	25	200	225	30	60	38	100	10.5
SIST3	25	210	250	30	60	40	105	10.5

Base type	Fuse link type	Rated current (A)	Rated voltage Un (V)	Weight (gr)	Packing / Box (pcs)	Catalogue number
SIST00	NT 00	up to 160	600	193	5 / 120	12001
SISP00	NT 00	up to 160	600	215	5 / 120	12001P

Remark : Fuse bases SISP are made of porcelain

Base type	Fuse link type	Rated current (A)	Rated voltage Un (V)	Weight (gr)	Packing / Box (pcs)	Catalogue number
SIST0	NT 0	up to 160	600	295	3 / 54	12010
SISP0	NT 0	up to 160	600	319	3 / 54	12010P

Remark : Fuse bases SISP are made of porcelain

Base type	Fuse link type	Rated current (A)	Rated voltage Un (V)	Weight (gr)	Packing / Box (pcs)	Catalogue number
SIST1	NT 1	up to 250	600	550	3 / 36	12100
SISP1	NT 1	up to 250	600	550	3 / 36	12100P

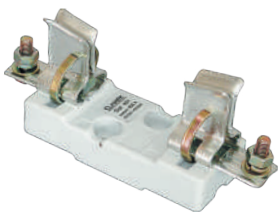
Remark : Fuse bases SISP are made of porcelain

Base type	Fuse link type	Rated current (A)	Rated voltage Un (V)	Weight (gr)	Packing / Box (pcs)	Catalogue number
SIST2	NT 2	up to 400	600	770	1 / 20	12200
SISP2	NT 2	up to 400	600	810	1 / 20	12200P

Remark : Fuse bases SISP are made of porcelain

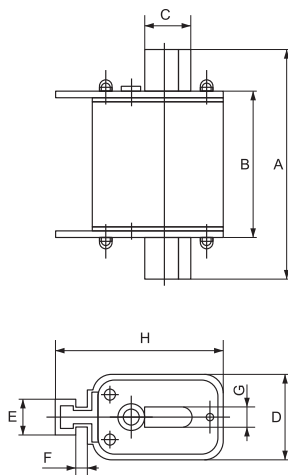
Base type	Fuse link type	Rated current (A)	Rated voltage Un (V)	Weight (gr)	Packing / Box (pcs)	Catalogue number
SIST3	NT 3	up to 630	600	965	1 / 20	12300
SISP3	NT 3	up to 630	600	987	1 / 20	12300P

Remark : Fuse bases SISP are made of porcelain



Documents corresponding to the product:

Standard EN 60269-1
EN 60269-2



Fuse links for high power safety device

3 YEAR WARRANTY

The series fuse links for high power safety devices is designed for short circuit protection. They are distinguished with high speed of operation and high reliability. The element is a ceramic (porcelain) body filled with fine quartz sand for voltaic arc lowering. In the ceramic body is mounted a fusible, specially profiled wafer connecting the current leading terminals. These terminals are manufactured of copper alloy with special nickel coating and have the form of knives to provide more contact surface. The fuse links correspond to "gL – gG" class which means that they are with common function and normal response time.

NH Fuses

Two operating classes of NH Fuses are available:

- Operating class gL/gG – general purpose, line protection, slow acting

Technical data:

- Rated voltage: 500V
- Rated short circuit current: 120 kA
- IP code: IP 00
- Ambient temperature: -5 to +65°C
- Altitude: up to 2000m

Base type	Overall dimensions (mm)				
	A	B	C	D	H
NT00	78	40	15	29	56,5
NT 0	125	68	15	29	56,5
NT1	135	68	21	48	62
NT 2	150	68	27	58	72
NT 3	150	68	33	67	84,5
NT00C	78	40	15	21	56,5
NT1C	135	68	21	29	62
NT2C	150	68	33	48	84,5

Type	In (A)	Un (V)	Packing / Box (pcs)	Catalogue number
NT00	16	500,600	3 / 90	10001
NT00	25	500,600	3 / 90	10002
NT00	32	500,600	3 / 90	10003
NT00	40	500,600	3 / 90	10004
NT00	50	500,600	3 / 90	10005
NT00	63	500,600	3 / 90	10006
NT00	80	500,600	3 / 90	10008
NT00	100	500,600	3 / 90	10009
NT00	125	500,600	3 / 90	10012
NT00	160	500,600	3 / 90	10016

Type	In (A)	Un (V)	Packing / Box (pcs)	Catalogue number
NT0	16	500,600	3 / 90	10015
NT0	25	500,600	3 / 90	10025
NT0	32	500,600	3 / 90	10032
NT0	40	500,600	3 / 90	10040
NT0	50	500,600	3 / 90	10050
NT0	63	500,600	3 / 90	10063
NT0	80	500,600	3 / 90	10080
NT0	100	500,600	3 / 90	10090
NT0	125	500,600	3 / 90	10092
NT0	160	500,600	3 / 90	10096



Type	In (A)	Un (V)	Packing / Box (pcs)	Catalogue number
NT1	80	500,600	3 / 36	10108
NT1	100	500,600	3 / 36	10110
NT1	125	500,600	3 / 36	10112
NT1	160	500,600	3 / 36	10116
NT1	200	500,600	3 / 36	10120
NT1	225	500,600	3 / 36	10122
NT1	250	500,600	3 / 36	10125

Type	In (A)	Un (V)	Packing / Box (pcs)	Catalogue number
NT2	160	500,600	1 / 24	10216
NT2	200	500,600	1 / 24	10220
NT2	250	500,600	1 / 24	10225
NT2	315	500,600	1 / 24	10231
NT2	400	500,600	1 / 24	10240

Type	In (A)	Un (V)	Packing / Box (pcs)	Catalogue number
NT3	500	500,600	1 / 24	10350
NT3	630	500,600	1 / 24	10363

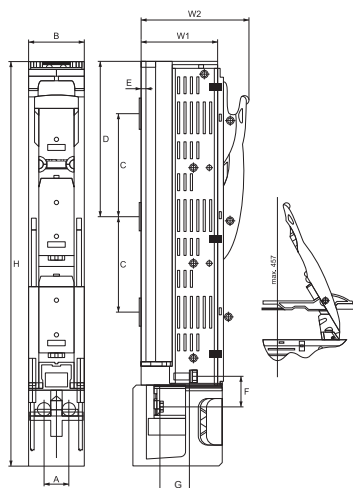
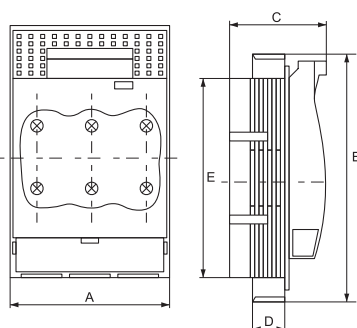
Type	In (A)	Un (V)	Packing / Box (pcs)	Catalogue number
NT00C	16	500,600	3/120	10001C
NT00C	25	500,600	3/120	10002C
NT00C	32	500,600	3/120	10003C
NT00C	40	500,600	3/120	10004C
NT00C	50	500,600	3/120	10005C
NT00C	63	500,600	3/120	10006C
NT00C	80	500,600	3/120	10008C
NT00C	100	500,600	3/120	10009C

Type	In (A)	Un (V)	Packing / Box (pcs)	Catalogue number
NT1C	80	500,600	3/54	10108C
NT1C	100	500,600	3/54	10110C
NT1C	125	500,600	3/54	10112C
NT1C	160	500,600	3/54	10116C

Type	In (A)	Un (V)	Packing / Box (pcs)	Catalogue number
NT2C	160	500,600	1/30	10216C
NT2C	200	500,600	1/30	10220C
NT2C	250	500,600	1/30	10225C

Documents corresponding to the product:

Standard EN 60947-1;
EN 60947-3



Isolating switches

3 YEAR WARRANTY

Designed in two types – horizontal and vertical. They represent a combination of low voltage isolating switch and high power safety devices mounted in a common plastic corpus. They are used for low voltage distribution boards and complete transformer substations (CTS) where visible circuit distribution is necessary. They provide safety and convenience at fuse links change. The plastic corpus increases the IP code and the plastic lid provides simultaneous circuits switching on/off. The lid allows easy removing which is additional measure at repairs. The vertical isolating switches are mounted directly to the power supply rails which enables the exploitation and improves the safety of the staff.

Technical data:

- Rated voltage: 500V
- Rated short circuit current: according to the mounted fuse links
- Number of poles: 3
- Impulse voltage wear resistance: 8kV
- Mechanical wear resistance: 3000 cycles
- IP code: IP 40
- Plastic: UV rays wear resistance
- Ambient temperature: -5 to +65°C
- Altitude: up to 2000m

Base type	Overall dimensions (mm)				
	A	B	C	D	E
THB - 160	105	160	85	45	100
THB - 250	185	220	111	66	180
THB - 400	210	260	130	88	205
THB - 630	256	270	140	94.5	245

Type	In (A)	Un (V)	Fuse link size	Packing / Box (pcs)	Catalogue number
THB	160	500, 660	NT00	1 / 18	44801
THB	250	500, 660	NT1	1 / 6	44802
THB	400	500, 660	NT2	1 / 4	44803
THB	630	500, 660	NT3	1/4	44804

Overall dimensions (mm)									
A	B	C	D	E	F	G	H	W1	W2
50	99	185	290	2	57	58	746	146	195

Type	In (A)	Un (V)	Fuse link size	Packing / Box (pcs)	Catalogue number
HG2B	160	500, 660	NT00	1 / 4	44805
HG2B	250	500, 660	NT1	1 / 4	44806
HG2B	400	500, 660	NT2	1 / 4	44807
HG2B	630	500, 660	NT3	1 / 4	44808

Documents corresponding to the product:

Standard EN 60269-2; IEC269-2



Switch disconnectors

3 YEAR WARRANTY

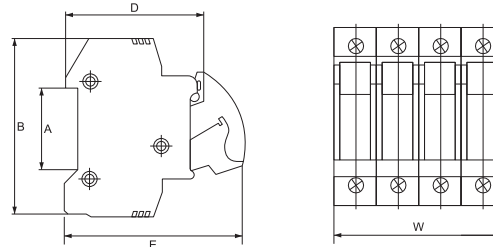
The series of switch disconnectors are developed for short-circuit protection. They have a high speed of start and high reliability. They have a plastic body of non-flammable plastics adapted for mounting on a DIN rail, where a porcelain round plug, which is filled with fine quartz sand for extinguishing the electric arc. LED indicator is mounted on the front panel to show fuse link condition. In this ceramic body is mounted melting, specifically profiled plate, which connects the input power terminals. These terminals are produced from copper alloy with especially laid nickel layer and contact with the projecting bolts from the plastic body. There are offered two types of insertions according to the degree of quick opera-

tion: normally quickly operating ones – class “gG”. Suitable for DC system.

Technical data:

- Rated voltage: 500V
- Insulation voltage: >2500V
- Rated current on short-circuit: 100 kA
- Direct mounting to the load
- Two insulated points to the load
- IP code: IP 44
- Cross-section of the supply conductors: up to 35mm²
- Environmental temperature: -5° to +65°C
- Utilization category: AC - 20B; DC - 20B
- Altitude: up to 2000m

Overall dimensions



Base type	Number of poles	Rated current (A)	Type of the fuse	Base dimensions (mm)					Packing / Box (pcs)	Catalogue number
				A	B	W	D	E		
1PRT18 - 32x	1P	32	xxG1038	37	82	18	60	78	12 / 240	10RT1831
1NRT18 - 32x	1P+N	32	xxG1038	37	82	36	60	78	6 / 120	10RT18311
2PRT18 - 32x	2P	32	xxG1038	37	82	36	60	78	6 / 120	10RT1832
3PRT18 - 32x	3P	32	xxG1038	37	82	54	60	78	4 / 80	10RT1833
3NRT18 - 32x	3P+N	32	xxG1038	37	82	72	60	78	3 / 60	10RT18331
1PRT18 - 63x	1P	63	xxG1451	37	105	27	80	110	6 / 108	10RT1861
1NRT18 - 63x	1P+N	63	xxG1451	37	105	54	80	110	6 / 108	10RT18611
2PRT18 - 63x	2P	63	xxG1451	37	105	54	80	110	6 / 108	10RT1862
3PRT18 - 63x	3P	63	xxG1451	37	105	81	80	110	6 / 108	10RT1863
3NRT18 - 63x	3P+N	63	xxG1451	37	105	108	80	110	6 / 108	10RT18631

Type of the fuse class gG	Voltage (V)	Rated current (A)	Size of the fuse A x ØB x C	Packing / Box (pcs)	Catalogue number
01G1038	500	1	38xØ10.3x10mm	10 / 2000	10G10381
02G1038	500	2	38xØ10.3x10mm	10 / 2000	10G10382
04G1038	500	4	38xØ10.3x10mm	10 / 2000	10G10384
06G1038	500	6	38xØ10.3x10mm	10 / 2000	10G10386
10G1038	500	10	38xØ10.3x10mm	10 / 2000	10G103810
16G1038	500	16	38xØ10.3x10mm	10 / 2000	10G103816
20G1038	500	20	38xØ10.3x10mm	10 / 2000	10G103820
25G1038	500	25	38xØ10.3x10mm	10 / 2000	10G103825
32G1038	500	32	38xØ10.3x10mm	10 / 2000	10G103832
40G1451	500	40	51xØ14.3x12mm	10 / 500	10G145140
50G1451	500	50	51xØ14.3x12mm	10 / 500	10G145150
63G1451	500	63	51xØ14.3x12mm	10 / 500	10G145163

Documents corresponding to the product:
Standard EN 60947-3 and IEC947-3

Switch disconnectors ISS 20...100A series

5 YEAR WARRANTY
*for industrial usage, 3 years warranty



Functions:

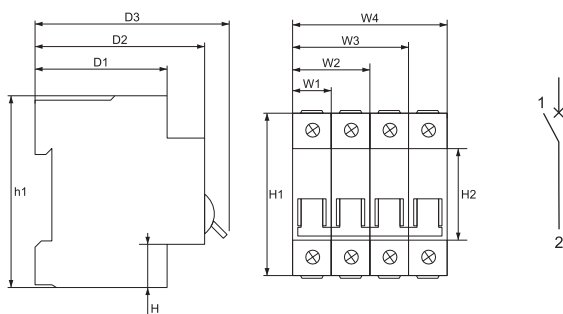
- switching on/off heavy loaded electrical circuits
- breaking of electrical circuits
- can be used as a main breaker
- it has no protective function

Technical data:

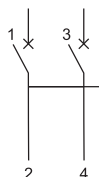
- Rated voltage: 230/400V; 50/60Hz
- Joining terminal: flat (tunnel) screw terminal
- Connecting: power supply busbar, rigid or flexible conductors
- Tightening moment: 1.33Nm
- Isolating voltage: $\geq 500V$
- Electrical wear resistance (number of cycles): ≥ 10000
- Mechanical wear resistance (number of cycles): ≥ 20000
- IP code: IP>20
- Mounting: DIN-rail
- Plastic material of UV rays
- Ambient temperature: $-20^{\circ}C + 65^{\circ}C$

Dimensions (mm)

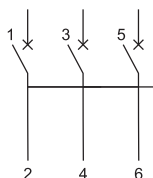
H1	H2	D1	D2	D3
81	45	50	65	76
W1	W2	W3	W3	
17,5	35	52,5	70	



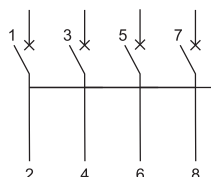
Type	Number of poles	Rated current In (A)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number
ISS	1P	40	10	12 / 240	41914
ISS	1P	63	16	12 / 240	41911
ISS	1P	80	25	12 / 240	41912
ISS	1P	100	35	12 / 240	41913



Type	Number of poles	Rated current In (A)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number
ISS	2P	40	10	6 / 120	41924
ISS	2P	63	16	6 / 120	41921
ISS	2P	80	25	6 / 120	41922
ISS	2P	100	35	6 / 120	41923



Type	Number of poles	Rated current In (A)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number
ISS	3P	20	2.5	4/80	41935
ISS	3P	32	6.0	4/80	41936
ISS	3P	40	10	4 / 80	41934
ISS	3P	63	16	4 / 80	41931
ISS	3P	80	25	4 / 80	41932
ISS	3P	100	35	4 / 80	41933

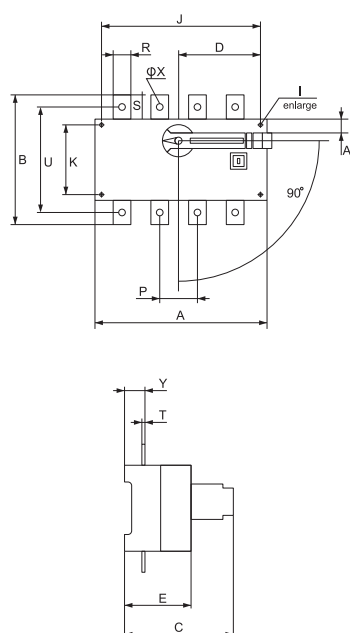


Type	Number of poles	Rated current In (A)	Recommended sections of the conductor (g/mm ²)	Packing/Box (pcs)	Catalogue number
ISS	4P	40	10	3 / 60	41944
ISS	4P	63	16	3 / 60	41941
ISS	4P	80	25	3 / 60	41942
ISS	4P	100	35	3 / 60	41943

Documents corresponding to the product:

Standard EN 60947-1

EN 60947-3 and IEC 60947-6

**Switch disconnectors ISS2 125...800A****5****YEAR
WARRANTY***for industrial
usage, 3 years
warranty

The series three- and four-pole load switch disconnectors ISS2 xxx are produced for mounting in main electrical boards for disconnection of the circuits, switching on of generators because of the fact they are not affected by the frequency variations. High mechanical strength and resistance to circulation. Simple and secure management. There is a possibility for the products to be produced with an window for visible disconnection.

Functions:

- switching on and off of electrical circuits under load
- disconnection of electrical circuits
- used as main circuit-breaker
- resistant to high voltages, to short circuits in the protected circuit
- it has no protective function

Technical features:

- Rated voltage: not higher than 660V; 50/60Hz
- Double connector: screw connection
- Connection: solid or flexible conductors
- Insulation voltage: $\geq 1000V$
- Resistance to impulse voltage: 8000V
- Electrical endurance (number of cycles): $\geq 5\,000$
- Mechanical endurance (number of cycles): $\geq 10\,000$
- IP code: IP>20
- Mounting method: to a surface by means of bolts
- Plastic resistant to UV rays
- Ambient temperature: $-20^{\circ}\div 65^{\circ}C$

Type	Dimensions (mm)											
	A	B	C	D	E	J	J1	K	R	S	T	Y
ISS2-125/3	140	135	125	27	73	120	120	65	20	25	3.5	25
ISS2-125/4	170	135	125	27	73	150	150	65	20	25	3.5	25
ISS2-160/3	140	135	125	27	73	120	120	65	20	25	3.5	25
ISS2-160/4	170	135	125	27	73	150	150	65	20	25	3.5	25
ISS2-250/3	180	170	138	35	86	160	160	90	25	30	3.5	25
ISS2-250/4	230	170	138	35	86	210	210	90	25	30	3.5	25
ISS2-400/3	230	240	165	50	110	210	210	140	32	40	5	37
ISS2-400/4	295	240	165	50	110	275	275	140	32	40	5	37
ISS2-630/3	230	260	165	50	110	210	210	140	40	50	6	37
ISS2-630/4	295	260	165	50	110	275	275	140	40	50	6	37
ISS2-800/3	378	312	240	50	140	353	353	175	60	56	8	48
ISS2-800/4	498	312	240	50	140	473	473	175	60	56	8	48

Type	Rated current I_n (A)	Maximum breaking capacity I_{cu} (A)	Tightening moment (Nm)	Packing/Box (pcs)	Catalogue number three-pole	Catalogue number four-pole
ISS2-125in	125	1250	6.5	1 / 12	41951	41961
ISS2-125out	125	1250	6.5	1 / 12	41952	41962
ISS2-160in	160	1250	6.5	1 / 12	41953	41963
ISS2-160out	160	1250	6.5	1 / 12	41954	41964
ISS2-250in	250	2000	10	1 / 6	41955	41965
ISS2-250out	250	2000	10	1 / 6	41956	41966
ISS2-400in	400	3200	14.5	1 / 2	41957	41967
ISS2-630in	630	4000	14.5	1 / 2	41958	41968
ISS2-800in	800	1000	27	1 / 2	41959	41969

Note: ISS2-xxx in – load circuit-breaker for mounting in the interior of a board

ISS2 -xxx out – load circuit-breaker with an extended lever for mounting on the front panel of the board

Manual switching to reserve series EQ 2M

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-3 and IEC 60947-6

Manual switching to reserve series EQ 2M from 160...800A

5

YEAR
WARRANTY*for industrial
usage, 3 years
warranty

The series three- and four-pole load isolating switch EQ 2 M xxx are produced for mounting in main electrical boards for disconnection of the circuits, manual switching between two power supplies or switching ON of generators because of the fact they are not affected by the frequency variations. High mechanical strength and resistance to circulation. Simple and secure management. There is a possibility for the products to be produced with an window for visible disconnection.

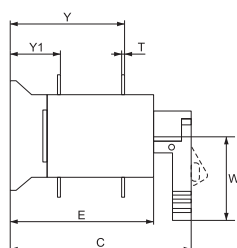
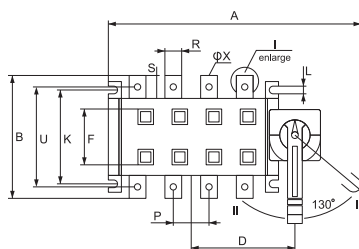
Functions:

- switching on and off of low voltage electrical circuits under load
- disconnection of the electrical circuit from one of the power supplies, while providing immediately switching to the other
- used as main switch
- resistant to high voltages, to short circuits in the protected circuit

- it has no protective function

Technical characteristics:

- Rated voltage: not higher than 690V; 50/60Hz
- Double connector: screw connection
- Connection: hard or flexible conductors
- Insulation voltage: $\geq 1000V$
- Resistance to impulse voltage: 8000V
- Electrical endurance (number of cycles): $\geq 5\,000$
- Mechanical endurance (number of cycles): $\geq 10\,000$
- IP code: IP>20
- Mounting method: to a surface by means of bolts
- Plastic resistant to UV rays
- Ambient temperature: $-20^{\circ}\div 65^{\circ}C$
- Option for moving the handle on the front panel of the board
- Small size
- Indication which of the two supplies is operating



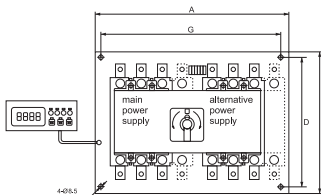
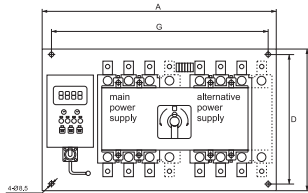
Type	Dimensions (mm)												
	A	B	C	D	E	J	J1	K	R	S	T	Y	Y1
EQ2M-160/3	270	135	212	89	150	120	65	95	20	25	3.5	55	25
EQ2M-160/4	300	135	212	104	150	150	65	95	20	25	3.5	55	25
EQ2M-250/3	307	170	260	110	180	160	65	115	25	30	3.5	70	25
EQ2M-250/4	357	170	260	135	180	210	65	115	25	30	3.5	70	25
EQ2M-400/3	372	240	297	150	236	210	77	180	32	40	5	83	37
EQ2M-400/4	432	240	297	180	236	275	77	180	32	40	5	83	37
EQ2M-630/3	372	240	297	150	236	210	77	180	40	50	6	83	37
EQ2M-630/4	432	240	297	180	236	275	77	180	40	50	6	83	37
EQ2M-800/3	372	240	297	150	236	210	77	180	60	56	8	83	48
EQ2M-800/4	432	240	297	180	236	275	77	180	60	56	8	83	48

Type	Rated current In (A)	Maximum breaking capacity Icu (A)	Tightening moment (Nm)	Packing/Box (pcs)	Catalogue number three-pole	Catalogue number four-pole
EQ2M-160	160	1250	6.5	1 / 4	44641	44641P
EQ2M-250	250	2000	10	1 / 2	44642	44642P
EQ2M-400	400	3200	14.5	1 / 2	44643	44643P
EQ2M-630	630	4000	14.5	1 / 2	44644	44644P
EQ2M-800	800	1000	27	1 / 2	44645	44645P

Documents corresponding to the product:

EN 60947-1

EN 60947-2; EN 60947-6-1

**Dual power change-over switch EQ1 series (ATS)****5****YEAR**
WARRANTY*for industrial
usage, 3 years
warranty

The system for dual power change-over switch EQ1 is designed to provide continuous power supply and two electrical sources automatic switch in case of failure or deviation from the set parameters. It switches only when the three phases of the second power supply source are available. The system for dual power change-over switch consists of two molded case circuit breakers mounted on a metal frame connected with common operating mechanism and controlled by a command device that controls the system parameters' correspondence.

Functions:

- Switching on/off heavy loaded electrical circuits at main power supply discrepancy
- Switching to dual power change-over at power supply phase lack
- with option to connect to fire alarm controller. In case of fire, the ATS switches off both power supply sources
- Breaking of electrical circuits and control of powerful consumers
- Used as a main breaker in housing or industrial distributing installations supplied with a generator or a second power supply source (hospitals, post offices, military sites, control rooms)
- Remarkable with high reliability of current characteristics
- Control: motor
- Controls the following circuit parameters:
 - presence of the three phases
 - the phase voltage to be in the set limits
 - overload
 - short circuit at the outlet

Technical data:

- Rated operating voltage: 690V; 50/60Hz

- Surge voltage wear resistance: $\geq 6000V$
- Joining terminal: bolt connection with 4 bolts to the power supply rail
- Connecting:
 - copper rails
 - flexible or rigid conductors
- Electrical wear resistance (number of cycles): ≥ 2000
- Mechanical wear resistance (number of cycles): ≥ 6000
- IP code: IP21
- Mounting:
 - clamping with bolts
 - mounting position: vertical gradient – maximum 5°
- Plastic material of the breakers of UV rays and non-flammable
- Ambient temperature: $-10^\circ C + 65^\circ C$
- Installation altitude: up to 2000m

Basic functions of the control device:

- Overload protection
- Instantaneous short circuit protection
- Under phase protection
- Undervoltage protection
- Possibility for setting the change-over time between the two sources – min 3s
- Possibility for automatic switch-over to the main power supply source after restoring its parameters

The system for dual power change-over switch is offered in two types:

- with display (control device) mounted on the mounting plate (integrated type)
- with separated control display

Overall dimensions (mm)

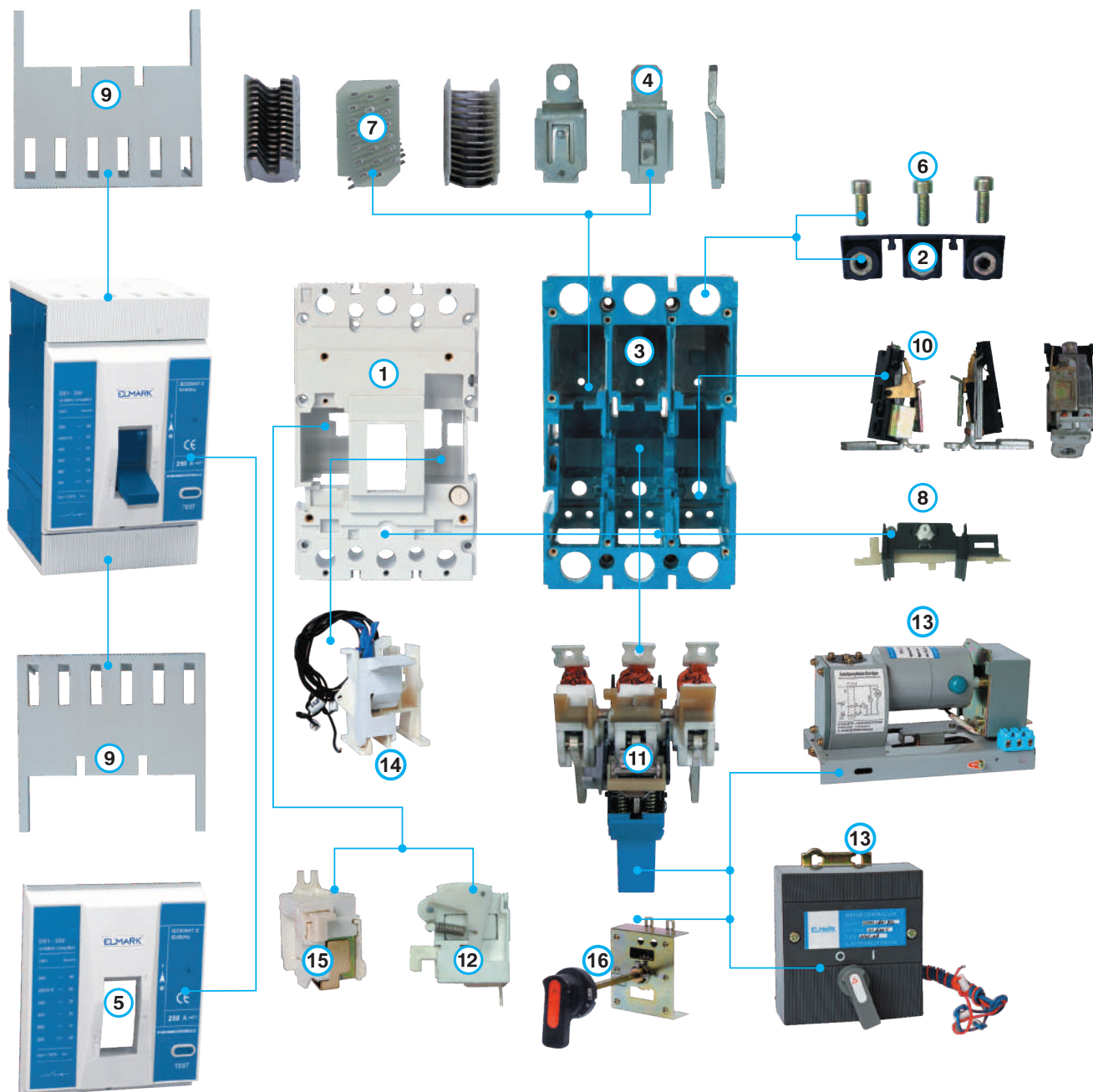
Type of the breaker	Type	A	B	C	D	H
EQ1 - 100	inner type	480	240	450	210	140
EQ1 - 225	inner type	480	240	450	210	140
EQ1 - 400	inner type	620	300	590	270	235
EQ1 - 630	inner type	660	300	630	270	240
EQ1 - 800	inner type					
EQ1 - 100*	moved type	420	230	390	200	145
EQ1 - 225*	moved type	420	230	390	200	145
EQ1 - 400*	moved type	570	300	540	270	235
EQ1 - 630*	moved type	610	300	580	270	240
EQ1 - 800*	moved type					

Type	Rated current In (A)	Max. breaking capacity (kA) Icu	Operating breaking capacity (kA) Ics	Section of the power supply conductor (mm ²)	Electrical wear resistance (number of cycles)	Mechanical wear resistance (number of cycles)	Packing / Box (pcs)	Catalogue number
EQ1 - 100	100	50	35	35	2000	6000	1 / 1	44100
EQ1 - 225	225	50	35	70	2000	6000	1 / 1	44225
EQ1 - 400	400	100	65	180	2000	6000	1 / 1	44403
EQ1 - 630	630	100	65	240	1000	3000	1 / 1	44633
EQ1 - 800	800	100	65	240	1000	3000	1 / 1	44833
EQ1 - 100*	100	50	35	35	2000	6000	1 / 1	44101
EQ1 - 225*	225	50	35	70	2000	6000	1 / 1	44226
EQ1 - 400*	400	100	65	180	2000	6000	1 / 1	44404
EQ1 - 630*	630	100	65	240	1000	3000	1 / 1	44634
EQ1 - 800*	800	100	65	240	1000	3000	1 / 1	44834

Note: *Dual power change-over switch with separated control display

CIRCUIT BREAKERS

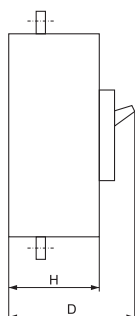
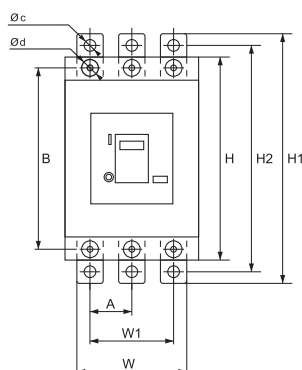
Moulded case circuit breakers



- | | |
|--------------------------|--|
| 1 COVER | 9 TERMINAL PLASTIC PLATE |
| 2 TERMINALS | 10 CONTACTS WITH BIMETAL PLATES |
| 3 NON-FLAMABLE BASE | 11 THERMAL SYSTEM WITH MOVABLE CONTACTS |
| 4 STATIC CONTACTS | 12 UNDER VOLTAGE RELEASE - UVR (accessory) |
| 5 PART FROM THE COVER | 13 REMOTE CONTROL – electrical (accessory) |
| 6 SCREWS FOR TERMINALS | 14 AUXILIARY CONTACT (accessory) |
| 7 ARC CHAMBERS | 15 SHUNT RELEASE (accessory) |
| 8 ELEMENT FOR ADJUSTMENT | 16 REMOTE CONTROL – manual (accessory) |

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2



Moulded case circuit breakers (MCCB) DS1 series from 40...1250A

7 YEAR WARRANTY

*for industrial usage, 3 years warranty

Functions:

- switching on/off heavily loaded electrical circuits
- breaking of electrical circuits and control of powerful consumers
- can be used as a main breaker in housing or industrial distributing installations
- endures high currents of short circuit in the protected circuit
- remarkable with high reliability of current characteristics
- control: manual
- possibility for auxiliary devices mounting for automation

Technical data:

- Rated operating voltage: 415/690V; 50/60Hz
- Isolating voltage: 2000V
- Surge voltage wear resistance: $\geq 8000V$
- Joining terminal: flat (tunnel) screw terminal for the breakers up to 160A and a bolt connection for the breakers from 250A to 1600A

- Connecting:
 - rigid or flexible conductors
 - front conductors joining
 - possibility for mounting to lengthening terminal
- Plastic elements
 - not keeping the burning material nylon PA66
 - box permittivity strength: $>16MV/m$
- Abnormal heating wear resistance and fire of the outer parts: $960^{\circ}C$
- Static contacts – alloy: pure copper T2Y2
 - contact head: silver graphite CAg(5)
 - thickness: depends on the current
- Tightening moment: 1.33Nm
- Electrical wear resistance (number of cycles): ≥ 10000
- Mechanical wear resistance (number of cycles): ≥ 20000
- IP code: IP>20
- Mounting:
 - joining with bolts
 - mounting position: vertical
- Plastic material of UV rays and non-flammable
- Test button
- Ambient temperature: $-20^{\circ} \div 65^{\circ}C$

Type	Overall dimensions (mm)					Installation dimensions (mm)					
	W	H	D	H1	D1	A	B	W1	H2	Ø d	Ø e
DS1-125/3P	76.2	120	70		90	25	100	50		4	
DS1-160/3P	90	120	70		93	30	100	60		5	
DS1-250/3P	105	170	104	238	143.5	35	139	70	210	6	8.5
DS1-400/3P	140	257	104	316	144	44	214	87.5	285	6	11
DS1-630/3P	210	275	104	310	172	70	230	140	280	6	11
DS1-800/3P	210	275	104	347	172	70	230	140	307	6	16
DS1-1600/3P	210	410	140	410	210	70	300	140	350	10	12
DS1-125/4P	110	120	70		90	25	100	50		4	
DS1-160/4P	120	120	70		93	30	100	60		5	
DS1-250/4P	140	170	104	238	143.5	35	139	70	210	6	8.5
DS1-400/4P	184	257	104	316	144	44	214	87.5	285	6	11
DS1-630/4P	280	275	104	310	172	70	230	140	280	6	11
DS1-800/4P	280	275	104	347	172	70	230	140	307	6	16
DS1-1600/4P	280	410	140	410	210	70	300	140	350	10	12

Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/ Box (pcs)	Catalogue number tree-poles	Catalogue number four-poles
			415V	690V					
DS1-125	40	16	35	10	fixed	16	1 / 20	44040	444040
DS1-125	50	16	35	10	fixed	16	1 / 20	44050	444050
DS1-125	63	16	35	10	fixed	25	1 / 20	44063	444063
DS1-125	80	16	35	10	fixed	25	1 / 20	44080	444080
DS1-125	100	16	35	10	fixed	35	1 / 20	44090	444090
DS1-125	125	16	35	10	fixed	50	1 / 20	44125	444125



Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles	Catalogue number four-poles
			415V	690V					
DS1 - 160	63	22	35	15	44 - 63	25	1 / 20	44163	444163
DS1 - 160	80	22	35	15	56 - 80	25	1 / 20	44164	444164
DS1 - 160	100	22	35	15	70 - 100	50	1 / 20	44165	444165
DS1 - 160	125	22	35	15	88 - 125	50	1 / 20	44166	444166
DS1 - 160	160	22	35	15	112 - 160	70	1 / 20	44160	444160
DS1 - 160	160	22	35	15	fixed	70	1 / 20	441601	-



Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles	Catalogue number four-poles
			415V	690V					
DS1 - 250	200	35	50	15	140 - 200	120	1 / 8	44200	444200
DS1 - 250	250	35	50	15	175 - 250	120	1 / 8	44250	444250



Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles	Catalogue number four-poles
			415V	690V					
DS1 - 400	315	50	65	25	fixed	240	1 / 4	44315	444315
DS1 - 400	400	50	65	25	fixed	240	1 / 4	44401	444401



Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles	Catalogue number four-poles
			415V	690V					
DS1 - 630	500	65	75	25	fixed	185	1 / 2	44500	444500
DS1 - 630	630	65	75	25	fixed	185	1 / 2	44630	444630
DS1 - 800	800	75	85	30	fixed	240	1 / 2	44800	444800



Type	Rated current In (A)	Max. breaking capacity (kA) Icu	Operating breaking capacity (kA) Ics	Section of the power supply conductor (mm ²)	Protection from overload	Packing/Box (pcs)	Catalogue number
DS1 - 1250	1000	85	65	240	fixed	1 / 1	44000
DS1 - 1250	1250	85	65	240	fixed	1 / 1	44502



Moulded case circuit breakers (MCCB) DS1 with lock

Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles
			415V	690V				
DS1 - 125	125	16	35	10	fixed	25	1/20	44163K
DS1 - 250	160	35	50	15	125-160	25	1/16	44160K
DS1 - 250	250	35	50	15	160-250	50	1/6	44250K
DS1 - 400	400	50	65	25	fixed	50	1/3	44401K
DS1 - 630	630	65	75	25	fixed	185	1/2	44630K
DS1 - 800	800	75	85	30	fixed	240	1/2	44800K

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2



Moulded case circuit breakers (MCCB) DS1 to 1600A-electronic type

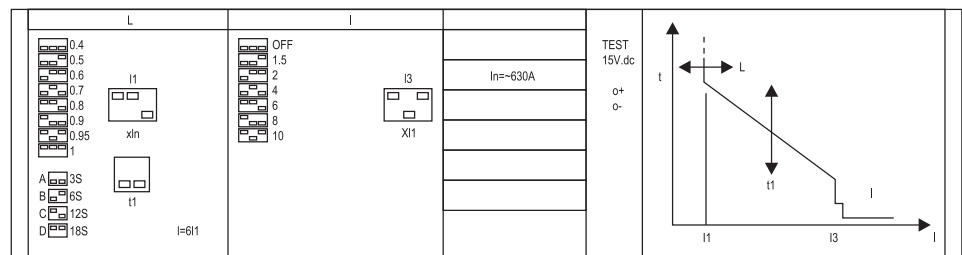
7 YEAR WARRANTY *for industrial usage, 3 years warranty

Functions:

- switching on/off heavy loaded electrical circuits
- breaking of electrical circuits and control of powerful consumers
- can be used as a main breaker in housing or industrial distributing installations
- endures high currents of short circuit in the protected circuit
- remarkable with high reliability of current characteristics
- control: manual
- possibilities for electrical module parameters adjustment through direct modules (combination of keys) thus providing accurate protection from overload and short circuit
- simultaneous protection of the three phases
- possibility for auxiliary devices mounting for automation
- contactor for TT test 15V DC

Technical data:

- Rated operating voltage: 415/690V; 50/60Hz
- Isolating voltage: 2000V
- Surge voltage wear resistance: $\geq 8000V$
- Joining terminal: flat (tunnel) screw terminal
- Connecting:
 - rigid or flexible conductors
 - front conductors joining
 - possibility for mounting to lengthening terminal
- Electrical wear resistance (number of cycles): ≥ 10000
- Mechanical wear resistance (number of cycles): ≥ 20000
- IP code: IP>20
- Abnormal heating wear resistance and fire of the outer parts: 960°C
- Mounting:
 - joining with bolts
 - mounting position: vertical
- Plastic material of UV rays and non-flammable
- Test button
- Ambient temperature: -20°÷65°C



Protecting functions:

Function L – step adjustment for protection against overload. Adjustment of the operating current $I1=0.4+1 \times I_n$ with discrete coefficients as the value can be 0.4; 0.5; 0.6; 0.7; 0.8; 0.9; 0.95 and 1

Time delay adjustment $t1$ of the protection against overload – step adjustment with four values A-3s; B-6s; C-12s; D-18s when current is $I=6I1$. The diagram of the current curves is presented on fig.1

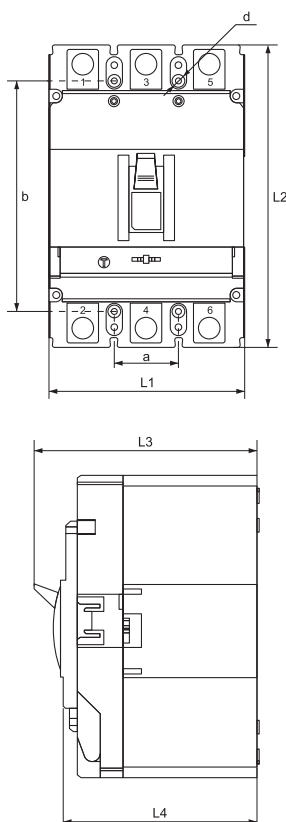
Adjustment of the transitory protection current against short circuit $I3=X \times I1$ where X can take discrete value OFF; 1.5; 2; 4; 6; 8; 10

Type	Rated current I_n (A)	Operating breaking capacity (kA) I_{cs}	Maximum breaking capacity (kA) I_{cu}		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles
			415V	690V				
DS1 - 400E	400	50	65	25	160 - 400	240	1 / 3	44940
DS1 - 630E	630	65	75	25	252 - 630	240	1 / 2	44963
DS1 - 800E	800	65	75	30	320 - 800	240	1 / 2	44980
DS1 - 1250E	1000	85	100	65	400 - 1000	240	1 / 1	44999
DS1 - 1250E	1250	85	100	65	500 - 1250	240	1 / 1	44925
DS1 - 1600E	1600	85	100	65	640 - 1600	240	1 / 1	44960

Moulded case circuit breakers

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2



High breaking capacity level moulded case circuit breakers (MCCB) DS1 MAX from 63A... 800A

7 YEAR WARRANTY

*for industrial usage, 3 years warranty

Functions:

- high breaking capacity level
- switching on/off heavily loaded electrical circuits
- breaking of electrical circuits and control of powerful consumers
- can be used as a main breaker in housing or industrial distributing installations
- endures high currents of short circuit in the protected circuit
- remarkable with high reliability of current characteristics control: manual
- possibility for auxiliary devices mounting for automation

Technical data:

- Rated operating voltage: 415/690V; 50/60Hz
- Isolating voltage: 2000V
- Surge voltage wear resistance: $\geq 8000V$
- Connecting:
 - rigid or flexible conductors
 - front conductors joining
 - possibility for mounting to lengthening terminal

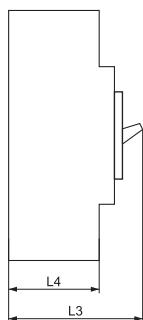
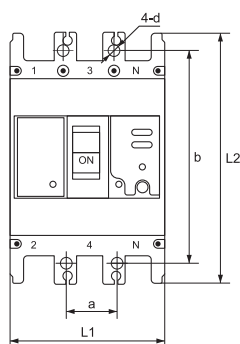
- Plastic elements
 - not keeping the burning material nylon PA66
 - box permittivity strength: $>16MV/m$
- Abnormal heating wear resistance and fire of the outer parts: $960^{\circ}C$
- Static contacts – alloy: pure copper T2Y2
 - acontact head: silver graphite CAg(5)
 - atickness: depends on the current
- Tightening moment: 1.33Nm
- Electrical wear resistance (number of cycles): ≥ 10000
- Mechanical wear resistance (number of cycles): ≥ 20000
- IP code: IP>20
- Mounting:
 - joining with bolts
 - mounting position: vertical
- Plastic material of UV rays and non-flammable
- Test button
- Ambient temperature: $-20^{\circ}/65^{\circ}C$.

Type	Overall dimensions (mm)						
	L1	L2	L3	L4	a	b	d
DS1 MAX 125/63 3P M	92	150	110	92	30	129	4.5
DS1 MAX 125/80 3PM	92	150	110	92	30	129	4.5
DS1 MAX 125/100 3P M	92	150	110	92	30	129	4.5
DS1 MAX 125/125 3P M	92	150	110	92	30	129	4.5
DS1 MAX 250/160 3P M	92	165	110	90	35	126	4.5
DS1 MAX 250/200 3P M	107	165	110	90	35	126	4.5
DS1 MAX 250/250 3P H	107	165	110	90	35	126	4.5
DS1 MAX 400/400 3P H	150	257	146	106	44	194	7
DS1 MAX 630/630 3P H	182	270	155	116	116	200	7
DS1 MAX 800/800 3P H	210	28	155	116	70	243	7
DS1 MAX 125/63 4P M	122	150	110	92	60	129	4.5
DS1 MAX 125/80 4PM	122	150	110	92	60	129	4.5
DS1 MAX 125/100 4P M	122	150	110	92	60	129	4.5
DS1 MAX 125/125 4P M	122	150	110	92	60	129	4.5
DS1 MAX 250/160 4P M	142	165	110	90	70	126	4.5
DS1 MAX 250/200 4P M	142	165	110	90	70	126	4.5
DS1 MAX 250/250 4P H	142	165	110	90	70	126	4.5
DS1 MAX 400/400 4P H	198	257	146	106	44	194	7
DS1 MAX 630/630 4P H	240	270	155	116	116	200	7
DS1 MAX 800/800 4P H	280	280	155	116	70	243	7

Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Packing/box	Catalogue number three-poles	Catalogue number four-poles
DS1 MAX - 125	63	36	50	20	50,4-63	1/16	44163MM	444163MM
DS1 MAX - 125	80	36	50	20	64-80	1/16	44164MM	444164MM
DS1 MAX - 125	100	36	50	20	80-100	1/16	44165MM	444165MM
DS1 MAX - 125	125	36	50	20	100-125	1/16	44166MM	444166MM
DS1 MAX - 250	160	36	50	20	128-160	1/6	44160MM	444160MM
DS1 MAX - 250	200	36	50	20	160-200	1/6	44200MM	444200MM
DS1 MAX - 250	250	42	65	25	200-250	1/6	44250MH	444250MH
DS1 MAX - 400	400	50	85	30	320-400	1/3	44401MH	444401MH
DS1 MAX - 630	630	50	85	30	504-630	1/2	44630MH	444630MH
DS1 MAX - 800	800	65	100	50	640-800	1/2	44800MH	444800MH

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2

**High breaking capacity level moulded case circuit breakers (MCCB) DS1 MAX with ELCB****7****YEAR
WARRANTY***for industrial
usage, 3 years
warranty

Earth Leakage Circuit Breaker (ELCB). Combine all functions of a standard circuit breaker, and prevent the consequences caused by short circuit, overload and shock. Widely used product for protection of low voltage circuits from fire.

Technical data:

- Rated operating voltage: 415/690V; 50/60Hz
- Rated residual operating current $I_{\Delta n}$ (mA) - 100mA; 300mA 500mA- adjustable
- Tripping time $I_{\Delta n}$ - instantaneous; 0.4s; 1s -adjustable
- Max delayed 2 In limit non-actuating time 1s 0.2/0.5
- Isolating voltage: 2000V.
- Surge voltage wear resistance: $\geq 8000V$
- Joining terminal: flat (tunnel) screw terminal.
- Connecting:
 - rigid or flexible conductors
 - front conductors joining
 - possibility for mounting to lengthening terminal.
- Electrical wear resistance (number of cycles): ≥ 10000 .
- Mechanical wear resistance (number of cycles): ≥ 20000 .
- IP code: IP>20.
- Abnormal heating wear resistance and fire of the outer parts: 960°C
- Mounting:
 - joining with bolts
 - mounting position: vertical.
- Plastic material of UV rays and non-flammable.
- Residual indicating push button
- Test button.
- Ambient temperature: $-20^{\circ}\div 65^{\circ}C$

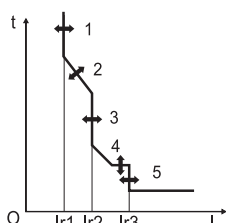
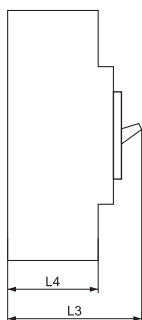
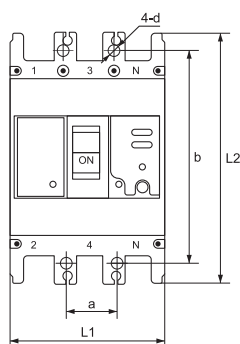
Type	Overall dimensions (mm)						
	L1	L2	L3	L4	a	b	d
DS1 MAX 225/125 3P M	92	150	110	92	30	129	4.5
DS1 MAX 400/250 3P H	150	257	146	106	44	194	7
DS1 MAX 400/400 3P H	150	257	146	106	44	194	7
DS1 MAX 225/125 4P M	122	150	110	92	60	129	4.5
DS1 MAX 400/250 4P H	198	257	146	106	44	194	7
DS1 MAX 400/400 4P H	198	257	146	106	44	194	7

Type	Rated current I_n (A)	Operating breaking capacity (kA) I_{cs}	Maximum breaking capacity (kA) I_{cu}		Rated residual operating current $I_{\Delta n}$ (mA)	Packing /box	Catalogue number three-poles	Catalogue number four-poles
			415V	690V				
DS1 MAX - 225	125	36	50	20	100/300/500	1/16	44163MMEL	444163MMEL
DS1 MAX - 400	250	42	65	25	100/300/500	1/6	44250MHLE	444250MHLE
DS1 MAX - 400	400	50	85	30	100/300/500	1/3	44401MHLE	444401MHLE

Moulded case circuit breakers

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2



High breaking capacity level moulded case circuit breakers (MCCB) DS1 MAX to 800A-electronic type

7 YEAR WARRANTY

*for industrial usage, 3 years warranty

Functions:

- high breaking capacity level
- switching on/off heavy loaded electrical circuits
- breaking of electrical circuits and control of powerful consumers
- can be used as a main breaker in housing or industrial distributing installations
- endures high currents of short circuit in the protected circuit
- remarkable with high reliability of current characteristics
- control: manual
- possibilities for electrical module parameters adjustment through direct modules (combination of keys) thus providing accurate protection from overload and short circuit
- simultaneous protection of the three phases
- possibility for auxiliary devices mounting for automation
- contactor for TT test 15V DC

Technical data:

- Rated operating voltage: 415/690V; 50/60Hz
- Isolating voltage: 2000V
- Surge voltage wear resistance: $\geq 8000V$
- Joining terminal: flat (tunnel) screw terminal
- Connecting:
 - rigid or flexible conductors
 - front conductors joining
 - possibility for mounting to lengthening terminal
- Electrical wear resistance (number of cycles): ≥ 10000
- Mechanical wear resistance (number of cycles): ≥ 20000
- IP code: IP>20
- Abnormal heating wear resistance and fire of the outer parts: 960°C
- Mounting:
 - joining with bolts
 - mounting position: vertical
- Plastic material of UV rays and non-flammable
- Test button
- Ambient temperature: $-20^{\circ} \div 65^{\circ}C$

Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Packing/box	Catalogue number three-poles	Catalogue number four-poles
DS1 MAX - 400E	400	50	85	30	200-400	1/3	44940MH	444940MH
DS1 MAX - 630E	630	50	85	30	400-630	1/2	44963MH	444963MH
DS1 MAX - 800E	800	65	100	50	630-800	1/2	44980MH	444980MH

Tripping characteristic:

Ir1(A) Over-load long time delay tripping current

Ir1 adjustment, according to the different rated current of MCCB.

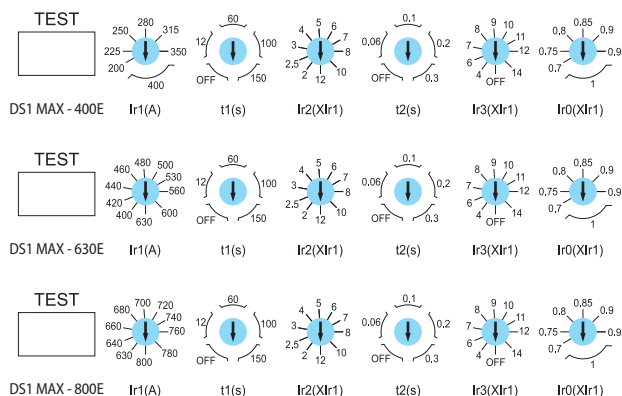
t1(s) Long time delay tripping time t1 adjustment.

Ir2(XIr1) Short circuit short time delay tripping time Ir2 adjustment.

t2(s) Short time delay tripping time t2 adjustment.

Ir3(XIr1) Short circuit instantaneous tripping current Ir3 adjustment.

Ir0(XIr1) Pre-alarm tripping current Ir0 adjustment.



Documents corresponding to the product:

Standard EN 60947-1; EN 60947-2;
IEC 947-2

**Moulded case circuit breaker(MCCB) DW1 series**

5 YEAR WARRANTY
*for industrial usage, 3 years warranty

The DW1 series is an intelligent type circuit breaker used to control and protect low voltage electrical distribution network. Possibility to set the parameters of the circuit protection, built in under voltage release, remote control, earth protection and load monitoring.

Functions:

- switching on/off heavy loaded electrical circuits
- breaking of electrical circuits and control of powerful consumers
- used as a main breaker in housing or industrial distributing installations
- endures high currents of short circuit in the protected circuit
- remarkable with high reliability of current characteristics
- motor control
- mounted auxiliary devices for automation - under voltage release, earth protection, intelligent controlling block with a possibility for a choice of the protected function

Technical data:

- Rated operating voltage: 690V; 50/60Hz
- Isolating voltage: 690V
- Surge voltage wear resistance: 2kV
- Joining terminal: bolt connection with 4 bolts to the power supply rail
- Connecting:
 - copper rails
 - busway connection – at the back
- Electrical wear resistance (number of cycles): ≥ 2000

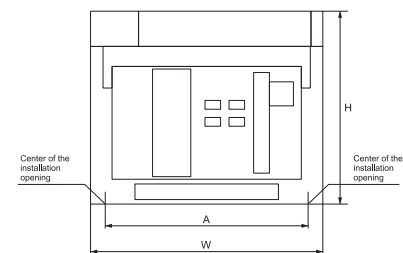
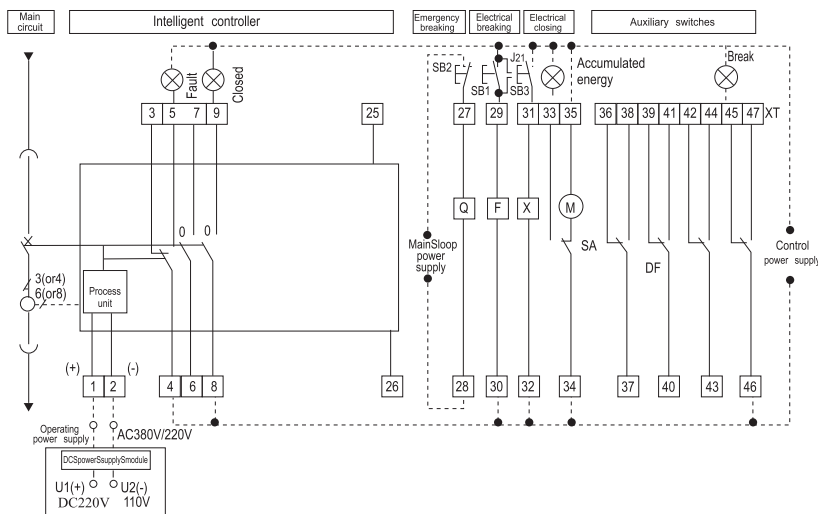
- Mechanical wear resistance (number of cycles): ≥ 9000
- IP code: IP54
- Mounting:
 - clamping with bolts
 - mounting position: vertical gradient – maximum 5°

- Plastic material of UV rays and non-flammable
- Test button
- Ambient temperature: -10°C + 65°C
- Installation altitude: up to 2000m

Basic protective functions:

- Overload protection with long time delay
- Short circuit protection with short time delay, time inversion limit
- Short circuit protection with short time delay, time fixed limit
- Instantaneous short circuit protection
- Earth protection function
- Full stability function
- "Overload alarm" function
- Test function
- Auto diagnostics function

A commutation type of breakers with RS 485 connection for duplex transmission of all function parameters, adjustment and data can also be produced at client's order and delivery terms agreement.



Type	Dimensions		
	A	H	W
DW1-2000 FIXED	362	402	373
DW1-3200 FIXED	422	402	363
DW1-2000 DRAW-OUT	375	432	461
DW1-3200 DRAW-OUT	435	432	494
DW1-4000 DRAW-OUT	550	432	494
DW1-6300 DRAW-OUT	813	452	504

Type	Rated current In (A)	Rated voltage Un (V)	Breaking capacity (kA)		Electrical wear resistance (number of cycles)	Mechanical wear resistance (number of cycles)	Packing/ Box (pcs)	Catalogue number
			400 V	690 V				
DW1-2000 FIXED	1600	AC400V	80	50	2000	9000	1/1	44208
DW1-2000 FIXED	2000	AC400V	80	50	2000	9000	1/1	44209
DW1-3200 FIXED	2500	AC400V	100	65	2000	9000	1/1	44255
DW1-3200 FIXED	3200	AC400V	100	65	2000	9000	1/1	44329
DW1-2000 DRAW-OUT	1600	AC400V	80	50	2000	9000	1/1	44208DO
DW1-2000 DRAW-OUT	2000	AC400V	80	50	2000	9000	1/1	44209DO
DW1-3200 DRAW-OUT	2500	AC400V	100	65	2000	9000	1/1	44255DO
DW1-3200 DRAW-OUT	3200	AC400V	100	70	2000	9000	1/1	44329DO
DW1-4000 DRAW-OUT	3600	AC400V	100	75	2000	9000	1/1	44436DO
DW1-4000 DRAW-OUT	4000	AC400V	100	75	2000	9000	1/1	44440DO
DW1-6300 DRAW-OUT	5000	AC400V	120	75	2000	9000	1/1	44650DO
DW1-6300 DRAW-OUT	6300	AC400V	120	75	2000	9000	1/1	44663DO

7 YEAR WARRANTY *for industrial usage, 3 years warranty

Shunt release (MX)

The device is used for remote control of breakers as at voltage signal it starts operating and switches off the breaker to which it is mounted

Technical data:

- rated operating voltage: 230/400V 50/60Hz
- electromagnetic coil 100VA for breakers up to 400A
- electromagnetic coil 150VA for breakers 630-800A
- available joining conductors

Mounting:

Mounted in a special jack after cover dismounting

Connecting:

Connected with the operative system through the provided conductors

***Note:** The breakers are offered with mounted accessory

DS1-electronic type with mounted MX

Type	Catalogue number	
	400V	230V
DS1 400/3300	444511	44452
DS1 630/3300	44455	44456
DS1 800/3300	44459	44460

DS1 MAX-electronic type with mounted MX

Type	Catalogue number	
	400V	230V
DS1 MAX 400/3300	444511M	44452M
DS1 MAX 630/3300	44455M	44456M
DS1 MAX 800/3300	44459M	44460M

DS1-thermomagnetic type with mounted MX

Type	Catalogue number	
	400V	230V
DS1 125/40	44317	44318
DS1 125/50	44321	44322
DS1 125/63	44326	44327
DS1 125/80	44331	44332
DS1 125/100	44336	44337
DS1 125/125	44340	44341
DS1 160/100	44463	44464
DS1 160/160	44333	44344
DS1 250/200	44347	44348
DS1 250/250	44351	44352
DS1 400/315	44467	44468
DS1 400/400	44355	44356
DS1 630/500	44359	44360
DS1 630/630	44363	44364
DS1 800/800	44367	44368

DS1 MAX-thermomagnetic type with mounted MX

Type	Catalogue number	
	400V	230V
DS1 MAX 125/63	44326M	44327M
DS1 MAX 125/80	44331M	44332M
DS1 MAX 125/100	44336M	44337M
DS1 MAX 125/125	44340M	44341M
DS1 MAX 250/160	44333M	44344M
DS1 MAX 250/200	44347M	44348M
DS1 MAX 250/250	44351M	44352M
DS1 MAX 400/400	44355M	44356M
DS1 MAX 630/630	44363M	44364M
DS1 MAX 800/800	44367M	44368M

7 YEAR WARRANTY
*for industrial usage, 3 years warranty

Under voltage release (MN)



MN for DS1 - 125-160

The device switches off and/or does not allow the switching on of the breaker to which it is mounted at power breakdown or voltage decrease under certain limits

Technical data:

- operating voltage: 230/400V 50Hz
- electromagnetic coil 6VA for breakers up to 400A
- electromagnetic coil 10VA for breakers 630-800A
- available joining conductors

- switches off at voltage decrease under 75% of the operating

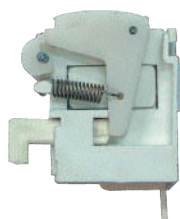
Mounting:

Mounted in a special jack after cover dismounting

Note: The breakers are offered with mounted accessory

Connecting:

Connected with the operative system through the provided conductors



MN for DS1 - 250-800

DS1-electronic type with mounted MN

Type	Catalogue number	
	400V	230V
DS1 400/3300	44483	44484
DS1 630/3300	44487	44488
DS1 800/3300	44491	44492

DS1 MAX-electronic type with mounted MN

Type	Catalogue number	
	400V	230V
DS1 MAX 400/3300	44483M	44484M
DS1 MAX 630/3300	44487M	44488M
DS1 MAX 800/3300	44491M	44492M

DS1-thermomagnetic type with mounted MN

Type	Catalogue number	
	400V	230V
DS1 125/40	44383	44384
DS1 125/50	44387	44388
DS1 125/63	44391	44392
DS1 125/80	44395	44396
DS1 125/100	44399	44402
DS1 125/125	44407	44408
DS1 160/100	44475	44476
DS1 160/160	44411	44412
DS1 250/200	44415	44416
DS1 250/250	44419	44420
DS1 400/315	44479	44480
DS1 400/400	44423	44424
DS1 630/500	44427	44428
DS1 630/630	44431	44432
DS1 800/800	44435	44436

DS1 MAX-thermomagnetic type with mounted MN

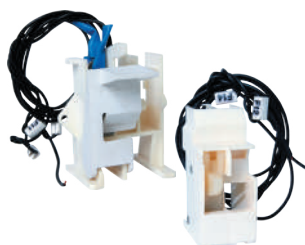
Type	Catalogue number	
	400V	230V
DS1 MAX 125/63	44391M	44392M
DS1 MAX 125/80	44395M	44396M
DS1 MAX 125/100	44399M	44402M
DS1 MAX 125/125	44407M	44408M
DS1 MAX 250/160	44411M	44412M
DS1 MAX 250/200	44415M	44416M
DS1 MAX 250/250	44419M	44420M
DS1 MAX 400/400	44423M	44424M
DS1 MAX 630/630	44431M	44432M
DS1 MAX 800/800	44435M	44436M



Auxiliary devices for MCCB DS1 and DS1 MAX type

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2

**Auxiliary contact (OF)**

7 YEAR WARRANTY
*for industrial usage, 3 years warranty

According to the way of mounting the auxiliary devices can be divided into two groups:

- internal devices – accessories for whose mounting it is necessary to dismount the cover of the breakers and fix them in specially designed jacks
- external devices – they are mounted right on the top cover of the breaker

INTERNAL DEVICES**Auxiliary contact (OF)**

The device changes its condition conformably to the breaker's condition; it has a NO and a NC contactor.

Technical data:

- for breakers up to 160A operating current through the auxiliary contact: 3A
- for breakers from 250 to 800A operating current through the auxiliary contact: 6A
- available joining conductors
- labeling of the cables

Mounting:

Mounted in a special jack after cover dismounting

Note:

The breakers are offered with mounted accessory

Connecting:

Connected with the operative system through the provided conductors

DS1-thermomagnetic type with mounted OF

Type	Catalogue number
DS1 125/40	44301
DS1 125/50	44302
DS1 125/63	44303
DS1 125/80	44304
DS1 125/100	44305
DS1 125/125	44306
DS1 160/160	44307
DS1 250/200	44308
DS1 250/250	44309
DS1 400/400	44310
DS1 630/500	44311
DS1 630/630	44312
DS1 800/800	44313

DS1 MAX-thermomagnetic type with mounted OF

Type	Catalogue number
DS1 MAX 125/63	44303M
DS1 MAX 125/80	44304M
DS1 MAX 125/100	44305M
DS1 MAX 125/125	44306M
DS1 MAX 250/160	44307M
DS1 MAX 250/200	44308M
DS1 MAX 250/250	44309M
DS1 MAX 400/400	44310M
DS1 MAX 630/630	44312M
DS1 MAX 800/800	44313M





MCCB with auxiliary devices mounted (MX+OF) and (MN+OF)

7 YEARS GUARANTEE *for industrial usage, 3 years warranty

DS1 -electronic type with mounted MX+OF

Type	Catalogue number	
	400V	230V
DS1 400/3300	44453	44454
DS1 630/3300	44457	44458
DS1 800/3300	44461	44462

DS1-thermomagnetic type with mounted MX+OF

Type	Catalogue number	
	400V	230V
DS1 125/40	44319	44320
DS1 125/50	44323	44324
DS1 125/63	44328	44330
DS1 125/80	44334	44335
DS1 125/100	44338	44339
DS1 125/125	44342	44343
DS1 160/100	44465	44466
DS1 160/160	44345	44346
DS1 250/200	44349	44350
DS1 250/250	44353	44354
DS1 400/315	44469	44470
DS1 400/400	44357	44358
DS1 630/500	44361	44362
DS1 630/630	44365	44366
DS1 800/800	44369	44370

DS1 MAX-thermomagnetic type with mounted MN+OF

Type	Catalogue number	
	400V	230V
DS1 MAX 125/63	44393M	44394M
DS1 MAX 125/80	44397M	44398M
DS1 MAX 125/100	44405M	44406M
DS1 MAX 125/125	44409M	44410M
DS1 MAX 250/160	44413M	44414M
DS1 MAX 250/200	44417M	44418M
DS1 MAX 250/250	44421M	44422M
DS1 MAX 400/400	44425M	44426M
DS1 MAX 630/630	44433M	44434M
DS1 MAX 800/800	44437M	44438M

DS1 MAX-electronic type with mounted MN+OF

Type	Catalogue number	
	400V	230V
DS1 MAX 400/3300	44485M	44486M
DS1 MAX 630/3300	44489M	44490M
DS1 MAX 800/3300	44493M	44494M

DS1 MAX-electronic type with mounted MX+OF

Type	Catalogue number	
	400V	230V
DS1 MAX 400/3300	44453M	44454M
DS1 MAX 630/3300	44457M	44458M
DS1 MAX 800/3300	44461M	44462M

DS1 MAX- thermomagnetic type with mounted MX+OF

Type	Catalogue number	
	400V	230V
DS1 MAX 125/63	44328M	44330M
DS1 MAX 125/80	44334M	44335M
DS1 MAX 125/100	44338M	44339M
DS1 MAX 125/125	44342M	44343M
DS1 MAX 250/160	44345M	44346M
DS1 MAX 250/200	44349M	44350M
DS1 MAX 250/250	44353M	44354M
DS1 MAX 400/400	44357M	44358M
DS1 MAX 630/630	44365M	44366M
DS1 MAX 800/800	44369M	44370M

DS1-thermomagnetic type with mounted MN+OF

Type	Catalogue number	
	400V	230V
DS1 125/40	44385	44386
DS1 125/50	44389	44390
DS1 125/63	44393	44394
DS1 125/80	44397	44398
DS1 125/100	44405	44406
DS1 125/125	44409	44410
DS1 160/100	44477	44478
DS1 160/160	44413	44414
DS1 250/200	44417	44418
DS1 250/250	44421	44422
DS1 400/315	44481	44482
DS1 400/400	44425	44426
DS1 630/500	44429	44430
DS1 630/630	44433	44434
DS1 800/800	44437	44438

DS1-electronic type with mounted MN+OF

Type	Catalogue number	
	400V	230V
DS1 400/3300	44485	44486
DS1 630/3300	44489	44490
DS1 800/3300	44493	44494



Terminal plates for MCCB - DS1 and DS1 MAX type

7

YEAR
WARRANTY*for industrial
usage, 3 years
warranty

Straight copper electro-tinned extensions enabling cable connection outside the switch terminals and providing excellent contact with the switch terminal base. Terminal extensions with different cross section are available depending on the switch rated power.

Mounting:

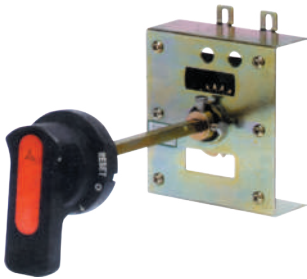
Extensions are directly bolt mounted to the switch terminal base.

Terminal plates for MCCB - DS1

Type	Rated current (A)	Catalogue number 3pcs/set	Catalogue number 4pcs/set
TP 125	125	31125	314125
TP 160	160	31160	314160
TP 250	250	31250	314250
TP 400	400	31400	314400
TP 630	630	31630	314630
TP 800	800	31850	314850
TP 1250	1250	311250	-

Terminal plates for MCCB - DS1 MAX

Type	Rated current (A)	Catalogue number 3pcs/set	Catalogue number 4pcs/set
TP 125 MAX	125	31125M	-
TP 250 MAX	250	31250M	-
TP 400 MAX	400	31400M	314400M
TP 630 MAX	630	31630M	314630M
TP 800 MAX	800	31850M	314850M



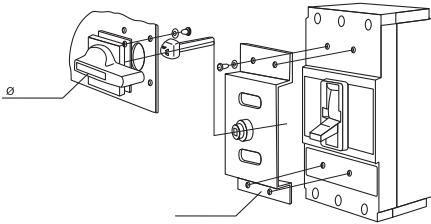
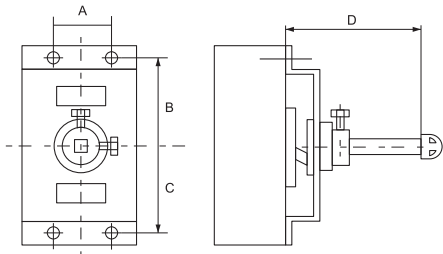
Remote control (manual)

5 YEAR WARRANTY
*for industrial usage, 3 years warranty

Description:
The device switches off/on the breaker to which manual operative rotary mechanism is mounted

- two operating positions of the executive mechanism fixed at 90°C

Mounting:
The base is mounted with bolts right on the cover (scheme 1 mounting), and the handle is mounted at the door of the distribution box, using an extension axis it is joined to the base



Remote control for MCCB, DS1

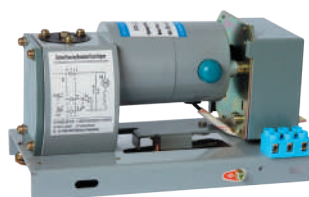
Type of the breaker	Dimensions (mm)					Packing/ Box (pcs)	Catalogue number
	A	B	C	Dmin	Dmax		
DS1 125A	25	50	50	65	115	1	44967
DS1 160A	30	50	50	65	115	1	44968
DS1 250A	35	70	70	80	130	1	44969
DS1 400A	45	107	107	85	105	1	44970
DS1 630A	70	119	119	110	110	1	44971
DS1 800A	70	119	119	110	110	1	44972

Remote control for MCCB, DS1 MAX

Type of the breaker	Dimensions (mm)					Packing/ Box (pcs)	Catalogue number
	A	B	C	Dmin	Dmax		
DS1 MAX 63A	25	50	50	65	115	1	44966M
DS1 MAX 125A	25	50	50	65	115	1	44967M
DS1 MAX 250A	35	70	70	80	130	1	44969M
DS1 MAX 400A	45	107	107	85	105	1	44970M
DS1 MAX 630/800A	70	119	119	110	110	1	44972M



DS1 - 125-160



DS1 - 250-800



DS1 MAX - 63-250

Remote control (electrical)

5 YEARS
GUARANTEE

*for industrial
usage, 3 years
warranty

Description:

The device switches off/on the breaker to which manual operative rotary mechanism is mounted

- two operating positions of the executive mechanism fixed at 90°C

Mounting:

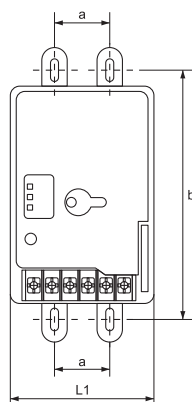
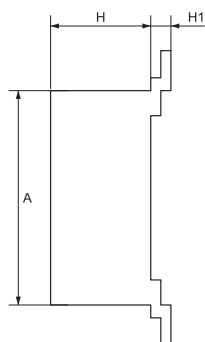
The base is mounted with bolts right on the cover (scheme 1 mounting), and the handle is mounted at the door of the distribution box, using an extension axis it is joined to the base

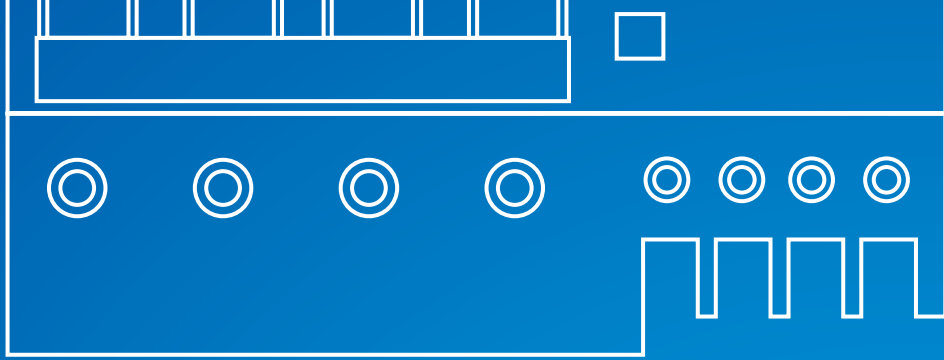
Electrical remote control for MCCB DS1

Type of the breaker	Dimensions (mm)					Packing/ Box (pcs)	Catalogue number Operating voltage (V)	
	A	A1	B	B1	H		230V	400V
DS1 125	103.5	110	30	90	92	1	44912	44907
DS1 160	103.5	110	35	90	92	1	44913	44908
DS1 250	139	-	132	-	105	1	44914	44909
DS1 400	226	-	132	-	132	1	44915	44910
DS1 630	226	-	132	-	132	1	44916	44911
DS1 800	226	-	132	-	132	1	44916	44911

Electrical remote control for MCCB DS1 MAX

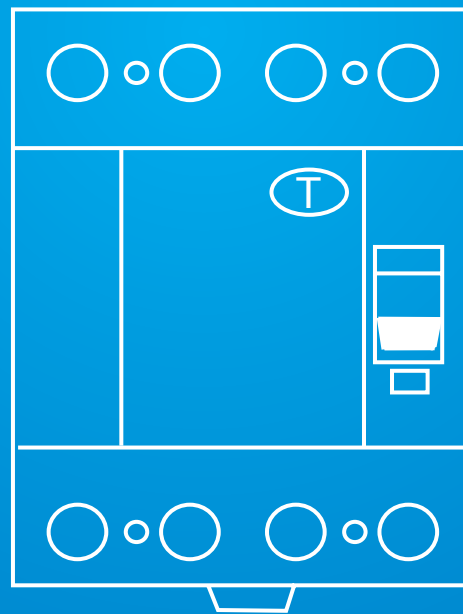
Type of the breaker	Dimensions (mm)					Packing/ Box (pcs)	Catalogue number Operating voltage (V)	
	L1	B	B	H	H1		230V	400V
DS1 MAX 63A	116	90	50	77	12,5	1	44917M	44906M
DS1 MAX 125A	116	90	50	77	12,5	1	44912M	44907M
DS1 MAX 250A	116	90	70	77	15	1	44914M	44909M
DS1 MAX 400A	176	130	107	115	27	1	44915M	44910M
DS1 MAX 630/800A	176	130	119	115	31	1	44916M	44911M





INDIRECT PROTECTION DEVICES

INDIRECT
PROTECTION DEVICES



ELMARK®

Residual current devices | 52

Combined residual current devices | 56

Surge arresters | 59





COVER 1

TERMINALS 2

NON-FLAMMABLE BASE 3

CONTACT 4

TEST BUTTON 5

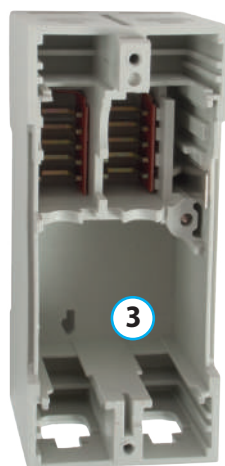
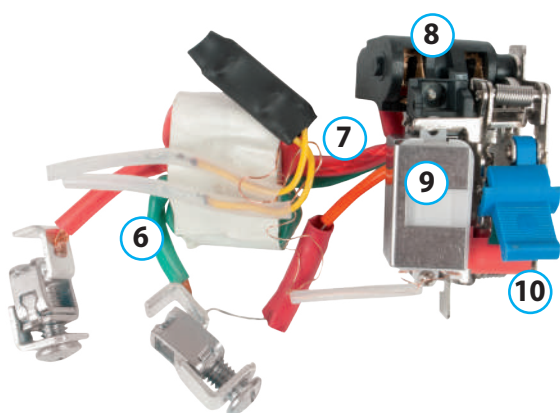
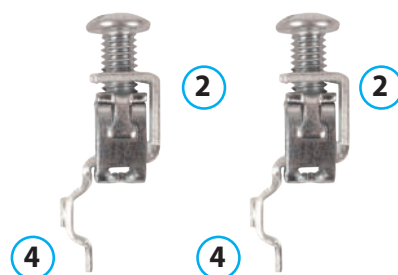
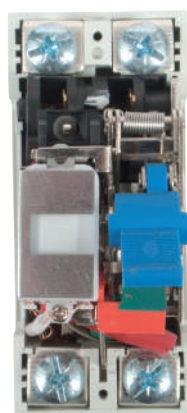
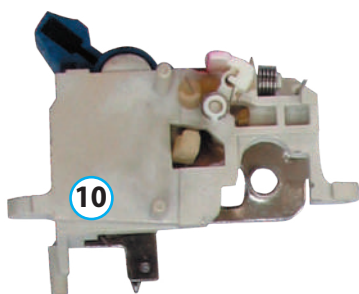
SECONDARY WINDING OF TT 6

PRIMARY WINDING 7

SUMMING CURRENT TRANSFORMER (TT) WITH TOROID 8

ELECTROMAGNETIC RELAY 9

BREAKING (RELEASE) UNIT 10



Residual current devices

Documents corresponding to the product:

EN 61008-1
EN 61008-2; EN 60947-1



Type AC for AC current

Residual current devices JEL1

7 YEAR WARRANTY *for industrial usage, 3 years warranty

The residual current device works with no extra power supply to the operating mechanism. It compares the magnitude of the currents through the neutral and phase conductors. The conductors are coiled on toroid and together with the secondary winding form a measurement transformer. The power conductors are coiled in such a way that the magnetic fields generated at electrical current flow through them are mutually neutralized. At failure in the insulation of some of the conductors or at presence of a person under voltage, the system is misbalanced and the magnetic fields can not be neutralized. This residual field generates in the secondary current winding, called current leakage. The device breaks when the value of this current exceeds the limit value of the residual current breaker.

Functions:

- switching off heavy-loaded electrical circuits at insulation damage of the conductors to the consumers
- switching off heavy-loaded electrical circuits at presence of a person under voltage
- used to protect not only particular consumers/circuits, but also the whole panel
- remarkable with high reliability of current characteristics
- control: manual switching on and automatic switching off at exit failure

Technical data:

- Rated operating voltage: 230/400V; 50/60 Hz
- Rated current: according to the table
- Responsiveness: 30; 100; 300; 500mA
- Time delay until break: $<0.1s$ at $I \Delta n$ and $<0.04s$ at $2I \Delta n$
- Surge voltage wear resistance: $\geq 2000V$

- Short circuit current wear resistance: 4500A, 6000A
- Joining terminal: flat (tunnel) screw terminal made of 1.5 coldly draw-plated plane Q235A
- Type of the plastic:
 - material: self-extinguishing nylon PA66
 - permittivity strength: $>18MV/m$
- Contact head: silver graphite CAg(5)
- Static contact: pure copper T2Y2 type
- Electrical wear resistance (number of cycles): ≥ 5000
- Mechanical wear resistance (number of cycles): ≥ 10000
- IP code: IP >20
- Indication for operating (switched on) position
- Plastic material of the breakers of UV rays and non-flammable
- Ambient temperature: $-10^{\circ}C + 65^{\circ}C$
- Installation altitude: up to 2000m

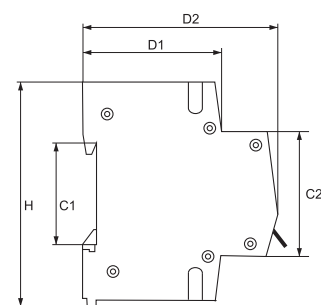
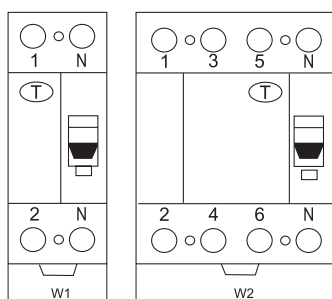
Connecting:

- power supply busbar (only for bipolar)
- flexible or rigid conductors with corresponding section

Mounting:

- on DIN-rail
- mounting position: vertical

The residual current device is mounted in the distribution box, and after the device the neutral conductor and the earthing conductor must not be connected together. In order to work accurately, the device must have three- or five-conductor grid with separate protective conductor (PE) (e.g. earthing system TN-S or TT with three or five conductors). The corpus of the consumer depending on the grid type must be connected either to the protective conductor or be earthed. (Fig.1)



Dimensions (mm)						
W1	W2	H	H1	H2	D1	D2
35	70	81	35	45	50	72

Connecting scheme

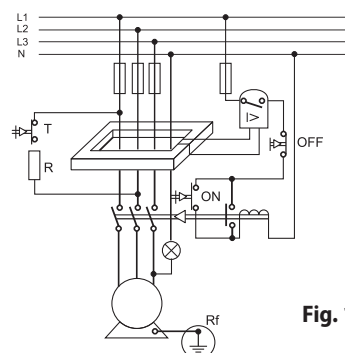
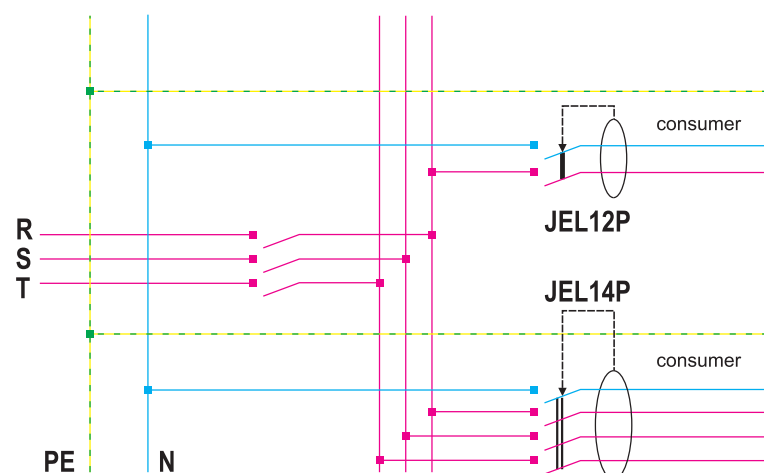


Fig. 1





Type AC for AC current



Residual current devices JEL1

7 YEAR WARRANTY
*for industrial usage, 3 years warranty

Residual current devices JEL 1, 6kA - Type AC - alternating fault currents sensible. Impulse withstand voltage 2000VAC

Type	Number of poles	Breaking capacity (kA)	Rated current In (A)	Packing/Box (pcs)	Catalogue number Leakage current I Δ n (mA)			
					30	100	300	500
JEL 1	2P	6	10.0	1 / 60	40210	40212	40213	40214
JEL 1	2P	6	16.0	1 / 60	40216	40217	40218	40219
JEL 1	2P	6	20.0	1 / 60	40292	40293	40294	40295
JEL 1	2P	6	25.0	1 / 60	40221	40222	40223	40224
JEL 1	2P	6	32.0	1 / 60	40231	40232	40233	40234
JEL 1	2P	6	40.0	1 / 60	40241	40242	40243	40244
JEL 1	2P	6	63.0	1 / 60	40261	40262	40263	40264
JEL 1	2P	6	80.0	1 / 60	40281	40282	40283	40284
JEL 1	2P	6	100.0	1 / 60	40291	40296	40297	40298

Type	Number of poles	Breaking capacity (kA)	Rated current In (A)	Packing/Box (pcs)	Catalogue number Leakage current I Δ n (mA)			
					30	100	300	500
JEL 1	4P	6	10.0	1 / 30	40410	40412	40413	40414
JEL 1	4P	6	16.0	1 / 30	40416	40417	40418	40419
JEL 1	4P	6	20.0	1 / 30	40492	40493	40494	40495
JEL 1	4P	6	25.0	1 / 30	40421	40422	40423	40424
JEL 1	4P	6	32.0	1 / 30	40431	40432	40433	40434
JEL 1	4P	6	40.0	1 / 30	40441	40442	40443	40444
JEL 1	4P	6	63.0	1 / 30	40461	40462	40463	40464
JEL 1	4P	6	80.0	1 / 30	40481	40482	40483	40484
JEL 1	4P	6	100.0	1 / 30	40491	40496	40497	40498

Residual current devices

Documents corresponding to the product:

EN 61008-1
EN 61008-2; EN 60947-1



Type A for AC/DC current



Residual current protection type A - JEL 1A

7 YEAR WARRANTY
*for industrial usage, 3 years warranty

These are Residual Current Devices (RCDs) JEL 1A with enhanced sensibility and fast - operating protection devices applicable in circuits with harmonic or direct pulsating current component presence.

Functions:

- switching off electrical circuits on load at conductor insulation breaking to the consumer
- switching off electrical circuits on load at direct and indirect contact
- switching off electrical circuits on load at alternating earth fault currents during consequent light impact
- switching off consumers at harmonic presence due to luminescent lights
- switching off consumers in DC circuits at fault currents presence
- mechanical indicator for ON position

Technical data:

- Rated operating voltage: 230/400V; 50 Hz
- Rated current: according to the table
- Responsiveness: 30; 100; 300; 500mA
- Time delay until break: <0.1s at I_{Δn} and <0.04s at 2I_{Δn}
- Short circuit current wear resistance: 6000A
- Electrical wear resistance (number of cycles): ≥5000
- Mechanical wear resistance (number of cycles): ≥10000
- IP code: IP>20

Connecting:

- power supply busbar (only for bipolar)
- flexible or rigid conductors with corresponding section

Mounting:

- on DIN-rail
- mounting position: vertical

Residual current devices JEL 1A, 6kA - Type A - alternating and pulsating direct fault currents sensible Impulse with-stand voltage 2000VAC/ 400VDC

Type	Number of poles	Breaking capacity (kA)	Rated current I _n (A)	Packing/Box (pcs)	Catalogue number Leakage current I _{Δn} (mA)			
					30	100	300	500
JEL 1A	2P	6	10.0	1 / 60	40510	40512	40513	40514
JEL 1A	2P	6	16.0	1 / 60	40516	40517	40518	40519
JEL 1A	2P	6	20.0	1 / 60	40592	40593	40594	40595
JEL 1A	2P	6	25.0	1 / 60	40521	40522	40523	40524
JEL 1A	2P	6	32.0	1 / 60	40531	40532	40533	40534
JEL 1A	2P	6	40.0	1 / 60	40541	40542	40543	40544
JEL 1A	2P	6	63.0	1 / 60	40561	40562	40563	40564
JEL 1A	2P	6	80.0	1 / 60	40581	40582	40583	40584
JEL 1A	2P	6	100.0	1 / 60	40591	40596	40597	40598

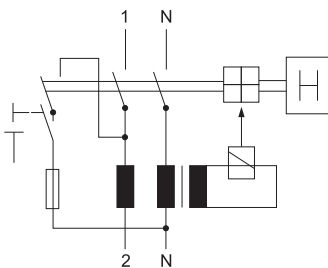
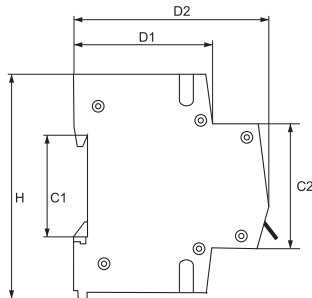
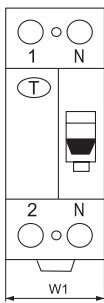
Type	Number of poles	Breaking capacity (kA)	Rated current I _n (A)	Packing/Box (pcs)	Catalogue number Leakage current I _{Δn} (mA)			
					30	100	300	500
JEL 1A	4P	6	10.0	1 / 30	40610	40612	40613	40614
JEL 1A	4P	6	16.0	1 / 30	40616	40617	40618	40619
JEL 1A	4P	6	20.0	1 / 30	40692	40693	40694	40695
JEL 1A	4P	6	25.0	1 / 30	40621	40622	40623	40624
JEL 1A	4P	6	32.0	1 / 30	40631	40632	40633	40634
JEL 1A	4P	6	40.0	1 / 30	40641	40642	40643	40644
JEL 1A	4P	6	63.0	1 / 30	40661	40662	40663	40664
JEL 1A	4P	6	80.0	1 / 30	40681	40682	40683	40684
JEL 1A	4P	6	100.0	1 / 30	40691	40696	40697	40698

Documents corresponding to the product:

EN 61 009-1; EN 61009-2;



Type AC for AC current



Combined circuit breakers with residual current devices(RCD)-JEL5

7 YEAR WARRANTY

*for industrial usage, 3 years warranty

Description of the operating system:

It is a combination of automatic circuit breaker and residual current electromagnetic device. It combines the properties of the two elements. The circuit breaker reacts at short circuit or overload in the protected circuit, and the electromagnetic residual current device - at failure in the conductors' insulation. It compares the magnitude of the currents through the neutral and phase conductors. The conductors are coiled on toroid and together with the secondary winding form a measurement transformer. The power conductors are coiled in such a way that the magnetic fields generated at electrical current flow through them are mutually neutralized. At failure in the insulation of some of the conductors or at presence of a person under voltage, the system is misbalanced and the magnetic fields can not be neutralized. This residual magnetic field generates in the secondary current winding, called current leakage. When the value of this current exceeds the limit value of the residual current breaker the device breaks and the residual current device switches off from the power supply grid. The device operates without any extra power supply to the electromagnetic residual current and is not influenced by voltage varying or decreasing.

Functions:

- switching off heavy-loaded electrical circuits at short circuit or overload
- switching off heavy-loaded electrical circuits at insulation damage of the conductors to the consumers
- switching off heavy-loaded electrical circuits at presence of a person and animals under voltage
- used to protect not only particular consumers/ circuits, but also the whole panel
- remarkable with high reliability of current characteristics
- control: manual switching on and automatic switching off at failure in the insulation after the breaker

Dimensions (mm)

W1	H	C1	C2	D1	D2
35	81	35	45	50	72

Technical data:

- Rated operating voltage: 230V 50 Hz
- Circuit breaker rated current: according to the table
- Residual current responsiveness: 30; 100; 300; 500mA
- Time delay until break:
 - of the residual current device: <0.1s at I Δ n and <0.04s at 2I Δ n
 - of the circuit breaker: <0.1s
- Circuit breaker tripping curve: C
- Surge voltage wear resistance: ≥2000V
- Breaking capacity: 10000
- Joining terminal: flat (tunnel) screw terminal made of 1.5 coldly draw-plated plane Q235A
- Type of the plastic:
 - material: self-extinguishing nylon PA66
 - dielectrical strength: >18MV/m
- Contact head: silver graphite CAg(5)
- Static contact: pure copper T2Y2 type
- Electrical wear resistance (number of cycles): ≥5000
- Mechanical wear resistance (number of cycles): ≥10000
- IP code: IP>20
- Indication for operating (switched on) position
- Breakers plastic material of UV rays and non-flammable
- Ambient temperature: -10°C + 65°C
- Installation altitude: up to 2000m

Connecting:

- flexible or rigid conductors with corresponding section

Mounting:

- on DIN-rail
- mounting position: vertical

The residual current device is mounted in the distribution box, and after the device the neutral conductor and the earthing conductor must not be connected together. In order to work accurately, the device must have three- or five-conductor grid with separate operating neutral conductor (N) and separate protecting conductor (PE) (e.g. earthing system TN-S or TT with three or five conductors).

Combined electromagnetic residual current device and circuit breaker 2P 6kA

Type designation	Number of poles	Breaking capacity (kA)	Rated current (A)	Packing / Box (pcs)	Catalogue number Leakage current I Δ n (mA)			
					30	100	300	500
JEL5	2	6	10	7 / 60	40010	40011	40013	40015
JEL5	2	6	16	7 / 60	40016	40017	40018	40019
JEL5	2	6	25	7 / 60	40025	40021	40023	40026
JEL5	2	6	32	7 / 60	40032	40031	40033	40035
JEL5	2	6	40	7 / 60	40040	40041	40043	40045

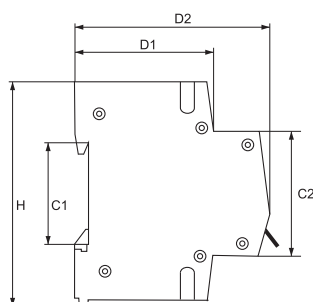
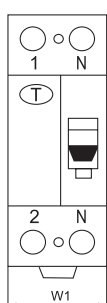


Combined residual current devices

Documents corresponding to the product:
EN 61 009-1; EN 61009-2;



Type AC for AC current



Combined circuit breakers with electronic residual current devices

7 YEAR WARRANTY
*for industrial usage, 3 years warranty

Description of the operating system:

It is a combination of automatic circuit breaker and residual current electromagnetic device. It combines part of the properties of the two elements. The circuit breaker reacts at short circuit in the protected circuit, and the electromagnetic residual current device - at failure in the conductors' insulation. It compares the rate of the currents through the conductors in an electronic comparator. The residual current device operates normally at voltage feed. The voltage is needed for the comparator's energizing – a semi-conductor element with constantly set leakage current rate. This rate is compared with the actual rate. When the margin of the comparison is neutral, the residual current device does not operate, but at failure in the protected circuit insulation when it exceeds the set margin it operates and switches off the protection. For the normal operation of the residual current device, the power supplying circuit voltage must be over 170V and there must be no time variation.

Functions:

- switching off heavy-loaded electrical circuits at short circuit or overload
- switching off heavy-loaded electrical circuits at insulation damage of the conductors to the consumers
- switching off heavy-loaded electrical circuits at presence of a person under voltage
- used to protect not only particular consumers/ circuits, but also the whole panel
- remarkable with high reliability of current characteristics
- control: manual switching on and automatic switching off at exit failure

Dimensions (mm)

W1	H	C1	C2	D1	D2
35	81	35	45	50	72

Technical data:

- Rated operating voltage: 230/400V 50 Hz
- Circuit breaker rated current: according to the table
- Residual current responsiveness: 30; 100; 300; 500mA
- Time delay until break:
 - of the residual current device: <0.1s at I Δ n and <0.04s at 2I Δ n
 - of the circuit breaker: <0.1s
- Circuit breaker tripping curve: C
- Surge voltage wear resistance: ≥2000V
- Breaking capacity: 4500A; 6000A
- Joining terminal: flat (tunnel) screw terminal
- Electrical wear resistance (number of cycles): ≥500
- Mechanical wear resistance (number of cycles): ≥2000
- IP code: IP>20
- Indication for operating (switched on) position

Connecting:

- power supply busbar (for two- or three polar)
- flexible or rigid conductors with corresponding section

Mounting:

- on DIN-rail
- mounting position: vertical
- Breakers plastic material of UV rays and non-flammable
- Ambient temperature: -10°C + 65°C
- Installation altitude: up to 2000m

The residual current device is mounted in the distribution box, and after the device the neutral conductor and the earthing conductor must not be connected together. In order to work accurately, the device must have separate conductors for operational neutral conductor (N) and protective conductor (e.g. earthing system TN-S or TT with three or five conductors).

Combined electronic residual current device with circuit breaker 2P, 10kA

Type designation	Number of poles	Breaking capacity (kA)	Rated current (A)	"Packing/Box (pcs)"	Leakage current I Δ n (mA)	Catalogue number
JEL 3 C6	2P	10	6	5/100	30	40906
JEL 3 C10	2P	10	10	5/100	30	40910
JEL 3 C16	2P	10	16	5/100	30	40916
JEL 3 C20	2P	10	20	5/100	30	40920
JEL 3 C25	2P	10	25	5/100	30	40925
JEL 3 C32	2P	10	32	5/100	30	40932
JEL 3 C40	2P	10	40	5/100	30	40940

Combined electronic residual current device with circuit breaker 2P, 6kA

Type designation	Number of poles	Breaking capacity (kA)	Rated current (A)	Packing / Box (pcs)	Catalogue number Leakage current I Δ n (mA)			
					30	100	300	500
JEL 4 C10	2	6	10	1 / 60	40211E	40207E	40208E	40209E
JEL 4 C16	2	6	16	1 / 60	40215E	40245E	40235E	40237E
JEL 4 C20	2	6	20	1 / 60	40225E	40229E	40230E	40238E
JEL 4 C25	2	6	25	1 / 60	40240E	40204E	40246E	40268E
JEL 4 C32	2	6	32	1 / 60	40265E	40260E	40236E	40269E
JEL 4 C40	2	6	40	1 / 60	40274E	40270E	40273E	40275E

Combined circuit breakers with electronic residual current devices-JEL6

7 YEAR
WARRANTY

 *for industrial
usage, 3 years
warranty

Combined electronic residual current device 1P + N

Compares the leakage current between the phase and neutral conductors.



Type AC for AC current

Type designation	Number of poles	Breaking capacity (kA)	Rated current (A)	Packing / Box (pcs)	Catalogue number Leakage current I _{Δn} (mA)			
					30	100	300	500
JEL 6 C10	1P+N	6	10	12 / 240	40110	40111	40113	40114
JEL 6 C16	1P+N	6	16	12 / 240	40116	40117	40118	40119
JEL 6 C25	1P+N	6	25	12 / 240	40125	40121	40123	40126
JEL 6 C40	1P+N	6	40	12 / 240	40140	40141	40133	40145
JEL 6 C50	1P+N	6	50	12 / 240	40163	40161	40136	40165

Combined electronic residual current device 2P

Compares the leakage current between the phase and neutral conductors or between two phases.



Type designation	Number of poles	Breaking capacity (kA)	Rated current (A)	Packing / Box (pcs)	Catalogue number Leakage current I _{Δn} (mA)			
					30	100	300	500
JEL 6 C10	2P	6	10	6 / 120	40211	40207	40208	40209
JEL 6 C16	2P	6	16	6 / 120	40215	40245	40235	40237
JEL 6 C25	2P	6	25	6 / 120	40225	40229	40230	40238
JEL 6 C40	2P	6	40	6 / 120	40240	40204	40246	40268
JEL 6 C50	2P	6	50	6 / 120	40265	40260	40236	40269

Combined electronic residual current device 3P

Compares the leakage current between the phases.



Type designation	Number of poles	Breaking capacity (kA)	Rated current (A)	Packing / Box (pcs)	Catalogue number Leakage current I _{Δn} (mA)			
					30	100	300	500
JEL 6 C10	3P	6	10	3 / 60	40310	40311	40313	40314
JEL 6 C16	3P	6	16	3 / 60	40316	40317	40318	40319
JEL 6 C25	3P	6	25	3 / 60	40325	40321	40323	40324
JEL 6 C40	3P	6	40	3 / 60	40340	40341	40343	40344
JEL 6 C50	3P	6	50	3 / 60	40363	40361	40336	40365

Combined electronic residual current device 3P+N

Compares the leakage current between the three phases and neutral conductors.



Type designation	Number of poles	Breaking capacity (kA)	Rated current (A)	Packing / Box (pcs)	Catalogue number Leakage current I _{Δn} (mA)			
					30	100	300	500
JEL 6 C10	3P+N	6	10	2 / 40	40411	40407	40408	40409
JEL 6 C16	3P+N	6	16	2 / 40	40415	40445	40439	40438
JEL 6 C25	3P+N	6	25	2 / 40	40425	40420	40428	40429
JEL 6 C40	3P+N	6	40	2 / 40	40440	40404	40447	40446
JEL 6 C50	3P+N	6	50	2 / 40	40465	40401	40436	40469

Surge arresters

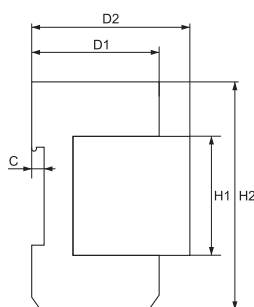
Documents corresponding to the product:

Standard EN61 643-1

The breakers are in accordance with the directives of EC "Low voltage directives (LVD) no. 2006/95/EC and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC.



Type AC for AC current



Dimensions (mm)

C	H1	H2	D1	D2
5	90	45	43,5	58

Surge arresters SPD type

7 YEAR WARRANTY *for industrial usage, 3 years warranty

The surge arrester consists of a semi-conductor valve element that opens at certain conditions. At normal conditions of the system, the surge arrester has infinitely high resistance between the protected conductors and earthing circuit. At voltage increase due to atmospheric nature or system failure, the valve element opens and leads the excessive voltage to the grounded circuit.

After reversion of the normal voltage the valve element closes. The arrester can endure high momentary overloading.

Functions:

- protection of heavy-loaded electrical circuits from overload
- used to protect not only particular consumers/ circuits, but also the whole panel
- remarkable with high reliability of current characteristics
- control: automatic switching off at exit failure and recovery after eliminating the danger

Technical data:

- Rated operating voltage U_c : - the operating voltage of the surge arrester 275/440V; 50Hz
- Surge voltage U_p : the voltage created in surge arrester terminals at rated discharge current running: according to the tables

- Rated discharge current I_n – the rated value of discharge current with a sinusoid 8/20 μ s, which can be repeatedly led to the ground: according to the tables
- Full discharge current I_{max} – the peak value of the discharge current with a sinusoid 8/20 μ s, which the surge arrester can bear once: according to the table
- Constant operating current: up to 800 μ A for 1P, 2P and 3P; up to 600 μ A for 1P + N, 3P + N
- Indication for damaged surge arrester
- Offered in types: 1P; 1P + N; 3P; 3P + N

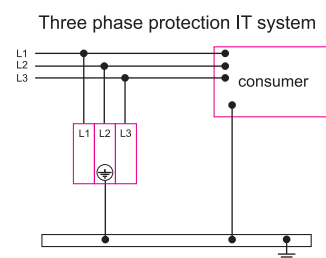
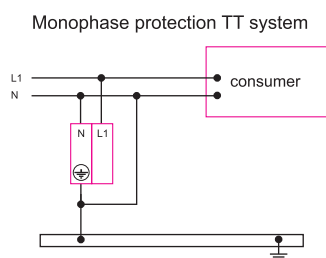
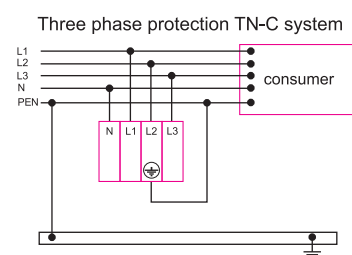
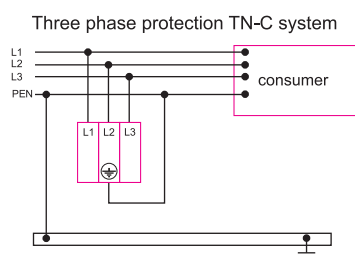
Connecting:

- flexible or rigid conductors with corresponding section

Mounting:

- on DIN-rail
- mounting position: vertical
- mounting in the distribution box on the front or right before the breaker according to the attached schemes
- Breakers plastic material of UV rays and non-flammable
- Ambient temperature: -10°C + 65°C
- Installation altitude: up to 2000m

COLOUR CODE for all types 5kA - yellow; white – 10kA; green – 20 kA and red 40kA



The surge arrester selection is made according to the overload risk level or atmosphere activity, named B, C or D (from high to low risk level).

The company offers the following models of arresters:

Model SPD – Bxxx – for systems with exceptionally high risk level. Mounted mainly in the beginning of the installation or in the main panel.

Model SPD – Cxxx – for systems with high or average risk level. Mounted in the beginning of the installation or before the breaker.

Model SPD – Dxxx – for systems with low risk level. Suitable for secondary protection of consumers in combination with SPD – Bxxx/SPD – Cxxx

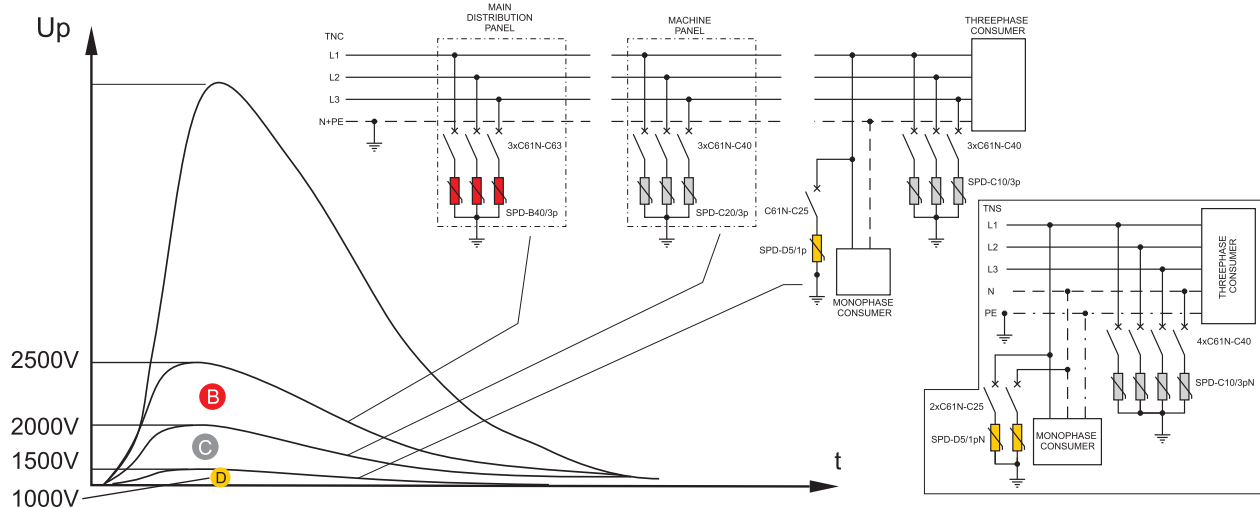


Type of the arrester	In (kA)	Imax (kA)	Uc (V)	Up (kV)	Packing/Box (pcs)	Catalogue number
SPD-D5/1p	5	10	275	1.2	17 / 170	64101
SPD-C10/1p	10	20	275	1.2	17 / 170	64102
SPD-C20/1p	20	40	275	1.8	17 / 170	64103
SPD-B40/1p	40	60	275	2	17 / 170	64104

Type of the arrester	In (kA)	I _{max} (kA)	U _c (V)	U _p (kV)	Packing/Box (pcs)	Catalogue number
SPD-D5/1pN	5	10	275	1.2	8 / 80	64201
SPD-C10/1pN	10	20	275	1.2	8 / 80	64202
SPD-C20/1pN	20	40	275	1.8	8 / 80	64203
SPD-B40/1pN	40	60	275	2	8 / 80	64204

Type of the arrester	In (kA)	I _{max} (kA)	U _c (V)	U _p (kV)	Packing/Box (pcs)	Catalogue number
SPD-D5/3p	5	10	440	1.2	5 / 50	64301
SPD-C10/3p	10	20	440	1.2	5 / 50	64302
SPD-C20/3p	20	40	440	1.8	5 / 50	64303
SPD-B40/3p	40	60	440	2	5 / 50	64304

Type of the arrester	In (kA)	I _{max} (kA)	U _c (V)	U _p (kV)	Packing/Box (pcs)	Catalogue number
SPD-D5/3pN	5	10	440	1.2	4 / 40	64401
SPD-C10/3pN	10	20	440	1.2	4 / 40	64402
SPD-C20/3pN	20	40	440	1.8	4 / 40	64403
SPD-B40/3pN	40	60	440	2	4 / 40	64404



Combined surge arresters AC – DC

7 YEAR WARRANTY *for industrial usage, 3 years warranty

Specially designed surge arresters providing protection of solar and photo - voltaic systems; designed to protect system against overvoltages resulting from indirect light impact. They could be installed in earthed and non - earthed systems. They break photo - voltaic generator electric circuit when voltage reaches or over passes limit threshold value, providing photo - voltaic protection against destroying.

COLOUR CODE for all types 5kA - yellow; white – 10kA; green – 20 kA and red 30kA



Type AC for AC/DC current

Type of the arrester	In (kA)	I _{max} (kA)	U _c (V)	U _p (kV)	Packing/Box (pcs)	Catalogue number
SPD-DC-D5/1p	5	10	275 AC/440 DC	≤ 1.2	17 / 170	64105
SPD-DC-C10/1p	10	20	275 AC/440 DC	≤ 1.5	17 / 170	64106
SPD-DC-C20/1p	20	40	275 AC/440 DC	≤ 1.8	17 / 170	64107
SPD-DC-B40/1p	30	60	275 AC/440 DC	≤ 2.2	17 / 170	64108



Type of the arrester	In (kA)	I _{max} (kA)	U _c (V)	U _p (kV)	Packing/Box (pcs)	Catalogue number
SPD-DC-D5/1pN	5	10	275 AC/440 DC	≤ 1.2	8 / 80	64205
SPD-DC-C10/1pN	10	20	275 AC/440 DC	≤ 1.5	8 / 80	64206
SPD-DC-C20/1pN	20	40	275 AC/440 DC	≤ 1.8	8 / 80	64207
SPD-DC-B40/1pN	30	60	275 AC/440 DC	≤ 2.2	8 / 80	64208



Type of the arrester	In (kA)	I _{max} (kA)	U _c (V)	U _p (kV)	Packing/Box (pcs)	Catalogue number
SPD-DC-D5/3p	5	10	385 AC/500 DC	≤ 1.2	5 / 50	64305
SPD-DC-C10/3p	10	20	385 AC/500 DC	≤ 1.5	5 / 50	64306
SPD-DC-C20/3p	20	40	385 AC/500 DC	≤ 1.8	5 / 50	64307
SPD-DC-B40/3p	30	60	385 AC/500 DC	≤ 2.2	5 / 50	64308



Type of the arrester	In (kA)	I _{max} (kA)	U _c (V)	U _p (kV)	Packing/Box (pcs)	Catalogue number
SPD-DC-D5/3pN	5	10	385 AC/500 DC	≤ 1.2	4 / 40	64405
SPD-DC-C10/3pN	10	20	385 AC/500 DC	≤ 1.5	4 / 40	64406
SPD-DC-C20/3pN	20	40	385 AC/500 DC	≤ 1.8	4 / 40	64407
SPD-DC-B40/3pN	30	60	385 AC/500 DC	≤ 2.2	4 / 40	64408



CONTACTORS

CONTACTORS

ELMARK®

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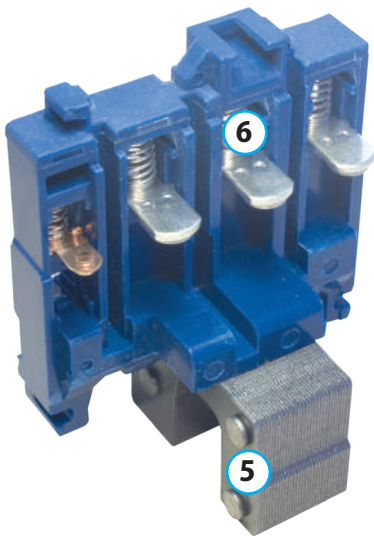
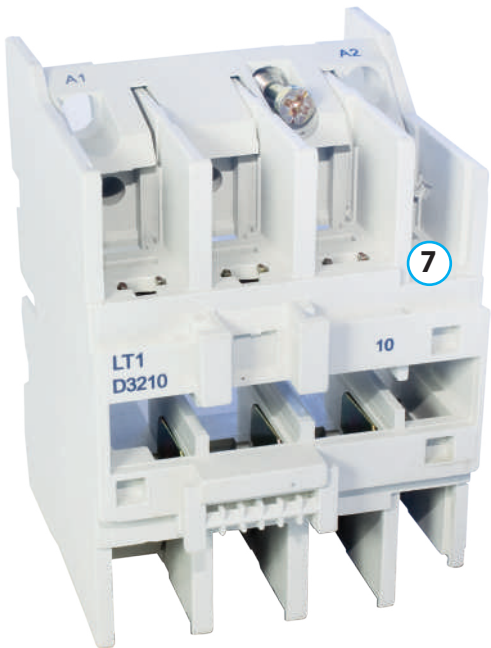
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- BASE 1
- STATIC MAGNETIC CORE 2
- COIL 3
- REVERSE SPRING 4
- MOVABLE MAGNETIC CORE 5
- MOVABLE CONTACTS 6
- LID 7
- STATIC CONTACTS 8
- AUXILIARY CONTACT 9
- SCREWS 10
- TERMINAL PROTECTION CAPS 11



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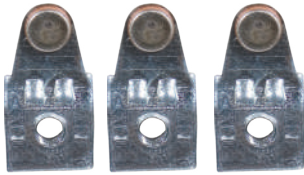
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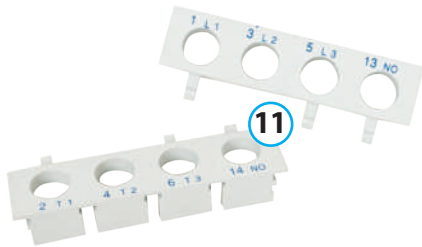
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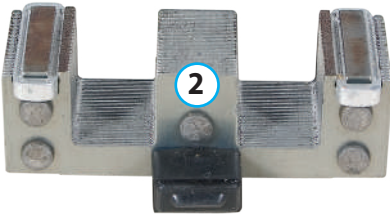
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3



1



2

Low voltage contactors LT1-D/K

Documents corresponding to the product:

Standard EN 60947-1; EN 60 947-4-1
The products are in accordance with the directives of EC "Low voltage directives (LVD) no. 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC".



Documents corresponding to the product:

Standard EN 60947-1; EN 60 947-4-1
The products are in accordance with the directives of EC "Low voltage directives (LVD) no. 73/23 EEC" and "Electromagnetic Compatibility Directives (EMC) no. 89/336 EEC".



Low voltage contactors LT1-D/K

5 YEAR WARRANTY
*for industrial usage, 3 years warranty

LT 1 D contactors are alternating current contactors for control of circuits and consumers operating in class AC3. It is suitable for consumers with rated current up to 95A. The contactors are offered in a type with 1 NO contact for operating circuit making and the models over 40A also have 1NC operating contactor.

Functions:

- switching on/off heavy-loaded electrical circuits at controlling signal to the coil
- making of control systems
- used as an operating element in process control panels
- remarkable with high reliability of current characteristics
- reliable separation of power contactors
- secured cover of the movable part of the contactor

Technical data:

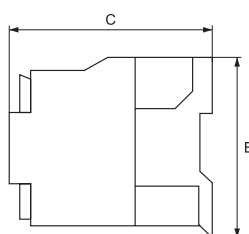
- Operation class: utilization category AC-3
- Rated operating voltage of power contactors: up to 690V; 50/60Hz
- Composition of the power contact surfaces: unalloyed copper with coating 80% AgSnO
- Surge voltage wear resistance: >8000V
- Rated voltage of the coil: from 12 to 400V AC
- Coil material: pure copper type QA-1
- Magnetic core material: alloy steel type 360

- Moveable part material: Bakelite
- Limits of the controlling coil voltage: operating range of coil
- Joining terminal: screw terminal
- Connecting:
 - flexible conductors with or without cable terminal
 - rigid conductors
- Electrical wear resistance (number of cycles): ≥1000000
- Mechanical wear resistance (number of cycles): ≥10000000
- Number of cycles per hour: 1200 UP TO 32A; 600 for 40-95A
- Pole leaking power: up to 13W

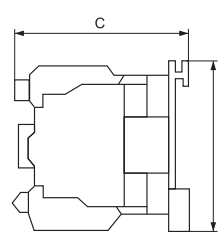
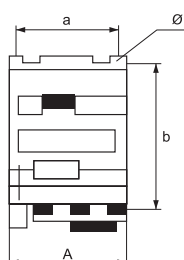
Mounting:

- on DIN-rail
- with bolts to the surface
- mounting position: vertical gradient – maximum ± 5°
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Ambient temperature: -10°C + 65°C
- Altitude: up to 2000m

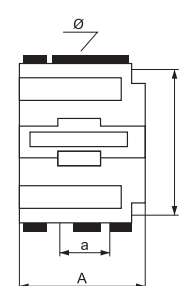
Type	Overall dimensions (mm)					
	a	b	Ø	A	B	C
LT1-HK 06~12/LT-1K	34/35	45	4.5	45	50	50
LT-D 09~12	34/35	50/60	4.5	47	70	82
LT1 D18	34/35	50/60	4.5	47	70	87
LT1 D25	40	48	4.5	57	80	95
LT1 D32	40	48	4.5	57	80	100
LT-D 40~65	40	100/110	6.5	77	126	116
LT-D 80~95	40	100/110	6.5	87	126	127



LT1-D 09~32
LT1 - K



LT-D 95~40

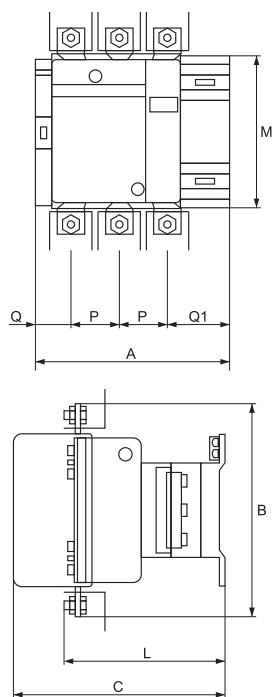


Type number	Rated capacity (kW)				Power consumption of coil (VA)			Rated current in AC-3 440V to up	Tightening moment (N.m)	Section of the power supply conductor	Packing/Box (pcs)	Catalogue number according to the coil voltage (V)						
	220V 230V	380V 400V	415V	440V	660V 690V	closed inrush	open hold					230V	400V	12V	24V	36V	48V	110V
LT 1 - K 0610 1NO	1.5	2.2	2.2	2.2	3	7	60	6A	1.7	0.75-2.5	1 / 100	23061E	23062E	23063E	23064E	23065E	23066E	23067E
LT 1 - K 0910 1NO	2.2	3.7	3.7	3.7	4	7	60	9A	1.7	0.75-2.5	1 / 100	23091E	23092E	23093E	23094E	23095E	23096E	23097E
LT 1 - K 1210 1NO	3	4	4	4	5	7	60	12A	1.7	0.75-2.5	1 / 100	23121E	23122E	23123E	23124E	23125E	23126E	23127E
LT1 - D0910 1NO	2.2	4	4	4	5.5	7	60	9A	1.7	1-4	1 / 50	23091	23092	23093	23094	23095	23096	23097
LT1 - D0901 1NC	2.2	4	4	4	5.5	7	60	9A	1.7	1-4	1 / 50	23273	23270	23271	23272	23277	23278	23279
LT1 - D1210 1NO	3	5.5	5.5	5.5	7.5	7	60	12A	1.7	1-4	1 / 50	23121	23122	23123	23124	23125	23126	23127
LT1 - D1201 1NC	3	5.5	5.5	5.5	7.5	7	60	12A	1.7	1-4	1 / 50	23274	23280	23281	23282	23283	23284	23285
LT1 - D1810 1NO	4	7.5	9	9	10	7	60	18A	1.7	1-4	1 / 50	23181	23182	23183	23184	23185	23186	23187
LT1 - D1801 1NC	4	7.5	9	9	10	7	60	18A	1.7	1-4	1 / 50	23275	23286	23287	23288	23289	23290	23291
LT1 - D2510 1NO	5.5	11	11	11	15	7.5	90	25A	2.5	2.5-10	1 / 50	23251	23252	23253	23254	23255	23256	23257
LT1 - D2501 1NC	5.5	11	11	11	15	7.5	90	25A	2.5	2.5-10	1 / 50	23276	23292	23293	23294	23295	23296	23297
LT1 - D3210 1NO	7.5	15	15	15	18.5	7.5	90	32A	2.5	2.5-10	1 / 50	23321	23322	23323	23324	23325	23326	23327
LT1 - D4011 1NO+1NC	11	18.5	22	22	30	20	200	40A	5	2.5-16	1 / 20	23401	23402	23403	23404	23405	23406	23407
LT1 - D5011 1NO+1NC	15	22	25	25	33	20	200	50A	5	6-25	1 / 20	23501	23502	23503	23504	23505	23506	23507
LT1 - D6511 1NO+1NC	18.5	30	37	37	37	20	200	65A	5	6-25	1 / 20	23651	23652	23653	23654	23655	23656	23657
LT1 - D8011 1NO+1NC	22	37	45	45	45	20	200	80A	9	10-50	1 / 15	23801	23802	23803	23804	23805	23806	23807
LT1 - D9511 1NO+1NC	25	45	45	45	45	20	200	95A	9	10-50	1 / 15	23951	23952	23953	23954	23955	23956	23957

Low voltage contactors LT1-F

Documents corresponding to the product:

Standard EN 60947-1; EN 60 947-4-1
The products are in accordance with the directives of EC "Low voltage directives (LVD) no. 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC".



Low voltage contactors LT1-F

5 YEAR WARRANTY
*for industrial usage, 3 years warranty

The contactors LT 1 - F are alternating current contactors used to control circuits and consumers operating in normal working conditions with switching on / off the consumer and dirty working environment. They are suitable for consumers with electrical power consumption from 115A to 800A.

Functions:

- frequently switching on/off heavy-loaded electrical circuits at controlling signal to the coil
- making of systems for consumers' control
- used as an operating element in process control panels
- remarkable with high reliability of current characteristics
- reliable separation of power contactors
- secured cover of the movable part of the contactor

Technical data:

- Operation class: utilization category AC-3
- Rated operating voltage of power contactors: up to 1000V; 50/60Hz
- Composition of the power contact surfaces: unalloyed copper with coating 80% AgSnO
- Surge voltage wear resistance: >8000V
- Coil composition: pure coil copper QA-1 type
- Magnetic core composition: steel alloy 360
- Movable part composition: bakelite
- Limits of the controlling coil voltage: operating range of coil
- Joining terminal: screw terminal
- Connecting:
 - flexible conductors with or without cable terminal
 - rigid conductors
 - rail
- Electrical wear resistance (number of cycles): ≥10000000
- Mechanical wear resistance (number of cycles): ≥10000000
- Number of cycles (switching on) per hour: 200
- Pole leaking power: from 16 to 80W
- Mounting:
 - with bolts to the surface
 - mounting position: vertical gradient – maximum ± 10°C
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Ambient temperature: -10°C + 65°C
- Altitude: up to 2000m

Type	Overall dimensions (mm)							
	A	B	C	L	M	Q	Q1	P
LT 1 F150	163.5	170	171	107	150	26	57.5	40
LT 1 F225	168.5	197	181	113.5	172	21	51.5	48
LT 1 F265	201.5	203	181	141	178	39	66.5	48
LT 1 F400	213	206	219	145	182	43	74	48
LT 1 F630	309	304	255	155	264	60	89	80
LT 1 F800	309	304	255	155	264	60	89	80

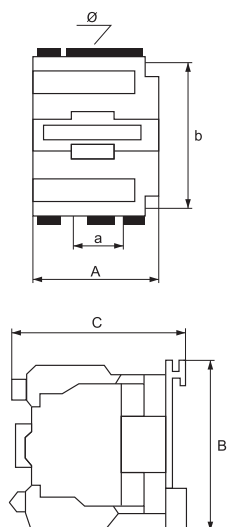
Type number	Motor rated capacity (kW)							Power consumption of coil (VA)		Rated current in AC-3 440V to up	Tightening moment (N.m)	Packing/ Box (pcs)	Catalogue number according to the coil voltage (V)							
	220V 230V	380V 400V	415V	440V	500V	660V 690V	1000V	closed	open				230V	400V	12V	24V	36V	48V	110V	
LT1 - F115	30	55	59	59	59	80	60	45	550	115 A	18	1 / 4	23111	23112	23113	23114	23115	23116	23117	
LT1 - F150	40	75	80	80	90	100	65	45	550	150 A	25	1 / 4	23151	23152	23153	23154	23155	23156	23157	
LT1 - F225	63	110	110	110	129	129	100	55	805	225 A	35	1 / 2	23861	23862	23863	23864	23865	23866	23867	
LT1 - F265	75	132	140	140	160	160	147	10	700	265 A	35	1 / 2	23261	23262	23263	23264	23265	23266	23267	
LT1 - F400	110	200	220	250	257	280	185	18	1000	400 A	50	1 / 1	23751	23752						
LT1 - F630	200	335	375	400	400	450	450	25	1500	630 A	50	1 / 1	23771	23772						
LT1 - F800	250	450	450	450	450	475	450	15	1300	800 A	50	1 / 1	23881	23882						

Note: At mounting the containers from the series in control schemes a distance must be provided at the side of the contactor in case of eventual coil change.

Documents corresponding to the product:

Standard EN60947-1; EN 60947-4-1

The products are in accordance with the directives of EC "Low voltage directives (LVD) no. 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC"



LP1-D 09~95

Low voltage contactors with direct current coil LP-1D**5 YEAR WARRANTY**

*for industrial usage, 3 years warranty

The contactors LP1 D are alternating current contactors with DC operating of coil for control. The power plugs of the contactor are designed for control of alternating current circuits and consumers operating in normal operating class AC-3 with frequently switching on/off the consumer and dirty working environment. The contactors are suitable for consumers with electrical power consumption from 9A to 225A.

Functions:

- switching on/off alternating current consumers in direct current controlling schemes at controlling signal to the coil
- making of systems for consumers' control
- used as an operating element in process control panels
- remarkable with high reliability of current characteristics
- reliable separation of power contacts
- secured cover of the movable part of the contactor

Technical data:

- Rated operating voltage of the coil: from 12V DC to 220V DC
- Rated operating voltage of the power circuit: up to 690V DC

- insulation voltage: 690V
- Surge voltage wear resistance: >8000V
- Limits of the controlling coil voltage: operating range of coil
- Joining terminal: screw terminal
- Connecting:
 - flexible conductors with or without cable terminal
 - rigid conductors
- Electrical wear resistance (number of cycles): ≥1000000
- Mechanical wear resistance (number of cycles): ≥1000000
- Number of cycles per hour: 1200 up to 32A; 600 for 40-95A
- Pole leaking power: up to 13W

Mounting:

- on DIN-rail
- with bolts to the surface
- mounting position: vertical gradient – maximum ± 5°
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Ambient temperature: -10°C + 65°C
- Altitude: up to 2000m

Type	Overall dimensions (mm)				
	A	B	C	a	b
LP 1 D0910	47	76	95	34/35	50/60
LP 1 D1210	47	76	95	34/35	50/60
LP 1 D1810	47	76	95	34/35	50
LP 1 D2510	57	86	101	40	50
LP 1 D3210	57	86	101	40	50
LP 1 D4011	77	129	176	40	100
LP 1 D5011	77	129	176	40	100
LP 1 D6511	77	129	176	40	100
LP 1 D9511	87	129	182	40	100
LP 1 F115	163.5	170	171	40	150
LP 1 F150	163.5	170	171	40	150
LP 1 F225	168.5	197	181	48	172

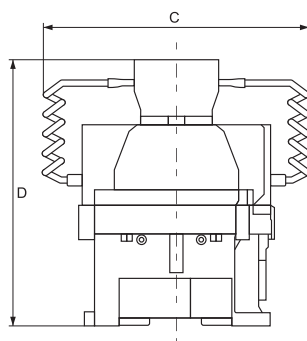
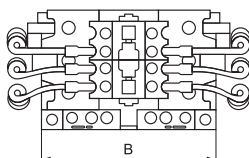
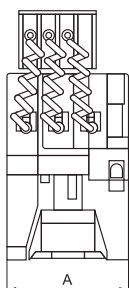
Type	Rated current (A)	Auxiliary contact (pcs.)	Rated capacity of the consumer (kW)						Pack- ing/Box (pcs)	Catalogue number according to the coil voltage (V DC)					
			230V	400V	415V	440V	690V	12V		24V	36V	48V	110V	230V	
LP 1 D0910	9	1NO	2.20	4.00	4.00	4.00	5.50	1/40	23962	23098	23130	23971	23980	23139	
LP 1 D1210	12	1NO	3.00	5.50	5.50	5.50	7.50	1/40	23963	23128	23131	23972	23981	23140	
LP 1 D1810	18	1NO	4.00	7.50	7.50	7.50	10.0	1/30	23964	23188	23132	23973	23982	23141	
LP 1 D2510	25	1NO	5.50	11.0	11.0	11.0	15.0	1/20	23925	23258	23133	23974	23983	23142	
LP 1 D3210	32	1NO	7.50	15.0	15.0	15.0	18.5	1/30	23966	23328	23134	23975	23984	23143	
LP 1 D4011	40	1NO+1NC	11.0	18.5	18.5	18.5	30.0	1/10	23967	23408	23135	23976	23985	23144	
LP 1 D5011	50	1NO+1NC	15.0	22.0	22.0	22.0	33.0	1/10	23968	23508	23136	23977	23986	23145	
LP 1 D6511	65	1NO+1NC	18.5	30.0	30.0	30.0	37.0	1/10	23969	23658	23137	23978	23987	23146	
LP 1 D9511	95	1NO+1NC	25.0	45.0	45.0	45.0	45.0	1/10	23970	23958	23138	23979	23988	23147	
LP 1 F115	115	1NO	30.0	55.0	59.0	59.0	80.0	1/4	23911	23118	23914	23917	23989	23148	
LP 1 F150	150	1NO	40.0	75.0	80.0	80.0	100	1/4	23912	23158	23915	23918	23990	23149	
LP 1 F225	225	1NO	63.0	110	110	110	129	1/2	23913	23228	23916	23919	23994	23201	

Low voltage contactors CJ19-43

Documents corresponding to the product:

Standard EN60947-1; EN 60947-4-1

The products are in accordance with the directives of EC "Low voltage directives (LVD) no. 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC"

**Low voltage contactors for switching on of capacitor banks CJ19-43****5 YEAR WARRANTY**

*for industrial usage, 3 years warranty

The AC contactors CJ19-43 are specially designed electrical devices for commutation of three phase capacitors used for power correction. They are alternating current contactor LT1 Dxx with mounted a group for peak current lowering from the transitional process of the capacitor's switching on/off. This group is a combination of current limiting resistors, switched on in the beginning of the transitional process (switching on/off of the capacitor group). The contactors are suitable for capacitors with rate up to 50 kVAr.

Functions:

- switching on/off of capacitor banks for reactive power compensation
- making of systems for compensation of the energy reactive component
- lowering of the peak transitional currents at switching on/off of the capacitor
- remarkable with high reliability of current characteristics
- reliable separation of power contacts
- secured part of the contactor against consumer contact
- do not allow manual operation

Technical data:

- Operation class: utilization category AC6b
- Rated operating voltage of the controlling coil: 230V AC; 50/60Hz

- Rated operating voltage of the power circuit: up to 690V AC
- insulation voltage: 690V
- Surge voltage wear resistance: >8000V
- Limits of the controlling coil voltage: from 0.8 to 1.15 Uc
- Number of the contacts: 3 NO power contacts +1NO operative
- Joining terminal: screw terminal
- Connecting:
 - flexible conductors with or without cable terminal
 - rigid conductors
- Electrical wear resistance (number of cycles): ≥300000
- Mechanical wear resistance (number of cycles): ≥1000000
- Number of cycles (switching on) per hour: up to 600
- Pole leaking power: up to 13W

Mounting:

- on DIN-rail or
- with bolts to the surface
- mounting position: vertical gradient – maximum ± 5°
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Ambient temperature: -10°C + 65°C
- Altitude: up to 2000m

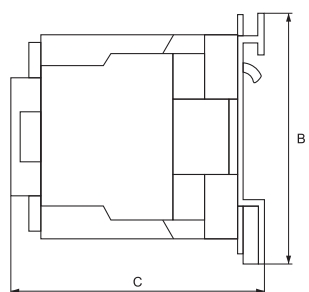
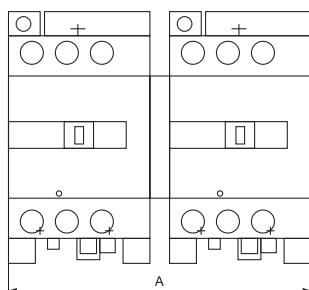
Type	Overall dimensions (mm)			
	A	B	C	D
CJ19-32 DPK	56	74	130	150
CJ19-40 DPK	75	127	180	150
CJ19-65 DPK	85	127	200	157
CJ19-95 DPK	85	127	200	157
CJ19-115DPK	122	165	230	157
CJ19-150DPK	122	165	230	157
CJ19-170DPK	122	165	230	157

Type	Rated current (A)	Rated capacity of the consumer (kVAr)		Coil voltage (V)	Packing/Box (pcs)	Catalogue number
		400/440V	690V			
CJ19-32 DPK	32	8	12.5	230	1/20	23932
CJ19-32 DPK	32	8	12.5	400	1/20	23910
CJ19-40 DPK	40	12.5	15	230	1/16	23900
CJ19-40 DPK	40	12.5	15	400	1/16	23940
CJ19-65 DPK	65	25	30	230	1/16	23961
CJ19-65 DPK	65	25	30	400	1/16	23965
CJ19-95 DPK	95	30	36	230	1/16	23909
CJ19-95 DPK	95	30	36	400	1/16	23995
CJ19-115 DPK	115	35	40	230	1/4	23991
CJ19-150 DPK	150	40	50	230	1/4	23992
CJ19-170 DPK	170	50	60	230	1/4	23993

Documents corresponding to the product:

Standard EN60947-1; EN 60947-4-1

The products are in accordance with the directives of EC "Low voltage directives (LVD) no. 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC"

**Reverse contactors LT4-Dxx**
5 YEAR WARRANTY *for industrial usage, 3 years warranty

LT 4-Dxx series contactors is suitable for across- the line starting and reversing of 3 phase squirrel cage and slip ring motors. It consist of two magnetic contactors LT1D. The contactor is provided whit a built-in interlock safety mechanism. The contactor is used for reverse control of induction motors with shortly rotor. The contactors from the series are offered for consumers up to 95A.

Functions:

- switching on of electrical motors in one direction of rotation and reversing of the rotation direction at outside command
- making of control systems
- remarkable with high reliability of current characteristics
- reliable switching on or separation of power contacts
- secured part of the contactors against consumer contact
- secured cover of the movable part of the contactor
- impossibility for simultaneous switching on of the two contactors from the group due to mechanical locking

Technical data:

- Operation class: AC 3
- Rated operating voltage of the controlling coil: 230V AC; 50/60 Hz
- Rated operating voltage of the power circuit: up to 690V AC
- insulation voltage: 690V

- Surge voltage wear resistance: >8000V
- Limits of the controlling coil voltage: from 0.8 to 1.15 Uc
- Number of plugs: 3 NO power contacts +1NO operative (for contactors over 40A there is also additional 1NC contact)
- Joining terminal: screw terminal
- Connecting:
 - flexible conductors with or without cable terminal
 - rigid conductors

Note: The contactors are offered without factory cabling

- Electrical wear resistance (number of cycles): $\geq 1\,000\,000$
- Mechanical wear resistance (number of cycles): $\geq 10\,000\,000$
- Number of cycles (switching on) per hour: up to 600
- Pole leaking power: up to 13W

Mounting:

- on DIN-rail or
- with bolts to the surface
- mounting position: vertical gradient – maximum $\pm 5^\circ$
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Ambient temperature: $-10^\circ\text{C} + 65^\circ\text{C}$
- Altitude: up to 2000m

Type	Overall dimensions (mm)		
	A	B	C
LT 4 - D1810	100	70	83
LT 4 - D2510	130	80	98
LT 4 - D3210	130	80	105
LT 4 - D4011	167	126	116
LT 4 - D6511	167	126	116
LT 4 - D9511	182	127	127

Type	Rated current (A)	Rated capacity of the consumer (kW)					Packing/ Box (pcs)	Catalogue number
		230V	400V	415V	440V	690V		
LT 4 D1810	18	4	7.5	7.5	7.5	10	1 / 20	23301
LT 4 D2510	25	5.5	11	11	11	15	1 / 20	23302
LT 4 D3210	32	7.5	15	15	15	18.5	1 / 20	23303
LT 4 D4011	40	11	18.5	18.5	18.5	30	1 / 8	23304
LT 4 D6511	65	18.5	30	30	30	37	1 / 8	23305
LT 4 D9511	95	25	45	45	45	45	1 / 6	23306

Auxiliary contact blocks

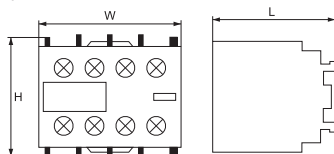
Documents corresponding to the product:

Standard EN 60947-4-1

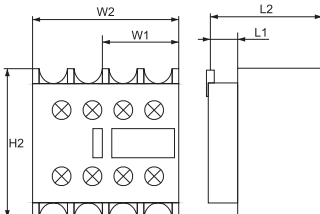
The products are in accordance with the directives of EC "Low voltage directives (LVD) no. 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC"



LT01-KNxx



LT01-DNxx



Dimensions (mm)

H	W	L	W1	W2
32	40	35	26	45
H2	L1	L2		
48	6,5	37		

Auxiliary contacts

5 YEAR WARRANTY *for industrial usage, 3 years warranty

Auxiliary contacts

At necessity the element provide auxiliary number of contacts. They are specially designed for mounting on the movable part of the magnetic core of the contactors LT 1K/D series.

Functions:

- extending the number of the operative contactors up to 4 in different
- Combinations
 - switches on simultaneously with the other contact system of the contactor
- Operation class: AC 3
- insulation voltage: 690V

- Joining terminal: screw terminal
- Connecting:
 - flexible conductors with or without cable terminal
 - rigid conductors

Mounting:

- on the movable cover of the contactor through pinching
- mounting position: vertical gradient – maximum $\pm 5^\circ$
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)

Type	Number of contacts	Rated current	Section of the conductor (mm ²)	Catalogue number
LT01-DN02	2NC	6A	0,5-1	23002
LT01-DN11	NO+NC	6A	0,5-1	23011
LT01-DN20	2NO	6A	0,5-1	23020
LT01-DN22	2NO+2NC	6A	0,5-1	23022
LT01-DN40	4NO	6A	0,5-1	23040
LT01-DN04	4NC	6A	0,5-1	23004
LT01-KN11	NO+NC	6A	0,5-1	23001
LT01-KN22	2NO+2NC	6A	0,5-1	23003



Auxiliary contacts LT03-DN11

5 YEAR WARRANTY *for industrial usage, 3 years warranty

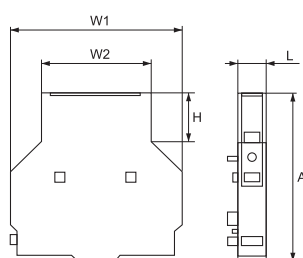
Providing on necessity additional number of plug points and are mounted sideward to the movable part of the magnetic cores of contactors of the series LT1 D. Variants with two additional plug points NO and NC are offered.

Functions:

- expanding the number of the operational plug points
- switching on simultaneously with the rest of the contact system
- of the contactor

Technical characteristics:

- Environment operational regime: AC 3
- Insulation voltage: 690V
- Double connector: screw connector
- Connection:
 - flexible conductors with or without cable end
 - solid conductors
- Mounting method:
 - mounting position – sideward to the contactor
- Plastic: resistant to UV and non-burning (self-extinguishing material)



Dimensions (mm)

W1	W2	H	L	A
73	48	22	12,5	72

Type	Rated current	Section of the conductor (mm ²)	Catalogue number
LT03-DN11	6A	0,5-1	23311

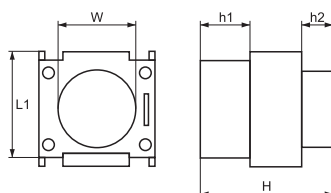


Time delay contact block LT02-Dxx

5 YEAR WARRANTY *for industrial usage, 3 years warranty

LT02-Dxx is designed to set time intervals from 0.1 to 180s in different control schemes. It is used most frequently in combination with contactors from LT1-Dxx series to form "star/delta" starters for electrical motor control, as it provides the necessary time for motor winding.

Type	Number of contacts	Time delay	Catalogue number
LT02-DT0	NO+NC	0.1~3s	23901
LT02-DT2	NO+NC	0.1~30s	23902
LT02-DT4	NO+NC	10~180s	23903



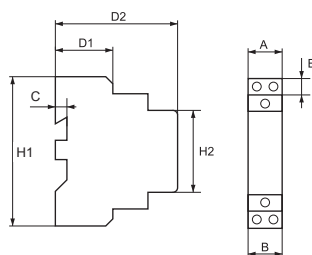
Dimensions (mm)

W	L1	h1	h2	H
33	48	22	14	59
W2				
45				

Documents corresponding to the product:

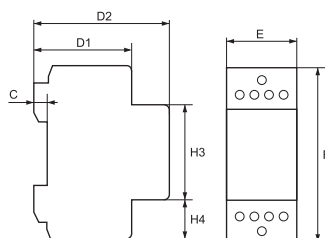
Standard EN 61095

The products are in accordance with the directives of EC "Low voltage directives (LVD) no. 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC"



Dimensions (mm)

H1	C	D1	D2	A	E
81	5	31	66	18	9



Dimensions (mm)

C	D1	D2	H3	H4
5	66	48	45	20
E	F			
35	85			

Module contactors K series

5 YEAR WARRANTY *for industrial usage, 3 years warranty

Modular contactors K series are used for commutation of mono-phase and three-phase low power electrical consumers. They provide connection between the consumers in small overall dimensions, silent work, mounting only at DIN-rails.

Functions:

- switching on of consumers
- making of control systems
- remarkable with high reliability of current characteristics
- reliable switching on or separation of power contacts

Technical data:

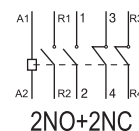
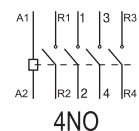
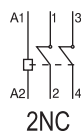
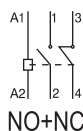
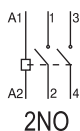
- Operation class: AC 7a
- Rated operating voltage of the controlling coil: 230V AC; 50/60 Hz

- Rated operating voltage of the power circuit: up to 690V AC
- insulation voltage: 690V
- Surge voltage wear resistance: >8000V
- Joining terminal: screw terminal
- Connecting:
 - flexible conductors with or without cable terminal
 - rigid conductors

Mounting:

- on DIN-rail or
- mounting position: vertical gradient – maximum $\pm 5^\circ$
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Ambient temperature: $-10^\circ\text{C} + 65^\circ\text{C}$
- Altitude: up to 2000m

Type	In	Coil voltage (V)	Contacts	Packing/Box (pcs)	Catalogue number
K20	20A	230V	2NO	1/12/120	23008
K20	20A	230V	NO+NC	1/12/120	23007
K20	20A	230V	2NC	1/12/120	23009
K20	25A	230V	NO+NC	1/12/100	23012
K20	25A	230V	2NO	1/12/100	23013
K20	25A	230V	2NC	1/10/100	23014
K20	40A	230V	NO+NC	1/6/60	23015
K20	40A	230V	2NO	1/6/60	23016
K20	40A	230V	2NC	1/6/60	23017
K40	25A	230V	2NO+2NC	1/6/60	23410
K40	25A	230V	3NO+1NC	1/6/60	23411
K40	25A	230V	4NO	1/6/60	23412
K40	25A	230V	4NC	1/6/60	23413
K40	40A	230V	2NO+2NC	1/4/40	23422
K40	40A	230V	3NO+1NC	1/4/40	23423
K40	40A	230V	4NO	1/4/40	23409
K40	40A	230V	4NC	1/4/40	23424
K40	63A	230V	2NO+2NC	1/4/40	23425
K40	63A	230V	3NO+1NC	1/4/40	23426
K40	63A	230V	4NO	1/4/40	23427
K40	63A	230V	4NC	1/4/40	23428

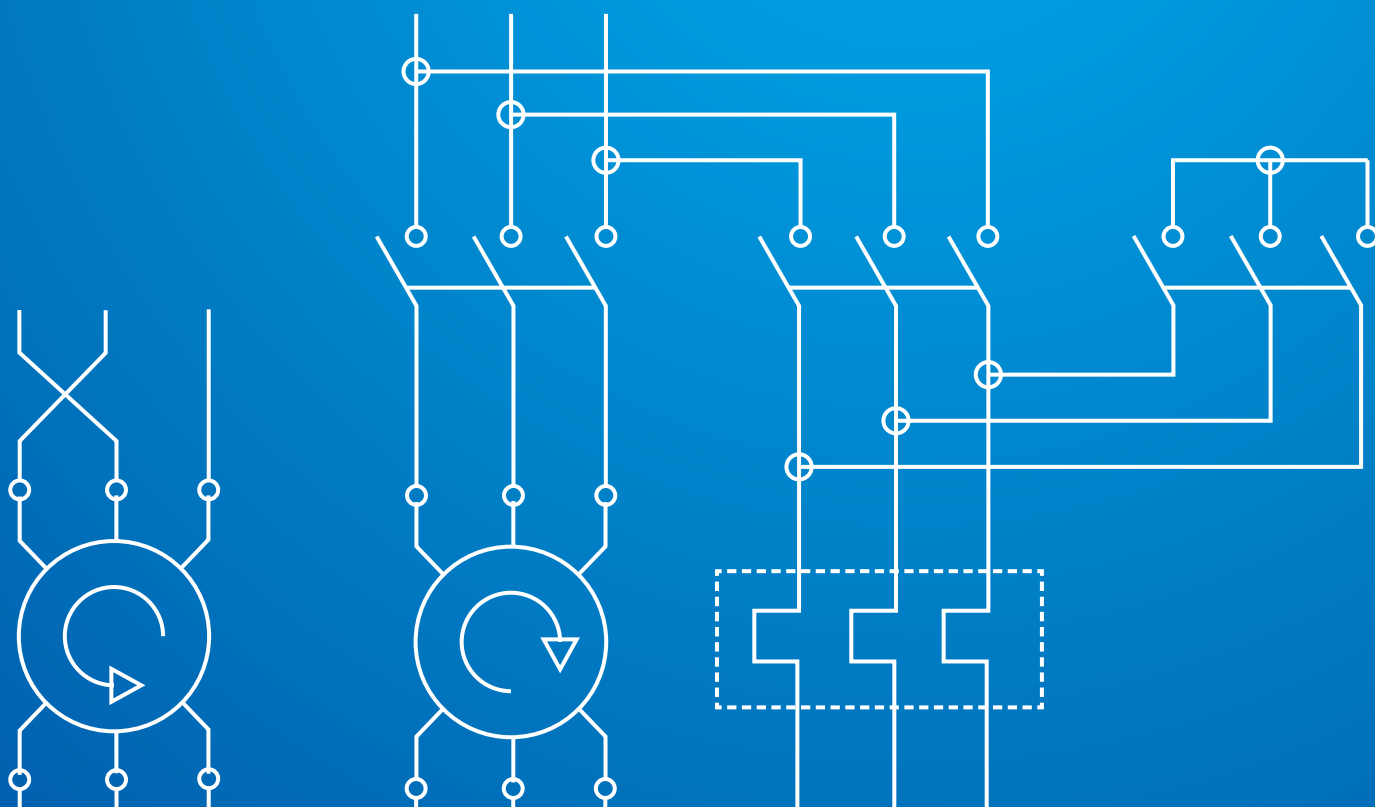




DEVICES FOR CONTROL AND PROTECTION OF ELECTRICAL MOTORS

DEVICES

FOR CONTROL AND PROTECTION
OF ELECTRICAL MOTORS



ELMARK®

Thermal relays | 76

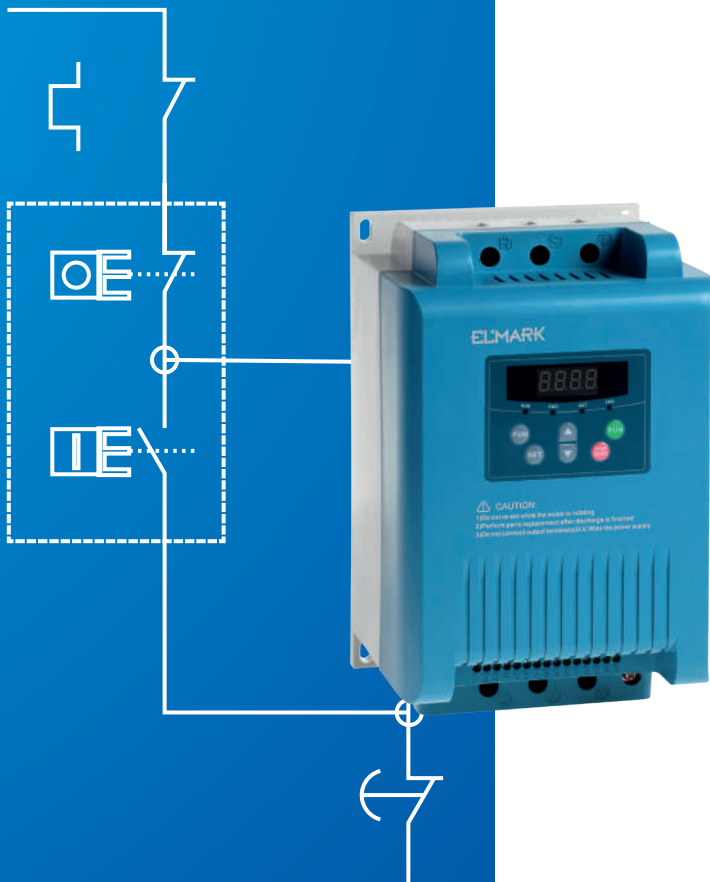
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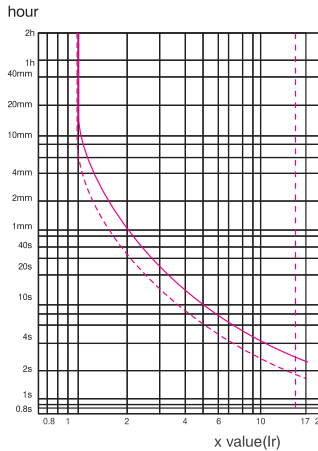
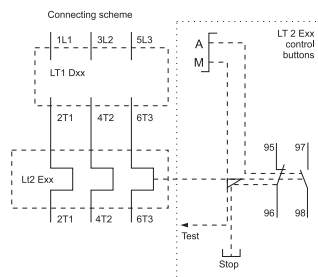
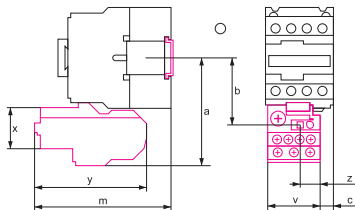
Soft starter | 87



Documents corresponding to the product:

Standard EN 60947-1
EN 60947-4-1

The products are in accordance with the directives of EC "Low voltage directives (LVD) no 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC".



Thermal overload relays

5 YEAR WARRANTY *for industrial usage, 3 years warranty

The thermal relays LT 2- K/Exx series are three pole relays designed for protection of induction motors from overload or overheat. They are mounted to contactors LT 1 K/Dxx series and an operating circuit for motor control is passed through their NC contacts. They have bimetallic releases /1 per phase/ through them the motors current flows and indirectly mated. The bimetallic releases bend subject to the influence of mating and this results in tripping of the relay. The contacts change switch position. The choice of a suitable protection prevents motor's operation at unusual temperature conditions and guarantees maximum constant operation, increases the effectiveness and prolongs the term of exploitation.

Functions:

- switching off alternating current consumers at current overload
- making of control systems for consumers
- used as a protective operating element in control panels of induction motors
- remarkable with high reliability of current characteristics

Technical data:

- Rated operating voltage: up to 690V AC; 50/60 Hz
- Rated operating current range: up to 690V AC
- insulation voltage: >690V
- Surge voltage wear resistance: ≥6000V
- Joining terminal: screw terminal
- temperature compensation: -25 +55
- tripping category: class 10A

- Connecting:
 - flexible or rigid conductors with or without cable terminal for joining to the consumer
 - to the contactor through the relay terminals
 - the connecting terminals with the consumer can be adjusted according to the type of the contactor
- Electrical wear resistance (number of cycles): ≥1000000
- Mechanical wear resistance (number of cycles): ≥10000000
- Indication for protection activating
- Possibility for choice of the protection restoring (through the blue button)
- Possibility for range adjustment of the protection activating
- Possibility for operation at higher frequency

Mounting:

- mounting to the contactor: to the terminals of the contactor as it is additionally clamped to its frame through a pin
- mounting position: vertical gradient – maximum ± 5°
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Ambient temperature: -10°C + 65°C
- Installation altitude: up to 2000m

Note: To protect the consumer from short circuit, before the combination contactor- thermal relay, a suitably measured breaker or safety device should be mounted.

Type	Dimensions (mm)							
	a	b	c	m	x	y	v	z
LT 2 - Kxx	81	50	0	98	47	92	44	17
LT 2 - E13xx	86	55	10.7	108	47	92	44	17
LT 2 - E23xx	86	55	9	109	47	92	44	17
LT 2 - E33xx	115	76	9.5	124	54	109	70	30

For contactor LT1-K06 type	Motor capacity (kW)			Rated current (A)	Protection adjustment range	Packing/Box (pcs)	Catalogue number
	220V 230V	380V 400V	660V 690V				
LT2-K0303	-	-	-	0.30	0.25 - 0.30	1 / 100	13403
LT2-K0306	-	0.37	1.10	1.20	0.80 - 1.20	1 / 100	13406
LT2-K0307	0.37	0.75	1.50	1.80	1.20 - 1.80	1 / 100	13407
LT2-K0308	0.75	1.10	2.20	2.60	1.80 - 2.60	1 / 100	13408
LT2-K0310	1.10	1.50	3.00	3.70	2.60 - 3.70	1 / 100	13410
LT2-K0312	1.10	2.20	4.00	5.50	3.70 - 5.50	1 / 100	13411
LT2-K0314	2.20	4.00	5.50	8.00	5.50 - 8.00	1 / 100	13412
LT2-K0316	3.00	5.00	7.50	11.5	8.00 - 11.5	1 / 100	13413

Thermal overload relays



For contactor LT1-D9 to LT1-D25 type	Motor capacity (kW)			Rated current (A)	Protection adjustment range	Packing/ Box (pcs)	Catalogue number
	220V 230V	380V 400V	660V 690V				
LT2-E1301	-	-	-	0.16	0.10 - 0.16	1 / 100	13001
LT2-E1302	-	-	-	0.25	0.16 - 0.25	1 / 100	13002
LT2-E1303	-	-	-	0.40	0.25 - 0.40	1 / 100	13003
LT2-E1304	-	-	0.37	0.63	0.40 - 0.63	1 / 100	13004
LT2-E1305	-	-	0.55	1.00	0.63 - 1.00	1 / 100	13005
LT2-E1306	-	0.37	1.10	1.60	1.0 - 1.60	1 / 100	13006
LT2-E1307	0.37	0.75	1.50	2.50	1.6 - 2.50	1 / 100	13007
LT2-E1308	0.75	1.50	3.00	4.00	2.5 - 4.00	1 / 100	13008
LT2-E1310	1.10	2.20	4.00	6.00	4.0 - 6.00	1 / 100	13010
LT2-E1312	2.00	3.70	5.50	8.00	5.5 - 8.00	1 / 100	13012
LT2-E1314	2.20	4.00	7.50	10.0	7.0 - 10.0	1 / 100	13014
LT2-E1316	3.70	5.50	11.0	13.0	9.0 - 13.0	1 / 100	13016
LT2-E1321	4.00	7.50	15.0	18.0	12.0 - 18.0	1 / 100	13021
LT2-E1322	5.50	9.00	18.5	25.0	17.0 - 25.0	1 / 100	13022
LT2-E1353	9.00	11.0	18.5	33.0	23.0 - 32.0	1 / 100	13053



For contactor LT1-D32 type	Motor capacity (kW)			Rated current (A)	Protection adjustment range	Packing/ Box (pcs)	Catalogue number
	220V 230V	380V 400V	660V 690V				
LT2-E2353	11	11	18.5	32	23.0 - 32.0	1 / 100	13253
LT2-E2355	15	15	22.0	36	28.0 - 36.0	1 / 100	13255



For contactor LT1-D40 to LT1-D95 type	Motor capacity (kW)			Rated current (A)	Protection adjustment range	Packing/ Box (pcs)	Catalogue number
	220V 230V	380V 400V	660V 690V				
LT2-E3355	18.5	18.5	30	40	30.0 - 40.0	1 / 50	13355
LT2-E3357	22	22	30	50	37.0 - 50.0	1 / 50	13357
LT2-E3359	30	30	37	65	48.0 - 65.0	1 / 50	13359
LT2-E3363	45	45	55	80	63.0 - 80.0	1 / 50	13363
LT2-E3365	55	55	75	93	80.0 - 93.0	1 / 50	13365



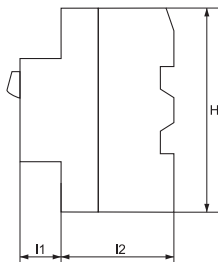
For contactor LT1-F115 to LT1-F150	Motor capacity (kW)			Rated current (A)	Protection adjustment range	Packing/ Box (pcs)	Catalogue number
	220V 230V	380V 400V	660V 690V				
LT2-F4367	40	75	100	150	90-150	1/30	13367

For contactor LT1-F225 to LT1-F400	Motor capacity (kW)			Rated current (A)	Protection adjustment range	Packing/ Box (pcs)	Catalogue number
	220V 230V	380V 400V	660V 690V				
LT2-F4368	63	110	129	220	132-220	1/30	13368
LT2-F4369	100	160	220	330	200-330	1/18	13369
LT2-F4370	147	250	335	500	300-500	1/18	13370

For contactor LT1-F630	Motor capacity (kW)			Rated current (A)	Protection adjustment range	Packing/ Box (pcs)	Catalogue number
	220V 230V	380V 400V	660V 690V				
LT2-F4371	200	335	450	630	380-630	1/18	13371

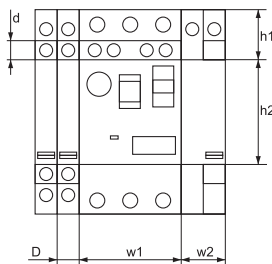


Dimensions



Auxiliary contact

UVR



Dimensions (mm)

H	I1	I2	d	D
89	16	50	10	9,2
w1	w2	h1	h2	
44,5	18	22	45	

Thermomagnetic automatic breaker TM2/TM3

5

YEAR
WARRANTY*for industrial
usage, 3 years
warranty

The thermomagnetic automatic breakers TM 2-Exx series are devices designed for control and protection of induction motors from overload, overheat or short circuit. The overload motor protection is carried out by the built in the breaker thermal elements, and the short circuit protection is carried out by the magnetic elements. These magnetic elements allow the adjustment of the current leakage which is 13 times the maximum current of the thermal protection. The overload protection elements include automatic compensation for the ambient temperature changes. In combination with under voltage release the thermomagnetic breaker TM 2-Exx also provides protection of the motors from fall out of a phase from the power supply. The choice of a suitable protection prevents motor's operation at unusual temperature conditions and guarantees maximum constant operation, increases the effectiveness and prolongs the term of exploitation.

Functions:

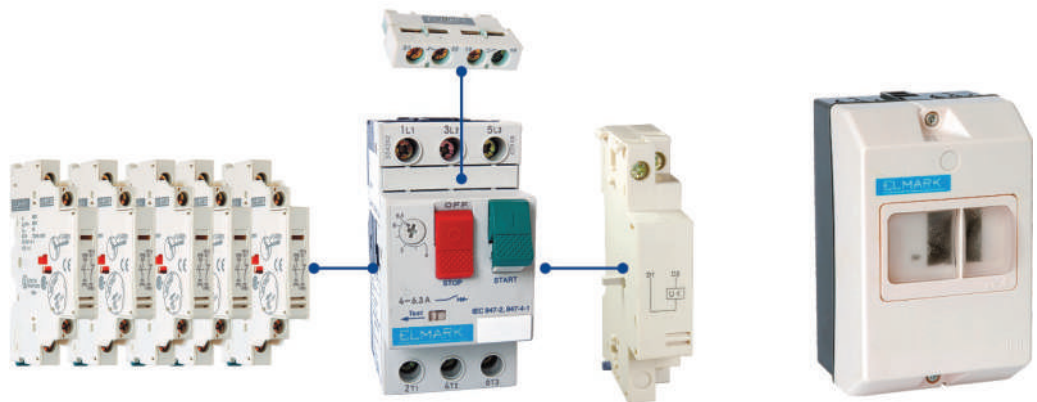
- switching off alternating current consumers at current overload
- switching off the electrical circuit to the consumer at inlet short circuit
- protects the motor at lack/lowering of the phase voltage (if there is under voltage release)
- used as a protective operating element in control panels of induction motors
- remarkable with high reliability of current characteristics
- possibility for change/choice of the protection current (according to the operating current of the motor)
- automatic compensation of the ambient temperature

Technical data:

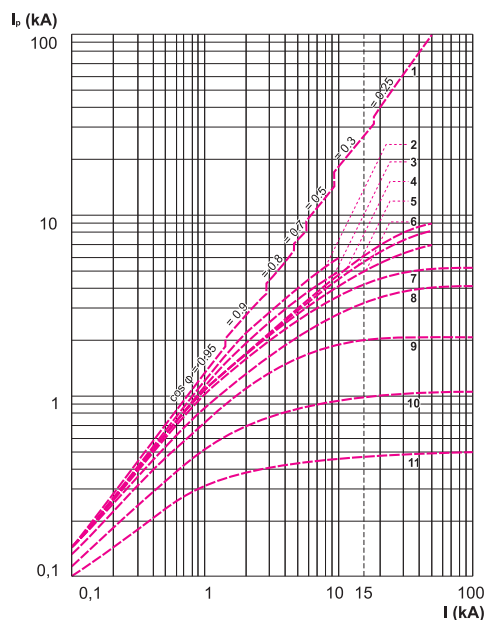
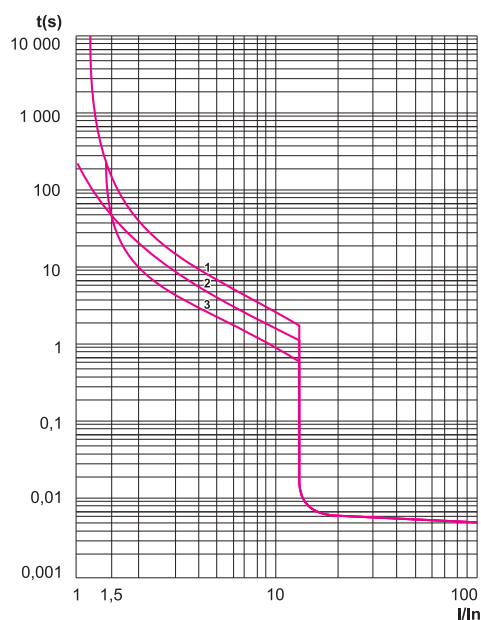
- Rated operating voltage: up to 690V AC; 50/60 Hz
- Rated operating current range: from 0.1 to 80A according to the type in table 1
- insulation voltage: 690V
- Surge voltage wear resistance: $\geq 6000V$
- Joining terminal: screw terminal
- Connecting:
 - flexible or rigid conductors with or without cable terminal for joining to the consumer
 - to the contactor through the relay terminals
 - the connecting terminals with the consumer can be adjusted according to the type of the contactor
- Electrical wear resistance (number of cycles): ≥ 1000000
- Mechanical wear resistance (number of cycles): ≥ 10000000
- Indication for protection activating
- Switching on of the breaker manually with button "I" and switching off with button "O" manually or automatically at failure or after activating of the protection
- Possibility for range adjustment of the protection activating
- Possibility for operation at higher frequency
- Possibility for independent operation or as an element of an automation system
- tripping category: class 10A

Mounting:

- mounting to DIN-rail
- mounting position: vertical gradient – maximum $\pm 5^\circ$
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Ambient temperature: $-10^\circ C + 65^\circ C$
- Altitude: up to 2000m



Thermomagnetic automatic breaker



Type	Rated capacity of three-phase motor in AC-3 category					instantaneous short-circuit release (A)	Current setting range (A)	Thermal current I _{the} TM2-E (A)	Packing/Box (pcs)	Catalogue number
	220V 230V	400V 410V	440V	500V	690V					
TM2-E01	-	-	-	-	-	1.5	0.1 - 0.16	0.16	1 / 50	48001
TM2-E02	-	0.06	0.06	-	-	2.4	0.16 - 0.25	0.25	1 / 50	48002
TM2-E03	0.06	0.09	0.09	-	-	5.0	0.25 - 0.40	0.40	1 / 50	48003
TM2-E04	-	0.12	0.18	-	0.37	8.0	0.40 - 0.63	0.63	1 / 50	48004
TM2-E05	0.09	0.25	0.25	0.37	0.55	13.0	0.63 - 1.00	1	1 / 50	48005
TM2-E06	0.18	0.37	0.37	0.37	0.75	22.5	1 - 1.60	1.6	1 / 50	48006
TM2-E07	0.37	0.75	0.75	1.10	1.50	33.5	1.6 - 2.50	2.5	1 / 50	48007
TM2-E08	0.55	1.10	1.50	1.50	2.20	51.0	2.5 - 4.00	4	1 / 50	48008
TM2-E10	1.10	2.20	2.20	3.00	4.00	78.0	4 - 6.30	6.3	1 / 50	48010
TM2-E14	1.50	3.00	4.00	4.00	5.50	138	6 - 10.0	9	1 / 50	48014
TM2-E16	2.20	5.50	5.50	7.50	9.00	170	9 - 14.0	13	1 / 50	48016
TM2-E20	4.00	7.50	7.50	9.00	15.0	223	13 - 18.0	17	1 / 50	48020
TM2-E21	5.50	9.00	11.0	11.0	18.5	327	17 - 23.0	21	1 / 50	48021
TM2-E22	5.50	11.0	11.0	15.0	22.0	327	20 - 25.0	23	1 / 50	48022
TM2-E32	7.50	15.0	15.0	18.5	22.0	416	24 - 32.0	24	1 / 50	48032
TM3-E40	11.0	18.5	22.0	25.0	33.0	480	25 - 40.0	32	1 / 15	48040
TM3-E63	15.0	30.0	33.0	40.0	55.0	550	40 - 63.0	50	1 / 15	48063
TM3-E80	22.0	40.0	45.0	55.0	63.0	665.5	56 - 80.0	64	1 / 15	48080

Documents corresponding to the product:

Standard EN 60947-1

EN 60947-2; EN 60947-4-1

The products are in accordance with the directives of EC "Low voltage directives (LVD) no 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC".

**Voltage release (VR) for TM 2****5** YEAR WARRANTY

*for industrial usage, 3 years warranty

For increasing the effectiveness of the thermomagnetic breakers TM 2-Exx operation, they can be supplied with auxiliary devices, designed for widening the practice range and improving the technical characteristics of the breakers.

The release is designed to switch off the thermomagnetic breaker when the controlling voltage falls under breaking level 0.55 to 0.7 UN and does not allow switching on of the breaker unless the voltage is over 0.85 UN.

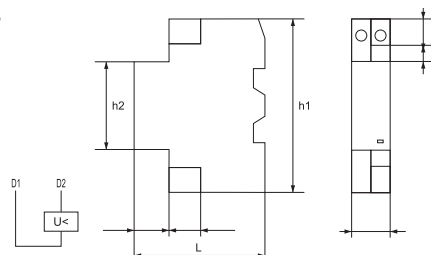
Functions:

- switching off the breaker at power supply voltage fall under 0.55 – 0.7 Un
- does not allow switching on of the breaker when the power supply voltage is under 0.85 Un
- prevents unwarranted secondary start of the breaker at falling off and restoring of the power supply voltage
- protects the motor at lack/lowering of the phase voltage
- used as a protective operating element in control panels of induction motors
- remarkable with high reliability of current characteristics

Mounting:

- laterally to a breaker
- At the side of the breaker through special openings

Type	Voltage (V)	Catalogue number
TM2 AU225	230	48099
TM3 AU385	400	48098

**Documents corresponding to the product:**

Standard EN 60529

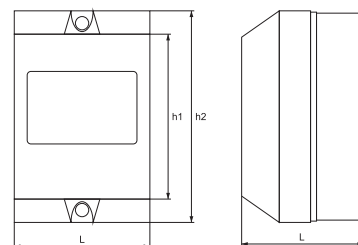
**Watertight box for TM 2-E****5** YEAR WARRANTY

*for industrial usage, 3 years warranty

Specially designed plastic box with silicon screen for increasing the IP code from dust and moisture to IP 65. Designed for thermal-magnetic circuit breakers of up to 32A

- Mounting:
 - mounting position: vertical gradient – maximum $\pm 5^\circ$
 - mounted to horizontal surfaces (walls) with bolts
 - the breaker TM2 Exx is fixed inside of it on rail
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)

Type	Catalogue number
TM2 E	8083

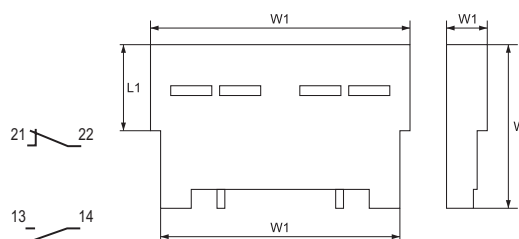
**Auxiliary contact block TM2 AE11- front mounting****5** YEAR WARRANTY

*for industrial usage, 3 years warranty

It is designed to switch on operational systems or signalization. Designed with one NO and one NC contact. It changes the position of its contacts according to the position of the breaker (switched on/off) to which it is mounted.

- Mounting:
 - laterally to a breaker TM2-Exx
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Ambient temperature: $-10^\circ\text{C} + 65^\circ\text{C}$
- Altitude: up to 2000m

Type	Catalogue number
TM2 AE11	48912



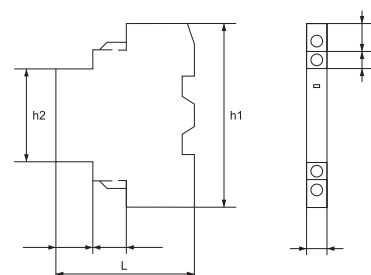


Auxiliary contact block TM2 AE11- side mounting **5** YEAR WARRANTY *for industrial usage, 3 years warranty

It is designed to switch on operational systems or signalization. Designed with one NO and one NC contact. It changes the position of its contacts according to the position of the breaker (switched on/off) to which it is mounted.

- Mounting:
 - laterally to a breaker TM2-Exx
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Ambient temperature: $-10^{\circ}\text{C} + 65^{\circ}\text{C}$
- Altitude: up to 2000m

Type	Catalogue number
TM2 AN11	48911
TM3 AN11	48913



Documents corresponding to the product:

Standard EN 60947-1
EN 60947-4-1

The products are in accordance with the directives of EC "Low voltage directives (LVD) no 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC".



Starters for direct start **5** YEAR WARRANTY *for industrial usage, 3 years warranty

The electromagnetic starters LT 5 Dxx series are devices designed for remote control, direct control and protection of induction motors or other electrical consumers. They are a combination of contactors LT 1 Dxx series and thermal protection LT 2 Exx factory cabled. The starters are offered on the market in metal or plastic boxes with the corresponding IP code from dust and moisture. At mounting there should be provided protection of the device from short circuit through breakers or disconnectors. If necessary, at client's order the factory mounted thermal protection in the pneumatic starter can be substituted. The choice of a suitable protection prevents motor's operation at unusual temperature conditions and guarantees maximum constant operation, increases the effectiveness and prolongs the term of exploitation.

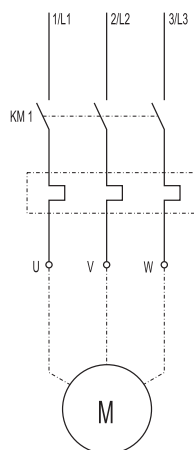
Functions:

- switching on/off alternating current consumers
- does not allow secondary unwarranted switching on of the starter at transitory lowering of the voltage
- protects the motor from overload in the range of the corresponding thermal protection
- remarkable with high reliability of current characteristics

Technical data:

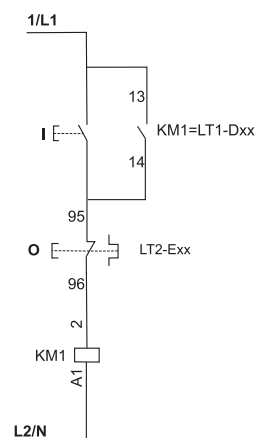
- Rated voltage of the controlling voltage: 230/400V AC; 50/60 Hz

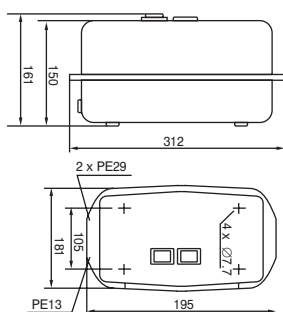
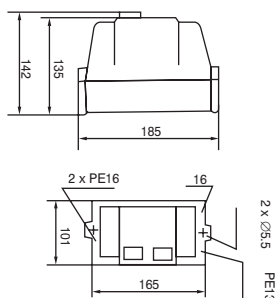
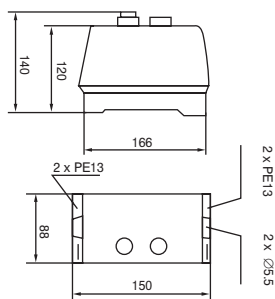
Note: In case you need different controlling coils



voltage of the starters you can turn to our regional representatives.

- Rated operating voltage: 690V
- Rated operating current range: from 7 to 93 A AC
- insulation voltage: 690V
- Surge voltage wear resistance: $\geq 6000\text{V}$
- Joining terminal: screw terminal
- Little power consumption and small dimensions
- Connecting:
 - flexible or rigid conductors with or without cable terminal for joining to the consumer and section according to the motor power
 - two by two inlets/outlets supplied with orifices for the cables
- Possibility for range adjustment of the protection activating
- IP code: IP 44
- Possibility for operation at higher frequency
- Mounting:
 - mounting to a flat surface (wall) with bolts/screws
 - mounting position: vertical gradient – maximum $\pm 5^{\circ}$
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Metal corpus: corrosion-proof coating
- Ambient temperature: $-10^{\circ}\text{C} + 65^{\circ}\text{C}$
- Altitude: up to 2000m





Type	Rated capacity of motors 50/60Hz AC-3 category			Rated current (A)	Thermal relay adjust- ment range	Coil voltage (V)	Packing/ Box (pcs)	Catalogue number
	220V 230V	380V 400V	415V 440V					
LT5 D093	2.2	4.0	4.0	9	7 .. 10A	230	1 / 16	43091
						400	1 / 16	43092
LT5 D123	3.0	5.5	5.5	12	9 .. 13A	230	1 / 16	43121
						400	1 / 16	43122
LT5 D185	4.0	7.5	9.0	18	12 .. 18A	230	1 / 16	43181
						400	1 / 16	43182

Note: Upon request the thermal relay will be replaced

Type	Rated capacity of motors 50/60Hz AC-3 category			Rated current (A)	Thermal relay adjust- ment range	Coil voltage (V)	Packing/ Box (pcs)	Catalogue number
	220V 230V	380V 400V	415V 440V					
LT5 D255	5.5	11	11	25	17 .. 25A	230	1 / 16	43251
						400	1 / 16	43252
LT5 D325	7.5	15	15	32	23 .. 32A	230	1 / 16	43321
						400	1 / 16	43322

Note: Upon request the thermal relay will be replaced

Type	Rated capacity of motors 50/60Hz AC-3 category			Rated current (A)	Thermal relay adjust- ment range	Coil voltage (V)	Packing/ Box (pcs)	Catalogue number
	220V 230V	380V 400V	415V 440V					
LT5 D405	11.0	18.5	22	40	30 .. 40A	230	1/6	43401
						400	1/6	43402
LT5 D655	18.5	30.0	37	65	48 .. 65A	230	1/6	43651
						400	1/6	43652
LT5 D955	25.0	45.0	45	95	80 .. 93A	230	1/6	43951
						400	1/6	43952

Note: Upon request the thermal relay will be replaced

Starters

Documents corresponding to the product:

Standard EN 60947-1

EN 60947-4-1

The products are in accordance with the directives of EC "Low voltage directives (LVD) no 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC".



"Star/delta" starter

5 YEAR WARRANTY *for industrial usage, 3 years warranty

The electromagnetic starters LT 3 Dxx series are devices designed for remote control, direct control and protection of induction motors coiled and operating according to a starter scheme "star/delta". They are a combination of three contactors LT 1 Dxx series, time relay and a set of buttons "start" and "stop" factory cabled. They provide the easy motor unwinding giving possibility for setting the time for unwinding in "star" as the time for switching between "star" and "delta" is fixed to 0.5 seconds.

The starters are offered on the market in two types:

- closed type – metal boxes providing the corresponding IP code from dust and moisture (IP 54) as at mounting there should be provided protection of the device from short circuit through breakers or disconnectors
- open type – for mounting in distribution boxes as at mounting there should be provided protection of the device from short circuit through breakers or disconnectors

The starters are offered on the market without mounted thermal protection which is purchased separately according to the motor capacity. The choice of a suitable protection prevents motor's operation at unusual temperature conditions and guarantees maximum constant operation, increases the effectiveness and prolongs the term of exploitation.

If necessary, at client's order the power supply operating voltage of the pneumatic starter can be changed.

Functions:

- switching on/off alternating current three phase motors operating according to a scheme "star - delta"
- does not allow secondary unwarranted switching on of the starter at transitory lowering of the voltage
- protects the motor from overload in the range of the corresponding thermal protection

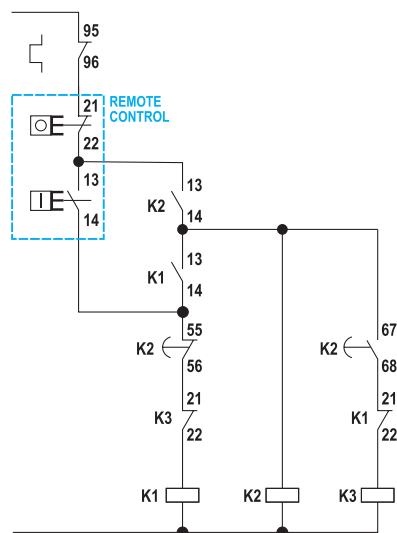
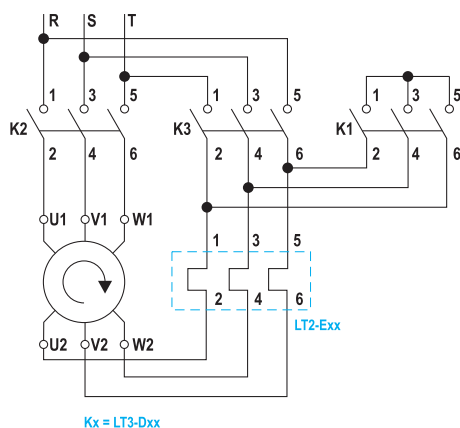
- indication of the operating condition through a valve indicator
- possibility for mounting of additional contacts (for the open type)
- remarkable with high reliability of current characteristics

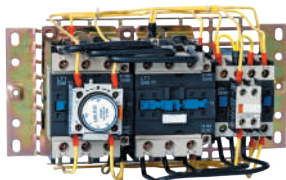
Technical data:

- Rated voltage of the controlling voltage: 400V AC; 50/60 Hz

Note: In case you need different controlling coils voltage of the starters you can turn to our regional representatives.

- Rated operating voltage: 690V
- Rated operating current range: from 7 to 93A AC
- insulation voltage: >690V
- Surge voltage wear resistance: ≥6000V
- Joining terminal: screw terminal
- Little power consumption and small dimensions
- Connecting:
 - flexible or rigid conductors with or without cable terminal for joining to the consumer and section according to the motor power
 - three by three inlets/outlets supplied with orifices for the cables
- Possibility for operation at higher frequency
- IP code: IP54
- Mounting:
 - mounting to a flat surface (wall) with bolts/screws
 - mounting position: vertical gradient – maximum ± 5°
- The metal body is covered with corrosion-proof paint
- Ambient temperature: -10°C + 65°C
- Altitude: up to 2000m





Type designation (without a box)	Overall dimensions (mm)		
	height	width	depth
LT3-D25A	135	170	160
LT3-D32A	135	170	160
LT3-D40A	150	285	190
LT3-D65A	150	285	190
LT3-D95A	150	310	190

Type designation (without a box)	Rated capacity (kW)				Rated current (A)	Coil voltage (V AC)	Packing/ Box (pcs)	Catalogue number
	220V 230V	380V 400V	415V	440V				
LT3-D25A	11	15	15	15	25	400	1 / 6	43253
LT3-D32A	15	18.5	18.5	18.5	32	400	1 / 6	43323
LT3-D40A	18.5	22	22	22	40	400	1 / 4	43403
LT3-D65A	30	55	55	55	65	400	1 / 4	43653
LT3-D95A	37	75	75	75	95	400	1 / 4	43953

Note: It is necessary that thermal protection with suitable range is mounted to protect the controlled motor.
The shown values of magnetic starters are for normal regimes for motor control, for hard operation regimes are chosen starters which correspond to the current rating of the motor.



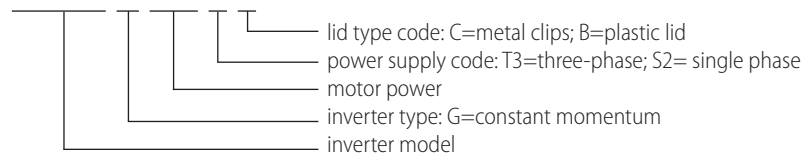
Type designation (with box)	Overall dimensions (mm)		
	height	width	depth
LT 3 -B- D25A	370	240	160
LT 3 -B- D32A	370	240	160
LT 3 -B- D40A	470	265	160
LT 3 -B- D65A	470	265	160
LT 3 -B- D95A	470	265	160

Type designation (with box)	Rated capacity (kW)				Rated current (A)	Coil voltage (V AC)	Packing/ Box (pcs)	Catalogue number
	220V 230V	380V 400V	415V	440V				
LT 3 - B - D25A	11	15	15	15	25	400	1 / 4	43254
LT 3 - B - D32A	15	18.5	18.5	18.5	32	400	1 / 4	43255
LT 3 - B - D40A	18.5	22	22	22	40	400	1 / 2	43256
LT 3 - B - D65A	30	55	55	55	65	400	1 / 4	43257
LT 3 - B - D95A	37	75	75	75	95	400	1 / 2	43258

Note: It is necessary that thermal protection with suitable range is mounted to protect the controlled motor.
The shown values of magnetic starters are for normal regimes for motor control, for hard operation regimes are chosen starters which correspond to the current rating of the motor.

Type of sign

ELM1000- G -0150 T3 C

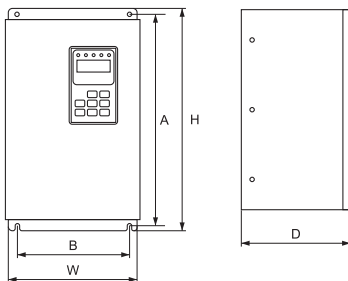


Documents corresponding to the product:

Standard EN60898-1

EN 60947-2

The products are in accordance with the directives of EC "Low voltage directives (LVD) no 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC".



ELM 1000 frequency inverters

3 YEAR WARRANTY

Frequency inverters are designed to control three-phase induction motors with short-circuited rotor. They provide for the implementation of some control laws, thus becoming an indispensable part of the control systems for conveyors and packaging machines, pumps, air conditioning systems, etc. The ELM 1000 inverter provides the so-called no-sensor control, V/f control and impulse control while the output load can reach up to 150% within 60 seconds. It features easy definition of curves and easy parameters setting of inverter through the use of control panel buttons. The inverter can auto calibrate according to the motor power, i.e. if the inverter is connected to a motor with power different from that set by the inverter manufacturer, it automatically adjusts its programmable parameters to suit the motor parameters.

Functions:

- rotation speed increase – automatic and manual
- sliding compensation: from 0 to 20%
- no-sensor control of the motor
- adjustment of the V/F control curve – linear or quadratic
- energy saving through automatic optimization of the V/F curve
- PID control law implementation option
- omission of resonance frequencies
- JOG function
- 'counter' function
- automatic restart option in case of power supply failure
- fifteen speed degrees control option
- control choice from the control panel; external or COM terminal
- frequency control from the control panel, external potentiometer by current or by voltage
- auto-calibration in accordance with the switched motor
- incoming signals on clockwise or counter-clockwise rotation, multi-step control, restart, etc.
- outgoing discrete control signal 24V
- outgoing analogue control signal 0 – 10V
- DC brake in static mode
- dynamic braking with external braking resistor –

- used in inert electric motor load
- output voltage adjustment option
- activation of output safety functions option
- electronic motor protection

Technical features:

- Rated working voltage: 230/400V AC; 50 Hz
- Permissible working voltage deviation: $\pm 10\%$
- Unbalance of phases: $< 3\%$
- Frequency fluctuation: $< 5\%$
- Output frequency: 0 – 400 Hz
- Output voltage: from 0 to U_{bx} max
- Overload capacity:
 - constant: up to 110%
 - momentary: up to 150%
- Precision of output frequency adjustment: 0.1%
- Type of connection:
 - the connection of the inverter to the power supply should always be done through a circuit breaker of the MCB or MCCB type
 - connection of consumer to power terminals: through conductors suitable for the power
 - connection of control circuits: flexible conductor up to 1.5 mm²

Note: It is not recommendable to mount contactors or other commutation devices between the frequency inverter and the motor, except as described in the product passport.

- Mounting:
 - mounting to a flat surface by means of bolts
 - mounting position – vertical gradient maximum $\pm 5^\circ$

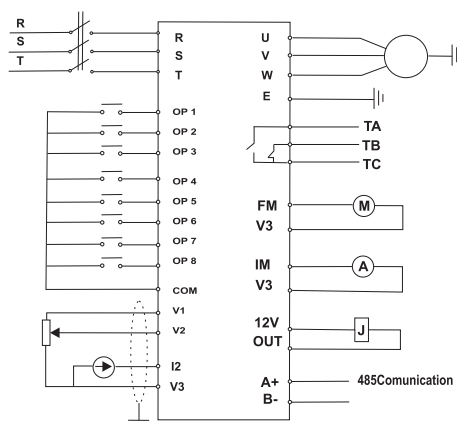
Note: When more than one inverter is mounted in a board, it is recommendable to mount them side by side and when this is not possible, the appropriate cooling conditions should be provided.

- Plastic: UV-rays resistant and fire resistant (self-extinguishing material)
- Ambient temperature: -10° to 65° C
- Altitude : up to 2000 m
- Function enhancement option: through the inclusion of additional modules

Overall dimensions (mm)

Type	H	W	A	B	D	d
ELM1000-G0007S2B	150	105	139	94	120	Ø4
ELM1000-G0015S2B	170	125	160	114	140	Ø5
ELM1000-G0022S2B	170	125	160	114	140	Ø5
ELM1000-G0007T3B	170	125	160	114	140	Ø5
ELM1000-G0015T3B	170	125	160	114	140	Ø5
ELM1000-G0022T3B	170	125	160	114	140	Ø5
ELM1000-G0037T3B	250	162	233	145	150	Ø6
ELM1000-G0040T3B	250	162	233	145	150	Ø6
ELM1000-G0055T3B	300	200	282	182	160	Ø6
ELM1000-G0075T3B	300	200	282	182	160	Ø6
ELM1000-G0110T3C	340	225	322	160	220	Ø6
ELM1000-G0150T3C	380	230	362	186	225	Ø6

Soft starter



Type	Input voltage (V)	Maximum output power (kW)	Maximum current output (A)	Packing/Box (pcs)	Catalogue number
ELM1000-G0007S2B	230	0.75	4.5	1 / 4	423107M
ELM1000-G0015S2B	230	1.5	7	1 / 4	423115M
ELM1000-G0022S2B	230	2.2	9	1 / 4	423122M
ELM1000-G0007T3B	400	0.75	2	1 / 4	423307M
ELM1000-G0015T3B	400	1.5	4	1 / 4	423315M
ELM1000-G0022T3B	400	2.2	6.5	1 / 4	423322M
ELM1000-G0037T3B	400	3.7	8	1 / 1	423337M
ELM1000-G0040T3B	400	4.0	9	1 / 1	423340M
ELM1000-G0055T3B	400	5.5	12	1 / 1	423355M
ELM1000-G0075T3B	400	7.5	17	1 / 1	423375M
ELM1000-G0110T3C	400	11	23	1 / 1	423391M
ELM1000-G0150T3C	400	15	32	1 / 1	423392M

Documents corresponding to the product:

Standard EN60947-4-2

EN 60947-1

The products are in accordance with the directives of EC "Low voltage directives (LVD) no 2006/95/EC" and "Electromagnetic Compatibility Directives (EMC) no. 2004/108/EC".



Soft starter ELM 2500

3 YEAR WARRANTY

Soft starters are designed to control the start of three-phase induction motors with short-circuited rotor. A number of motor control issues are avoided through them, and namely: prolonged start moments, auto-ignition of motor, there is no need of stardelta switching, auto-transformer switching, resistant switching, etc. The ELM 2500 soft starter pertains to the AC53b type of starters as per the standard requirements and it provides rotation of motor and once the operation mode is set, a shunt contactor of the LT 1 D/F series is switched to control motor operation as the soft starter is not designed to control motors in a set mode. Under a stop command in accordance with the selected control scheme, the soft starter can or can not be included in shutting the motor down.

- output faults
- motor faults diagnostics
- keyboard or outward control
- delayed start option
- faults memory

Technical features:

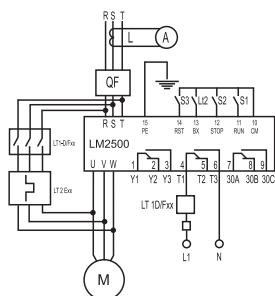
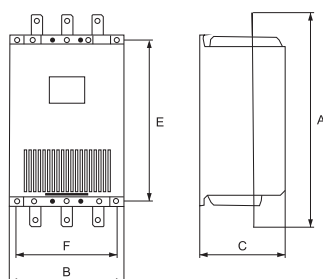
- Rated working voltage: 230/400V AC; 50 Hz
- Permissible working voltage deviation: $\pm 10\%$
- Unbalance of phases: $< 3\%$
- Frequency fluctuation: $< 5\%$
- Obligatory bypass contactor installation
- Mounting :
 - mounting to a flat surface through bolts
 - mounting position – vertical gradient maximum $\pm 5^\circ$

Note: When more than one soft starter is mounted in a board, it is recommendable to mount them side by side and when this is not possible, the appropriate cooling conditions should be provided.

- Plastic: UV-rays resistant and fire resistant (self-extinguishing material)
- Altitude : up to 2000 m

Functions:

- System functions
 - over-voltage protection – motor will switch off when power supply exceeds the preset limits
 - overload protection – protects the motor from overloading
 - phase loss protection
 - temperature overload protection
- Control functions

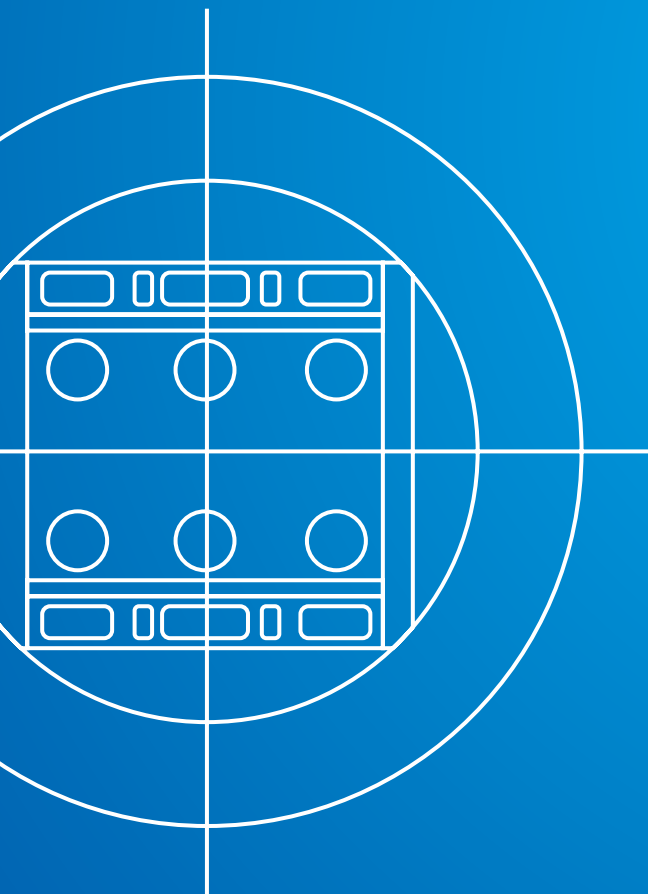


Type	Overall dimensions (mm)					
	A	B	C	E	F	d
EL M25015	250	153	162	219	140	Ø6
EL M25022	250	153	162	219	140	Ø6
EL M25037	250	153	162	219	140	Ø6
EL M25045	250	153	162	219	140	Ø6
EL M25055	250	153	162	219	140	Ø6
EL M25075	510	260	194	389	232	Ø8

Type	Power of mo- tor (kW)	Rated current (A)	Type of bypass contactor	Section of power supply conductors	Packing/Box (pcs)	Catalogue number
EL M25015	15	30	LT 1-D 50	10	1 / 1	42225015
EL M25022	22	45	LT 1-D 50	10	1 / 1	42225022
EL M25037	37	76	LT 1-D 80	16	1 / 1	42225037
EL M25045	45	90	LT 1-D 95	25	1 / 1	42225045
EL M25055	55	110	LT 1-F 115	25	1 / 1	42225055
EL M25075	75	150	LT 1-F 150	35	1 / 1	42225075

CAPACITY COEFFICIENT COMPENSATION

CAPACITY COEFFICIENT COMPENSATION



ELMARK[®]

Complex compensating devices | 90

Capacitor batteries for reactive energy compensation | 91

Cosφ regulator | 91





Complex compensating devices

3 YEAR WARRANTY

The use of electrical energy in industry is invariably connected with its transformation. The development of semiconductor elements and the broader coming of semi-conductor transformers, frequency control, welding machines and electrical arc furnaces in industrial projects have a negative impact over the electrical power quality in the electro distributing systems. Induction machines need reactive energy to create electromagnetic field. The reactive component of current is taken from the electro distributing systems but it leads to additional losses in the power supply system and makes shorter the exploitation term of electrical devices. This leads to curving of the sinusoid form of current and voltage and interferences with harmonic character. Compensating the reactive power means to fill up the system in such a way that the needed reactive power to be created from the compensating device instead of being taken from the electro transportation system. This leads to killing the voltage fall and cable losses and increasing the outlet power of the power transporters and cutting down the bills for overconsumption of reactive energy paid by consumers to the electricity supply company. In practice compensating the reactive energy and high harmonics through LC filters combined in compensating installations has the broadest spreading.

There are several types of compensation according to their location:

- individual compensation – when to every single motor or consumer is mounted a compensating system. It is applied to powerful motors and transformers with fixed capacity.
- installation compensation – when the consumers from the whole section (workshop) are grouped and compensation is accomplished for the whole section.
- overall compensation – accomplished at full compensation in the inlet of the installation.

According to the type of the compensating devices compensation can be:

- passive – when the system supplies constant reactive power. In this case the system does not react to changes in the size and nature of the harmonic components and also to the per cent increase of the reactive energy in time.
- active – broader spread. The system controls the form of the consumed current and generates different capacity depending on the load changes.

When designing the electro distributing system of industrial projects the following tasks are taken into consideration:

- defining the factor of non-sinusoid of the consumers and the voltage harmonic components
- defining the additional loading of the capacitor batteries from the harmonic components and calculating the filtering elements if needed

The calculation of the compensating device capacity is done by reading the reactive energy of the system and the working time of the system. Compensating devices represent a device of one or several metal boxes with common rail system, automatic regulator for $\cos\phi$ control RPSF-xx series, different number of capacitor batteries (according to the capacity of the device) with different capacity HY 111 series, contactors for capacitor batteries control CJ 19-43 series, protective elements, etc.

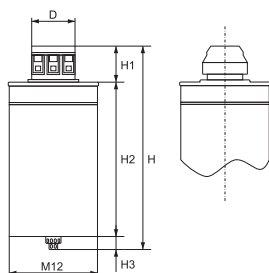
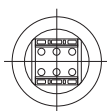
The broadest spreading of compensation has acquired the compensation of harmonics and reactive energy with capacitors for high voltage. Capacitors HY 111 series are voltage remeasured and are able to endure overload from harmonic components up to 7% from the basic harmonics. They are used in systems with high harmonics foul up to 25%.

The high harmonics composition is defined after measuring the influence rate of each separate harmonics compared to the first one. In Bulgaria mostly spread are 5, 7, 9, 11 and 13 harmonics. The capacitors are remeasured for voltage 415V and are normally mounted right in the compensation systems.

When the high harmonics are over 25% the system is taken to be foul and in this case except using capacitors, filters for leveling the harmonics are to be used as well. These filters are calculated on the basis of the corresponding voltage harmonics and differ for the different harmonics. They are calculated using complex mathematical programme which reads the foul rate, the significance per cent of the voltage harmonic component, etc.

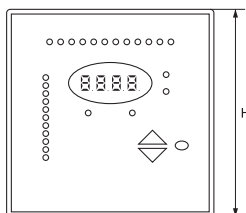
Documents corresponding to the product:

Standard EN 60831-1
EN 60831-2



Dimensions (mm)

D	H1	H3
30	35	16

**Capacitor batteries for reactive energy compensation****3** YEAR WARRANTY

Capacitor batteries HY 111 series are specially designed three phase dry capacitors for compensation of reactive energy and correction of the capacity factor. It represents an aluminum cylindrical body in which a metal polypropylene folio is mounted which does not require special impregnation. The permittivity characteristics are acquired through filling with a special mixture on a vegetable base (resins). The capacitor battery is constructed in such a way that at failure (overload from voltage, current or temperature) breaks the connection to the upper cover where are the connections to the power supply. This is done by a specially constructed valve for overpressure mounted right above the capacitor element. The breaking of the inner couplings provides protection to the staff and environment from damage due to capacitor element failure. There is a three phase capacitor in the cylindrical body with built in resistor for rarefying the capacitors.

The capacitor battery can be used both for passive and active compensation.

Technical data:

- Rated operating voltage: 450V; 50Hz
- Insulation voltage: 690V
- Surge voltage wear resistance: 6kV per minute
- Capacity: from 5,0 to 100,0 kVAR at 450V
- Tolerance: $\pm 5\%$
- Operating temperature: $-40^{\circ}\text{C} - +65^{\circ}\text{C}$
- Capacity losses: 0.5W/kVAR
- Built in discharging resistance
- Admissible current overload: twice as much the peak current
- Discharge time: <50V per minute
- Altitude: 2000m

Mounting:

- With bolt M12 or M16 to a flat horizontal base

Type of the battery	Dimensions H / Ø (mm)	Operating voltage (V)	Battery capacity (kVAR)	Capacity (µF)	Packing/Box (pcs)	Catalogue number
HY 11A5	210/76	450	5.0	3X26.2	6	49005
HY 11A7	210/76	450	7.5	3X39	6	49007
HY 11A10	240/76	450	10.0	3X52.4	6	49010
HY 11A15	240/86	450	15.0	3X78.9	6	49015
HY 11A20	240/116	450	20.0	3X105	6	49020
HY 11A30	280/160	450	30.0	3X157	6	49030
HY 11A50	345/180	450	50.0	3X262	6	49050
HY 11A100	300/300	450	100.0	3X524	6	49100
HY 11A12*	230 / 85	690	12.5	3X27.9	6	49031
HY 11A25*	280 / 115	690	25	3X55.7	6	49032

Note: *Suitable for wind generators

Controller for automatic regulation of the capacity factor (cosφ regulator)**3** YEAR WARRANTY

The automatic regulators of the capacity factor RPCF-xx series are devices for monitoring of low voltage systems and control of switching on of capacitor batteries for the capacity factor compensation. There is possibility for adjustment of the system parameters and control. Manufactured by the latest CMOS technology, they are distinguished with high degree of data security, easy programming and secure control of the outlets. There is possibility for indication and setting the parameters of the power supply system as: capacity coefficient, display of the system parameters such as voltage, current and capacity, losses, protection against overload, overload indication or lack of voltage, etc.

The change of parameters is performed through a combination of buttons on the front panel. There is light diode to indicate which parameter is being displayed on the screen and which outlets are in operation. The display is four digital. There is possibility for choice of the working conditions: manual or automatic.

Technical data:

- Rated operating voltage: 230/400V
- Operating frequency: 45 – 65Hz
- Insulation voltage: 690V
- Surge voltage wear resistance: 6kV per minute
- Measurement range: from 0 to 9999kVAR
- Measurement accurateness:
 - voltage: $\pm 1.0\%$
 - current: $\pm 1.0\%$
 - capacity coefficient: $\pm 1.0\%$
 - reactive energy: $\pm 2.0\%$
- Operating temperature: $-10^{\circ}\text{C} - +65^{\circ}\text{C}$
- Humidity: 30 – 60%
- Display: 4 digital
- Responsiveness: 20mA
- Outlet: 7A
- Number of outlets: 12 and 16
- Altitude: up to 2500m

Mounting:

- On the front panel of the box through cutting an opening

Type	Number of steps	Dimensions H (mm)	Packing/Box (pcs)	Catalogue number
HY-RPCF12	12	122x122	8	49120
HY-RPCF16	16	144x144	8	49160

The background is a solid blue color. Overlaid on this are several white line-art drawings of building facades. In the top left, there's a partial view of a building corner. In the top right, another partial view. In the bottom left, a more complete drawing of a building facade with a central vertical section and two side sections. In the bottom right, a drawing of a building facade with a prominent horizontal section and a series of vertical lines below it. The text is centered in the upper half of the image.

TIMERS, RELAYS AND DISPLAYING DEVICES

TIMERS, RELAYS AND DISPLAYING DEVICES

ELMARK[®]

Programmable timers | 94

Digital counters | 99

Industrial relays | 101

Current measurement transformers | 103

Voltage transformers | 105

Displaying measurement devices | 107



**Programmable digital one-channel timer TE 15A****3** YEAR WARRANTY

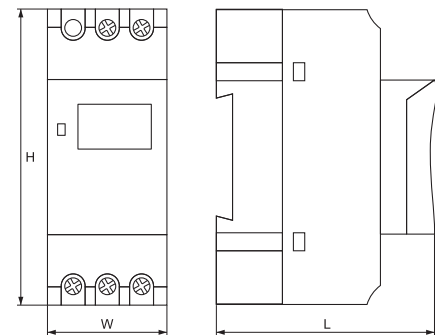
The timer is manufactured under the CMOS technology with a quartz minicontroller which makes it reliable for operation. The timer is adjusted for DIN-rail mounting. It can memorize up to eight ON/OFF programs (ON/OFF cycles). Each program setting is done through the push buttons. Programming starts with selection of the days of the week (you can choose among a whole week cycle, work days cycle, weekend cycle, or a specific day of the week); then the cycle start time and end time are set. If you have selected work days cycle, then the program will start and stop at the set times each work day of the week. This is one ON/OFF program. Where necessary, other programs can be memorized up to the limit of eight possible programs. If you continue setting new programs the first memorized program will be deleted. The minimal interval for cycle programming is 1 minute.

Technical data:

- Display: LCD
- Power supply voltage: 230V; 50Hz
- Operations: 8 switching ON/OFF
- Time deviation: <2s (at 25°C)
- Battery for programme storing: up to 15 days
- Power consumption: <5VA
- Switched on indicator
- Electrical wear resistance: 10⁵ cycles
- Mechanical wear resistance: 10⁷ cycles
- Operating temperature: -10°C ÷ +65°C
- Humidity: 35 – 85%RH
- Number of contacts: 1NO + 1NC
- Commutating capacity:
 - active load: up to 6A
 - inductive load: up to 2.5
- Weight: 120g

Mounting:

- DIN-rail



Type	Packing/Box (pcs)	Catalogue number
TE 15 A	1 / 100	50036
Dimensions (mm)		
H	W	L
85	36	64

**Programmable digital one-channel timer TE 15B****3** YEAR WARRANTY

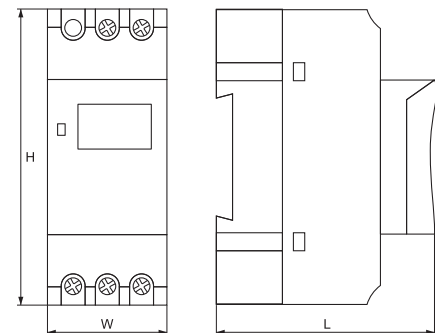
The timer is manufactured under the CMOS technology with a quartz minicontroller which makes it reliable for operation. The timer is adjusted for DIN-rail mounting. It can memorize up to six ON/OFF programs (ON/OFF cycles). Each program setting is done through the push buttons. Programming starts with selection of the days of the week (you can choose among a whole week cycle, work days cycle, weekend cycle, or a specific day of the week); then the cycle start time and end time are set. If you have selected work days cycle, then the program will start and stop at the set times each work day of the week. This is one ON/OFF program. Where necessary, other programs can be memorized up to the limit of eight possible programs. If you continue setting new programs the first memorized program will be deleted. The minimal interval for cycle programming is 1 minute. There is possibility for automatic correction of the time according to the seasonal sun variations.

Technical data:

- Display: LCD
- Automatic adjustment of the current time (time correction winter/summer)
- Power supply voltage: 230V; 50Hz
- Operations: 6 switching ON/OFF
- Time deviation: <2s (at 25°C)
- Battery for programme storing: up to 15 days
- Power consumption: <5VA
- Switched on indicator
- Electrical wear resistance: 10⁵ cycles
- Mechanical wear resistance: 10⁷ cycles
- Operating temperature: -10 ÷ +65°C
- Humidity: 35 – 85%RH
- Number of contacts: 1NO + 1NC
- Commutating capacity:
 - active load: up to 6A
 - inductive load: up to 2.5
- Weight: 120g

Mounting:

- DIN-rail



Type	Packing/Box (pcs)	Catalogue number
TE 15 B	1 / 100	50101
Dimensions (mm)		
H	W	L
85	36	64



Programmable digital one-channel timer TE 20

3 YEAR WARRANTY

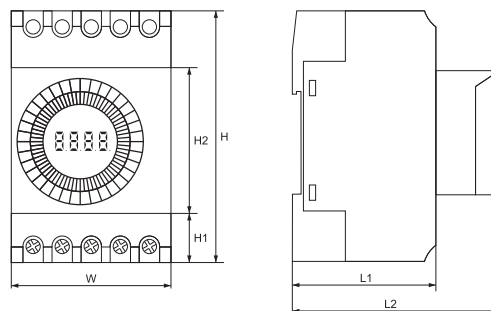
The timer is manufactured under the CMOS technology with a quartz minicontroller which makes it reliable for operation. The timer is adjusted for DIN-rail mounting. It is possible to adjust forty-eight ON/OFF cycles. Each program setting is done through selection of the cycle start and end time with the push buttons. When a program is on, the time cycle is indicated as a dimmed out section on the dial. For example, if you start a 2-hour program the 2-hour portion between On and Off times on the dial becomes dark. The minimal interval for cycle programming is 15 minutes. The battery allows programme storing at lack of power supply.

Technical data:

- Power supply voltage: 230V; 50Hz
- Time deviation: <2s (at 25°C)
- Battery for programme storing and operation: up to 150 hours
- Power consumption: <5VA
- Switched on indicator
- Electrical wear resistance: 10⁵ cycles
- Mechanical wear resistance: 10⁷ cycles
- Operating temperature: -10 ÷ +65°C
- Humidity: 35 – 85%RH
- Number of contacts: 1NO + 1NC
- Li-Ion battery: 150h
- Commutating capacity:
 - active load: up to 16A
- Weight: 120g

Mounting:

- DIN-rail



Type	Packing/Box (pcs)	Catalogue number
TE 20	1 / 92	50100

Dimensions (mm)

H	H1	H2	W	L1	L2
85	20	45	54.5	34	66



Tariff switching clock (timer) TE 18

3 YEAR WARRANTY

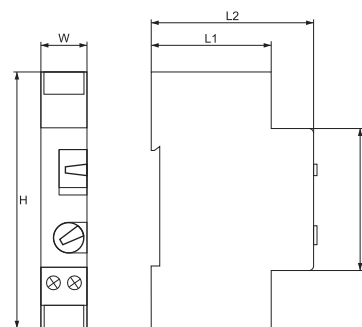
The timer is adjusted for DIN-rail mounting. It is used for switching on tariff lighting in housing buildings and switching off after the adjusted time. Easy to adjust time intervals, mounting and conducting. Reliable to use.

Technical data:

- Power supply voltage: 230V; 50Hz
- Adjustment range: 0.5 to 20 min
- Power consumption: <2.5VA
- Operating temperature: -5 ÷ +65°C
- Humidity: 45 – 95%RH
- Number of contacts: 1NO
- Commutating capacity:
 - active load: up to 16A
 - inductive load: up to 10 A
- Weight: 75g

Mounting:

- DIN-rail



Type	Packing/Box (pcs)	Catalogue number
TE 18	1 / 200	35005

Dimensions (mm)

H	W	L1	L2	D
82	18	40	65	45



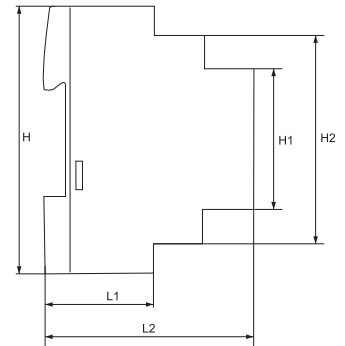
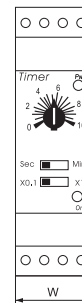
Time relay "star/delta" TE 19

3 YEAR WARRANTY

The time relay is manufactured under the most modern methods of qualitative and reliable materials. The timer is adjusted for DIN-rail mounting. It is used to provide reliable and safe time hold at "star/delta" starters and it is used for setting fixed time intervals. Programming is done through selection of the time unit (seconds or minutes) and rate (x 0.1 or x1) by the slide switches, and then selection of a value from the timer knob (from 0 to 10). Whenever timer circuit receives a signal, it executes the set cycle and then stops until a new signal is available. It gives possibility for time adjustment for motor unwinding in star up to 600s and time change to delta according to the consumer's need.

Technical data:

- Power supply voltage: 230V; 50Hz
 - Adjustment range for operation in star: 1 to 600 seconds
 - Repetition accuracy: $\pm 5\%$ from the whole scale
 - Adjustment accuracy: $\pm 5\%$ from the whole scale
 - Zeroing time: $< 0.5s$
 - Power consumption: $< 5VA$
 - Electrical wear resistance: 100 000 cycles
 - Mechanical wear resistance: 1 000 000 cycles
 - Operating temperature: $-10 \div +65^{\circ}C$
 - Humidity: 45 – 85%RH
 - Commutating capacity: up to 5A
 - Indication:
 - at operation in "star": red indication
 - at operation in "delta": green indication
 - Weight: 150g
- Mounting:**
- DIN-rail



Type	Packing/Box (pcs)	Catalogue number
TE19	1 / 200	50102

Dimensions (mm)

H	W	L1	L2	H1	H2
85	24	34	66	45	60



Timer TE8A – 1a, TE8A – 2a

3 YEAR WARRANTY

The timer is manufactured under the most modern technology CMOS with a quartz minicontroller which makes it precise, qualitative and reliable. It has a built in battery which allows operation of the timers without charging up to 150 hours. The timer is adjusted for DIN-rail mounting. Timer programming is done through selection of the operational day(s) of the week, followed by selection of the start time and end time. You may choose out of ten modes (one for each day of the week, one for the work days, one for the weekends and one for the whole week). When setting the time, you should start first with the hours and then continue with the minutes.

TE8A - 1a - Up to eight programs can be memorized. The on/off time resolution is 1 minute.

TE8A - 2a - It has two operating channels, each of which can adjust four programmes for a day or a week with minimal interval of 1 minute for switching on and off.

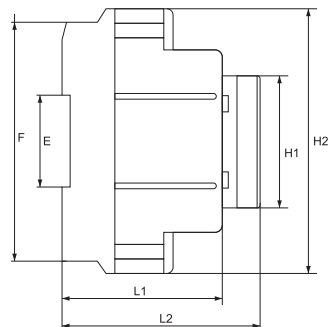
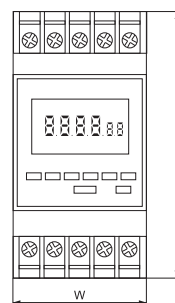
Indication on LCD display with high resolution and showing the time in hours, minutes and seconds.

Technical data:

- Power supply voltage: 230V; 50Hz
- Power consumption: $< 5VA$
- Electrical wear resistance: 10^7 cycles
- Mechanical wear resistance: 10^5 cycles
- Operating temperature: $-10^{\circ}C \div +65^{\circ}C$
- Temperature of storage: up to $70^{\circ}C$
- Humidity: 45 – 85%RH
- Commutating capacity: up to 16A
- Two outlet relays
- Li-Ion battery: 150h
- Weight: 150g

Mounting:

- DIN-rail



Type	Packing/Box (pcs)	Catalogue number
TE8A - 1a	1 / 75	50113
TE8A - 2a	1 / 75	50114

Dimensions (mm)

H	H1	H2	W
100	50	68	50
E	L1	L2	F
36	60	74	90



Impulse relay

3 YEAR WARRANTY

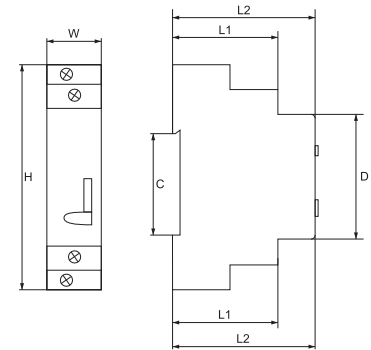
Impulse relays allow circuit remote control. They can be operated manually, remotely, from several control points, or by impulses. Impulse relays are most frequently used for the control of lighting circuits in various public places with multiple control points.

Technical data:

- Control voltage: 230V
- Rated current of the power circuit: 16A
- Electrical endurance: 200000 cycles
- Maximum switching frequency: 5 operations/minute
- Impulse duration: 50ms

Connection:

- tunnel terminals



Type	Packing/Box (pcs)	Catalogue number
EPN510	8 / 160	50300

Dimensions (mm)

H	W	C	D	L1	L2
85	24	36	45	34	66



Timer TE6B

3 YEAR WARRANTY

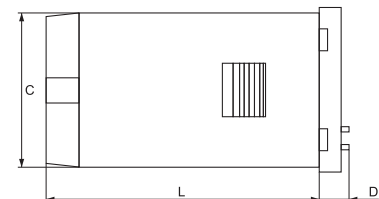
The timer is manufactured under the most modern technology CMOS with a quartz minicontroller which makes it precise, qualitative and reliable. The timer is modulated to be mounted on the front panel of boards. The direction of operation is adjusted – direct or reverse. There is possibility to adjust the time range from 0.01 second to 99 hours 59 minutes, possibility for correction of the set values during operation. Indication on LCD display with high resolution and showing the time in hours, minutes and seconds.

Technical data:

- Power supply voltage: 230V; 50Hz
- Possibility for choice of operating range:
 - from 0.01 second to 99.99 seconds
 - from 1 second to 99.59 minutes
 - from 1 minute to 99.59 hours
- Error: $<0.01\% \pm 0.05s$
- Minimal duration of the input pulse: 20ms
- Power consumption: $<5VA$
- Electrical wear resistance: 10^7 cycles
- Mechanical wear resistance: 10^5 cycles
- Operating temperature: $-10 \div +65^\circ C$
- Temperature of storage: up to $70^\circ C$
- Humidity: 45 – 85%RH
- Commutating capacity at active load: 3A
- Weight: 300g

Mounting:

- on the front panel of the board



Type	Packing/Box (pcs)	Catalogue number
TE6B	1 / 100	50104

Dimensions (mm)

D	W	L
8.5	45	80

**Timer TE48S-S****3** YEAR WARRANTY

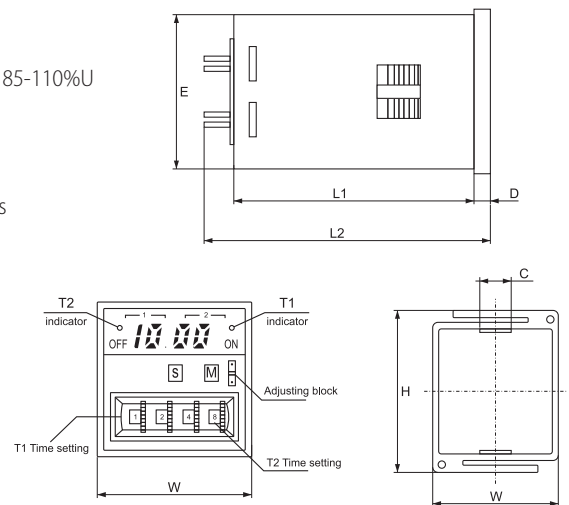
The timer is manufactured under the most modern technology CMOS with a quartz minicontroller which makes it precise, qualitative and reliable. The timer is modulated to be mounted on the front panel of boards. The direction of operation is adjusted – direct or reverse. It represents two separate operating channels, each of which can operate independently with time range adjustment from 1 second to 99 minutes. Possibility for correction of the set values during operation. First, select the time unit (seconds or minutes) and then set the time. Depending on the timer coupling, it can be used as a cyclic timer relay, i.e. it initially counts the first time set, then counts the second time set, then starts counting over the first time again, etc. until a stop signal is received. In another mode, the timer can count the set time and stop until a new signal is received to count the next cycle. Indication on LCD display with high resolution and showing the time in hours, minutes and seconds.

Technical data:

- Power supply voltage: 230V; 50Hz
- Admissible variation of the input voltage: 85-110%U
- Possibility for choice of operating range:
 - from 1 to 99 seconds
 - from 1 minute to 99 minutes
- Error: $<0.01\% \pm 0.05s$
- Minimal duration of the input pulse: 20ms
- Power consumption: $<5VA$
- Electrical wear resistance: 10^7 cycles
- Mechanical wear resistance: 10^5 cycles
- Operating temperature: $-10 \div +65^\circ C$
- Temperature of storage: up to $70^\circ C$
- Humidity: 45 – 85%RH
- Commutating capacity at load: 3A
- Weight: 300g

Mounting:

- on the front panel of the board

**Timer TE 19M****3** YEAR WARRANTY

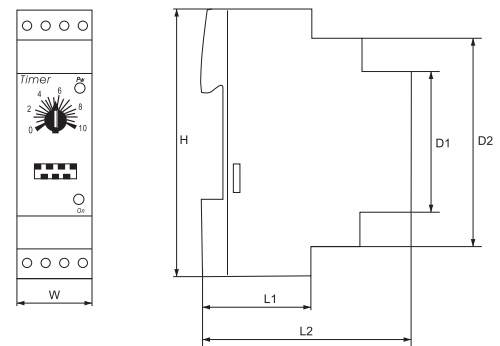
Timer is developed using modern technologies from quality and reliable materials and is adapted for mounting on DIN rail. It is used for providing time intervals in eight time programs, which are assigned by combinations of the keys. There is an option for it to operate in time ranges (assigned by the keys K4, K5, K6): seconds, minutes or hours depending on the necessity of the user. Power contact up to 3A.

Technical characteristics:

- Input voltage: 230V; 50Hz
- Range of setting: from 0.6 sec to 100 hours
- Accuracy of setting: $\pm 5\%$ from the whole scale
- Time for nullifying: <0.5 seconds
- Consumed capacity: $< 5VA$
- Electrical endurance (number of cycles): 100 000 cycles
- Mechanical endurance (number of cycles): 1 000 000 cycles
- Operation temperature: $-10 \div +65^\circ C$
- Humidity: 45 - 85%RH
- Computing option: up to 5A
- Indication:
 - on power supply: red indication
 - on operational output relay: green indication
- Weight: 150 gr.
- Time functions: according to the programming guide

Mounting method:

- DIN rail



Type	Packing/Box (pcs)	Catalogue number
TE48S-S	84	50105

Dimensions (mm)

D	E	L1	L2
5	44.8	74	95
C	H	W	
15	58	48	

Type	Packing/Box (pcs)	Catalogue number
TE 19M	1 / 200	50102M

Dimensions (mm)

H	W	H1	H2	L1	L2
85	24	45	60	34	66

Digital counters



Documents corresponding to the product:

Standard EN 61010-1

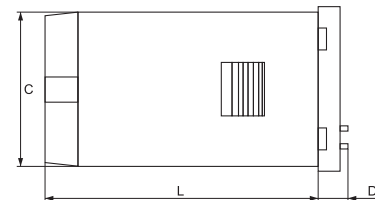
Type	Packing/Box (pcs)	Catalogue number
CE2J	1 / 45	50111

Dimensions (mm)				
H	W	C	D	L
68	68	65	8.5	90

Universal digital counter CE2J

3 YEAR WARRANTY

The device is manufactured under the modern technology CMOS which allows high speed of counting and high counting reliability. It has a built in battery which allows data storing for more than 10 years. It is supplied with a digital display with black lighting digits, providing excellent visibility at different lighting. The counter is to be mounted on the front panel of the boards. It is used for impulse sequence counting with accumulation or deduction. There is possibility for relay outlet operation at reaching beforehand set value, and also a possibility for changing the position of the decimal point.

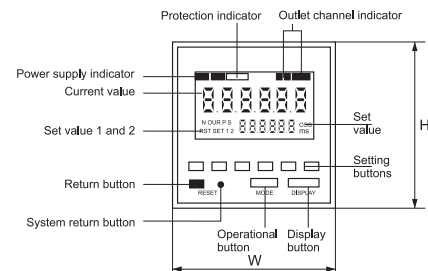


Technical data:

- Display: LCD
- Power supply voltage: 230V; 50Hz
- Counting range: 0 - 99999
- Counting speed: 30/3k cps
- Zeroing: outside impulse
- Battery for programme storing: up to 10 years
- Power consumption: <5VA
- Operating temperature: -10 ÷ +65°C
- Humidity: 35 - 85%RH
- Commutating capacity: relay outlet with active load: up to 3A
- Weight: 250g

Mounting:

- on the front panel
- opening with dimensions: 45x45



Documents corresponding to the product:

Standard EN 61010-1

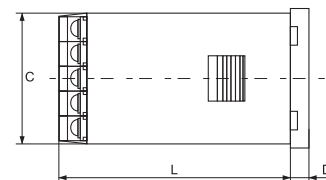
Type	Packing/Box (pcs)	Catalogue number
CE10J	1 / 45	50120

Dimensions (mm)				
H	W	C	D	L
68	68	65	6	90

Combined digital counter/timer CE10J

3 YEAR WARRANTY

The device is for front mounting in the board. It can be used as a counter or timer choosing a definite combination from keys. It is manufactured under the modern technology CMOS which allows high speed of counting, precision at operation as a timer and high reliability. It has a built in battery which allows data storing for more than 10 years. It is supplied with a digital display providing excellent visibility at different lighting. It is used for impulse sequence counting with accumulation or deduction. There is possibility for relay outlet operation at reaching beforehand set value, and also a possibility for changing the position of the decimal point.

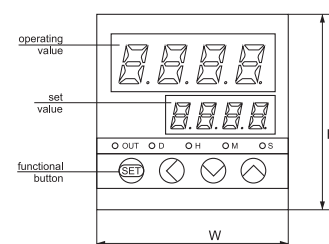


Technical data:

- Display: LCD
- Power supply voltage: 230V; 50Hz
- Counting range: 0 - 999
- Timer range: 0.01 - 99h99min
- Counting speed: 30/500 cps
- Zeroing: outside impulse
- Battery for programme storing: up to 10 years
- Power consumption: <3VA
- Mechanical wear resistance: 107 cycles
- Operating temperature: -5 ÷ +65°C
- Humidity: 35 - 85%RH
- Commutating capacity: relay outlet with active load: up to 3A
- Weight: 120g

Mounting:

- on the front panel
- opening with dimensions: 45x45





Documents corresponding to the product: EN 61010-1

Type	Packing/Box (pcs)	Catalogue number
CE15J	1 / 100	50112

Total digital counter CE15J

3 YEAR WARRANTY

The device is to be mounted on DIN-rail. It is used as an impulse counter with no outside power supply. For that purpose there is a Li battery built in the device which provides data storing and operation of the device for 5 years. It has eight digital lighting display providing excellent visibility at different lighting. It is used for impulse sequence counting with accumulation.

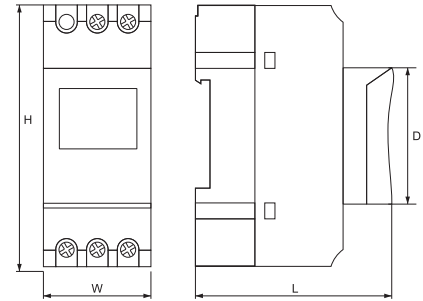
Technical data:

- Display: LCD
- Power supply voltage: built in battery
- Inlet signal: 100-230V AC/DC
- Counting accuracy: <0.002%
- Data storing battery: up to 5 years
- Operating temperature: $-5 \div +65^{\circ}\text{C}$
- Humidity: 35 – 85%RH
- Weight: 120g

Mounting:

- DIN-rail

Dimensions (mm)			
H	W	D	L
86	36	45	64



Documents corresponding to the product: EN 61010-1

Type	Packing/Box (pcs)	Catalogue number
CE15L	1 / 100	50115

Total digital counter CE15L

3 YEAR WARRANTY

The device is to be mounted on DIN-rail. It is used as a time impulse counter with no outside power supply. For that purpose there is a Li battery built in the device which provides data storing and operation of the device for 5 years. It has eight digital lighting display providing excellent visibility at different lighting. It is used for time impulse sequence counting with accumulation. It displays the operated time.

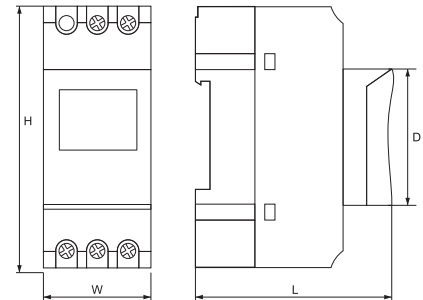
Technical data:

- Display: LCD
- Power supply voltage: built in battery
- Inlet signal: 100-230V AC/DC
- Counting accuracy: <0.002%
- Battery for data storing: up to 5 years
- Operating temperature: $-5 \div +65^{\circ}\text{C}$
- Humidity: 35 – 85%RH
- Weight: 120g

Mounting:

- DIN-rail

Dimensions (mm)			
H	W	D	L
86	36	45	64



Documents corresponding to the product: EN 61010-1

Type	Packing/Box (pcs)	Catalogue number
EK - RSTB	1 / 200	50103

Phase sequence indicator EK - RSTB

3 YEAR WARRANTY

The device is to be mounted on DIN-rail. It is used for control and indication of the presence, sequence and quality of the phases. The device indicates the following fault:

- lack of one or several phases;
- change in the sequence of the phases;
- lowering of the power supplying voltage: under 10%;
- increasing of the power supplying voltage: over 10%;
- phase asymmetry of the power supplying voltage: $\pm 10\%$

In the presence of one of the conditions above a relay starts operating in the device which breaks the controlling circuit.

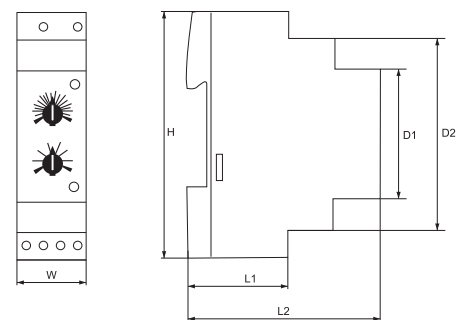
The time between fault indication and outlet relay switching on can be adjusted in order to prevent unwilling stops at very short breaks. When the voltage is back to normal limits, the device receives energy (indication lights) according to the hysteresis values. At phase sequence fault the device operates immediately.

Technical data:

- Power supply voltage: 400V; 50Hz
- Possibility for operation range adjustment: 0.1 – 10 seconds
- Possibility for working range adjustment: from 300 to 480 V
- Electrical wear resistance: 1 000 000 cycles
- Mechanical wear resistance: 10 000 000 cycles
- Indication:
 - green LED – indication for a change in the condition
 - red LED – failure
- Operating temperature: $-5 \div +65^{\circ}\text{C}$
- Humidity: 35 – 85%RH
- Weight: 120g

Mounting:

- DIN-rail





Documents corresponding to the product: EN 60947-5-1; EN 61810

Industrial Relays and Bases

3 YEAR WARRANTY

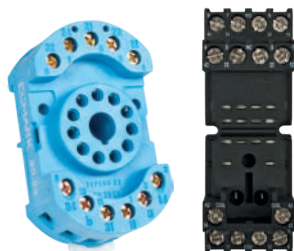
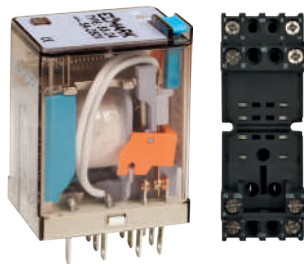
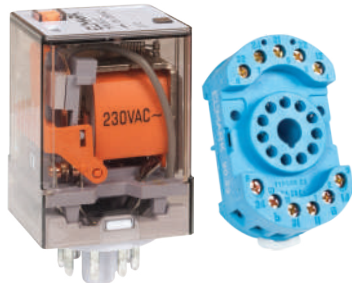
Devices intended for construction of automation and signalling boards. They are mainly used for command transfer towards the executive mechanisms. Currents of comparatively heavy values enabling the direct control of industrial executive mechanisms are commuted in comparatively small sizes. The contact surfaces are made from silver-coated electrolytic copper. The entire contact system is closed within a lid of colourless fire-proof plastic with a test-button installed to it. The base provides a safe electric connection of the conductors of the electric installation and the relays and is used to install the relay to the DIN busbar.

Technical Characteristics:

- Supply voltage: from 12 to 230V AC, 50 Hz and from 12 to 110V DC
- Acceptable deviation of the supply voltage: 85 - 110% U_n
- Rated current of the sockets: 10A AC
- Electrical endurance: 1 000 000 cycles
- Isolation resistance: 500 m Ω /min (500V)
- Impulse tension resistance: 2000V, 50Hz
- Dielectric strength: 1000V AC/1 min
- Turn-out time: 25ms
- Working temperature: -5 ÷ + 65°C
- Humidity: 35 - 85% RH

Method of installation:

- on a DIN rail by means of a socket



Relay type	Voltage of the coil (V)	Socket type	Resistance of the coil (Ω)	Number of contacts	Packing/Box (pcs)	Catalogue number
ELM - 14FC	12 VDC	ELM-RT624-B	260	NO+NC	100 / 1000	57141
ELM - 14FC	24 VDC	ELM-RT624-B	1080	NO+NC	100 / 1000	57142
ELM - 14FC	48 VDC	ELM-RT624-B	4260	NO+NC	100 / 1000	57143

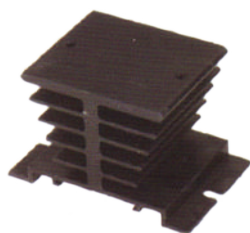
Relay type	Voltage of the coil (V)	Socket type	Resistance of the coil (Ω)	Number of contacts	Packing/Box (pcs)	Catalogue number
ELM - 60.2	12 VDC	ELM - 90.22	96	2NO+2NC	20 / 300	57601
ELM - 60.2	24 VDC	ELM - 90.22	384	2NO+2NC	20 / 300	57602
ELM - 60.2	48 VDC	ELM - 90.22	1540	2NO+2NC	20 / 300	57603
ELM - 60.2	230 VAC	ELM - 90.22	7400	2NO+2NC	20 / 300	57605
ELM-60.2	24VAC	ELM-90.22		2NO+2NC	20 / 300	57606
ELM - 60.13	12 VDC	ELM - 90.23	96	3NO+3NC	20 / 300	57611
ELM - 60.13	24 VDC	ELM - 90.23	384	3NO+3NC	20 / 300	57612
ELM - 60.13	48 VDC	ELM - 90.23	1540	3NO+3NC	20 / 300	57613
ELM - 60.13	110 VAC	ELM - 90.23	1700	3NO+3NC	20 / 300	57614
ELM - 60.13	230 VAC	ELM - 90.23	7400	3NO+3NC	20 / 300	57615
ELM-60.13	24VAC	ELM90.23		3NO-3NC	20/300	57616

Relay type	Voltage of the coil (V)	Socket type	Resistance of the coil (Ω)	Number of contacts	Packing/Box (pcs)	Catalogue number
ELM - 55.02	12 VDC	ELM - RT702-B	42	2NO+2NC	50 / 500	57521
ELM - 55.02	24 VDC	ELM - RT702-B	168	2NO+2NC	50 / 500	57522
ELM - 55.02	48 VDC	ELM - RT702-B	675	2NO+2NC	50 / 500	57523
ELM - 55.02	230 VAC	ELM - RT702-B	14000	2NO+2NC	50 / 500	57525
ELM55.02	24VAC	ELM - RT702-B		2NO+2NC	50/500	57526
ELM - 55.04	12 VDC	ELM-RT704-B	42	4NO+4NC	50 / 500	57541
ELM - 55.04	24 VDC	ELM-RT704-B	168	4NO+4NC	50 / 500	57542
ELM - 55.04	48 VDC	ELM-RT704-B	675	4NO+4NC	50 / 500	57543
ELM - 55.04	110 VAC	ELM-RT704-B	3500	4NO+4NC	50 / 500	57544
ELM - 55.04	230 VAC	ELM-RT704-B	14000	4NO+4NC	50 / 500	57545
ELM-55.04	24VAC	ELM-RT704-B		4NO+4NC	50/500	57546

Socket type	Dimensions (mm)	Number of terminals (pcs.)	Packing/Box (pcs)	Catalogue number
ELM - RT624-B	76 x 15	5	20 / 600	57901
ELM - RT702-B	76 x 27	11	10 / 240	57902
ELM - RT704-B	76 x 27	14	10 / 240	57912
ELM - 90.22	68 x 38	8	10 / 400	57904
ELM - 90.23	68 x 38	11	10 / 400	57905



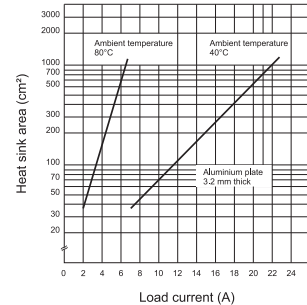
Documents corresponding to the product: EN 60947-5-1; EN 61810



Industrial Solid State Relays (SSR)

3 YEAR WARRANTY

Industrial SSR are intended for mounting in power and control cabinets as an output switch devices with reliable ON/OFF performance. The SSR are based on the CMOS technology. The non-contact electronic switch is optically separated from the input signal by a photoelectric coupler. This allows use of switch currents of up to 50A despite of the devices small overall size. Another important feature of the relay is that output load can be regulated depending on the input signal value. The relay is mainly used to transmit control signals to actuating mechanisms since it can work at comparatively high currents making it possible to directly control actuators. SSR have transparent plastic covers to additionally improve their safety level. The SSR use is connected with considerable heat emissions, so measures must be taken to dispense the excessive thermal energy in the atmosphere. This is achieved through application of specially deigned radiators. The correct definition of radiator parameters is of critical importance. It is made by calculating the heat generation capacity with the formula: Heat generation = active load current x 3.0 W/A. The heat removal surface is estimated with the help of the following graphic:



Technical Specifications:

- Load/output voltage: 30/400V 50 Hz or the solid state voltage regulators
- Rated output current: from 10A to 60A
- Insulating voltage: 1000 MΩ / min (500V)
- Impulse voltage stability: 2000V, 50Hz
- Dielectric Strength: < 2500VAC / 1 min
- Leakage current: < 2mA
- Turn-on time: < 10ms
- Operating temperature: -5°C + 65°C
- Relative Humidity: 35 - 85%RH

Type	Relay Type	Control Voltage (V)	Output Voltage (V)	Number of phases	Output Current (A)	Packing/Box (pcs)	Catalogue number
ZG3NC - 2 - 10B	SSR	3-32VDC	230VAC	1	10	10 / 100	57710
ZG3NC - 2 - 20B	SSR	3-32VDC	230VAC	1	20	10 / 100	57720
ZG3NC - 2 - 25B	SSR	3-32VDC	230VAC	1	25	10 / 100	57725
ZG3NC - 2 - 40B	SSR	3-32VDC	230VAC	1	40	10 / 100	57740
ZG3NC - 2 - 60B	SSR	3-32VDC	230VAC	1	60	10 / 100	57760
ZG3NC - 3 - 10B	SSR	3-32VDC	400VAC	2	10	10 / 100	57713
ZG3NC - 3 - 20B	SSR	3-32VDC	400VAC	2	20	10 / 100	57723
ZG3NC - 3 - 25B	SSR	3-32VDC	400VAC	2	25	10 / 100	57735
ZG3NC - 3 - 40B	SSR	3-32VDC	400VAC	2	40	10 / 100	57743
ZG3NC - 3 - 60B	SSR	3-32VDC	400VAC	2	60	10 / 100	57763

Type	Relay Type	Control Voltage (V)	Output Voltage (V)	Number of phases	Output Current (A)	Packing/Box (pcs)	Catalogue number
ZG1NC - 2 - 10D	SS voltage regulator	1-10VDC	0-230VAC	1	10	10 / 100	57810
ZG1NC - 2 - 20D	SS voltage regulator	1-10VDC	0-230VAC	1	20	10 / 100	57820
ZG1NC - 2 - 25D	SS voltage regulator	1-10VDC	0-230VAC	1	25	10 / 100	57825
ZG1NC - 2 - 40D	SS voltage regulator	1-10VDC	0-230VAC	1	40	10 / 100	57840
ZG1NC - 3 - 10D	SS voltage regulator	1-10VDC	0-400VAC	2	10	10 / 100	57813
ZG1NC - 3 - 20D	SS voltage regulator	1-10VDC	0-400VAC	2	20	10 / 100	57823
ZG1NC - 3 - 25D	SS voltage regulator	1-10VDC	0-400VAC	2	25	10 / 100	57835
ZG1NC - 3 - 40D	SS voltage regulator	1-10VDC	0-400VAC	2	40	10 / 100	57843

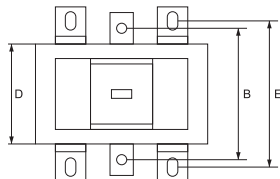
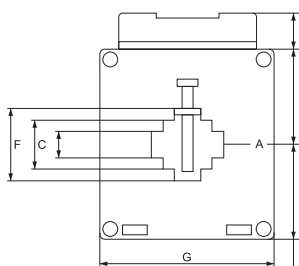
Type	Relay Type	Control Voltage (V)	Output Voltage (V)	Number of phases	Output Current (A)	Packing/Box (pcs)	Catalogue number
ZG33 - 3 - 10B	SSR	3-32VDC	400VAC	3	10	1 / 30	57831
ZG33 - 3 - 20B	SSR	3-32VDC	400VAC	3	20	1 / 30	57832
ZG33 - 3 - 25B	SSR	3-32VDC	400VAC	3	25	1 / 30	57833
ZG33 - 3 - 40B	SSR	3-32VDC	400VAC	3	40	1 / 30	57834

Note: The relay output must be supplied with a varistor to ensure its over-voltage protection, whenever RRS is used to control inductive loads.

Type of Radiator	Overall Dimensions (L/W/H)	Approximate Load (A)	Packing/Box (pcs)	Catalogue number
QW-A 50	60 x 50 x 50	15	1 / 50	57906
QW-B 72	72x100x50	20	1 / 50	57907
QW-B 100	100x100x50	25	1 / 50	57908
QW-C 115	115x100x50	40	1 / 50	57909
QW-E 50	150x88x35	75	1 / 40	57910



Documents corresponding to the product: Standard EN 61010-1; EN 60044-1; EN 60044-6



Current measurement transformers MES - xx/x5 type

3 YEAR WARRANTY

The measurement transformers find application at current measuring, current regulation, systems for current characteristics watching, systems for reactive energy compensation, signaling, etc. They are with x/5 gear ratio as X is the inlet range of the transformer.

Technical data:

- Maximum operating voltage: 720V; 50Hz
- Admissible deviation of the operating current: $1.2 \times I_n$
- Inlet current: 50 – 1200A
- Outlet current: 5A
- Impulse voltage wear resistance: 4000V; 50Hz (1 min)
- Operating temperature: $-5 \div +65^\circ\text{C}$
- Humidity: 35 – 85%RH
- Precision class: 0.5

Mounting:

- Current transformers can be DIN rail mounted;
- vertically or horizontally to the power supplying rails according to the opening of the transformer
- Current transformers can be mounted on flat surfaces by use of fixing clamps.

Type	Overall dimensions (mm)						
	A	B	C	D	E	F	G
MES - 75/30	88	52	52	41	77	31	31
MES - 75/40	88	52	52	41	77	41	41
MES - 86/60	117	57	57	184	77	61	61

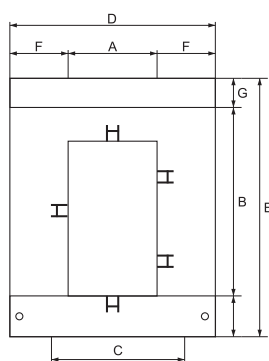
Type	Range	Precision class	Capacity VA	Weight kg	Packing/Box (pcs)	Catalogue number
MES - 75/30	50/5	0.5	1.5	0.60	1 / 40	45050A
MES - 75/30	75/5	0.5	1.5	0.60	1 / 40	45075A
MES - 75/30	100/5	0.5	1.5	0.60	1 / 40	45103A
MES - 75/30	150/5	0.5	2.5	0.60	1 / 40	45153A

Type	Range	Precision class	Capacity VA	Weight kg	Packing/Box (pcs)	Catalogue number
MES - 75/40	200/5	0.5	5	0.60	1 / 40	45204A
MES - 75/40	250/5	0.5	5	0.60	1 / 40	45254A
MES - 75/40	300/5	0.5	10	0.60	1 / 40	45304A
MES - 75/40	400/5	0.5	10	0.60	1 / 40	45404A
MES - 75/40	500/5	0.5	10	0.60	1 / 40	45504A
MES - 75/40	600/5	0.5	15	0.60	1 / 40	45604A

Type	Range	Precision class	Capacity VA	Weight kg	Packing/Box (pcs)	Catalogue number
MES - 86/60	400/5	0.5	15	0.60	1 / 40	45406A
MES - 86/60	500/5	0.5	15	0.60	1 / 40	45506A
MES - 86/60	600/5	0.5	15	0.60	1 / 40	45606A
MES - 86/60	800/5	0.5	15	0.60	1 / 40	45806A
MES - 86/60	1000/5	0.5	15	0.60	1 / 32	45906A
MES - 86/60	1200/5	0.5	15	0.60	1 / 32	45916A



Documents corresponding to the product: Standard EN 60044-1



Current transformers, type CP

3 YEAR WARRANTY

Current measuring transformers of duct type. Specially designed to be installed in measuring circuits without removing cables in current measuring circuit. CP Transformers save installation time and decrease installation costs

Technical Specification:

- small size table:
- secondary coil rated current 5A
- rated voltage 720V
- frequency 50Hz
- rated load: up to 30VA
- safety coefficient: $f_s \leq 5$
- accuracy class :0.5; 1
- secondary coil connection: cable shoe terminal

Type	Overall dimensions (mm)					
	A	B	C	D	E	G
CP 23	20	30	51	89	111	34
CP 58	50	80	78	114	145	32
CP 88	80	80	108	144	145	32

Type	Range	Precision class	Capacity VA	Weight kg	Packing/Box (pcs)	Catalogue number
CP 23	200/5	1	1.5	0,74	1 / 45	452320
CP 23	250/5	1	1,5	0,74	1 / 45	452325
CP 23	300/5	0,5	1,5	0,74	1 / 45	452330

Type	Range	Precision class	Capacity VA	Weight kg	Packing/Box (pcs)	Catalogue number
CP 58	250/5	0,5	1,5	0,87	1 / 36	455825
CP 58	300/5	0,5	1,5	0,87	1 / 36	455830
CP 58	400/5	0,5	1,5	0,87	1 / 36	455840
CP 58	500/5	0,5	2,5	0,87	1 / 36	455850
CP 58	600/5	0,5	2,5	0,87	1 / 36	455860

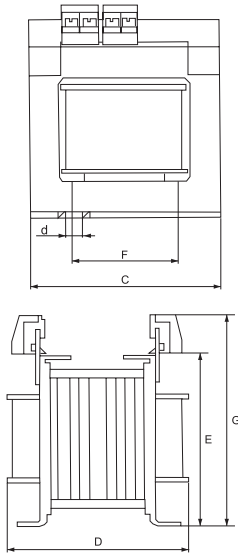
Type	Range	Precision class	Capacity VA	Weight kg	Packing/Box (pcs)	Catalogue number
CP 88	400/5	0,5	1,5	1	1 / 20	458840
CP 88	500/5	0,5	1,5	1	1 / 20	458850
CP 88	600/5	0,5	1,5	1	1 / 20	458860
CP 88	750/5	0,5	2,5	1	1 / 20	458875
CP 88	800/5	0,5	2,5	1	1 / 20	458880
CP 88	1000/5	0,5	5	1	1 / 20	458890

Voltage transformers



Documents corresponding to the product:

Standard EN 60051-1



EVT5 - control voltage transformer

3 YEAR WARRANTY

Functions:

Reduction of main voltage within standard range

- Galvanic separation of the power supply circuit from the operation circuit

Technical features:

- Input voltage: 400 or 230 V
- Frequency : 50/60Hz
- Short circuit resistance: unstable
- Temperature class: B (130°C)
- Construction: open (for installation in other products)
- Magnetic circuit: cold rolled electric furnace steel
- Coils: pure electrotechnical copper
- IP code: IP20

Connection:

- flexible or hard conductors of relevant section to terminals

Mounting:

- Mounting in distribution boards or products
- fastening: by means of screws/bolts to the surface
- position: vertical
- ambient temperature: -20 ÷ +65°C

Type	Initial voltage (V)	Secondary voltage (V)	Power VA	Dimensions						Packing / Box (pcs.)	Catalogue number
EVT5 - 100VA	230	48-36	100	84	90	63	65	95	4	16	45248
EVT5 - 100VA	400	48-36	100	84	90	63	65	95	4	16	45448
EVT5 - 100VA	230	24-12	100	84	90	63	65	95	4	16	45243
EVT5 - 100VA	400	24-12	100	84	90	63	65	95	4	16	45443
EVT5 - 250VA	230	48-24-12	250	130	100	120	53	130	20	16	45242
EVT5 - 250VA	230	48-36	250	130	100	120	53	130	20	16	45242N
EVT5 - 250VA	400	48-24-12	250	130	100	120	53	130	20	12	45442
EVT5 - 250VA	400	48-36	250	130	100	120	53	130	20	12	45442N
EVT5 - 250VA	230	24-12	250	130	100	120	53	130	20	12	45244
EVT5 - 250VA	400	24-12	250	130	100	120	53	130	20	12	45444
EVT5 - 500VA	230	48-24-12	500	150	113	133	53	140	20	4	45245
EVT5 - 500VA	230	48-36	500	150	113	133	53	140	20	4	45245N
EVT5 - 500VA	400	48-24-12	500	150	113	133	53	140	20	4	45445
EVT5 - 500VA	400	48-36	500	150	113	133	53	140	20	4	45445N
EVT5 - 500VA	230	24-12	500	150	125	133	53	140	20	4	45246
EVT5 - 500VA	400	24-12	500	150	125	133	53	140	20	4	45446
EVT5 - 500VA	230	110-48-24	500	150	125	133	53	140	20	4	45215
EVT5 - 500VA	400	110-48-24	500	150	125	133	53	140	20	6	45415
EVT5 - 1000VA	230	48-24-12	1000	170	125	150	65	155	20	2	45241
EVT5 - 1000VA	230	48-36	1000	170	125	150	65	155	20	2	45241N
EVT5 - 1000VA	400	48-24-12	1000	170	125	150	65	155	20	2	45441
EVT5 - 1000VA	400	48-36	1000	170	125	150	65	155	20	2	45441N
EVT5 - 1000VA	230	24-12	1000	170	125	150	65	155	20	2	45247
EVT5 - 1000VA	400	24-12	1000	170	125	150	65	155	20	2	45447
EVT5 - 1600VA	230	48-24-12	1600	190	125	150	65	170	20	2	452416
EVT5 - 1600VA	230	48-36	1600	190	125	150	65	170	20	2	452416N
EVT5 - 1600VA	400	48-24-12	1600	190	125	150	65	170	20	2	454416
EVT5 - 1600VA	400	48-36	1600	190	125	150	65	170	20	2	454416N
EVT5 - 1600VA	230	24-12	1600	190	125	150	65	170	20	2	452417
EVT5 - 1600VA	400	24-12	1600	190	125	150	65	170	20	2	454417



Bell

5 YEAR WARRANTY

Used for sound signalization in housing and industrial buildings.

- Sound level: 70 dB

Consumption:

- 3.6VA for power supply 8 -12V
- 5VA for power supply 230V

Mounting on DIN-rail

Type	Un (V)	Packing / Box (pcs)	Catalogue number
Bell	8-12	1 / 12 / 240	5012
Bell	230	1 / 12 / 240	5220



Bell transformer

5 YEAR WARRANTY

Modified for power supply of bells and other signal devices with alternating voltage 8V, 12V, 24V and capacity up to 8VA

- The voltage of the primary winding voltage is 230V
- Mounting on DIN-rail

Type	Packing / Box (pcs)	Catalogue number
Bell transformer	1 / 80	5001



Documents corresponding to the product: Standard EN 61010-1

Type	Packing/Box (pcs)	Catalogue number
CD - 701	1	50124

Digital Temperature Controller Type CD - 701

3 YEAR WARRANTY

The device is intended for industrial control and monitoring of temperature. It allows monitoring and adjustment of temperatures of up to 1999°C depending on the used sensor – thermocouple or thermoresistor. The device allows programming of the used type of sensor (K (CA) ; J (IC) PT 100, etc.) and the controller working range. It also allows selection of the control algorithm, error adjustment, indication hysteresis curve adjustment and alarm settings. The controller is intended for mounting on control panels. It is user friendly and can be set through the push buttons on the device front panel. The program can be password protected. When operational, the display shows the set temperature and the current temperature.

Technical Specifications:

- Rated voltage: 230V, 50 Hz
- Permissible voltage deviation: 85 - 110% Un
- Input signal: from thermocouple, thermoresistor or unified signal (4-20mA; 0-10VDC)
- Output: Relay
- Emergency Output: Relay
- Electrical life: 1 000 000 cycles.
- Indication:
 - Green LED – indicates the measured (current) temperature
 - Red LED – indicates the set temperature
- Insulation resistance: 20 MΩ /min (500V)
- Impulse voltage stability: 2000V, 50Hz
- Operating temperature: -5°C ÷ +65°C
- Relative Humidity: 35 - 85%RH

Mounting:

- on the front panel



Thermocouple and thermo resistance

3 YEAR WARRANTY

The thermo-measuring elements are designed for measuring the temperature in the point of contact between the surface (warmed or cooled) and the thermo-element. They are a comparatively cheap and the most wide-spread method for temperature measurement. The thermocouples are produced by accumulating two conductors from a special measuring alloy in one common head. Each of these elements has a specific electromotive voltage at a specific temperature. The temperature measuring is based on the difference in the electromotive powers between the hot and the cool end of the thermocouple, while this difference in the form of voltage of several millivolts is supplied at the input of the thermoregulator, which displays the measured temperature. Each thermocouple is produced and calibrated for measuring of specific temperature ranges depending on the alloys of which it is made. When thermocouples measuring great distances from the thermoregulators are used (more than 15 points), it is obligatory to use compensatory cable corresponding to the type of the thermocouple. The thermo-resistant elements action is based on the capacity of specific alloys, very often Pt100 to change their resistance when the temperature is changed. For each temperature value is specified a value of resistance. This value is supplied at the input of the thermoregulator, which displays the measured temperature.

Each thermoregulator operates with a specific type of thermo-element.

Type of thermo-element	Symbol	Temperature range	Type of catching	Sizes of the head	Size of the free end	Packing/Box (pcs)	Catalogue number
K	WRNT - 01	0 ÷ 400°C	nut	30 x 35	1m	1 / 300	50K40G
K	WRNT - 31	0 ÷ 400°C	Bayonet	30 x 35	0.5m	1 / 200	50K40B
K	WRNT - 13	0 ÷ 400°C	explosion-proof	Ø6	2m	1 / 200	50K40EX
J	WRKT - 01	0 ÷ 400°C	nut	30 x 35	1m	1 / 300	50J40G
J	WRKT - 13	0 ÷ 400°C	explosion-proof	Ø6	2m	1 / 300	50J40EX



Documents corresponding to the product:

Standard EN 61010-1

Type	Packing/Box (pcs)	Catalogue number
EKDP-15AA	1 / 100	50117A
EKDP-15AD	1 / 100	50117D
EKDP-15VA	1 / 100	50116A
EKDP-15VD	1 / 100	50116D

Dimensions (mm)

H	W	L	D
88	36	64	45



Documents corresponding to the product:

Standard EN 61010-1

Type	Packing/Box (pcs)	Catalogue number
EKDP7-AV	1 / 84	50106
EKDP7-AA	1 / 84	50107
EKDP7-DV	1 / 84	50108
EKDP7-DA	1 / 84	50109
EKDP7-HZ	1 / 84	50110

Dimensions (mm)

H	W	H1	D	L
72	72	68	6	42

Digital voltmeter/ammeter EKDP 15 A/V

3 YEAR WARRANTY

Digital device adjusted for DIN-rail mounting and offered in two types:

- amperemeter
- voltmeter

It is supplied with LCD display where the measurement quantity is displayed with numbers with 3 1/2 size. It has high accuracy of analogue-digital transfer, measurement precision and electromagnetic interference stability. There is possibility for adjustment of the measurement range through built in micro switches. Adjusted to measure constant current (AD,DV) and alternating current (AA,VA) quantities.

Technical data:

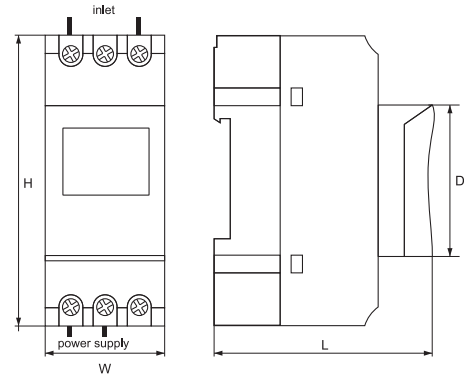
- Power supply voltage: 100 - 240V; 50Hz
- Inlet signal:
 - operating as voltmeter: 2 - 700V (the range is adjusted from inside)
 - operating as amperemeter: 5 - 2000A (the range is adjusted from inside)

Note: At current range over 5A a current measurement transformer should be used

- Consumption: <5A
- Impulse voltage wear resistance: 4000V; 50Hz (1min)
- Operating temperature: -5 ÷ +65°C
- Humidity: 35 - 85%RH
- Precision: 0.5% from the whole scale
- Display: LCD
- Weight: 150gr

Mounting:

- DIN-rail



Digital voltmeter/ammeter and frequency meter EKDP7

3 YEAR WARRANTY

Digital device adjusted for mounting on the front panel of electrical boards and offered in the following types:

- amperemeter:
 - EKDP7 - AA - amperemeter for alternating current
 - EKDP7 - DA - amperemeter for direct current
- voltmeter:
 - EKDP7 - AV - voltmeter for alternating current
 - EKDP7 - DV - voltmeter for direct current
- EKDP7 - Hz - frequency meter

It is supplied with LCD display where the measurement quantity is displayed with numbers with 3 1/2 size. It has high accuracy of analogue-digital transfer, measurement precision and electromagnetic interference stability. There is possibility for adjustment of the measurement range through built in micro switches. Adjusted to measure direct current and alternating current quantities.

Technical data:

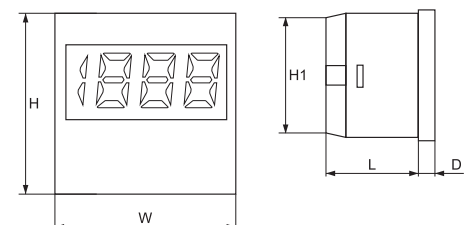
- Power supply voltage: 100 - 240V; 50Hz
- Inlet signal:
 - operating as voltmeter: 2 - 700V (the range is adjusted from inside)
 - operating as amperemeter: 5 - 2000A (the range is adjusted from inside)

Note: For high current range a current measurement transformer should be used for alternating current device and a measurement shunt for direct current.

- Consumption: <5A
- Impulse voltage wear resistance: 4000V; 50Hz (1min)
- Operating temperature: -5 ÷ +65°C
- Humidity: 35 - 85%RH
- Precision: 0.5% from the whole scale
- Display: LCD
- Weight: 130gr

Mounting:

- on the front panel





Analogue (pointer) panel meters SD72 type for build-in

3 YEAR WARRANTY

Analogue devices adjusted for mounting on the front panel of electrical boards. Designed for frequency measurement, capacity, alternating or direct voltage and current of the power supply grid, with overall dimensions 72x72mm. They are manufactured on the basis of bridge measurement schemes. There is possibility for display change for the higher scopes of measuring.

Documents corresponding to the product:

Standard EN 60051-1



Type	Type of the measurement system	Precision class	Range	Note	Packing/Box (pcs)	Catalogue number
amperemeter AC	MEMSI	1.5	0-40A	-	1 / 100	50118
amperemeter AC	MEMSI	1.5	0-100A	current transfer 100/5	1 / 100	654010
amperemeter AC	MEMSI	1.5	0-200A	current transfer 200/5	1 / 100	654020
amperemeter AC	MEMSI	1.5	0-400A	current transfer 400/5	1 / 50	654040
amperemeter AC	MEMSI	1.5	0-600A	current transfer 600/5	1 / 50	654060
amperemeter AC	MEMSI	1.5	0-1000A	current transfer 1000/5	1 / 50	654100
amperemeter AC	MEMSI	1.5	0-1500A	current transfer 1500/5	1 / 50	654150
voltmeter AC*	MEMSI	1.5	0-500V	-	1 / 50	50125
frequency meter**	ME	0.5	45-65Hz	-	1 / 50	50126
cosφ meter	MEMSI	1.5	3P 400V	-	1 / 50	50127
amperemeter DC	MEMC	1.5	0-5A	-	1 / 50	50128
amperemeter DC	MEMC	1.5	0-50A	outer resistor 60mV	1 / 50	50129
voltmeter DC	MEMC	1.5	0-50V	-	1 / 50	50130
voltmeter DC	MEMC	1.5	0-100V	-	1 / 20	50131
wattmeter	MEMSI	1.5	0-3000W 1P240V	-	1 / 25	50132
wattmeter	MEMSI	1.5	0-3000W 3P 3 line	-	1 / 25	50133
wattmeter	MEMSI	1.5	0-3000W 3P 4 line	-	1 / 25	50134

Note: MEMSI - magnetic-electrical movable steel instrument; MEMC – magnetic-electrical movable coil

* Possibility for supplying with voltage transformer X/100V for range expanding

** Possibility for voltage 110V, 230V , 400V

Documents corresponding to the product: Standard IEC 62052-11; IEC 62053-21; IEC 62056-21

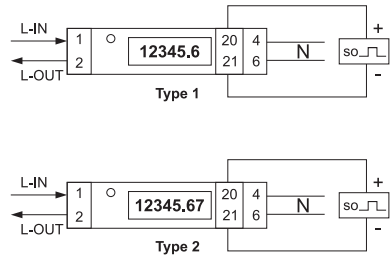
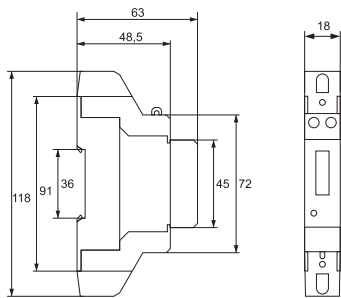
DIN Rail Mounted kWh Meters

3 YEAR WARRANTY

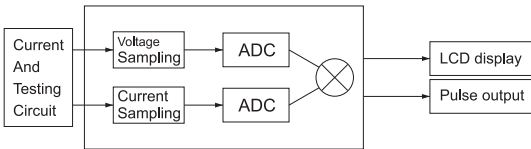
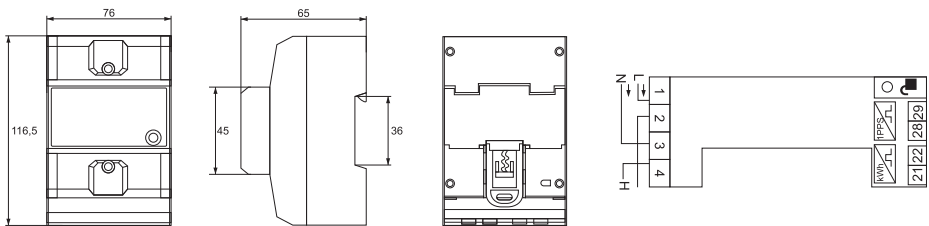
Electronic single and three phase kWh meters intended for DIN rail mounting and active energy measurement. Meters are suitable for home and commercial applications. They perform direct measurement of the real consumption of electric power and the results are shown on the LCD display. The system doesn't need any additional adjustment or calibration. The range includes single and multi-tariff models.

Technical Specifications:

- Direct power consumption measurement: up to 20 (80) A; 50/60Hz
- Automatic temperature compensation
- LED phase voltage outage indicator.
- Indication for wrong cable connection
- Indication for wrong measurement
- Accuracy class: 1
- Number of tariffs: see the table below
- Meter constant: See the table below

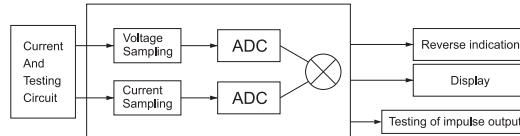
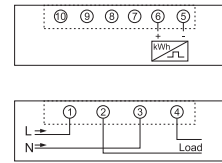
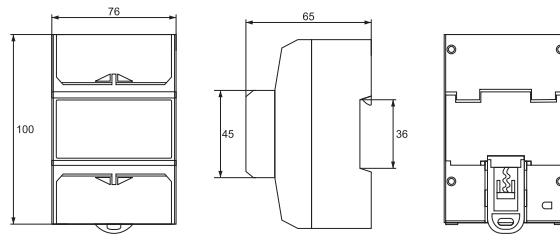


Type	Measuring range	Number of Tariffs	Meter constant (imp/kWh)	Voltage (V)	Overall dimensions (mm) height / width / depth	Packing/Box (pcs)	Catalogue number
DDS - 1Y - 45	5 (45)	1	1000	230	63 / 18 / 118	1 / 120	50214

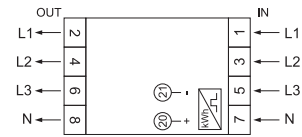
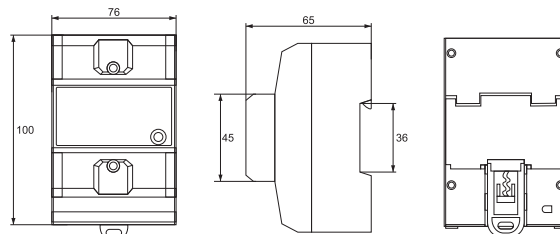


Type	Measuring range	Number of Tariffs	Meter constant (imp/kWh)	Voltage (V)	Overall dimensions (mm) height / width / depth	Packing/Box (pcs)	Catalogue number
DD4F-S01-1Y-60	5(60)	4	1600	230	116.5 / 76 / 65	1 / 48	50220

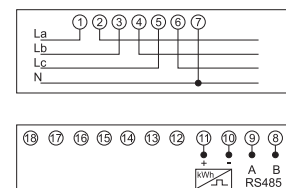
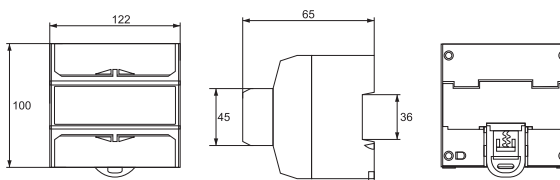
Displaying measurement devices



Type	Measuring range	Number of Tariffs	Meter constant (imp/kWh)	Voltage (V)	Overall dimensions (mm) height / width / depth	Packing/Box (pcs)	Catalogue number
DDS - 1Y - 100	10 (100)	1	1600	230	65 / 76 / 100	1 / 45	50260



Type	Measuring range	Number of Tariffs	Meter constant (imp/kWh)	Voltage (V)	Overall dimensions (mm) height / width / depth	Packing/Box (pcs)	Catalogue number
DDS - 3Y 80	20 (80)	1	800	3x230/400	65 / 76 / 100	1 / 45	50380



Type	Measuring range	Number of Tariffs	Meter constant (imp/kWh)	Voltage (V)	Overall dimensions (mm) height / width / depth	Packing/Box (pcs)	Catalogue number
DTGS-S01-3Y100	10(100)	4	800	3X230/400	122 / 100 / 65	1 / 30	50400

The background is a solid blue color with white technical drawing elements. These include various geometric shapes like circles, arcs, and lines, some with arrows indicating direction or flow. There are also dashed lines and crosshairs, typical of engineering or architectural drawings. The overall style is clean and professional, suggesting a technical or scientific theme.

ELEMENTS FOR AUTOMATION, MONITORING AND CONTROL

ELEMENTS

ELMARK®

Limit switches | [114](#)

Proximity sensor | [120](#)

Capacitive sensor | [121](#)

Photoelectrical sensor | [122](#)

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Rotary switches | [124](#)

Buttons and LED indicators | [128](#)

Devices for telfer control | [133](#)

Warning lights and towers | [134](#)



All-purpose limit switch – series CSA-xxx

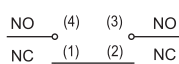
3 YEAR WARRANTY

The all-purpose limit switches are devices used in automatic systems as a control element. They are used for setting of gearing limits. They are mounted on transport lines, conveyors and other linear progressive motion machines. They feature a vibration-resistant metal shell.

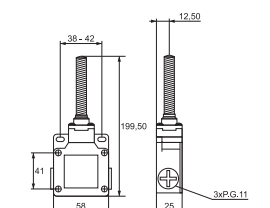
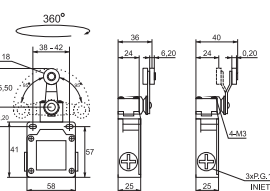
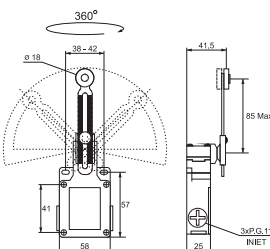
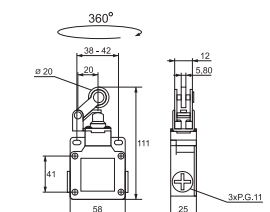
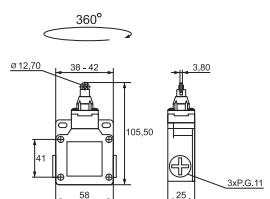
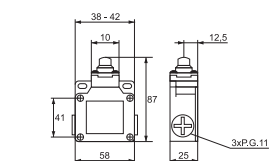
Product conformity documentation:

- Standard: EN 60947-1; EN 60947-5-1
- Dielectric strength: 1000V AC
- Insulating resistance: 100mΩ
- Electrical endurance (number of cycles): 500 000 with active load
- Mechanical endurance (number of cycles): 1 000 000
- Gearing speed: 5mm/s to 0.5 m/s
- Rated voltage: 230V
- Rated current: up to 10A
- IP code: IP66
- Cable input: cable gland PG11
- Section of power supply conductor: up to 2mm²
- Fastening strength of terminals: 6-8kgf/cm

Type of contact system



Type	Type of the head	Power of starting (g)	Power of release (g)	Switching position	General movement	Rated current	Packing/Box (pcs)	Catalogue number
CSA - 001	metal cylinder	800	400	2.0mm	5.8mm	10A-active 4A-inductive	10 / 90	46A001
CSA - 003	cylinder with metal roll	800	400	2.0mm	5.8mm	10A-active 4A-inductive	10 / 90	46A003
CSA - 012	horizontal lever with metal roll	800	400	2.0mm	5.8mm	10A-active 4A-inductive	10 / 90	46A012
CSA - 031	adjustable lever with metal roll	400	100	22.5°	95°	10A-active 4A-inductive	10 / 80	46A031
CSA - 021	lever with metal roll	400	100	22.5°	95°	10A-active 4A-inductive	10 / 80	46A021
CSA - 081	spring lever	150	50	22.5°	50mm	10A-active 4A-inductive	10 / 80	46A081



All-purpose limit switch – series TZ-6xxx

3 YEAR WARRANTY

The all-purpose limit switches are installed on transport lines, conveyors and other linear progressive motion machines. The miniature limit switch is mounted in an aluminum shell, resistant to vibrations, lubricants and water.

Product conformity documentation:

- Standard: EN 60947-1; EN 60947-5-1
- Dielectric strength: 1000V AC
- Insulating resistance: 100mΩ
- Contact resistance: 15mΩ
- Electrical endurance (number of cycles): 500 000 with active load
- Mechanical endurance (number of cycles): 10 000 000
- Gearing speed: 0.1mm/s to 0.5 m/s
- Rated voltage: 230V
- IP code: IP65
- Cable input: cable gland PG11
- Section of power supply conductor: up to 1.5mm²

Type of contact system



Type	Type of the head	Power of starting (g)	Power of release (g)	Switching position	General movement	Rated current	Packing/ Box (pcs)	Catalogue number
TZ-6001	metal cylinder	350g	115g	0.5mm	5.5mm	15A-active 5A-inductive	1 / 50	466001
TZ-6101	oil-resistant metal cylinder	800g	240g	2mm	5mm	15A-active 5A-inductive	1 / 50	466101
TZ-6102	oil-resistant cylinder with metal roll	500g	100g	1mm	3.5mm	15A-active 5A-inductive	1 / 50	466102
TZ-6104	oil-resistant horizontal lever with metal roll	640g	230g	5mm	6mm	15A-active 5A-inductive	1 / 50	466104
TZ-6143	oil-resistant vertical lever with metal roll	640g	230g	5mm	6mm	15A-active 5A-inductive	1 / 50	466143
TZ-6106	spring lever	150g	-	20°	-	-	1 / 50	466106

Universal Limit Switch – Series CM-1xxx

3 YEAR WARRANTY

Limit switches of the CM series are used mainly as replacement of the limit switches of the TZ series or for setting the movement limits of some types of equipment. The switches are supplied with screw cable terminals. They can work at resistance loads as high as 15A, and are of single circuit type. Limit switches have high accuracy and can operate at wide variety of speeds.

Items are compliant with the following standards:

EN 60947-1; EN 60947-5-1

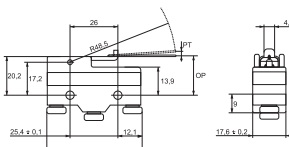
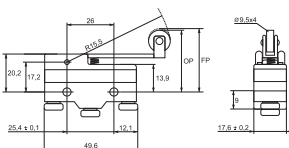
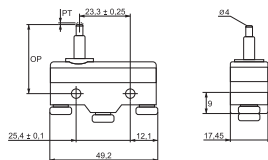
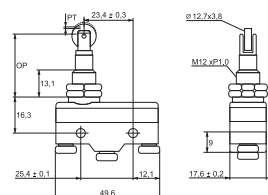
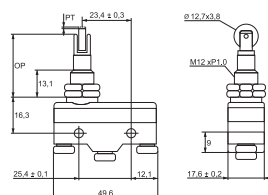
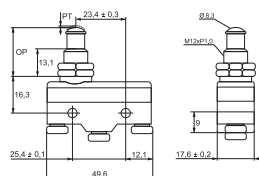
- Dielectric Strength: 1000V AC
- Insulation Resistance: 100mΩ min. (at 500VDC)
- Contact Resistance: 5mΩ
- Electrical Life (No. of cycles): 500 000 with non-inductive load

- Mechanical Life (No. of cycles): 5 000 000
- Operating frequency: 20 electrical operations/minute
- Operating speed: 0.1mm/s to 1.0m/s
- Rated voltage: 230V
- IP code: IP65
- Fastening strength of terminals: 6-8kgf/cm

Type of contact system



Type	Type of the head	Power of starting (g)	Power of release (g)	Switching position	General movement	Rated current	Packing/Box (pcs)	Catalogue number
CM-1307	Metal cylinder	350g	114g	0.4mm	5.5mm	15A-active 5A-inductive	1 / 480	468105
CM-1309	Cylinder and transverse metal roll	350g	114g	0.4mm	5.5mm	15A-active 5A-inductive	1 / 480	468106
CM-1308	Cylinder longitudinal metal roll	350g	114g	0.4mm	5.5mm	15A-active 5A-inductive	1 / 480	468109
CM-1305	Metal cylinder	350g	114g	0.4mm	1.6mm	15A-active 5A-inductive	1 / 480	468110
CM-1703	Extended metal roll	160g	22g	7.1mm	1.02mm	15A-active 5A-inductive	1 / 480	468113
CM-1705	Spring lever	10g	3g	20mm	5.6mm	15A-active 5A-inductive	1 / 480	468117



All-purpose limit switch – series TZ-8xxx

3 YEAR WARRANTY

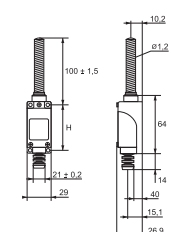
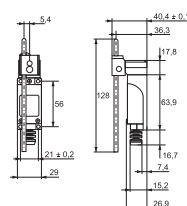
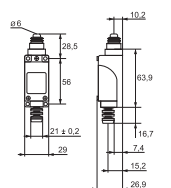
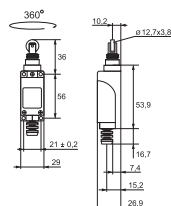
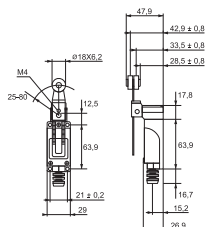
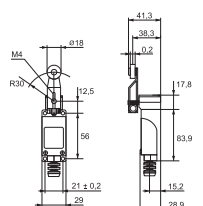
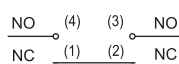
The all-purpose limit switches are devices used for setting gearing limits. They are mounted on transport lines, conveyors and other linear progressive motion machines. They have small dimensions and a vibration-resistant metal shell with plastic lid, resistant to oil and water.

Product conformity documentation:

- Standard: EN 60947-1; EN 60947-5-1
- Dielectric strength: 1000V AC
- Insulating resistance: 100MΩ
- Contact Resistance: 25mΩ
- Electrical endurance (number of cycles): 500 000 with active load

- Mechanical endurance (number of cycles): 5 000 000
- Gearing speed: 5mm/s to 0.5 m/s
- Rated voltage: 230V
- IP code: IP40
- Cable input: cable gland PG11
- Section of power supply conductor: up to 2mm
- Fastening strength of terminals: 6-8kgf/cm

Type of contact system



Type	Type of the head	Power of starting (g)	Power of release (g)	Switching position	General movement	Rated current	Packing/ Box (pcs)	Catalogue number
TZ -8104	lever with metal roll	750g	100g	20°	50°	5A-active 3A-inductive	10 / 100	468104
TZ -8108	adjustable lever with metal roll	750g	100g	20°	50°	5A-active 3A-inductive	10 / 100	468108
TZ -8112	cylinder with metal roll	900g	150g	1.5mm	4.0mm	5A-active 3A-inductive	10 / 100	468112
TZ -8111	metal cylinder	900g	150g	1.5mm	4.0mm	5A-active 3A-inductive	10 / 100	468111
TZ -8107	metal rod	750g	100g	20°	50°	5A-active 3A-inductive	10 / 100	468107
TZ -8167	spring lever	150g	-	30mm	-	5A-active 3A-inductive	10 / 100	468167

All-purpose limit switch – series CWL-xxx

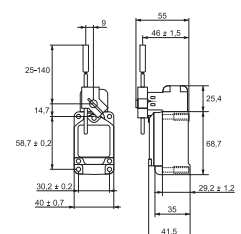
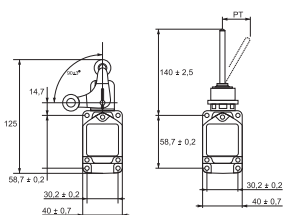
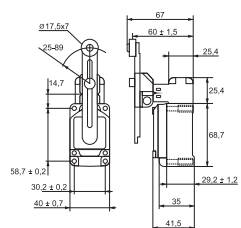
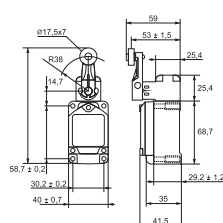
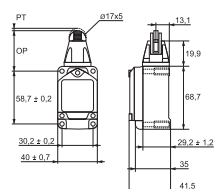
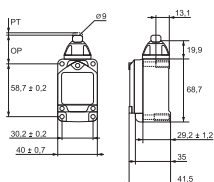
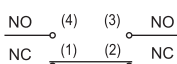
3 YEAR WARRANTY

The all-purpose limit switches are devices used for setting gearing limits. They are mounted on transport lines, conveyors and other linear progressive motion machines. They have aluminium shell of high mechanic strength and resistance to oil, water and pressure.

Product conformity documentation:

- Standard: EN 60947-1; EN 60947-5-1
- Dielectric strength: 1000V AC
- Insulating resistance: 100mΩ
- Contact resistance: 15mΩ
- Electrical endurance (number of cycles): 500 000 with active load
- Mechanical endurance (number of cycles): 10 000 000
- Gearing speed: 1mm/s to 2 m/s
- Rated voltage: 230V
- IP code: IP66
- Cable input: cable gland
- Metal shell
- Vibration-resistant

Type of contact system



Type	Type of the head	Power of starting (g)	Power of release (g)	Switching position	General movement	Rated current	Packing/Box (pcs)	Catalogue number
CWLD	metal cylinder	2720g	910g	2.0mm	6.4mm	10A-active 3A-inductive	1 / 50	46LD
CWLD2	cylinder with metal roll	2720g	910g	2.0mm	5.6mm	10A-active 3A-inductive	1 / 50	46LD2
CWL-CA2-2	lever with metal roll	1360g	227g	20°	50°	10A-active 3A-inductive	1 / 50	46LCA2-2
CWL-CA12-2-Q	adjustable lever with metal roll	2720g	910g	20°	50°	10A-active 3A-inductive	1 / 50	46LCA12-2-Q
CWL-CA32-41	fork	1200g	-	55°	90±10°	10A-active 3A-inductive	1 / 50	46LCA32-41
CWLNJ	oil-resistant spring lever	150g	-	28mm	90±10°	10A-active 3A-inductive	1 / 50	46LNJ
CWLCL	metal rod	142g	28g	20°	50°	10A-active 3A-inductive	1 / 50	46LCL

Universal Limit Switch – Series CZ93-xx

3 YEAR WARRANTY

Limit switches of the CZ 93 series are Safety Key Interlock Switches. They are used in object control systems with high safety requirements. The limit switch body is mounted to the fixed system component, while the safety key is mounted to the movable system component. System operation cannot start, unless a full interlocking is achieved. Safety key interlock switches can operate at up to 10A non-inductive resistance load, 3A lamp load and 5A inductive load. They have high operating accuracy at wide variety of speeds. These limit switches are available in two versions depending on the operating contacts number: 2NC and NO+NC

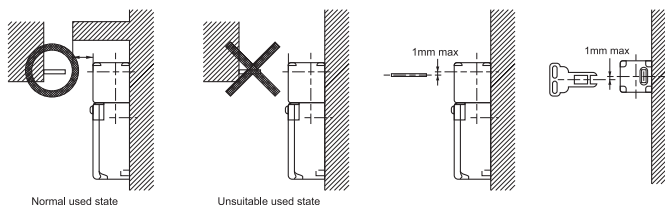
Items are compliant with the following standards:

EN 60947-1; EN 60947-5-1

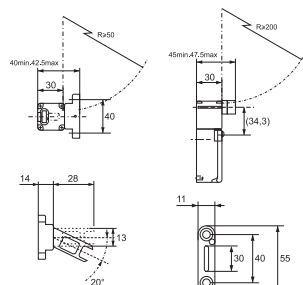
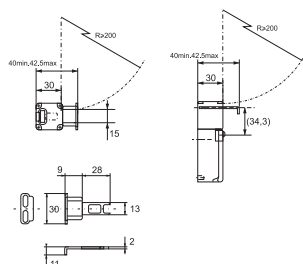
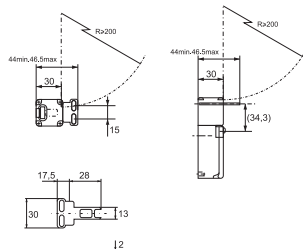
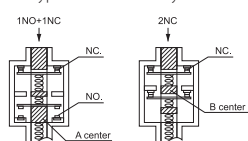
- Dielectric Strength: 2500V AC
- Insulation Resistance: 100mΩ min. (at 500VDC)
- Contact Resistance: 25mΩ
- Electrical Life (No. of cycles): 50 000 with non-

inductive load

- Mechanical Life (No. of cycles): 2 000 000
- Operating frequency: 30 electrical operations/minute
- Operating speed: 0.1mm/s to 0.5m/s
- Rated voltage: 230V
- IP code: IP65



Type of the contact system



Type	Key type	Power of starting (g)	Power of release (g)	Switching position	General movement	Rated current	Packing/Box (pcs)	Catalogue number
CZ-93BPG01	CZ93-K1	147N	29.4N	6 mm	28mm	10A-active 3A-inductive	10 / 100	46CZ08
CZ-93CPG01	CZ93-K1	147N	29.4N	6 mm	28mm	10A-active 3A-inductive	10 / 100	46CZ09
CZ-93BPG02	CZ93-K2	147N	29.4N	6 mm	28mm	10A-active 3A-inductive	10 / 100	46CZ10
CZ-93CPG02	CZ93-K2	147N	29.4N	6 mm	28mm	10A-active 3A-inductive	10 / 100	46CZ11
CZ-93BPG03	CZ93-K3	147N	29.4N	6 mm	28mm	10A-active 3A-inductive	10 / 100	46CZ12
CZ-93CPG03	CZ93-K3	147N	29.4N	6 mm	28mm	10A-active 3A-inductive	10 / 100	46CZ13
Type	Key Actuating	Packing / Box (pcs)		Catalogue number				
CZ 93 - K 1	Horizontal	1 / 100		46CZ931				
CZ 93 - K 2	Vertical	1 / 100		46CZ932				
CZ 93 - K 3	Adjustable	1 / 100		46CZ933				

All-purpose proximity switch – series LM xx

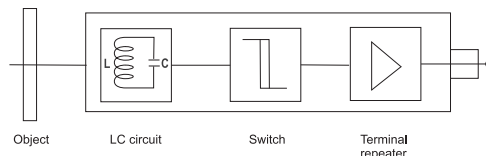
5

YEAR
WARRANTY

*for industrial
usage, 3 years
warranty

Proximity induction sensors are all-purpose switches used in machine systems and equipment for no contact surveillance of metal elements motion. They can also be used in other machine systems applications as no contact control sensors for level of liquids, control sensors for the speed and position of rotating chains, etc. They are developed on the base of PNP and NPN transition. They have small dimensions and feature a metal cylindrical shell resistant to vibrations and a plastic lid which is oil and water resistant.

- Insulating resistance: $\geq 50 \text{ M}\Omega$
- Gearing distance: from 2 mm to 7 mm
- Precision of repetition: 0.01
- Ambient temperature: -25°C to $+65^\circ\text{C}$
- Gearing speed: 5mm/s
- Rated voltage: 6~36VDC; 90~230VAC
- IP code: IP 67

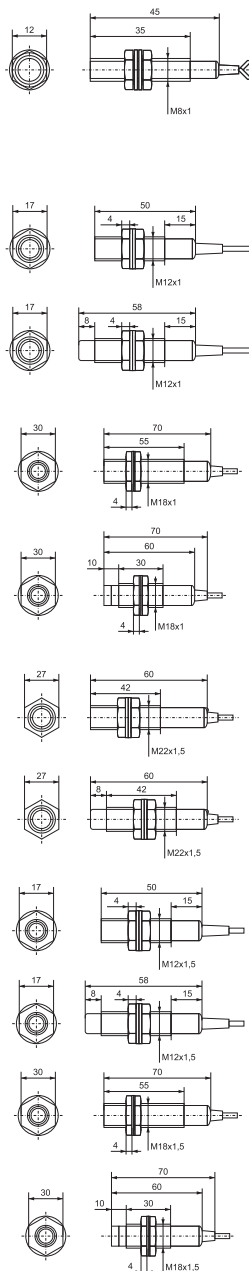


EL-LM8

EL-LM12

EL-LM18

EL-LM22



Type	Start distance (mm)	Power supply voltage	Type of transition	Type of contact	Output load	Packing / Box (pcs)	Catalogue number
EL-LM8-3002NA	2	15~30 VDC	NPN	NO	130 mA	2 / 200	46LM 8-32NA
EL-LM8-3002NB	2	15~30 VDC	NPN	NC	130 mA	2 / 200	46LM 8-32NB
EL-LM8-3002PA	2	15~30 VDC	PNP	NO	130 mA	2 / 200	46LM 8-32PA
EL-LM8-3002PB	2	15~30 VDC	PNP	NC	130 mA	2 / 200	46LM 8-32PB
EL-LM8-2002A	2	90~230VAC	SCR	NO	150 mA	2 / 200	46LM 8-22A
EL-LM12-3004NA	4	15~30 VDC	NPN	NO	200 mA	2 / 200	46LM 12-34NA
EL-LM12-3004NB	4	15~30 VDC	NPN	NC	200 mA	2 / 200	46LM 12-34NB
EL-LM12-3004PA	4	15~30 VDC	PNP	NO	200 mA	2 / 200	46LM 12-34PA
EL-LM12-3004PB	4	15~30 VDC	PNP	NC	200 mA	2 / 200	46LM 12-34PB
EL-LM12-2004A	4	90~230VAC	SCR	NO	300 mA	2 / 200	46LM 12-24A
EL-LM18-3008NA	8	15~30 VDC	NPN	NO	200 mA	1 / 100	46LM 18-38NA
EL-LM18-3008NB	8	15~30 VDC	NPN	NC	200 mA	1 / 100	46LM 18-38NB
EL-LM18-3008PA	8	15~30 VDC	PNP	NO	200 mA	1 / 100	46LM 18-38PA
EL-LM18-3008PB	8	15~30 VDC	PNP	NC	200 mA	1 / 100	46LM 18-38PB
EL-LM18-2008A	8	90~230VAC	SCR	NO	300 mA	1 / 100	46LM 18-28A
EL-LM22-3010NA	10	15~30 VDC	NPN	NO	200 mA	1 / 100	46LM 22-30NA
EL-LM22-3010NB	10	15~30 VDC	NPN	NC	200 mA	1 / 100	46LM 22-30NB
EL-LM22-3010PA	10	15~30 VDC	PNP	NO	200 mA	1 / 100	46LM 22-30PA
EL-LM22-3010PB	10	15~30 VDC	PNP	NC	200 mA	1 / 100	46LM 22-30PB
EL-LM22-2010A	10	90~230VAC	SCR	NO	300 mA	1 / 100	46LM 22-20A
EL-LM12-4002A	2	230VAC	inductive	NO	100 mA	2 / 200	46LM 12-44A
EL-LM12-4004A	4	230VAC	inductive	NO	300 mA	2 / 200	46LM 12-46A
EL-LM18-4006A	5	230VAC	inductive	NO	100 mA	1 / 100	46LM 18-44A
EL-LM18-4008A	8	230VAC	inductive	NO	300 mA	1 / 100	46LM 18-48A

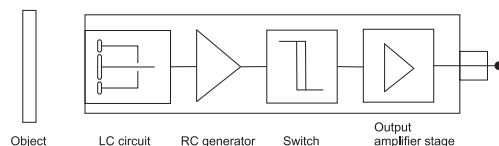
Capacitive sensor

Capacitive sensors – series CM xx

5 YEAR WARRANTY *for industrial usage, 3 years warranty

Capacitive sensors are used in machine systems and equipment for no-contact motion surveillance. They consist of two coaxial electrodes, a condenser and RC generator. This type of sensors reacts to both metal and non-metal objects, as the gearing distance for non-metal objects depends on their dielectric constants. They allow gearing distance adjustment for non-magnetic conductive materials. They are developed on the base of PNP and NPN transition. They have small dimensions and feature a metal cylindrical shell resistant to vibrations and a plastic lid which is oil and water resistant.

- Insulating resistance: $\geq 50 \text{ M } \Omega$
- Gearing distance: from 2 mm to 15 mm
- Precision of repetition: 0.01
- Ambient temperature: -25°C to $+65^{\circ}\text{C}$
- Gearing speed: 5mm/s
- Rated voltage: 6~36VDC; 90~230VAC
- IP code: IP 54



Type	Start distance (mm)	Power supply voltage	Type of transition	Type of contact	Output load	Packing / Box (pcs)	Catalogue number
EL-CM12-3004NA	0~4	15~30 VDC	NPN	NO	200 mA	1 / 100	46CM 12-32NA
EL-CM12-3004NB	0~4	15~30 VDC	NPN	NC	200 mA	1 / 100	46CM 12-32NB
EL-CM12-3004PA	0~4	15~30 VDC	PNP	NO	200 mA	1 / 100	46CM 12-32PA
EL-CM12-3004PB	0~4	15~30 VDC	PNP	NC	200 mA	1 / 100	46CM 12-32PB
EL-CM18-3008NA	0~8	15~30 VDC	NPN	NO	200 mA	1 / 100	46CM 18-38NA
EL-CM18-3008NB	0~8	15~30 VDC	NPN	NC	200 mA	1 / 100	46CM 18-38NB
EL-CM18-3008PA	0~8	15~30 VDC	PNP	NO	200 mA	1 / 100	46CM 18-38PA
EL-CM18-3008PB	0~8	15~30 VDC	PNP	NC	200 mA	1 / 100	46CM 18-38PB
EL-CM18-2008A	0~8	90~230VAC	SCR	NO	300 mA	1 / 100	46CM 18-28A
EL-CM24-3012NA	8	15~30 VDC	NPN	NO	200 mA	1 / 100	46CM 24-12NA
EL-CM24-3012NB	8	15~30 VDC	NPN	NC	200 mA	1 / 100	46CM 24-12NB
EL-CM24-3012PA	8	15~30 VDC	PNP	NO	200 mA	1 / 100	46CM 24-12PA
EL-CM24-3012PB	8	15~30 VDC	PNP	NC	200 mA	1 / 100	46CM 24-12PB
EL-CM24-2012A	8	90~230VAC	SCR	NO	300 mA	1 / 100	46CM 24-12A
EL-SM12-3110NA	10	15~30 VDC	NPN	NO	200 mA	2 / 200	46SM 12-31NA
EL-SM12-3110NB	10	15~30 VDC	NPN	NC	200 mA	2 / 200	46SM 12-31NB
EL-SM18-3110PA	10	15~30 VDC	PNP	NO	200 mA	1 / 100	46SM 18-31PA
EL-SM18-3110PB	10	15~30 VDC	PNP	NC	200 mA	1 / 100	46SM 18-31PB
EL-XM18-305PMI	5	15~30 VDC inductive		NO	100 mA	1 / 100	46XM 18-35A
EL-XM18-305PMU	5	15~30 VDC inductive		NC	100 mA	1 / 100	46XM 18-35B
Note: Sensor of Hall							
EL-XM24-308PMI	8	15~30 VDC inductive		NO	300 mA	1 / 100	46XM 24-38A
EL-XM24-308PMU	8	15~30 VDC inductive		NC	300 mA	1 / 100	46XM 24-38B

Note: MI - current type; MU - voltage type



EL-CM12



EL-CM18



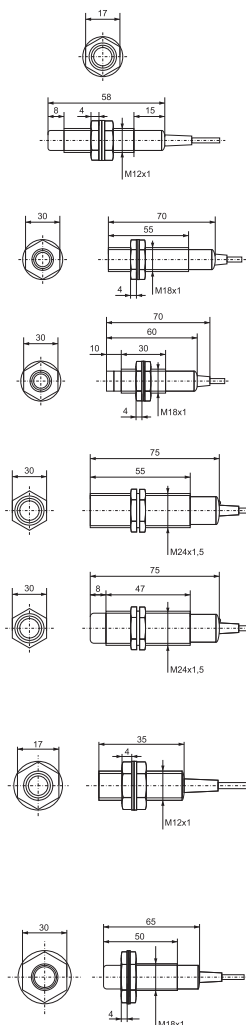
EL-CM24



EL-SM12



EL-XM18



Photoelectrical sensor

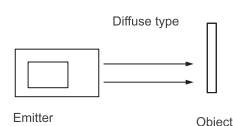
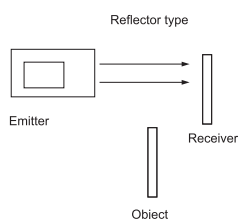
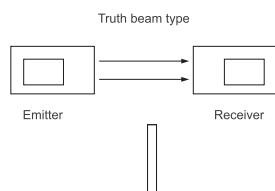
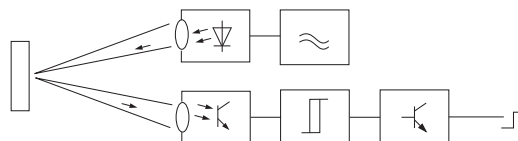
5 YEAR WARRANTY

*for industrial usage, 3 years warranty

Photoelectrical sensors of the Gxx series are all-purpose switches used in machine systems and equipment for no contact surveillance of motion of elements. They are based on the photoelectric principle of operation – inside the sensor there is a photo signal emitter and receiver of the returned signal. There are three types of sensors: diffuse sensors, reflector sensors and emitter-receiver sensors. These types of sensors differ in the way of returning the signal. They allow for gearing distance adjustment. They are developed on the base of PNP and NPN transition. They have small dimensions and feature a metal cylindrical shell resistant to vibrations and a plastic lid which is oil and water resistant.

Technical features:

- Insulating resistance: $\geq 50 \text{ M}\Omega$
- Gearing distance: from 2 mm to 7 mm
- Precision of repetition: 0.01
- Ambient temperature: -25°C to $+65^\circ\text{C}$
- Gearing speed: 5mm/s
- Rated voltage: 6~36VDC; 90~230VAC
- IP code: IP 67



Type	Start distance	Power supply voltage	Type of transition	Type of contact	Type of sensor	Packing / Box (pcs)	Catalogue number
EL-G12-3A07NA	70 mm	15~30 VDC	NPN	$\varnothing 12; I=50$	Diffuse	1 / 100	46G12A071
EL-G12-3A07PA	70 mm	15~30 VDC	PNP	$\varnothing 12; I=50$	Diffuse	1 / 100	46G12A072
EL-G12-3B1NA	1 m	15~30 VDC	NPN	$\varnothing 12; I=50$	Reflector	1 / 100	46G123B11
EL-G12-3B1PA	1 m	15~30 VDC	PNP	$\varnothing 12; I=50$	Reflector	1 / 100	46G123B12
EL-G12-3C3NA	3 m	15~30 VDC	NPN	$\varnothing 12; I=50$	Truth beam	1 / 100	46G123C11
EL-G12-3C3PA	3 m	15~30 VDC	PNP	$\varnothing 12; I=50$	Truth beam	1 / 100	46G123C12
EL-G18-3A10NA	100 mm	15~30 VDC	NPN	$\varnothing 18; I=70$	Diffuse	1 / 100	46G18A101
EL-G18-3A10PA	100 mm	15~30 VDC	PNP	$\varnothing 18; I=70$	Diffuse	1 / 100	46G18A102
EL-G18-3B2NA	2 m	15~30 VDC	NPN	$\varnothing 18; I=70$	Reflector	1 / 100	46G183B11
EL-G18-3B2PA	2 m	15~30 VDC	PNP	$\varnothing 18; I=70$	Reflector	1 / 100	46G183B12
EL-G18-3C5NA	5 m	15~30 VDC	NPN	$\varnothing 18; I=70$	Truth beam	1 / 100	46G185C11
EL-G18-3C5PA	5 m	15~30 VDC	PNP	$\varnothing 18; I=70$	Truth beam	1 / 100	46G185C12
EL-G30-3A70NA	500 mm	15~30 VDC	NPN	$\varnothing 22; I=70$	Diffuse	1 / 100	46G30A101
EL-G30-3A70PA	500 mm	15~30 VDC	PNP	$\varnothing 22; I=70$	Diffuse	1 / 100	46G30A102
EL-G30-3B3NA	3 m	15~30 VDC	NPN	$\varnothing 22; I=70$	Reflector	1 / 100	46G303B11
EL-G30-3B3PA	3 m	15~30 VDC	PNP	$\varnothing 22; I=70$	Reflector	1 / 100	46G303B12
EL-G30-3C101NA	10 m	15~30 VDC	NPN	$\varnothing 22; I=70$	Truth beam	1 / 52	46G305C11
EL-G30-3C101PA	10 m	15~30 VDC	PNP	$\varnothing 22; I=70$	Truth beam	1 / 52	46G305C12
EL-G35-3A50NA	500 mm	15~30 VDC	NPN	NO	Diffuse	1 / 100	46G35A101
EL-G35-3A50PA	500 mm	15~30 VDC	PNP	NO	Diffuse	1 / 100	46G35A102
EL-G35-3B3NA	3 m	15~30 VDC	NPN	NO	Reflector	1 / 100	46G353B11
EL-G35-3B3PA	3 m	15~30 VDC	PNP	NO	Reflector	1 / 100	46G353B12
EL-G35-3C5NA	5 m	15~30 VDC	NPN	NO	Truth beam	1 / 50	46G355C11
EL-G35-3C5PA	5 m	15~30 VDC	PNP	NO	Truth beam	1 / 50	46G355C12
EL-G50-3A30NA	500 mm	15~30 VDC	NPN	NO	Diffuse	1 / 100	46G50A101
EL-G50-3A30PA	500 mm	15~30 VDC	PNP	NO	Diffuse	1 / 100	46G50A102
EL-G50-3B4NA	4 m	15~30 VDC	NPN	NO	Reflector	1 / 100	46G503B11
EL-G50-3B4PA	4 m	15~30 VDC	PNP	NO	Reflector	1 / 100	46G503B12
EL-G50-3C5NA	5 m	15~30 VDC	NPN	NO	Truth beam	1 / 50	46G505C11
EL-G50-3C5PA	5 m	15~30 VDC	PNP	NO	Truth beam	1 / 50	46G505C12
EL-BZJ-211	10 mm	15~30 VDC	Reflector	NO	Colour detector	1 / 50	46BZJ211
EL-BZJ-311	9mm	15~30 VDC	Reflector	NO	Colour detector	1 / 50	46BZJ311
EL-BZJ-411	9mm	15~30 VDC	Reflector	NO	Colour detector	1 / 50	46BZJ411



EL-G12



EL-G18



EL-G30



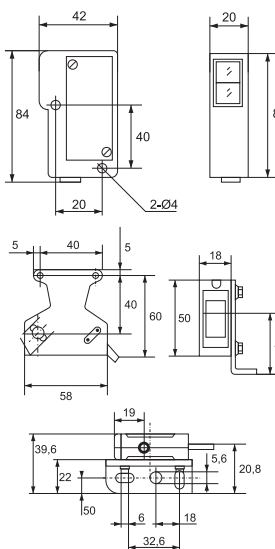
EL-G35



EL-G50



EL-BZJ



Power supplies



Power supplies

3 YEAR WARRANTY

The DRP-xx-xx series of power supplies are voltage reduction and rectification units ideally suited to provide stable power supply of systems and equipment for contact-free movement monitoring elements (such as inductive, capacity and photo sensors, logic elements and systems, etc.). They have small overall dimensions and can be installed on a DIN rail. The power units have metal or plastic cases resistant to vibrations and plastic oil- and waterproof covers. They are able to provide stable output voltage at comparatively fluctuating input voltage. Devices have built-in overload and short circuit protection, allowing short time overload of up to 130%. Power supplies are available with various output voltages (5, 12, 15 and 24 V DC) and different output power rates.

Technical Specifications:

- Input voltage: 80 ~ 230V AC
- Over-voltage: 115 ~ 135% of the rated output voltage
- Overload: 120 ~ 120% of the rated output power
- Terminals: Input – 2 screw terminals; Output: 4 screw terminals;
- IP code: IP44
- Power indicator
- Installation: DIN rail
- Cooling: Free air cooling convection

Type	Output Voltage (V)	Output Load (A)	Tolerance	Power (W)	Dimensions W/H/L (mm)	Packing / Box (pcs)	Catalogue number
DR - 45 - 5	5	5	±2%	25	78 / 93 / 56	1 / 50	46DR455
DR - 45 - 12	12	3.5	±1%	42	78 / 93 / 56	1 / 50	46DR4512
DR - 45 - 15	15	2.8	±1%	42	78 / 93 / 56	1 / 45	46DR4515
DR - 45 - 24	24	2	±1%	48	78 / 93 / 56	1 / 16	46DR4524

Type	Output Voltage (V)	Output Load (A)	Tolerance	Power (W)	Dimensions W/H/L (mm)	Packing / Box (pcs)	Catalogue number
DR - 75 - 12	12	6.3	±2%	75	55.5 / 125.3 / 100	1 / 18	46DR7512
DR - 75 - 24	24	3.2	±1%	75	55.5 / 125.3 / 100	1 / 18	46DR7524
DRP - 240 - 24	24	10	±1%	240	125.5 / 125.3 / 100	1 / 12	46DR2424

Float switches

3 YEAR WARRANTY

Float switches of the type QW-xx-xx are sealed units for direct pump control. They are intended for continuous liquid level maintenance in pools, tanks or ponds exercised through direct control of the pumping in or out process in the respective reservoir. They are pre-wired and depending on the chosen configuration can control either the pumping in, or pumping out of the reservoir. They allow direct control of single phase pumps with mounted power of 1 kW. Float switches are waterproof.

The automatic level control units of the DHC1Y-xx series are intended for mounting on pumping control

panels. They do not use any additional sensors, but conductive probes to contact the liquid. The unit sends low (harmless) voltage signals to the probes and once a contact between a probe and liquid is established, the unit changes its contactors' state. Units are available in three variants with different number of control contacts suitable for different applications. Each contact can transfer current of up to 5A, which is enough to ensure control over the powerful pumps' contactors or to directly control pumps with mounted power of 1 kW. The automatic level control units can be installed on a DIN rail.

Type	Number of probes (No. of levels)	Output Load (A)	Accuracy	Operating Voltage (V)	Note	Packing / Box (pcs)	Catalogue number
DHC1Y - S	1	5	±1%	230	-	100	46DW001
DHC1Y - SD	3	5	±1%	230	-	100	46DW002
DHC1Y - T	1	5	±1%	230	2 pumps control	100	46DW003

Type	Number of probes (No. of levels)	Output Load (A)	Accuracy	Operating Voltage (V)	Note	Packing / Box (pcs)	Catalogue number
QW - M 15 - 3	2	6	±1%	230	-	1 / 30	46DW004
QW - 70AB	2	4	±1%	230	-	1 / 20	46DW005



Rotary switches LW26 series

5 YEAR WARRANTY
*for industrial usage, 3 years warranty

The rotary switches LW26 series are produced for switching on/off electrical circuits with commutated current from 20 to 160A. They are designed on the bases of the rotor-eccentric switching on which is realized through turning of the handle to 60 or 90 degrees. The normal operation is used for commutation of two, three or four conductor systems. There are special rotary switches that switch on under given connection schemes and are used to control motors, electric welding machines and other consumers.

Documentation corresponding to the product:

Standard: EN 60947-1; EN 60947-3-1

Technical data:

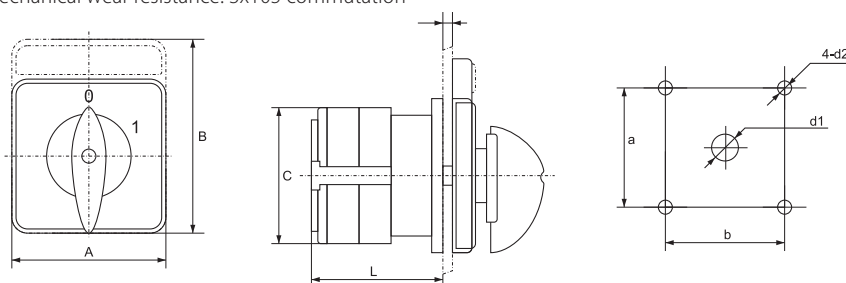
- Power supply voltage: 230/400V; 50Hz
- Insulation voltage: 690V
- Impulse voltage wear resistance: 6000V
- Mechanical wear resistance: 3x105 commutation

cycles

- Operating temperature: $-10 \div +65^{\circ}\text{C}$
- Humidity: 35 – 85% RH
- Commuting capacity: up to 160A according to the tables
- Plastic: UV rays wear resistance
- IP code:
 - IP42 for the ordinary breakers mounted in a panel
 - IP65 for the breakers offered in a box
- Cable connection: screw joining
- Tightening moment of the bolt: 1.33N
- Maximum section of the power supply conductors: according to the dimensions table
- Weight: according to the number of the contacts

Mounting:

- directly to the control panel
- thickness of the surface to which it is mounted: max 5mm



Dimensions	Front panel	Joining conductor (mm ²)	Overall dimensions (mm)				Mounting dimensions (mm)			
			A	B	C	L	a	b	d1	d2
LW26-20	M1 panel	1x2.5	48	48	43	22 + 9.6n	36	36	Ø8.5	Ø4.5
	M1 panel with inscription field		48	60	43	22 + 9.6n	36	36	Ø8.5	Ø4.5
LW26-25	M1 panel	1x4.0	48	48	45.2	23+12.8n	36	36	Ø8.5	Ø4.5
LW26-32	M2 panel	1x6.0	64	64	58	29.2 + 12.8n	48	48	Ø10	Ø4.5
LW26-63	M2 panel	1x16	64	64	66	29.2 + 21.5n	48	48	Ø10	Ø4.5
LW26-125	M3 panel	1x35	88	88	84	35 + 26.5n	68	68	Ø13	Ø6
LW26-160	M3 panel	1x50	88	88	88	35 + 32.5n	68	68	Ø13	Ø6

* n - number of modules

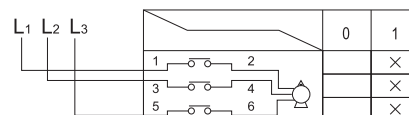
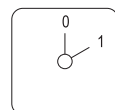


Type	Scheme	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW26 - 10Q	Q10 three-poles switching on; motor starting and stopping; voltage turning on/off to the consumers	10	2	1 / 100	492101
LW26 - 16Q		16	2	1 / 100	492161
LW26 - 20Q		20	2	1 / 100	492201
LW26 - 25Q		25	2	1 / 100	492251
LW26 - 32Q		32	2	1 / 72	492321
LW26 - 63Q		63	2	1 / 30	492631
LW26 - 125Q		125	2	1 / 24	492951
LW26 - 160Q		160	2	1 / 27	492961

Rotary switches



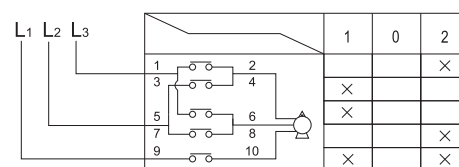
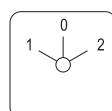
Type	Scheme	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW26GS - 20/04	Q11	20	2	1 / 100	492207
LW26GS - 25/04	three-poles switching over; motor starting and stopping; voltage turning on/off to the consumers; possibility for access control	25	2	1 / 100	492257
LW26GS - 32/04		32	2	1 / 72	492327
LW26GS - 63/04		63	2	1 / 30	492637



	0	1
1		×
2		×
3		×
4		×
5		×
6		×



Type	Scheme	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW26 - 20N	N11 3-position – 2 start positions and 1 stop; for motor reversing	20	3	1 / 100	492202
LW26 - 25N		25	3	1 / 100	492252
LW26 - 32N		32	3	1 / 64	492322
LW26 - 63N		63	3	1 / 48	492632
LW26 - 125N		125	3	1 / 24	492952
LW26 - 160N		160	3	1 / 18	492962

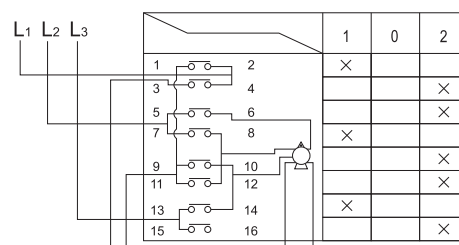
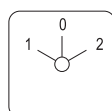


	1	0	2
1			×
2			×
3	×		
4			
5	×		
6			
7			×
8			×
9	×		
10			×



Type	Scheme	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW26 - 25S	S19	25	4	1 / 100	492253
LW26 - 63S	3-position – 2 start positions and 1 stop; for two speed motor control; switching over between charging*	63	4	1 / 30	492633
LW26 - 125S		125	4	1 / 24	492953
LW26 - 160S		160	4	1 / 18	492963

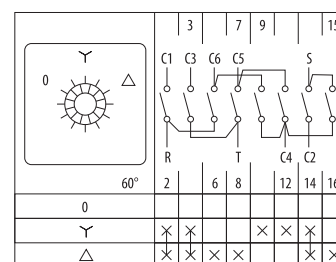
Note: It is necessary that additional bridges be placed at switching over between charging



	1	0	2
1	×		
2			×
3			×
4			
5			×
6			
7	×		
8			
9			×
10			×
11			
12			
13	×		
14			
15			×
16			×

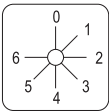


Type	Scheme	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW26 - 25 SD	S21	25	4	1 / 100	492025
LW26 - 63 SD	3-position switching on star/delta	63	4	1 / 30	492063





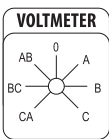
Type	Scheme	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW26 - 32H 5881/3	H5881/3 – 85 for welding transformer wind- ings switching over	32	3	1 / 64	492324
LW26 - 63H 5881/3		63	3	1 / 48	492634



	0	1	2	3	4	5	6
1		×					
2							
3			×				
4							
5				×			
6							
7					×		
8							
9						×	
10							
11							×
12							



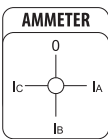
Type	Scheme	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW26 - 20 YH5/3	YH5/3 - 66 for voltage switch- ing over	20	3	1 / 72	492205



	L1	L2	L3	N	CA	BC	AB	0	A	B	C
1						×					×
2											
3					×						
4											
5						×	×			×	
6											
7					×		×				
8											
9						×	×		×		
10									×	×	×
11										×	×
12											



Type	Scheme	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW26 - 20 LH3/3	LH3/3 - 58 for amperemeter switching on to current trans- formers	20	3	1 / 100	492206



	L1	L2	L3	N	0	I _a	I _b	I _c
1					×	×	×	×
2						×	×	×
3					×	×	×	×
4						×	×	×
5					×	×	×	×
6						×	×	×
7					×	×	×	×
8						×	×	×
9					×	×	×	×
10						×	×	×
11					×	×	×	×
12						×	×	×

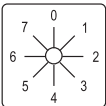


Type	Scheme	IP code:	Packing / Box (pcs)	Catalogue number
LW26 - 20-25-Q	Box for LW26-20/25	IP 42	1 / 76	492037
LW26 - 32-Q	Box for LW26-32	IP 42	1 / 30	492038
LW26 - 20-25-DIN	Adaptor for DIN-rail for LW26-20/25		15 / 1500	492039

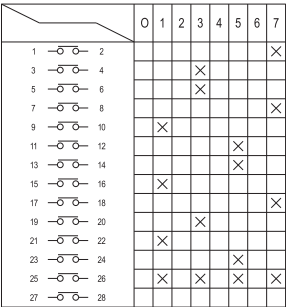
Rotary switches



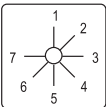
Type	Scheme	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW26 4.I7168/7	4.I7168/7	20	7	1 / 100	492028



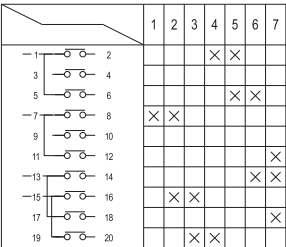
4.I7168/7



Type	Scheme	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW26 4.H6518/5	4.H6518/5	25	5	1 / 100	492029



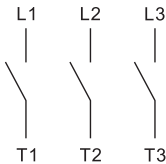
4.H6518/5



Type	Scheme	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW30-20	LW30-20	20	3	1 / 32	492030
LW30-32	LW30-32	32	3	1 / 32	492031
LW30-40	LW30-40	40	3	1 / 32	492033
LW30-63	LW30-63	63	3	1 / 32	492034

* Possibility for access control

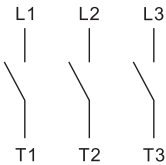
LW30-20-100A
ON/OFF switch 3 poles

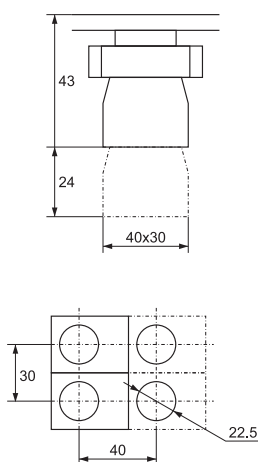


Type	Scheme	IP code:	In (A)	Levels	Packing / Box (pcs)	Catalogue number
LW30-32	LW30-32	IP54	32	3	1 / 30	492032

* Possibility for access control

LW30-20-100A
ON/OFF switch 3 poles





Overall dimensions
Diagram for drill the openings



Buttons and LED indicators

5 YEAR WARRANTY
*for industrial usage, 3 years warranty

These are devices used in control and indication systems, command boards and panels in industrial automation systems. They are manufactured to commute controlling circuits and to control the switching on or off executive mechanisms such as relays, contactors, etc. The signal lamps and indicators find broad application in all industrial fields. The devices endure short time current overload up to 10A, and normally they can commute thermal current up to 6A in their contact system. The connection to the contact terminals is through screw terminals to which operational conductors with section up to 2.5mm² can be joined.

Documentation corresponding to the product:

- Standard: EN 60947-1; EN 60947-5-1

Technical data:

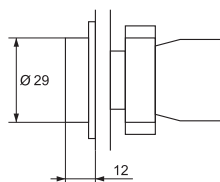
- Insulation voltage: 660V; 50/60Hz

- Impulse voltage wear resistance: 6000V;
- Rated current: 6A (230V AC); 0.3A (230V DC)
- Short circuit protection: safety device 10A gG outside in the circuit
- Mechanical wear resistance: 1x10⁶ commutation cycles
- Power of mechanical compression:
 - at closing: 20N
 - at opening: 8N
- Operating temperature: -20 - +65°C
- Humidity: 35 - 85%RH
- Tightening moment of the joining conductors: 0.15Nm
- Section of the conductor: 1x0.5; 1x0.75; 1x1; 1x1.5; 1x2.5mm²

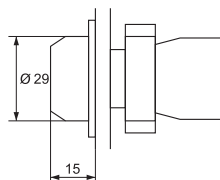
Mounting:

- to a flat metal or plastic surface with thickness: max 4mm
- opening with size: Ø 22.5mm

Type	Description	Type of contacts	Rated current (A) at 400V	Colour	Packing / Box (pcs)	Catalogue number
EL 2- BA 21	Button round with spring reverse	NO	6	black	20 / 300	401021
EL 2- BA 31		NO	6	green	20 / 300	401031
EL 2- BA 51		NO	6	yellow	20 / 300	401051
EL 2- BA 61		NO	6	blue	20 / 300	401061
EL 2- BA 42		NC	6	red	20 / 300	401042



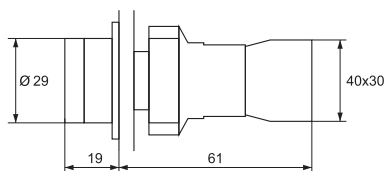
Type	Description	Type of contacts	Rated current (A) at 400V	Colour	Note	Packing / Box (pcs)	Catalogue number
EL 2- BP 31	Button round with spring reverse	NO	6	green	IP=65 Provided from silicon lid	20 / 300	401032
EL 2- BP 42		NC	6	red	IP=65 Provided from silicon lid	20 / 300	401043



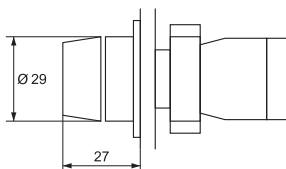
Buttons and LED indicators



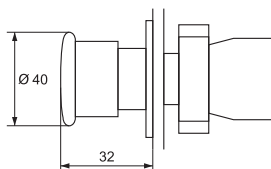
Type	Description	Voltage (V)	Rated current (A) at 400V	Colour	Packing / Box (pcs)	Catalogue number
EL 2- BW3471	Button round with spring reverse and LED indicator	24V	6	red	20 / 200	401474
EL 2- BW3371		24V	6	green	20 / 200	401374
EL 2- BW3571		24V	6	yellow	20 / 200	401574
EL 2- BW3671		24V	6	blue	20 / 200	401674
EL 2- BW3471		110V	6	red	20 / 200	401473
EL 2- BW3371		110V	6	green	20 / 200	401373
EL 2- BW3571		110V	6	yellow	20 / 200	401573
EL 2- BW3671		110V	6	blue	20 / 200	401673
EL 2- BW3471		230V	6	red	20 / 200	401471
EL 2- BW3371		230V	6	green	20 / 200	401371
EL 2- BW3571		230V	6	yellow	20 / 200	401571
EL 2- BW3671		230V	6	blue	20 / 200	401671



Type	Description	Type of contacts	Rated current (A) at 400V	Colour	Note	Packing / Box (pcs)	Catalogue number
EL 2- BD 21	Switch with arrest	1NO	6	black	two-position	20 / 200	401421
EL 2- BD 33		2NO	6	black	three-position	20 / 200	401433



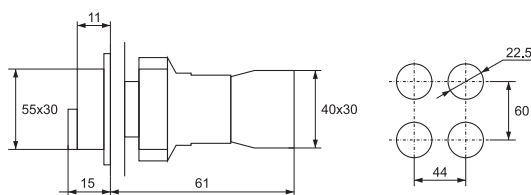
Type	Description	Type of contacts	Rated current (A) at 400V	Colour	Note	Packing / Box (pcs)	Catalogue number
EL 2- BC 42	Button with head "mushroom" type	1NC	6	red	spring reverse	15 / 150	401642



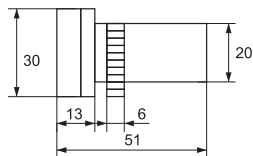
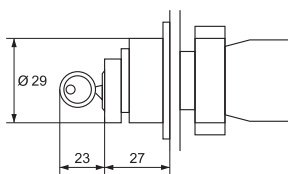
Type	Description	Type of contacts	Rated current (A) at 400V	Colour	Note	Packing / Box (pcs)	Catalogue number
EL 2- BS 545	Button with head "mushroom" type	1NC + 1NO	6	red	release with spinning	15 / 150	401545



Type	Description	Type of contacts	Rated current (A) at 400V	Voltage (V)	Note	Packing / Box (pcs)	Catalogue number
EL 2- BW8475	Button double	1NO+1NC	6	24 AC	Green and red button + LED indicator	20 / 200	401844
EL 2-BW8475	Button double	1NO+1NC	6	230 AC	Green and red button+LED indicator	20/200	401845



Type	Description	Type of contacts	Rated current (A) at 400V	Note	Packing / Box (pcs)	Catalogue number
EL 2- BG 21	Change-over switch with switch	1NO	6	two-position with switch	20 / 200	401121



Type	Description	Voltage (V)	Colour	Packing / Box (pcs)	Catalogue number
AD56-22-W-230	LED indicators	230V AC	white	10 / 500	401123
AD56-22-W-110		110V AC	white	10 / 500	401111
AD56-22-W-24		24V AC/DC	white	10 / 500	401124
AD56-22-A-110		110V AC	amber	10 / 500	401211
AD56-22-A-24		24V AC/DC	amber	10 / 500	401224
AD56-22-A-230		230V AC	amber	10 / 500	401223
AD56-22-PG-230		230V AC	green	10 / 500	401323
AD56-22-PG-110		110V AC	green	10 / 500	401311
AD56-22-PG-24		24V AC/DC	green	10 / 500	401324
AD56-22-B-230		230V AC	blue	10 / 500	401523
AD56-22-B-110		110V AC	blue	10 / 500	401511
AD56-22-B-24		24V AC/DC	blue	10 / 500	401524
AD56-22-Y-230		230V AC	yellow	10 / 500	401723
AD56-22-Y-110		110V AC	yellow	10 / 500	401711
AD56-22-Y-24		24V AC/DC	yellow	10 / 500	401724
AD56-22-R-230		230V AC	red	10 / 500	401423
AD56-22-R-110		110V AC	red	10 / 500	401411
AD56-22-R-24		24V AC/DC	red	10 / 500	401424



Type	Description	Type of contacts	Colour	Packing / Box (pcs)	Catalogue number
EL02 - BE101	1	1 NO	green	100 / 1000	401001
EL02 - BE102	2	1 NC	red	100 / 1000	401002

Buttons and switches with box

3 YEAR WARRANTY

Type	Description	IP code:	Overall dimensions (mm)			Type of the contact	Colour	Packing / Box (pcs)	Catalogue number
			L	H	W				
EL1-B134	switching on 0-1	IP44	68	68	50	1 NO	black	1 / 100	401134



Type	Description	IP code:	Overall dimensions (mm)			Type of the contact	Colour	Packing / Box (pcs)	Catalogue number
			L	H	W				
EL1-B102	1 button with spring return	IP44	68	68	50	1 NO	green	1 / 100	401102
EL1-BP102	1 button with spring return	IP65	68	68	50	1 NO	green	1 / 100	401132



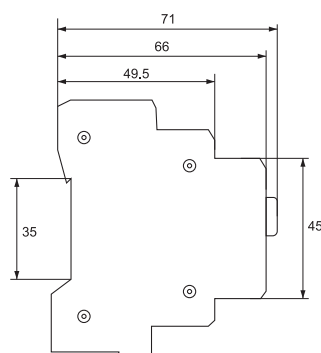
Type	Description	IP code:	Overall dimensions (mm)			Type of the contact	Colour	Packing / Box (pcs)	Catalogue number
			L	H	W				
EL1-B213	2 buttons with spring return	IP44	104	68	50	1 NC 1 NO	1 - red 1 - green	1 / 100	401213
EL1-BP213	2 buttons with spring return	IP65	104	68	50	1 NC 1 NO	1 - red 1 - green	1 / 100	401233



Type	Description	IP code:	Overall dimensions (mm)			Type of the contact	Colour	Packing / Box (pcs)	Catalogue number
			L	H	W				
EL1-B339	3 buttons with spring return	IP44	134	68	50	1 NO 1 NC 1 NO	1 - green 1 - red 1 - green	1 / 50	401339
EL1-BP339	3 buttons with spring return	IP65	134	68	50	1 NO 1 NC 1 NO	1 - green 1 - red 1 - green	1 / 50	401349



Type	Description	IP code:	Overall dimensions (mm)			Type of the contact	Colour	Packing / Box (pcs)	Catalogue number
			L	H	W				
EL1-B174	Emergency button with head "mushroom" type Ø40.Release through turning	IP44	68	68	50	1 NC	red	1 / 100	401174



Documents corresponding to the product:

Standard EN 60947-1
EN 60 947-5-1 t



Buttons and LED indicators

5 YEAR WARRANTY

*for industrial usage, 3 years warranty

These are devices used in control and indication systems adjusted for mounting in command boards and panels directly on DIN-rail. They are manufactured to commute controlling circuits and to control the switching on or off executive mechanisms such as relays, contactors, etc. The signal lamps and indicators find broad application in all industrial fields. The devices endure short time current overload up to 20A, and normally they can commute current up to 10A with their contact system. The connection to the contact terminals is through screw terminals to which operational conductors with section up to 2.5mm² can be joined. There are also designed buttons combined with lamps.

Technical data:

- Insulation voltage: 660V; 50/60Hz
- Impulse voltage wear resistance: 6000V;
- Rated current: up to 10A (230V AC)

- Short circuit protection: safety device 10A gG outside in the circuit
- Rated consumed current (for indicators and buttons combined with indicators): <20mA
- wear resistance (indicators): >2000h
- Mechanical wear resistance (buttons): 1x10⁶ commutation cycles
- Power of mechanical compression:
 - at closing: 20N
 - at opening: 8N
- Operating temperature: -20 - +65°C
- Humidity: 35 – 85%RH
- Tightening moment of the joining conductors: 0.15Nm
- Section of the conductor: 1x0.5; 1x0.75; 1x1; 1x1.5; 1x2.5mm²
- Plastic: UV rays wear resistance

Mounting:

- to a DIN-rail
- Altitude: up to 2000m

Type	Description	Rated current (A) at 400V	Type of the contact	Colour	Packing / Box (pcs)	Catalogue number
ELB - BL - DIN	button	<10	2NO+ 1 NC	black	12 / 240	401505
ELB - BL - DIN	button	<10	1NO+ 2 NC	black	12 / 240	401506
ELB - G - DIN	button	<10	2NO+ 1 NC	green	12 / 240	401507
ELB - G - DIN	button	<10	1NO+ 2 NC	green	12 / 240	401508
ELB - Y - DIN	button	<10	2NO+ 1 NC	yellow	12 / 240	401509
ELB - Y - DIN	button	<10	1NO+ 2 NC	yellow	12 / 240	401510
ELB - R - DIN	button	<10	2NO+ 1 NC	red	12 / 240	401512
ELB - R - DIN	button	<10	1NO+ 2 NC	red	12 / 240	401513

Type	Description	Voltage (V)	Rated current (A) at 400V	Colour	Packing / Box (pcs)	Catalogue number
ELD - G - DIN	lamp	230V	<20	green	12 / 240	401500
ELD - R - DIN	lamp	230V	<20	red	12 / 240	401501
ELD - Y - DIN	lamp	230V	<20	yellow	12 / 240	401502
ELD - B - DIN	lamp	230V	<20	blue	12 / 240	401503
ELD - W - DIN	lamp	230V	<20	white	12 / 240	401504

Type	Description	Voltage (V)	Rated current (A) at 400V	Type of the contact	Colour	Packing / Box (pcs)	Catalogue number
ELBD - G - DIN	button + lamp	230V	<20	2NO+ 1 NC	green	12 / 240	401514
ELBD - G - DIN	button + lamp	230V	<20	1NO+ 2 NC	green	12 / 240	401515
ELBD - R - DIN	button + lamp	230V	<20	2NO+ 1 NC	red	12 / 240	401516
ELBD - R - DIN	button + lamp	230V	<20	1NO+ 2 NC	red	12 / 240	401517
ELBD - Y - DIN	button + lamp	230V	<20	2NO+ 1 NC	yellow	12 / 240	401518
ELBD - Y - DIN	button + lamp	230V	<20	1NO+ 2 NC	yellow	12 / 240	401519



Devices for telpher control MBP type

3 YEAR WARRANTY

They represent different combinations of START and STOP buttons mounted in plastic boxes in different sizes. They are connected to the operating circuits of cranes or telfers and serve as a remote control of their movement. They are connected directly to the operating cable of the telpher and send commands directly to the executive mechanisms. They are designed to provide protection from dust and moisture IP65.

Technical data:

- Supplying voltage: 230V; 50/60Hz

- Electrical wear resistance: 1×10^5 cycles
- Operating temperature: $-10 + 65^\circ\text{C}$
- Humidity: 35 – 85% RH
- Number of contacts: according to the number of the buttons
- Commuting capacity: up to 6A
- Plastic: UV rays wear resistance
- IP code: IP65
- Weight: according to the number of the contacts

Mounting:

- directly to the control cable of the telpher (crane)

MBP-Axxxx — stop button type
 — button type – one-speed (x81) or two-speed (x91)
 — number of buttons

Type	Number of buttons	Contact block and scheme Emergency	For the directions	Packing / Box (pcs)	Catalogue number
MBP-A281	2	-	NO+NC	1 / 20	46281
MBP-A291 two speed	2	-	NO+NC	1 / 20	46291
MBP-A2813	2+1	emergency button	NO+NC	1 / 20	46283
MBP-A2813K	2+1	emergency button with switch	NO+NC	1 / 20	46283K
MBP-A2913 two speed	2+1	emergency button	NO+NC	1 / 20	46294
MBP-A2913K two speed	2+1	emergency button with switch	NO+NC	1/20	46294K
MBP-A481	4	-	NO+NC	1 / 20	46481
MBP-A491 two speed	4	-	NO+NC	1 / 20	46491
MBP-A4813	4+1	emergency button	NO+NC	1 / 20	46483
MBP-A4813K	4+1	emergency button with switch	NO+NC	1 / 20	46483K
MBP-A4913 two speed	4+1	emergency button	NO+NC	1 / 20	46493
MBP-A4913K two speed	4+1	emergency button with switch	NO+NC	1/20	46493K
MBP-A681	6	-	NO+NC	1 / 20	46681
MBP-A691 two speed	6	-	NO+NC	1 / 20	46691
MBP-A6813	6+1	emergency button	NO+NC	1 / 20	46683
MBP-A6813K	6+1	emergency button with switch	NO+NC	1 / 20	46683K
MBP-A6913 two speed	6+1	emergency button	NO+NC	1 / 20	46693
MBP-A6913K two speed	6+1	emergency button with switch	NO+NC	1/20	46693K
MBP-A881	8	-	NO+NC	1 / 20	46881
MBP-A891 two speed	8	-	NO+NC	1 / 20	46891
MBP-A8813	8+1	emergency button	NO+NC	1 / 20	46883
MBP-A8813K	8+1	emergency button with switch	NO+NC	1 / 20	46883K
MBP-A8913 two speed	8+1	emergency button	NO+NC	1 / 20	46893
MBP-8913K two speed	8+1	emergency button with switch	NO+NC	1/20	46893K

Warning lights and towers

3 YEAR WARRANTY

The revolving warning lights and towers are devices intended for use as status indicators in the human-machine control systems. They are suitable for installation on control cabinets and panels or directly on machines. They are manufactured in different colour combinations to attract attention of operators working in a given production sector. Warning lights and towers are widely used in almost any industrial branch. They can be mounted on movable components or such, creating potential danger and can warn all workers for a critical situation with their blinking light and siren. These devices are electrically connected through cables, protruding out of the lamp casing.

Technical Specification:

- Rated voltage: 12 VAC/230VAC; 50/60 Hz;
- Isolation voltage: 660V; 50/60 Hz;
- Impulse voltage stability: 6000V
- Rated power: see the tables below
- Short circuit protection: 1A gG external fuse
- Operating Temperature: - 20°C + 65°C
- Humidity: 35 – 85% RH
- Plastic cover: UV resistant polycarbonate not considered as being harmful to human health

Installation:

- Warning lights are fixed to the respective machine body with the studs protruding from the light plastic casing.

Type	Description	Voltage (VAC)	Rated Power (W)	Colour	Packing / Box (pcs)	Catalogue number
LTE1101 - R	Warning light	12	10	Red	1 / 30	401525R
LTE1101 - G	Warning light	12	10	Green	1 / 30	401525G
LTE1101 - Y	Warning light	12	10	Yellow	1 / 30	401525Y
LTE1101J - R	Warning light + siren	12	11	Red	1 / 30	401526R
LTE1101J - G	Warning light + siren	12	11	Green	1 / 30	401526G
LTE1101J - Y	Warning light + siren	12	11	Yellow	1 / 30	401526Y
LTE1101 - R	Warning light	230	8	Red	1 / 30	402525R
LTE1101 - G	Warning light	230	8	Green	1 / 30	402525G
LTE1101 - Y	Warning light	230	8	Yellow	1 / 30	402525Y
LTE1101J - R	Warning light + siren	230	9	Red	1 / 30	402526R
LTE1101J - G	Warning light + siren	230	9	Green	1 / 30	402526G
LTE1101J - Y	Warning light + siren	230	9	Yellow	1 / 30	402526Y
LTE1161 - R	Warning light	12	35	Red	1 / 8	401527R
LTE1161 - G	Warning light	12	35	Green	1 / 8	401527G
LTE1161 - Y	Warning light	12	35	Yellow	1 / 8	401527Y
LTE1161 - R	Warning light	230	28	Red	1 / 8	402527R
LTE1161 - G	Warning light	230	28	Green	1 / 8	402527G
LTE1161 - Y	Warning light	230	28	Yellow	1 / 8	402527Y
LTA205 - 1	Tower / flashing	12	4	1 - Red	1 / 20	401528
LTA205 - 2	Tower / flashing	12	8	2 - Red/Green	1 / 20	401529
LTA205 - 3	Tower / flashing	12	12	3 - Red/Yellow/Green	1 / 20	401530
LTA205 - 3J	Tower / flashing + siren	12	12	3 - Red/Yellow/Green	1 / 20	401531
LTA205 - 5	Tower / flashing	12	18	5 - Red/Yellow/Green/Blue/Transparent	1 / 20	401532
LTA205 - 1	Tower / flashing	230	6	1 - Red	1 / 20	402528
LTA205 - 2	Tower / flashing	230	8	2 - Red/Green	1 / 20	402529
LTA205 - 3	Tower / flashing	230	10	3 - Red/Yellow/Green	1 / 20	402530
LTA205 - 3J	Tower / flashing + siren	230	11	3 - Red/Yellow/Green	1 / 20	402531
LTA205 - 5	Tower / flashing	230	14	5 - Red/Yellow/Green/Blue/Transparent	1 / 20	402532



Warning lights and towers



Type	Description	Voltage (V)	Rated Power (W)	Sound level (dB)	Packing / Box (pcs)	Catalogue number
MS-290A	metal siren	230	60	100	1 / 24	401533
MS-290B	plastic siren	230	60	100	1 / 24	401541



Type	Description	Voltage (V)	Rated Power (W)	Sound level (dB)	Packing / Box (pcs)	Catalogue number
MS-390	siren	230	160	120	1 / 10	401534



Type	Description	Voltage (V)	Rated Power (W)	Sound level (dB)	Packing / Box (pcs)	Catalogue number
CB-4	alarm bell	12	-	85	1 / 50	401535
CB-4	alarm bell	24	-	85	1 / 50	401536
CB-4	alarm bell	110	-	85	1 / 50	401537
CB-4	alarm bell	230	-	85	1 / 50	401538



Type	Description	Voltage (V)	Rated Power (W)	Sound level (dB)	Packing / Box (pcs)	Catalogue number
FA-01	fire alarm	230	-	-	1 / 100	401540

The background is a solid blue color. It features several white line drawings of industrial electrical components. In the top left, there is a circular face with four small circles arranged in a square. In the top right, there is a perspective view of a rectangular block with diagonal lines on its side. On the right side, there is a perspective view of a rectangular block with a small protrusion on one end. In the bottom left, there is a perspective view of a rectangular block with a small protrusion on one end and diagonal lines on its side. In the bottom right, there is a circular face with four small circles arranged in a square, similar to the one in the top left. The text "INDUSTRIAL PLUGS AND SOCKETS" is centered in the upper half of the image.

INDUSTRIAL PLUGS AND SOCKETS

INDUSTRIAL

PLUGS AND SOCKETS

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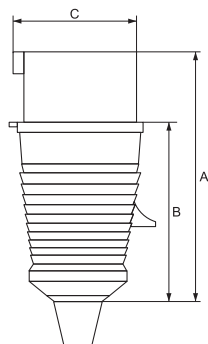
Industrial plugs | 138

Industrial sockets | 139



Documents corresponding to the product:

Standard EN 60309-1; EN 60309-2

**Industrial plugs and sockets HT/HTN type****5** YEAR WARRANTY

Made of special high quality plastic with alloys against aging at sun light exposing and for increasing the mechanical strength. They are designed in accordance with standard EN 60309 and provide reliable connection and high protection level against electrical current. They provide IP protection not less than IP 44/67. They are designed for surface or flush mounting, movable or fixed type.

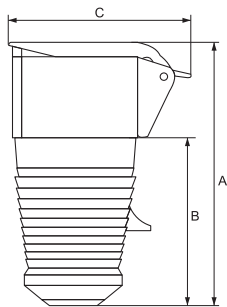
Technical data:

- Rated voltage: 500V
- Rated short circuit current: according to the mounted protection in the boards
- Impulse voltage wear resistance: 8kV
- Mechanical wear resistance: 3000 cycles
- IP code: IP 44/67
- Plastic: UV rays wear resistance
- Ambient temperature: -5 to +65°C
- Altitude: up to 2000m
- Plugs and sockets: 6h

Model	In (A)		Poles	Un (V)	Dimensions (mm) A / B / C	IP code:	Packing/Box	Catalogue number
HT-013	16		1P+N+E	230	121 / 84 / 53	44	2 / 10 / 100	37013
HT-023	32		1P+N+E	230	138 / 92 / 63	44	2 / 10 / 60	37023

Model	In (A)		Poles	Un (V)	Dimensions (mm) A / B / C	IP code:	Packing/Box	Catalogue number
HT-014	16		3P+E	400	121 / 84 / 51	44	2 / 10 / 100	37014
HT-024	32		3P+E	400	138 / 92 / 63	44	2 / 10 / 60	37024
HT-034	63		3P+E	400	230 / 109 / 36	44	2 / 10	37034
HT-044	125		3P+E	400	295 / 124 / 50	44	2 / 10	37044


Model	In (A)		Poles	Un (V)	Dimensions (mm) A / B / C	IP code:	Packing/Box	Catalogue number
HT-015	16		3P+N+E	400	129 / 92 / 62	44	2 / 10 / 60	37015
HT-025	32		3P+N+E	400	149 / 97 / 70	44	2 / 10 / 60	37025
HT-035	63		3P+N+E	400	230 / 109 / 36	44	2 / 10	37035
HT-045	125		3P+N+E	400	295 / 124 / 50	44	2 / 10	37045




Movable industrial sockets for surface mounting
HT type ip44

5 YEAR WARRANTY




Model	In (A)		Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT-213	16		1P+N+E	230	130 / 96	44	2 / 10 / 100	37213
HT-223	32		1P+N+E	230	149 / 90	44	2 / 10 / 60	37223



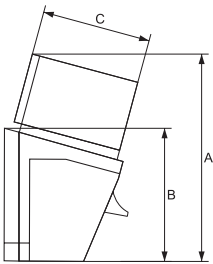
Model	In (A)		Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT-214	16		3P+E	400	131 / 96	44	2 / 10 / 100	37214
HT-224	32		3P+E	400	149 / 90	44	2 / 10 / 60	37224
HT-234	63		3P+E	400	230/109	44	2 / 10	37234
HT-244	125		3P+E	400	290/124	44	2 / 10	37244




Model	In (A)		Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT-215	16		3P+N+E	400	139 / 90	44	2 / 10 / 60	37215
HT-225	32		3P+N+E	400	154 / 100	44	2 / 10 / 60	37225
HT-235	63		3P+N+E	400	230/100	44	2 / 10	37235
HT-245	125		3P+N+E	400	290/124	44	2 / 10	37245


Fixed industrial plugs HT type ip44

5 YEAR WARRANTY




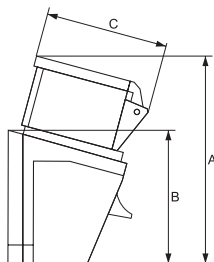
Model	In (A)		Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT-513	16		1P+N+E	230	121/79	44	2 / 10 / 60	37513
HT-523	32		1P+N+E	230	131/83	44	2 / 10 / 60	37523



Model	In (A)		Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT 514	16		3P+E	400	121/76	44	2 / 10 / 60	37514
HT 524	32		3P+E	400	131/83	44	2 / 10 / 60	37524



Model	In (A)		Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT 515	16		3P+N+E	400	123/79	44	2 / 10 / 60	37515
HT 525	32		3P+N+E	400	132/84	44	2 / 10 / 60	37525



Fixed industrial sockets HT type ip44

5 YEAR WARRANTY



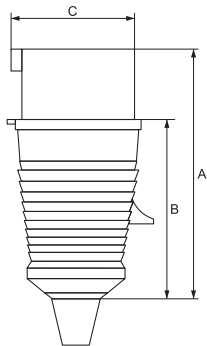
Model	In (A)	Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT-113	16	1P+N+E	230	126 / 86	44	2 / 10 / 60	37113
HT-123	32	1P+N+E	230	141 / 97	44	2 / 10 / 60	37123



Model	In (A)	Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT-114	16	3P+E	400	132 / 91	44	2 / 10 / 60	37114
HT-124	32	3P+E	400	141 / 96	44	2 / 10 / 60	37124
HT-134	63	3P+E	400	193 / 122	44	2 / 10	37134
HT-144	125	3P+E	400	220 / 140	44	2 / 10	37144



Model	In (A)	Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT-115	16	3P+N+E	400	129 / 96	44	2 / 10 / 60	37115
HT-125	32	3P+N+E	400	141 / 98	44	2 / 10 / 60	37125
HT-135	63	3P+N+E	400	193 / 122	44	2 / 10	37135
HT-145	125	3P+N+E	400	220 / 140	44	2 / 10	37145



Industrial plugs HTN type IP67

5 YEAR WARRANTY



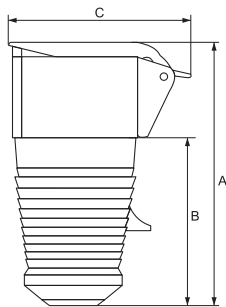
Model	In (A)	Poles	Un (V)	Dimensions (mm) A / B / C	IP code:	Packing/Box	Catalogue number
HTN 0131	16	1P+N+E	230	120/71/12	67	1 / 60	37131
HTN 0231	32	1P+N+E	230	150/93/17	67	1 / 40	37231



Model	In (A)	Poles	Un (V)	Dimensions (mm) A / B / C	IP code:	Packing/Box	Catalogue number
HTN 0141	16	3P+E	400	125/79/12	67	2 / 60	37141
HTN 0241	32	3P+E	400	150/93/17	67	2 / 40	37241
HTN 0341	63	3P+E	400	230/109/36	67	10	37341
HTN 0441	125	3P+E	400	230/109/36	67	10	37441



Model	In (A)	Poles	Un (V)	Dimensions (mm) A / B / C	IP code:	Packing/Box	Catalogue number
HTN 0151	16	3P+N+E	400	133/87/12	67	2 / 60	37151
HTN 0251	32	3P+N+E	400	155/99.5/17	67	2 / 40	37251
HTN 0351	63	3P+N+E	400	230/109/36	67	10	37351
HTN 0451	125	3P+N+E	400	295/124/50	67	10	37451



Movable Industrial socket HTN type ip67

5 YEAR WARRANTY



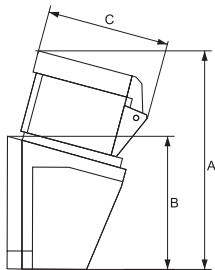
Model	In (A)	Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HTN 2131	16	1P+N+E	230	131/90	67	2 / 60	37831
HTN 2231	32	1P+N+E	230	149/90	67	2 / 40	37931



Model	In (A)	Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HTN 2141	16	3P+E	400	131/76	67	2 / 60	37841
HTN 2241	32	3P+E	400	149/90	67	2 / 40	37941
HTN 2341	63	3P+E	400	271/115	67	10	37942
HTN 2441	125	3P+E	400	295/137	67	6	37943



Model	In (A)	Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HTN 2151	16	3P+N+E	400	139/90	67	2 / 60	37851
HTN 2251	32	3P+N+E	400	154/100	67	2 / 40	37951
HTN 2351	63	3P+N+E	400	240/112	67	10	37952
HTN 2451	125	3P+N+E	400	300/126	67	6	37953



Fixed Industrial socket HTN type ip67

5 YEAR WARRANTY



Model	In (A)	Poles	Un (V)	Dimensions (mm) A / B / C	IP code:	Packing/Box	Catalogue number
HTN 1131	16		1P+N+E	230	101/150/93.5	67	2 / 40
HTN 1231	32		1P+N+E	230	114/162/93.5	67	2 / 40



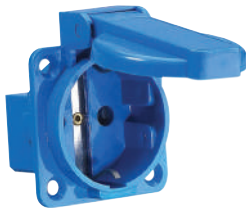
Model	In (A)	Poles	Un (V)	Dimensions (mm) A / B / C	IP code:	Packing/Box	Catalogue number
HTN 1141	16		3P+E	400	104/150/93.5	67	2 / 40
HTN 1241	32		3P+E	400	116/162/93.5	67	2 / 40
HTN 1341	63		3P+E	400	171/170/230	67	1 / 10
HTN 1441	125		3P+E	400	171/170/230	67	1 / 6



Model	In (A)	Poles	Un (V)	Dimensions (mm) A / B / C	IP code:	Packing/Box	Catalogue number
HTN 1151	16		3P+N+E	400	107/150/93.5	67	2 / 40
HTN 1251	32		3P+N+E	400	116/162/93.5	67	2 / 40
HTN 1351	63		3P+N+E	400	171/170/230	67	10
HTN 1451	125		3P+N+E	400	171/170/230	67	6

Industrial sockets for flush mounting HT type ip44

5 YEAR WARRANTY



Model	In (A)	Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT-413	16	1P+N+E	230	70/85	44	2 / 10 / 60	37413
HT-423	32	1P+N+E	230	80/97	44	2 / 10 / 60	37423

Model	In (A)	Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT-414	16	3P+E	400	70/85	44	2 / 10 / 60	37414
HT-424	32	3P+E	400	80/97	44	2 / 10 / 60	37424

Model	In (A)	Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT-415	16	3P+N+E	400	70/85	44	2 / 10 / 60	37415
HT-425	32	3P+N+E	400	80/97	44	2 / 10 / 60	37425

Model	In (A)	Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
HT-105SR	16	German type	230	70/70	44	500	37105

Model	In (A)	Poles	Un (V)	Dimensions (mm) A/C	IP code:	Packing/Box	Catalogue number
213L-2P-W	16	1P+N+E	230	450	44	48	37003

German type socket for DIN rail mounting
It provides plug presence in electric boards and easy cabling.

* Supply voltage: 230V

* Computing option: up to 16A

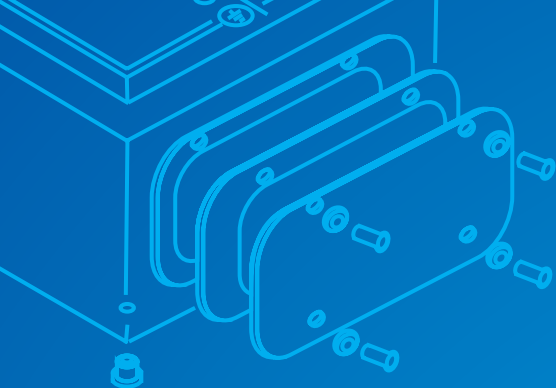
* Operation temperature: from -10 up to +65°C

* Humidity: up to 85%RH

Mounting method:

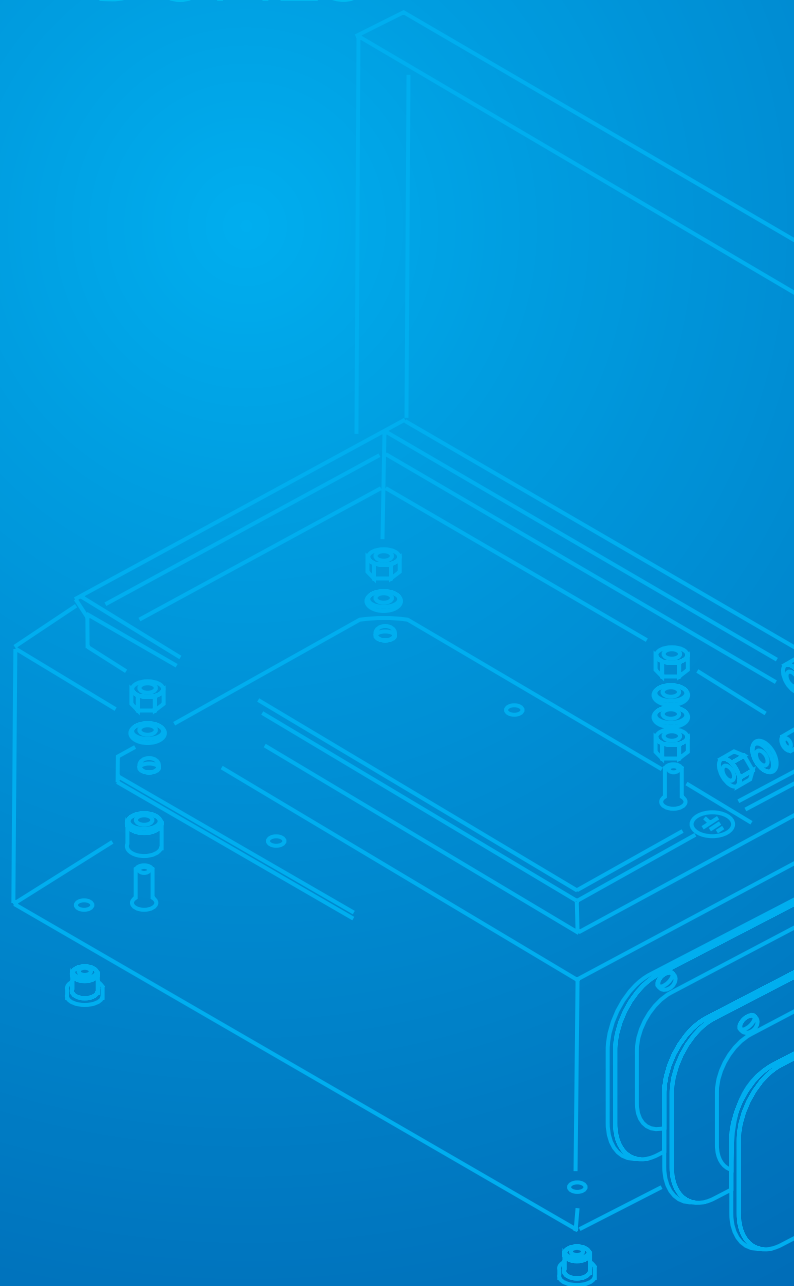
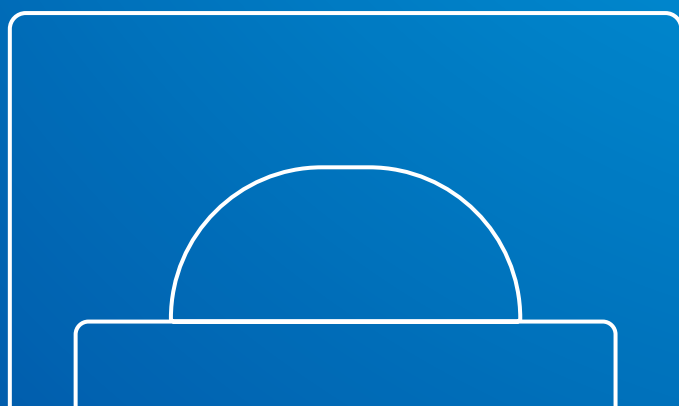
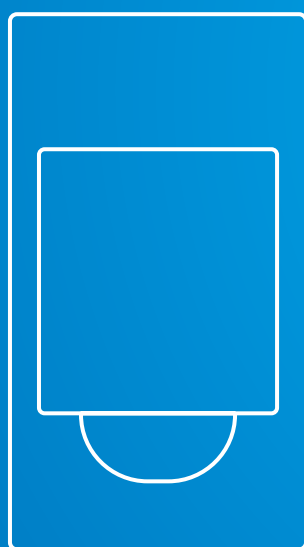
* DIN rail

Type	Packing / Box (pcs)	Catalogue number
German type socket for DIN rail	5 / 100	37004



DISTRIBUTION BOXES

DISTRIBUTION BOXES



EL[®]MARK

Plastic distribution boxes | [148](#)

Metal distribution boxes | [151](#)

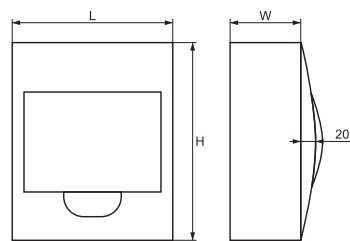
Metal distribution boxes for flush and surface mounting | [151](#)

Plastic distribution boards | [154](#)

Plastic distribution boards and accessories | [156](#)



Documents corresponding to the product:
Standard EN 62 208;
EN 60439-1; EN 60 439-3



Plastic distribution boxes for surface and flush mounting IP40

3 YEAR WARRANTY

The distribution boxes are designed for mounting in newly built buildings or buildings in reconstruction. They are a module box with mounted protective devices of the given flats electrical current circuit circles. They are supplied with transparent door for each row opening upwards to 90°. They are made of white self-extinguishing plastic, resistant to heat and high temperature with IP code: IP 40. The mounted device in the box is protected from direct contact to the current leading parts. They are offered with DIN-rail for device mounting and terminal strips for the neutral and earthing conductor joining. Mounted directly on the walls with screws.

- Technical data:
- Maximum insulation voltage: 690V; 50Hz
 - fire resistance rate: UL 94
 - IP code: IP 40
 - Class of current limiting: 2

Boxes for surface mounting

Number of rows	Module capacity (number of devices)	Dimensions (mm)			Packing / Box	Catalogue number
		L	H	W		
1	4	110	205	75	1 / 20	60040
1	6	150	205	75	1 / 20	60060
1	8	190	205	75	1 / 20	60080

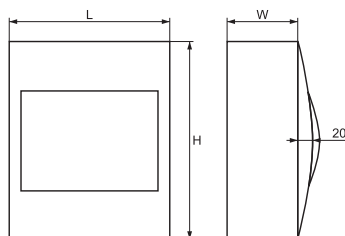
Boxes for flush mounting

Number of rows	Module capacity (number of devices)	Dimensions (mm)			Packing / Box	Catalogue number
		L	H	W		
1	4	110	205	75	1 / 20	60041
1	6	150	205	75	1 / 20	60061
1	8	190	205	75	1 / 20	60081



Documents corresponding to the product:

Standard EN 62 208;
EN 60439-1; EN 60 439-3

**Plastic distribution boxes for surface and flush mounting IP40****3** YEAR WARRANTY

The distribution boxes are designed for mounting in newly built buildings or buildings in reconstruction. They are a module box with mounted protective devices of the given flats electrical current circuit circles. They are supplied with transparent door for each row opening upwards to 90°. They are made of white self-extinguishing plastic, resistant to heat and high temperature with IP code: IP 40. The mounted device in the box is protected from direct contact to the current leading parts. They are offered with DIN-rail for device mounting and terminal strips for the neutral and earthing conductor joining. Mounted directly on the walls with screws.

Technical data:

- Door colour: Transparent blue
- Mounting type: Surface; Flush
- Modules (N°): 12; 18; 24; 28; 36
- IP code: IP40
- Row: Single row for 12 and 18 modules
- Double rows for 24; 28 and 36 modules
- Material: ABS for body and PC for door
- Fire resistance: 650°C/30s
- Ambient temperature(°C): -5 +65°C, max. 95% humidity
- Colour: White RAL 9003
- Storage temperature(°C): -40 +75°C

Boxes for surface mounting

Number of rows	Module capacity (number of devices)	Dimensions (mm)			Packing / Box	Catalogue number
		L	H	W		
1	12	300	204	102	1/10	60122
1	18	410	204	102	1/10	60182
2	24	300	294	109	1/5	60242
2	28	310	354	109	1/5	60282
2	36	410	294	109	1/5	60362

Boxes for flush mounting

Number of rows	Module capacity (number of devices)	Dimensions (mm)			Packing / Box	Catalogue number
		L	H	W		
1	12	317	220	102	1/10	60123
1	18	426	220	102	1/10	60183
2	24	317	310	109	1/5	60243
2	28	294	338	109	1/5	60283
2	36	426	310	109	1/5	60363


Documents corresponding to the product:

Standard EN 62 208;
EN 60439-1; EN 60 439-3

Moisture-proof distribution boxes for surface mounting - IP 55; IP65
3 YEAR WARRANTY

The distribution boxes are designed for mounting in newly built buildings or buildings in reconstruction. They are a module box with mounted protective devices of the given flats electrical installation current circles. They are supplied with transparent door for each row opening upwards to 90°. They are made of white non-self-extinguishing plastic, resistant to heat and high temperature. The special design of the lids and gaskets provides IP code: IP55; IP65. The mounted device in the box is protected from indirect contact to the current leading parts. They are offered with DIN-rail for device mounting and terminal strips for the neutral and earthing conductor joining. For direct wall mounting with screws.

Technical data:

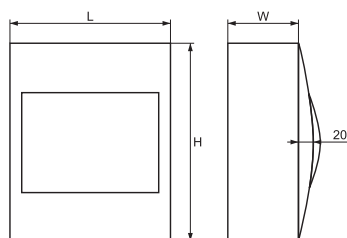
- Maximum insulation voltage: 690V; 50Hz
- Flame retardance: UL94 V-O
- IP code: IP55; IP65
- Door colour: Transparent
- Mounting type: Surface

Moisture-proof distribution boxes for surface mounting - IP 55

Type	Number of rows	Module capacity (number of devices)	IP	Dimensions (mm)			Packing / Box	Catalogue number
				L	H	W		
WP4	1	4	55	127	214	93	1 / 20	60100
WP6	1	6	55	162	214	93	1 / 20	60101
WP8	1	8	55	216	214	93	1 / 20	60102
WP12	1	12	55	270	214	93	1 / 12	60103
WP18	1	18	55	378	233	93	1 / 8	60104
WP24	2	24	55	340	288	93	1 / 8	60105

Moisture-proof distribution boxes for surface mounting - IP 65

Type	Number of rows	Module capacity (number of devices)	IP	Dimensions (mm)			Packing / Box	Catalogue number
				L	H	W		
WPDB 04	1	4	65	210	140	100	1/30	60004
WPDB 08	1	8	65	210	215	100	1/20	60008
WPDB 12	1	12	65	260	300	140	1/10	60012
WPDB 18	1	18	65	285	410	140	1/5	60018
WPDB 24	2	24	65	300	415	140	1/5	60024



Metal distribution boxes for flush and surface mounting

3 YEAR WARRANTY

Technical data:

- Maximum insulation voltage: 690V; 50Hz
- Flame retardance: V-0
- IP code: IP40
- Colour: Gray
- Mounting type: Surface and flush



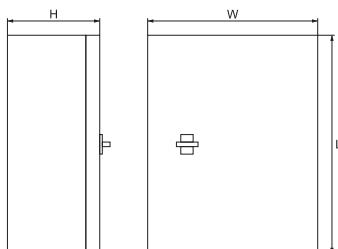
Type	Number of poles	Module capacity (number of devices)	Dimensions (mm)			Packing / Box	Catalogue number
			H	L	W		
MDB 1/4	1	4	251	190	90	1/10	600104
MDB 1/8	1	8	251	262	90	1/10	600108
MDB 1/12	1	12	251	334	90	1/10	600112
MDB 1/16	1	16	251	406	90	1/10	600116



Type	Number of poles	Module capacity (number of devices)	Dimensions (mm)			Packing / Box	Catalogue number
			H	L	W		
MDB 3/4	3	4	454	406	114	1/2	600304
MDB 3/6	3	6	508	406	114	1/2	600306
MDB 3/8	3	8	562	406	114	1/2	600308
MDB 3/10	3	10	616	406	114	1/2	600310
MDB 3/12	3	12	670	406	114	1/2	600312

Documents corresponding to the product:

Standard EN 62 208;
EN 60439-1; EN 60 439-3



Stainless steel metal boards

3 YEAR WARRANTY

Supplied with a special lock, metal plate for fixing of electrical devices, lid for the input-output conductors, grounded dowel pin, gaskets, etc. Option to change the opening direction. Made of single stainless steel sheet. The mounting plate is treated with anti-corrosion and decorative powder coating. They are used in case of special requirements regarding the exposure of corrosion.

Technical data:

- Rated voltage: up to 1000V
- Maximum current: up to 800A
- Material: stainless steel
- IP code: IP 65

Mounting:

- vertically on flat surface

Type	Thickness of metal sheet (mm)	Metal box dimensions (mm)			Packing / Box	Catalogue number
		L (height)	W (width)	H (depth)		
SXF 25/25/15	1.0	250	250	150	1	54025
SXF 30/25/15	1.0	300	250	150	1	54030
SXF 40/30/20	1.0	400	300	200	1	54040
SXF 50/40/20	1.2	500	400	200	1	54050
SXF 60/40/20	1.2	600	400	200	1	54060
SXF 70/50/20	1.2	700	500	200	1	54070
SXF 80/60/25	1.5	800	600	250	1	54080
SXF 100/80/30	1.5	1000	800	300	1	54100
SXF 120/80/30	1.5	1200	800	300	1	54120

Documents corresponding to the product:

Standard EN 62208;
EN 60439-1; EN 60 439-3



Metal distribution boards

3 YEAR WARRANTY

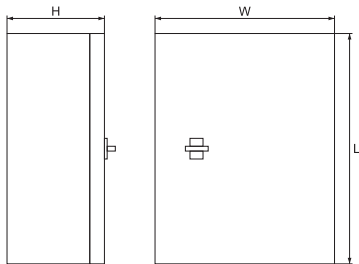
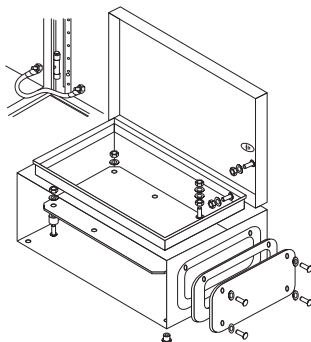
Supplied with a special lock, metal plate for fixing of electrical devices, lid for the input-output conductors, grounded dowel pin, gaskets, etc. Option to change the opening direction. Made of single steel sheet, treated with decorative powder coating.

Technical data:

- Rated voltage: up to 1000V
- Maximum current: up to 1250A
- Material: steel
- RAL 7032
- Coating: powder style painting
- IP code: IP 65

Mounting:

- vertically on flat surface



Type	Thickness of metal sheet (mm)	Metal box dimensions (mm)			Nominal working current In (A)	Packing / Box	Catalogue number
		L (height)	W (width)	H (depth)			
JXF 25/25/15	1.0	250	250	150	80	1	53025
JXF 25/30/15	1.0	250	300	150	100	1	53026
JXF 30/25/15	1.0	300	250	150	100	1	53030
JXF 30/40/20	1.0	300	400	200	160	1	53031
JXF 40/30/20	1.0	400	300	200	160	1	53040
JXF 40/50/20	1.2	400	500	200	250	1	53041
JXF 40/40/20	1.2	400	400	200	250	1	53044
JXF 50/40/20	1.2	500	400	200	250	1	53050
JXF 40/60/20	1.2	400	600	200	250	1	53051
JXF 60/40/20	1.2	600	400	200	250	1	53060
JXF 60/60/20	1.2	600	600	200	250	1	53066
JXF 70/50/20	1.2	700	500	200	350	1	53070
JXF 80/60/25	1.5	800	600	250	400	1	53080
JXF 100/80/30	1.5	1000	800	300	630	1	53100
JXF 120/80/30	1.5	1200	800	300	630	1	53120
JXF 140/80/30	1.5	1400	800	300	800	1	53140
JXF 180/80/30	1.5	1800	800	300	1000	1	53188
JXF 180/100/30*	1.5	1800	1000	300	1250	1	53180

Note: *Metal boxes with double door

Documents corresponding to the product:

Standard EN 60439-1;
EN 60 439-3

Electric Switchboards with Type-Approval Certificates

The company has produced and successfully passed the type-approval procedures for the following metal and plastic electric control boxes and boards with ELMARK automation:

- Tower Mounted Switchgear
- Low Voltage Meter Box
- Low Voltage Main Switchboard
- Distribution Switchboard
- Power Compensation System



Low Voltage Meter Box Type TEPO



Low Voltage Main Switchboard Type GRT



Tower Mounted Switchgear Type MTT



Power Compensation System Type CCU



Distribution Switchboard Type KRSH




Documents corresponding to the product:

Standard EN 60439 -1
EN 60439 -5

Plastic distribution boards - ABS IP65
3 YEAR WARRANTY

Plastic distribution boards of various sizes. Intended for extension or distribution of cable lines. They can also be used as meter boxes. They are resistant to chemical agents, thermal and UV rays.

Technical Specifications:

- Resistance: chemical agents, weak acids, alkali, oils, salts, etc.
- Rated Voltage: up to 690V
- Maximum Current: up to 800A
- Thermal Deformation: over 240°C
- Operating Temperature: -35°C + 65°C
- Material: ABS
- IP code: IP65
- Colour: RAL7035 grey
- Recyclable
- adjustable mounting plate position

Mounting:

- Vertically on flat surface

ABS halogen free distribution boards - gray door

Board Type	Material Type	L (mm)	W (mm)	H (mm)	Packing / Box	Catalogue number
PP 3001	ABS	300	200	130	1	5312030130
PP 3002	ABS	350	250	150	1	5312535150
PP 3004	ABS	400	300	170	1	5313040170
PP 3005	ABS	400	300	220	1	5313040220
PP 3006	ABS	500	350	190	1	5313550190
PP 3007	ABS	500	400	240	1	5314050240
PP 3008	ABS	600	400	200	1	5314060190

Note: Open door angle 180°

ABS halogen free distribution boards - transparent door

Board Type	Material Type	L (mm)	W (mm)	H (mm)	Packing / Box	Catalogue number
PP 3011	ABS	300	200	130	1	5342030130
PP 3012	ABS	350	250	150	1	5342535150
PP 3014	ABS	400	300	170	1	5343040170
PP 3015	ABS	400	300	220	1	5343040220
PP 3016	ABS	500	350	190	1	5343550190
PP 3017	ABS	500	400	240	1	5344050240
PP 3018	ABS	600	400	200	1	5344060190
PP 3020	ABS	700	500	250	1	5345070250



ABS halogen free distribution module boards - transparent door

Board Type	Material Type	L (mm)	W (mm)	H (mm)	Packing / Box	Catalogue number
PP 3112-18modules	ABS	350	250	150	1	5322535150
PP 3114-24modules	ABS	400	300	170	1	5323040170
PP 3116-45modules	ABS	500	350	190	1	5323550190
PP 3118-60modules	ABS	600	400	200	1	5324060190

Note: Transparent door

Surface mounting polyester boards EC - IP65

3 YEAR WARRANTY

Technical Specifications:

- Colour: grey RAL 7035.
- IP65 protection degree.
- Material: made of halogen free reinforced fiberglass polyester, self-extinguishing V0 degree according to UL94.
- Double insulation, shock resistance: IK10, 20j, according to EN 62262.
- Application temperature: minimum -25°, maximum +65°.
- Resistance to abnormal heat (GWT)- board with blank door up to 960°C - board with transparent window up to 650°C.
- Application voltage 1000V, suitable for photovoltaic plants.
- Right or left reversible door with stainless steel pins – it can be opened more than 180°.
- Plain and smooth headboards for easy opening and conduit inlet.
- Removable frame ready to install slotted trunkings in the back.
- Back plates made up of metal or insulating material can be fixed directly to the board back, also if the frame is used, or can be adjusted to different heights through the kit EC625REG.
- Possibility to mount 48-75mm high switches or 102mm high switches starting from the board with dimensions 435x505x215.
- One-Screw-System: only one type of screws is used for the different accessories in order to permit a simple and easy assembly.
- Left or right reversible counter door with stainless steel pins, ergonomic handle, triangle lock, adjustable at two different heights with reference grid for the fixing of the devices.
- Fixing of the single/double blank or windowed panels through a ¼ turn screws.

Halogen free polyester boards EC- blank door

Type	Material	L (mm)	W (mm)	H (mm)	Packing / Box	Catalogue number
PBBD 5001	Polyester	305	270	170	1	5332730170
PBBD 5002	Polyester	430	325	185	1	5333243185
PBBD 5003	Polyester	505	435	215	1	5334350215
PBBD 5004	Polyester	655	435	215	1	5334365215
PBBD 5005	Polyester	655	545	265	1	5335465265
PBBD 5006	Polyester	810	620	320	1	5336281320

*Detailed installation instructions and information about the functions and applications of all additional accessories for polyester boxes, you can find on: www.elmarkholding.eu



**Halogen free polyester boards EC - transparent door**

Type	Material	L (mm)	W (mm)	H (mm)	Packing / Box	Catalogue number
PBTD 5001	Polyester	305	270	170	1	5362730170
PBTD 5002	Polyester	430	325	185	1	5363243185
PBTD 5003	Polyester	505	435	215	1	5364350215
PBTD 5004	Polyester	655	435	215	1	5364365215
PBTD 5005	Polyester	655	545	265	1	5365465265
PBTD 5006	Polyester	810	620	320	1	5366281320

Polyester hinger counterdoor EC

Type	Material	Used for type boards	Packing / Box	Catalogue number
CD 5002	Polyester	PBTD/PBBD 5002	1	53502CD
CD 5003	Polyester	PBTD/PBBD 5003	1	53503CD
CD 5004	Polyester	PBTD/PBBD 5004	1	53504CD
CD 5005	Polyester	PBTD/PBBD 5005	1	53505CD
CD 5006	Polyester	PBTD/PBBD 5006	1	53505CD

Metal back plate EC

Type	Dimensions	Used for type boards	Packing / Box	Catalogue number
MP 5001	207x239	PBTD/PBBD 5001	1	53501MP
MP 5002	264x364	PBTD/PBBD 5002	1	53502MP
MP 5003	372x439	PBTD/PBBD 5003	1	53503MP
MP 5004	372x589	PBTD/PBBD 5004	1	53504MP
MP 5005	482x589	PBTD/PBBD 5005	1	53505MP
MP 5006	556x739	PBTD/PBBD 5006	1	53506MP

Insulating plastic back plate EC

Type	Dimensions	Used for type boards	Packing / Box	Catalogue number
IBP 5001	207x239	PBTD/PBBD 5001	1	53501IBP
IBP5002	264x364	PBTD/PBBD 5002	1	53502IBP
IBP5003	372x439	PBTD/PBBD 5003	1	53503IBP
IBP 5004	372x589	PBTD/PBBD 5004	1	53504IBP
IBP 5005	482x589	PBTD/PBBD 5005	1	53505IBP
IBP 5006	556x739	PBTD/PBBD 5006	1	53506IBP

*Detailed installation instructions and information about the functions and applications of all additional accessories for polyester boxes, you can find on: www.elmarkholding.eu



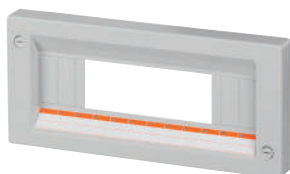
Pair of uprights for rail DIN and panels EC

Type	Used for type boards	Packing / Box	Catalogue number
DP 5002	PBTD/PBBD 5002	1 pair	53502DP
DP 5003	PBTD/PBBD 5003	1 pair	53503DP
DP 5004	PBTD/PBBD 5004/5005	1 pair	53504DP
DP 5006	PBTD/PBBD 5006	1 pair	53506DP



DIN rail with support EC

Type	Module capacity	Used for type boards	Packing / Box	Catalogue number
DS 5002	12	PBTD/PBBD 5002	1	53502DS
DS 5003	18	PBTD/PBBD 5003/5004	1	53503DS
DS 5004	24	PBTD/PBBD 5005	1	53504DS
DS 5005	28	PBTD/PBBD 5006	1	53505DS



Cover module with window EC

Type	Module capacity	Used for type boards	Packing / Box	Catalogue number
CMW 5002	12	PBTD/PBBD 5002	1	53502CMW
CMW 5003	18	PBTD/PBBD 5003/5004	1	53503CMW
CMW 5004	24	PBTD/PBBD 5005	1	53504CMW
CMW 5005	28	PBTD/PBBD 5006	1	53505CMW



Blank cover module EC

Type	Height of single/double cover (mm)	Used for type boards	Packing /Box	Catalogue number single cover	Catalogue number double cover
Blank cover module	125/250	PBTD/PBBD 5002	1	53502S	53502D
	150/300	PBTD/PBBD 5003/5004	1	53503S	53503D
	150/300	PBTD/PBBD 5005	1	53505S	53505D
	150/300	PBTD/PBBD 5006	1	53506S	53506D

Deep adjustment back plate kit EC

Type	Used for type boards	Need kits	Packing /Box	Catalogue number
Deep adjustment back plate kit	PBTD/PBBD 5002/5003	2kit	1 kit (2 pcs)	53507
	PBTD/PBBD 5004/5005	3kit	1 kit (2 pcs)	57508
	PBTD/PBBD 5006	4kit	1 kit (2 pcs)	53509



Spare brass and brackets for fixing- galvanized EC

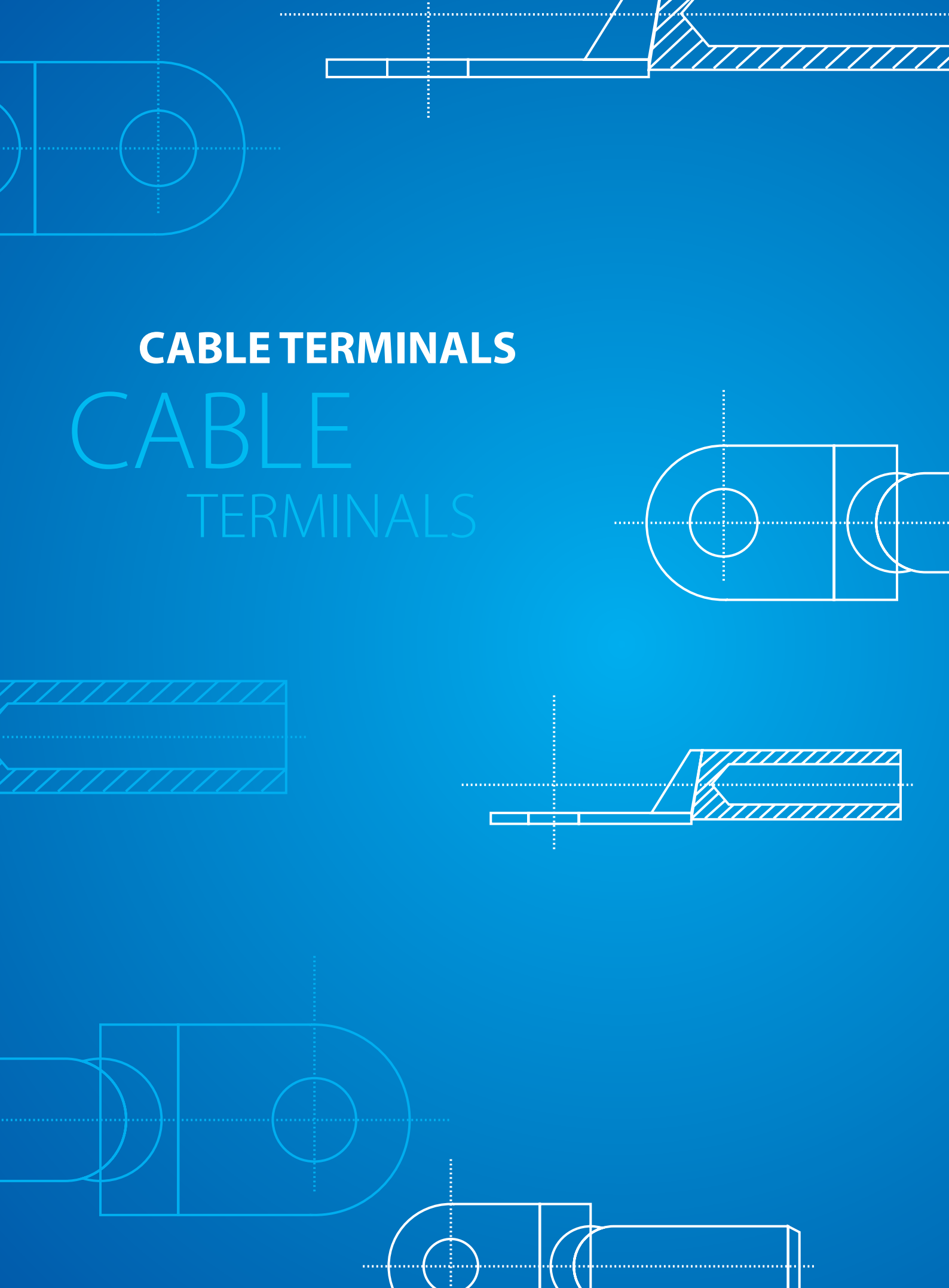
Type	Used for type boards	Packing /Box	Catalogue number
Galvanized brackets	All type	1 kit (4 pcs)	53510
Spare brass insert kit	All type	1 kit (10 pcs)	53512

Safety lock EC

Type	Used for type boards	Packing /Box	Catalogue number
Safety lock	All type	1	53511

Note: Lock supplied with two unified keys. The keys are unified and open all the locks





CABLE TERMINALS

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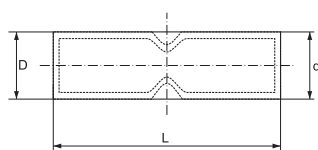
Connection tubes | 160

Isolated cable terminals | 163





Standard: EN 61 238-1

**Connection tubes - GTY type****3** YEAR WARRANTY

Copper pipes with galvanic tin coating, used for joining of copper rigid or multicore conductors with different sections. The assembling is made by mechanical pressing with crimping tool.

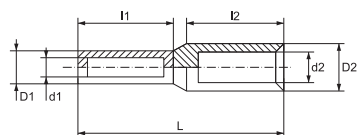
Technical data:

- Material: copper alloy
- Coating: tin
- Application: general

Type	Length L (mm)	Outer diameter D (mm)	Inner diameter d (mm)	Cable (mm ²)	Packing / Box (pcs)	Catalogue number
GTY-4	20	5	3	4	1000 / 16000	59213
GTY-6	25	5.3	3.7	6	500 / 1500 / 12000	59201
GTY-10	30	6.3	4.5	10	500 / 1500 / 12000	59202
GTY-16	35	7.5	5.7	16	100 / 200 / 4800	59203
GTY-25	40	9	7.2	25	100 / 500 / 2000	59204
GTY-35	45	10.8	8.5	35	100 / 200 / 1600	59205
GTY-50	50	12.5	9.8	50	20 / 200 / 1600	59206
GTY-70	55	14.5	11.5	70	10 / 100 / 800	59207
GTY-95	60	17	13.7	95	10 / 80 / 640	59208
GTY-120	65	19	15	120	10 / 60 / 480	59209
GTY-150	70	21	16.7	150	10 / 50 / 400	59210
GTY-185	75	23	18.5	185	10 / 40 / 320	59211
GTY-240	80	26	21	240	10 / 30 / 240	59212



Standard: EN 61 238-1

**Bimetallic connection tube - GTL type****3** YEAR WARRANTY

Pipes made of two metals – copper and aluminum without galvanic coating. They are designed for joining copper and aluminum conductors – rigid or multicore conductors with different section. The connection is accomplished through crimping pliers, through mechanical pressing of the butt terminals and the conductor. They are used for protection against electrochemical corrosion got at two metals contact with different chemical properties and conductivity at electrical current feed. They are manufactured under modern technology and have high quality and long exploitation period.

Technical data:

- Material: copper aluminum alloy
- Coating: none
- Application: general for joining of two types of conductors

Type	d1	D1	d2	D2	l1	l2	L	Packing / Box (pcs)	Catalogue number
GTL - 16	5	9	6	10	30	30	75	20 / 200 / 1200	59214
GTL - 25	6	10	7	12	30	33	82	20 / 400 / 1500	59215
GTL - 35	7	11	8.5	14	30	40	90	20 / 300 / 1000	59216
GTL - 50	8.5	13	9.8	16	32	42	95	20 / 800	59217
GTL - 70	9.5	15	11.5	18	38	50	105	10 / 600	59218
GTL - 95	11.5	17	13.5	21	40	50	110	10 / 500	59219
GTL - 120	13.5	19	15	23	42	55	112	10 / 400	59220
GTL - 150	15	21	17	25	44	55	118	10 / 350	59221
GTL - 185	17	23	18.5	27	46	60	125	10 / 300	59222
GTL - 240	19	26	21	30	54	60	130	10 / 200	59223

Cable terminals without isolation - JM type

3 YEAR WARRANTY

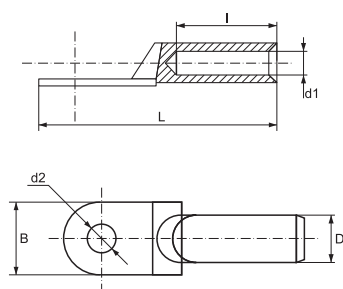


They are used for joining copper conductors - multicore conductors with different section to electrical devices or connections to combine all cores of the conductor, to provide safe connection at tightening in terminals and safe connection at the base of the terminal. Thus the connection stability against vibrations is increased and the possibility for short circuit is decreased. They are made of copper alloy with galvanic tin coating. The connection is realized through crimping pliers, through mechanic pressing of the terminal and conductor. Two types are offered with standard length SC and extended base JM. They are manufactured under modern technology and have high quality and long exploitation period.

Technical data:

- Material: copper alloy
- Coating: tin
- Application: general for joining conductors to electrical devices.

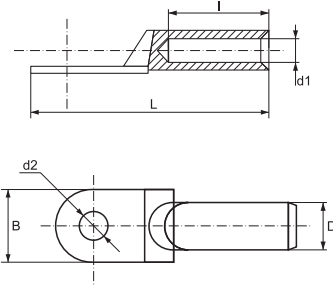
Standard: EN 61 238-1



Type	d1 (mm)	D (mm)	d2 (mm)	L (mm)	Packing / Box (pcs)	Catalogue number
JM - 2.5/6	2.2	4.5	6	24	1000 / 3000 / 24000	59240
JM - 4/6	3.0	4.8	6	24	1000 / 2000 / 16000	59241
JM - 6/6	3.8	5.5	6	24	500 / 2000 / 16000	59035
JM - 6/8	3.8	5.5	8	24	500 / 2000 / 16000	59059
JM - 10/6	4.8	6.8	6	25.5	100 / 1500 / 12000	59036
JM - 10/8	4.8	6.8	8	25.5	500 / 1500 / 12000	59037
JM - 16/6	5.5	7.5	6	30.5	400 / 800 / 6400	59038
JM - 16/8	5.5	7.5	8	30.5	400 / 800 / 6400	59039
JM - 16/10	5.5	7.5	10	30.5	400 / 800 / 6400	59040
JM - 25/8	7	9	8	34	100 / 500 / 4000	59041
JM - 25/10	7	9	10	34	250 / 500 / 4000	59042
JM - 35/8	8.2	10.5	8	38	200 / 400 / 3200	59043
JM - 35/10	8.2	10.5	10	38	200 / 400 / 3200	59044
JM - 35/12	8.2	10.5	12	38	200 / 400 / 3200	59045
JM - 50/8	9.8	12.5	8	45	100 / 200 / 1600	59046
JM - 50/10	9.8	12.5	10	45	100 / 100 / 1600	59047
JM - 50/12	9.8	12.5	12	45	100 / 200 / 1600	59048
JM - 70/10	11.5	14.5	10	50	80 / 100 / 1280	59049
JM - 70/12	11.5	14.5	12	50	80 / 100 / 1280	59050
JM - 95/10	13.8	17.5	10	55.5	50 / 200 / 800	59051
JM - 95/12	13.8	17.5	12	55.5	50 / 200 / 800	59052
JM - 120/10	15.5	19.5	10	63	30 / 60 / 480	59053
JM - 120/12	15.5	19.5	12	63	30 / 60 / 480	59054
JM - 150/12	16.5	21	12	71	10 / 50 / 400	59055
JM - 185/12	18.8	23.5	12	78	10 / 40 / 320	59056
JM - 185/16	18.8	23.5	16	78	10 / 40 / 320	59057
JM - 240/16	21.3	26.5	16	92	10 / 30 / 240	59058



Standard: EN 61 238-1



Bimetallic non-isolated cable terminals for crimping DTL

3 YEAR WARRANTY

They are used for joining aluminum conductors - multicore conductors with different section to electrical devices or connections to combine all cores of the conductor, to provide safe connection at tightening in terminals and safe connection at the base of the terminal. Thus the connection stability against vibrations is increased and the possibility for short circuit is decreased. They are made of copper and aluminum alloys as in the aluminum billet is made under special technology the copper terminal formed like an ear. The connection is realized through crimping pliers, through mechanic pressing of the terminal and conductor. They are manufactured under modern technology and have high quality and long exploitation period.

Technical data:

- Material: copper aluminum
- Application: general for joining conductors to electrical devices.

Type	d1 (mm)	D (mm)	d2 (mm)	L (mm)	l (mm)	B (mm)	Packing / Box (pcs)	Catalogue number
DTL - 1 - 16	6	11	8	70	30	16	20 / 200 / 1440	59224
DTL - 1 - 25	7	12	8	75	34	18	20 / 180 / 1080	59225
DTL - 1 - 35	8.5	14	10	85	38	20.5	20 / 100 / 600	59226
DTL - 1 - 50	9.8	16	10	90	40	23	20 / 70 / 420	59227
DTL - 1 - 70	11.5	18	12	102	48	26	10 / 60 / 360	59228
DTL - 1 - 95	13.5	21	12	112	50	28	10 / 40 / 180	59229
DTL - 1 - 120	15	23	14	120	53	30	10 / 30 / 120	59230
DTL - 1 - 150	16.5	25	14	126	56	34	5 / 25 / 120	59231
DTL - 1 - 185	18.5	27	16	133	58	37	5 / 20 / 120	59232
DTL - 1 - 240	21	30	16	140	60	40	4 / 12 / 72	59233

Copper cable wire fork terminal connector

3 YEAR WARRANTY



Type	Length (mm)	Colour	Conductor (mm ²)	Packing (pcs.)	Packing / Box (pcs.)	Catalogue number
SVS1.25-4	21.2	Red	0.5-1.5	100	10 / 240	59080
SVS1.25-5	21.2	Red	0.5-1.5	100	15 / 180	59081
SVS1.25-6	21.2	Red	0.5-1.5	100	15 / 180	59082
SVS 2-4	21.0	Blue	1.5-2.5	100	15 / 180	59083
SVS 2-5	22.5	Blue	1.5-2.5	100	15 / 180	59084
SVS 2-6	27,6	Blue	1.5-2.5	100	10 / 120	59085
SVS 5,5-4	24.5	Yellow	4-6	100	5 / 60	59086
SVS 5,5-5	27,9	Yellow	4-6	100	5 / 60	59087
SVS 5,5-6	27,9	Yellow	4-6	100	5 / 60	59088



Standard: EN 61 238-1

Isolated cable joints

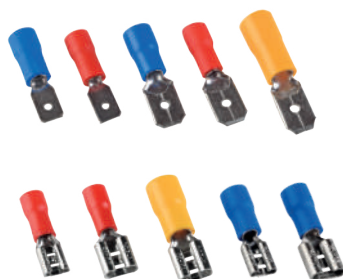
3 YEAR WARRANTY

Metal pipes with outside PVC insulation. They are used for joining/extending multicore conductors with section up to 6mm². It increases the connection stability against vibrations and decreases the possibility for short circuit. The connection is realized through crimping pliers, through mechanic pressing of the terminal and conductor. The different insulation colour corresponds to different conductor sections.

Technical data:

- Material: copper alloy
- Coating: polyvinylchloride
- Application: general for joining of copper conductors

Type	Length (mm)	Colour	Conductor (mm ²)	Packing (pcs.)	Packing / Box (pcs.)	Catalogue number
PVT 1.25	16	red	1	100	10 / 120	59015
BV 1.25	25	red	1	100	10 / 120	59001
PVT 2	16	blue	1.5-2.5	100	10 / 120	59034
BV 2	25	blue	1.5-2.5	100	10 / 60	59002
PVT 5.5	20	yellow	4-6	100	5 / 60	59014
BV 5.5	25	yellow	4-6	100	5 / 60	59003



Isolated cable terminals - MDD/FDD types

3 YEAR WARRANTY

They represent a cable terminal made of brass alloy with galvanic tin coating and insulated with polyvinylchloride. They are used as non-insulated terminals, as the insulated part protects the cores from bending and breaking in the joining point and at the same time it protects the staff from direct contact to the current - carrying parts. They are used for conductors with section up to 6 mm. The connection is realized through crimping pliers, through mechanic pressing of the terminal and cable. The different insulation colour corresponds to different conductor sections. They are manufactured under modern technology and have high quality and long exploitation period.

All insulated cable terminals are being offered in 100 pcs. packing

Technical data:

- Material: copper alloy
- Coating: polyvinylchloride
- Application: general for joining copper conductors
- Ambient temperature: -10 to +75°C

Type	Shape	Colour	Conductor (mm ²)	Shoe width	Packing (pcs.)	Packing / Box (pcs.)	Catalogue number
MDD 1.25 - 187	male	red	1	187	100	10 / 240	59012
MDD 1.25 - 250	male	red	1	250	100	10 / 240	59009
MDD 2 - 187	male	blue	1.5-2.5	187	100	10 / 240	59013
MDD 2 - 250	male	blue	1.5-2.5	250	100	10 / 180	59011
MDD 5.5 - 250	male	yellow	4-6	250	100	10 / 120	59010
FDD 1.25 - 187	female	red	1	187	100	20 / 240	59008
FDD 1.25 - 187	female	red	1	250	100	15 / 180	59006
FDD 2 - 187	female	blue	1.5-2.5	187	100	20 / 240	59007
FDD 2 - 250	female	blue	1.5-2.5	250	100	10 / 180	59004
FDD 5.5 - 250	female	yellow	4-6	250	100	10 / 120	59005



Isolated cable terminals - E type

3 YEAR WARRANTY

Type	Colour	Terminal length (mm)	Conductor (mm ²)	Packing (pcs.)	Packing / Box (pcs.)	Catalogue number
E0508	white	8	0.5	100	50 / 600	59023
E7508	blue	8	0.75	100	50 / 600	59024
E1008	red	8	1.0	100	50 / 600	59025
E1510	black	10	1.5	100	30 / 360	59026
E2512	grey	12	2.5	100	30 / 300	59027
E4012	orange	12	4.0	100	20 / 240	59028
E6018	green	18	6.0	100	5 / 120	59029
E10-18	dark green	18	10	100	8 / 96	59030
E16-18	milky yellow	18	16	100	6 / 60	59031
E25-16	black	16	25	100	5 / 36	59032
E35-25	grey-yellow	25	35	100	2 / 24	59033



Isolated cable terminals - PTV type

3 YEAR WARRANTY

Type	Shape	Colour	Conductor (mm ²)	Shoe width	Packing (pcs.)	Packing / Box (pcs.)	Catalogue number
PTV 1.25 - 10	male	red	0.25-1.5	1.9	100	20 / 240	59101
PTV 1.25 - 12	male	red	0.25-1.5	1.9	100	20 / 240	59102
PTV 2 - 10	male	blue	1.5-2.5	1.9	100	20 / 240	59103
PTV 2 - 12	male	blue	1.5-2.5	1.9	100	15 / 180	59104
PTV 5.5 - 13	male	yellow	4-6	2.9	100	8 / 96	59105

Isolated cable terminals - RVL type

3 YEAR WARRANTY

Type	Size of the opening (mm)	Colour	Conductor (mm ²)	Packing (pcs.)	Packing / Box (pcs.)	Catalogue number
RVL 1.25-4	4	red	1	100	20 / 240	59021
RVL 1.25-5	5	red	1	100	15 / 180	59022
RVL 2-4	4	blue	1.5-2.5	100	15 / 180	59018
RVL 2-5	5	blue	1.5-2.5	100	10 / 120	59019
RVL 5.5-4	4	yellow	4-6	100	8 / 96	59020
RV 5.5-5	5	yellow	4-6	100	8 / 96	59016
RV 5.5-6	6	yellow	4-6	100	8 / 96	59017





Isolated cable terminals - PBDD type

3 YEAR WARRANTY

Type	Shape	Colour	Conductor (mm ²)	Shoe width	Packing (pcs.)	Packing / Box (pcs.)	Catalogue number
PBDD 1.25 - 250	male	red	0.25-1.5	6.3	100	5 / 60	59106
PBDD 2 - 250	male	blue	1.5-2.5	6.3	100	5 / 60	59107
PBDD 5.5 - 250	male	yellow	4-6	6.3	100	5 / 60	59108



Isolated cable terminals - MPD type

3 YEAR WARRANTY

Type	Shape	Colour	Conductor (mm ²)	Shoe width	Packing (pcs.)	Packing / Box (pcs.)	Catalogue number
MPD 1.25 - 156	male	red	0.25-1.5	6.3	100	10 / 240	59109
MPD 2 - 195	male	blue	1.5-2.5	6.3	100	10 / 120	59110
MPD 5.5 - 195	male	yellow	4-6	6.3	100	10 / 120	59111



Isolated cable terminals - MDFN type

3 YEAR WARRANTY

Type	Shape	Colour	Conductor (mm ²)	Shoe width	Packing (pcs.)	Packing / Box (pcs.)	Catalogue number
MDFN 1.25 - 250	male	red	0.25-1.5	4	100	5 / 60	59112
MDFN 2 - 250	male	blue	1.5-2.5	4	100	5 / 60	59113
MDFN 5 - 250	male	yellow	4-6	5	100	4 / 48	59114



Isolated cable terminals - FDFNY type

3 YEAR WARRANTY

Type	Length (mm)	Conductor (mm ²)	Colour	Packing (pcs.)	Packing / Box (pcs.)	Catalogue number
FDFNY	250	1,25	red	100	10 / 60	59242
FDFNY	250	2	blue	100	10 / 60	59243
FDFNY	250	5,5	yellow	100	10 / 60	59244



Isolated cable terminals - CHS type

3 YEAR WARRANTY

Type	Length (mm)	Conductor (mm ²)	Packing / Box (pcs.)	Packing / Box (pcs.)	Catalogue number
CHS3	18.1	0.25-1.5	100	250	59115
CHS4	20.1	1.5-2.5	100	200	59116
CHS5	25.5	4-6	100	200	59117
CHS6	27.3	8	100	100	59118



CABLE INSTALLATION SYSTEM

CABLE
INSTALLATION



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Plastic cable trunking CT2

3 YEAR WARRANTY

Cable trunkings are practical solution of organizing power and communication cables in office and residential buildings. They increase the reliability in operation of the electrical systems and allow quick adaptation if necessary to rearrange the interior. Fast and simple installation. In combination with a wide range of accessories, building irregularities are quickly overcome. Non-flammable material, easy to cut and paint.

Type	Size(mm)	Length	Colour	Packing (pcs)	Catalogue number
PLASTIC CABLE TRUNKING CT2	12x12	2m	white	100	5621212
PLASTIC CABLE TRUNKING CT2	15X10	2m	white	100	5621510
PLASTIC CABLE TRUNKING CT2	16X16	2m	white	100	5621616
PLASTIC CABLE TRUNKING CT2	25X16	2m	white	80	5622516
PLASTIC CABLE TRUNKING CT2	25X25	2m	white	50	5622525
PLASTIC CABLE TRUNKING CT2	40X16	2m	white	50	5624016
PLASTIC CABLE TRUNKING CT2	40X25	2m	white	50	5624025
PLASTIC CABLE TRUNKING CT2	40X40	2m	white	40	5624040
PLASTIC CABLE TRUNKING CT2	60X40	2m	white	30	5626040
PLASTIC CABLE TRUNKING CT2	60X60	2m	white	32	5626060
PLASTIC CABLE TRUNKING CT2	80X40	2m	white	18	5628040
PLASTIC CABLE TRUNKING CT2	80X60	2m	white	24	5628060
PLASTIC CABLE TRUNKING CT2	100X40	2m	white	16	56210040
PLASTIC CABLE TRUNKING CT2	100X60	2m	white	16	56210060

Switches and sockets frames for cable trunking

3 YEAR WARRANTY

Cable trunking frames are decorative solution for installation of switches and sockets on places where their normal mounting is not possible. The assembly set includes subframe and main white frame. Universal sizes, suitable for mounting of switches and sockets from different manufacturers. Single, double and triple frames are offered.

Type	Used for cable trunking	Colour	Packing (pcs)	Catalogue number
SINGLE FRAME	100X40/100X60	White	20	562100441
DOUBLE FRAME	100X40/100X60	White	14	562100442
TRIPLE FRAME	100X40/100X60	White	5	562100443





Outside corner

3 YEAR WARRANTY

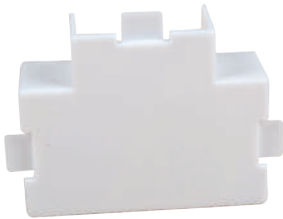
Type	Used for cable trunking	Colour	Packing (pcs)	Catalogue number
Outside corner	12x12	white	50	56212121
Outside corner	15X10	white	50	56215101
Outside corner	16X16	white	50	56216161
Outside corner	25X16	white	30	56225161
Outside corner	25X25	white	30	56225251
Outside corner	40X16	white	30	56240161
Outside corner	40X25	white	30	56240251
Outside corner	40X40	white	30	56240401
Outside corner	60X40	white	10	56260401
Outside corner	60X60	white	10	56260601
Outside corner	80X40	white	8	56280401
Outside corner	80X60	white	8	56280601
Outside corner	100X40	white	6	562100401
Outside corner	100X60	white	6	562100601



Inside corner

3 YEAR WARRANTY

Type	Used for cable trunking	Colour	Packing (pcs)	Catalogue number
Inside corner	12x12	white	50	56212122
Inside corner	15X10	white	50	56215102
Inside corner	16X16	white	50	56216162
Inside corner	25X16	white	30	56225162
Inside corner	25X25	white	30	56225252
Inside corner	40X16	white	30	56240162
Inside corner	40X25	white	30	56240252
Inside corner	40X40	white	30	56240402
Inside corner	60X40	white	10	56260402
Inside corner	60X60	white	10	56260602
Inside corner	80X40	white	8	56280402
Inside corner	80X60	white	8	56280602
Inside corner	100X40	white	6	562100402
Inside corner	100X60	white	6	562100602



T- corner

3 YEAR WARRANTY

Type	Used for cable trunking	Colour	Packing (pcs)	Catalogue number
T- corner	12x12	white	50	56212123
T- corner	15X10	white	50	56215103
T- corner	16X16	white	50	56216163
T- corner	25X16	white	20	56225163
T- corner	25X25	white	20	56225253
T- corner	40X16	white	30	56240163
T- corner	40X25	white	30	56240253
T- corner	40X40	white	30	56240403
T- corner	60X40	white	16	56260403
T- corner	60X60	white	16	56260603
T- corner	80X40	white	8	56280403
T- corner	80X60	white	8	56280603
T- corner	100X40	white	8	562100403
T- corner	100X60	white	8	562100603



L- corner

3 YEAR WARRANTY

Type	Used for cable trunking	Colour	Packing (pcs)	Catalogue number
L- corner	12x12	white	50	56212124
L- corner	15X10	white	50	56215104
L- corner	16X16	white	50	56216164
L- corner	25X16	white	30	56225164
L- corner	25X25	white	30	56225254
L- corner	40X16	white	30	56240164
L- corner	40X25	white	30	56240254
L- corner	40X40	white	30	56240404
L- corner	60X40	white	16	56260404
L- corner	60X60	white	16	56260604
L- corner	80X40	white	12	56280404
L- corner	80X60	white	12	56280604
L- corner	100X40	white	8	562100404
L- corner	100X60	white	8	562100604



Connector

3 YEAR WARRANTY

Type	Used for cable trunking	Colour	Packing (pcs)	Catalogue number
Connector	12x12	white	50	56212125
Connector	15X10	white	50	56215105
Connector	16X16	white	50	56216165
Connector	25X16	white	30	56225165
Connector	25X25	white	30	56225255
Connector	40X16	white	30	56240165
Connector	40X25	white	30	56240255
Connector	40X40	white	30	56240405
Connector	60X40	white	25	56260405
Connector	60X60	white	25	56260605
Connector	80X40	white	50	56280405
Connector	80X60	white	50	56280605
Connector	100X40	white	50	562100405
Connector	100X60	white	30	562100605



End cap

3 YEAR WARRANTY

Type	Used for cable trunking	Colour	Packing (pcs)	Catalogue number
End cap	12x12	white	50	56212126
End cap	15X10	white	50	56215106
End cap	16X16	white	50	56216166
End cap	25X16	white	50	56225166
End cap	25X25	white	50	56225256
End cap	40X16	white	30	56240166
End cap	40X25	white	30	56240256
End cap	40X40	white	30	56240406
End cap	60X40	white	50	56260406
End cap	60X60	white	50	56260606
End cap	80X40	white	60	56280406
End cap	80X60	white	60	56280606
End cap	100X40	white	50	562100406
End cap	100X60	white	50	562100606



Separator

3 YEAR WARRANTY

Type	Length (m)	Used for cable trunking	Colour	Packing (pcs)	Catalogue number
SEPARATOR 40	2	60x40, 80x40, 100x40	white	40	56261111
SEPARATOR 60	2	60x40, 80x40, 100x40	white	40	56261112

**Plastic cable trunking self-adhesive****3** YEAR WARRANTY

Type	Size(mm)	Length	Colour	Packing m/pcs	Catalogue number
Plastic cable trunking self-adhesive	12x12	2m	white	250/125	5621212A
	15x10	2m	white	250/125	5621510A
	16x16	2m	white	250/125	5621616A
	25x16	2m	white	100/50	5622516A
	25x25	2m	white	100/50	5622525A
	40x16	2m	white	50/25	5624016A
	40x25	2m	white	80/40	5624025A
	40x40	2m	white	80/40	5624040A

**Plastic cable trunking - Dark Walnut****3** YEAR WARRANTY

Type	Size(mm)	Length	Colour	Packing m/pcs	Catalogue number
Plastic cable trunking dark walnut	12x12	2m	dark walnut	250/125	5621212DW
	15x10	2m	dark walnut	250/125	5621510DW
	16x16	2m	dark walnut	250/125	5621616DW
	25x16	2m	dark walnut	150/75	5622516DW
	25x25	2m	dark walnut	100/50	5622525DW
	40x25	2m	dark walnut	80/40	5624025DW

**Plastic cable trunking - Light Beech****3** YEAR WARRANTY

Type	Size(mm)	Length	Colour	Packing m/pcs	Catalogue number
Plastic cable trunking light beech	12x12	2m	light beech	250/125	5621212LB
	15x10	2m	light beech	250/125	5621510LB
	16x16	2m	light beech	250/125	5621616LB
	25x16	2m	light beech	150/75	5622516LB
	25x25	2m	light beech	100/50	5622525LB
	40x25	2m	light beech	80/40	5624025LB

Plastic cable trunking



Plastic cable trunking - Pear

3 YEAR WARRANTY

Type	Size(mm)	Length	Colour	Packing m/pcs	Catalogue number
Plastic cable trunking pear	12x12	2m	pear	250/125	5621212P
	15x10	2m	pear	250/125	5621510P
	16x16	2m	pear	250/125	5621616P
	25x16	2m	pear	150/75	5622516P
	25x25	2m	pear	100/50	5622525P
	40x25	2m	pear	80/40	5624025P



Floor type plastic cable trunking CT2

3 YEAR WARRANTY

Type	Size(mm)	Length	Colour	Packing (pcs)	Catalogue number
Floor type plastic cable trunking CT2	50x12	2m	grey	60	5625012F
	75x20	2m	grey	40	5627520F
	90x20	2m	grey	20	5629020F



Slotted plastic cable trunking CT2

2 YEAR WARRANTY

Type	Size(mm)	Length	Colour	Packing (pcs)	Catalogue number
Slotted plastic cable trunking CT2	25x25	2m	grey	196	5622525S
	25x40	2m	grey	64	5622540S
	40x40	2m	grey	64	5624040S
	40x60	2m	grey	60	5624060S
	60x40	2m	grey	60	5626040S
	60x60	2m	grey	48	5626060S
	80x40	2m	grey	40	5628040S
	80x60	2m	grey	40	5628060S
	100x40	2m	grey	32	56210040S
	100x60	2m	grey	32	56210060S

Self-extinguishing pliable conduits with draw tape EC**3** YEAR WARRANTY

Technical data:

Material- technopolymer on PVC base, Self extinguishing V0 degree to UL94

Compression resistance- 320N

Standard- EN 61386-1; EN61386-22

RAL- 7035

Type	Inner Diameter Φ (mm)	Outer Diameter Φ (mm)	Packing (m)	Catalogue number
Self-extinguishing pliable conduits with draw tape	10,7	16	100	500N16
	14,1	20	100	500N20
	18,2	25	50	500N25
	24,3	32	25	500N32
	32,3	40	25	500N40

Spiral flexible PVC conduits- UV rays resistant EC**3** YEAR WARRANTY

Technical data:

Material (spiral+cover)- shock resistance technopolymer on PVC base

Self extinguishing V0 degree to UL94

Compression resistance- 320N

Installation temperature: -15/+70

Operating temperature: -5/+65

Type: UV rays resistance

Type	Inner Diameter Φ (mm)	Outer Diameter Φ (mm)	Packing (m)	Catalogue number
UV flexible pvc conduit	12	16,2	30	500UV12
	16	20,2	30	500UV16
	20	24,2	30	500UV20
	25	29,6	30	500UV25
	32	37,2	30	500UV32

Nylon cable draw tape EC**2** YEAR WARRANTY

Type	Diameter Φ (mm)	Lenght (m)	Colour	Packing (pcs)	Catalogue number
Nylon cable draw tape	3	5	Transparent	1/340	500305
	3	15	Transparent	1/120	500315

PVC insulated steel spirals

3 YEAR WARRANTY



Technical data:

Material - Galvanized steel, helically wound, flexible steel conduit with PVC coating

PVC-resistance against corrosion

Colour- black

Operating temperature: -5/+65

Type	Inner Diameter Φ (mm)	Outer Diameter Φ (mm)	Packing (m)	Catalogue number
PVC insulated steel spirals	11	15,2	50	500P11
	14	18,4	50	500P14
	16	20,4	50	500P16
	18	22,4	50	500P18
	26	30,4	25	500P26
	37	42,4	25	500P37

PVC self-extinguishing rigid insulating conduit EC

3 YEAR WARRANTY



Rigid insulating conduit are practical solution of organizing power and communication cables in of-
fice and residential buildings. They increase the reliability in operation of the electrical systems. Fast
and simple installation. In combination with a wide range of accessories, building irregularities are
quickly overcome. Non- flammable material, easy to cut and paint.

Technical data:

Material - shock resistance technopolymer on rigid PVC base

Self extinguishing V0 degree to UL94

Compression resistance- 320N

Standard- EN 61386-1; EN 61386-21

Type	External diameter Ø (mm)	Length (m)	Colour	IP code	Packing (pcs)	Catalogue number
Plastic cable conduit, with sleeve	16	3	GREY	40	34	50016
	20	3	GREY	40	34	50020
	25	3	GREY	40	20	50025
	32	3	GREY	40	10	50032
	40	3	GREY	40	10	50040

Accessories for PVC self-extinguishing rigid insulating conduits and flexible spiral conduits, IP 65 EC

3 YEAR WARRANTY

Technical data:
 Material- shock resistant technopolymer on PVC base
 Self-extinguishing V0 degree to UL94
 Glow wire test: up to 960°C
 O-ring to compensate the conduit tolerances
 Standard- EN 61386-1; EN61386-21
 RAL- 7035



Type	Used for cable conduit ϕ (mm)	IP code	Colour	Packing/Box (pcs)	Catalogue number
PVC bend flexible	16	65	GREY	50/200	500FB16
	20	65	GREY	50/200	500FB20
	25	65	GREY	35/140	500FB25
	32	65	GREY	20/80	500FB32



Type	Used for cable conduit ϕ (mm)	IP code	Colour	Packing/Box (pcs)	Catalogue number
PVC bend 90°	16	65	GREY	100/1000	500BB16
	20	65	GREY	50/600	500BB20
	25	65	GREY	25/300	500BB25
	32	65	GREY	100	500BB32
	40	65	GREY	100	500BB40



Type	Used for cable conduit ϕ (mm)	IP code	Colour	Packing/Box (pcs)	Catalogue number
Conduit-conduit PVC joint	16	65	GREY	10/350	500CM16
	20	65	GREY	10/350	500CM20
	25	65	GREY	10/200	500CM25
	32	65	GREY	10/100	500CM32
	40	65	GREY	5/80	500CM40



Type	Used for cable conduit ϕ (mm)	IP code	Colour	Packing/Box (pcs)	Catalogue number
Conduit-box PVC joint	16	65	GREY	10/350	500CB16
	20	65	GREY	10/350	500CB20
	25	65	GREY	10/200	500CB25
	32	65	GREY	10/100	500CB32
	40	65	GREY	5/80	500CB40



Type	Conduit diameter (mm)	Flexible spiral diameter (mm)	IP code	Colour	Packing/Box (pcs)	Catalogue number
PVC rigid conduit - flexible spiral conduits joint	16	12	65	GREY	10/350	500DD16
	20	16	65	GREY	10/350	500DD20
	25	20	65	GREY	10/200	500DD25
	32	25	65	GREY	10/100	500DD32
	40	32	65	GREY	5/100	500DD40



Accessories for PVC self-extinguishing rigid insulating conduits and flexible spiral conduits, IP 40 EC

3 YEAR WARRANTY

Technical data:
Material- shock resistant technopolymer on PVC base
Self-extinguishing V0 degree to UL94
Glow wire test: up to 960°C
Standard- EN 61386-1; EN61386-21
RAL- 7035

Type	Used for cable conduit ϕ (mm)	IP code	Colour	Packing/Box (pcs)	Catalogue number
PVC bend flexible	16	44	GREY	50/200	500FK16
	20	44	GREY	50/200	500FK20
	25	44	GREY	35/140	500FK25
	32	44	GREY	20/80	500FK32



Type	Used for cable conduit ϕ (mm)	IP code	Colour	Packing/Box (pcs)	Catalogue number
PVC bend 90°	16	40	GREY	100/1000	500BK16
	20	40	GREY	50/600	500BK20
	25	40	GREY	25/300	500BK25
	32	40	GREY	100	500BK32
	40	40	GREY	100	500BK40



Type	Used for cable conduit ϕ (mm)	IP code	Colour	Packing/Box (pcs)	Catalogue number
Plastic bend small 90°	16	40	GREY	100/400	500SK16
	20	40	GREY	100/300	500SK20
	25	40	GREY	100/200	500SK25
	32	40	GREY	50/150	500SK32



Type	Used for cable conduit ϕ (mm)	IP code	Colour	Packing/Box (pcs)	Catalogue number
PVCT-joint	16	40	GREY	100/300	500T16
	20	40	GREY	100/200	500T20
	25	40	GREY	50/100	500T25
	32	40	GREY	50/100	500T32



Type	Used for cable conduit ϕ (mm)	IP code	Colour	Packing/Box (pcs)	Catalogue number
PVC coupling	16	40	GREY	100/1200	500C16
	20	40	GREY	100/800	500C20
	25	40	GREY	50/500	500C25
	32	40	GREY	25/250	500C32
	40	40	GREY	25/150	500C40



Type	Used for cable conduit ϕ (mm)	Colour	Packing/Box (pcs)	Catalogue number
PVC conduit clips	16	GREY	100/1500	500CC16
	20	GREY	100/1000	500CC20
	25	GREY	100/1000	500CC25
	32	GREY	100/800	500CC32
	40	GREY	50/400	500CC40



Type	Used for cable conduit ϕ (mm)	Colour	Packing/Box (pcs)	Catalogue number
PVC conduit clips with plug and steel screw	16	GREY	100/1000	500CS16
	20	GREY	100/1000	500CS20
	25	GREY	100/800	500CS25
	32	GREY	50/400	500CS32



Type	Used for cable conduit ϕ (mm)	Colour	Packing/Box (pcs)	Catalogue number
PVC collar conduit clips	16	GREY	100/1000	500C016
	20	GREY	100/1000	500C020
	25	GREY	100/800	500C025
	32	GREY	50/500	500C032



Type	Length (mm)	Colour	Packing	Catalogue number
PVC modular fixing guide for clips	200	GREY	400	500BC

Cable trays and accessories

2 YEAR WARRANTY

The universal cable support systems are used for construction of cable link in closed production premises for direct mounting on even vertical surfaces. They are perforated metal grates and accessories with standard lengths and sizes. They allow quick construction of cable systems with many angles and derivations.

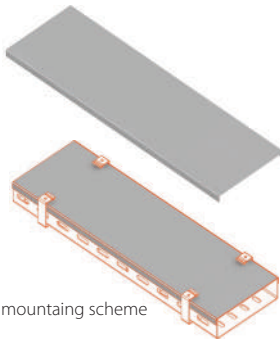


Type	Size (mm)	Thickness	Length (mm)	Catalogue number
CT1 UT CABLE TRAY	40x50	0,8	2500	56050825U
CT1 UT CABLE TRAY	40x100	0,8	2500	56100825U
CT1 UT CABLE TRAY	40x150	0,8	2500	56150825U
CT1 UT CABLE TRAY	40x200	0,8	2500	56200825U
CT1 UT CABLE TRAY	40x300	0,8	2500	56300825U
CT1 UT CABLE TRAY	40x400	0,8	2500	56400825U

Cable support systems

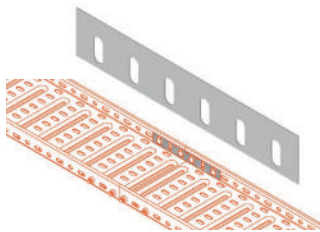


Type	Size (mm)	Thickness	Length (mm)	Catalogue number
CT1 UT CABLE TRAY	60x100	0,8	2500	56100826U
CT1 UT CABLE TRAY	60x200	0,8	2500	56200826U
CT1 UT CABLE TRAY	60x300	0,8	2500	56300826U



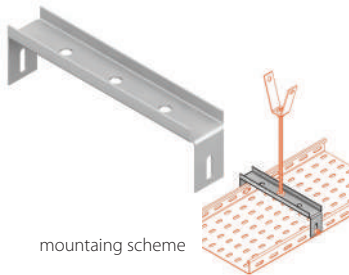
mountaing scheme

Type	Size (mm)	Thickness	Length (mm)	Catalogue number
CT1 CABLE TRAY COVER	10x50	0,8	2500	56050825C
CT1 CABLE TRAY COVER	10x100	0,8	2500	56100825C
CT1 CABLE TRAY COVER	10x150	0,8	2500	56150825C
CT1 CABLE TRAY COVER	10x200	0,8	2500	56200825C
CT1 CABLE TRAY COVER	10x300	0,8	2500	56300825C



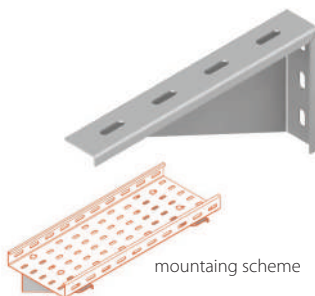
mountaing scheme

Type	Size (mm)	Length (mm)	Catalogue number
CT1 COUPLER FOR TRAYS WITH THE SAME SIZE	40	250	56250C



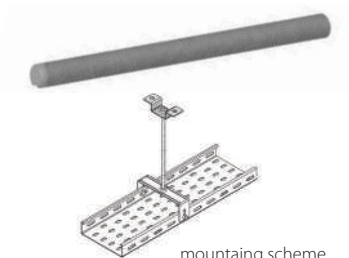
mountaing scheme

Type	Thickness	Length (mm)	Catalogue number
CT1 U-HANGING SUPPORT	1,5	100	56100HSW
CT1 U-HANGING SUPPORT	1,5	150	56150HSW
CT1 U-HANGING SUPPORT	1,5	200	56200HSW
CT1 U-HANGING SUPPORT	1,5	300	56300HSW
CT1 U-HANGING SUPPORT	1,5	400	56400HSW



mountaing scheme

Type	Thickness	Length (mm)	Catalogue number
CT1 HOLDER	1,5	100	56100HOL
CT1 HOLDER	1,5	150	56150HOL
CT1 HOLDER	1,5	200	56200HOL
CT1 HOLDER	1,5	300	56300HOL



mountaing scheme

Type	Metric bolt diameters	Length (mm)	Catalogue number
CT1 THREADED HANGING ROD	8	2000	56082
CT1 THREADED HANGING ROD	10	2000	56102



Universal console box for plasterboard

2 YEAR WARRANTY

Type	d (mm)	Packing (pcs)	Catalogue number
Console box for plasterboard- Ø65	65	240	19273



Universal console box-flush mounting

2 YEAR WARRANTY

Type	d (mm)	Packing (pcs)	Catalogue number
Console box- Ø65	65	300	1927302



Console box multi

2 YEAR WARRANTY

Type	d (mm)	Packing (pcs)	Catalogue number
Console box multi- Ø65	65	250	1927301



Distribution boxes-square type

2 YEAR WARRANTY

Type	Size			Packing (pcs)	Catalogue number
	L	W	H		
Distribution Box 80/80/50	80	80	50	100	1927402
Distribution Box 100/100/50	100	100	50	100	1927401



Distribution boxes for plasterboard-square type

2 YEAR WARRANTY

Type	L	Size W	H	Packing (pcs)	Catalogue number
Distribution Box 80/80/45	80	80	45	100	1927405
Distribution Box 100/100/45	100	100	45	100	1927404



Distribution boxes for plasterboard-round type

2 YEAR WARRANTY

Type	d (mm)	Packing (pcs)	Catalogue number
Distribution Box Ø65	65	240	1927403
Distribution Box Ø70	70	200	1927407
Distribution Box Ø80	80	100	1927409



Distribution boxes - round type

2 YEAR WARRANTY

Type	d (mm)	Packing (pcs)	Catalogue number
Distribution Box Ø70	70	300	1927406
Distribution Box Ø80	80	200	1927408

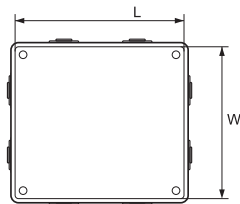
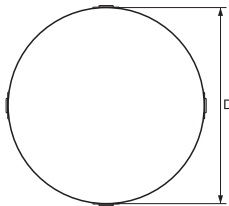
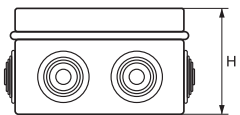
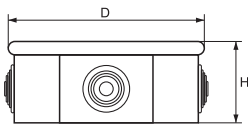
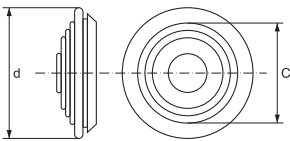
Waterproof junction boxes IP44

2 YEAR WARRANTY



Plastic junction boxes with different shapes and dimensions. Designed for cable lines extension or tapping at cable installations laying. Made of ABS material with openings for input - output conductors, with rubber gasket to provide the corresponding IP code. Resistant to chemical, thermal and UV rays. Direct wall mounting with screws. Documentation corresponding to the product: Standard: EN 60670-1

Technical data:
* Rated voltage: up to 1000V
* Material: ABS
* IP code: IP 44



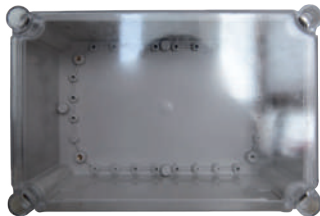
Box type	Box dimensions (mm)				Gasket dimensions (mm)		IP code	Packing / Box	Catalogue number
	D	L	W	H	d	C			
WB50/50	50	-	-	50	22.5	17	44	320	8070
WB80/50	80	-	-	50	22.5	17	44	240	8071
WB85/85/50	-	85	85	50	22.5	18.5	44	200	8072



Waterproof junction boxes IP65

2 YEAR WARRANTY

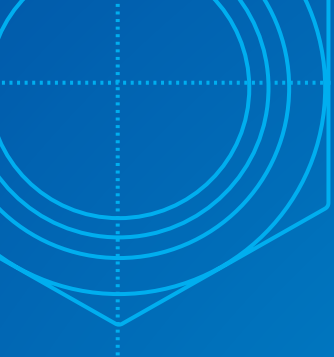
Box type	Box dimensions (mm)				Hole/pcs	IP code	Packing / Box	Catalogue number
	L	W	H	d				
WBG 100/100/70	100	100	70	27	7	65	100	8001
WBG 150/110/70	150	110	70	27	10	65	60	8002
WBG 150/150/70	150	150	70	27	7	65	60	8003
WBG 200/100/70	200	100	70	27	8	65	50	8004
WBG 200/155/80	200	155	80	35	10	65	30	8005
WBG 200/200/80	200	200	80	35	12	65	30	8006
WBG 255/200/80	255	200	80	35	12	65	30	8007
WBG 300/250/120	300	250	120	35	12	65	20	8008
WBG 400/350/120	400	350	120	35	16	65	5	8009



Waterproof junction boxes IP66 with transparent cover

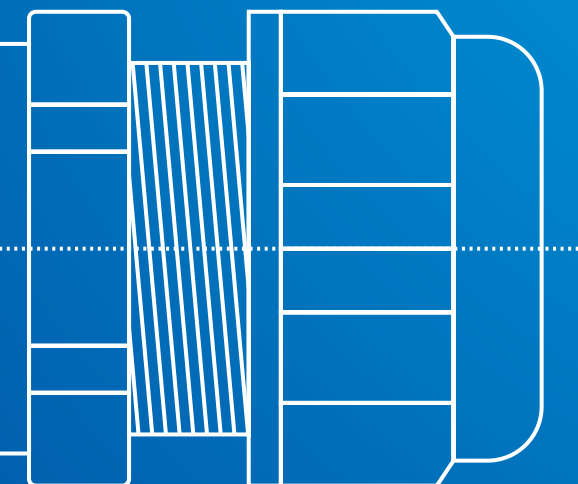
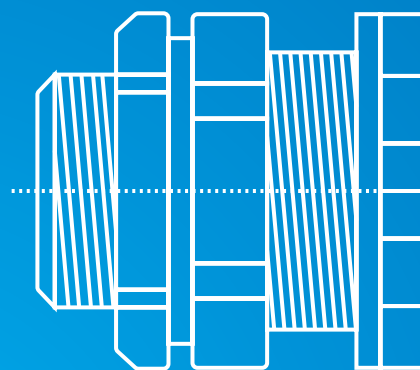
2 YEAR WARRANTY

Box type	Box dimensions (mm)			IP code	Packing / Box	Catalogue number
	L	W	H			
WBT 65/95/55	65	95	55	66	200	8010
WBT 100/100/50	100	100	50	66	150	8011
WBT 80/110/70	80	110	70	66	100	8012
WBT 80/130/85	80	130	85	66	100	8013
WBT 80/180/70	80	180	70	66	86	8014
WBT 80/250/85	80	250	85	66	60	8015
WBT 125/125/75	125	125	75	66	48	8016
WBT 125/125/100	125	125	100	66	36	8022
WBT 125/175/100	125	175	100	66	40	8017
WBT 150/200/100	150	200	100	66	24	8018
WBT 150/250/130	150	250	130	66	18	8019
WBT 200/200/130	200	200	130	66	27	8020
WBT 280/190/130	280	190	130	66	18	8021



ACCESSORIES

ACCESSORIES

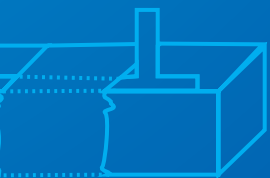
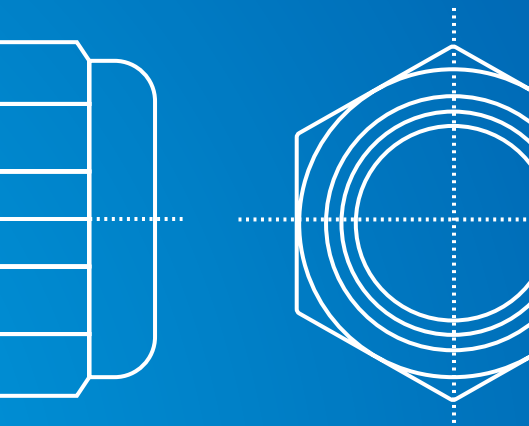


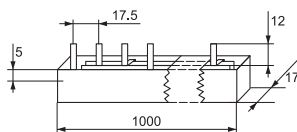
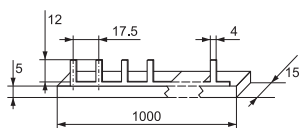
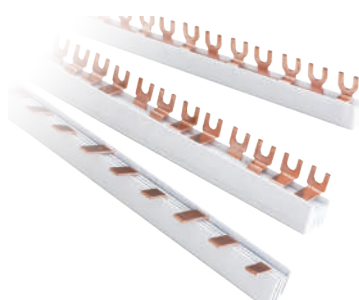
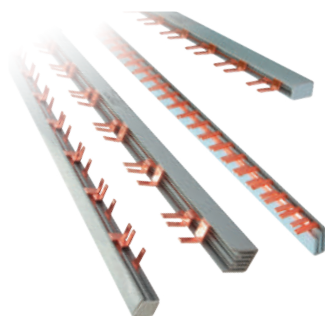
ELMARK®

Consummative | 186

Heat shrinkage tubes | 192

Terminal blocks | 193





Supply busbar

3 YEAR WARRANTY

Functions:

- enables the supply of a group of conductors
- provides simultaneous supply
- conducting section – electrotechnical copper
- insulation of the conducting section

Technical data:

- Rated operating voltage: 230/400V
- Isolating voltage: 500V
- Abnormal heating wear resistance and fire of the outer parts: 960°C/3sec.
- Rated current (phase): 63/100A

Connecting:

- to the joining terminal of the breaker

Type (copper busbar)	Length (m)	Poles (number)	In with one point of power supply	In with two points of power supply	Packing / Box (pcs)	Catalogue number
1P 63	1	54	63A	90A	20 / 100	14163
1P 100	1	54	100A	120A	20 / 100	14190
2P 63	1	28	63A	90A	10 / 50	14263
3P 63	1	18	63A	90A	6 / 30	14363
3P 100	1	18	100A	120A	5 / 50	14390
DP 1N	1	56	63A	90A	10 / 50	14463
C100 1P	1	-	125A	150A	20 / 100	14190T
C100 2P	1	-	125A	150A	10 / 50	14290T
C100 3P	1	-	125A	159A	5 / 20	14390T
U 1P 63	1	54	63A	90A	20 / 100	14163U
U 2P 63	1	28	63A	90A	10 / 50	14263U
U 3P 63	1	18	63A	90A	6 / 30	14363U
U 4P 63	1	13	63A	90A	5 / 20	14463U

Zero rails

3 YEAR WARRANTY

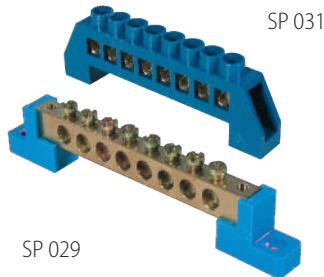
They represent a brass rail with rectangular section with factory made openings for the conductors and bolts for clamping of the conductor. They are offered in types with insulated and non-insulated rail. They are used in the electrical distribution boxes for zeroing and earthing.

Technical data:

- Material: brass for the current leading elements
- Insulation material: plastic
- Colour: gray/blue
- Application: general
- Ambient temperature: -40 to +65°C

Rail type	Length L (mm)	Height H (mm)	Width W (mm)	Ø D (mm)	Bolt	Number of terminals	Packing / Box (pcs)	Catalogue number
BRASS	1000	7.8	6	5	M4	54	100	14002
ZERO insulated	250	-	-	5	M4	16	200	14012

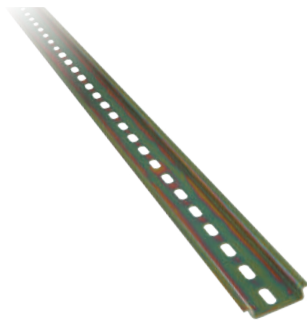




Zero terminals

3 YEAR WARRANTY

Rail type	L (mm)	H (mm)	W (mm)	M	Packing / Box (pcs)	Catalogue number
SP 029-4	82.9	21.5	12	5x10	10 / 500	14204
SP 029-6	100.9	21.5	12	5x10	10 / 800	14206
SP 029-8	118.9	21.5	12	5x10	20 / 300	14208
SP 029-10	136.9	21.5	12	5x10	20 / 300	14210
SP 029-12	182.4	21.5	12	5x10	20 / 250	14212
SP 031-4	59.5	31.5	12.4	5x10	5 / 400	14304
SP 031-6	76.5	31.5	12.4	5x10	5 / 400	14306
SP 031-8	93	31.5	12.4	5x10	5 / 400	14308
SP 031-10	111	31.5	12.4	5x10	5 / 400	14310
SP 031-12	128	31.5	12.4	5x10	5 / 300	14312



Mounting (DIN) rail

3 YEAR WARRANTY

Functions:

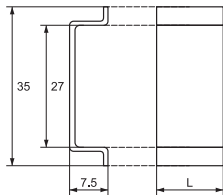
- serves for mounting breakers, residual current devices, contactors and other elements
- provides a firm fixation of the elements

Technical data:

- brass alloy with galvanic cover
- factory drilled mounting openings
- length up to 1m

Connecting:

- with bolts or other fixing elements to the mounting surface



Length (m)	Packing / Box (pcs)	Catalogue number
1m	20 / 100	14001



Insulating mounting terminal - TB25

3 YEAR WARRANTY

Functions:

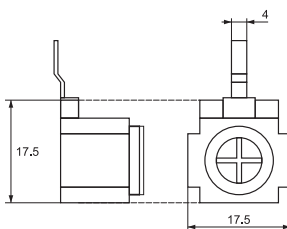
- provides a firm joining of rigid or flexible conductors up to 35mm² to power supply busbar
- provides a firm joining of the power supply conductor to the breaker
- provides enough contact surface of the conductor

Technical data:

- Brass alloy with galvanic cover
- Fabric isolated with plastic cover
- Appropriate for joining to copper or aluminum cables
- Rated voltage: 230V
- Rated current: up to 63A
- Isolating voltage: ≥500V
- IP code: IP>20
- Section of power supply conductor: up to 35mm²

Connecting:

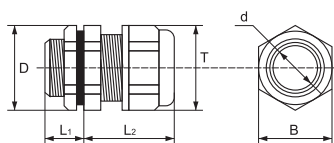
- to the joining terminal of the breaker



Type	Section of the conductor (mm ²)	Rated current I _n (A)	Packing / Box (pcs)	Catalogue number
TB 25	2.5 to 35	63	20 / 2000	31025



Standard: EN 60 423; 48580-81



Cable glands PG type

3 YEAR WARRANTY

Plastic pipes supplied with the corresponding gaskets and nuts. Designed to provide necessary IP code on the points where conductors pass through the walls of the electric distribution boxes. All cable gland elements are made of high quality plastic (PE) and rubber.

Technical data:

- Material: polyethylene (PE)
- Colour: gray
- Application: general
- Ambient temperature: -40 to +65°C
- IP code: IP 55

Type	Overlapping field	T (mm)	B (mm)	d (mm)	D (mm)	L1 (mm)	L2 (mm)	Packing / Box (pcs)	Catalogue number
PG-7	3.5-6.8	16.3	18	12	6.6	10	22	100 / 4000	500070
PG-9	5-8	18.9	21.7	15.5	8.5	10	25	100 / 4000	500090
PG-11	6-10	21.7	23.5	18.5	10.4	8.5	29	100 / 3000	500110
PG-13.5	7-12	23.6	26.5	20	13	10	29	100 / 2000	500135
PG-16	8-14	26.5	29.3	21.5	14	9	29	100 / 2000	500160
PG-19	9-17	29	32	23	17	12	29	100 / 2000	500190
PG-21	10-18	32.3	35.6	28	19	12	35	100 / 1000	500210
PG-25	15-22	32.6	32.6	29.8	24	13	31	100 / 1000	500250
PG-29	16-24	41.1	45.4	36	26	12.5	40	50 / 500	500290
PG-36	18-28	52	58	46	31.5	12.5	45	50 / 350	500360
PG-42	26-36	57.4	61.9	51	37.6	17.5	47	20 / 200	500420
PG-48	32-39	65.2	70.7	58	43	21	50	20 / 200	500480

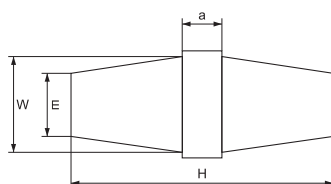
Support insulator for low voltage

3 YEAR WARRANTY

Support insulators are used in control and distribution cabinets mounting when bars isolation is required. Provides reliable insulation of live parts.

Technical Specification:

- Rated voltage: 1000V
- Insulating voltage: 5000 V
- Ambient temperature : -40 to +65°C



Type	Impulse voltage kV	Strength	Fastening strength	Bolt	Dimensions (mm)				Packing (pcs.)	Catalogue number
					H	W	a	ø		
SM 25	6	500	6	6	25	30	13	23	10 / 600	31725
SM 30	8	550	8	8	30	32	10	27	10 / 500	31730
SM 35	10	600	10	8	35	32	10	28	10 / 400	31735
SM 40	12	650	12	8	40	40	10	33	10 / 240	31740
SM 51	15	1000	20	8	51	50	12	28	10 / 240	31751
SM 76	25	1500	40	10	76	45	16	34	10 / 120	31776



Cable fixing clips

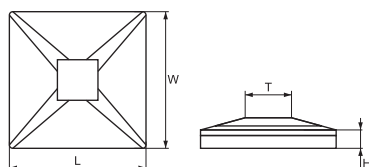
2 YEAR WARRANTY

Support insulators are used in control and distribution cabinets mounting when bars isolation is required. Provides reliable insulation of live parts.

Technical Specification:

- Rated voltage: 1000V
- Insulating voltage: 5000 V
- Ambient temperature : -40 to +65°C

Type	Diameter Ø (mm)	Packing (pcs)	Packing / Box (pcs)	Catalogue number
CHR-4	4	100	500	500004
CHR-5	5	100	500	500005
CHR-6	6	100	300	500006
CHR-7	7	100	300	500007
CHR-8	8	100	250	500008
CHR-9	9	100	200	500009
CHR-10	10	100	200	500010
CHR-12	12	100	100	500012
CHR-14	14	100	50	500014
CHR-16	16	100	50	500016



Cable tie mounts-adhesive

2 YEAR WARRANTY

Type	colour	Dimmensions (mm)				Packing (pcs.)	Catalogue number
		L	W	H	T		
MT-25	white	25	25	7,5	6,2	100	500041
MT-25	black	25	25	7,5	6,2	100	500042
MT-30	white	30	30	8,7	6,4	100	500043
MT-30	black	30	30	8,7	6,4	100	500039

PVC insulating tape

2 YEAR WARRANTY



Colour	Thickness (mm)	Width (mm)	Length (m)	Packing / Box (pcs)	Catalogue number
Black	0.15	19	18,28	10 / 200	51001
Red	0.15	19	18,28	10 / 200	51002
Yellow / Green	0.15	19	18,28	10 / 200	51004
White	0.15	19	18,28	10 / 200	51005
Blue	0.15	19	18,28	10 / 200	51006



Cable tags – sets

2 YEAR WARRANTY

Type	Section (mm)	Number in a roller	Packing / Box (pcs)	Catalogue number	Type	Section (mm)	Number in a roller	Packing / Box (pcs)	Catalogue number
EC-0-0	1.5 - 3.2	1000	100	318000	EC-1-0	2.6 - 4.2	1000	150	318010
EC-0-1	1.5 - 3.2	1000	100	318001	EC-1-1	2.6 - 4.2	1000	150	318011
EC-0-2	1.5 - 3.2	1000	100	318002	EC-1-2	2.6 - 4.2	1000	150	318012
EC-0-3	1.5 - 3.2	1000	100	318003	EC-1-3	2.6 - 4.2	1000	150	318013
EC-0-4	1.5 - 3.2	1000	100	318004	EC-1-4	2.6 - 4.2	1000	150	318014
EC-0-5	1.5 - 3.2	1000	100	318005	EC-1-5	2.6 - 4.2	1000	150	318015
EC-0-6	1.5 - 3.2	1000	100	318006	EC-1-6	2.6 - 4.2	1000	150	318016
EC-0-7	1.5 - 3.2	1000	100	318007	EC-1-7	2.6 - 4.2	1000	150	318017
EC-0-8	1.5 - 3.2	1000	100	318008	EC-1-8	2.6 - 4.2	1000	150	318018
EC-0-9	1.5 - 3.2	1000	100	318009	EC-1-9	2.6 - 4.2	1000	150	318019
EC-0-a	1.5 - 3.2	1000	100	31800a	EC-1-a	2.6 - 4.2	1000	150	31801a
EC-0-b	1.5 - 3.2	1000	100	31800b	EC-1-b	2.6 - 4.2	1000	150	31801b
EC-0-R	1.5 - 3.2	1000	100	31800R	EC-1-R	2.6 - 4.2	1000	150	31801R
EC-0-S	1.5 - 3.2	1000	100	31800S	EC-1-S	2.6 - 4.2	1000	150	31801S
EC-0-T	1.5 - 3.2	1000	100	31800T	EC-1-T	2.6 - 4.2	1000	150	31801T
EC-0-N	1.5 - 3.2	1000	100	31800N	EC-1-N	2.6 - 4.2	1000	150	31801N
EC-0-P	1.5 - 3.2	1000	100	31800P	EC-1-P	2.6 - 4.2	1000	150	31801P
EC-0-E	1.5 - 3.2	1000	100	31800E	EC-1-E	2.6 - 4.2	1000	150	31801E
EC-0-A	1.5 - 3.2	1000	100	31800A	EC-1-A	2.6 - 4.2	1000	150	31801A
EC-0-B	1.5 - 3.2	1000	100	31800B	EC-1-B	2.6 - 4.2	1000	150	31801B
EC-0-C	1.5 - 3.2	1000	100	31800C	EC-1-C	2.6 - 4.2	1000	150	31801C
EC-0-Q	1.5 - 3.2	1000	100	31800Q	EC-1-Q	2.6 - 4.2	1000	150	31801Q

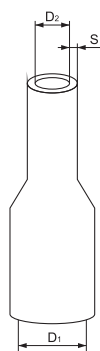


Type	Section (mm)	Number in a roller	Packing / Box (pcs)	Catalogue number
EC-2-0	3.6 - 5.2	500	150	318020
EC-2-1	3.6 - 5.2	500	150	318021
EC-2-2	3.6 - 5.2	500	150	318022
EC-2-3	3.6 - 5.2	500	150	318023
EC-2-4	3.6 - 5.2	500	150	318024
EC-2-5	3.6 - 5.2	500	150	318025
EC-2-6	3.6 - 5.2	500	150	318026
EC-2-7	3.6 - 5.2	500	150	318027
EC-2-8	3.6 - 5.2	500	150	318028
EC-2-9	3.6 - 5.2	500	150	318029
EC-2-a	3.6 - 5.2	500	150	31802a
EC-2-b	3.6 - 5.2	500	150	31802b
EC-2-R	3.6 - 5.2	500	150	31802R
EC-2-S	3.6 - 5.2	500	150	31802S
EC-2-T	3.6 - 5.2	500	150	31802T
EC-2-N	3.6 - 5.2	500	150	31802N
EC-2-P	3.6 - 5.2	500	150	31802P
EC-2-E	3.6 - 5.2	500	150	31802E
EC-2-A	3.6 - 5.2	500	150	31802A
EC-2-B	3.6 - 5.2	500	150	31802B
EC-2-C	3.6 - 5.2	500	150	31802C
EC-2-Q	3.6 - 5.2	500	150	31802Q

Type	Section (mm)	Number in a roller	Packing / Box (pcs)	Catalogue number
EC-3-0	5 - 7.2	250	150	318030
EC-3-1	5 - 7.2	250	150	318031
EC-3-2	5 - 7.2	250	150	318032
EC-3-3	5 - 7.2	250	150	318033
EC-3-4	5 - 7.2	250	150	318034
EC-3-5	5 - 7.2	250	150	318035
EC-3-6	5 - 7.2	250	150	318036
EC-3-7	5 - 7.2	250	150	318037
EC-3-8	5 - 7.2	250	150	318038
EC-3-9	5 - 7.2	250	150	318039
EC-3-a	5 - 7.2	250	150	31803a
EC-3-b	5 - 7.2	250	150	31803b
EC-3-R	5 - 7.2	250	150	31803R
EC-3-S	5 - 7.2	250	150	31803S
EC-3-T	5 - 7.2	250	150	31803T
EC-3-N	5 - 7.2	250	150	31803N
EC-3-P	5 - 7.2	250	150	31803P
EC-3-E	5 - 7.2	250	150	31803E
EC-3-A	5 - 7.2	250	150	31803A
EC-3-B	5 - 7.2	250	150	31803B
EC-3-C	5 - 7.2	250	150	31803C
EC-3-Q	5 - 7.2	250	150	31803Q



Standard: EN 60 684



Heat shrinkage tubes ZDG type

2 YEAR WARRANTY

Thin-wall heat shrinkage tubes are used for insulation of cable connection, at conductors repair to protect the cable head from corrosion, for protection of the cable insulation from water and moisture, for restoring the cable insulation integrity, etc. It is a plastic thin wall pipe which at temperature higher than 120°C shrinks its initial diameter to a certain degree. The material has high temperature and UV rays wear resistance. The material represents the so called permanently netted plastic. This material is obtained as the plastic billet is processed with the help of high energy electron rays so that inner molecular bonds between adjacent molecules are formed. After that the pipe is heated to the boiling point, the pipe inflates, so do the inner molecular bonds. Then the pipe is sharply refrigerated and the molecules stay in the condition of inflated bonds for indefinite long time. Heating the pipe repeatedly (after being mounted to

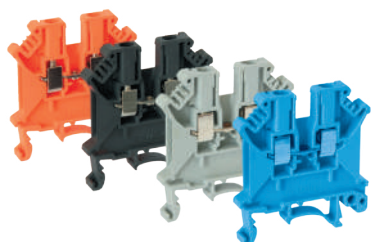
the given cable) the crystals melt again but due to the net structure, they resume the initial pipe diameter and take the form of the cable, pressing it and not allowing the moisture to get under the pipe.

Technical data:

- Material: triple cross - linked polyolefin
- Colours: blue, black, red, yellow, yellow-green, green, white
- Shrinkage ratio: min 2 : 1
- Ambient temperature: -40 to + 100°C
- Shrinkage temperature: min 120°C
- Condition of the material during fire exposure: slight burning
- The material does not emit hazardous substances
- Insulation resistance: 1x 10¹² Ω/cm
- Application: general
- Insulating voltage 1000 V

Type	D1 (mm)	D2 (mm)	S (mm)	Packing / Box (m)	Catalogue number *
ZDG	1	0.5	0.04	200 / 4000	301001x
ZDG	1.5	0.75	0.04	200 / 4000	301115x
ZDG	2	1.0	0.05	200 / 4000	301002x
ZDG	3	1.5	0.05	200 / 2000	301003x
ZDG	4	2.0	0.08	100 / 1700	301004x
ZDG	5	2.5	0.08	100 / 1200	301005x
ZDG	6	3.0	0.08	100 / 1000	301006x
ZDG	7	3.5	0.08	100 / 1000	301007x
ZDG	8	4.0	0.08	100 / 1500	301008x
ZDG	9	4.5	0.08	100 / 1500	301009x
ZDG	10	5.0	0.08	100 / 1500	301010x
ZDG	11	5.5	0.08	100 / 1500	301011x
ZDG	12	6.0	0.08	100 / 1200	301012x
ZDG	13	6.5	0.08	100 / 1200	301013x
ZDG	14	7.0	0.08	100 / 1200	301014x
ZDG	15	7.5	0.08	100 / 1200	301015x
ZDG	16	8.0	0.08	100 / 1200	301016x
ZDG	18	9.0	0.08	50 / 600	301018x
ZDG	20	10	0.08	50 / 500	301020x
ZDG	22	11	0.08	50 / 500	301022x
ZDG	25	12.5	0.08	25 / 600	301025x
ZDG	28	14	0.08	25 / 300	301028x
ZDG	30	15	0.08	25 / 300	301030x
ZDG	35	17.5	0.08	25 / 300	301035x
ZDG	40	20	0.08	25 / 250	301040x
ZDG	50	25	0.08	25 / 200	301050x
ZDG	60	30	0.08	25 / 300	301060x
ZDG	70	35	0.08	25 / 250	301070x
ZDG	80	40	0.08	25 / 100	301080x
ZDG	90	45	0.08	25 / 150	301090x
ZDG	100	50	0.08	25 / 100	301100x
ZDG	120	60	0.08	25 / 200	301120x
ZDG	150	75	0.08	25 / 100	301150x

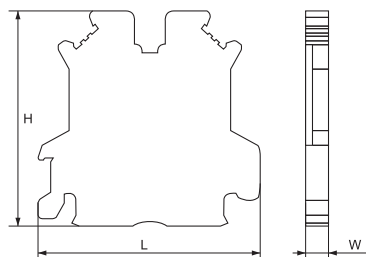
Note: * At orders after the catalogue number of the corresponding diameter a letter showing the colour must be added: B – blue; R – red; K – black; G – green; Y – yellow;



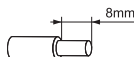
Fixed terminal blocks - LTU2 UK series

3 YEAR WARRANTY

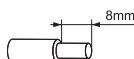
Fixed terminal blocks with universal application into electrical distribution boxes. For DIN-rail mounting. Variety of sizes for optimum using of available space by selection of appropriate terminals for the corresponding conductors. Made of non-flammable insulation polymeric material.



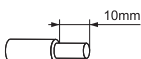
Type	Section of the conductor (mm ²)		Size of the terminal (mm)			In (A)	Un (V)	Colour	Packing / Box (pcs)	Catalogue number
	single-core	multicore	L	H	W					
LTU2UK 3N	0.2-4	0.2-2.5	42.5	47	5.2	32	800	grey	50 / 3000	31033
LTU2UK 3N	0.2-4	0.2-2.5	42.5	47	5.2	32	800	red	50 / 3000	31032
LTU2UK 3N	0.2-4	0.2-2.5	42.5	47	5.2	32	800	black	50 / 3000	31031
LTU2UK 3N	0.2-4	0.2-2.5	42.5	47	5.2	32	800	blue	50 / 3000	31035



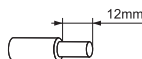
Type	Section of the conductor (mm ²)		Size of the terminal (mm)			In (A)	Un (V)	Colour	Packing / Box (pcs)	Catalogue number
	single-core	multicore	L	H	W					
LTU2UK 5N	0.2-6	0.2-4	42.5	47	6.2	41	800	grey	50 / 2000	31053
LTU2UK 5N	0.2-6	0.2-4	42.5	47	6.2	41	800	red	50 / 2000	31052
LTU2UK 5N	0.2-6	0.2-4	42.5	47	6.2	41	800	black	50 / 2000	31051
LTU2UK 5N	0.2-6	0.2-4	42.5	47	6.2	41	800	blue	50 / 2000	31055



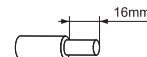
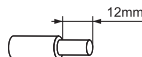
Type	Section of the conductor (mm ²)		Size of the terminal (mm)			In (A)	Un (V)	Colour	Packing / Box (pcs)	Catalogue number
	single-core	multicore	L	H	W					
LTU2UK 6N	0.2-10	0.2-6	42.5	47	8.2	57	800	grey	50 / 1000	31063
LTU2UK 6N	0.2-10	0.2-6	42.5	47	8.2	57	800	red	50 / 1000	31062
LTU2UK 6N	0.2-10	0.2-6	42.5	47	8.2	57	800	black	50 / 1000	31061
LTU2UK 6N	0.2-10	0.2-6	42.5	47	8.2	57	800	blue	50 / 1000	31065



Type	Section of the conductor (mm ²)		Size of the terminal (mm)			In (A)	Un (V)	Colour	Packing / Box (pcs)	Catalogue number
	single-core	multicore	L	H	W					
LTU2UK 10N	0.5-16	0.5-10	42.5	47	10.2	76	800	grey	50 / 1000	31103
LTU2UK 10N	0.5-16	0.5-10	42.5	47	10.2	76	800	red	50 / 1000	31102
LTU2UK 10N	0.5-16	0.5-10	42.5	47	10.2	76	800	black	50 / 1000	31101
LTU2UK 10N	0.5-16	0.5-10	42.5	47	10.2	76	800	blue	50 / 1000	31105



Type	Section of the conductor (mm ²)		Size of the terminal (mm)			In (A)	Un (V)	Colour	Packing / Box (pcs)	Catalogue number
	single-core	multicore	L	H	W					
LTU2UIK 16	2.5-25	4-16	42.5	47	12.2	101	800	grey	50 / 1000	31163
LTU2UIK 35	10-35	10-35	55	62	15.2	125	800	grey	20 / 400	31353

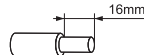


Fixed terminal blocks - JD series

3 YEAR WARRANTY

Two-sided insulated fixed terminal blocks designed to connect grounded conductors. Made of non-flammable insulation polymeric material.

Type	Section of the conductor (mm ²)		Size of the terminal (mm)			In (A)	Un (V)	Colour	Packing / Box (pcs)	Catalogue number
	single-core	multicore	L	H	W					
5JD	0.2-4	0.2-4	42.5	47	6.2	34	800	yellow-green	50 / 1000	31054
6JD	0.2-10	0.2-6	42.5	47	8.2	37	800	yellow-green	50 / 1000	31064
10JD	0.5-10	0.5-6	42.5	47	8.2	61	800	yellow-green	50 / 1000	31104
16JD	2.5-25	2.5-16	42.5	47	12.2	108	800	yellow-green	50 / 600	31164
35JD	2.5-35	2.5-35	42.5	47	15	135	800	yellow-green	20 / 400	31354



Marking tags - ZB type

2 YEAR WARRANTY

Accessories for marking and separation of different electrical circuits, different voltages and fixing of elements for DIN-rail mounting.

Type	Pieces in a strip	Colour	Size (mm)	Packing / Box (pcs)	Catalogue number
ZB6	20	white	6	100 / 1200	31906
ZB8	10	white	8	100 / 1200	31908

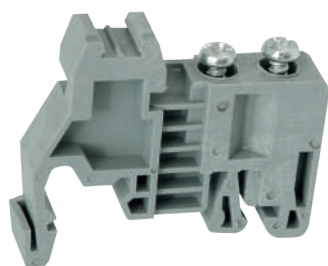




End cover

3 YEAR WARRANTY

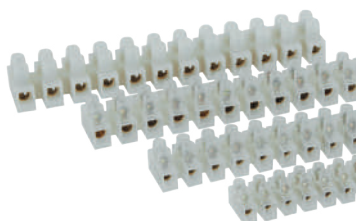
Type	Colour	Thickness (mm)	Packing / Box (pcs)	Catalogue number
EC	grey	8	200 / 6000	31901



Universal end fixed pieces E/UK type

3 YEAR WARRANTY

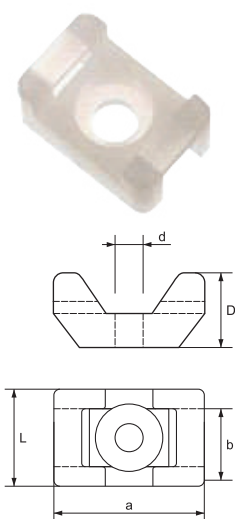
Type	Colour	Thickness (mm)	Packing / Box (pcs)	Catalogue number
E/UK	grey	5	200 / 2400	31902



Terminal blocks TBH type

2 YEAR WARRANTY

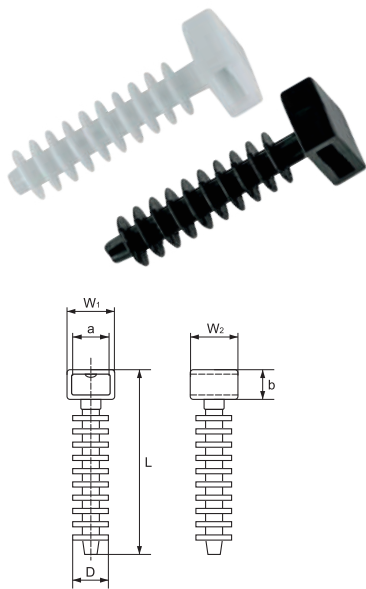
Type	Pieces in a strip	In (A)	Un (V)	Colour	Section of the conductor (mm ²)	Packing / Box (pcs)	Catalogue number
TBH 3A	12	3	660	semitransparent	to 1.5	10 / 1000	31003
TBH 6A	12	6	660	semitransparent	to 4	10 / 1000	31006
TBH 10A	12	10	660	semitransparent	to 6	10 / 500	31010
TBH 15A	12	15	660	white	to 6	10 / 500	31015
TBH 20A	12	20	660	white	to 10	10 / 400	31020



Cable tie bases fixed with screws

2 YEAR WARRANTY

Type	Color	a (mm)	b (mm)	L (mm)	d (mm)	D (mm)	Packing/(pcs)	Catalogue number
CTH-2C	white	22	16,5	9	5,8	9,5	100	500048
CTH-2C	black	22	16,5	9	5,8	9,5	100	500038



Cable tie holder

2 YEAR WARRANTY

Type	colour	Bore diameter (mm)	a	b	D	W1	W2	L	Packing/(pcs)	Catalogue number
MT-6	black	φ6	9,7	6,2	7,2	12,7	11,9	37	100	500044
MT-6	white	φ6	9,7	6,2	7,2	12,7	11,9	37	100	500045
MT-8	black	φ8	9,7	6,3	9,9	12,7	12,6	43	100	500046
MT-8	white	φ8	9,7	6,3	9,9	12,7	12,6	43	100	500047



Cable ties - white

2 YEAR WARRANTY

Type	Length (mm)	Colour	Width (mm)	Packing (pcs)	Packing / Box (pcs)	Catalogue number
Cable ties	100	white	2.5	100	10 / 800	500100
Cable ties	150	white	2.5	100	10 / 500	500152
Cable ties	160	white	2.5	100	10 / 500	500162
Cable ties	200	white	2.5	100	10 / 400	500202
Cable ties	250	white	3.5	100	10 / 250	500253
Cable ties	280	white	3.5	100	10 / 200	500283
Cable ties	300	white	3.5	100	10 / 200	500303
Cable ties	300	white	4.8	100	10 / 120	500304
Cable ties	370	white	3.5	100	10 / 120	500373
Cable ties	380	white	4.8	100	10 / 100	500384
Cable ties	450	white	4.8	100	10 / 70	500454
Cable ties	500	white	7.9	100	5 / 40	500507



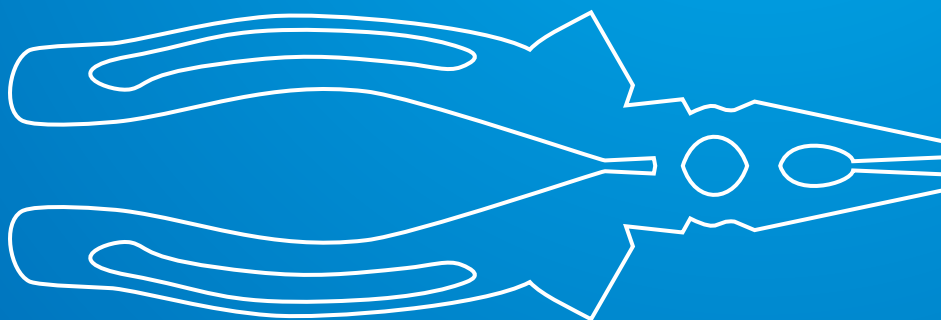
Cable ties - black

2 YEAR WARRANTY

Type	Length (mm)	Colour	Width (mm)	Packing (pcs)	Packing / Box (pcs)	Catalogue number
Cable ties	150	black	2.5	100	10 / 500	500151
Cable ties	160	black	2.5	100	10 / 500	500161
Cable ties	250	black	3.5	100	10 / 250	500251
Cable ties	280	black	3.5	100	10 / 200	500281
Cable ties	300	black	3.5	100	10 / 200	500301
Cable ties	500	black	7.9	100	40	500501



TOOLS TOOLS



EL[®]MARK

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Crimping tools | [206](#)

Mechanical cutting tools | [211](#)

Isolated VDE tools | [212](#)





Type	Packing (pcs) / carton	Catalogue number
EM5510	1/10	5195510

Digital multimeter EM5510

3 YEAR WARRANTY

This is a digital device for measuring of humidity, illumination, temperature and all electric values. It features automatic range adjustment, manual value selection. It has an LCD display showing the measured value in digits with the size of 3 3/4 . It is of high accuracy of analogue-digital conversion, precision in measuring and resistance to electro-magnetic interferences. It has an automatic switch off.

- Technical features:**
- DC voltage: 0.4 / 4 / 40 / 400 / 600 V
 - AC voltage : 4 / 40 / 400 / 600V
 - DC current: 400µ / 4000µ / 40m / 400m / 10A
 - AC current: 400µ / 4000µ / 40m / 400m / 10A
 - Resistance: 400 / 4K / 40K / 400K / 4M / 40MΩ
 - Capacitors: 4n / 40n / 400n / 4µ / 40µ / 100µF
 - Frequency: 10 / 100 / 1k / 10k / 100k / 200kHz
 - Loading cycles: from 0.1% to 99.9%
 - Temperature: -20° up to 1000°C
 - Humidity: 30% to 95%
 - Illumination: 4000 Lux / 40000 Lux
 - Noise level: 35 to 100dB
 - Circuit control: yes
 - Diodes control: yes
 - Weight: 310 g (including battery)
 - Battery: 1x9V
 - Dimensions: 83 x 162 x 47mm



Type	Packing (pcs) / carton	Catalogue number
EM420C	1/10	519420

Digital multimeter EM420C

3 YEAR WARRANTY

This is a digital device for measuring of humidity, illumination, temperature and all electric values. It features automatic range adjustment, manual value selection. It has an LCD display showing the measured value in 4 digits with the size of 16 mm. It is of high accuracy of analogue-digital conversion, precision in measuring and resistance to electro-magnetic interferences. It has an automatic switch off.

- Technical features:**
- DC voltage: 200m/ 2 / 20 / 200 / 600 V
 - AC voltage : 2 / 20 / 200 / 600V
 - DC current: 200µ / 2000µ / 20m / 200m / 2 / 10A
 - AC current: 00µ / 2000µ / 20m / 200m / 2 / 10A
 - Resistance: 200 / 2K / 20K / 200K / 2M / 20MΩ
 - Temperature: -20° up to 1000°C
 - Battery test: 1.5 / 3 / 9 / 12 V
 - Circuit control: yes
 - Diodes control: yes
 - Weight: 200 g (including battery)
 - battery: 3x1.5 V
 - dimensions: 75 x 158 x 35mm



Digital multimeter EM3055

3 YEAR WARRANTY

This is a digital device for measuring of all electric values. It features manual range adjustment. It has an LCD display showing the measured value in 4 digits with the size of 3 1/2. It is of high accuracy of analogue-digital conversion, precision in measuring and resistance to electro-magnetic interferences.

Technical features:

- DC voltage: 200mV / 2 / 20 / 200 / 1000 V
- AC voltage: 2 / 20 / 200 / 750V
- DC current: 2m / 20m / 200m / 10A
- AC current: 200m / 10A
- Resistance: 200 / 2K / 20K / 200K / 2M / 20M / 200MΩ
- Capacity: 2000p / 20n / 200n / 20μF
- Temperature: 0° up to 1000°C
- Battery test: 1.5 / 3 / 9 / 12 V
- Transistor test: Vce≈3V, Ib≈10μF
- Circuit control: yes
- Diodes control: yes
- Weight: 495 g (including battery)
- battery: 1x9V
- dimensions: 97 x 200 x 48mm

Type	Packing (pcs) / carton	Catalogue number
EM3055	1/10	5193055



Digital multimeter EM3058

3 YEAR WARRANTY

This is a digital device for measuring of temperature and all electric values. It features manual range adjustment, manual value selection. It has an LCD display showing the measured value in digits with the size of 3 3/4. It is of high accuracy of analogue-digital conversion, precision in measuring and resistance to electro-magnetic interferences. It has an automatic switch off.

Technical features:

- DC voltage: 200mV / 2 / 20 / 200 / 1000 V
- AC voltage: 200 m / 2 / 20 / 200 / 750V
- DC current: 20μ / 200 μ / 2m / 200m / 10A
- AC current: 20μ / 200μ / 2m / 200m / 2 / 10A
- Resistance: 200 / 2K / 20K / 200K / 2M / 20M / 200MΩ
- Capacitors: 2n / 20n / 200n / 2μ / 20μF
- Frequency: 20kHz to 2000kHz
- Loading cycles: 0.1% to 99.9%
- Temperature: 0° up to 1000°C
- Logical level: High > 2.0 V; Low < 0.8 V
- Circuit control: yes
- Diodes control: yes
- Weight: 495 g (including battery)
- battery: 1x9V
- dimensions: 97 x 200 x 47 mm

Type	Packing (pcs) / carton	Catalogue number
EM3058	1/10	5193058



Type	Packing (pcs) / carton	Catalogue number
EM31	1/10	519031

Digital multimeter EM31

3 YEAR WARRANTY

This is a digital device for measuring of electric values. It features automatic range adjustment, manual value selection. It has an LCD display showing the measured value in 4 digits with the size of 16 mm. It is of high accuracy of analogue-digital conversion, precision in measuring and resistance to electro-magnetic interferences. It has an automatic switch off and low battery indication.

Technical features:

- DC voltage: 240m/ 2400m / 24 / 240 / 600 V
- AC voltage: 240m/ 2400m / 24 / 240 / 600 V
- DC current: 240μ / 2400μ / 24m / 240m / 10A
- AC current: 240μ / 2400μ / 24m / 240m / 10A
- Resistance: 400Ω - 40MΩ
- Capacity: 51.2nF to 51.2μF
- Frequency: 50 / 500 / 5000 / 50k / 50MHz
- Circuit control: yes
- Diodes control: yes
- Weight: 137 g (including battery)
- battery: 9V
- dimensions: 70 x 126 x 28mm



Type	Packing (pcs) / carton	Catalogue number
EM3215	1/10	5193215

Digital multimeter / pen EM3215

3 YEAR WARRANTY

This is a digital device for measuring of electric values in the form of a pen. It features automatic range adjustment, manual value selection. It has an LCD display, data retain function, automatic reset, polarity selection, range overload indication. It is of high accuracy of analogue-digital conversion, precision in measuring and resistance to electro-magnetic interferences. It has an automatic switch off and low battery indication and a torch.

Technical features:

- DC voltage: 200m/ 2 / 20 / 200 / 600 V
- AC voltage: 2 / 20 / 200 / 600V
- DC current: 20m to 200mA
- AC current: 20m to 200mA
- Resistance: 200 / 2K / 20K / 200K / 2M / 20MΩ
- Logical level: High > 2.3V; Low < 0.8 V
- Circuit control: yes
- Diodes control: yes
- Weight: 182 g (including battery)
- battery: 1x9V
- dimensions: 57 x 230 x 30mm



Digital clamp meter EM202

3 YEAR WARRANTY

This is a digital clamp meter for measuring of electric values. It features manual range adjustment, manual value selection. It has an LCD display showing the measured value in digits with the size of 3½ mm. It is of high accuracy of analogue-digital conversion, precision in measuring and resistance to electro-magnetic interferences. It has an automatic switch off.

- Technical features:**
- DC voltage: 1000 V
 - AC voltage: 750V
 - AC current: 20 / 200 / 1000A
 - Resistance: 200 kΩ
 - Temperature: -40° up to 1400°C
 - Circuit control: yes
 - Diodes control: yes
 - Weight: 400 g (including battery)
 - battery: 1x9V
 - dimensions: 99 x 250 x 43mm

Type	Packing (pcs) / carton	Catalogue number
EM202	1/10	519202



Digital clamp meter EM204

3 YEAR WARRANTY

This is a digital clamp meter for measuring of electric values. It features automatic range adjustment, manual value selection. It has an LCD display, low battery indication, overload protection. It is of high accuracy of analogue-digital conversion, precision in measuring and resistance to electro-magnetic interferences. It has an automatic switch off.

- Technical features:**
- DC voltage: 1000 V
 - AC voltage: 750V
 - DC current: 200 / 1000A
 - AC current: 200 / 1000A
 - Resistance: 200 kΩ
 - Frequency: 2 kHz
 - Circuit control: yes
 - Weight: 400 g (including battery)
 - battery: 1x9V
 - dimensions: 99 x 258 x 43mm

Type	Packing (pcs) / carton	Catalogue number
EM204	1/10	519204



Digital clamp meter EM266

3 YEAR WARRANTY

This is a digital clamp meter for measuring of electric values. It features manual range adjustment. It has an LCD display and retain function option, low battery indication and overload protection.

Technical features:

- DC voltage: 1000 V
- AC voltage: 750V
- AC current: 200 / 1000A
- Resistance: 200 / 20 kΩ
- Circuit control: yes
- Diodes control: yes
- Weight: 310 g (including battery)
- battery: 1x9V
- dimensions: 69 x 229 x 38mm

Type	Packing (pcs) / carton	Catalogue number
EM266	1/10	519266



Infrared temperature meter EM520A

3 YEAR WARRANTY

This is a digital device for measuring of temperature. The temperature is measured with no contact. It has a laser counter for precision measuring, suitable large LCD display, battery low indication and overload protection.

Technical features:

- Temperature: -20° up to 320°C / -4° to 608 °F
- Distance to point size: 6:1
- Precision: ±2° C or 2% in reading
- battery: 1x9V
- dimensions: 90 x 155 x 45mm

Type	Packing (pcs) / carton	Catalogue number
EM520A	1/5	519520

Voltage tester

2 YEAR WARRANTY

The voltage tester screwdriver is used for detecting the presence of electrical voltage. Existence of voltage is shown via lighting signal indicator located in the handle of the screwdriver. It can detect voltage in the range from 100V to 250V. The screwdriver has a flat tip.

Technical features:

- Length-3.5*140mm
- Voltage range 100-250V~
- GS, CE certificates



Type	Packing (pcs) / carton	Catalogue number
DN-8203	1/480	519203



Phase meter Gk7

3 YEAR WARRANTY

A device indicating phase availability in the system. No contact phase indicator featuring sound and light indication of phase availability.

Technical features:

- Voltage range: from 50 to 1000V
- Frequency range: from 50 Hz to 500 Hz
- dimensions: length – 62mm

Type	Packing (pcs) / carton	Catalogue number
GK7	60	519GK7



Digital detector 4 in 1 series TS530

3 YEAR WARRANTY

This is a device for detecting metals, voltage and live conductors, wooden struts, or piping sections. The device has a 2-meter measuring tape. It features light and sound indication. When an object is located, the display light blinks and marks with increasing position. Once the exact position is located, a light point is marked on the wall through a button.

Technical features:

- 2-meter measuring tape
- Pen: marking the located detail
- Piping section: metal pipe up to 25mm
- Wooden struts: 30x30mm
- Live conductors detection: 50mm for 90 ~ 250V; 50/60Hz
- Weight: 213 g (including battery)
- battery: 1x9 V
- dimensions: 73 x 180 x 32mm

Type	Packing (pcs) / carton	Catalogue number
TS530	1/10	519530



Industrial repair kit ETK06A

3 YEAR WARRANTY

A finely packaged repair kit containing four elements in a metal briefcase, sealed with special plastic foam and struts for each instrument.

The kit includes:

- Digital multimeter EM420
- Digital clamp-on ammeter EM465
- Phase meter GK7
- Infrared temperature meter EM520A

Type	Packing (pcs) / carton	Catalogue number
ETK06A	1/6	51906A



Hydraulic crimping pliers HT - 300 type

2 YEAR WARRANTY

Functions:

- Crimping of aluminum or copper conductors with cable terminals or bush in the corresponding size

Technical data:

- Crimping head turning at 360° which facilitates the crimping of static conductors
- Device for automatic following of the effort at crimping completion
- Form of the crimping element: hexahedral
- Size of the crimping element: 16, 25, 35, 50, 70, 95, 120, 150, 185, 240, 300 mm²
- Section of the crimping conductors:
 - - Al conductors - from 16 to 300 mm²
 - - Cu conductors - from 16 to 240 mm²
- Element pressing power: 60kN
- Width of the element: 17mm
- Weight of the instrument: 3.3 kg
- Length: 460mm
- Used hydraulic oil: #15 (hydraulic oil with viscosity 15)
- Metal box for the instrument
- A set of congestion hoops for the hydraulic cylinder

Type	Packing (pcs) / carton	Catalogue number
HT - 300	2	59300



Hydraulic crimping pliers KYQ-300B type

2 YEAR WARRANTY

Functions:

- Crimping of aluminum or copper conductors with cable terminals or bush in the corresponding size

Technical data:

- Device for automatic following of the effort at crimping completion
- Form of the crimping element: hexahedral
- Size of the crimping element: 16, 25, 35, 50, 70, 95, 120, 150, 185, 240, 300 mm²
- Section of the crimping conductors:
 - - Al conductors - from 16 to 300 mm²
 - - Cu conductors - from 16 to 240 mm²
- Element pressing power: 100kN
- Width of the element: 22mm
- Weight of the instrument: 6.8 kg
- Length: 500mm
- Used hydraulic oil: #23 (hydraulic oil with viscosity 23)
- Metal box for the instrument
- A set of congestion hoops for the hydraulic cylinder

Type	Packing (pcs) / carton	Catalogue number
KYQ-300B	2	59302



Hydraulic crimping pliers YQK-300 type

2 YEAR WARRANTY

Functions:

- Crimping of aluminum or copper conductors with cable terminals or bush in the corresponding size

Technical data:

- Form of the crimping element: hexahedral
- Size of the crimping element: 10, 16, 25, 35, 50, 70, 95, 120, 150, 185, 240, 300 mm²
- Section of the crimping conductors:
 - - Al conductors - from 10 to 300 mm²
 - - Cu conductors – from 10 to 240 mm²
- Element pressing power: 100kN
- Width of the element: 22mm
- Weight of the instrument: 6.3 kg
- Length: 500mm
- Used hydraulic oil: #15 (hydraulic oil with viscosity 15)
- Metal box for the instrument
- A set of congestion hoops for the hydraulic cylinder

Type	Packing (pcs) / carton	Catalogue number
YQK-300	4	59301



Hydraulic crimping pliers YQK – 50 type

2 YEAR WARRANTY

Functions:

- Crimping of aluminum or copper conductors with cable terminals or bush in the corresponding size

Technical data:

- Form of the crimping element: hexahedral
- Size of the crimping element: 4, 6, 10, 16, 25, 35, 50 mm²
- Section of the crimping conductors:
 - - Al conductors - from 4 to 50mm²
 - - Cu conductors – from 4 to 50 mm²
- Element pressing power: 8T
- Width of the element: 10mm
- Weight of the instrument: 2.8 kg
- Length: 310mm
- Used hydraulic oil: #15 (hydraulic oil with viscosity 15)
- Metal box for the instrument
- A set of congestion hoops for the hydraulic cylinder

Type	Packing (pcs) / carton	Catalogue number
YQK – 50	5	59303



Hydraulic punching pliers WK - 8 type

2 YEAR WARRANTY

Functions:

- Cutting through openings in sheet metal with gauge up to 3mm without rotary motion

Technical data:

- Piercing head turning at 360°
- Form of the cutting element: round
- Size of the cutting element: Ø 22, 27.5, 34.3, 40, 49, 60.8mm
- Piercing capacity:
 - - sheet metal 3mm – openings up to Ø 30mm
 - - sheet metal 2mm – openings up to Ø 60mm
- Element pressing power: 80kN
- Thickness of the element: 25mm
- Weight of the instrument: 3.5 kg
- Used hydraulic oil: #15 (hydraulic oil with viscosity 15)
- Metal box for the instrument
- A set of congestion hoops for the hydraulic cylinder
- Additional set of cutting elements for cable glands – Ø16, 20, 26.2, 32.5, 39, 51, 63 and a square for display devices 46.5x46.5, 68x68 (ordered additionally); Catalogue number 54002

Type	Packing (pcs) / carton	Catalogue number
WK - 8	2	54000
Additional set	2	54002



Hydraulic punching press SYK - 15 type

2 YEAR WARRANTY

Functions:

- Cutting through openings in sheet metal with gauge up to 3mm without rotary motion

Technical data:

- Retracting piercing head supplied with a hose for the hydraulic oil that gives possibility for piercing openings everywhere on the metal surface
- Form of the cutting element:
 - - round
 - - square
- Size of the cutting element:
 - - square: 32x32mm
 - - round openings: Ø 22, 27.5, 34.3, 40, 49, 60.8mm
- Piercing capacity:
 - - sheet metal 3mm – openings up to Ø 60.8mm
 - - sheet metal 2mm – openings up to Ø 115.5mm
 - - square opening up to 110x110mm
- Element pressing power: 15T
- Thickness of the element: 25mm
- Weight of the instrument: 11.5 kg
- Used hydraulic oil: #15 (hydraulic oil with viscosity 15)
- Metal box for the instrument
- A set of congestion hoops for the hydraulic cylinder
- Additional set of cutting elements for cable glands – Ø16, 20, 26.2, 32.5, 39, 51, 63 and a square for display devices 46.5x46.5, 68x68 (ordered additionally); Catalogue number 54002

Type	Packing (pcs) / carton	Catalogue number
SYK - 15	2	54001
Additional set	2	54002



Combined scissors HS – 2103 type

2 YEAR WARRANTY

Functions:

- Cleaning of the plastic insulation of conductors and conductors
- Cutting of aluminum or copper cable conductors up to 6mm²
- Cutting of bearing steel plated wires up to 2mm²
- Crimping of cable terminals

Technical data:

- Possibility for crimping of automobile high voltage conductors
- Possibility for crimping of cable conductors up to 6mm²
- Maximum section of the cable: up to 6mm²
- Weight of the instrument: 0.21kg
- Length of the instrument: 213mm
- Packing: blister

Type	Packing (pcs) / carton	Catalogue number
HS – 2103	50	59310



Combined scissors HS – 2603 type

2 YEAR WARRANTY

Functions:

- Cleaning of the plastic insulation of conductors and conductors
- Cutting of aluminum or copper cable conductors up to 6mm²
- Cutting of bearing steel plated wires up to 2mm²
- Crimping of cable terminals

Technical data:

- Possibility for crimping of cable conductors up to 6mm²
- Maximum section of the cable:
 - - cleaning of a rigid conductor: from 0.5 to 6mm²
 - - cleaning of a flexible conductor: from 0.75 to 6mm²
- Presence of openings for cutting of bolts: from M2.5 to M5
- Weight of the instrument: 0.32kg
- Length of the instrument: 240mm
- Packing: blister

Type	Packing (pcs) / carton	Catalogue number
HS – 2603	50	59311



Instrument for manual crimping of conductors HD – 005 type

2 YEAR WARRANTY

Functions:

- Crimping of naked cable terminals

Technical data:

- Possibility for crimping of cable conductors up to 10mm²
- Form of the crimping head: hexahedral
- Weight of the instrument: 0.49kg
- Length of the instrument: 220mm
- Packing: blister

Type	Packing (pcs) / carton	Catalogue number
HD – 005	20	59308



Instrument for manual crimping of conductors G – 301H type

2 YEAR WARRANTY

Functions:

- Crimping of isolated cable terminals

Technical data:

- Possibility for crimping of cable conductors up to 6mm²
- Form of the crimping head: hexahedral
- Weight of the instrument: 0.49kg
- Length of the instrument: 220mm
- Packing: blister

Type	Packing (pcs) / carton	Catalogue number
G – 301H	20	59307



Crimping pliers SN – 003 type

2 YEAR WARRANTY

Functions:

- Crimping of naked cable terminals and joining bushes

Technical data:

- Possibility for crimping of cable conductors from 6 to 16mm²
- Form of the crimping head: hexahedral
- Weight of the instrument: 0.39kg
- Length of the instrument: 190mm
- Packing: blister

Type	Packing (pcs) / carton	Catalogue number
SN – 003	10 / 20	59309


Mechanical cable cutting pliers CC – 325 type
2 YEAR WARRANTY

Functions:

- Cutting of aluminum or copper cable conductors
- Cutting of conductors with metal bearing core

Technical data:

- Maximum section of the cable:
 - - for aluminum conductors up to 150mm²
 - - for copper conductors up to 150mm²
- Cutting power: 15T
- Presence of cutting mechanism type ratchet
- Presence of brake of the cutting mechanism
- Weight of the instrument: 0.58kg
- Length of the instrument: 260mm
- Packing: blister

Type	Packing (pcs) / carton	Catalogue number
CC – 325	5 / 10	59305


Mechanical cable cutting pliers CC – 400 type
2 YEAR WARRANTY

Functions:

- Cutting of aluminum or copper cable conductors
- Cutting of conductors with metal bearing core

Technical data:

- Maximum section of the cable:
 - - for aluminum conductors up to 400mm²
 - - for copper conductors up to 350mm²
- Cutting power: 15T
- Presence of cutting mechanism type ratchet
- Presence of brake of the cutting mechanism
- Weight of the instrument: 1.25kg
- Length of the instrument: 360mm
- Packing: blister

Type	Packing (pcs) / carton	Catalogue number
CC – 400	5	59304


Mechanical cable cutting pliers HS – 250 type
2 YEAR WARRANTY

Functions:

- Cutting of aluminum or copper cable conductors
- Cutting of conductors with metal bearing core

Technical data:

- Maximum section of the cable:
 - - for aluminum conductors up to 240mm²
 - - for copper conductors up to 185mm²
- Weight of the instrument: 1.43kg
- Length of the instrument: 540mm
- Packing: blister

Type	Packing (pcs) / carton	Catalogue number
HS – 250	10	59306

1000V vde pliers**5** YEAR WARRANTY

- Manufactured to exact standards.
- Chrome Vanadium Steel
- Induction hardened cutting edges.
- Bi-material TPR soft-grip handle.
- Ergonomic design for comfortable, firm grip.
- GS/TUV approved.

**VDE Combination Pliers**

Type	Size (mm)	Packing (pcs) hanging card / box / carton	Catalogue number
VDE Combination Pliers	180	1 / 6 / 60	599100180

VDE Long Nose Pliers

Type	Size (mm)	Packing (pcs) hanging card / box / carton	Catalogue number
VDE Long Nose Pliers	180	1 / 6 / 60	599300180

**VDE Side Cutting Pliers**

Type	Size (mm)	Packing (pcs) hanging card / box / carton	Catalogue number
VDE Side Cutting Pliers	160	1 / 6 / 60	599200160
VDE Side Cutting Pliers	180	1/6/60	599200180





VDE Cable Cutting Pliers



Type	Size (mm)	Packing (pcs) hanging card / box / carton	Catalogue number
VDE Cable Cutting Pliers	160	1 / 6 / 60	599600180

1000V vde screwdriver



- Designer for great performance with thumb pressure points.
- Extra torque and comfort.
- Chrome vanadium steel.
- Magnetic tip.
- Ergonomic comfort-grip handle



VDE Screwdriver, Slotted



Type	Size (mm)	L (mm)	Packing (pcs) hanging card / box / carton	Catalogue number
VDE Screwdriver, Slotted	3	100	1 / 12 / 240	599030100
VDE Screwdriver, Slotted	4	100	1 / 12 / 240	599040100



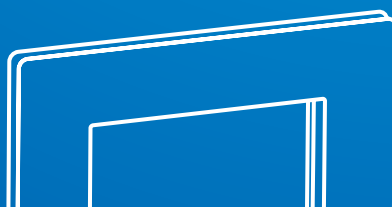
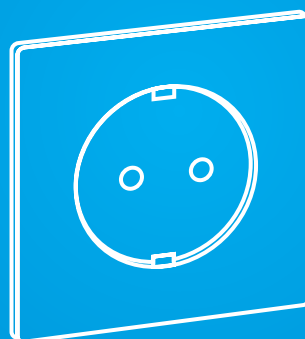
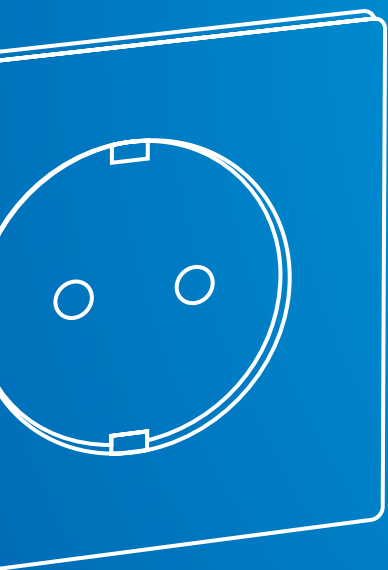
VDE Screwdriver



Type	Size (mm)	L (mm)	Packing (pcs) hanging card / box / carton	Catalogue number
VDE Screwdriver	PH0	60	1 / 12 / 240	599000060
VDE Screwdriver	PH1	80	1 / 12 / 240	599001080
VDE Screwdriver	PH2	100	1 / 12 / 120	599020100

ELECTRICAL SWITCHES AND SOCKETS

ELECTRICAL



EL[®]MARK

City series | [216](#)

Lecce series | [222](#)

Rhyme series | [228](#)

Splendor series | [234](#)

Life style series | [238](#)

Basic series | [242](#)

Waterproof for surface mounting | [246](#)

Plugs | [247](#)





White



Champagne metallic



Orange



Yellow



Green



Red



Blue



Orange metallic







Bordo metallic







Grey

City series





Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
1 button 1 way switch	 White metallic	10	10/100	190011
	 Champagne metallic			190012
1 button 2 way switch	 White metallic	10	10/100	190021
	 Champagne metallic			190022





Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
2 button 1 way switch	 White metallic	10	10/100	190041
	 Champagne metallic			190042
2 button 2 way switch	 White metallic	10	10/100	190051
	 Champagne metallic			190052





Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Dimmer LED 3-300W	 White metallic		6/10	190191
	 Champagne metallic			190192



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Door bell switch	 White metallic		10/100	190181
	 Champagne metallic			190182





Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
German type socket	 White metallic	16	10/100	190211
	 Champagne metallic			190212





Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
German type socket IP44	 White metallic	16	10/100	190211C





Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
German type socket double	 White metallic	16	8/80	190371
	 Champagne metallic			190372





Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Phone socket RJ11	 White metallic		10/100	190261
	 Champagne metallic			190262

City series





Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Phone socket RJ11 + computer socket RJ45	 White metallic		10/100	190731
	 Champagne metallic			190732





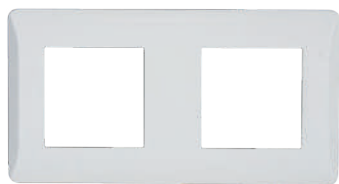
Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Computer socket RJ45	 White metallic		10/100	190281
	 Champagne metallic			190282























Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Phone socket RJ11 + computer socket RJ45	 White metallic		10/100	190711
	 Champagne metallic			190712













Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
TV socket	 White metallic		10/100	190251
	 Champagne metallic			190252













Type		Colour	Packing (pcs)	Catalogue number
single		White	20/200	190441
single		Champagne	20/200	190442
single		Orange	20/200	190443
single		Yellow	20/200	190444
single		Green	20/200	190445
single		Red	20/200	190446
single		Blue	20/200	190447
single		Orange metallic	20/200	190448
single		Bordo metallic	20/200	190449
single		Grey	20/200	190450

Type		Colour	Packing (pcs)	Catalogue number
double		White	10/100	190551
double		Champagne	10/100	190552
double		Orange	10/100	190553
double		Yellow	10/100	190554
double		Green	10/100	190555
double		Red	10/100	190556
double		Blue	10/100	190557
double		Orange metallic	10/100	190558
double		Bordo metallic	10/100	190559
double		Grey	10/100	190560











Type		Colour	Packing (pcs)	Catalogue number
triple		White	15/150	190661
triple		Champagne	15/150	190662
triple		Orange	15/150	190663
triple		Yellow	15/150	190664
triple		Green	15/150	190665
triple		Red	15/150	190666
triple		Blue	15/150	190667
triple		Orange metallic	15/150	190668
triple		Bordo metallic	15/150	190669
triple		Grey	15/150	190670

City series



Type		Colour	Packing (pcs)	Catalogue number
quadruple		White	10/100	190361
quadruple		Champagne	10/100	190362
quadruple		Orange	10/100	190363
quadruple		Yellow	10/100	190364
quadruple		Green	10/100	190365
quadruple		Red	10/100	190366
quadruple		Blue	10/100	190367
quadruple		Orange metallic	10/100	190368
quadruple		Bordo metallic	10/100	190369
quadruple		Grey	10/100	190370



Type		Colour	Packing (pcs)	Catalogue number
fivefold		White	10/100	190601
fivefold		Champagne	10/100	190602
fivefold		Orange	10/100	190603
fivefold		Yellow	10/100	190604
fivefold		Green	10/100	190605
fivefold		Red	10/100	190606
fivefold		Blue	10/100	190607
fivefold		Orange metallic	10/100	190608
fivefold		Bordo metallic	10/100	190609
fivefold		Grey	10/100	190610



Type	Colour	Packing (pcs)	Catalogue number
Outlet safety cap	White	10/100	192215
	Brown		192214



White



Blue



Silver grey



Golden



Graphite mat



Graphite



Champagne



Green



Onix



Cherry-tree






Tabac

Lecce series




Type	Colour	Packing (pcs)	Catalogue number
single	White	40/400	26100
	Blue		26101
	Silver grey		26102
	Golden		26103
	Graphite mat		26104
	Graphite		26105
	Champagne		26106
	Green		26107
	Onix		26108
	Cherry-tree		26109
double	White	40/400	26200
	Blue		26201
	Silver grey		26202
	Golden		26203
	Graphite mat		26204
	Graphite		26205
	Champagne		26206
	Green		26207
	Onix		26208
	Cherry-tree		26209
triple	White	40/400	26300
	Blue		26301
	Silver grey		26302
	Golden		26303
	Graphite mat		26304
	Graphite		26305
	Champagne		26306
	Green		26307
	Onix		26308
	Cherry-tree		26309
sixfold	White	20/200	26600
	Silver grey		26602
	Graphite		26605
	Champagne		26606




Type		Colour	Size	Rated current In (A)	Packing (pcs)	Catalogue number
1 button 1 way switch		White	1 mod.	10AX	20/200	26001
1 button 2 way switch		White	1 mod.	10AX	20/200	26003
1 button cross switch		White	1 mod.	10AX	16/160	26004




Type		Colour	Size	Rated current In (A)	Packing (pcs)	Catalogue number
1 button 1 way switch with light		White	1 mod.	10AX	20/200	26002




Type	Colour	Size	Rated current In (A)	Packing (pcs)	Catalogue number
door bell switch	 White	1 mod.	10AX	20/200	26005




Type	Colour	Size	Rated current In (A)	Packing (pcs)	Catalogue number
curtain switch	 White	1 mod.	10AX	20/200	26006



Type	Colour	Size	Rated current In (A)	Packing (pcs)	Catalogue number	
boiler switch with neon**		White	kompl.	45A	10/100	26024


*The product comes without decorative tripple panel




Type	Colour	Size	Packing (pcs)	Catalogue number
LED dimmer 250W	 White	1 mod.	20/200	26055

Lecce series




Type	Colour	Size	Rated current In (A)	Packing (pcs)	Catalogue number
italian standard multi socket	 White	1 mod.	10A	16/160	26007




Type		Colour	Size	Rated current In (A)	Packing (pcs)	Catalogue number
german type socket		White	2 mod.	16A	8/80	26008




Type	Colour	Size	Rated current In (A)	Packing (pcs)	Catalogue number
universal socket	 White	2 mod.	13A	8/80	26009




Type	Colour	Size	Packing (pcs)	Catalogue number
TV socket	 White	1 mod.	28/280	26010




Type	Colour	Size	Packing (pcs)	Catalogue number
satellite socket	 White	1 mod.	28/280	26011




Type	Colour	Size	Packing (pcs)	Catalogue number
phone socket	 White	1 mod.	28/280	26012




Type	Colour	Size	Packing (pcs)	Catalogue number
computer socket	 White	1 mod.	28/280	26013




Type	Colour	Size	Packing (pcs)	Catalogue number
2 port USB socket*	 White	1 mod.	12/120	26014

*Input: 90-240V; Output: 5V 2A




Type	Colour	Size	Packing (pcs)	Catalogue number
door bell	 White	2 mod.	8/80	26015




Type	Colour	Size	Packing (pcs)	Catalogue number
sound dimmer	 White	2 mod.	8/80	26016



Type	Colour	Size	Packing (pcs)	Catalogue number
blanc cover	 White	1 mod.	40/400	26017

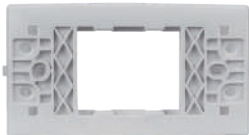


Type		Colour	Size	Packing (pcs)	Catalogue number
button without functional part		White	3 mod.	20/200	26023

Lecce series



Type	Size	Packing (pcs)	Catalogue number
mounting frames	1 mod	20/200	26019
	3 mod		



Type	Size	Packing (pcs)	Catalogue number
mounting frames	2 mod	20/200	26018



Type	Size	Packing (pcs)	Catalogue number
mounting frames	6 mod	10/100	26056



Type	Size	Packing (pcs)	Catalogue number
console box for plasterboard	1-3 mod	10/300	24205
	6 mod	5/150	26626

* Single, double and triple switch or socket use triple console



Type	Size	Packing (pcs)	Catalogue number
console box for brick and concrete	1-3 mod	10/300	24203
	6 mod	5/150	26616

* Single, double and triple switch or socket use triple console



RHYME

5 YEAR WARRANTY



White metallic



Champagne metallic



Grey metallic



Graphite metallic



Coffee metallic

Rhyme series



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
1 button 1 way switch	White metallic	10	10/100	11011
	Champagne metallic			11012
	Grey metallic			11014
	Graphite metallic			11015
	Coffee metallic			11016
1 button 2 way switch	White metallic	10	10/100	11021
	Champagne metallic			11022
	Grey metallic			11024
	Graphite metallic			11025
	Coffee metallic			11026
1 button cross switch	White metallic	10	10/100	11341
	Champagne metallic			11342
	Grey metallic			11344
	Graphite metallic			11345
	Coffee metallic			11346



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
2 buttons 1 way switch	White metallic	10	10/100	11041
	Champagne metallic			11042
	Grey metallic			11044
	Graphite metallic			11045
	Coffee metallic			11046
2 buttons 2 way switch	White metallic	10	10/100	11051
	Champagne metallic			11052
	Grey metallic			11054
	Graphite metallic			11055
	Coffee metallic			11056



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
3 buttons 1 way switch	White metallic	10	10/100	11721
	Champagne metallic			11722
	Grey metallic			11724
	Graphite metallic			11725
	Coffee metallic			11726



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
curtain control switch	White metallic	10	10/100	11171A
	Champagne metallic			11172A
	Grey metallic			11174A
	Graphite metallic			11175A
	Coffee metallic			11176A



Type	Colour	Packing (pcs)	Catalogue number
sensor switch	White metallic	10/100	11411
	Champagne metallic		11412
	Grey metallic		11414
	Graphite metallic		11415
	Coffee metallic		11416



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
dimmer switch	White metallic	10	10/100	11191
	Champagne metallic			11192
	Grey metallic			11194
	Graphite metallic			11195
	Coffee metallic			11196








Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
door bell switch	White metallic	10	10/100	11181
	Champagne metallic			11182
	Grey metallic			11184
	Graphite metallic			11185
	Coffee metallic			11186








Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
door bell switch with name card	White metallic	10	10/100	11181B
	Champagne metallic			11182B
	Grey metallic			11184B
	Graphite metallic			11185B
	Coffee metallic			11186B

Rhyme series








Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Push light switch	 White metallic	10	10/100	11181C
	 Champagne metallic			11182C
	 Grey metallic			11184C
	 Graphite metallic			11185C
	 Coffee metallic			11186C








Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
German type socket	 White metallic	10	10/100	11211
	 Champagne metallic			11212
	 Grey metallic			11214
	 Graphite metallic			11215
	 Coffee metallic			11216



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
German type socket with cover	 White metallic	16	10/100	11211C
	 Champagne metallic			11212C
	 Grey metallic			11214C
	 Graphite metallic			11215C
	 Coffee metallic			11216C



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
German type socket (double)	 White metallic	16	5/50	11371
	 Champagne metallic			11372
	 Grey metallic			11374
	 Graphite metallic			11375
	 Coffee metallic			11376



Type	Colour	Packing (pcs)	Catalogue number
Phone socket RJ11	White metallic	10/100	11261
	Champagne metallic		11262
	Grey metallic		11264
	Graphite metallic		11265
	Coffee metallic		11266
Phone socket RJ11 - double	White metallic	10/100	11741
	Champagne metallic		11742
	Grey metallic		11744
	Graphite metallic		11745
	Coffee metallic		11746
Phone socket RJ11 + computer socket RJ45	White metallic	10/100	11731
	Champagne metallic		11732
	Grey metallic		11734
	Graphite metallic		11735
	Coffee metallic		11736

Type	Colour	Packing (pcs)	Catalogue number
Computer socket (cat5e) RJ45	White metallic	10/100	11281
	Champagne metallic		11282
	Grey metallic		11284
	Graphite metallic		11285
	Coffee metallic		11286
Computer socket RJ45 (CAT6e)	White metallic	10/100	112816E
	Champagne metallic		112826E
	Grey metallic		112846E
	Graphite metallic		112856E
	Coffee metallic		112866E
Computer socket RJ45 - double	White metallic	10/100	11711
	Champagne metallic		11712
	Grey metallic		11714
	Graphite metallic		11715
	Coffee metallic		11716

Type	Colour	Packing (pcs)	Catalogue number
TV socket	White metallic	10/100	11251
	Champagne metallic		11252
	Grey metallic		11254
	Graphite metallic		11255
	Coffee metallic		11256
TV socket+FM socket + SAT socket	White metallic	10/100	11681
	Champagne metallic		11682
	Grey metallic		11684
	Graphite metallic		11685
	Coffee metallic		11686

*The model is available for individual installation only and cannot be combined with other frames of Rhyme series.

Rhyme series



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Key card power switch	White metallic	10	10/100	11331
	Champagne metallic			11332
	Grey metallic			11334
	Graphite metallic			11335
	Coffee metallic			11336



Type	Colour	Packing (pcs)	Catalogue number
2 gangs	White metallic	20/200	11551
	Champagne metallic		11552
	Grey metallic		11554
	Graphite metallic		11555
	Coffee metallic		11556
3 gangs	White metallic	20/200	11661
	Champagne metallic		11662
	Grey metallic		11664
	Graphite metallic		11665
	Coffee metallic		11666
4 gangs	White metallic	10/100	11361
	Champagne metallic		11362
	Grey metallic		11364
	Graphite metallic		11365
	Coffee metallic		11366
5 gangs	White metallic	20/200	11601
	Champagne metallic		11602
	Grey metallic		11604
	Graphite metallic		11605
	Coffee metallic		11606
6 gangs	White metallic	20/200	11621
	Champagne metallic		11622
	Grey metallic		11624
	Graphite metallic		11625
	Coffee metallic		11626



Type	Colour	Packing (pcs)	Catalogue number
Outlet safety cap	White	10/100	192215
	Brown		192214



SPLENDOR

5 YEAR
WARRANTY



White



Silver grey



Pear-tree



Cherry-tree

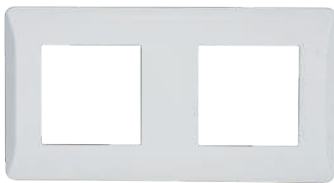



Black

Splendor series



Type		Colour	Packing (pcs)	Catalogue number
1 gang		White	30/300	06301
1 gang		Silver grey	30/300	06302
1 gang		Pear-tree	30/300	06305
1 gang		Cherry-tree	30/300	06306
1 gang		Black	30/300	06303



Type		Colour	Packing (pcs)	Catalogue number
2 gangs		White	20/200	06311
2 gangs		Silver grey	20/200	06312
2 gangs		Pear-tree	20/200	06315
2 gangs		Cherry-tree	20/200	06316
2 gangs		Black	20/200	06313



Type		Colour	Packing (pcs)	Catalogue number
3 gangs		White	15/150	06321
3 gangs		Silver grey	15/150	06322
3 gangs		Pear-tree	15/150	06325
3 gangs		Cherry-tree	15/150	06326
3 gangs		Black	15/150	06323



Type		Colour	Packing (pcs)	Catalogue number
single with cover		White	20/200	0629
		Silver grey		06292
		Pear-tree		06295
		Cherry-tree		06296
		Black		1629



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
1 button 1 way switch	white	10	10/100	0601
	dark grey	10	10/100	1601
1 button 2 way switch	white	10	10/100	0602
	dark grey	10	10/100	1602
1 button cross switch	white	10	10/100	0603
	dark grey	10	10/100	1603



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
2 buttons 1 way switch	white	10	10/100	0610
	dark grey	10	10/100	1610
2 buttons 1 way switch with light	white	10	10/100	0612
	dark grey	10	10/100	1612
2 buttons 2 way switch	white	10	10/100	0611
	dark grey	10	10/100	1611



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
German type socket	white	16	10/100	0616
	dark grey	16	10/100	1616



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
1 button 1 way switch with light	white	10	10/100	0606
	dark grey	10	10/100	1606
1 button 2 way switch with light	white	10	10/100	0607
	dark grey	10	10/100	1607



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Push light switch	white	10	10/100	0605
	dark grey	10	10/100	1605
Door bell switch with light	white	10	10/100	0609
	dark grey	10	10/100	1609

Splendor series



Type	Colour	Power(W)	Packing (pcs)	Catalogue number
Dimmer switch	white	600	10/100	0618
	dark grey	600	10/100	1618
Fan speed switch	white	500	10/100	0619
	dark grey	500	10/100	1619



Type	Colour	Packing (pcs)	Catalogue number
TV socket	white	10/100	0621
	dark grey	10/100	1621
TV socket+FM socket+SAT socket <small>*The model is available for individual installation only and cannot be combined with other frames of Rhyme series.</small>	white	10/100	0668
	dark grey	10/100	1668
TV socket (female)+ Phone socket RJ11	white	10/100	0648
	dark grey	10/100	1648
TV socket (female)+ Computer socket RJ45	white	10/100	0645
	dark grey	10/100	1645



Type	Colour	Packing (pcs)	Catalogue number
Phone socket RJ11	white	10/100	0623
	dark grey	10/100	1623
Phone socket RJ11 (2 gangs)	white	10/100	06232
	dark grey	10/100	16232
Computer socket RJ45	white	10/100	0624
	dark grey	10/100	1624
Phone socket RJ11+ Computer socket RJ45	white	10/100	0646
	dark grey	10/100	1646



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Key card power switch	white	10	10/100	0633
	dark grey	10	10/100	1633



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
German type socket (2 gangs)	white	16	10/100	0637



LIFE STYLE

5 YEAR WARRANTY



White



Chrome



Silver grey



Yellow



Pear-tree



Golden



Bordo



Cherry-tree



Dark grey



Green



Light blue



Dark blue



Type	Colour	Packing (pcs)	Catalogue number
1 gang	White	40/480	34601
2 gangs		40/480	34613
3 gangs		40/480	34625
4 gangs		35/420	34637
1 gang	Chrome	40/480	34609
2 gangs		40/480	34621
3 gangs		40/480	34633
4 gangs		35/420	34645
1 gang	Silver grey	40/480	34610
2 gangs		40/480	34622
3 gangs		40/480	34634
4 gangs		35/420	34646
1 gang	Yellow	40/480	34602
2 gangs		40/480	34614
3 gangs		40/480	34626
4 gangs		35/420	34638
1 gang	Pear-tree	40/480	34611
2 gangs		40/480	34623
3 gangs		40/480	34635
4 gangs		35/420	34647
1 gang	Golden	40/480	34608
2 gangs		40/480	34620
3 gangs		40/480	34632
4 gangs		35/420	34644
1 gang	Bordo	40/480	34606
2 gangs		40/480	34618
3 gangs		40/480	34630
4 gangs		35/420	34642
1 gang	Cherry-tree	40/480	34162
2 gangs		40/480	34624
3 gangs		40/480	34636
4 gangs		35/420	34648
1 gang	Dark grey	40/480	34607
2 gangs		40/480	34619
3 gangs		40/480	34631
4 gangs		35/420	34643
1 gang	Green	40/480	34603
2 gangs		40/480	34615
3 gangs		40/480	34627
4 gangs		35/420	34639
1 gang	Light blue	40/480	34605
2 gangs		40/480	34617
3 gangs		40/480	34629
4 gangs		35/420	34641
1 gang	Dark blue	40/480	34604
2 gangs		40/480	34616
3 gangs		40/480	34628
4 gangs		35/420	34640
6 gangs	White	35/420	34660
6 gangs	Silver grey	35/420	34662
6 gangs	Dark grey	35/420	34661



Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
one button one way switch	white	16	8/48/960	20501
	dark grey	16	8/48/960	21501
one button cross switch	white	16	8/48/960	20579
	dark grey	16	8/48/960	21579

Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
one button two way switch	white	16	8/48/960	20506
	dark grey	16	8/48/960	21506
one button two way switch with light	white	16	8/48/960	20507
	dark grey	16	8/48/960	21507

Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
door bell switch with light	white	10	8/48/960	20510A
	dark grey	10	8/48/960	21510A
push light switch with light	white	10	8/48/960	20510B
	dark grey	10	8/48/960	21510B

Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
curtain switch	white	10	8/48/960	20521
	dark grey	10	8/48/960	21521

Type	Colour	Power(W)	Packing (pcs)	Catalogue number
dimmer switch	white	500	8/48/960	20803
	dark grey	500	8/48/960	21803
fan speed switch	white	500	8/48/960	20803A
	dark grey	500	8/48/960	21803A

Type	Colour	Rated current In (VA)	Packing (pcs)	Catalogue number
bell 230V	white	8	8/48/960	20616
	dark grey	8	8/48/960	21616

Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
German type socket	white	16	4/24/480	20265
	dark grey	16	4/24/480	21265

Type	Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Italian standard multi socket	white	16	8/48/960	20203
	dark grey	16	8/48/960	21203

Life style series



Type	Colour	Packing (pcs)	Catalogue number
TV socket	white	8/48/960	20228
	dark grey	8/48/960	21228
Satellite socket	white	8/48/960	30301
	dark grey	8/48/960	31301



Type	Colour	Packing (pcs)	Catalogue number
phone socket RJ 11	white	8/48/960	20251
	dark grey	8/48/960	21251
computer socket RJ 45	white	8/48/960	20266
	dark grey	8/48/960	21266



Type	Colour	Packing (pcs)	Catalogue number
decorative cover	white	8/48/960	20056
	dark grey	8/48/960	21056



Type		Packing (pcs)	Catalogue number
Surface mounting box - for LIFE STYLE series	double	5 / 250	2702
	triple	5 / 200	2703



Type	IP code	Packing (pcs)	Catalogue number
Watertight box - for LIFE STYLE series	triple	44	22451A
	quadruple	44	22461A



Type		Packing (pcs)	Catalogue number
Frame - for LIFE STYLE series	double frame	10 / 400	24262
	triple frame	10 / 400	24201
	quadruple frame	10 / 400	24202
	sixfold frame	10 / 200	24206LF

* Single switch or socket use triple frame



Type		Packing (pcs)	Catalogue number
Console box for brick and concrete - for LIFE STYLE series	triple	10 / 300	24203
	quadruple	10 / 200	71304
	sixfold	10 / 200	68206

* Single, double and triple switch or socket use triple console



Type		Packing (pcs)	Catalogue number
Console box for plasterboard	triple	160	24205
	quadruple	150	24206

* Single, double and triple switch or socket use triple console



BASIC

5 YEAR
WARRANTY



White



Cream



Silver grey



Pear tree

Basic series



Type		Colour	Rated current In (A)	Packing (pcs)	Catalogue number
1 button 1 way switch		White	10	10/100	38000
		Cream	10	10/100	38001
		Silver grey	10	10/100	38002
		Pear tree	10	10/100	38005
1 button 2 way switch		White	10	10/100	38010
		Cream	10	10/100	38011
		Silver grey	10	10/100	38012
		Pear tree	10	10/100	38015



Type		Colour	Rated current In (A)	Packing (pcs)	Catalogue number
1 button 1 way switch with light		White	10	10/100	38700
		Cream	10	10/100	38701
		Silver grey	10	10/100	38702
		Pear tree	10	10/100	38705



Type		Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Cross switch		White	10	10/100	38070
		Cream	10	10/100	38071
		Silver grey	10	10/100	38072
		Pear tree	10	10/100	38075







Type		Colour	Rated current In (A)	Packing (pcs)	Catalogue number
2 buttons 1 way switch		White	10	10/100	38050
		Cream	10	10/100	38051
		Silver grey	10	10/100	38052
		Pear tree	10	10/100	38055







Type		Colour	Power(W)	Packing (pcs)	Catalogue number
Dimmer switch		White	400	10/100	38800
		Cream	400	10/100	38801
		Silver grey	400	10/100	38802
		Pear tree	400	10/100	38805







Type		Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Push light switch		White	10	10/100	38100
		Cream	10	10/100	38101
		Silver grey	10	10/100	38102
		Pear tree	10	10/100	38105







Type		Colour	Rated current In (A)	Packing (pcs)	Catalogue number
Door bell switch		White	10	10/100	38120
		Cream	10	10/100	38121
		Silver grey	10	10/100	38122
		Pear tree	10	10/100	38125




Type		Colour	Rated current In (A)	Packing (pcs)	Catalogue number
German type socket		White	16	10/100	38200
		Cream	16	10/100	38201
		Silver grey	16	10/100	38202
		Pear tree	16	10/100	38205



Type		Colour	Rated current In (A)	Packing (pcs)	Catalogue number
German type socket with cover		White	16	10/100	38250
		Cream	16	10/100	38251
		Silver grey	16	10/100	38252
		Pear tree	16	10/100	38255





Type		Colour	Packing (pcs)	Catalogue number
Phone socket		White	10/100	38350
		Cream	10/100	38351
		Silver grey	10/100	38352
		Pear tree	10/100	38355

Basic series










Type		Colour	Packing (pcs)	Catalogue number
Computer socket		White	10/100	38300
		Cream	10/100	38301
		Silver grey	10/100	38302
		Pear tree	10/100	38305



Type		Colour	Packing (pcs)	Catalogue number
TV socket		White	10/100	38360
		Cream	10/100	38361
		Silver grey	10/100	38362
		Pear tree	10/100	38365



Type		Colour	Packing (pcs)	Catalogue number
2 gang panel		White	20/200	38900
		Cream	20/200	38901
		Silver grey	20/200	38902
		Pear tree	20/200	38905
3 gang panel		White	15/150	38910
		Cream	15/150	38911
		Silver grey	15/150	38912
		Pear tree	15/150	38915



Type	Colour	Packing (pcs)	Catalogue number
Outlet safety cap	White	10/100	192215
	Brown		192214



German type socket waterproof with transparent cover

5 YEAR WARRANTY

Type	IP code	Packing (pcs)	Catalogue number
German type socket waterproof with transparent cover	Single	44	120
	Double	44	60
	Triple	44	50



German type socket waterproof with white cover

5 YEAR WARRANTY

Type	IP code	Packing (pcs)	Catalogue number
German type socket waterproof with white cover	Single	44	120
	Double	44	60
	Triple	44	50



Switch - waterproof

5 YEAR WARRANTY

Type	IP code	Packing (pcs)	Catalogue number
Switch - waterproof	One way switch	44	120
	One button two way switch	44	120
	Two buttons one way switch	44	120
	Push light switch/door bell switch	44	120

Waterproof for surface mounting



Switch

5 YEAR WARRANTY

	Type	IP code	Packing (pcs)	Catalogue number
Switch	One button two way switch	20	120	19221305
	Puch light switch	20	120	19221306
	Two buttons one way switch	20	120	19221307

Socket

5 YEAR WARRANTY

	Type	IP code	Packing (pcs)	Catalogue number
	Socket	20	120	19221308

Multisocket

2 YEAR WARRANTY

Type	Colour	Rated current in (A)	Rated power in (W)	Packing (pcs)	Catalogue number
Multisocket double	black	16	3500	60	192216
Multisocket double	white	16	3500	60	192217
Multisocket triple	black	16	3500	60	192218
Multisocket triple	white	16	3500	60	192219

Adapters

2 YEAR WARRANTY

Type	Colour	Rated current in (A)	Rated power in (W)	Packing (pcs)	Catalogue number
Adapter double	White	16	3500	50	192213
Adapter double	Graphite	16	3500	50	192212
Adapter double with key	White	16	3500	50	192211
Adapter double with key	Graphite	16	3500	50	192210
Adapter triple	White	16	3500	40	192209
Adapter triple	Graphite	16	3500	40	192208
Adapter triple with key	White	16	3500	40	192207
Adapter triple with key	Graphite	16	3500	40	192206



Rubber- coated socket

2 YEAR WARRANTY

Type	Colour	IP code	Packing (pcs)	Catalogue number
Rubber- coated socket	black	44	25 / 100	192220



Rubber-coated plug

2 YEAR WARRANTY

Type	Colour	IP code	Packing (pcs)	Catalogue number
Rubber- coated plug	black	44	25 / 100	192221



Plug with PVC muff

2 YEAR WARRANTY

Type	Rated current In (A)	Colour	Material	Packing (pcs)	Catalogue number
Plug	16	black / white	with pvc muff	300	192113



Plug bakelite

2 YEAR WARRANTY

Type	Rated current In (A)	Colour	Material	Packing (pcs)	Catalogue number
Plug	16	white	bakelite	80	19211102
Plug	16	black	bakelite	80	19211101



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