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## COMPLEX SOLUTIONS IN ENERGY POWER

**E.NEXT INTERNATIONAL ELECTROTECHNICAL GROUP** is an international group of companies specializing in the implementation of integrated electrical engineering solutions and automation of process control, the production and supply of low and medium voltage switchgear, cable-conductor and lighting devices.

Today, the E.NEXT brand combines modern production facilities, engineering services, technical laboratories, service centers, regional commercial and administrative offices in Poland, Bulgaria, Romania, Ukraine, Moldova, Serbia, Greece, the Czech Republic, Slovakia, Lithuania, Latvia and Estonia. TM E.NEXT products are certified according to European standards and available through our affiliate network.

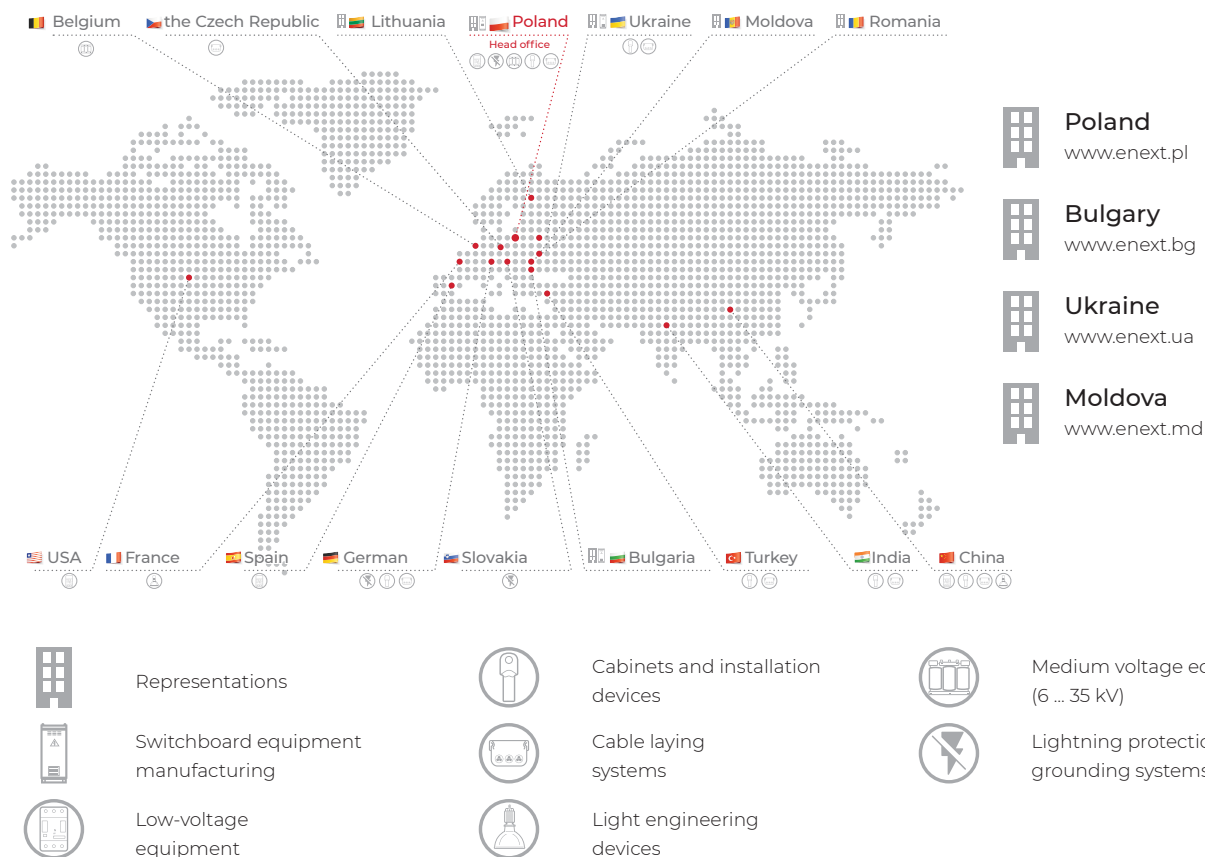
Over the years, the E.NEXT team has accumulated extensive experience in implementing projects for the agrarian, building, transport, industrial and energy branches of the economy. Working individually with each of our clients, we are responsibly approaching the solution of technically challenging tasks by: designing, complex supply of equipment, start-up and adjustment works, service, warranty and post-warranty services.

The basis of our success is the desire to become better, not to dwell on the achieved results following new technologies and world trends, to produce high-quality devices at affordable prices, to seek innovative ideas and implement them.

We invite you to our valued Partners and Clients! We are well aware of the challenges facing you and know how to solve them, appreciate your time and cooperation and always strive to be the first number for your business!

**Let's build the future together!**

### Map of representations and suppliers



**NOTATION**



Household use



Maximum cross section for connected conductors (single-core wire)



Maximum program time



Industrial use



Indication of power contacts position



Lighting level control



Fire protection due to failure in electrical wiring



Operation indication of power contacts position



Lighting control



Electric shock protection



Operation indicator



Voltage control



Overcurrent protection



Strict compliance with the connection scheme



Multi-functionality



Electric motors protection



Power supply is possible both on the upper contacts and on the lower contacts



Stairway lighting control



Protection degree



Temperature control of air and liquids



Maximum current

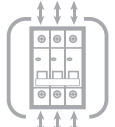


## Modular circuit breakers e.mcb.stand

They are intended for protection of low-voltage electrical networks and equipment against overload and short circuit currents, as well as infrequent operational switching of electrical networks. Household use.



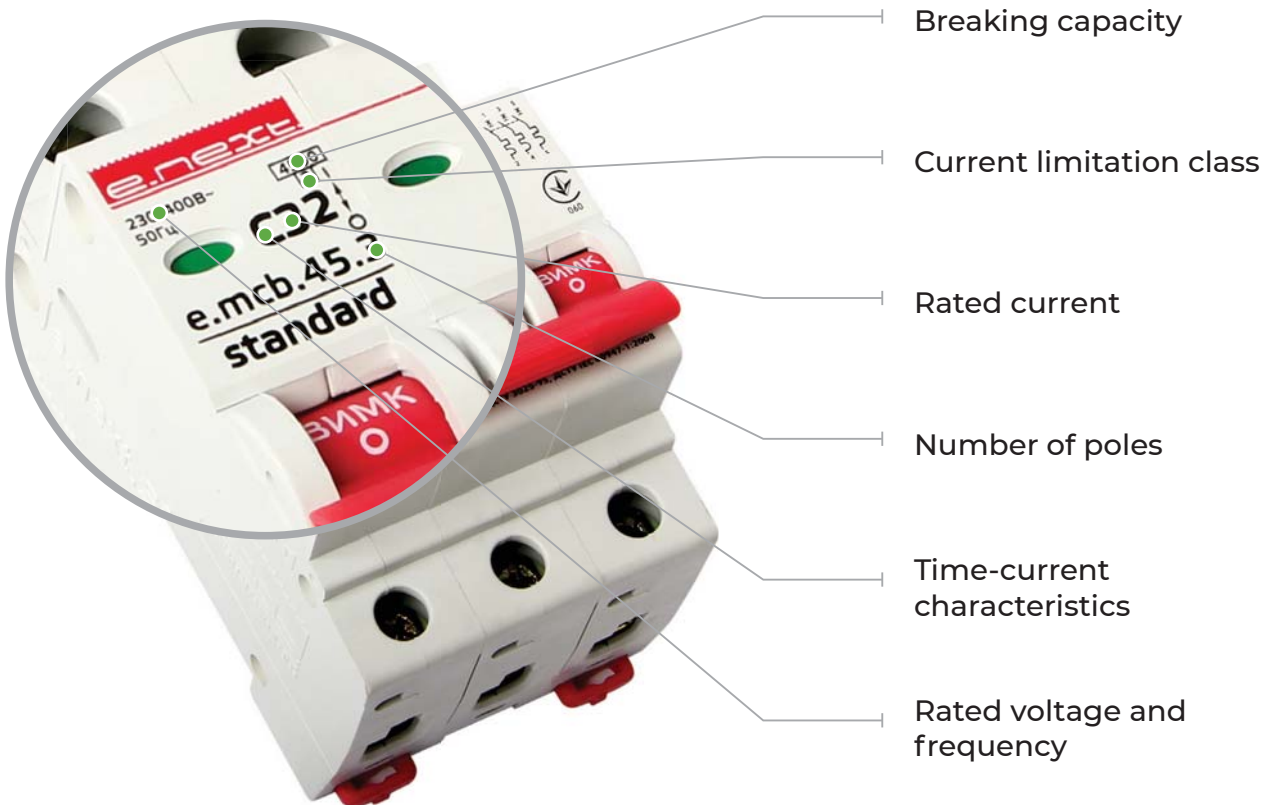
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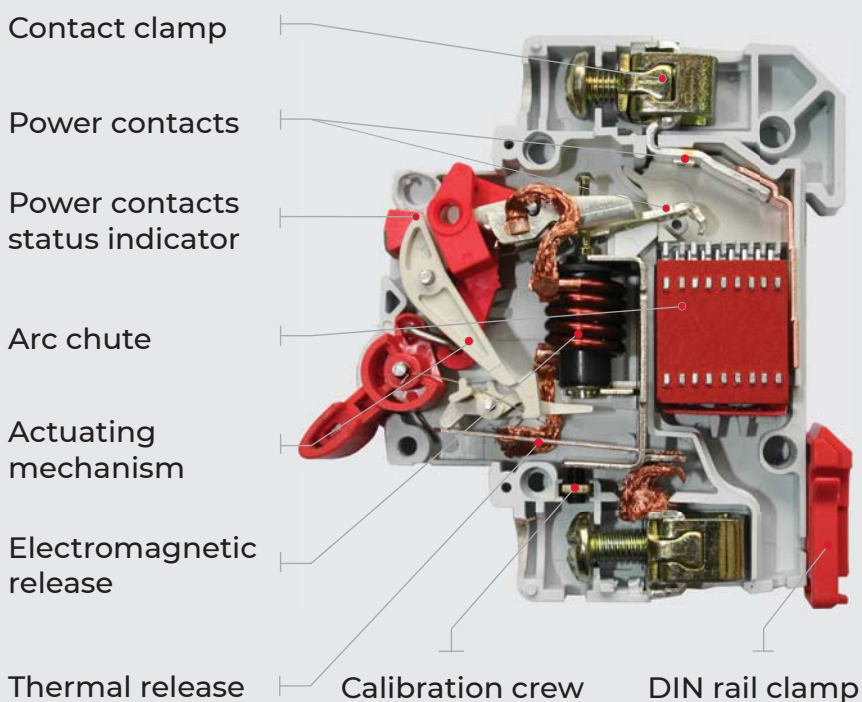
### Symbolic structure

e.mcb.stand.45.X.XX

- e. — trademark E.NEXT
- mcb — type
- stand — series
- 45 — rated breaking capacity 4,5 kA
- X — number of poles
- X — time-current characteristics
- X — rated current



## Construction features e.mcb.stand



The breaker case and all inside non-metal parts are made of ABS-plastic, which is self-extinguishing.

The contact clamps of the breakers have a corrugated surface that improves the mechanical stability and reliability of the contact connection.

The contact solders of movable and fixed contacts are made of copper-graphite alloy, coated with silver 99,8 %.

The ergonomic design of the control handle prevents the fingers sliding when the breaker is On/Off.

The lack of the possibility of breakers connecting by connecting buses involves the use of Standard series breakers in networks with low short-circuit currents (up to 4,5 kA): household networks, control circuits etc.

All electrical connections inside the circuit breakers are made of flexible copper wires which reduce the possibility of temperature-induced variations in short circuits.

The DIN rail clamp has two fixed positions, which greatly facilitates the breaker mounting/disassembling.

## Technical data

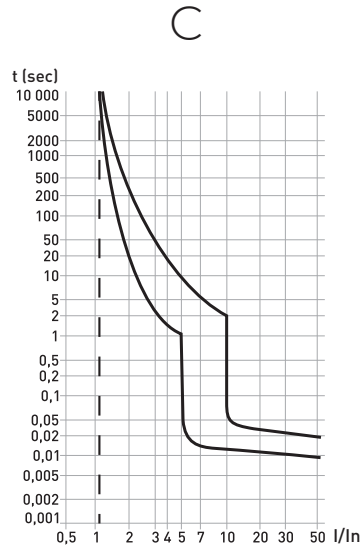
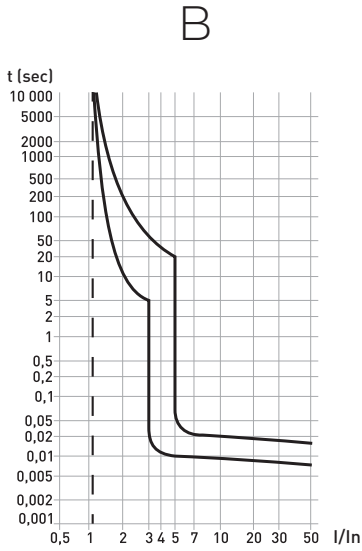
Parameter name	Value
Rated voltage $U_e$ , V	AC 230/400
Rated frequency, Hz	50
Rated DC voltage at one pole, V	48
Voltage of insulation $U_i$ , V	500
Pulse voltage (1,2/50) $U_{imp}$ , kV	6
Rated current $I_n$ , A	1, 2, 3, 4, 5, 6, 10, 16, 25, 32, 40, 50, 63
Rated breaking capacity $I_{cn}$ , A	4 500
Number of poles	1, 2, 3, 4
Time-current characteristics	B, C
Electrical life, On/Off cycles, no less	4 000
Mechanical life, On/Off cycles, no less	10 000
Maximum cross section of connecting wire, mm <sup>2</sup>	25
Tightening torque of contact clamps, Nm	3
Protection degree	IP20
Weight, (of 1p) g	100
Ambient temperature, °C	-25...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	80 %
Working position	vertical, horizontal, with a deviation of no more than 5°
Mounting	on DIN rail 35 mm

Rated current, A	Curve B		Curve C	
	Name	Order code	Name	Order code
1 pole				
1	e.mcb.stand.45.1.B1	s001001	e.mcb.stand.45.1.C1	s002001
2	e.mcb.stand.45.1.B2	s001002	e.mcb.stand.45.1.C2	s002002
3	e.mcb.stand.45.1.B3	s001003	e.mcb.stand.45.1.C3	s002003
4	e.mcb.stand.45.1.B4	s001004	e.mcb.stand.45.1.C4	s002004
5	e.mcb.stand.45.1.B5	s001005	e.mcb.stand.45.1.C5	s002005
6	e.mcb.stand.45.1.B6	s001006	e.mcb.stand.45.1.C6	s002006
10	e.mcb.stand.45.1.B10	s001007	e.mcb.stand.45.1.C10	s002007
16	e.mcb.stand.45.1.B16	s001008	e.mcb.stand.45.1.C16	s002008
20	e.mcb.stand.45.1.B20	s001009	e.mcb.stand.45.1.C20	s002009
25	e.mcb.stand.45.1.B25	s001010	e.mcb.stand.45.1.C25	s002010
32	e.mcb.stand.45.1.B32	s001011	e.mcb.stand.45.1.C32	s002011
40	e.mcb.stand.45.1.B40	s001012	e.mcb.stand.45.1.C40	s002012
50	e.mcb.stand.45.1.B50	s001013	e.mcb.stand.45.1.C50	s002013
63	e.mcb.stand.45.1.B63	s001014	e.mcb.stand.45.1.C63	s002014
2 poles				
1	—	—	e.mcb.stand.45.2.C1	s002054
2	—	—	e.mcb.stand.45.2.C2	s002041
3	—	—	e.mcb.stand.45.2.C3	s002042
4	—	—	e.mcb.stand.45.2.C4	s002043
5	—	—	e.mcb.stand.45.2.C5	s002055
6	e.mcb.stand.45.2.B6	s001015	e.mcb.stand.45.2.C6	s002015
10	e.mcb.stand.45.2.B10	s001016	e.mcb.stand.45.2.C10	s002016
16	e.mcb.stand.45.2.B16	s001017	e.mcb.stand.45.2.C16	s002017
20	e.mcb.stand.45.2.B20	s001018	e.mcb.stand.45.2.C20	s002018
25	e.mcb.stand.45.2.B25	s001019	e.mcb.stand.45.2.C25	s002019
32	e.mcb.stand.45.2.B32	s001020	e.mcb.stand.45.2.C32	s002020
40	e.mcb.stand.45.2.B40	s001021	e.mcb.stand.45.2.C40	s002021
50	e.mcb.stand.45.2.B50	s001022	e.mcb.stand.45.2.C50	s002022
63	e.mcb.stand.45.2.B63	s001023	e.mcb.stand.45.2.C63	s002023
3 poles				
1	—	—	e.mcb.stand.45.3.C1	s002024
2	—	—	e.mcb.stand.45.3.C2	s002025
3	—	—	e.mcb.stand.45.3.C3	s002026
4	—	—	e.mcb.stand.45.3.C4	s002027
5	—	—	e.mcb.stand.45.3.C5	s002028
6	e.mcb.stand.45.3.B.6	s001024	e.mcb.stand.45.3.C6	s002029
10	e.mcb.stand.45.3.B.10	s001025	e.mcb.stand.45.3.C10	s002030
16	e.mcb.stand.45.3.B.16	s001026	e.mcb.stand.45.3.C16	s002031
20	e.mcb.stand.45.3.B.20	s001027	e.mcb.stand.45.3.C20	s002032
25	e.mcb.stand.45.3.B.25	s001028	e.mcb.stand.45.3.C25	s002033
32	e.mcb.stand.45.3.B.32	s001029	e.mcb.stand.45.3.C32	s002034
40	e.mcb.stand.45.3.B.40	s001030	e.mcb.stand.45.3.C40	s002035
50	e.mcb.stand.45.3.B.50	s001031	e.mcb.stand.45.3.C50	s002036
63	e.mcb.stand.45.3.B.63	s001032	e.mcb.stand.45.3.C63	s002037
4 poles				
10	—	—	e.mcb.stand.45.4.C10	s002046
16	—	—	e.mcb.stand.45.4.C16	s002047
20	—	—	e.mcb.stand.45.4.C20	s002048
25	—	—	e.mcb.stand.45.4.C25	s002049

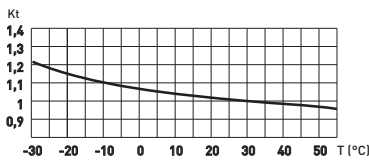


Rated current, A	Curve B		Curve C	
	Name	Order code	Name	Order code
32	—	—	e.mcb.stand.45.4.C32	s002050
40	—	—	e.mcb.stand.45.4.C40	s002051
50	—	—	e.mcb.stand.45.4.C50	s002052
63	—	—	e.mcb.stand.45.4.C63	s002053

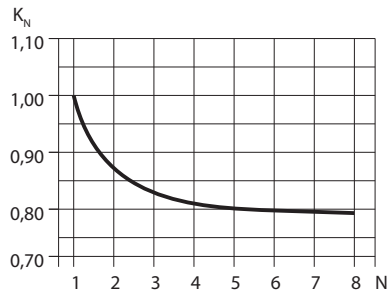
## Time-current characteristics



Dependence of circuit breakers rated current on ambient temperature



Dependence of mutual heating placed near the circuit breakers



The residual operating current for placed one near one circuit breaker depending on their quantity (N) and ambient temperature is determined by the formula:

$$I = 1,13 \times I_n \times K_N \times K_t$$

where:  $I_n$  — rated current (factory setting of the thermal release for ambient temperature 30 °C);

$K_N$  — load factor depending on the number of poles;

$K_t$  — load factor depending on the ambient temperature.

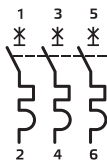
## Graphic notation



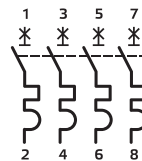
1 pole



2 poles



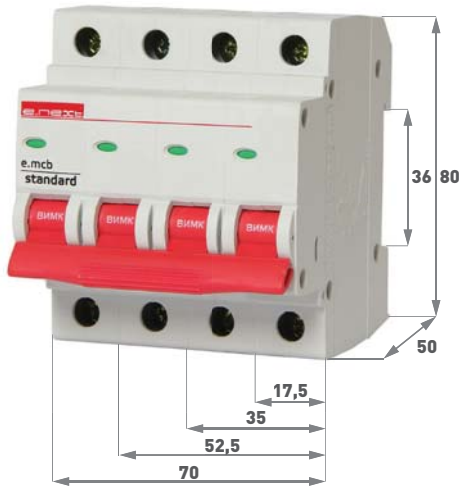
3 poles



4 poles



## Overall and installation dimensions



## Auxiliary devices

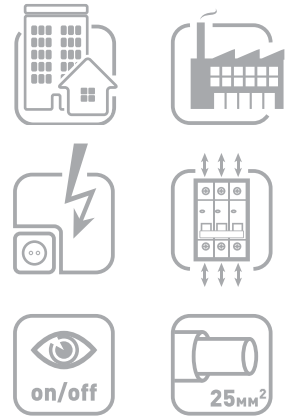




## Modular circuit breakers e.mcb.pro

They are intended for protection of low-voltage electrical networks and equipment against overload and short circuit currents, as well as infrequent operational switching of electrical networks. Household and industrial use.

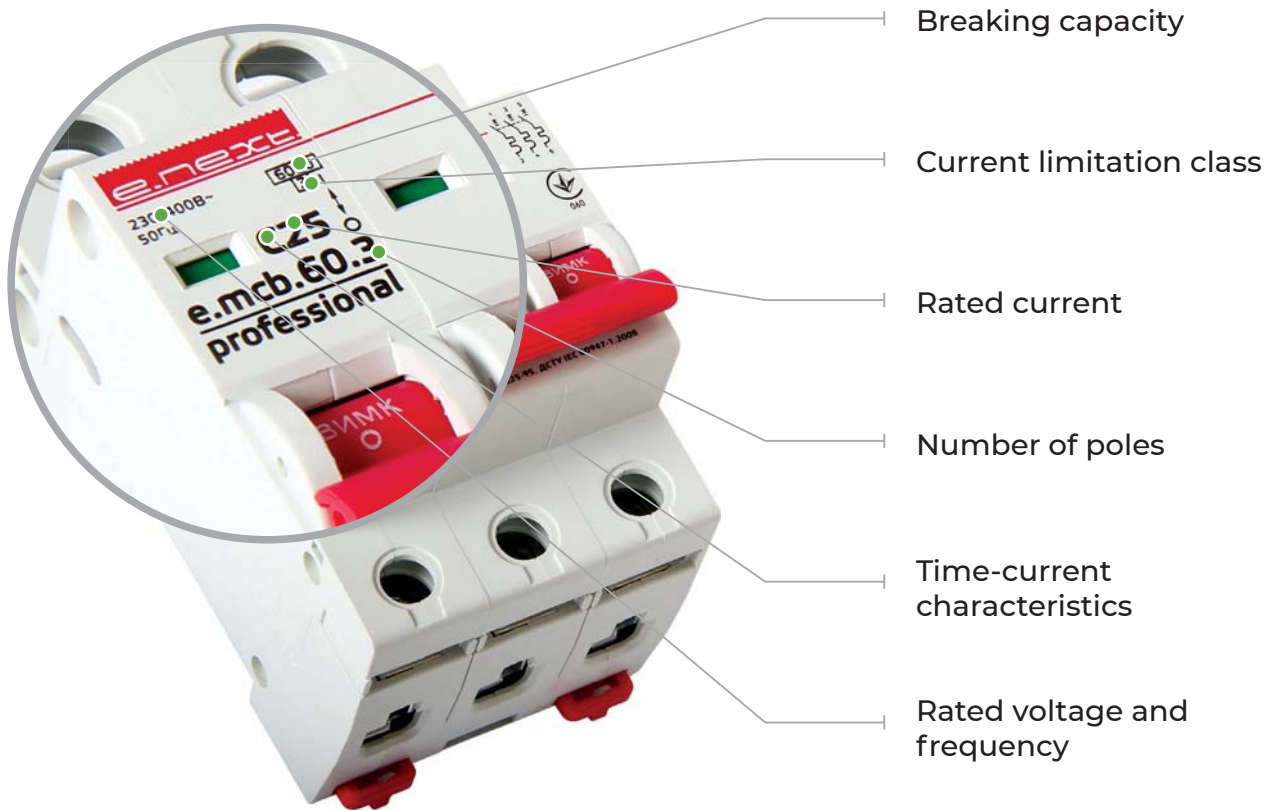
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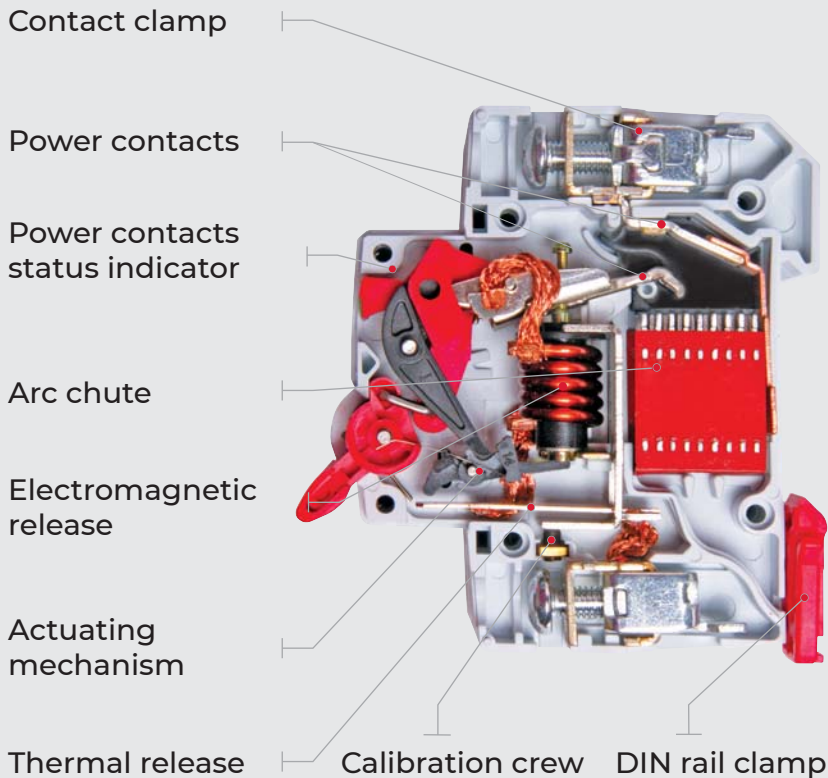
### Symbolic structure

e.mcb.pro.60.X.XX

- e. — trademark E.NEXT
- mcb — type
- pro — series
- 60 — rated breaking capacity 6 kA
- X — number of poles
- X — time-current characteristics
- X — rated current



## Construction features e.mcb.pro



The breaker case and all inside non-metal parts are made of ABS-plastic, which is self-extinguishing.

The reinforced (by auxiliary locks) contact breaker clamps have increased electrodynamic stability. The clamps also have corrugated surface that improve the mechanical stability and reliability of the contact connection.

The contact surface of the fixed contact is made of silver-graphite alloy which reduces the transient resistance and heat losses, as well as increases the electrical life of the breaker.

The ergonomic design of the control handle prevents the fingers sliding when the breaker is On/Off.

The constructive execution with a breakingshort-circuit capacity of 6 kA provides for the usage of breakers Pro series in both household domestic and industrial areas. Contact connections allow double simultaneous clamping of the wire and the connecting bus.

All electrical connections inside the breaker are made of flexible copper wires which reduce the possibility of temperature-induced variations in short circuits.

The DIN rail clamp has two fixed positions, which greatly facilitates the breaker mounting/disassembling.

## Technical data

Parameter name	Value
Rated voltage $U_e$ , V	AC 230/400
Rated frequency, Hz	50
Rated DC voltage at one pole, V	48
Voltage of insulation $U_i$ , V	500
Pulse voltage (1,2/50) $U_{imp}$ , kV	6
Rated current $I_n$ , A	1, 2, 3, 4, 5, 6, 10, 16, 25, 32, 40, 50, 63
Rated breaking capacity $I_{cn}$ , A	6 000
Number of poles	1, 2, 3
Time-current characteristics	B, C, D
Electrical life, On/Off cycles, no less	10 000
Mechanical life, On/Off cycles, no less	20 000
Maximum cross section of connecting wire, mm <sup>2</sup>	25
Tightening torque of contact clamps, Nm	3
Protection degree	IP20
Weight, (for 1 pole), g	100
Ambient temperature, °C	-25...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	80 %
Working position	vertical, horizontal, with a deviation of no more than 5°
Mounting	on DIN-rail 35 mm

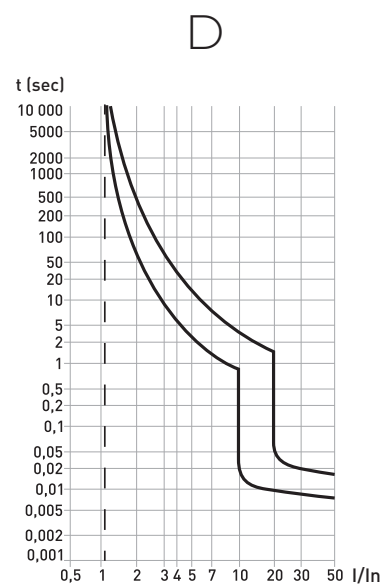
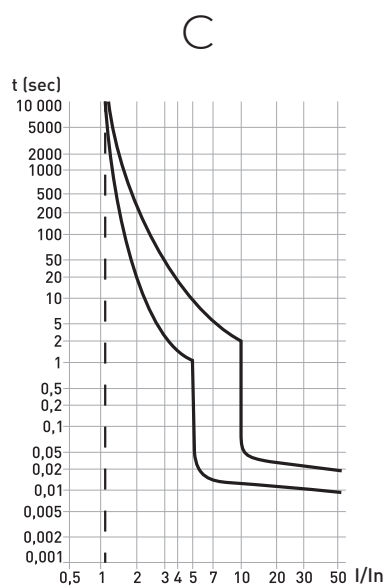
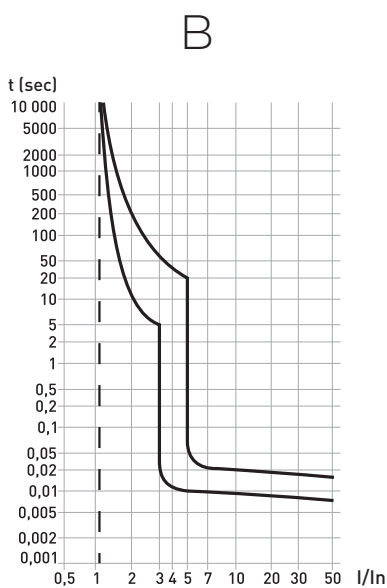
## Electrical Newest Exclusive Extended Technologies

Rated current, A	Curve B		Curve C		Curve D	
	Name	Order code	Name	Order code	Name	Order code
1 pole						
	1	e.mcb.pro.60.1.B1 new s001001	e.mcb.pro.60.1.B1 new s001001	p042001	e.mcb.pro.60.1.D.1	p0710001
	2	e.mcb.pro.60.1.B2 new s001002	e.mcb.pro.60.1.B2 new s001002	p042002	e.mcb.pro.60.1.D.2	p0710002
	3	e.mcb.pro.60.1.B3 new s001003	e.mcb.pro.60.1.B3 new s001003	p042003	e.mcb.pro.60.1.D.3	p0710003
	4	e.mcb.pro.60.1.B4 new s001004	e.mcb.pro.60.1.B4 new s001004	p042004	e.mcb.pro.60.1.D.4	p0710004
	5	e.mcb.pro.60.1.B5 new s001005	e.mcb.pro.60.1.B5 new s001005	p042005	e.mcb.pro.60.1.D.5	p0710005
	6	e.mcb.pro.60.1.B6 new s001006	e.mcb.pro.60.1.B6 new s001006	p042006	e.mcb.pro.60.1.D.6	p0710006
	10	e.mcb.pro.60.1.B10 new s001007	e.mcb.pro.60.1.B10 new s001007	p042007	e.mcb.pro.60.1.D.10	p0710007
	16	e.mcb.pro.60.1.B16 new s001008	e.mcb.pro.60.1.B16 new s001008	p042008	e.mcb.pro.60.1.D.16	p0710008
	20	e.mcb.pro.60.1.B20 new s001009	e.mcb.pro.60.1.B20 new s001009	p042009	—	—
	25	e.mcb.pro.60.1.B25 new s001010	e.mcb.pro.60.1.B25 new s001010	p042010	e.mcb.pro.60.1.D.25	p0710009
	32	e.mcb.pro.60.1.B32 new s001011	e.mcb.pro.60.1.B32 new s001011	p042011	e.mcb.pro.60.1.D 32 new	p0710020
	40	e.mcb.pro.60.1.B40 new s001012	e.mcb.pro.60.1.B40 new s001012	p042012	e.mcb.pro.60.1.D 40 new	p0710021
	50	e.mcb.pro.60.1.B50 new s001013	e.mcb.pro.60.1.B50 new s001013	p042013	e.mcb.pro.60.1.D 50 new	p0710022
	63	e.mcb.pro.60.1.B63 new s001014	e.mcb.pro.60.1.B63 new s001014	p042014	e.mcb.pro.60.1.D 63 new	p0710023
2 poles						
	6	e.mcb.pro.60.2.B6 new p041015	e.mcb.pro.60.2.C6 new p041015	p042015	—	—
	10	e.mcb.pro.60.2.B10 new p041016	e.mcb.pro.60.2.C10 new p041016	p042016	—	—
	16	e.mcb.pro.60.2.B16 new p041017	e.mcb.pro.60.2.C16 new p041017	p042017	—	—
	20	e.mcb.pro.60.2.B20 new p041018	e.mcb.pro.60.2.C20 new p041018	p042018	—	—
	25	e.mcb.pro.60.2.B25 new p041019	e.mcb.pro.60.2.C25 new p041019	p042019	—	—
	32	e.mcb.pro.60.2.B32 new p041020	e.mcb.pro.60.2.C32 new p041020	p042020	—	—
	40	e.mcb.pro.60.2.B40 new p041021	e.mcb.pro.60.2.C40 new p041021	p042021	—	—
	50	e.mcb.pro.60.2.B50 new p041022	e.mcb.pro.60.2.C50 new p041022	p042022	—	—
	63	e.mcb.pro.60.2.B63 new p041023	e.mcb.pro.60.2.C63 new p041023	p042023	—	—
3 poles						
	1	—	e.mcb.pro.60.3.C1 new p041024	p042024	—	—
	2	—	e.mcb.pro.60.3.C2 new p041025	p042025	e.mcb.pro.60.3.D.2	p0710010
	3	—	e.mcb.pro.60.3.C3 new p041026	p042026	—	—
	4	—	e.mcb.pro.60.3.C4 new p041027	p042027	—	—
	5	—	e.mcb.pro.60.3.C5 new p041028	p042028	—	—
	6	e.mcb.pro.60.3.B6 new p041024	e.mcb.pro.60.3.C6 new p041024	p042029	e.mcb.pro.60.3.D.6	p0710019
	10	e.mcb.pro.60.3.B10 new p041025	e.mcb.pro.60.3.C10 new p041025	p042030	e.mcb.pro.60.3.D.10	p0710011

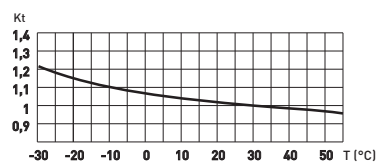


Rated current, A	Curve B		Curve C		Curve D	
	Name	Order code	Name	Order code	Name	Order code
16	e.mcb.pro.60.3.B16 new	p041026	e.mcb.pro.60.3.C16 new	p042031	e.mcb.pro.60.3.D.16	p0710012
20	e.mcb.pro.60.3.B20 new	p041027	e.mcb.pro.60.3.C20 new	p042032	e.mcb.pro.60.3.D.20	p0710013
25	e.mcb.pro.60.3.B25 new	p041028	e.mcb.pro.60.3.C25 new	p042033	e.mcb.pro.60.3.D.25	p0710014
32	e.mcb.pro.60.3.B32 new	p041029	e.mcb.pro.60.3.C32 new	p042034	e.mcb.pro.60.3.D.32	p0710015
40	e.mcb.pro.60.3.B40 new	p041030	e.mcb.pro.60.3.C40 new	p042035	e.mcb.pro.60.3.D.40	p0710016
50	e.mcb.pro.60.3.B50 new	p041031	e.mcb.pro.60.3.C50 new	p042036	e.mcb.pro.60.3.D.50	p0710017
63	e.mcb.pro.60.3.B63 new	p041032	e.mcb.pro.60.3.C63 new	p042037	e.mcb.pro.60.3.D.63	p0710018

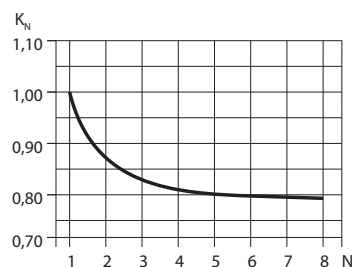
## Time-current characteristics



Dependence of circuit breakers rated current on ambient temperature



Dependence of mutual heating placed near the circuit breakers



The residual operating current for placed one near one circuit breaker depending on their quantity (N) and ambient temperature is determined by the formula:

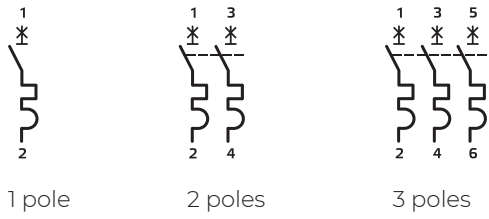
$$I = 1,13 \times I_n \times K_N \times K_t$$

where:  $I_n$  — rated current (factory setting of the thermal release for ambient temperature 30 °C);

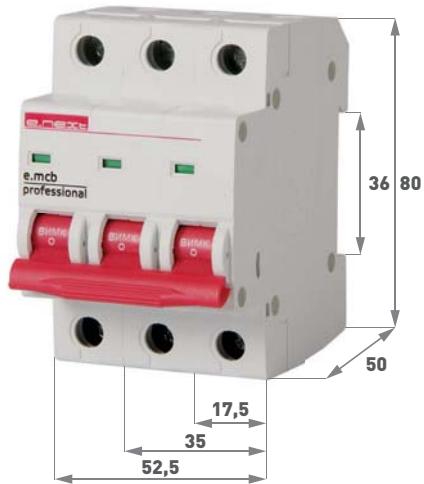
$K_N$  — load factor depending on the number of poles;

$K_t$  — load factor depending on the ambient temperature.

### Graphic notation



### Overall and installation dimensions



### Auxiliary devices



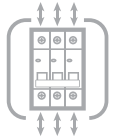
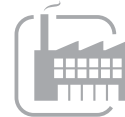


## Modular circuit breakers e.mcb.pro.60 (63-125 A)

They are intended for protection of low-voltage electrical networks and equipment against overload and short circuit currents, as well as infrequent operational switching of electrical networks. Household and industrial use.



060 Corresponds to EN 60898-1.



### Symbolic structure

e.mcb.pro.60.X.XX

- e. — trademark E.NEXT
- mcb — type
- pro — series
- 60 — rated breaking capacity 6 kA
- X — number of poles
- X — time-current characteristics
- X — rated current



Breaking capacity

Current limitation class

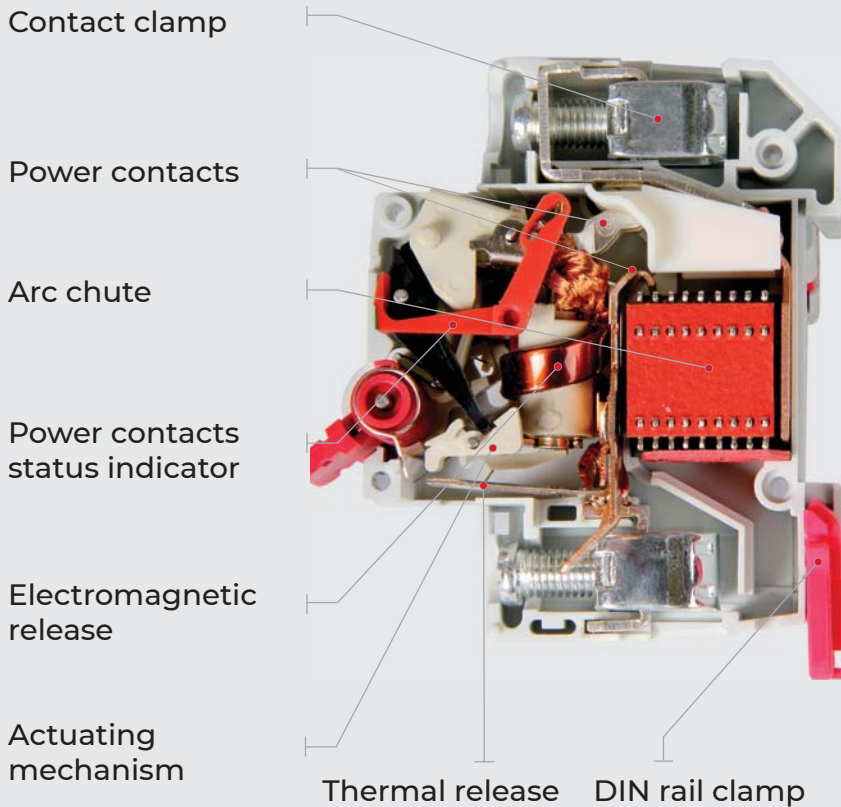
Rated current

Number of poles

Time-current characteristics

Rated voltage and frequency

**Construction features e.mcb.pro.60 (63-125 A)**



The breaker case is made of ABS-plastic, which is self-extinguishing.

The contact clamps of the breakers have a corrugated surface that improves the mechanical stability and reliability of the contact connection.

The increased width of the pole (27 mm), the increased arc chute and a double spring-actuated contact allow the currents to be switched to 125 A.

The contact surface of the fixed contact is made of silver-graphite alloy which reduces the transient resistance and heat losses, as well as increases the electrical life of the breaker.

The ergonomic design of the control handle prevents the fingers sliding when the breaker is On/Off.

The construction of modular circuit breakers with a breaking capacity of 6 kA provides the use of the Professional series in both household and industrial areas. The contact clamps allow double simultaneous clamping of the wire and the connecting bus from the upper contacts.

All electrical connections inside the circuit breakers are made of flexible copper wires which reduce the possibility of temperature-induced variations in short circuits.

The DIN rail clamp has two fixed positions, which greatly facilitates the breaker mounting/disassembling.

**Technical data**

Parameter name	Value
Rated voltage $U_e$ , V	AC 230/400
Rated frequency, Hz	50
Rated DC voltage at one pole, V	60
Voltage of insulation $U_i$ , V	500
Pulse voltage (1,2/50) $U_{imp}$ , kV	6
Rated current $I_n$ , A	63, 80, 100, 125
Rated breaking capacity $I_{cn}$ , A	6 000
Number of poles	1, 3
Time-current characteristics	C, K
Electrical life, On/Off cycles, no less	1 500
Mechanical life, On/Off cycles, no less	8 000
Maximum cross section of connecting wire, mm <sup>2</sup>	50
Tightening torque of contact clamps, Nm	3,5
Protection degree	IP20
Weight, (of 1p) g	160
Ambient temperature, °C	-25...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	80 %
Working position	vertical, horizontal, with a deviation of no more than 5°
Mounting	on DIN rail 35 mm

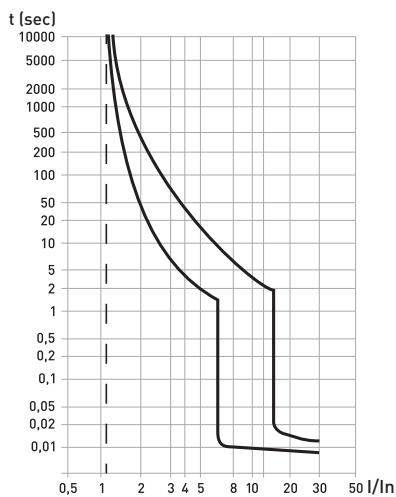




Rated current, A	Curve B	
	Name	Order code
1 pole		
63	e.mcb.pro.60.1.K 63 new	p0430001
80	e.mcb.pro.60.1.K 80 new	p0430002
100	e.mcb.pro.60.1.K 100 new	p0430003
125	e.mcb.pro.60.1.K 125 new	p0430004
3 poles		
63	e.mcb.pro.60.3.K 63 new	p0430005
80	e.mcb.pro.60.3.K 80 new	p0430006
100	e.mcb.pro.60.3.K 100 new	p0430007
125	e.mcb.pro.60.3.K 125 new	p0430008

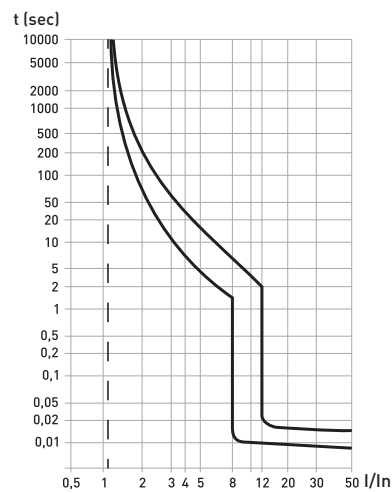
## Time-current characteristics

C

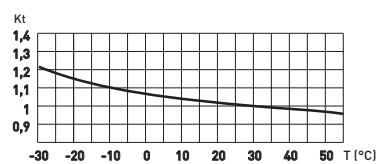
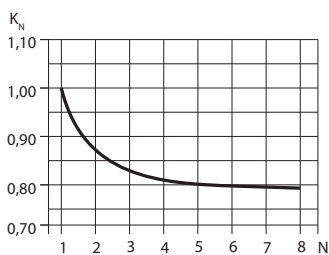


Dependence of mutual heating placed near the circuit breakers

K



Dependence of circuit breakers rated current on ambient temperature



The residual operating current for placed one near one circuit breaker depending on their quantity (N) and ambient temperature is determined by the formula:

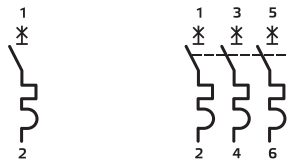
$$I = 1,13 \times I_n \times K_N \times K_t$$

where:  $I_n$  — rated current (factory setting of the thermal release for ambient temperature 30 °C);

$K_N$  — load factor depending on the number of poles;

$K_t$  — load factor depending on the ambient temperature.

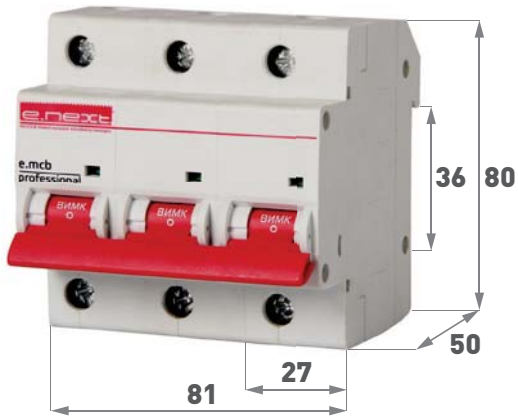
### Graphic notation



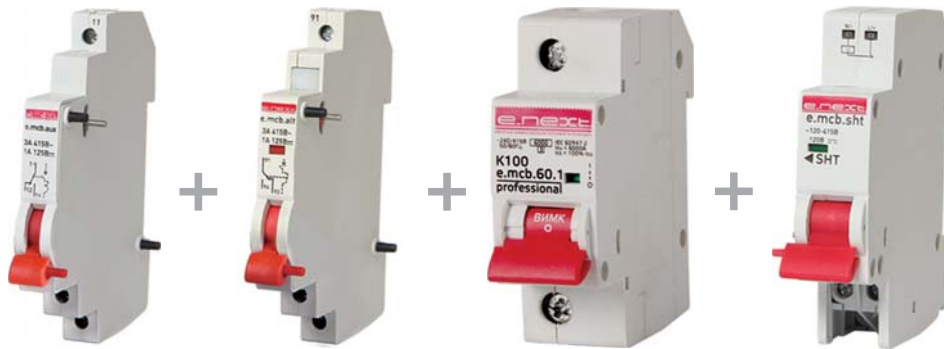
1 pole

3 poles

### Overall and installation dimensions



### Auxiliary devices



e.mcb.aux  
Auxiliary contact

e.mcb.alt  
Alarm contact

e.mcb.pro

e.mcb.sht  
Shunt release

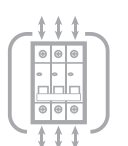


## Modular circuit breakers e.industrial.mcb.100

They are intended for protection of low-voltage electrical networks and equipment against overload and short circuit currents, as well as infrequent operational switching of electrical networks. Industrial use.



060 Corresponds to EN 60947-2.



### Symbolic structure

e.industrial.mcb.100.X.XX

- e. — trademark E.NEXT
- industrial — type
- mcb — model
- 100 — rated breaking capacity 10 kA
- X — number of poles
- X — time-current characteristics
- X — rated current



Breaking capacity

Current limitation class

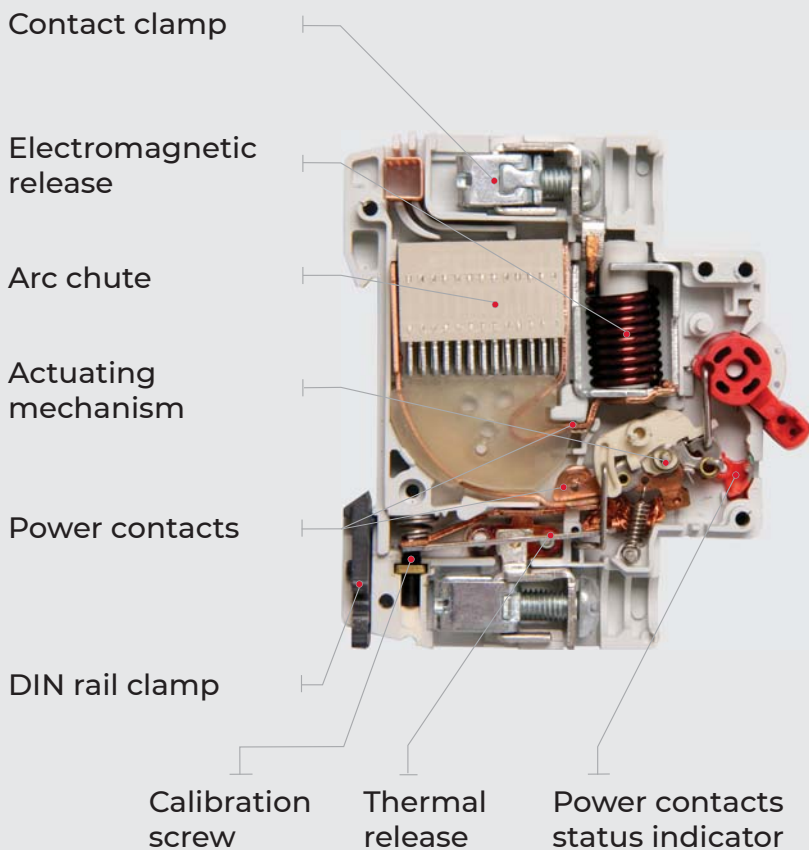
Number of poles

Rated current

Rated voltage and frequency

Time-current characteristics

## Construction features e.industrial.mcb.100



The breaker case is made of ABS-plastic, which is self-extinguishing.

The reinforced contact clamps of the breakers have a corrugated surface that improves the mechanical stability and reliability of the contact connection.

The increased arc chute, arcing lamellae of movable and fixed contacts, a double spark-gassing grate at the exit of the arc chute can effectively extinguish the arc when the short-circuit currents are turned off and overloaded.

Contact surfaces of movable and fixed contacts are made of silver-graphite alloy which reduces the transient resistance and heat losses and also increases the electrical life of the breaker.

The ergonomic design of the control handle prevents the fingers sliding when the breaker is On/Off.

The construction of modular circuit breakers with a switching power of 10 kA provides the use of circuit breakers of the Industrial series in networks with high levels of short-circuit currents: industrial networks, protection of output lines in main switchboards etc. The contact clamps allow double simultaneously wiring the wire and the connecting bus from the upper contacts.

All electrical connections inside the breaker are made of flexible copper wires which reduce the possibility of temperature-induced variations in short circuits.

The DIN rail clamp has two fixed positions, which greatly facilitates the breaker mounting /disassembling.

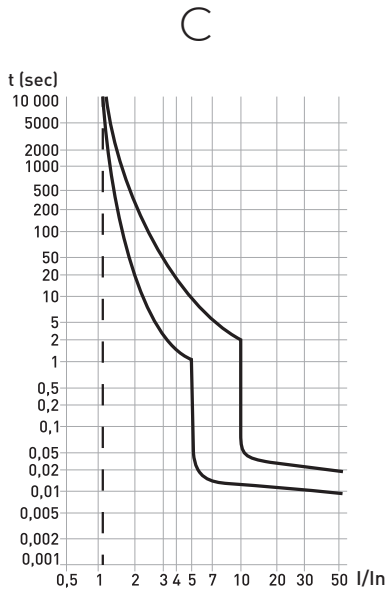
## Technical data

Parameter name	Value
Rated voltage $U_e$ , V	AC 230/400
Rated frequency, Hz	50
Rated DC voltage at one pole, V	48
Voltage of insulation $U_i$ , V	500
Pulse voltage (1,2/50) $U_{imp}$ , kV	6
Rated current $I_n$ , A	6, 10, 16, 25, 32, 40, 50, 63
Rated breaking capacity $I_{cn}$ , A	10 000
Number of poles	1, 2, 3, 4
Time-current characteristics	C, D
Electrical life, On/Off cycles, no less	8 000
Mechanical life, On/Off cycles, no less	20 000
Maximum cross section of connecting wire, mm <sup>2</sup>	25
Tightening torque of contact clamps, Nm	3
Protection degree	IP20
Weight (for 1 pole), g	115
Ambient temperature, °C	-25...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	80 %
Working position	vertical, horizontal, with a deviation of no more than 5°
Mounting	on DIN rail 35 mm

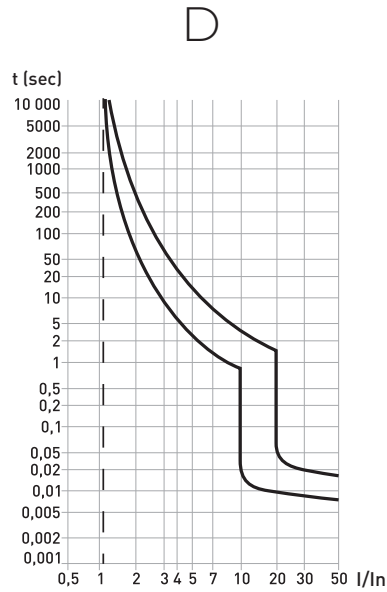
Rated current, A	Curve C		Curve D	
	Name	Order code	Name	Order code
1 pole				
6	e.industrial.mcb.100.1.C6	i0180001	—	—
10	e.industrial.mcb.100.1.C10	i0180002	—	—
16	e.industrial.mcb.100.1.C16	i0180003	—	—
20	e.industrial.mcb.100.1.C20	i0180004	—	—
25	e.industrial.mcb.100.1.C25	i0180005	—	—
32	e.industrial.mcb.100.1.C32	i0180006	—	—
40	e.industrial.mcb.100.1.C40	i0180007	—	—
50	e.industrial.mcb.100.1.C50	i0180008	—	—
63	e.industrial.mcb.100.1.C63	i0180009	—	—
2 poles				
6	e.industrial.mcb.100.2.C6	i0180010	—	—
10	e.industrial.mcb.100.2.C10	i0180011	—	—
16	e.industrial.mcb.100.2.C16	i0180012	—	—
20	e.industrial.mcb.100.2.C20	i0180013	—	—
25	e.industrial.mcb.100.2.C25	i0180014	—	—
32	e.industrial.mcb.100.2.C32	i0180015	—	—
40	e.industrial.mcb.100.2.C40	i0180016	—	—
50	e.industrial.mcb.100.2.C50	i0180017	—	—
63	e.industrial.mcb.100.2.C63	i0180018	—	—
3 poles				
6	e.industrial.mcb.100.3.C6	i0180019	e.industrial.mcb.100.3.D.6	i0200001
10	e.industrial.mcb.100.3.C10	i0180020	e.industrial.mcb.100.3.D.10	i0200002
16	e.industrial.mcb.100.3.C16	i0180021	e.industrial.mcb.100.3.D.16	i0200003
20	e.industrial.mcb.100.3.C20	i0180022	e.industrial.mcb.100.3.D.20	i0200004
25	e.industrial.mcb.100.3.C25	i0180023	e.industrial.mcb.100.3.D.25	i0200005
32	e.industrial.mcb.100.3.C32	i0180024	e.industrial.mcb.100.3.D.32	i0200006
40	e.industrial.mcb.100.3.C40	i0180025	e.industrial.mcb.100.3.D.40	i0200007
50	e.industrial.mcb.100.3.C50	i0180026	e.industrial.mcb.100.3.D.50	i0200008
63	e.industrial.mcb.100.3.C63	i0180027	e.industrial.mcb.100.3.D.63	i0200009
4 poles				
6	e.industrial.mcb.100.4.C6	i0180028	—	—
10	e.industrial.mcb.100.4.C10	i0180029	—	—
16	e.industrial.mcb.100.4.C16	i0180030	—	—
20	e.industrial.mcb.100.4.C20	i0180031	—	—
25	e.industrial.mcb.100.4.C25	i0180032	—	—
32	e.industrial.mcb.100.4.C32	i0180033	—	—
40	e.industrial.mcb.100.4.C40	i0180034	—	—
50	e.industrial.mcb.100.4.C50	i0180035	—	—
63	e.industrial.mcb.100.4.C63	i0180036	—	—



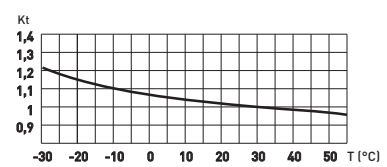
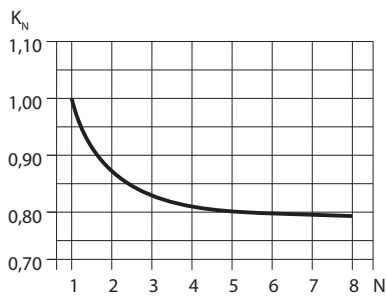
### Time-current characteristics



Dependence of mutual heating placed near the circuit breakers



Dependence of circuit breakers rated current on ambient temperature



The residual operating current for placed one near one circuit breaker depending on their quantity (N) and ambient temperature is determined by the formula:

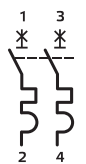
$$I = 1,13 \times I_n \times K_N \times K_t$$

where:  $I_n$  — rated current (factory setting of the thermal release for ambient temperature 30 °C);  
 $K_N$  — load factor depending on the number of poles;  
 $K_t$  — load factor depending on the ambient temperature.

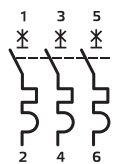
### Graphic notation



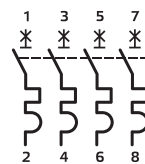
1 pole



2 poles

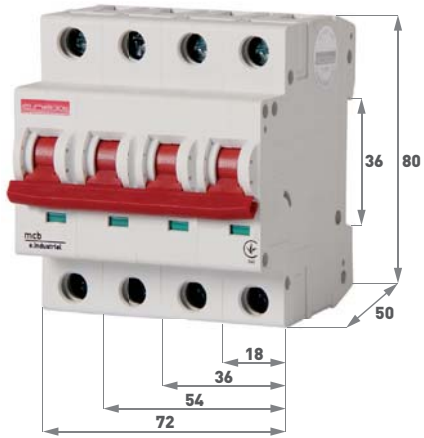


3 poles



4 poles

## Overall and installation dimensions



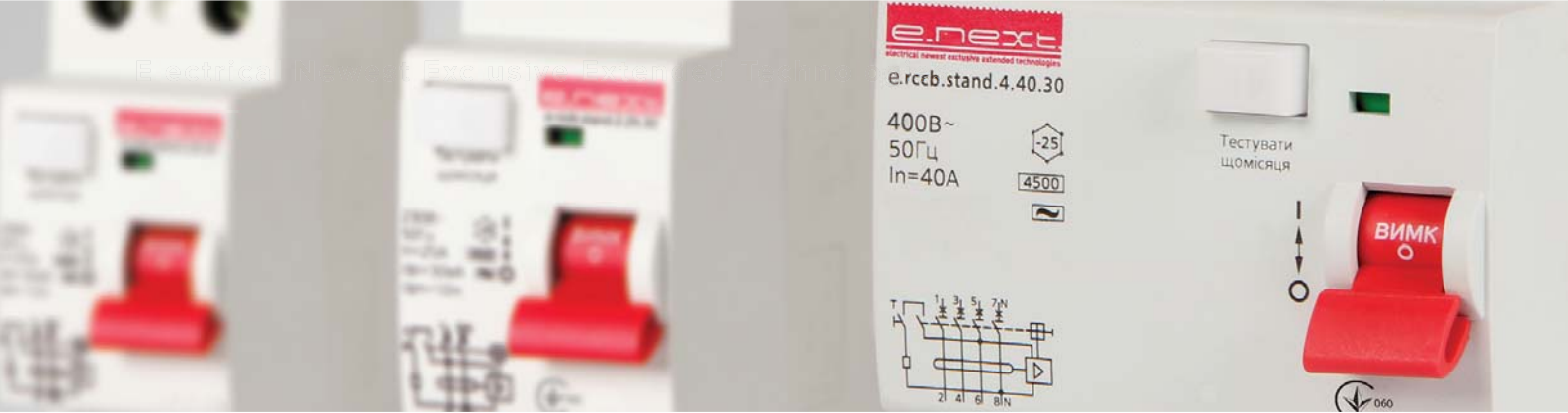
## Auxiliary devices



e.industrial.acs.znh.20  
Auxiliary contacts block

e.industrial.acs.za  
Shunt release

e.industrial.mcb.100

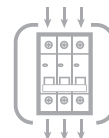


## Residual current circuit breakers e.rccb.stand

They are intended for protection against electric shock by direct or indirect contact with open conductive parts of electrical installations, as well as in contact with parts that may be exposed to voltage as a result of insulation damage and to protect against fires that arise as a result of violation of the insulation of wires, cables and conductive parts of electrical appliances



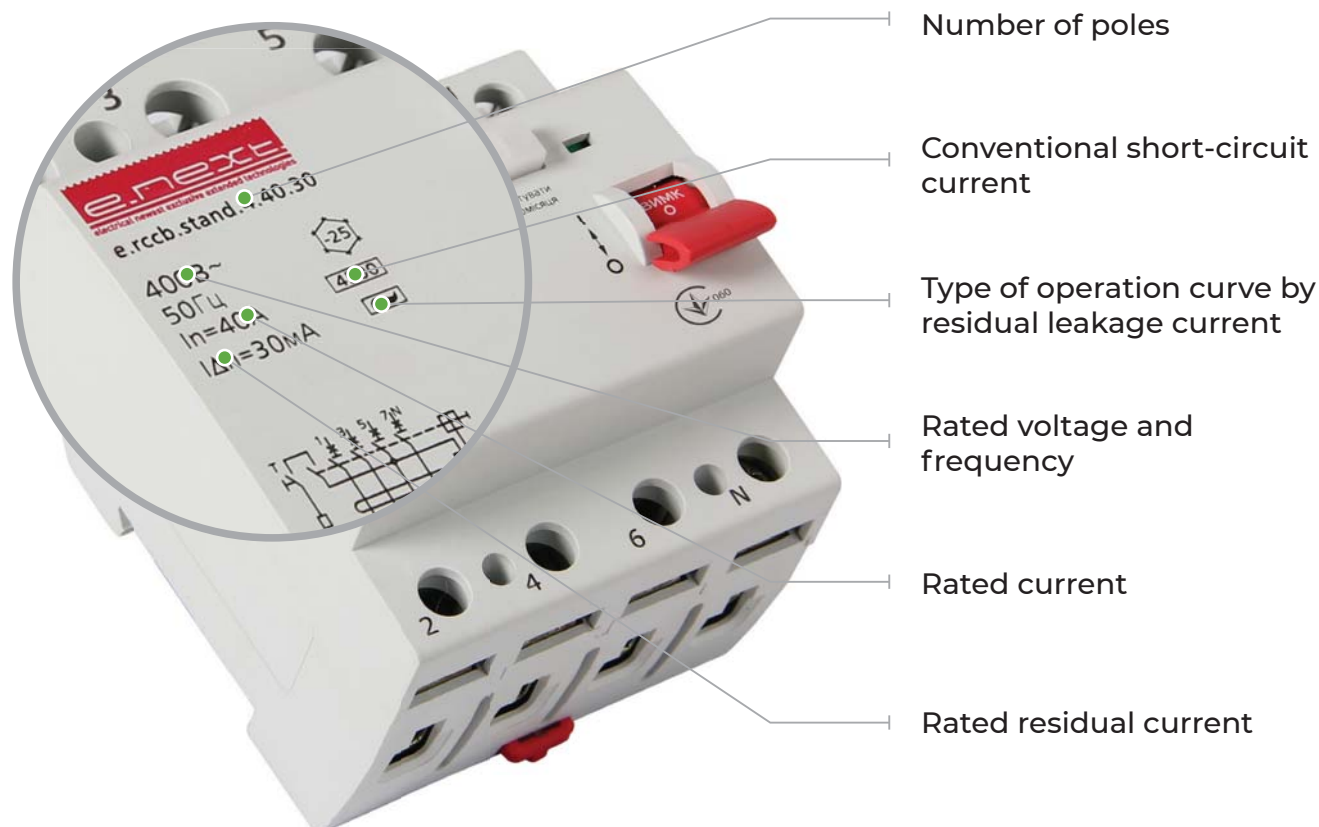
060 Corresponds to EN 61008.



### Symbolic structure

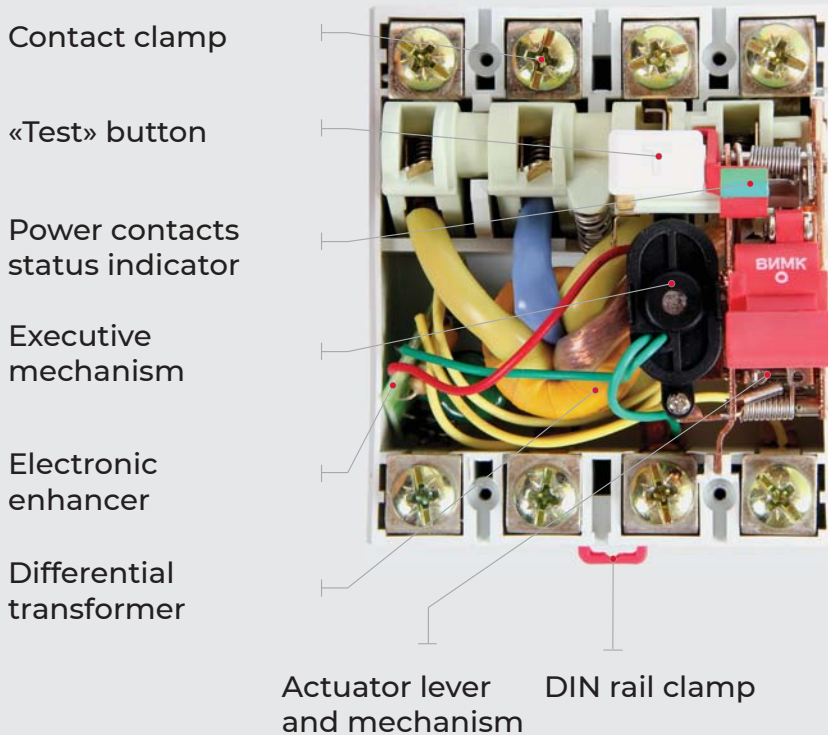
e.rccb.stand.X.X.X

- e. — trademark E.NEXT
- rccb — type
- stand — series
- X — number of poles
- X — rated current
- X — rated residual current





## Construction features e.rccb.stand



The breaker case is made of ABS-plastic, which is self-extinguishing.

The protection against leakage currents of the device is executed by an electronic differential module, which consists of a differential transformer, an electronic enhancer with a threshold device and an actuator relay. The electronic module is functionally dependent on the voltage of the supply, so it is not recommended to use the residual current circuit breakers of e.rccb.stand series as an input differential protection device or to provide a fully operational protection. It is necessary to install the voltage control devices in the device.

The contact surfaces of movable and fixed contacts are made of silver-graphite alloy which reduces the transient resistance and heat losses and also increases the electrical life of the breaker.

All electrical connections inside the breaker are made of flexible copper wires which reduce the possibility of temperature-induced variations in short circuits.

The arc chute are installed on each pole, including neutral one.

The DIN rail clamp has two fixed positions, which greatly facilitates the breaker mounting/disassembling.

## Technical data

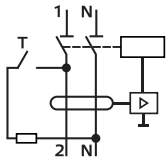
Parameter name	Value	
Number of poles	2	4
Rated voltage $U_e$ , V	AC 230	AC 400
Rated frequency, Hz	50	
Voltage of insulation $U_i$ , V	500	
Rated current $I_n$ , A	16, 25, 40, 63	
Rated residual operating current $I_{\Delta n}$ (A)	10, 30	
Rated residual non-operating current $I_{\Delta no}$	$0,5 \times I_{\Delta n}$	
Limited turn-off time at rated residual current, ms	40	
Rated conventional short-circuit current $I_{nc}$ , A	4 500	
Maximum residual breaking capacity $I_{\Delta m}$ , A	500	
Type of operation curve by residual leakage current	AC — only from variables sinusoidal leakage currents	
Electrical life, On/Off cycles, no less	4 000	
Mechanical life, On/Off cycles, no less	10 000	
Maximum cross section of connecting wire, mm <sup>2</sup>	25	
Tightening torque of contact clamps, Nm	3	
Protection degree	IP20	
Weight, g, no more	IP20	-25...+40
Ambient temperature, °C	-25...+40	
Altitude, m, no more	2 000	
Permissible relative humidity at 25 °C (without condensation), no more	80 %	
Working position	vertical, horizontal, with a deviation of no more than 5°	
Mounting	on DIN rail 35 mm	

# Electrical Newest Exclusive Extended Technologies

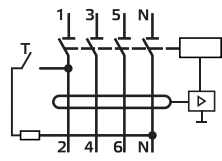


Rated current, A	2 poles		4 poles	
	Name	Order code	Name	Order code
10 mA				
16	e.rccb.stand.2.16.10	s034006	—	—
25	e.rccb.stand.2.25.10	s034007	e.rccb.stand.4.25.10	s034009
40	e.rccb.stand.2.40.10	s034008	e.rccb.stand.4.40.10	s034010
30 mA				
16	e.rccb.stand.2.16.30	s034011	—	—
25	e.rccb.stand.2.25.30	s034001	e.rccb.stand.4.25.30	s034003
40	e.rccb.stand.2.40.30	s034002	e.rccb.stand.4.40.30	s034004
63	—	—	e.rccb.stand.4.63.30	s034005

## Graphic notation

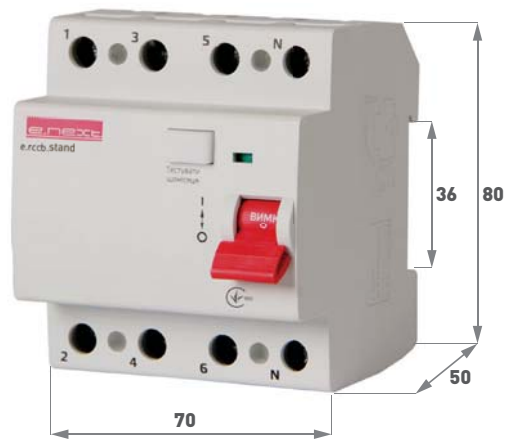
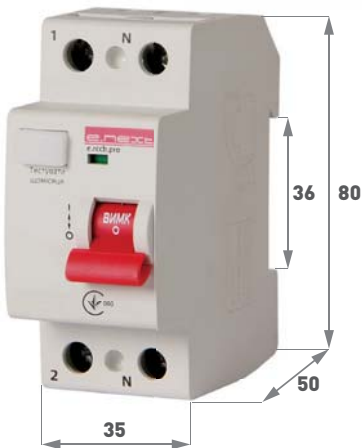


2 poles



4 poles

## Overall and installation dimensions



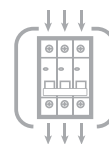


## Residual current circuit breakers e.rccb.pro

They are intended for protection against electric shock by direct or indirect contact with open conductive parts of electrical installations, as well as in contact with parts that may be exposed to voltage as a result of insulation damage and to protect against fires that arise as a result of violation of the insulation of wires, cables and conductive parts of electrical appliances.



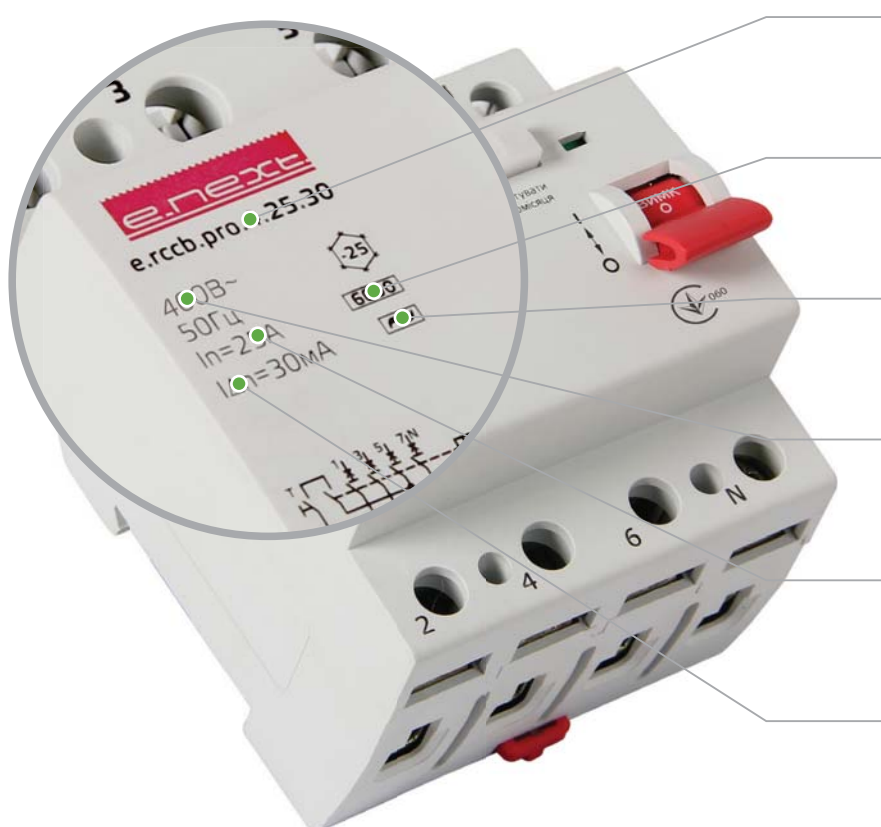
060 Corresponds to EN 61008.



### Symbolic structure

e.rccb.pro.X.X.X

- e. — trademark E.NEXT
- rccb — type
- pro — series
- X — number of poles
- X — rated current
- X — rated residual current



Number of poles

Conventional short-circuit current

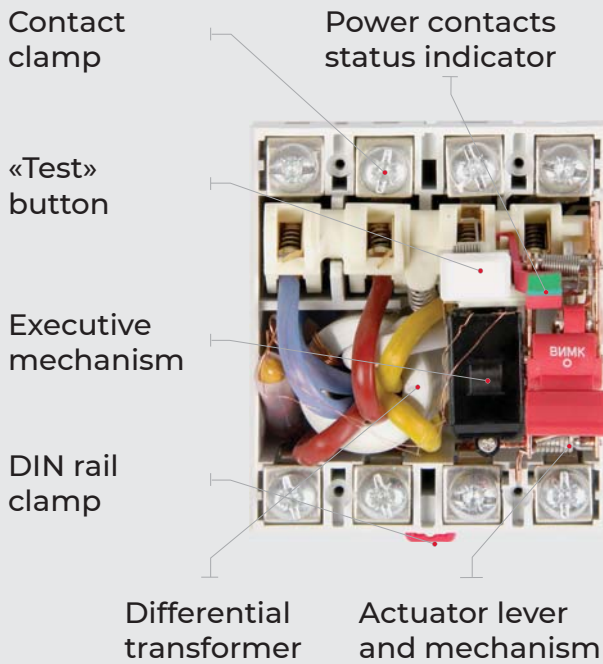
Type of operation curve by residual leakage current

Rated voltage and frequency

Rated current

Rated residual current

Construction features e.rccb.pro



The breaker case is made of ABS-plastic, which is self-extinguishing.

The protection against leakage currents is carried out by a differentiated module, which consists of various transformers and solenoids, which do not fall under high voltage supply. Measuring residual currents are stored in accordance with the working conditions of the neutral conductor and can be used as output devices of differential protection.

The contact surfaces of movable and fixed contacts are made of silver-graphite alloy which reduces the transient resistance and heat losses, and also increases the electrical life of the breaker.

All electrical connections inside the breaker are made of flexible copper wires which reduce the possibility of temperature-induced variations in short circuits.

The arc chutes are installed on each pole, including neutral one.

The DIN rail clamp has two fixed positions, which greatly facilitates the breaker mounting/disassembling.

The residual current circuit breakers of type AC react only to the sinusoidal component of the alternating leakage current. They are used to protect ordinary household loads: a system of heated floors, electric stove, etc. Most modern household appliances have pulsing power units or thyristor regulators (for example: washing machines with speed regulator, regulated light sources, televisions, computers, sources of uninterruptible power supply), in which the probability of a pulsating component of a direct current at the breakdown on the case is very high. At the same time, the RCCB of AC type will not respond to this leakage current. In order to protect a person, in this case, the RCCB of A type should be used, which react both to the sinusoidal alternating, and to the pulsating constant residual leakage currents.

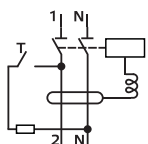
Technical data

Parameter name	Value	
Number of poles	2	4
Rated voltage Ue, V	AC 230	AC 400
Rated frequency, Hz	50	
Voltage of insulation Ui, V	500	
Pulse voltage (1,2/50) Uimp, kV	6	
Rated current In, A	16, 25, 40, 63, 80, 100	
Rated residual operating current IΔn (A)	10, 30, 100, 300	
Rated residual non-operating current IΔno	0,5×IΔn	
Limited turn-off time at rated residual current, ms	40	
Rated conventional short-circuit current Inc, A	6 000	
Maximum residual breaking capacity IΔm, A	500	
Type of operation curve by residual leakage current	A, AC	
Electrical life, On/Off cycles, no less	4 000	
Mechanical life, On/Off cycles, no less	10 000	
Maximum cross section of connecting wire, mm <sup>2</sup>	25	
Tightening torque of contact clamps, Nm	3	
Protection degree	IP20	
Weight, g, no more	170	280
Ambient temperature, °C	-25...+40	
Altitude, m, no more	2 000	
Permissible relative humidity at 25 °C (without condensation), no more	80 %	
Working position	vertical	
Mounting	on DIN rail 35 mm	

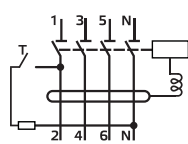
Rated current, A	2 poles		4 poles	
	Name	Order code	Name	Order code
10 mA				
16	e.rccb.pro.2.16.10	p003001	—	—
25	e.rccb.pro.2.25.10	p003002	—	—
30 mA				
16	e.rccb.pro.2.16.30	p003003	—	—
16	e.rccb.pro.A.2.16.30	p080001	—	—
25	e.rccb.pro.2.25.30	p003004	e.rccb.pro.4.25.30	p003018
25	e.rccb.pro.A.2.25.30	p080002	—	—
40	e.rccb.pro.2.40.30	p003005	e.rccb.pro.4.40.30	p003019
40	e.rccb.pro.A.2.40.30	p080003	e.rccb.pro.A.4.40.30	p080004
63	e.rccb.pro.2.63.30	p003006	e.rccb.pro.4.63.30	p003020
80	e.rccb.pro.2.80.30	p003007	e.rccb.pro.4.80.30	p003021
100	—	—	e.rccb.pro.4.100.30	p003032
100 mA				
25	e.rccb.pro.2.25.100	p003008	e.rccb.pro.4.25.100	p003022
40	e.rccb.pro.2.40.100	p003009	e.rccb.pro.4.40.100	p003023
63	e.rccb.pro.2.63.100	p003010	e.rccb.pro.4.63.100	p003024
80	e.rccb.pro.2.80.100	p003011	e.rccb.pro.4.80.100	p003025
100	e.rccb.pro.2.100.100	p003012	e.rccb.pro.4.100.100	p003026
300 mA				
25	e.rccb.pro.2.25.300	p003013	e.rccb.pro.4.25.300	p003027
40	e.rccb.pro.2.40.300	p003014	e.rccb.pro.4.40.300	p003028
63	e.rccb.pro.2.63.300	p003015	e.rccb.pro.4.63.300	p003029
80	e.rccb.pro.2.80.300	p003016	e.rccb.pro.4.80.300	p003030
100	e.rccb.pro.2.100.300	p003017	e.rccb.pro.4.100.300	p003031



## Graphic notation

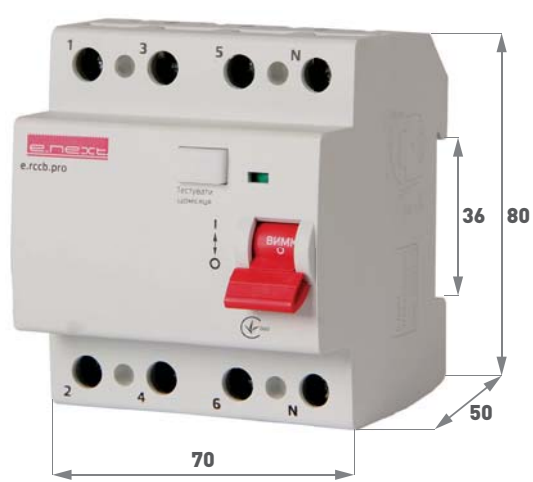
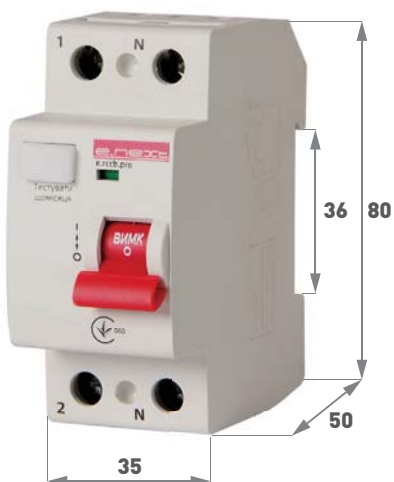


2 poles



4 poles

## Overall and installation dimensions



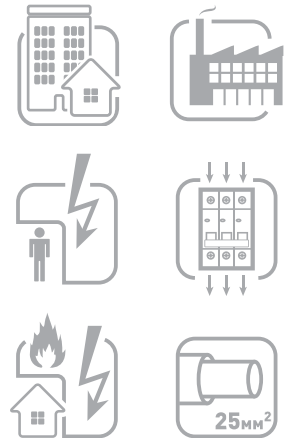


## Residual current circuit breakers e.industrial.rccb

They are intended for protection against electric shock by direct or indirect contact with open conductive parts of electrical installations, as well as in contact with parts that may be exposed to voltage as a result of insulation damage and to protect against fires that arise as a result of violation of the insulation of wires, cables and conductive parts of electrical appliances.



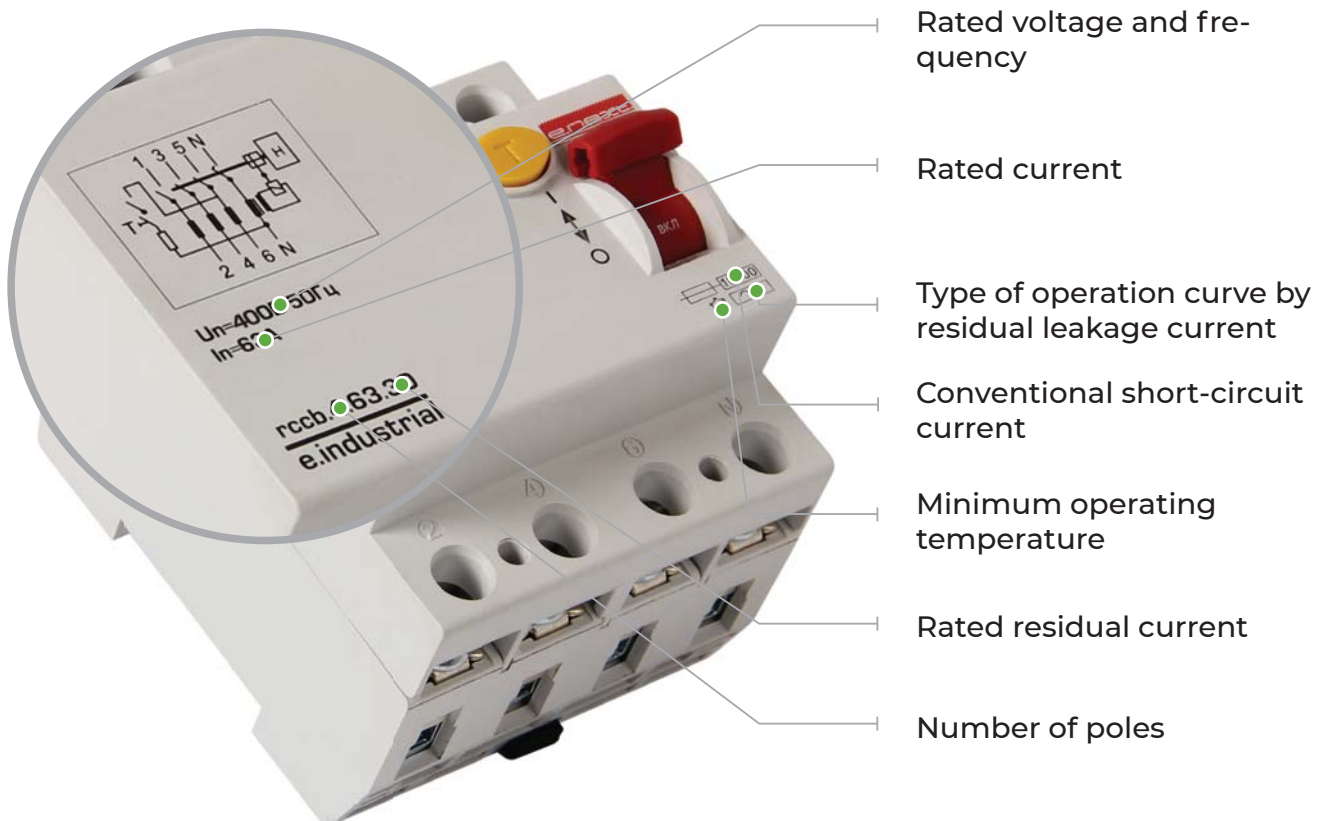
060 Corresponds to EN 61008.



### Symbolic structure

e.industrial.rccb.X.X.X

- e. — trademark E.NEXT
- industrial — series
- rccb — type
- X — number of poles
- X — rated current
- X — rated residual current



## Construction features e.industrial.rccb

Contact clamp

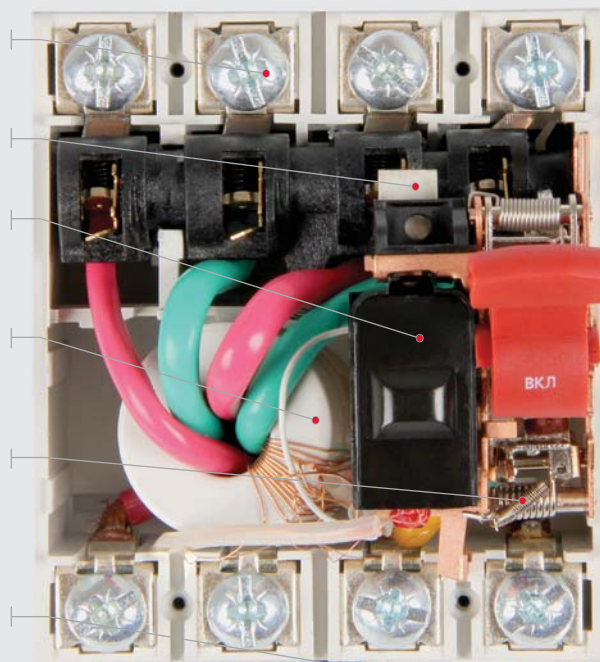
«Test» button

Executive mechanism

Differential transformer

Actuator lever and mechanism

DIN-rail clamp



The breaker case is made of ABS-plastic, which is self-extinguishing.

Protection against leakage currents is carried out by a differentiated module, which consists of various transformers and solenoids, which do not fall under high voltage supply.

Residual current circuit breakers e.industrial.rccb are functionally independent on the supply voltage, they remain operational when the working neutral conductor breakage and can be used as input differential protection devices.

Contact surfaces of movable and fixed contacts are made of silver-graphite alloy which reduces the transient resistance and heat losses, and also increases the electrical life of the breaker.

All electrical connections inside the breaker are made of flexible copper wires which reduce the possibility of temperature-induced variations in short circuits.

The DIN rail clamp has two fixed positions, which greatly facilitates the breaker mounting/disassembling.

## Technical data

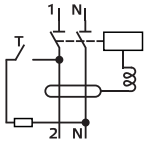
Parameter name	Value	
Number of poles	2	4
Rated voltage $U_e$ , V	AC 230	AC 400
Rated frequency, Hz	50	
Voltage of insulation $U_i$ , V	500	
Pulse voltage (1,2/50) $U_{imp}$ , kV	6	
Rated current $I_n$ , A	16, 25, 40, 63	
Rated residual operating current $I_{\Delta n}$ (A)	30, 100, 300	
Rated residual non-operating current $I_{\Delta no}$	0,5× $I_{\Delta n}$	
Limited turn-off time at rated residual current, ms	40	
Rated conventional current $I_{nc}$ , A	10 000	
Maximum residual breaking capacity $I_{\Delta m}$ , A	500	
Type of operation curve by residual leakage current	AC — only from variables sinusoidal leakage currents	
Electrical life, On/Off cycles, no less	4 000	
Mechanical life, On/Off cycles, no less	10 000	
Maximum cross section of connecting wire, mm <sup>2</sup>	25	
Tightening torque of contact clamps, Nm	3	
Protection degree	IP20	
Weight, g, no more	170	280
Ambient temperature, °C	-25...+40	
Altitude, m, no more	2 000	
Permissible relative humidity at 25 °C (without condensation), no more	80 %	
Working position	vertical, horizontal, with a deviation of no more than 5°	
Mounting	on DIN rail 35 mm	

# Electrical Newest Exclusive Extended Technologies

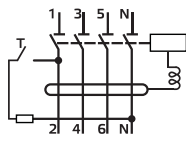


Rated current, A	2 poles		4 poles	
	Name	Order code	Name	Order code
30 mA				
16	e.industrial.rccb.2.16.30	i0220010	—	—
25	e.industrial.rccb.2.25.30	i0220001	e.industrial.rccb.4.25.30	i0220004
40	e.industrial.rccb.2.40.30	i0220002	—	—
63	e.industrial.rccb.2.63.30	i0220003	e.industrial.rccb.4.63.30	i0220007
100 mA				
25	—	—	e.industrial.rccb.4.25.100	i0220005
40	—	—	e.industrial.rccb.4.40.100	i0220009
63	—	—	e.industrial.rccb.4.63.100	i0220008
300 mA				
40	—	—	e.industrial.rccb.4.40.300	i0220011
63	—	—	e.industrial.rccb.4.63.300	i0220012

## Graphic notation

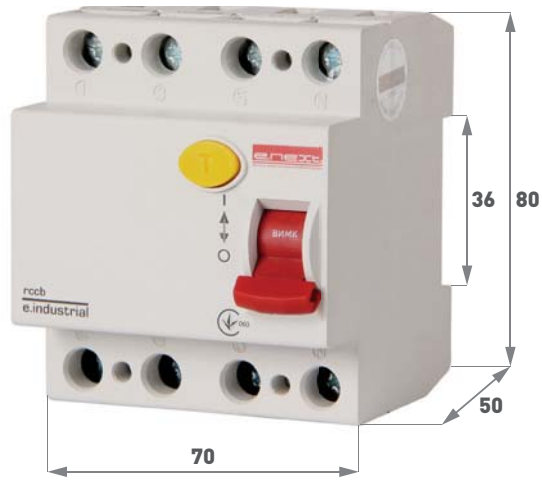
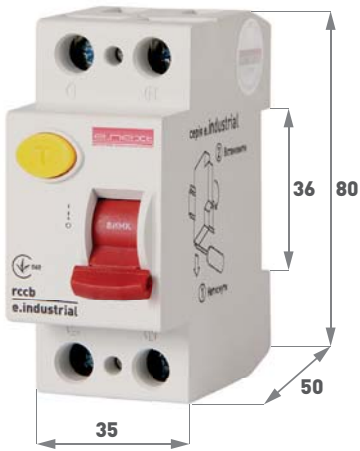


2 poles



4 poles

## Overall and installation dimensions





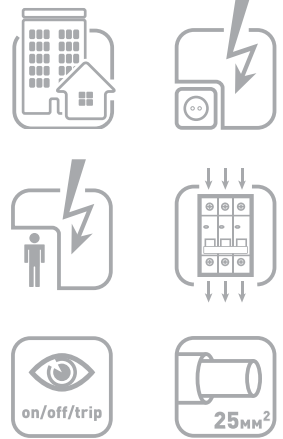


## Residual current circuit breakers with overcurrent protection e.elcb.stand

It is intended for:

1 - protection against electric shock by direct or indirect contact with open conducting parts of electrical installations, as well as by contacting with parts that may be exposed to voltage as a result of insulation damage and to provide protection against fires resulting from damage to insulation of wires, cables and current conductive parts of electrical appliances;

2 - protection of electric circuits of low voltage against currents of overload and short circuit and for infrequent operational commutations of electric circuits.

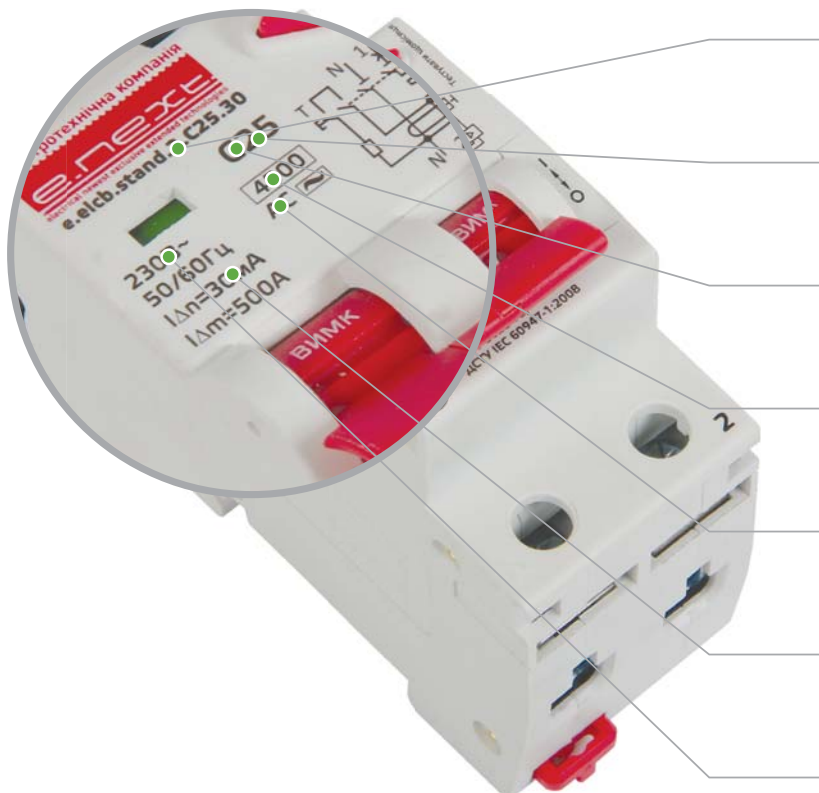


060 Corresponds to EN 61009.

### Symbolic structure

e.elcb.stand.X.XX.X

- e. — trademark E.NEXT
- elcb — type
- stand — series
- X — number of poles
- X — time-current characteristics
- X — rated current
- X — rated residual current



Number of poles

Rated current

Time-current characteristics

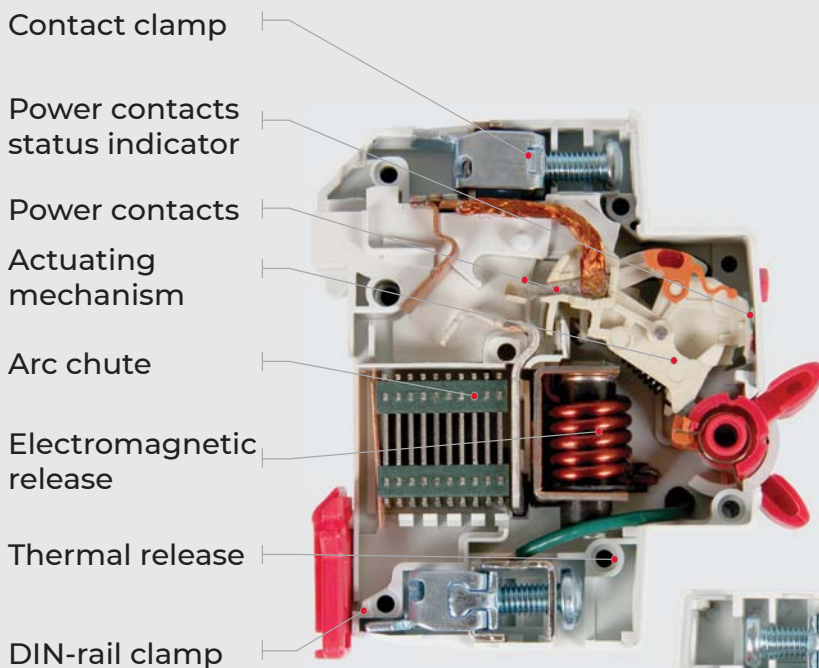
Rated breaking capacity

Type of operation curve by residual leakage current

Rated residual current

Rated voltage and frequency

## Construction features e.elcb.stand



The breaker case is made of ABS-plastic, which is self-extinguishing.

The device takes on the task of the circuit breaker and safety turn-off device. The device is protected by overvoltages by a combined disassembly: thermal and electromagnetic, installed at the phase pole. The device is protected against leakage currents by an electronic differential module, which consists of a differential transformer, an electronic enhancer with a threshold device and an actuator relay. The electronic module functionally depends on the voltage of the supply and does not maintain efficiency at breakage of the working neutral conductor.

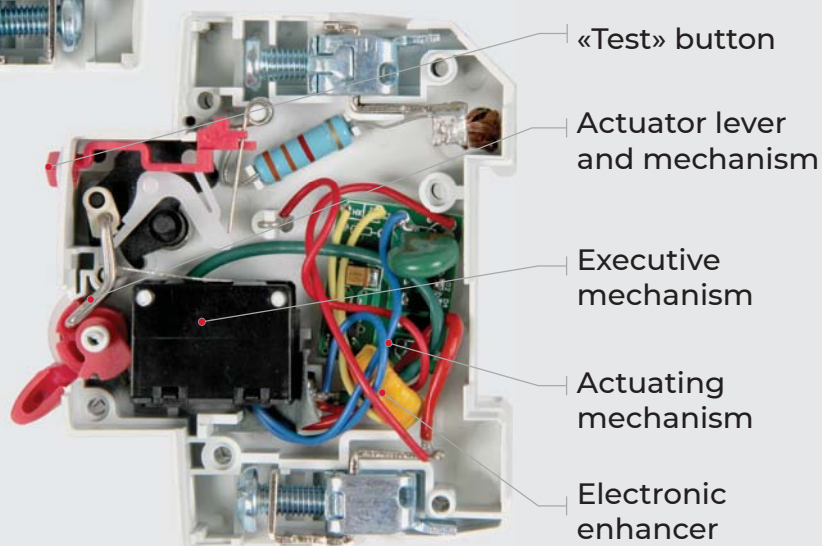
The contact surfaces of movable and fixed contacts are made of silver-graphite alloy, which reduces the transient resistance

and heat losses, and also increases the electrical life of the breaker.

All electrical connections inside the breaker are made of flexible copper wires which reduce the possibility of temperature-induced variations in short circuits.

The DIN rail clamp has two fixed positions, which greatly facilitates the breaker mounting/disassembling.

The residual current circuit breakers with overcurrent protection e.elcb.stand series have a separate handle for the unit, the position of which parts can determine the nature of the emergency situation, which caused the device to be turned off: in case of overvoltage operation, only one half of the handle will be turned off, when triggered by currents leakage will be turned off both halves of the handle.



## Technical data

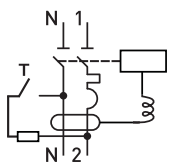
Parameter name	Value
Number of poles	AC 230
Rated voltage $U_e$ , V	50
Rated frequency, Hz	500
Voltage of insulation $U_i$ , V	4
Pulse voltage (1,2/50) $U_{imp}$ , kV	10, 16, 25, 32
Rated current $I_n$ , A	30
Rated residual operating current $I_{\Delta n}$ (A)	30, 100, 300
Rated residual non-operating current $I_{\Delta no}$	$0,5 \times I_{\Delta n}$
Limited turn-off time at rated residual current, ms	40
Rated breaking capacity $I_{cn}$ , A	4 500
Maximum residual breaking capacity $I_{\Delta m}$ , A	500
Time-current characteristics	C
Type of operation curve by residual leakage current	AC — only from variables sinusoidal leakage currents

Parameter name	Value
Electrical life, On/Off cycles, no less	4 000
Mechanical life, On/Off cycles, no less	10 000
Maximum cross section of connecting wire, mm <sup>2</sup>	25
Tightening torque of contact clamps, Nm	3
Protection degree	IP20
Weight, g, no more	180
Ambient temperature, °C	-25...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	80 %
Working position	vertical, horizontal, with a deviation of no more than 5°
Mounting	on DIN rail 35 mm



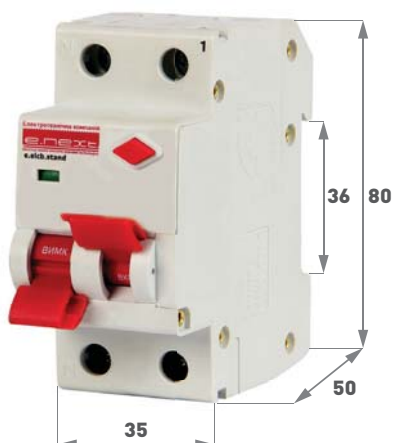
Rated current, A	Curve C	
	Name	Order code
	30 mA	
10	e.elcb.stand.2.C10.30	p0620005
16	e.elcb.stand.2.C16.30	p0620006
25	e.elcb.stand.2.C25.30	p0620007
32	e.elcb.stand.2.C32.30	p0620008

## Graphic notation

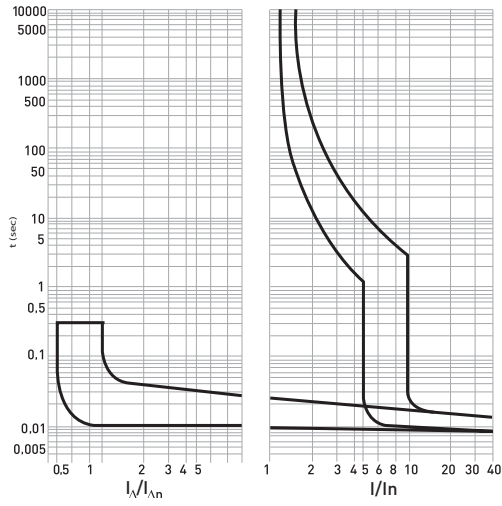


2 poles

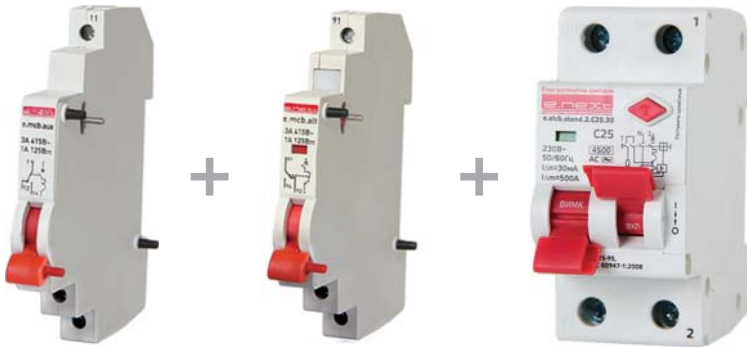
## Overall and installation dimensions



### Time-current characteristics



### Auxiliary devices



e.mcb.aux  
Auxiliary contacts

e.mcb.alt  
Alarm contacts

e.elcb.stand



## Residual current circuit breakers with overcurrent protection e.elcb.pro

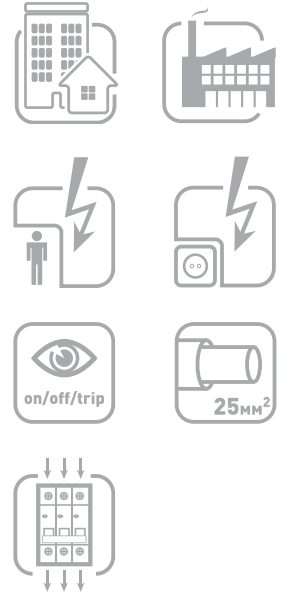
They are intended for:

1 - protection against electric shock by direct or indirect contact with open conducting parts of electrical installations, as well as by contacting with parts that may be exposed to voltage as a result of insulation damage and to provide protection against fires resulting from damage to insulation of wires, cables and current conductive parts of electrical appliances;

2 - protection of electric circuits of low voltage against currents of overload and short circuit and for infrequent operational commutations of electric circuits.



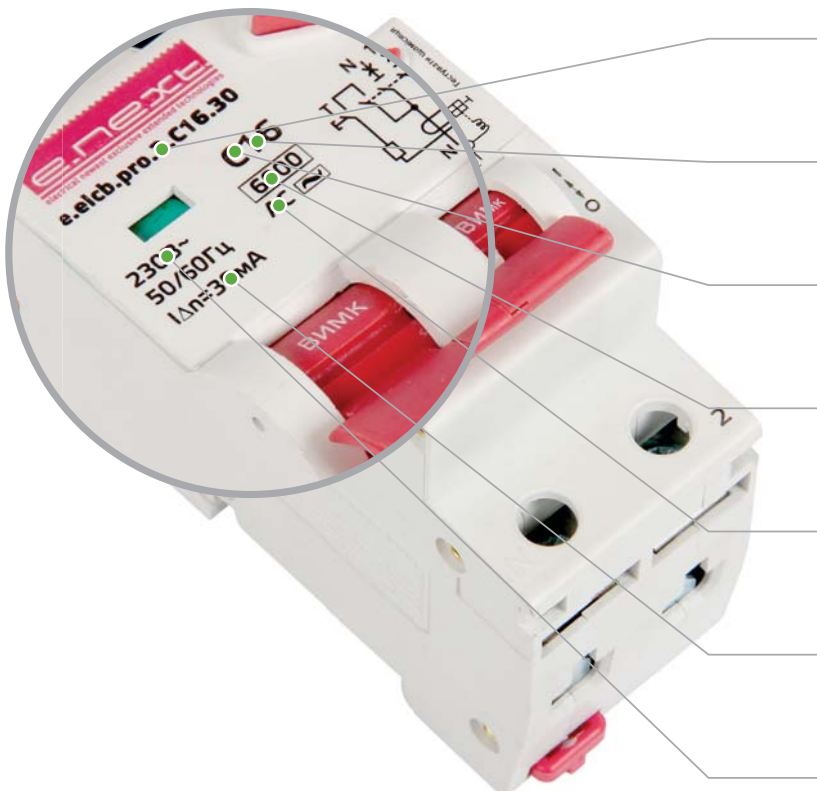
060 Corresponds to EN 61009.



### Symbolic structure

e.elcb.pro.X.XX.X

- e. — trademark E.NEXT
- elcb — type
- pro — series
- X — number of poles
- X — time-current characteristics
- X — rated current
- X — rated residual current



Number of poles

Rated current

Time-current characteristics

Rated breaking capacity

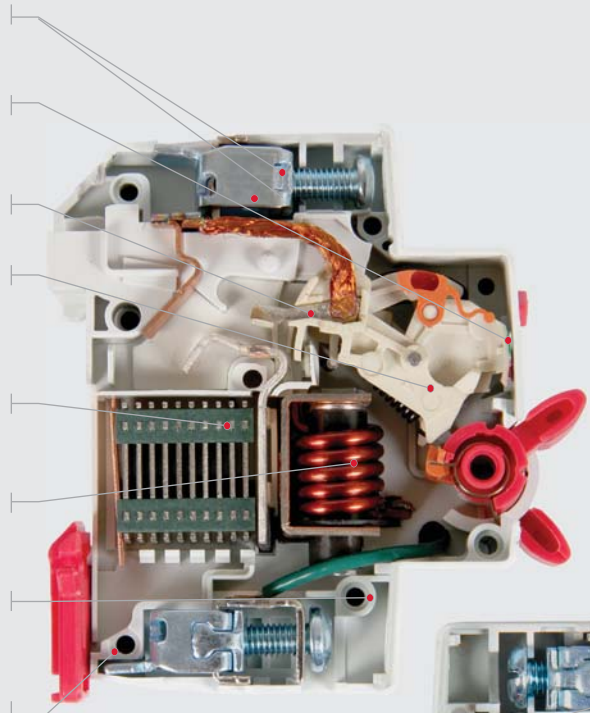
Type of operation curve by residual leakage current

Rated residual current

Rated voltage and frequency

**Construction features e.elcb.pro**

- Contact clamp
- Power contacts status indicator
- Power contacts
- Actuating mechanism
- Arc chute
- Electromagnetic release
- Thermal release
- DIN-rail clamp



and also increases the electrical life of the breaker.

All electrical connections inside the residual current circuit breakers with overcurrent protection are made of flexible copper wires which reduce the possibility of temperature-induced variations in short circuits and frequent repeated On/Off cycles of switching.

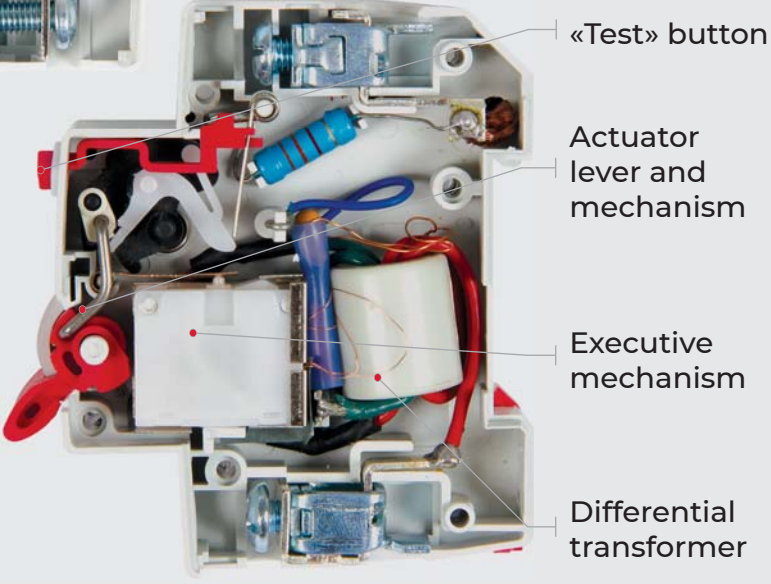
The DIN rail clamp has two fixed positions, which greatly facilitates the breaker mounting/disassembling.

The residual current circuit breakers with overcurrent protection e.elcb.pro series have a separate actuator handle, the parts position can determine the nature of the emergency situation, which caused the device to be turned off: in case of overvoltage operation, only one half of the handle will be turned off, when triggered by currents leakage - both halves of the handle.

The breaker case is made of ABS-plastic, which is self-extinguishing.

The device takes on the task of the circuit breaker and safety turn-off device. The breaker is protected by overvoltages by a combined disassembly: thermal and electromagnetic, installed at the phase pole. The device is protected against leakage currents by a differential module, which consists of a differential transformer and an actuating solenoid of direct action. The breakers e.elcb.pro functionally do not depend on the size of the supply voltage, they remain operational at breakage of the operating neutral conductor.

The contact surfaces of movable and fixed contacts are made of silver-graphite alloy which reduces the transient resistance and heat losses,



- «Test» button
- Actuator lever and mechanism
- Executive mechanism
- Differential transformer

**Technical data**

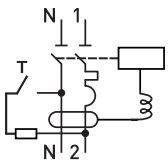
Parameter name	Value
Rated voltage Ue, V	AC 230
Rated frequency, Hz	50
Voltage of insulation Ui, V	500
Pulse voltage (1,2/50) Uimp, kV	4
Rated current In, A	10, 16, 25, 32
Rated residual operating current IΔn(A)	30
Rated residual non operating current IΔno	0,5×IΔn
Limited turn-off time at rated residual current, ms	40
Rated conventional current Inc, A	6 000
Maximum residual breaking capacity IΔm, A	500
Time-current characteristics	C

Parameter name	Value
Type of operation curve by residual leakage current	AC — only from variables sinusoidal leakage currents
Electrical life, On/Off cycles, no less	4 000
Mechanical life, On/Off cycles, no less	10 000
Maximum cross section of connecting wire, mm <sup>2</sup>	25
Tightening torque of contact clamps, Nm	3
Protection degree	IP20
Weight, g, no more	180
Ambient temperature, °C	-25...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	80 %
Working position	vertical, horizontal, with a deviation of no more than 5°
Mounting	on DIN rail 35 mm



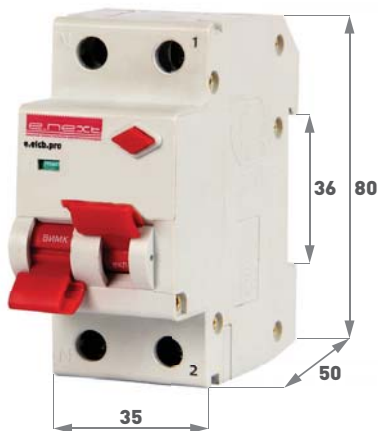
Rated current, A	Curve C	
	Name	Order code
	30 mA	
10	e.elcb.pro.2.C10.30	p0620001
16	e.elcb.pro.2.C16.30	p0620002
25	e.elcb.pro.2.C25.30	p0620003
32	e.elcb.pro.2.C32.30	p0620004

## Graphic notation

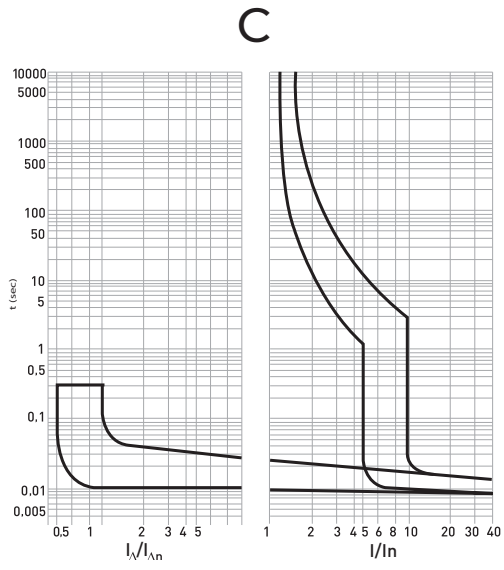


2 poles

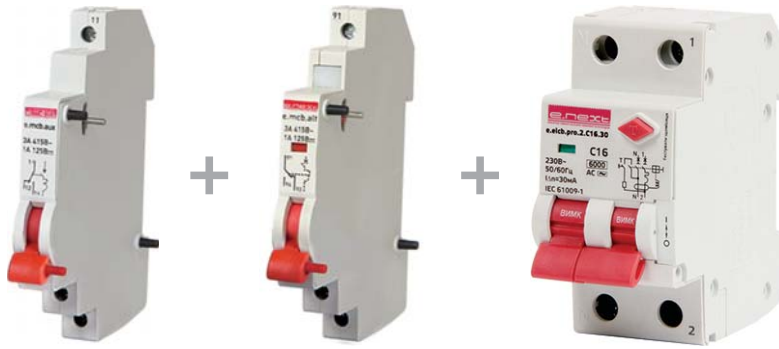
## Overall and installation dimensions



## Time-current characteristics



## Auxiliary devices



**e.mcb.aux**  
Auxiliary contacts

**e.mcb.alt**  
Alarm contacts

**e.elcb.pro**





## Residual current circuit breakers with overcurrent protection e.rcbo, A type

They are intended for:

1 - protection against electric shock by direct or indirect contact with open conducting parts of electrical installations, as well as by contacting with parts that may be exposed to voltage as a result of insulation damage and to provide protection against fires resulting from damage to insulation of wires, cables and current conductive parts of electrical appliances;

2 - protection of electric circuits of low voltage against currents of overload and short circuit and for infrequent operational commutations of electric circuits.



060 Corresponds to EN 61009.



### Technical data

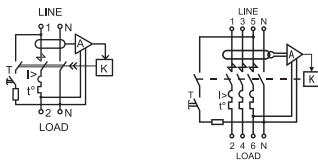
Parameter name	Value	
	e.rcbo.pro.2	e.rcbo.pro.4
Rated voltage Ue, V	AC 230	AC 400
Rated frequency, Hz	50	
Number of poles	1p+N	3+N
Pulse voltage (1,2/50) Uimp, kV	4	
Rated current In, A	6; 10; 16; 20; 25; 32; 40; 50; 63	6; 10; 16; 20; 25; 32; 40; 50; 63
Rated residual operating current IΔn (A)	0,01; 0,03; 0,1; 0,3	
Rated residual non operating current IΔno	0,5×IΔn	
Turn-off time, ms	40	
Rated breaking capacity Inc, kA	6	
Rated residual breaking capacity IΔm, A	500	
Time-current characteristics	B, C	
Type of operation curve by residual leakage current	A	
Electrical life, On/Off cycles, no less	6 000	
Mechanical life, On/Off cycles, no less	15 000	10 000
Maximum cross section of connecting wire, mm <sup>2</sup>	25	
Tightening torque of contact clamps, Nm	3	
Protection degree	IP20	
Weight, g, no more	0,25	0,4
Ambient temperature, °C	-25...+40	
Altitude, m, no more	2 000	
Permissible relative humidity at 25 °C (without condensation), no more	80 %	
Working position	vertical, horizontal, with a deviation of no more than 5°	
Mounting	on DIN rail 35 mm	

# Electrical Newest Exclusive Extended Technologies

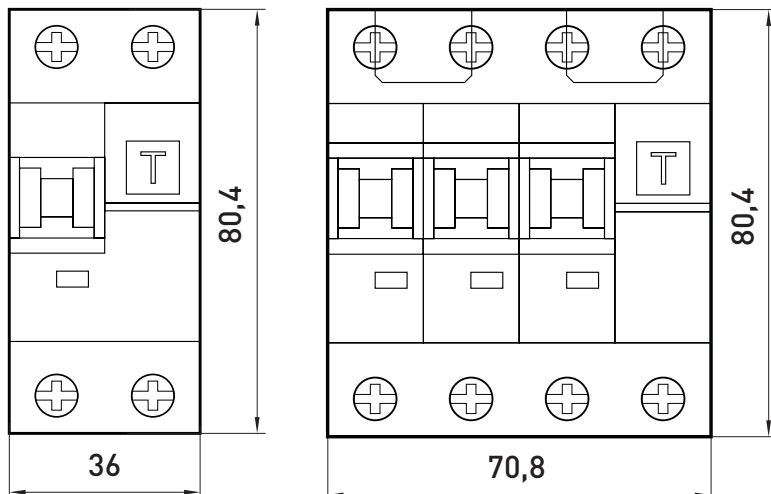


Rated current, A	Rated residual current, mA	Name	Number of poles	Order code
6	30	e.rcbo.pro.2.B06.30	1p+N	p0720004
10	30	e.rcbo.pro.2.B10.30	1p+N	p0720005
16	30	e.rcbo.pro.2.B16.30	1p+N	p0720006
6	10	e.rcbo.pro.2.C06.10	1p+N	p0720001
6	30	e.rcbo.pro.2.C06.30	1p+N	p0720007
10	10	e.rcbo.pro.2.C10.10	1p+N	p0720002
10	30	e.rcbo.pro.2.C10.30	1p+N	p0720008
16	10	e.rcbo.pro.2.C16.10	1p+N	p0720003
16	30	e.rcbo.pro.2.C16.30	1p+N	p0720009
25	30	e.rcbo.pro.2.C25.30	1p+N	p0720010
32	30	e.rcbo.pro.2.C32.30	1p+N	p0720011
40	30	e.rcbo.pro.2.C40.30	1p+N	p0720012
50	30	e.rcbo.pro.2.C50.30	1p+N	p0720013
63	30	e.rcbo.pro.2.C63.30	1p+N	p0720014
16	100	e.rcbo.pro.4.C16.100	3p+N	p0720021
16	30	e.rcbo.pro.4.C16.30	3p+N	p0720015
25	100	e.rcbo.pro.4.C25.100	3p+N	p0720022
25	30	e.rcbo.pro.4.C25.30	3p+N	p0720016
32	100	e.rcbo.pro.4.C32.100	3p+N	p0720023
32	30	e.rcbo.pro.4.C32.30	3p+N	p0720017
40	100	e.rcbo.pro.4.C40.100	3p+N	p0720024
40	30	e.rcbo.pro.4.C40.30	3p+N	p0720018
50	100	e.rcbo.pro.4.C50.100	3p+N	p0720025
50	30	e.rcbo.pro.4.C50.30	3p+N	p0720019
63	100	e.rcbo.pro.4.C63.100	3p+N	p0720026
63	30	e.rcbo.pro.4.C63.30	3p+N	p0720020

## Graphic notation

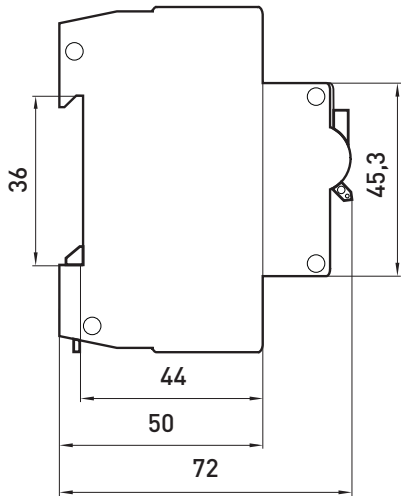


## Overall and installation dimensions

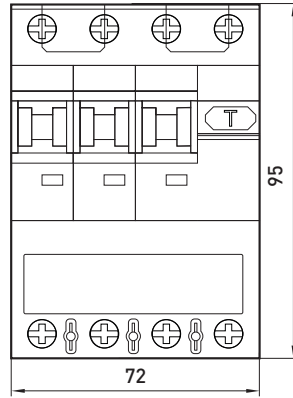


e.rcbo.pro.2, 1+N

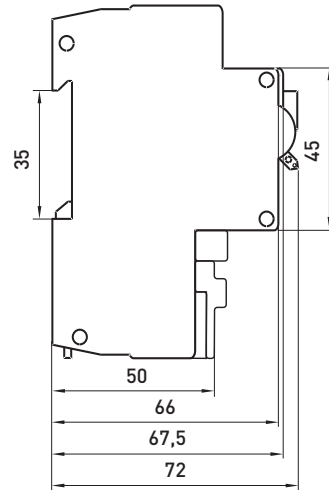
e.rcbo.pro.4, 3+N ≤ 32 A



\*same dimensions on the side for e.rcbo.pro.2 and e.rcbo.pro.4



e.rcbo.pro.4, 3+N – 40, 50, 63 A





## Residual current circuit breakers with overcurrent protection e.industrial.elcb

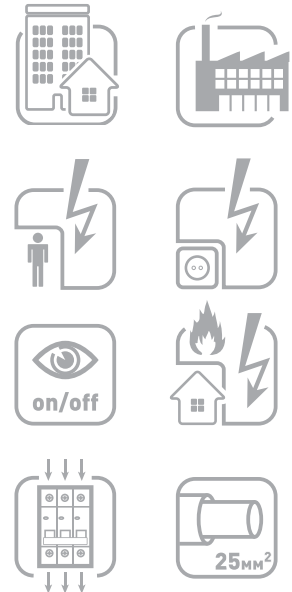
They are intended for:

1 - protection against electric shock by direct or indirect contact with open conducting parts of electrical installations, as well as by contacting with parts that may be exposed to voltage as a result of insulation damage and to provide protection against fires resulting from damage to insulation of wires, cables and current conductive parts of electrical appliances;

2 - protection of electric circuits of low voltage against currents of overload and short circuit and for infrequent operational commutations of electric circuits.



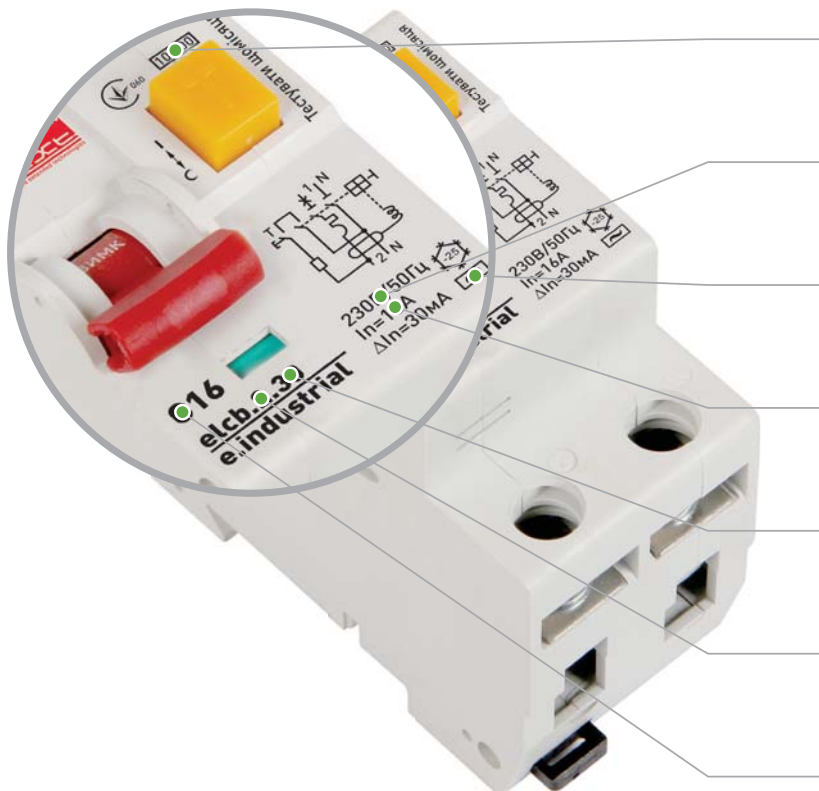
060 Corresponds to EN 61009.



### Symbolic structure

e.industrial.elcb.X.XX.X

- e. — trademark E.NEXT
- industrial — series
- elcb — type
- X — number of poles
- X — time-current characteristics
- X — rated current
- X — rated residual current



Rated breaking capacity

Rated voltage and frequency

Type of operating curve by residual leakage current

Rated current

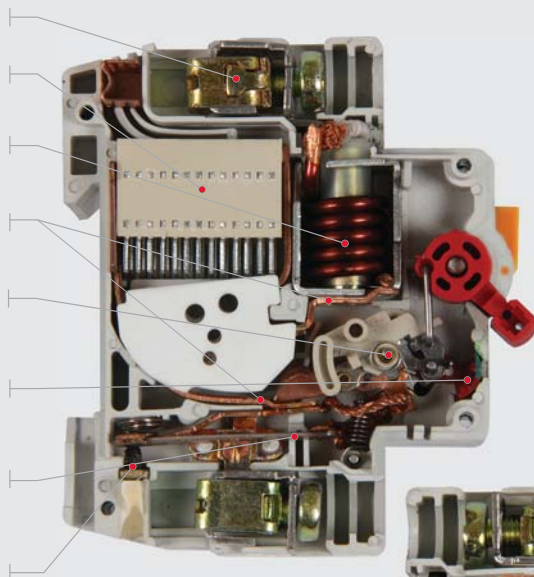
Number of poles

Rated short-circuit residual current

Time-current characteristics

## Construction features e.industrial.elcb

- Contact clamp
- Arc chute
- Electromagnetic release
- Power contacts
- Actuating mechanism
- Power contacts status indicator
- Thermal release
- Calibration screw



contacts are made of silver-graphite alloy which reduces the transient resistance and heat losses, and also increases the electrical life of the breaker.

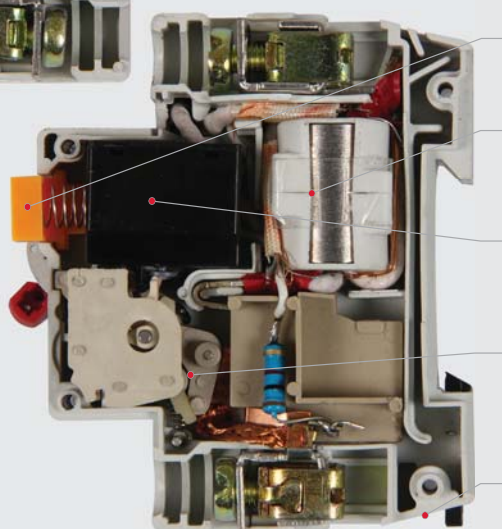
All electrical connections inside the residual current circuit breakers with overcurrent protection are made of flexible copper wires which reduce the possibility of temperature-induced variations in short circuits and frequent repeated On/Off cycles of switching.

The DIN rail clamp has two fixed positions, which greatly facilitates the breaker mounting/disassembling.

The breaker case is made of ABS-plastic, which is self-extinguishing.

The device takes on the task of the circuit breaker and safety turn-off device. The breaker is protected by overvoltages by a combined disassembly: thermal and electromagnetic, installed at the phase pole. The device is protected against leakage currents by a differential module which consists of a differential transformer and an actuating solenoid of direct action. The breakers e.industrial.elcb remain operational at breakage of the operating neutral conductor.

The contact surfaces of movable and fixed



«Test» button

Differential transformer

Executive mechanism

Actuator lever and mechanism

DIN rail clamp

## Technical data

Parameter name	Value
Rated voltage $U_e$ , V	AC 230
Rated frequency, Hz	50
Voltage of insulation $U_i$ , V	500
Pulse voltage (1,2/50) $U_{imp}$ , kV	4
Rated current $I_n$ , A	6; 10; 16; 20; 25; 32
Rated residual current $I_{\Delta n}$ , mA	30; 300
Turn-off time, (less) ms	40
Number of poles	1p+N
Rated breaking capacity $I_{cn}$ , A	10 000
Time-current characteristics	B, C
Type of operation curve by residual leakage current	AC — only from variables sinusoidal leakage currents
Electrical life, On/Off cycles, no less	4 000
Mechanical life, On/Off cycles, no less	10 000
Maximum cross section of connecting wire, mm <sup>2</sup>	25
Tightening torque of contact clamps, Nm	3
Protection degree	IP20

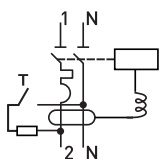
## Electrical Newest Exclusive Extended Technologies

Parameter name	Value
Weight, g, no more	180
Ambient temperature, °C	-25...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	80 %
Working position	vertical, horizontal, with a deviation of no more than 5°
Mounting	on DIN rail 35 mm

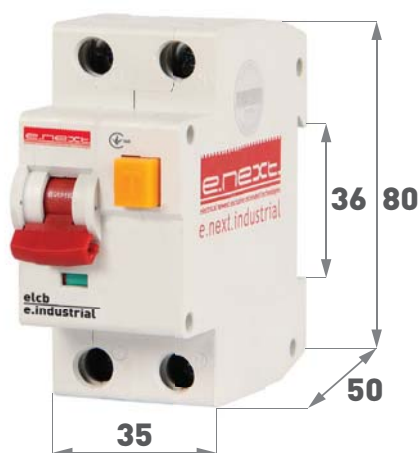


Rated current, A	Curve B	
	Name	Order code
	30 mA	
20	e.industrial.elcb.2.B20.30	i0230013
25	e.industrial.elcb.2.B25.30	i0230014
	Curve C	
	30 mA	
6	e.industrial.elcb.2.C06.30	i0230001
10	e.industrial.elcb.2.C10.30	i0230002
16	e.industrial.elcb.2.C16.30	i0230003
20	e.industrial.elcb.2.C20.30	i0230004
25	e.industrial.elcb.2.C25.30	i0230005
32	e.industrial.elcb.2.C32.30	i0230006
	300 mA	
6	e.industrial.elcb.2.C06.300	i0230007
10	e.industrial.elcb.2.C10.300	i0230008
16	e.industrial.elcb.2.C16.300	i0230009
20	e.industrial.elcb.2.C20.300	i0230010
25	e.industrial.elcb.2.C25.300	i0230011
32	e.industrial.elcb.2.C32.300	i0230012

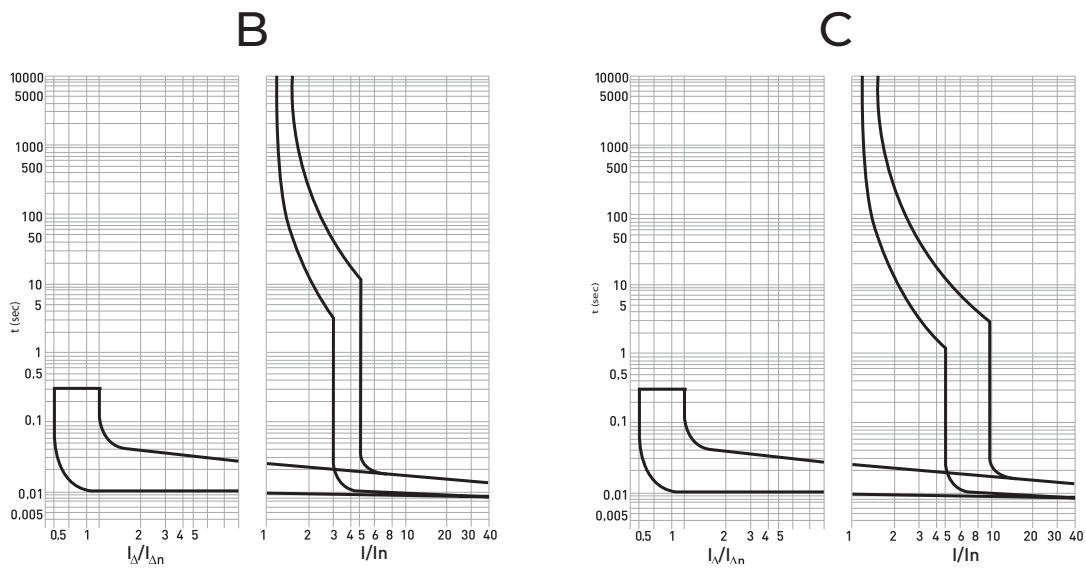
### Graphic notation



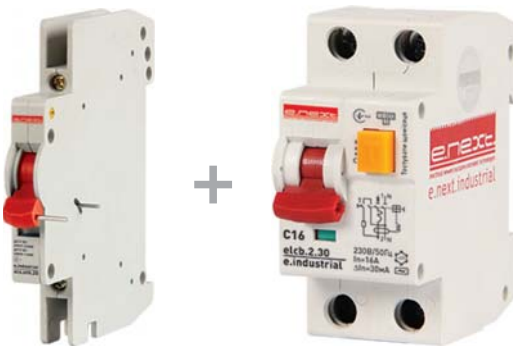
### Overall and installation dimensions



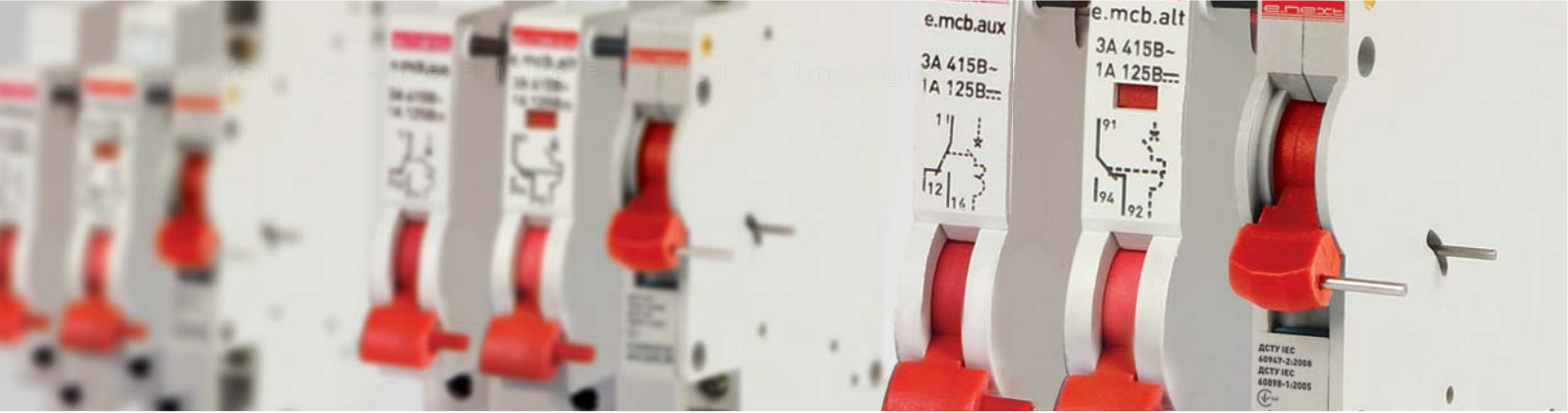
## Time-current characteristics



## Auxiliary devices



e.industrial.acs.znh.20  
Auxiliary contact

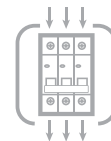
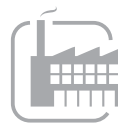


## Auxiliary and alarm contacts for modular circuit breakers

They are intended for indicating the state of power contacts (closed/opened/alarm turning off) of modular circuit breakers in control and signaling circuits.

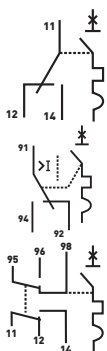


060 Corresponds to EN 60898-1.



### Technical data

Parameter name	Value
Rated voltage Ue, V	AC 230
Rated frequency, Hz	50
Rated current In, A	3
Utilization category	AC-13
Maximum cross section of connecting wire, mm <sup>2</sup>	2,5
Tightening torque of contact clamps, Nm	2
Weight, g, no more	50



Contact type	Compatible breakers	Installation	Name	Order code
Auxiliary	e.mcb.stand; e.elcb.stand; e.mcb.pro; e.mcb.pro.K; e.elcb.pro	left	e.mcb.aux	p042100
Alarm	e.mcb.stand; e.elcb.stand; e.mcb.pro; e.mcb.pro.K; e.elcb.pro	left	e.mcb.alt	p042101
Auxiliary	e.industrial.mcb.100; e.industrial.acs.za	left and right	e.industrial.acs. znh.20	i0240001
	e.industrial.elcb	left		



Turning the regulator «sel» sets one of two switching modes of contacts:

- switching 11-14 on 11-12 and 95-96 on 95-98;
- switching 11-14 to 11-12 and closed state 95-96.





## Shunt release for modular circuit breakers

They are intended for remote turning off modular circuit breakers by supplying to the solenoid of the control of voltage release.



060 Corresponds to EN 60898-1.



### Technical data

Parameter name		e.mcb.sht	e.industrial.acs.za.230	e.industrial.acs.za.24
Operating solenoid voltage U, V	AC	110-415	110-415	12-110
	DC	110-130	110-130	12-24
Maximum cross section of connecting wire, mm <sup>2</sup>		25	25	3
Tightening torque of contact clamps, Nm		2	2	2
Weight, g, no more		90		



Compatible breakers	Installation	Name	Order code
e.mcb.stand; e.elcb.stand; e.mcb.pro; e.mcb.pro.K; e.elcb.pro	left	e.mcb.sht	p042103
e.industrial.mcb.100; e.industrial.elcb	right	e.industrial.acs.za.230	i0250001
		e.industrial.acs.za.24	i0250002

### Overall and installation dimensions



e.mcb.sht



e.industrial.acs.za

### Graphic notation



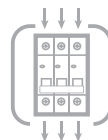


## Under-voltage release e.industrial.acs.zu for modular circuit breakers e.industrial.mcb

They are intended for turning off the circuit breakers of the e.industrial.mcb.100 series when the network voltage is lower below 0,8 U level.

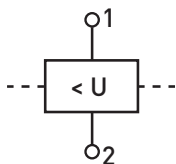


060 Corresponds to EN 60898-1.

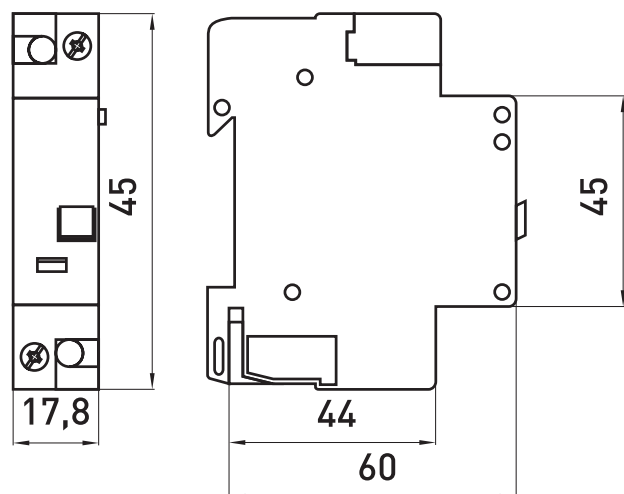


Name	Installation	Order code
e.industrial.acs.zu.230	230 V	i0260001
e.industrial.acs.zu.400	400 V	i0260002

### Graphic notation



### Overall and installation dimensions



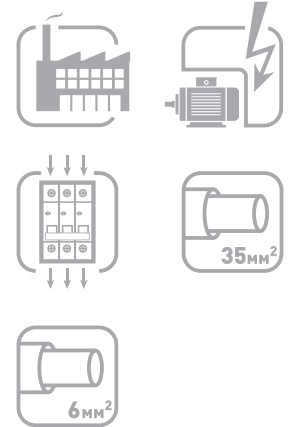


## Motor protection circuit breakers e.mp.pro

They are intended for control and protection of three-phase induction motors with short-circuited rotor against: short circuits, currents of overload and indirectly against phase interruption and bias.



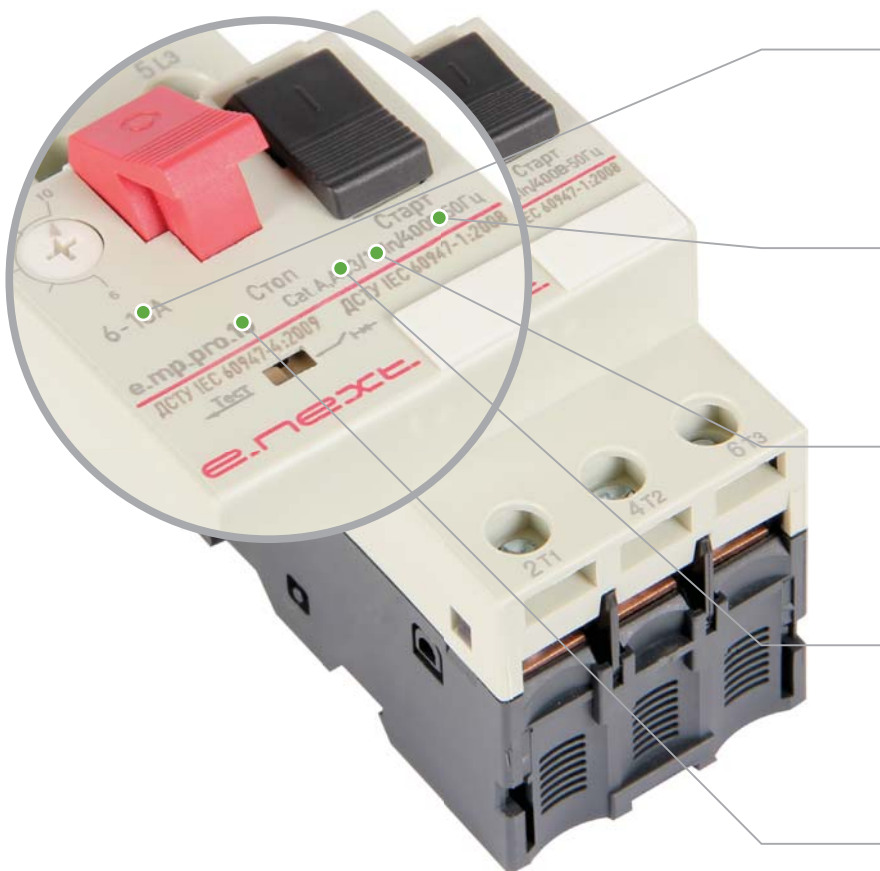
060 Corresponds to EN 60947-1, EN 60947-4-1.



### Symbolic structure

- e. — trademark E.NEXT
- mp — type
- pro — series
- X — rated current

e.mp.pro.X



Adjustable limits of the thermal release pickup setting

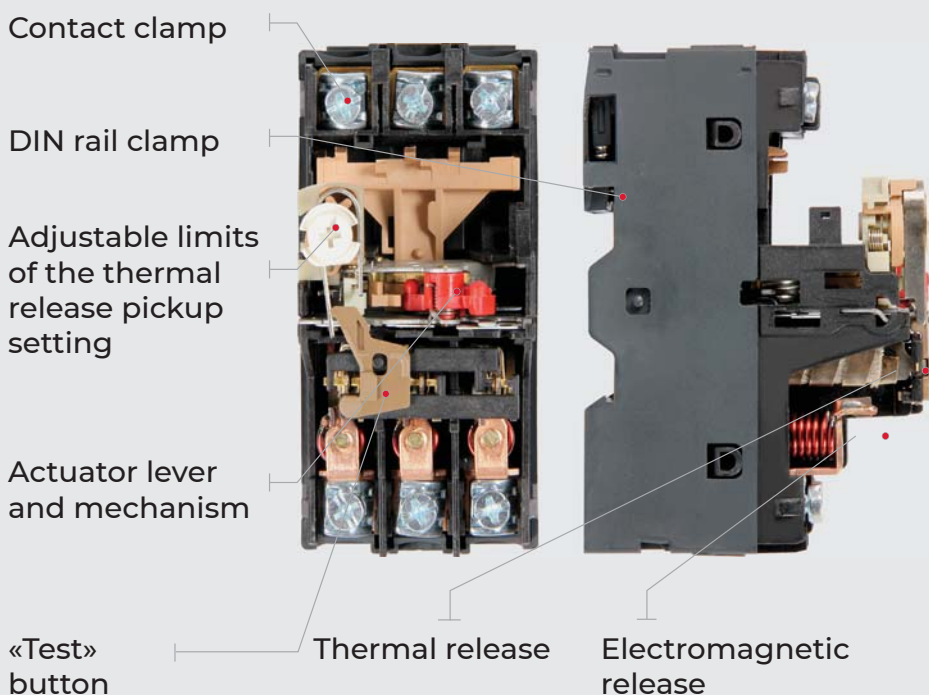
Rated voltage and frequency

Pickup setting of electromagnetic release

Utilization category

Rated current

**Construction features e.mp.pro**



The device case is made of materials which are self-extinguishing: the base of the breaker is made of the slope of the glass filled polyamide, the upper lid is made of ABS-plastic. On the front panel there are buttons «Start», «Stop», «Test» and a disk for adjusting the current set of thermal protection. The breaker protection functions are executed by regulated heat and electromagnetic releases. The current thermal protection setting has a range of regulation of 0,6-1 against the rated current of the breaker to provide thermal protection in accordance with the rated current of the protected motor.

The thermal release is equipped with a mechanism of temperature compensation, which reduces the influence of ambient temperature on the accuracy of setting and operation of the breaker. The setting of the electromagnetic release is unregulated and is equal to  $13 \times I_n$ .

**Technical data**

Parameter name	Value
Rated voltage $U_e$ , V	AC 400 (660)
Rated frequency, Hz	50
Number of poles	3
Rated current $I_n$ , A	0,4; 0,63; 1; 1,6; 2,5; 4; 6,3; 10; 14; 18; 25; 32; 40; 63; 80
Utilization category	A, AC-3
Voltage of insulation $U_i$ , V	690
Pulse voltage (1,2/50) $U_{imp}$ , kV	8
Release type	combined: adjustable thermal and electromagnetic
Pickup setting of electromagnetic release, $I_m$	$13 I_n$
Trip type of thermal release	10 A
Rated breaking capacity $I_{cs}$ at 400 V, kA	7,5
Rated limiting breaking capacity $I_{cu}$ at 400 V, kA	15
Electrical life, On/Off cycles, no less	6 000
Mechanical life, On/Off cycles, no less	10 000
Maximum switching frequency, cycles/hour	25
Heat loss, W/Pole	2,5 (to 32 A), 8 (from 40 to 80 A)
Protection degree	IP20
Maximum cross section of connecting conductors, $mm^2$	6 (to 32 A); 35 (from 40 to 80 A)
Tightening torque of contact clamps, Nm	1,2
Weight, g, no more	0,3 (to 32 A); 0,9 (from 40 to 80 A)
Ambient temperature, °C	-25...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	80 %
Working position	vertical, horizontal, with a deviation of no more than 5°
Mounting	on DIN rail 35 mm



Rated current, A	Thermal release regulation band Ir, A	Rated power of the protected AC-3 motor, kW		Name	Order code
		400 V	660 V		
0,4	0,25-0,4	0,09	0,21	e.mp.pro.0.4	p004015
0,63	0,4-0,63	0,21	0,37	e.mp.pro.0.63	p004016
1	0,63-1	0,25	0,55	e.mp.pro.1	p004017
1,6	1-1,6	0,37	1,1	e.mp.pro.1.6	p004001
2,5	1,6-2,5	0,75	1,5	e.mp.pro.2.5	p004002
4	2,5-4	1,5	3	e.mp.pro.4	p004003
6,3	4-6,3	2,2	4	e.mp.pro.6,3	p004004
10	6-10	4	7,5	e.mp.pro.10	p004005
14	9-14	5,5	9	e.mp.pro.14	p004018
18	13-18	7,5	11	e.mp.pro.18	p004019
23	17-23	11	15	e.mp.pro.23	p004007
25	20-25	11	18,5	e.mp.pro.25	p004020
32	24-32	15	22	e.mp.pro.32	p004021
40	25-40	18,5	37	e.mp.pro.40	p004022
63	40-63	30	45	e.mp.pro.63	p004010
80	56-80	37	55	e.mp.pro.80	p004011

## Auxiliary devices



**e.mp.pro.ae**  
Contact block:  
auxiliary (front)

+



**e.mp.pro.ad**  
Contact block:  
auxiliary+alarm  
(side)

+



**e.mp.pro.an**  
Auxiliary  
contacts block  
(side)

+



**e.mp.pro (0,4...32)**

+



**e.mp.pro.au**  
Minimal voltage  
release

+



**e.mp.pro.as**  
Shunt release



Plastic case with  
«Stop» button

## Electrical Newest Exclusive Extended Technologies

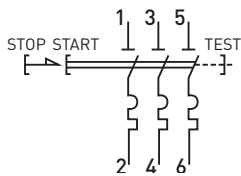


e.mp.pro (40...80)



e.mp.pro.dz  
Contact block:  
auxiliary (side)

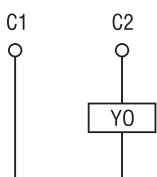
### Graphic notation



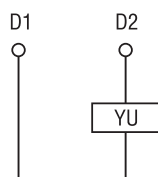
Name	Overload current $I_{th}$ , A	Types and number of contacts		Weight, g, no more	Order code
		auxiliary	alarm		
e.mp.pro.ad.0101	2,5	1NC	1NC	40	p004034
e.mp.pro.ad.0110	2,5	1NO	1NC	40	p004035
e.mp.pro.ad.1001	2,5	1NC	1NO	40	p004033
e.mp.pro.ad.1010	2,5	1NO	1NO	40	p004028
e.mp.pro.ae11	6	1NO+1NC	—	15	p004025
e.mp.pro.an11	6	1NO+1NC	—	40	p004026
e.mp.pro.dz11	6	1NO+1NC	—	40	p004029
e.mp.pro.dz20	6	2NO	—	40	p004030

	e.mp.pro.as.220	e.mp.pro.as.380	e.mp.pro.au.220	e.mp.pro.au.380
Order code	p004024	p004031	p004032	p004027
Release type	Shunt release		Undervoltage release	
Rated voltage of the control coil $U_c$ , V	AC 220	AC 380	AC 220	AC 380
Pickup voltage, V	(0,7...1,1) $U_c$		(0,35...0,7) $U_c$	
Seal-in voltage, V			(0,85...1,1) $U_c$	
Power consumption, W	3		0,1	
Cross-section of connecting conductors, $mm^2$	0,75...1,5 $mm^2$			
Weight, g, no more	95			

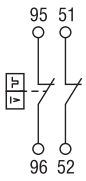
### Graphic notation



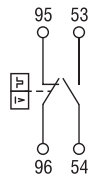
e.mp.pro.as



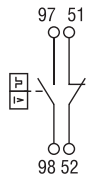
e.mp.pro.au



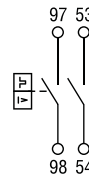
e.mp.pro.ad.0101



e.mp.pro.ad.0110



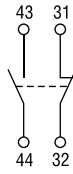
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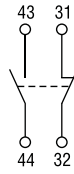
e.mp.pro.ad.1010



e.mp.pro.ae.11



e.mp.pro.an.11

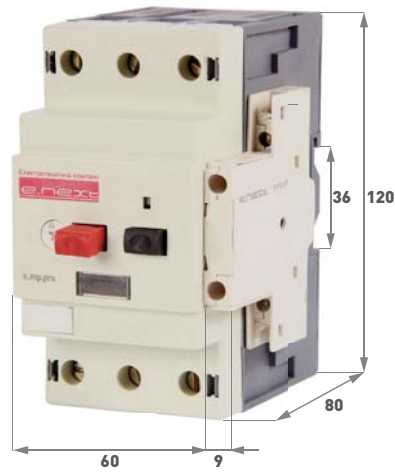
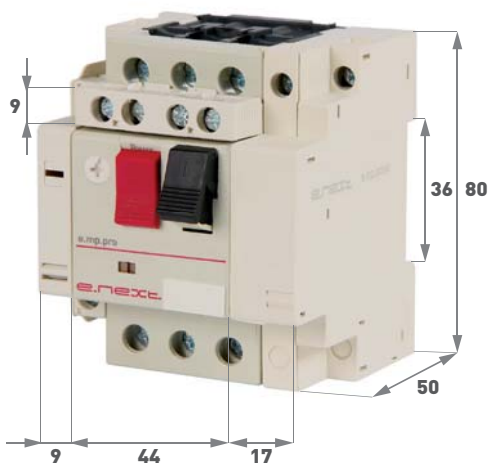


e.mp.pro.dz.11

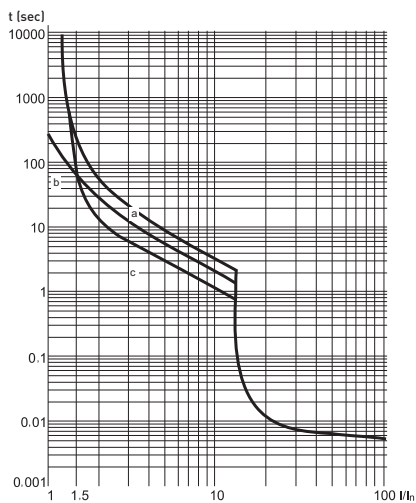


e.mp.pro.dz.20

## Overall and installation dimensions



## Time-current characteristics



- a - three phases from the «cold» state;
- b - two phases from the «cold» state;
- c - three phases from the «hot» state.

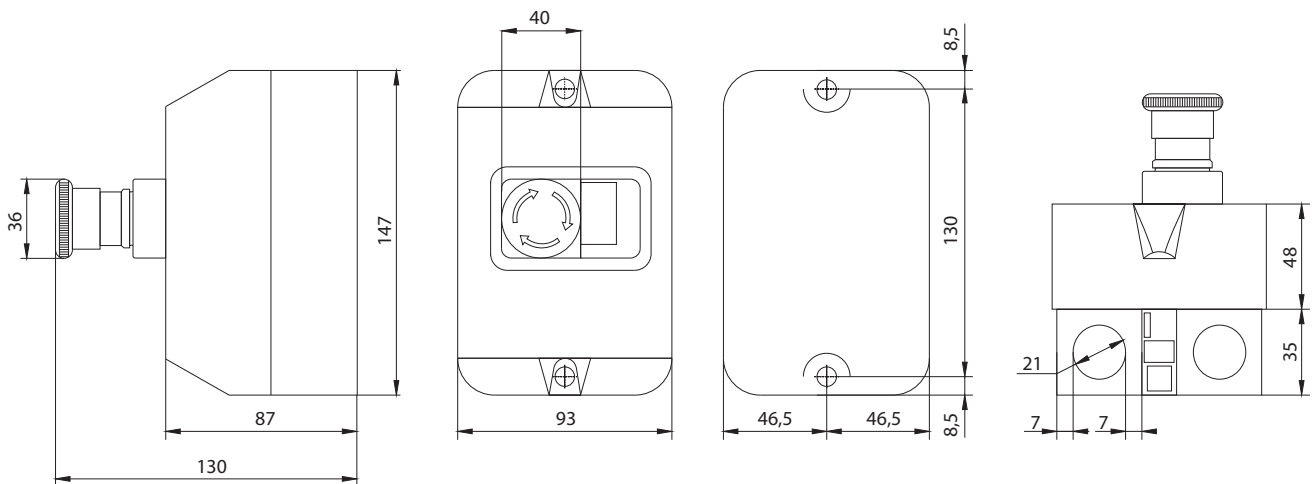
## Plastic case with «Stop» button e.mp.pro.box IP54

It is intended for mounting of engine circuit breaker up to 32 A. The protection degree IP54 allows to use the case in rooms with a high level of dust and damp. In manual mode, the alarm turning off the engine's circuit breaker is carried out with the help of the red «Stop» momentary-action mushroom-button (turn-by-turn unlocking). Reclosing of the engine circuit breaker is possible only after turning this button.



Name	Protection degree	Maximum current of ECB, A	Overall dimensions, mm	Weight, g	Order code
e.mp.pro.box	IP54	32	93×147×87	250	p004036

### Overall and installation dimensions







## Modular insulating switches e.is.pro (I-0)

They are intended for non-automatic switching of electric circuits with active and weak inductive loads.



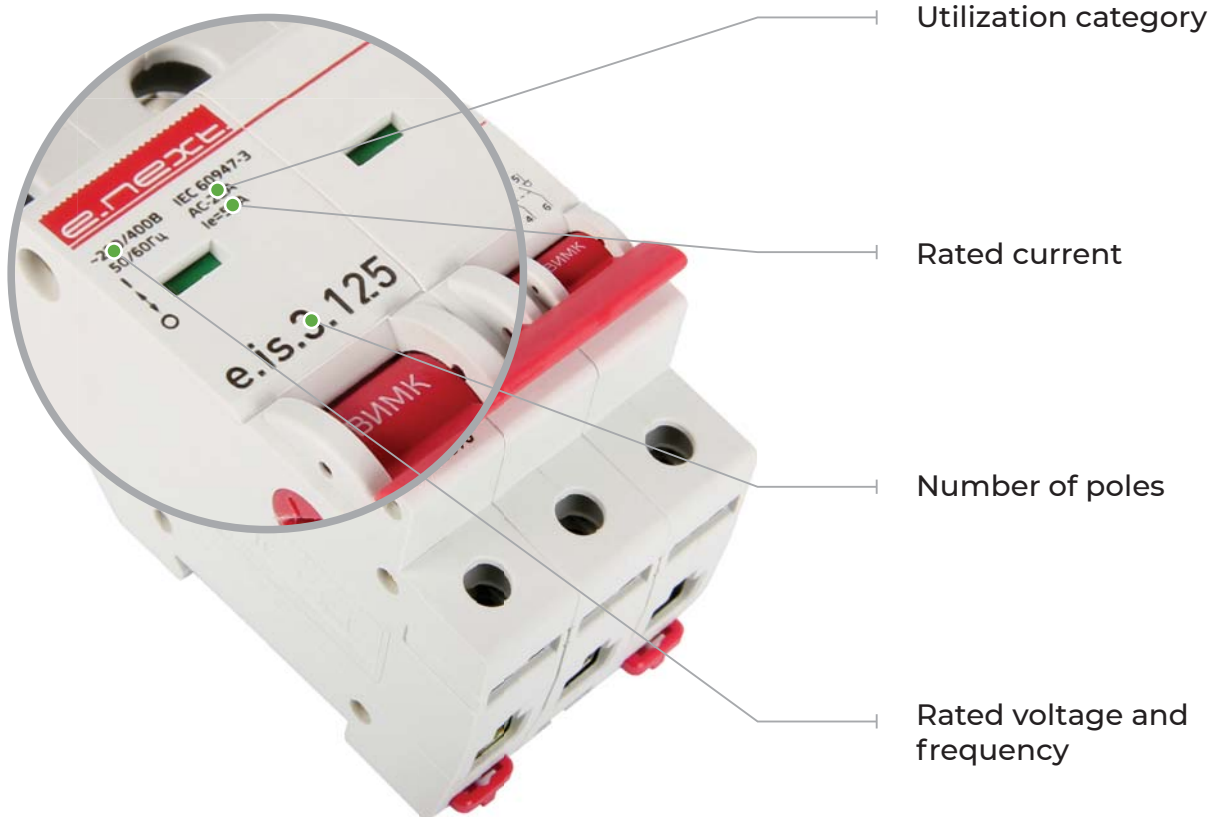
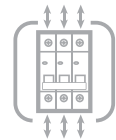
060 Corresponds to EN 60947-3.



### Symbolic structure

e.is.pro.X.X

- e. — trademark E.NEXT
- is — type
- pro — series
- X — number of poles
- X — rated current



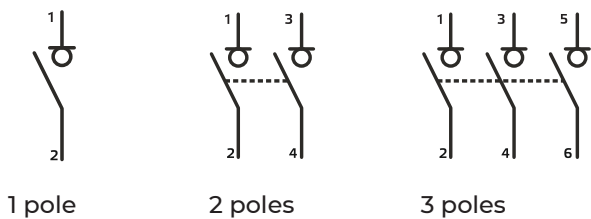
**Technical data**

Parameter name	Value
Rated voltage Ue, V	AC 230/400
Rated frequency, Hz	50
Rated DC voltage at one pole, V	48
Rated operating current Ie, A	50, 63, 125
Utilization category	AC-22 A
Number of poles	1, 2, 3
Voltage of insulation Ui, V	500
Pulse voltage (1,2/50) Uimp, kV	6
Maximum current during 1 s Icw, A	12 Ie
Rated breaking capacity, A	3 Ie
Electrical life, On/Off cycles, no less	4 000
Mechanical life, On/Off cycles, no less	10 000
Maximum cross section of connecting wire, mm <sup>2</sup>	50
Tightening torque of contact clamps, Nm	3, 5
Protection degree	IP20
Weight, (of 1p) g	80
Ambient temperature, °C	-25...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	80 %
Working position	arbitrary
Mounting	on DIN rail 35 mm

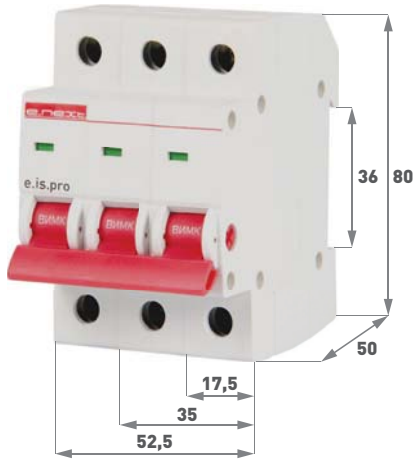


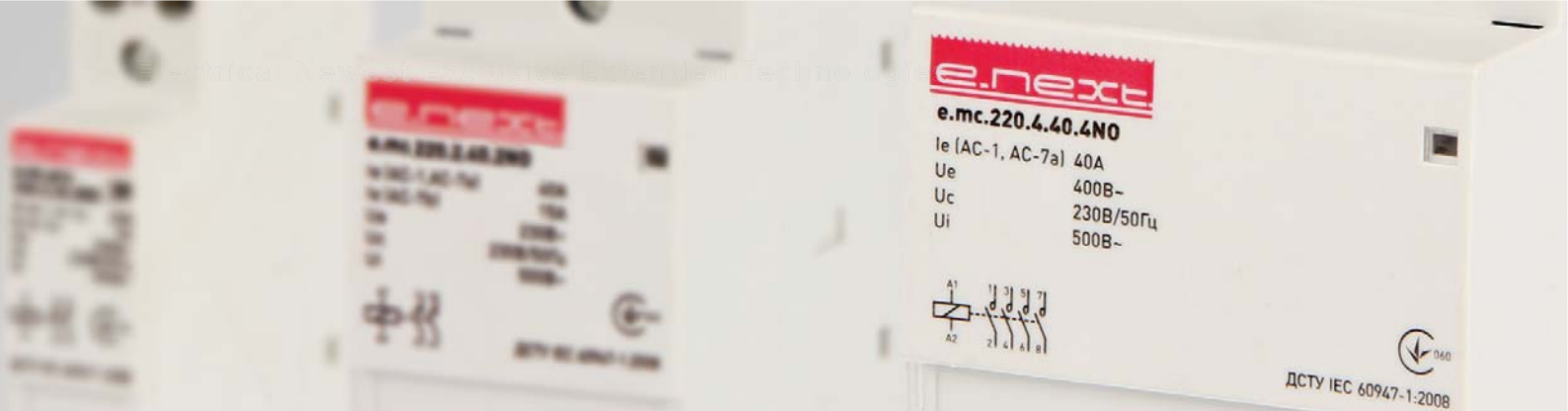
Rated current, A	Name	Order code
50	e.is.pro.1.50	p008007
125	e.is.pro.1.125	p008008
63	e.is.pro.2.63	p008011
125	e.is.pro.2.125	p008012
50	e.is.pro.3.50	p008009
125	e.is.pro.3.125	p008010

**Graphic notation**



## Overall and installation dimensions

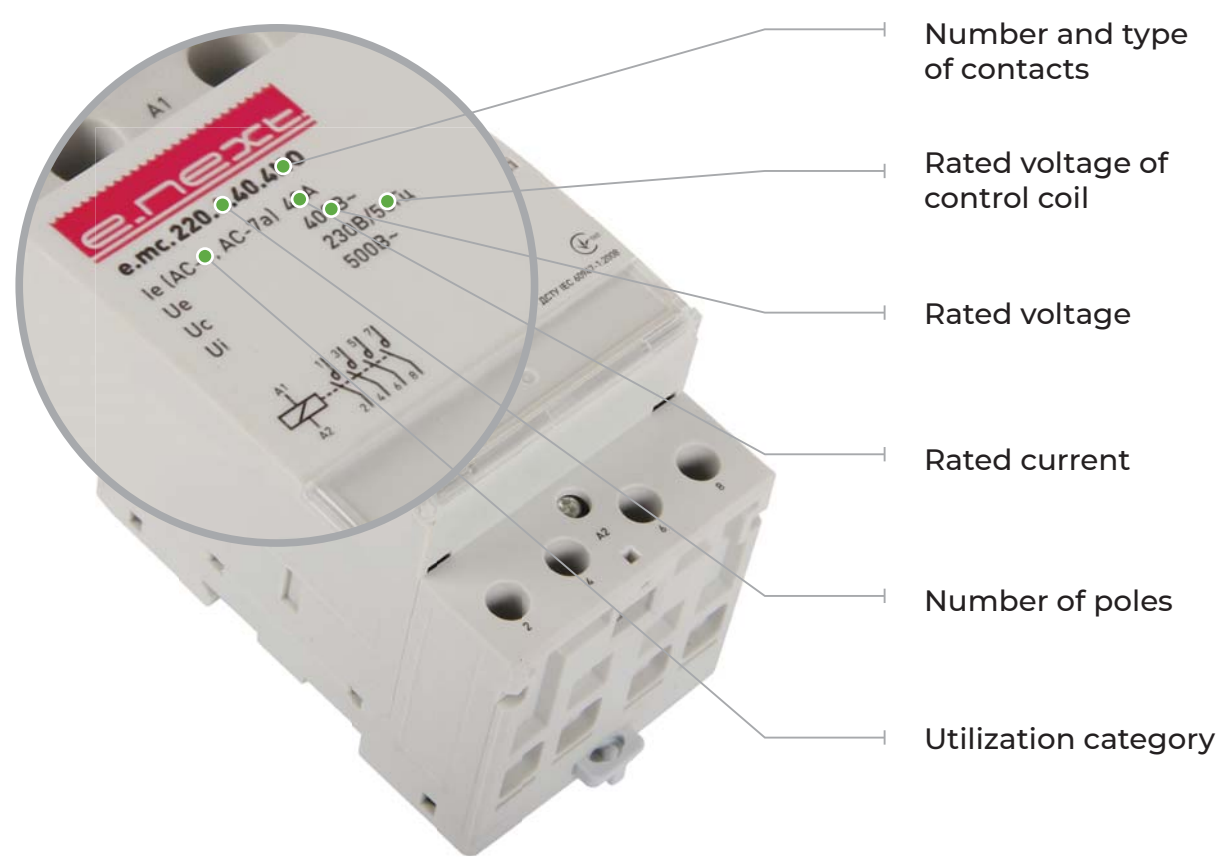
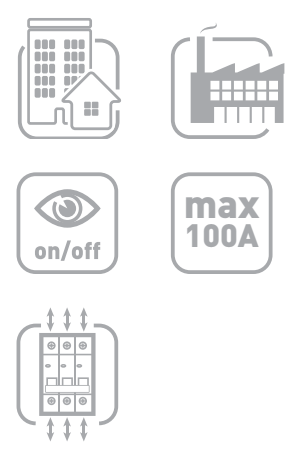




## Modular contactors e.mc

They are intended for switching active and weakly inductive loads in control systems of various technological processes, conditioning and ventilation, lighting networks.

 **060** Corresponds to EN 61095.



## Technical data

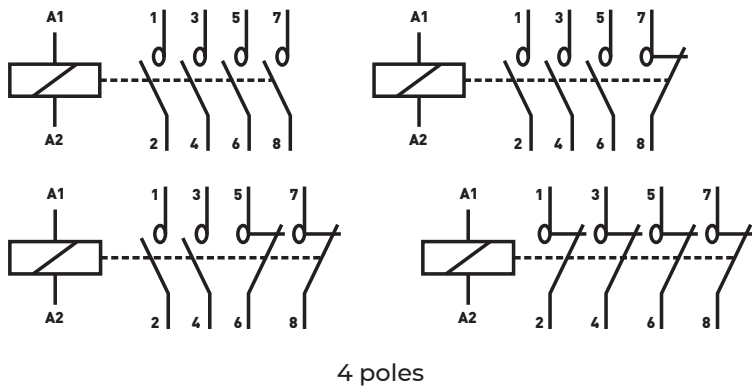
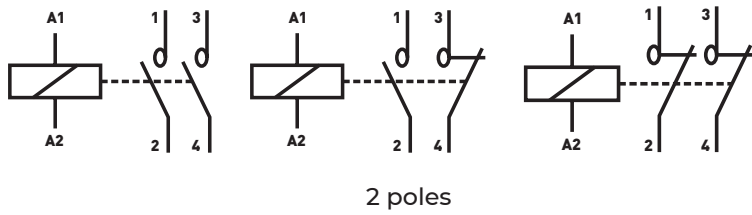
Parameter name		Value	
Number of poles		2	4
Rated voltage U <sub>e</sub> , V		AC 230	AC 400
Rated frequency, Hz		50	
Rated current I <sub>th</sub> , A		20, 25, 40, 63, 100	
Utilization category		AC-1, AC-7a	
Voltage of insulation U <sub>i</sub> , V		500	
Pulse voltage (1,2/50) U <sub>imp</sub> , kV		4	
Limited current, A		3 000	
Rated voltage of control coil U <sub>c</sub> , B		230	
Starting current of the control coil, not more than mA		60	95
Current control coil hold, no more than mA		18	12
Voltage range of the control coil, V	closed	B, C	
	opened	A	
Electrical life, On/Off cycles, no less		10 <sup>6</sup>	
Mechanical life, On/Off cycles, no less		0,15×10 <sup>6</sup>	
Heat loss, W		3	6
Protection degree		IP20	
Tightening torque of contact clamps, Nm		3, 5	
Maximum cross section of connecting wire, mm <sup>2</sup>		6 (20-25 A), 25 (40-100 A)	25
Weight, g, no more		135 (20-25 A), 240 (40-100 A)	380
Ambient temperature, °C		2 000	
Altitude, m, no more		-25...+40	
Permissible relative humidity at 25 °C (without condensation), no more		80 %	
Working position		arbitrary	
Mounting		on DIN rail 35 mm	

Rated current, A	Name	Order code	Name	Order code
	2 poles		4 poles	
20	e.mc.220.2.20.2NO	p005017	e.mc.220.4.20.4NO	p005019
25	e.mc.220.2.25.2NO	p005001	e.mc.220.4.25.4NO	p005005
	e.mc.220.2.25.1NO+1NC	p005020	e.mc.220.4.25.3NO+1NC	p005021
	e.mc.220.2.25.2NC	p005025	e.mc.220.4.25.2NO+2NC	p005022
	—	—	e.mc.220.4.25.4NC	p005024
40	e.mc.220.2.40.2NO	p005003	e.mc.220.4.40.4NO	p005007
63	e.mc.220.2.63.2NO	p005018	e.mc.220.4.63.4NO	p005009
100	—	—	e.mc.220.4.100.4NO	p005023

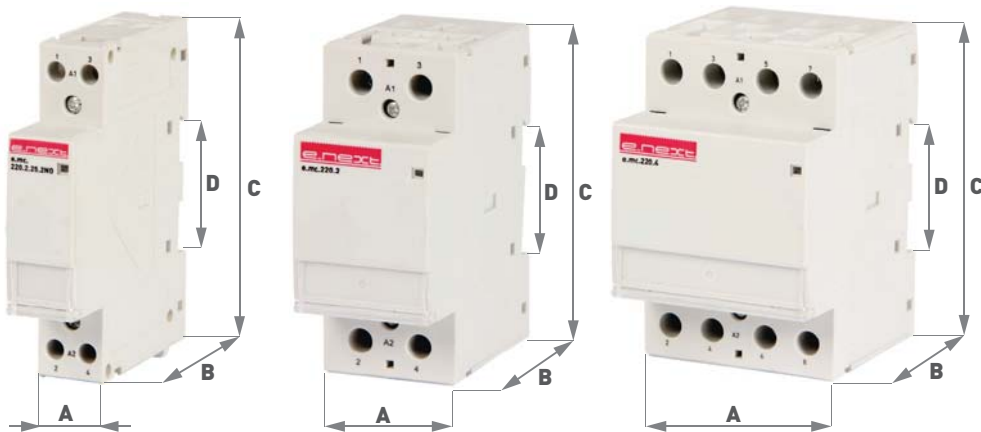
## Auxiliary contacts block (side) for modular contactors e.mc

Name	Contacts	Order code
e.mc.aux	1NO+1NC	p005101

### Graphic notation



### Overall and installation dimensions



Name	A	B	C	D
e.mc.220.2.20.2NO	18	50	80	36
e.mc.220.2.25.2NO				
e.mc.220.2.25.1NO+1NC				
e.mc.220.2.25.2NC	36	50	80	36
e.mc.220.2.40.2NO				
e.mc.220.2.63.2NO				
e.mc.220.4.20.4NO	54	50	80	36
e.mc.220.4.25.4NO				
e.mc.220.4.25.3NO+1NC				
e.mc.220.4.25.2NO+2NC				
e.mc.220.4.25.4NC				
e.mc.220.4.40.4NO				
e.mc.220.4.63.4NO				
e.mc.220.4.100.4NO	8,5	50	80	36
e.mc.aux				

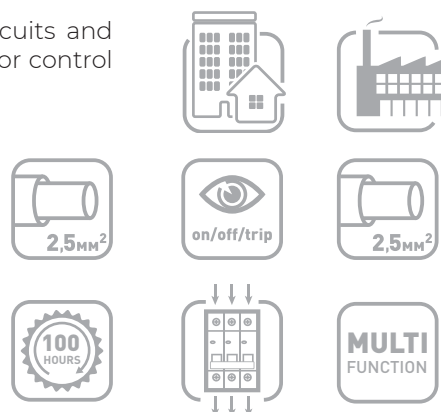


## Time control relay e.control.t06

It is intended for providing a time delay On/Off in the automation circuits and control various technological processes in relation to the supply voltage or control contact.



Corresponds to EN 60730-1, EN 60730-2-7, EN 61000-6-2, EN 61000-6-4.

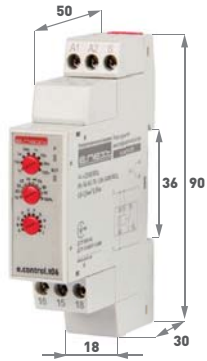


### Technical data

Parameter name	Value
Rated voltage $U_e$ , V	AC 220±10 %
Rated frequency, Hz	50
Rated voltage of insulation $U_i$ , V	380
Number and type of contacts	1 C/O break-before-make contact
Maximum switching current of contacts at 250 V, A	1,5
Conventional overload current of contacts, A	5
Utilization category	AC - 15
Time setting range	0,1 s-100 h
Error setting time, no more	5 %
Error recurrence time, no more	0,2 %
Recovery time, ms	200
Maximum power consumption, VA	1,5
Electrical life, On/Off cycles, no less	$10^5$
Mechanical life, On/Off cycles, no less	$10^6$
Maximum cross section of connecting conductors, mm <sup>2</sup>	2,5
Tightening torque of contact clamps, Nm	0,5
Protection degree	IP20
Weight, g	70
Ambient temperature, °C	-5...+40
Altitude, m, no more	2 000
Permissible relative humidity at 40 °C (without condensation), no more	50
Working position	arbitrary
Mounting	on DIN rail 35 mm

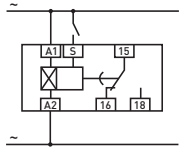
Name	Time setting range	Rated supply voltage, V	Rated current of contacts, A	Order code
e.control.t06	0,1 s - 100 h	220±10 %	1,5	p0690004

### Overall and installation dimensions

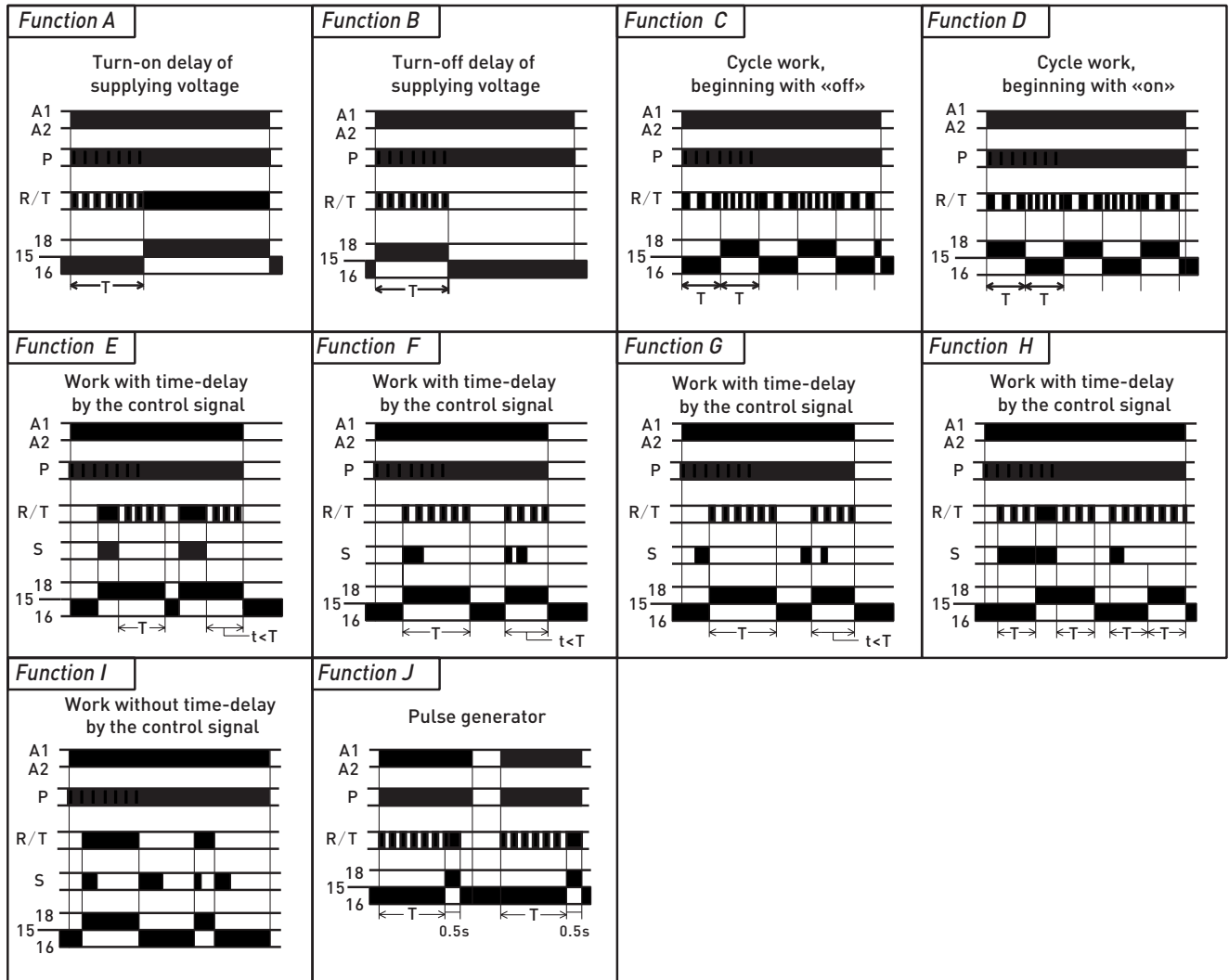


The setting reference time and selection of the relay function occurs before supply voltage. When changing the settings after the voltage supply, they will come into force only after turning off and reclosing on the supply voltage. The minimum time before re-supplying the voltage after turned-off must be at least 200 ms. When the supply voltage is applied to the A1 and A2 terminals, the yellow LED indicator P is turned on. When the time is off, the red LED R/T blinks and illuminates when the output contact of the relay is closed (15-18). When removing the supply voltage, the output contacts relay 15-18 are opened. The potentiometer on the front panel sets the time delay - the time delay is selected: 1 s, 10 s, 1 min, 10 min, 1 hour, 10 hours, 30 hours, 100 hours and more accurate setting from 10 to 100 % of the selected level. The potentiometer chooses the necessary function of the time relay.

### Graphic notation



### Relay operation diagrams depending on the given function







## Time relay e.control.t07

It is intended for providing a time delay in the turning off the signal in the automation circuits and control of various technological processes.



Corresponds to EN 60730-1, EN 60730-2-7, EN 61000-6-2, EN 61000-6-4.

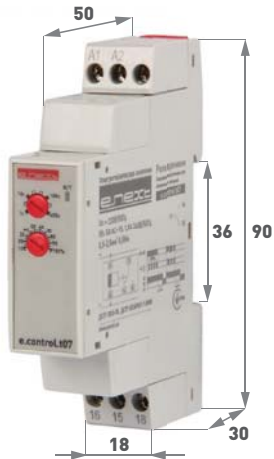


### Technical data

Parameter name		Value
Rated voltage Ue, V		AC 220±10 %
Rated frequency, Hz		50
Rated voltage of insulation Ui, V		380
Number and type of contacts		1 C/O break-before-make contact
Maximum commutation current of contacts	250 V, A	1,5
	415 V, A	0,95
Conventional overload current of contacts, A		5
Utilization category		AC-15
Time setting range		1-600
Error setting time, no more		5 %
Error recurrence time, no more		0,2 %
Recovery time, ms		200
Maximum power consumption, VA		3
Electrical life, On/Off cycles, no less		10 <sup>5</sup>
Mechanical life, On/Off cycles, no less		10 <sup>6</sup>
Maximum cross section of connecting conductors, mm <sup>2</sup>		2,5
Tightening torque of contact clamps, Nm		0,5
Protection degree		IP20
Weight, g		65
Ambient temperature, °C		-5...+40
Altitude, m, no more		2 000
Permissible relative humidity at 40 °C (without condensation), no more		50 %
Working position		arbitrary
Mounting		on DIN rail 35 mm

Name	Time setting range, s	Rated supply voltage, V	Rated current of contacts, A	Order code
e.control.t07	0,1-600	220±10 %	1,5	p0690005

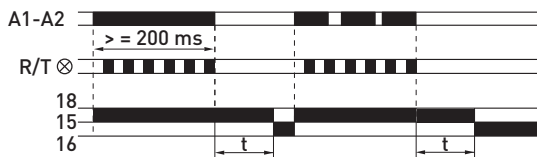
## Overall and installation dimensions



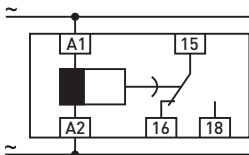
## Function

The potentiometers on the front panel have a time delay of 1 s, 10 s, 100 s, 600 s and a more accurate setting of 10 to 100 % of the selected level. When the control voltage is turned on, the output relay 15-18 is closed and the red LED R/T flashes. When the control voltage is turned off, the set time delay starts, after which the output relay 15-18 will open. If after the set time of the time delay, the control voltage again turns on, the timer stops and the output relay 15-18 remains closed.

## Relay operation diagram



## Graphic notation





## Electronic timer e.control.t08

It is intended for automatic turning On/Off the electrical equipment at intervals of time during the week in automation circuits and control of various technological processes.



060

Corresponds to EN 60730-1, EN 60730-2-7, EN 61000-6-2, EN 61000-6-4.



### Technical data

Parameter name		Value
Rated voltage Ue, V		AC 230
Rated frequency, Hz		50
Rated voltage of control circuit, V		230
Rated voltage of insulation Ui, V		250
Maximum current of contacts, A	cosφ = 1	16
	cosφ = 0,7	10
Maximum programs number		40
Utilization category		AC-1
Number and type of contacts		1 C/O
Maximum switching power		4000 VA/AC1; 384 W/DC
Countdown error, s/day, no more		±1
Backup battery time, years, no less		3
Maximum power consumption, VA		1
Electrical life, On/Off cycles, no less		10 <sup>5</sup>
Mechanical life, On/Off cycles, no less		10 <sup>6</sup>
Maximum cross section of connecting wire, mm <sup>2</sup>		4
Tightening torque of contact clamps, Nm		0,5
Protection degree		IP20
Weight, g		150
Ambient temperature, °C		-20...+55
Altitude, m, no more		2 000
Permissible relative humidity at 40 °C (without condensation), no more		50 %
Working position		arbitrary
Mounting		on DIN rail 35 mm



Name	Description	Order code
e.control.t08	Weekly electronic timer - up to 40 cycles of On/Off	i0310011

## Overall and installation dimensions



## Function

The electronic timer e.control.t08 has a modularity with a width of 36 mm (2 modules).

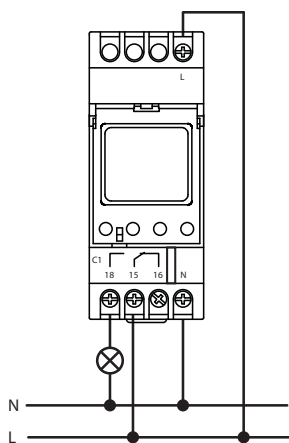
The case of the device is made of ABS-plastic, which is self-extinguishing.

There are the buttons for setting the current time and programming the timer; liquid crystal display on the timer front panel under a transparent lid, which has the ability to seal.

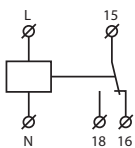
The built-in lithium battery ensures that the timer program is saved when the power supply voltage disappears for 3 years. The microprocessor of the timer provides the implementation of a weekly control program with a number of cycles of On/Off to 40 and the program's execution on a weekly basis.

If it is necessary, the timer can be converted to «Output» mode, during this time it will not run the installed program. Thus the program will be saved and the timer will always be in the initial state: 15-16 - closed, 15-18 - opened.

## Connection scheme



## Graphic notation





## Electronic dual-channels timer e.control.t09

It is intended for automatic turning On/Off two groups of electrotechnical equipment independently of each other at regular intervals during a week in automation circuits and control of various technological processes.



Corresponds to EN 60730-1, EN 60730-2-7, EN 61000-6-2, EN 61000-6-4.



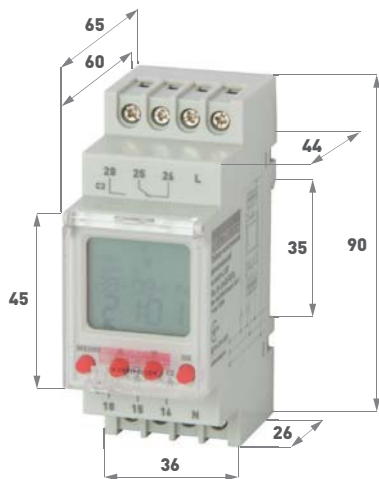
### Technical data

Parameter name		Value
Rated current of supply circuit, V		AC/DC 24-264
Rated voltage of control circuit, V		230
Voltage of insulation U <sub>i</sub> , V		250
Maximum current of contacts, A	cosφ = 1	16
	cosφ = 0,7	10
Maximum programs number		100
Utilization category		AC-1
Number and type of contacts		2 C/O
Maximum switching power		4 000 VA/AC1; 384 W/DC
Countdown error, s/day, no more		±1
Backup battery time, years, no less		10
Maximum power consumption, VA, no more		2
Electrical life, On/Off cycles, no less		10 <sup>5</sup>
Mechanical life, On/Off cycles, no less		10 <sup>6</sup>
Maximum cross section of connecting conductors, mm <sup>2</sup>		4
Tightening torque, Nm		0,5
Protection degree		IP20
Weight, g, no more		150
Ambient temperature, °C		-20...+55
Altitude, m, no more		2 000
Permissible relative humidity at 40 °C (without condensation), no more		50 %
Working position		arbitrary
Mounting		on DIN rail 35 mm



Name	Description	Order code
e.control.t09	Electronic dual-channel weekly electronic timer - up to 100 cycles of On/Off	i0310012

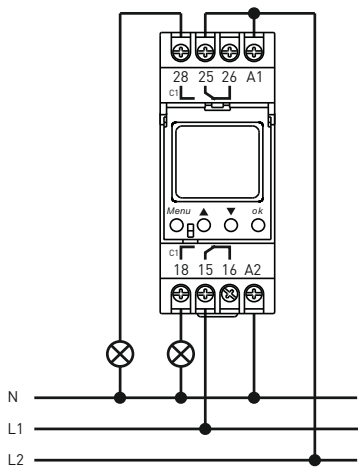
### Overall and installation dimensions



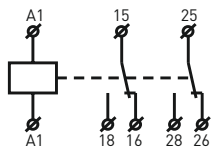
### Function

The electronic timer e.control.t09 has a modularity with a width of 36 mm (2 modules). The case of the device is made of ABS-plastic, which is self-extinguishing. There are the buttons for setting the current time and programming the timer; liquid crystal backlit display on the timer front panel under the transparent cover, which has the ability to seal. The built-in lithium battery ensures that the timer program is saved when the supply voltage disappears for 10 years. The microprocessor of the timer provides a weekly control program with the number of programs up to 100 by two independent channels and program execution in days of the week. In this mode, the timer will be turned on and off according to the installed program. If necessary, the timer can be converted to «Output» mode, during which the installed program will not be executed. At the same time, the program will be saved, and the break-before-make contacts of the timer will always be in the initial state: 15-16, 25-26 - closed; 15-18, 25-28 - opened.

### Connection scheme



### Graphic notation





## Astronomical dual-channels timer e.control.t10

It is intended for automatic control of lighting (or other electrical equipment) by two independent contact groups without use of illumination sensors with controlled switching at the time of sunset and sunrise based on location coordinates.



Corresponds to EN 60730-1, EN 60730-2-7, EN 61000-6-2, EN 61000-6-4.



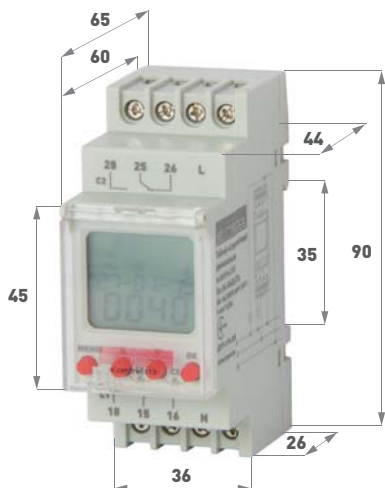
### Technical data

Parameter name	Value	
Rated current of supply circuit, V	AC/DC 24-264	
Rated voltage of control circuit, V	230	
Voltage of insulation $U_i$ , V	250	
Maximum current of contacts, A	$\cos\phi = 1$	16
	$\cos\phi = 0,7$	10
Maximum programs number	80	
Utilization category	AC-1	
Number and type of contacts	2 C/O	
Maximum switching power	4 000 VA/AC1; 384 W/DC	
Countdown error, s/day, no more	$\pm 1$	
Backup battery time, years, no less	10	
Maximum power consumption, VA, no more	2	
Electrical life, On/Off cycles, no less	$10^5$	
Mechanical life, On/Off cycles, no less	$10^6$	
Maximum cross section of connecting conductors, $\text{mm}^2$	4	
Tightening torque, Nm	0,5	
Protection degree	IP20	
Weight, g, no more	150	
Ambient temperature, $^{\circ}\text{C}$	-20...+55	
Altitude, m, no more	2 000	
Permissible relative humidity at 40 $^{\circ}\text{C}$ (without condensation), no more	50 %	
Working position	arbitrary	
Mounting	on DIN rail 35 mm	



Name	Description	Order code
e.control.t10	Astronomical dualchannels timer — up to 80 On/Off cycles	i0310013

## Overall and installation dimensions

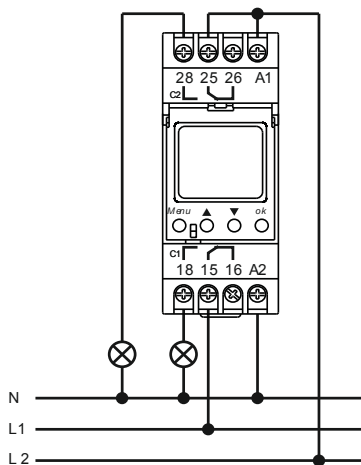


## Function

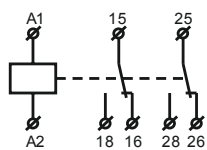
The astronomical timer e.control.t10 has a modularity with a width of 36 mm (2 modules). The case of the device is made of ABS-plastic, which is self-extinguishing. There are setting the current time and programming the timer buttons, liquid crystal backlit display on the timer front panel under the transparent cover which has the ability to seal.

The installed lithium battery keeps the timer program up to 10 years. The microprocessor of the timer provides a program control with the number of programs up to 80 by two independent channels. In this mode, the timer will be turned on and off according to the installed program. If it is necessary, the timer can be converted to «Output» mode, during which there will be no install the program. At the same time, the program will be saved, and the reset contacts of the timer will always be in the initial state: 15-16, 25-26 - closed; 15-18, 25-28 - opened. The timer also has a manual operation mode, in which the output state of the contacts is manually set. There is also a random mode in which the timer will operate arbitrarily in the range of 1 to 30 minutes.

## Connection scheme



## Graphic notation







## ON-delay time relay e.control.t15

It is intended for turning on load in automation systems (ventilation, lighting, etc.) after counting a given time segment.



060 Corresponds to EN 60730-1, EN 60730-2-7, EN 61000-6-2, EN 61000-6-4.

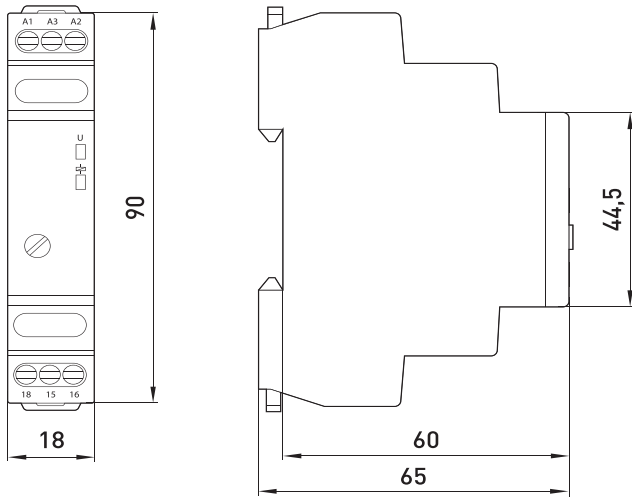


### Technical data

Parameter name		Value
Rated voltage of supply circuit	(A1-A2), V	AC 230
	(A3-A2), V	DC 24
Rated frequency, Hz		50
Time setting range, s		0,3-30
Error of setting time, %		<5
Error of recurrence time, %		≤0,2
Number and type of contacts		1 C/O
Rated current of contacts, A	cosφ = 1	8
	cosφ = 0,7	2
Own power consumption, VA, no more		1
Electrical life, On/Off cycles, no less		100 000
Mechanical life, On/Off cycles, no less		1 000 000
Maximum cross section of connecting wire, mm <sup>2</sup>		0,5-1
Tightening torque of contact clamps, Nm		0,5
Protection degree		IP20
Weight, g, no more		100
Ambient temperature, °C		-5...+40
Altitude, m, no more		2 000
Permissible relative humidity at 40 °C (without condensation), no more		60 %
Working position		arbitrary
Mounting		on DIN rail 35 mm

Name	Time setting range, s	Rated supply voltage, V	Rated current of contacts, A	Order code
e.control.t15	0,3-30	AC 230, DC 24	8	i0310027

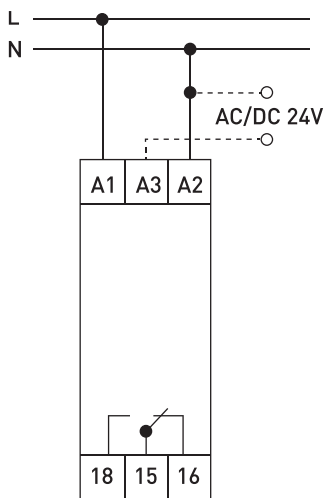
### Overall and installation dimensions



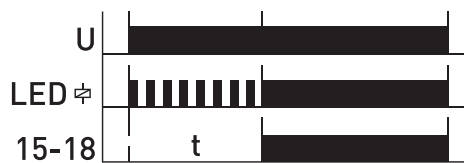
### Function

ON-delay time relay e.control.t15 has a modular execution with a 18 mm body width (1 module). The case of the device is made of ABS-plastic, which is self-extinguishing. There are a power supply indicator (green) and a relay operation indicator (red) on the outside panel of the relay. When the power is supplying, a green indicator lights up indicating the power supply voltage. After the voltage supply through the setting point of operation, contact 15-16 opens and contact 15-18 closes. From the moment the control signal is supplied and the contact on the front panel is lit, the red indicator light is on. After the contact 15-18 is closed, the red indicator lights continuously.

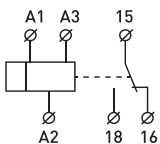
### Connection scheme



### Relay operation diagram



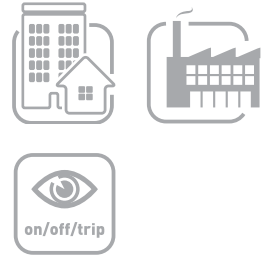
### Graphic notation





## OFF-delay time relay (0,3-30 s) e.control.t16

It is applied in systems of industrial and household automation. After a temporary turning on (0,3-30 sec.) when the voltage is supplied, the relay turns off, and remains to be off until the voltage is defusing and supplying again.



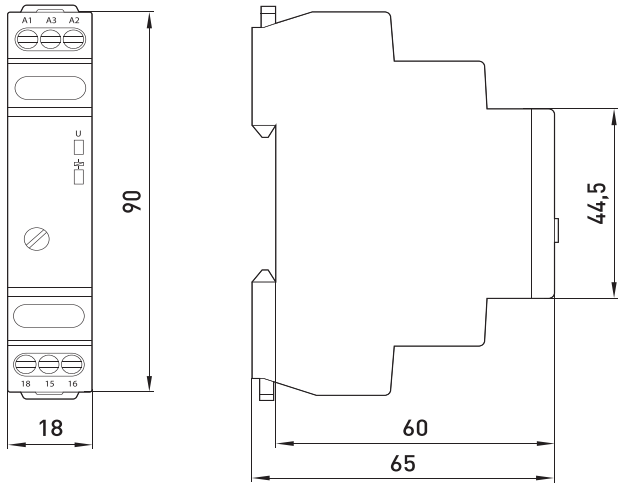
**060** Corresponds to EN 60730-1, EN 60730-2-7, EN 61000-6-2, EN 61000-6-4.

### Technical data

Parameter name		Value
Rated voltage of supply circuit	(A1-A2), V	AC 230
	(A3-A2), V	DC 24
Rated frequency, Hz		50
Time setting range, s		0,3-30
Error of setting time, %		<5
Error of recurrence time, %		≤0,2
Number and type of contacts		1 C/O
Rated current of contacts, A	cosφ = 1	8
	cosφ = 0,7	2
Own power consumption, VA, no more		1
Electrical life, On/Off cycles, no less		100 000
Mechanical life, On/Off cycles, no less		1 000 000
Maximum cross section of connecting wire, mm <sup>2</sup>		0,5-1
Tightening torque of contact clamps, Nm		0,5
Protection degree		IP20
Weight, g, no more		100
Ambient temperature, °C		-5...+40
Altitude, m, no more		2 000
Permissible relative humidity at 40 °C (without condensation), no more		60 %
Working position		arbitrary
Mounting		on DIN rail 35 mm

Name	Time setting range, s	Rated supply voltage, V	Rated current of contacts, A	Order code
e.control.t16	0,3-30	AC 230, DC 24	8	i0310028

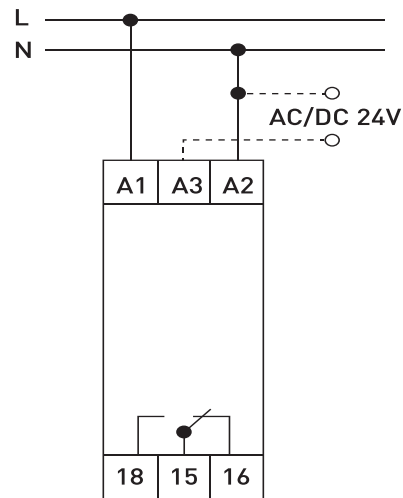
### Overall and installation dimensions



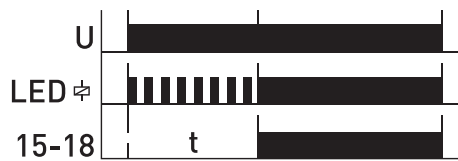
### Function

ON-delay time relay e.control.t15 has a modular execution with a 18 mm body width (1 module). The case of the device is made of ABS-plastic, which is self-extinguishing. There are a power supply indicator (green) and a relay operation indicator (red) on the outside panel of the relay. When the power is supplying, a green indicator lights up indicating the power supply voltage. After the voltage supply through the setting point of operation, contact 15-16 opens and contact 15-18 closes. From the moment the control signal is supplied and the contact on the front panel is lit, the red indicator light is on. After the contact 15-18 is closed, the red indicator lights continuously.

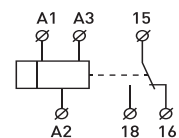
### Connection scheme



### Relay operation diagram



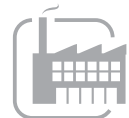
### Graphic notation





## Asymmetric cycle time relay e.control.t17

It is applied in systems of industrial and household automation. After a temporary turning on (0,3-30 sec.) when the voltage is supplied, the relay turns off, and remains to be off until the voltage is defusing and supplying again.



060 Corresponds to EN 60730-1, EN 60730-2-7, EN 61000-6-2, EN 61000-6-4.

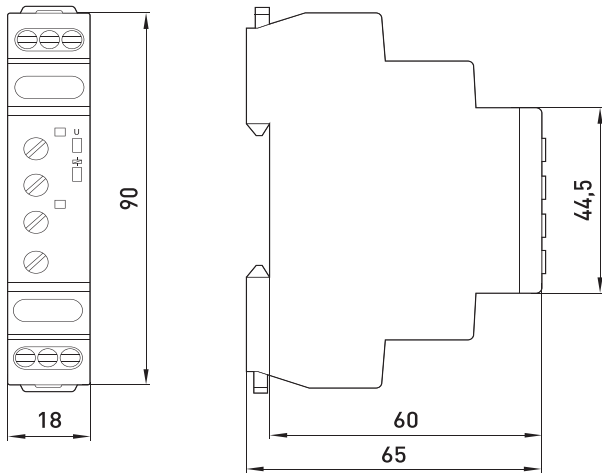


### Technical data

Parameter name	Value
Rated voltage of supply circuit (A1-A2), V	AC 230
Rated frequency, Hz	50
Time setting range, s	0,1 s - 100 days
Error of setting time, %	<5
Error of recurrence time, %	≤0,2
Number and type of contacts	1 C/O
Rated current of contacts, A	cosφ = 1
	cosφ = 0,7
Own power consumption, VA, no more	1
Electrical life, On/Off cycles, no less	1 000 000
Mechanical life, On/Off cycles, no less	10 000 000
Maximum cross section of connecting wire, mm <sup>2</sup>	0,5-1
Tightening torque of contact clamps, Nm	0,5
Protection degree	IP20
Weight, g, no more	100
Ambient temperature, °C	-5...+40
Altitude, m, no more	2 000
Permissible relative humidity at 40 °C (without condensation), no more	60 %
Working position	arbitrary
Mounting	on DIN rail 35 mm

Name	Time setting range, s	Rated supply voltage, V	Rated current of contacts, A	Order code
e.control.t17	0,1 s - 100 days	AC 230	8	i0310029

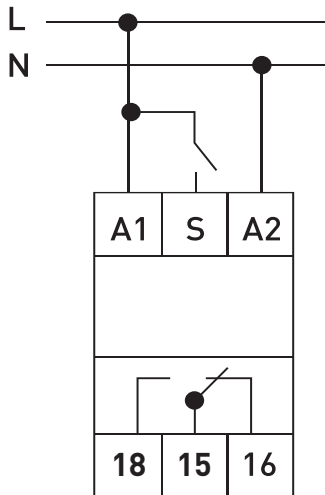
### Overall and installation dimensions



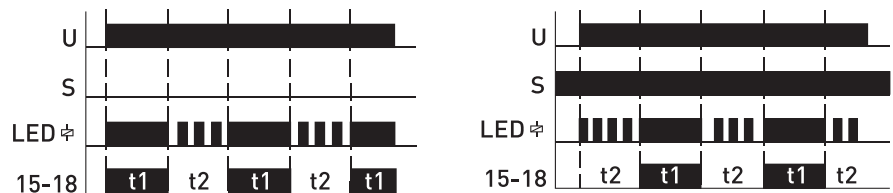
### Function

The asymmetric cycle time relay e.control.t17 has a modular execution with body width of 18 mm (1 module). The case of the device is made of ABS-plastic, which is self-extinguishing. There is a power supply indicator (green) and a relay operation indicator (red) on the front panel of the relay. When a power supply is supplied without a control signal, a green indicator light indicates that there is a voltage supply. In the case of supplying the voltage, the contact 15-18 closes, while the red indicator light turns on. At the end of the setting time T1, contact 15-18 opens and contact 15-16 closes. The red indicator light blinks. At the end of the second time setting T2, the contact 15-16 is opens and contact 15-18 closes and so until the power is removed from the relay. In the presence of a control signal on the contact «S» process begins with closed contacts 15-16.

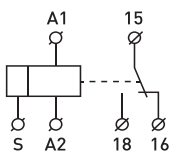
### Connection scheme



### Relay operation diagram



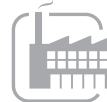
### Graphic notation





## Star-delta time relay e.control.t18

They are intended for control of contactors, which switch windings of an electric engine from the scheme «star» - when starting on the «delta» scheme - in working mode.



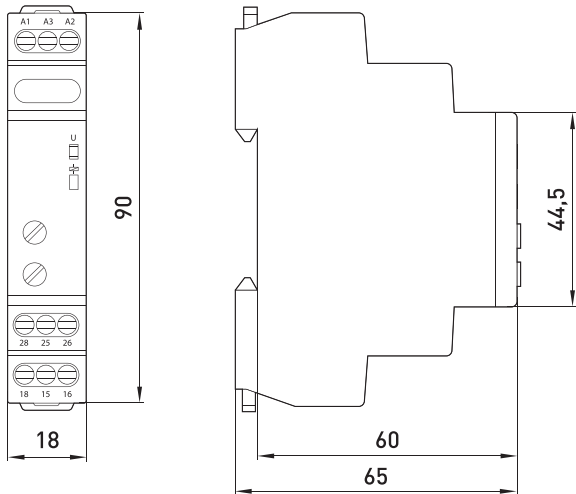
**060** Corresponds to EN 60730-1, EN 60730-2-7, EN 61000-6-2, EN 61000-6-4.

### Technical data

Parameter name		Value
Rated voltage of power-supply circuit	(A1-A2), V	AC 230
	(A3-A2), V	DC 24
Rated frequency, Hz		50
Time setting range, s		0,1 s-10 min
Error of setting time, %		75/150
Error of recurrence time, %		<5
Number and type of contacts		2 C/O
Rated current of contacts, A	cosφ = 1	8
	cosφ = 0,7	2
Own power consumption, VA, no more		1
Electrical life, On/Off cycles, no less		100 000
Mechanical life, On/Off cycles, no less		1 000 000
Maximum cross section of connecting wire, mm <sup>2</sup>		0,5-1
Tightening torque of contact clamps, Nm		0,5
Protection degree		IP20
Weight, g, no more		100
Ambient temperature, °C		-5...+40
Altitude, m, no more		2 000
Permissible relative humidity at 40 °C (without condensation), no more		60 %
Working position		arbitrary
Mounting		on DIN rail 35 mm

Name	Time setting range, s	Rated supply voltage, V	Rated current of contacts, A	Type of contacts	Order code
e.control.t18	0,1 s - 10 min	(A1-A2): AC 230; (A2-A3): AC/DC 24	8	2 C/O	i0310030

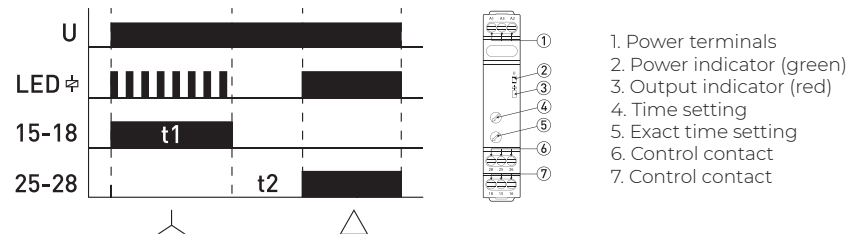
### Overall and installation dimensions



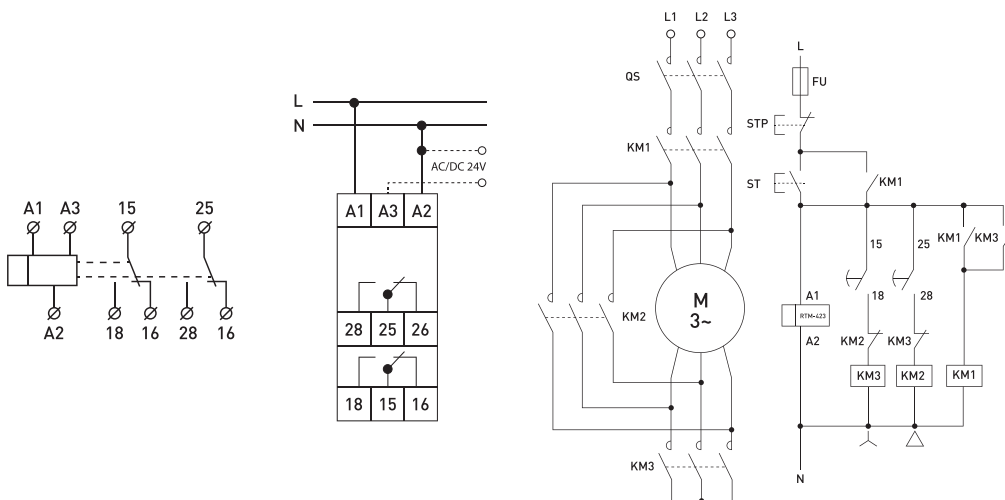
### Function

When the voltage is supplied to the relay, the indicator of the presence of a voltage of green color is turning on. At this moment contact 15-18 is closing, which activates the contactor for connecting the windings of the electric engine to the «Star». After counting the time indicated by the blinking of the red indicator, contact 15-18 is opened, but due to the selected time setting of 75/150 ms, contact 25-28 closes. In turn, contact 25-28 turns on the contactor for connecting the winding of the electric engine to the «delta». In this case, the indicator of the red color is lighting constantly.

### Relay operation diagram



### Graphic notation and a schematic diagram of turning on







## Twilight relay with remote sensor e.control.s01

It is intended for automatic turning on and off lighting and other electrical equipment depending on the level of lighting.



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.



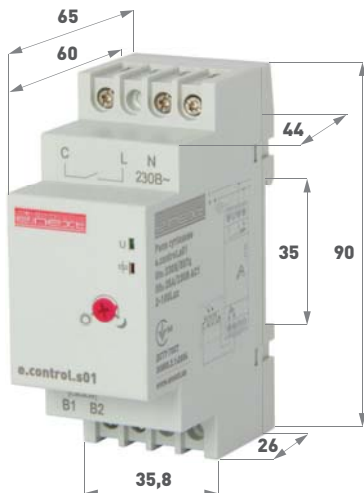
### Technical data

Parameter name		Value
Rated current of supply circuit, V		AC 230
Rated frequency, Hz		50
Rated voltage of control circuit, V		230
Voltage of insulation U <sub>i</sub> , V		250
Maximum switching contact current, A	cosφ = 1	20
	cosφ = 0,7	16
Maximum current of contacts, A		25
Regulation range, lx		2-100
Time delay for turning on, non adjustable, s		2-5
Time delay for turning off, non adjustable, s		10-15
Contact		1NO
Maximum switching power, W:	Incandescent-filament lamps	3 000
	Halogen lamps	3 000
	LED lamps	3 000
	Fluorescent lamps	1 000
Power consumption, operating/waiting, VA, no more		0,45/0,1
Electrical life, On/Off cycles, no less		10 <sup>5</sup>
Mechanical life, On/Off cycles, no less		10 <sup>6</sup>
Maximum cross section of connecting conductors, mm <sup>2</sup>		4
Tightening torque, Nm		0,5
Protection degree	Halogen lamps	IP20
	LED lamps	IP65
Weight, g, no more		150
Ambient temperature, °C		-20...+40
Altitude, m, no more		2 000
Permissible relative humidity at 40 °C (without condensation), no more		50 %
Working position		arbitrary
Mounting		on DIN rail 35 mm



Name	Description	Order code
e.control.s01	Twilight relay with remote sensor	i0310014

## Overall and installation dimensions



## Function

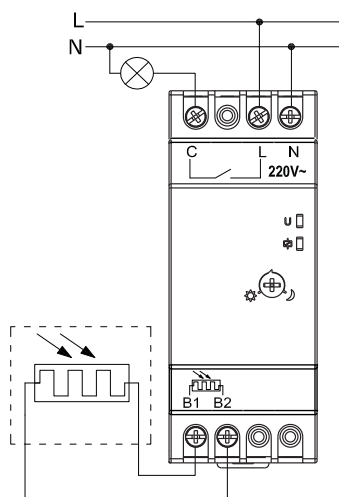
There are a potentiometer for changing the threshold for lighting, a power supply indicator (green) and a relay operation indicator (red) on the front panel of the relay.

The relay has an unregulated (factory) delay time for turning on and off, which avoids false turning on when the level of lighting is accidentally changing (for example, when the sensor hits the headlight of the car). At the level of lighting above the setting threshold, the output contact of the relay is in the open state.

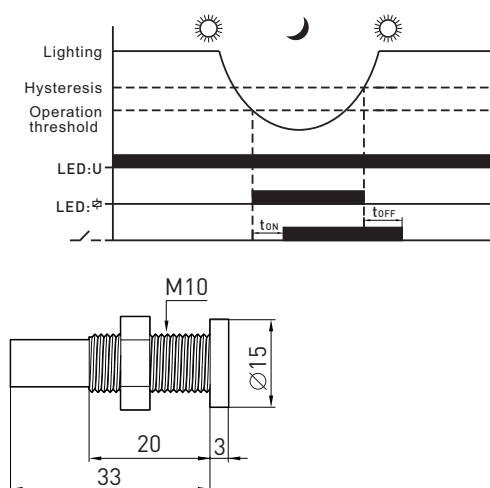
When the level of lighting decreases below the set value, the operating indicator of relay turns on and the delay time starts to turn on. If during this time the level of lighting does not increase, the output relay contact closes.

When the lighting is increasing, the operation indicator of the relay turns off and the countdown to the turning off time starts. If during this time the level of lighting will not decrease, the output relay contact will open.

## Connection scheme



## Relay operation diagram





## Pulse relay e.control.i01

It is intended for control the double-circuit network lighting and other electrotechnical equipment from several places due to parallel connected breakers.



**060** Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.

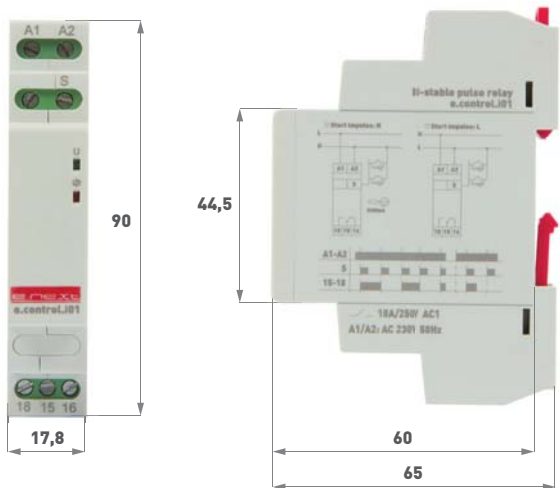


### Technical data

Parameter name		Value
Rated voltage of supply circuit, V		AC 230
Rated frequency, Hz		50
Rated voltage of control circuit, V		230
Voltage of insulation, $U_i$ , V		250
Rated current of contacts, A	$\cos\varphi = 1$	10
	$\cos\varphi = 0,7$	6
Utilization category		AC1
Number and type of contacts		1 C/O
Control current, mA		$\leq 1$
Own power consumption, VA, no more		0,8
Electrical life, On/Off cycles, no less		105
Mechanical life, On/Off cycles, no less		106
Maximum cross section of connecting wire, mm <sup>2</sup>		0,5-1
Tightening torque of contact clamps, Nm		0,5
Protection degree		IP20
Weight, g, no more		100
Ambient temperature, °C		-5...+40
Altitude, m, no more		2 000
Permissible relative humidity at 40 °C (without condensation), no more		60 %
Working position		arbitrary
Mounting		on DIN rail 35 mm

Name	Description	Order code
e.control.s01	Twilight relay with remote sensor	i0310014

## Overall and installation dimensions



## Function

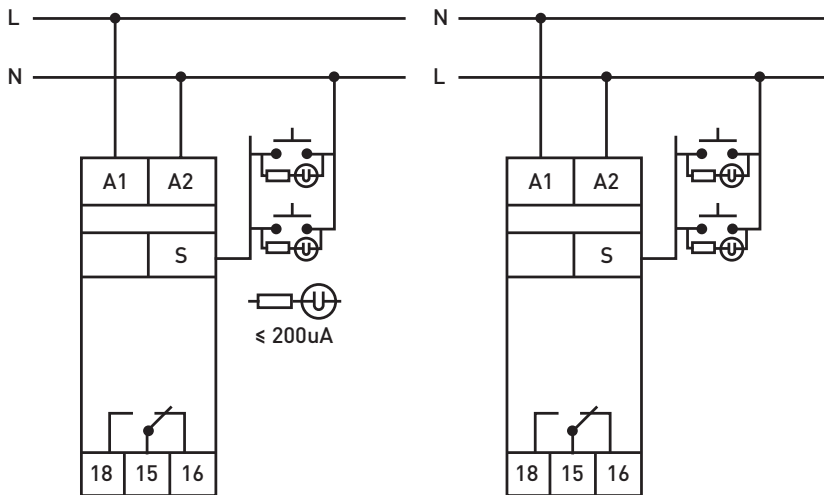
The green power indicator light turns on when the power is supplying. When the pulse of the control signal is supplied at the closing of one of the push-buttons breakers, the output contact of the relay 15-18 is closing, in this case the red indicator is turning on, in repeated pulse the output relay contact is opening and the red indicator light is turning off.

Pulse relays can reduce the cost of laying wiring for staircases and other breakers, greatly simplify the schemes and installation.

The relay e.control.i01 has not memory function, that is, when the voltage is lost, the relay contacts 15-18 are opened and after the renovation of the voltage the supply, contacts are kept in the open state.

The relay e.control.i01 can be used together with backlight breakers.

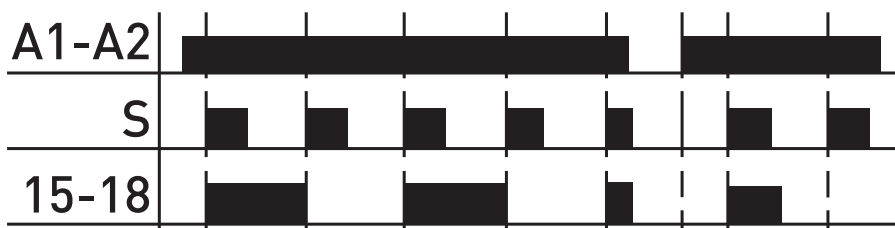
## Connection scheme



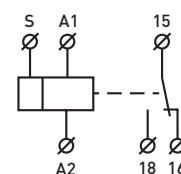
Control pulse for L

Control pulse for N

## Relay operation diagram



## Graphic notation





## Temperature control relay with remote sensor e.control.h01

It is intended to control and maintain a given air temperature of residential and industrial places, also objects and liquids in a variety of technological processes through the control of heating or cooling equipment.



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.

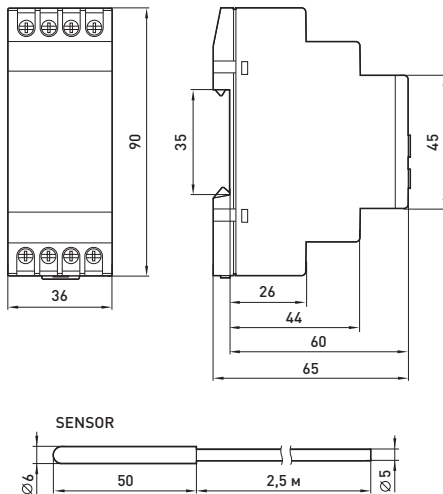


### Technical data

Parameter name	Value
Rated voltage Ue, V	DC/AC 24-240
Rated frequency, Hz	50/60
Rated voltage of insulation Ui, V	415
Maximum switching current of contacts at 250 V, A	16
Utilization category	AC-1
Temperature setting range, °C	-5...+40
Hysteresis, °C	0,5...+3
Type of contacts	1C/O
Switching capacity	4 000 VA/AC-1, 300 W/DC
Maximum power consumption, VA	1,5
Electrical life, cycles, no less	10 <sup>5</sup>
Mechanical life, cycles, no less	10 <sup>6</sup>
Maximum cross section of connecting wire, mm <sup>2</sup>	2,5
Tightening torque of contact clamps, Nm	0,5
Protection degree of relay	IP20
Protection degree of sensor	IP65
Weight, g, no more	200
Ambient temperature, °C	-5...+55
Altitude, m, no more	2 000
Permissible relative humidity at 40 °C (without condensation), no more	50 %
Working position	arbitrary
Mounting	on DIN rail 35 mm

Name	Rated current, A	Adjustment range t, °C	Group of contacts	Order code
e.control.h01	16 A, at AC/DC 24-240 V	-5...+40	1 C/O	i0310016

## Overall and installation dimensions



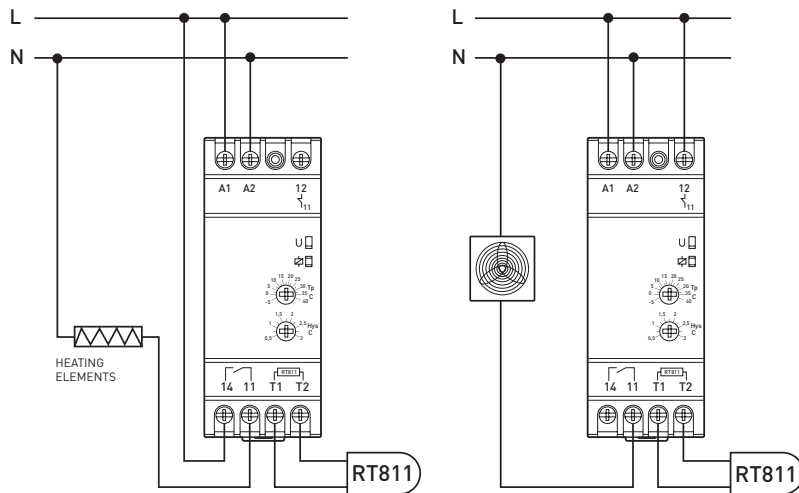
## Function

The temperature control relay e.control.h01 in a modular execution with a width of 36 mm it is made of ABS-plastic, which is self-extinguishing.

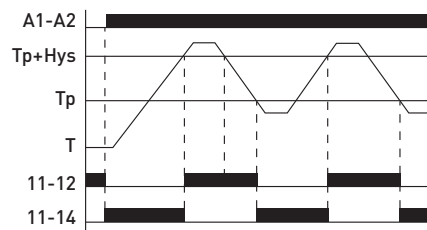
There are LED indicators at the front panel of the device (see Pic. 3) that indicate the mode of operation of the relay, and potentiometers for setting the temperature and hysteresis. The setting of temperature and hysteresis of the relay is carried out before the supply voltage. When the settings are changed after the voltage is supplied, they will come into force only after the turning off and repeated turning on of the supply voltage.

When the supply voltage is applied to the terminals A1 and A2, the green LED indicator U is turning on. If the measured temperature T is less than the set value  $T_p + Hys$ , the output contact (11-14) is closing. When the temperature becomes higher than the  $T_p + Hys$  setting, the output contact (11-12) is closing. If the measured temperature T becomes less than the set value  $T_p + Hys$  (including hysteresis), the contacts (11-14) are closing again.

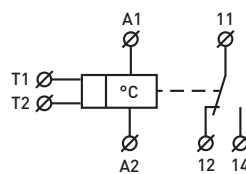
## Connection scheme



## Relay operation diagram



## Graphic notation





## Temperature control relay with remote sensor e.control.h02

It is intended to control and maintain a given air temperature of residential and industrial places, also objects and liquids in a variety of technological processes through the control of heating or cooling equipment.



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.

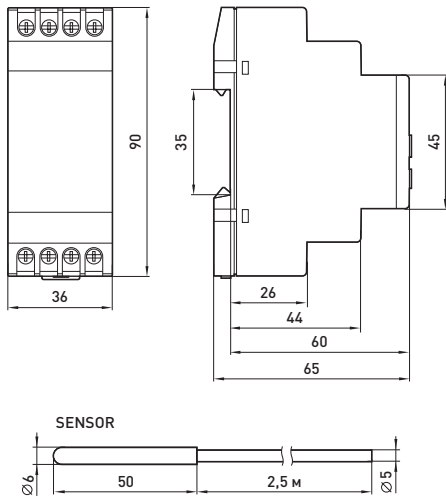


### Technical data

Parameter name	Value
Rated voltage Ue, V	AC/DC 24-240
Rated frequency, Hz	50/60
Rated voltage of insulation Ui, V	415
Maximum switching current of contacts at 250 V, A	16
Utilization category	AC-1
Temperature setting range, °C	-25...+130
Hysteresis, °C	1...30
Type of contacts	2 NO
Switching capacity	4 000 VA/AC-1, 300 W/DC
Power consumption, VA	1,5
Electrical life, cycles	10 <sup>5</sup>
Mechanical life, cycles	10 <sup>6</sup>
Maximum cross section of connecting wire, mm <sup>2</sup>	1
Tightening torque of contact clamps, Nm	0,5
Protection degree of relay	IP20
Protection degree of sensor	IP65
Weight, g, no more	200
Ambient temperature, °C	-20...+55
Altitude, m, no more	2 000
Permissible relative humidity at 40 °C (without condensation), no more	50 %
Working position	arbitrary
Mounting	on DIN rail 35 mm

Name	Rated current, A	Adjustment range t, °C	Group of contacts	Order code
e.control.h02	16 A, at AC/DC 24-240 V	-25...+130	2 NO	i0310017

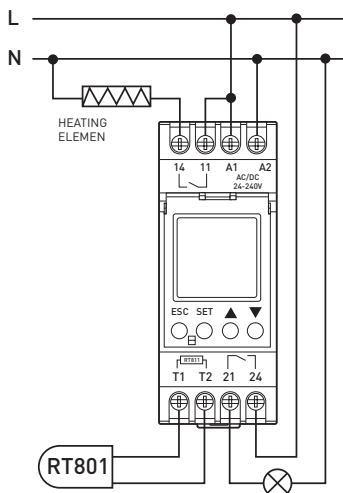
## Overall and installation dimensions



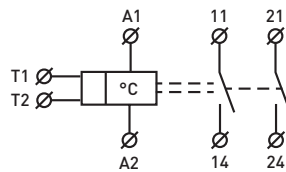
## Function

The temperature control relay e.control.h02 in a modular execution with a width of 36 mm, it is made of ABS-plastic, which is self-extinguishing. There are control buttons and liquid crystal display on the device front panel (see Pic. 3), which works to show current parameters and settings. The relay can operate in two modes: heating and cooling. The relay has signaling contacts (21-24) that can be connected to the power supply interruption of the light-signal armature or other device, which can signal an excess temperature tolerance.

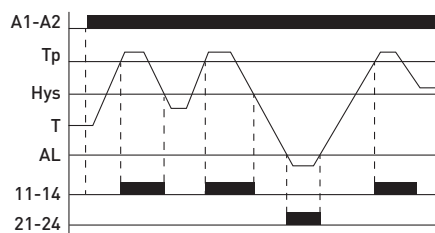
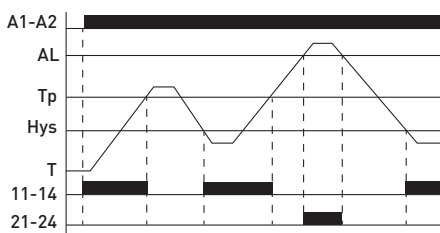
## Connection scheme



## Graphic notation



## Diagrams of the relay operation depending on the temperature







## Electromechnical daily socket timer e.control.t11

It is intended for automatic turning on and off the electrical equipment at regular intervals during the day.



060 Corresponds to EN 60730-1, EN 60730-2-7.



### Technical data

Parameter name	Value	
Rated voltage of supply circuit, V	230	
Rated frequency, Hz	50	
Rated voltage of control circuit, V	230	
Maximum switching current of contacts, A	cosφ = 1	16
	cosφ = 0,7	10
Maximum number of cycles On/Off per day	12/84	
Minimum step of setting the working time, min	2	
Error of counting time, s/day, no more	±6	
Power consumption, VA, no more	1	
Electrical life, On/Off cycles, no less	10 <sup>5</sup>	
Mechanical life, On/Off cycles, no less	10 <sup>6</sup>	
Protection degree	IP20	
Weight, g, no more	85	
Ambient temperature, °C	0...+40	
Altitude, m, no more	2 000	
Permissible relative humidity at 25 °C (without condensation), no more	60 %	
Working position	arbitrary	
Mounting	in a socket with grounding contact, Shuko type	

### Overall and installation dimensions



The case is made of ABS-plastic, which is self-extinguishing. The electronic timer control unit sets the pulses of control by a stepper miniature electric engine which transmits the sequence of the set limbs. The turning On/Off the timer is triggered by transmitting the effects of the daily program set sectors to the timer break-before-make contact.

There is the timer mode breaker on the right side of the device. There is a timer setting limb with dial plate over the socket of the timer for setting the current time and indicator of the presence of network voltage.

The timer breaker has two positions:

- «C» — output contact of timer is permanently closed according to the program is On/Off;
- «I» — automatic timer operation according to the setting program is On/Off.

Name	Order code
e.control.t11	i0310018



## Electromechanical weekly socket timer e.control.t12

It is intended for automatic turning on and off the electrical equipment at regular intervals during the week.



max  
16A



060 Corresponds to EN 60730-1, EN 60730-2-7.



### Technical data

Parameter name	Value	
Rated voltage of supply circuit, V	230	
Rated frequency, Hz	50	
Rated voltage of control circuit, V	230	
Rated current of contacts, A	cosφ = 1	16
	cosφ = 0,7	10
Maximum number of cycles On/Off per day	96	
Minimum step of setting the working time, min	15	
Error of counting time, s/day, no more	±6	
Power consumption, VA, no more	1	
Electrical life, On/Off cycles, no less	10 <sup>5</sup>	
Mechanical life, On/Off cycles, no less	10 <sup>6</sup>	
Protection degree	IP20	
Weight, g, no more	85	
Ambient temperature, °C	0...+40	
Altitude, m, no more	2 000	
Permissible relative humidity at 25 °C (without condensation), no more	60 %	
Working position	arbitrary	
Mounting	in a socket with grounding contact, schuko type	

### Overall and installation dimensions



The case of device is made of ABS-plastic, which is self-extinguishing. The electronic timer control unit sets the pulses of control by a stepper miniature electric engine which transmits the sequence of the set limbs. The turning On/Off the timer is triggered by transmitting the effects of the weekly program setting sectors to the timer break-before-make contact.

There is timer mode breaker on the right side of the device. There is a timer setting limb with dial plate over the socket of the timer for setting the current time and indicator of the presence of network voltage. The timer breaker has two positions:

- «C» — output contact of timer is permanently closed according to the program is On/Off;
- «I» — automatic timer operation according to the setting On/Off program.

Name	Order code
e.control.t12	i0310019



## Electronic socket timer e.control.t13 and e.control.t14

It is intended for automatic turning on and off the electrical equipment at regular intervals during the week.



060 Corresponds to EN 60730-1, EN 60730-2-7.



### Technical data

Parameter name	e.control.t13	e.control.t14
Rated voltage of supply circuit, V	230	
Rated frequency, Hz	50	
Rated voltage of control circuit, V	230	
Maximum switching current of contacts, A	cos φ = 1	16
	cos φ = 0,7	10
Maximum number of cycles On/Off per day	20	8
Maximum number of cycles On/Off per week	140	56
Minimum step of setting the working time, min	1	1
Error of counting time, s/day, no more	±2	
Power consumption, VA, no more	100	
Power consumption, VA, no more	7,5	
Electrical life, On/Off cycles, no less	10 <sup>5</sup>	
Mechanical life, On/Off cycles, no less	10 <sup>7</sup>	
Protection degree	IP20	
Weight, g, no more	150	180
Ambient temperature, °C	0...+40	
Altitude, m, no more	2 000	
Permissible relative humidity at 25 °C (without condensation), no more	70 %	
Working position	arbitrary	
Mounting	in a socket with grounding contact, Shuko type	

### Overall and installation dimensions



e.control.t13



e.control.t14

The microprocessor of timers provides the following functions:

- weekly control program with the number of On/Off cycles to 140 (for e.control.t13) or 56 (for e.control.t14) and the program execution for choosing: every day up to 20 (8) cycles per day, in this mode the timer will be turned on and off according to the installed program;
- program execution to choose: daily; from Monday to Friday; from Monday to Saturday; Saturday and Sunday; from Monday to Wednesday; from Thursday to Saturday; Monday, Wednesday, Friday; Tuesday, Thursday, Saturday; every day of the week separately, in this mode, the timer will be turned on at the setting time and then automatically will turn off;
- time countdown mode (for e.control.t13); accidental switching mode for contacts (for e.control.t14).

Name	Order code
e.control.t13	i0310020
e.control.t14	i0310021



## Residual current socket relay e.control.d01

It is intended for:

- 1 - protection against electric shock by direct or indirect contact, as well as by contacting with parts that may be exposed to voltage as a result of insulation damage;
- 2 - protection against fires that arise as a result of damage to the insulation of wires, cables and conductive parts of electrical appliances.

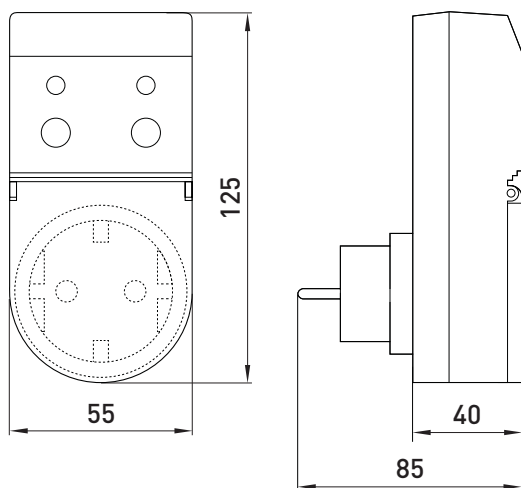


060 Corresponds to EN 60730-1.

### Technical data

Parameter name	Value
Rated voltage Ue, V	AC 230
Rated frequency, Hz	50
Range of working voltages, V	115-265
Maximum switching current of contacts, A	16
Rated residual operating current I $\Delta$ n (A)	30
Rated residual non operating current I $\Delta$ no	0,5 I $\Delta$ n
Type of operation curve by residual leakage current	A
Off time, s	0,030
Rated conventional short-circuit current Inc, A	1500
Maximum cross section of connecting conductors, mm <sup>2</sup>	2,5
Electrical life, On/Off cycles, no less	10 <sup>4</sup>
Mechanical life, On/Off cycles, no less	2×10 <sup>4</sup>
Protection degree	IP20
Weight, g, no more	180
Ambient temperature, °C	-10...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	70 %
Working position	arbitrary
Mounting	in a socket with grounding contact, schuko type
<b>Name</b>	<b>Order code</b>
e.control.d01	i0310024

## Overall and installation dimensions



For installation the protective relay, it is necessary to insert it into a two-pole household socket 16 A/230 V (with earthing contact) and connect the current-using equipment to it. The working capacity checking of relay can be checked by using the «Test» button located on the front panel of the relay. When the «Test» button is pressed, the relay must be operated (there is turning off the voltage supplied to the protected current-using equipment). At the same time, above the «Test» button, the indicator must be turned on, and above the «RESET» button must be turned off.

If the relay is turned off during operation, the following steps must be taken to determine the causes: check the entire electrical circuit for leakage currents; press the «RESET» button. If the relay is turned off immediately or after a while, follow these steps:

Press «RESET» again. If the device is turned on, it means that there was a current leakage to the ground in the current-using equipment due to a short-term insulation breakdown (for example, when a high-voltage pulse passes). Check the function of the protective function of the relay by pressing the «Test» button. If the device does not turn on when you press the «RESET» button again, it means that there is a faulty in insulation or relay is defective in the current-using equipment.



## Single-phase power control socket relays e.control.w01

It is intended to determine the electricity consumption of household consumers (electric kettles, microwave ovens, refrigerators, televisions, etc.), (not intended for commercial electricity accounting).



max  
16A



060 Corresponds to EN 61326-1.

### Technical data

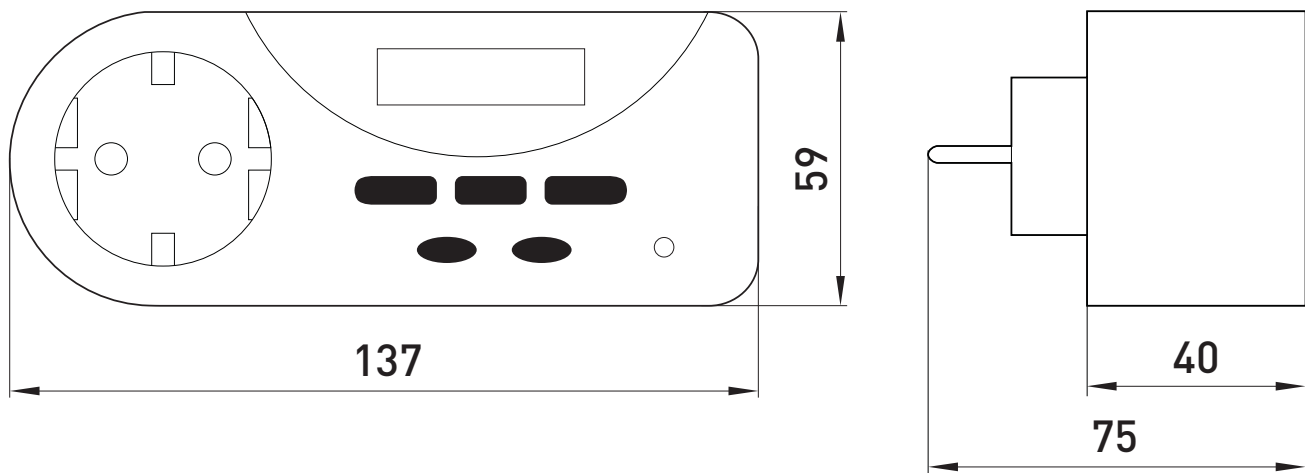
Parameter name	Value
Rated voltage of supply circuit, V	230
Rated frequency, Hz	50
Maximum switching current of contacts, A	16
Metered range, W	5-3500
Displayed values, kWh	0,0-9999
Maximum metering time, h	9999
Power consumption, VA, no more	1
Protection degree	IP20
Weight, g, no more	85
Ambient temperature, °C	+5...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	60 %
Working position	arbitrary
Mounting	in a socket with grounding contact, schuko type

Name	Order code
e.control.w01	i0310023



The case of device is made of ABS-plastic, which is self-extinguishing. The active power control relay at operating controls: network voltage, current value, time of the user and the cost of consumed energy. The relay display can operate in 12- or 24-hour format. For choosing a format, it is necessary to press the «SELECT» button and select 12 or 24-hour format. The device has several functions, each of them is responsible for a certain parameter.

## Overall and installation dimensions



Function	Display	Notation
Time	0:00	Time
Function1	0 V	Voltage
Function 2	0,00 A	Current
Function 3	0 VA	Power
Function 4	0:00	Time of consumption
Function 5	0.00	Consumed energy
Function 6	EURO 0,00	Total cost
Function 7	EURO/kWH 0,00	Price W/Euro

Using «FUNCTION» button you can choose one of the seven existing functions that can be displayed on the device display at the current time:

- Function 1 and Function 2 operate automatically and do not need any settings.
- Function 3 indicates the total power passing through the relay to the consumer.
- Choosing function 4, the display shows the user's working time, if the total time of the relay is more than 100 hours.
- If the total time of the relay is more than 9999 hours, the indicators on the display will blink. Sensitivity of the relay is 60 mA. When loaded below 60 mA, the active power control relay does not react to power consumption.
- Function 5 informs about the energy amount consumed by the customer connected to the relay. If the value of function 5 exceeds 999 kWh, functions 4, 5, 6 are automatically turned off.
- Function 7 indicates the cost of one kWh.



## Current control relay e.control.w02

It is intended for protection of engines or other systems against excessive current consumption depending on the set value.



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.



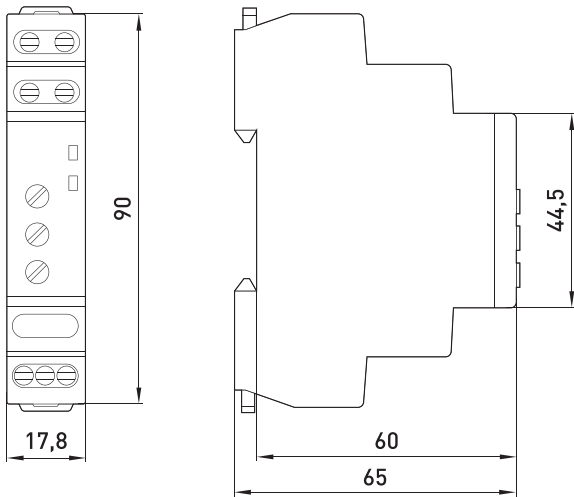
### Technical data

Parameter name	Value
Rated voltage supply, V	AC 230±10 %
Rated frequency, Hz	50
Regulation range of the rated current setting, A	1-10
Rated voltage of insulation, V	250
Contact group	1 C/O
Maximum switching current, A	8
Regulation range of delay time at turning off, s	0,5-10
Regulation range of delay time at turning on, s	1-6
Hysteresis, %	5
Own power consumption, VA, no more	1
Electrical life, On/Off cycles, no less	100 000
Mechanical life, On/Off cycles, no less	1 000 000
Maximum cross section of connecting wire, mm <sup>2</sup>	2,5
Tightening torque of contact clamps, Nm	0,5
Protection degree	IP20
Weight, g, no more	100
Ambient temperature, °C	-5...+40
Altitude, m, no more	2 000
Permissible relative humidity at 40 °C (without condensation), no more	50 %
Working position	arbitrary
Mounting	on DIN rail 35 mm

Name	Rated voltage Ue, V	Rated current (ACI)	Setting range of the rated current value, A	Protection degree	Order code
Current control relay e.control.w02	AC 230±10 %	8	1-10	IP20	p0690016



## Overall and installation dimensions

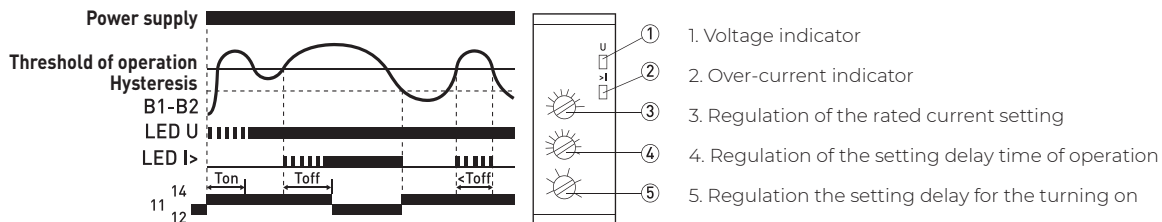


## Function

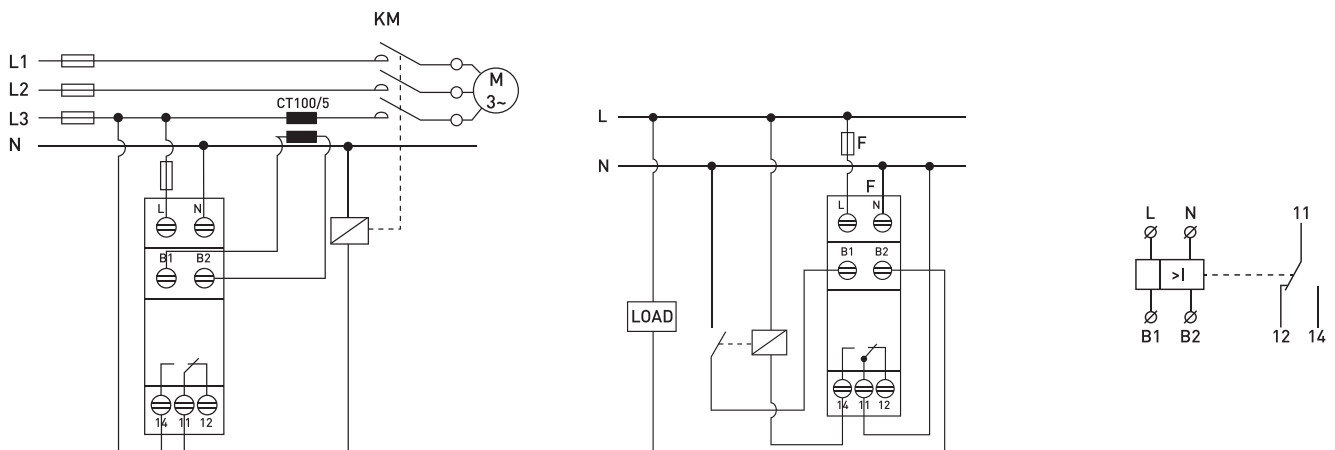


After the voltage is supplied to the contacts L, N, the indicator «U» starts blinking. After the countdown, the delay time of the contact 11-14 remains to be closed. When an overload current occurs, the «I» indicator blinks, signaling the start of the reference time of the operation. If the current after the delay time did not fall below the setpoint, the «I» indicator lights continuously, and the contacts 11-14 are opened (11-12 - closed). After returning the load in the set limits of the relay, contacts 11-14 are again closed. The current transformer is connected to contacts B1-B2, if the current is more than 10 A, it is connected directly at a lower value it.

## Relay operation diagram



## Graphic notation and schematic diagram for turning on





## Single-phase pump protection relay e.control.w03

It is intended for protection of submersible pumps from «dry running», overload and over-voltage.



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.

max  
8A



### Technical data

Parameter name	Value
Rated voltage supply, V	AC 230±10 %
Rated frequency, Hz	50
Regulation range of the rated current setting, A	(0,4-0,9)×Inom
Rated voltage of insulation, V	250
Contact group	1 C/O
Maximum switching current, A	8
Regulation range of delay time at turning on, s	2-60
Hysteresis, %	5
Own power consumption, VA, no more	1
Electrical life, On/Off cycles, no less	100 000
Mechanical life, On/Off cycles, no less	1 000 000
Maximum cross section of connecting wire, mm <sup>2</sup>	2,5
Tightening torque of contact clamps, Nm	0,5
Protection degree	IP20
Weight, g, no more	100
Ambient temperature, °C	-5...+40
Altitude, m, no more	2 000
Permissible relative humidity at 40 °C (without condensation), no more	50 %
Working position	arbitrary
Mounting	on DIN rail 35 mm

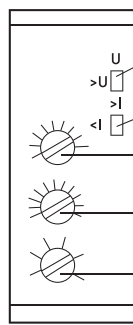
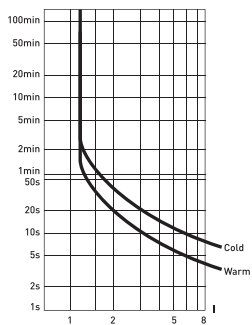
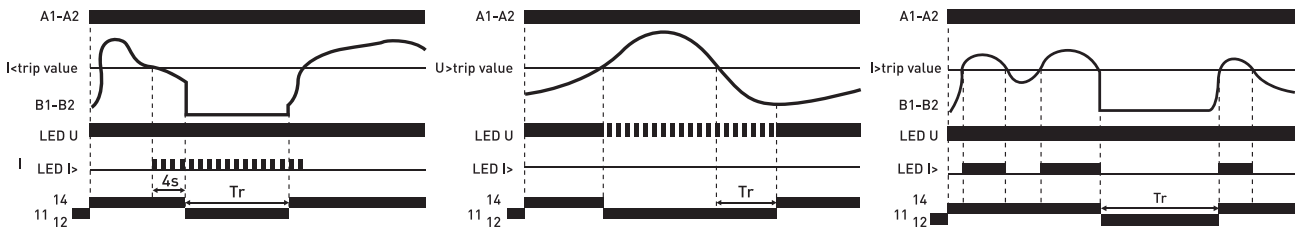
Name	Rated voltage U <sub>e</sub> , V	Rated current (AC1) I <sub>n</sub> , A	Range of operation against reduced current consumption, A	Voltage of protection against over-voltage, V	Order code	Order code
Single-phase pump protection relay e.control.w03	AC 230±10 %	8	(0,4-0,9)×Inom	265	IP20	i0310025

## Function



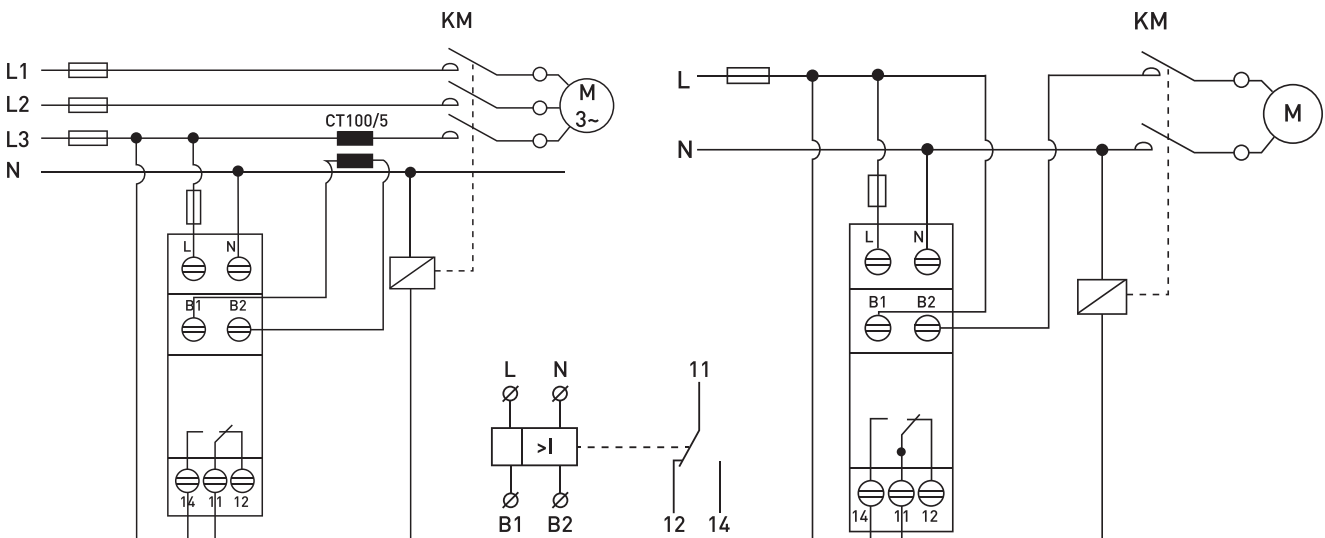
After the voltage is supplied to the contacts L, N, the indicator «U» starts blinking, signaling the countdown of the delay time. If the indicator continues to blink or blinks at the operation time (in this case the relay opens contact 11-14), it signals about the relay operation from the high voltage. When the delay time is completed, contacts 11-14 remain to be closed. When an overload current occurs the indicator «I» starts to light, signaling about the start of the reference time of the operation. If the current after the delay time has not descended below the setpoint, the contacts 11-14 are opening (11-12 - closing). After delay time of turning on is completed, the relay closes the contact 11-14 again. If the load current is below the setpoint, the «I» indicator blinks and after the ending of turning on of the delay time opens. The current transformer is connected to contacts B1-B2, if the current is more than 10 A, at a lower value it is connected directly.

## Relay operation diagram



1. Indication of power supply and over-voltage
2. Indication of increased or reduced current consumption
3. Rated current
4. Minimum current
5. Time delay after emergency mode

## Graphic notation and schematic diagram for turning on





## Phase relay 16A e.control.v11

It is intended for supplying of industrial or household single-phase load 230 V/50 Hz from a three-phase four-wire network for ensuring uninterrupted power supply of single-phase consumers and protect them against inadmissible fluctuations.



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.

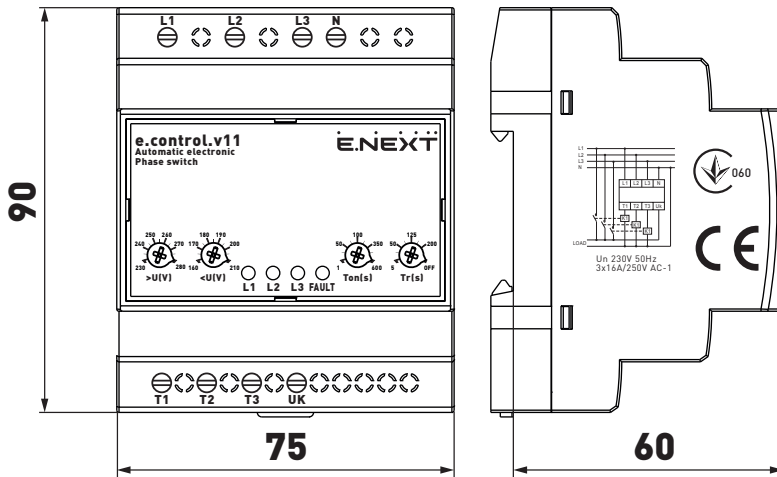


### Technical data

Parameter name	Value	
Rated supply, V	AC 3×230 V (N-L1/L2/L3)	
Rated frequency, Hz	50	
Voltage regulation range, V:	upper limit	230-280
	low limit	160-210
Maximum switching current of contacts for AC-1, A	16	
Response time to emergency voltage, s	<0,2	
Time of turning on after an emergency, s	1-600	
Switching delay time to the priority phase, s	5-200, OFF	
Error of repetition time, no more	0,2 %	
Hysteresis, V	6	
Error of the metering voltage, %	<1	
Cross section of connecting conductors, mm <sup>2</sup>	0,5-1	
Electrical life, On/Off cycles, no less	100 000	
Mechanical life, On/Off cycles, no less	1 000 000	
Protection degree	IP20	
Weight, g, no more	120	
Ambient temperature, °C	-25...+40	
Altitude, m, no more	2 000	
Permissible relative humidity at 40 °C (without condensation), no more	50 %	
Working position	arbitrary	
Mounting	on DIN rail 35 mm	

Name	Rated voltageU <sub>e</sub> , V	Rated current, A	Protection degree	Order code
Phase relay 16 A e.control.v11	AC 3×230	16	IP20	p0690016

## Overall and installation dimensions

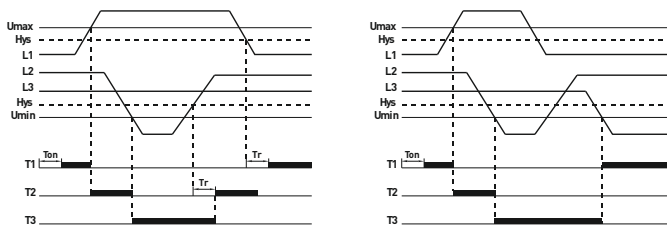


## Function

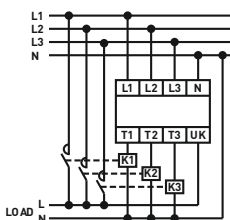


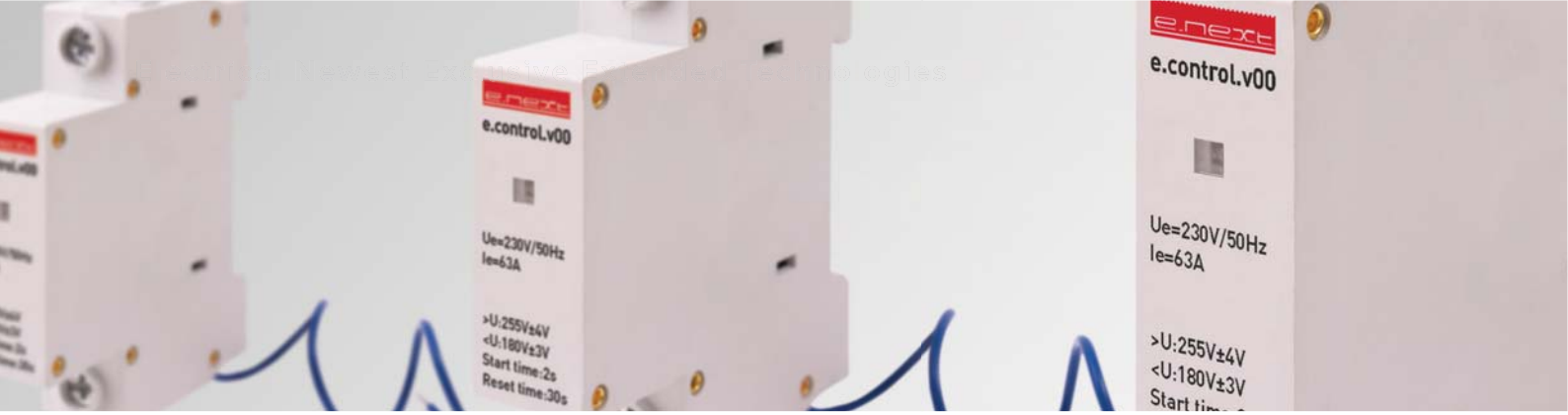
The phase relay e.control.v11 has a modular execution with a width of 75 mm. The case of the device is made of ABS-plastic, which is self-extinguishing. Indicators L1, L2, L3 indicate a priority phase whose voltage at the given time is supplied to the output terminals. The constant lighting of the «FAULT» indicator shows the output of the voltage at the set limits of all three phases. The blinking of the «FAULT» indicator shows that the time delay occurs during turning on. At connecting to a three-phase network, the relay automatically analyzes the voltage in each phase and when the voltage is released in the same phase at the set limits, the device switches the load to another phase where the voltage does not exceed the set limits. The connection is occurring only through contactors. After switching from the priority phase to another phase and stabilizing the voltage in the priority phase, the relay switches to the priority phase back immediately if the delay of switching to the priority «Tr (s)» is turned off - OFF. If the switching delay to the priority phase «Tr (s)» is set in the range of 5 to 200 seconds, then the returning to the priority phase will be carried out at the setting time.

## Relay operation diagram



## Graphic notation and schematic diagram for turning on



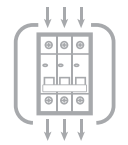
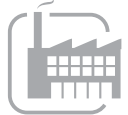


## Single-phase voltage-check relay e.control.v00

It is intended for continuous control of voltage values and protection of equipment from poor-quality voltage in single-phase circuits.



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.



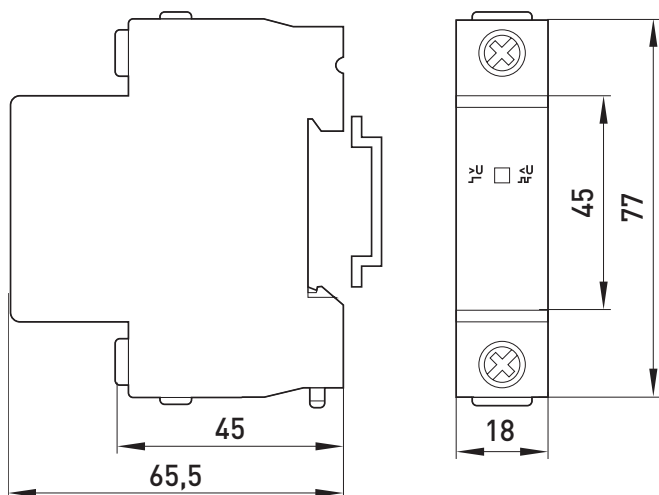
### Technical data

Parameter name	Value	
Rated voltage supply, V	230	
Rated frequency, Hz	50	
Rated voltage of insulation, V	400	
Number and type of contacts	1 NO	
Maximum switching current, A	63	
Delay time at turning off, s	0,5	
Delay time at first turning on/after operation, s	2/30	
Pickup setting (fixed), V	upper limit	255
	low limit	180
Electrical life, On/Off cycles, no less	10 <sup>5</sup>	
Mechanical life, On/Off cycles, no less	10 <sup>6</sup>	
Maximum transverse cross section of conductor	10	
Tightening torque of contact screw, no more, Nm	1	
Protection degree	IP20	
Altitude, m, no more	2 000	
Permissible relative humidity, %	50	
Working position	arbitrary	
Mounting	on DIN rail 35 mm	



Name	Rated voltage U <sub>e</sub> , V	Rated current, A	Protection degree	Order code
e.control.v00	230	63	IP20	p0690017

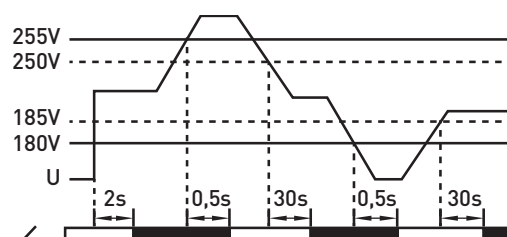
## Overall and installation dimensions



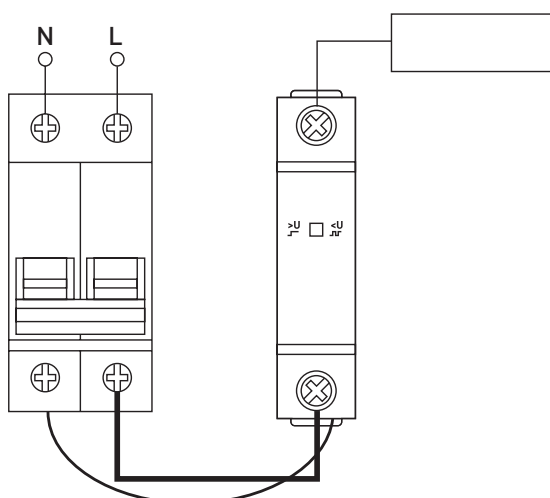
## Construction and function

A green LED will blink on the front of the relay at voltage supplying to the phase and neutral conductor of the device, indicating a delay of the first turning on (2 seconds). At the end of the delay time, the normally opened relay contact closes and the power is supplying to the load. In this case, the LED constantly lights with green light. At the output (deviation) of the voltage outside the value of the setting of the maximum or minimum value of voltage network, the contact relay is opened, thus providing a deenergizing load. At operating from the low-voltage, the red LED blinks, from the over-voltage - it lights continuously. The delay time for turning on after the voltage has returned to the operating range is 30 seconds; All values are fixed (non-adjustable factory settings).

## Relay operation diagram



## Connection scheme





## Single-phase voltage-check relay e.control.v01 and e.control.v02

It is intended for control the value of supply voltage in single-phase AC circuits and protecting consumers of electricity from over or low voltage by turning off the supply voltage at its output for set limits with a set time delay and automatically turning on the power supply with a given time delay when normal level is renewed. The voltage measurement method is the real RMS value (True RMS).

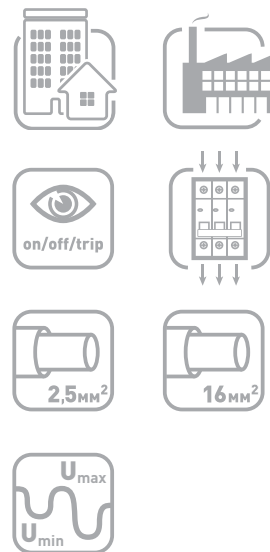


060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.

### Symbolic structure

e. — trademark E.NEXT  
control — series  
v — type  
X — execution

e.control.v0X



### Technical data

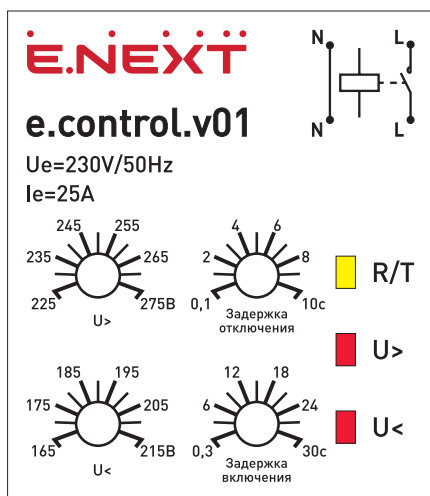
Parameter name	e.control.v01	e.control.v02
Rated voltage U <sub>e</sub> , V	AC 160-280	
Rated frequency, Hz	50	
Rated voltage of insulation U <sub>i</sub> , V	460	
Number and type of contacts	1NO	1 C/O break-before-make contact
Maximum switching current of contacts, A	25	1,5
Current of thermal stability of contacts, A	—	5
Utilization category	AC-7a	AC-15
Voltage regulation range, V:	upper limit	225-275
	low limit	165-215
Range of time delay control at turning off, s	0,1-10	
Range of time delay control at reclosing, s	0,3-30	1
Error of the metering voltage, %	1 %	
Hysteresis	5 %	
Maximum power consumption, VA	2	
Electrical life, On/Off cycles, no less	10 <sup>5</sup>	
Mechanical life, On/Off cycles, no less	10 <sup>7</sup>	
Cross section of connecting conductors, mm <sup>2</sup>	16	2,5
Tightening torque of contact clamps, Nm	2,5	0,5
Protection degree	IP20	
Weight, g, no more	120	70
Ambient temperature, °C	-5...+40	
Altitude, m, no more	2 000	



Parameter name	e.control.v01	e.control.v02
Permissible relative humidity at 40 °C (without condensation), no more	50 %	
Working position	arbitrary	
Mounting	on DIN rail 35 mm	

Name	Voltage regulation range, V		Time delay at turning off, s	Time delay at turning on, s	Rated current of contacts, A	Order code
	Upper limit	Low limit				
e.control.v01	225-275	165-215	0,1-10	0,3-30	25	p0690006
e.control.v02	225-275	165-215	0,1-10	1	1,5	p0690007

## Function e.control.v01



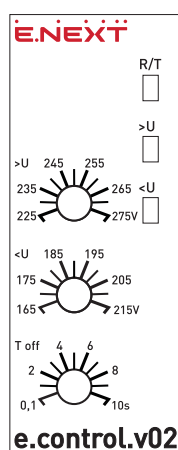
At the voltage supply is supplied to the contacts L and N, at a normal voltage level outside the set limits, the countdown of the setting time of the relay turning on starts. In this case, the R/T LED starts blinking. When the setting delay time is reached, the normally opened relay contact closes and the load is connected to the network.

At the deviation of voltage value at set limits the suitable indicator U> or U< lights, R/T indicator starts blinking. If after the setting output delay time the voltage after the deviation does not return to normal, after the ending of output delay time the relay contact is opened and the load is disconnected from the network. In this case R/T control indicator will go out.

When the normal voltage level is renewed at the set limits, the indicator U> or U< disappears, the R/T indicator blinks, the relay contact with the time delay Tg closes and the load connects to the network. In this case control indicator R/T will go out.

If the power supply voltage exceeds the set limits, the suitable indicator U> or U< will be illuminated, there will be no timer and the relay contact will remain opened.

## Function e.control.v02



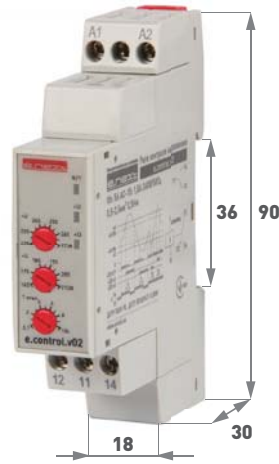
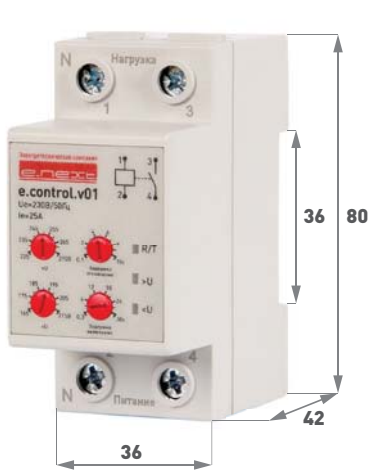
At the supply voltage is supplied to the contacts A1 and A2, and at the normal voltage level in the network, which do not exceed the set limits, the relay closes the output contact with the time delay of 0,5 s.

At the deviation of value of the supply voltage at the set limits, the suitable indicator U> or U< will light, the R/T indicator starts blinking. If after the setting delay time Tt off the voltage does not return to the normal level, then after the time reference Tt, the output relay contacts are opening. In this case indicator R/T will go out.

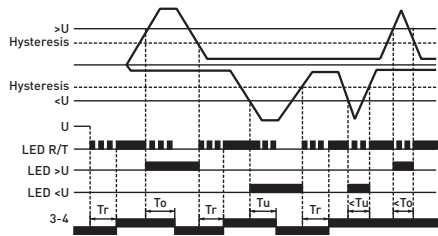
At the normal voltage level is renewed at the set limits, the indicator U> or U< will go out, the relay contact with the time delay 1 s will close.

If the power supply voltage exceeds the set limits, the suitable indicator U> or U< will light, there will be no countdown and the relay contact will remain to be opened.

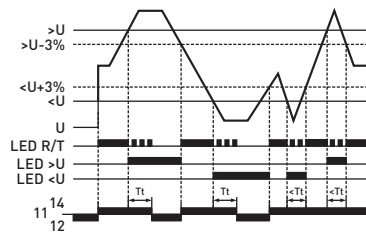
## Overall and installation dimensions



## Relay operation diagram

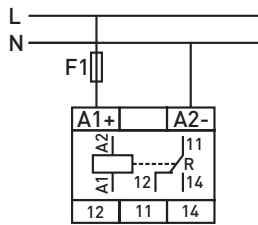


e.control.v01



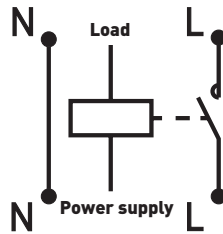
e.control.v02

## Connection scheme



e.control.v02

## Graphic notation



e.control.v01



## Three-phase voltage-check relay e.control.v03

It is intended for uninterrupted control: values of three-phase AC voltage and protection of consumers of electricity from: over or low voltage; the incorrect order of phases sequence, asymmetry and phase interruption. The voltage measurement method is the real mean square value (True RMS).

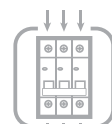


060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.

### Symbolic structure

e. — trademark E.NEXT  
control — series  
v — type  
X — execution

e.control.v0X



### Technical data

Parameter name	Value	
Rated voltage U <sub>e</sub> , V	AC 265-495	
Rated frequency, Hz	50	
Rated voltage of insulation U <sub>i</sub> , V	415	
Number and type of contacts	1 C/O break-before-make contact	
Maximum switching current of contacts	250 V, A	1,5
	415 V, A	0,95
Current of thermal stability of contacts, A	5	
Utilization category	AC-15	
Voltage regulation range, V	upper limit	435
	low limit	325
Range adjustment of electrical imbalance, %	8	
Time off at interruption or incorrect phase sequence, s	0,2	
Error of the metering voltage, %	1	
Hysteresis, V	6	
Maximum power consumption, VA	2	
Electrical life, On/Off cycles, no less	10 <sup>5</sup>	
Mechanical life, On/Off cycles, no less	10 <sup>6</sup>	
Cross section of connecting conductors, mm <sup>2</sup>	2,5	
Tightening torque of contact clamps, Nm	0,5	
Protection degree	IP20	
Weight, g, no more	90	
Ambient temperature, °C	-5...+40	
Altitude, m, no more	2 000	

# Electrical Newest Exclusive Extended Technologies

Parameter name	Value
Permissible relative humidity at 40 °C (without condensation), no more	50 %
Working position	arbitrary
Mounting	on DIN rail 35 mm

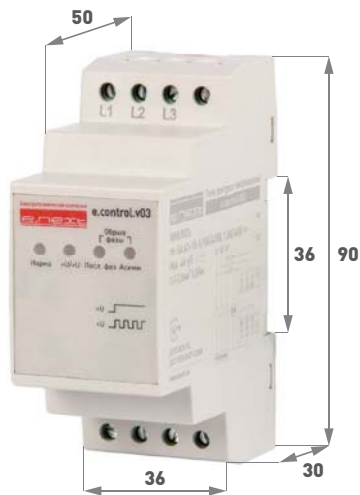
Name	Voltage regulation range, V		Asymmetry, %	Time delay at turning off, s	Time delay at turning on, s	Order code
	Upper limit	Low limit				
e.control.v03	435	325	8	2	1	p0690008

## Function

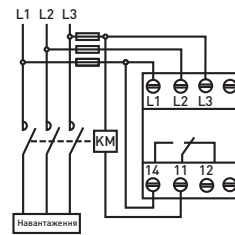
At the supplying of voltage to the controlled network at terminals L1, L2, L3 at normal voltage level and asymmetry values which do not exceed the set limits (325-435 V and 8 % respectively), and the correct phases sequence, the contact relay (11-14) are closing. In this case, the «Norm» indicator is initially activated. If the voltage parameters exceed the set limits, the suitable emergency indicator is activated and the relay contact (11-14) remains to be opened.

At interruption of one or more, the fault of the phase sequence causes the relay contact (11-14) are opening without delay time. The indicator «Norm» will go out, and the suitable indicators «Last phases «+» Asym.» are activated. When the full-phase mode and the normal phase sequence are renewed, the relay contact (11-14) are closing without delay time. The indicators «Last phases «+» Asym.» will turn off and the «Norm» indicator will be activated.

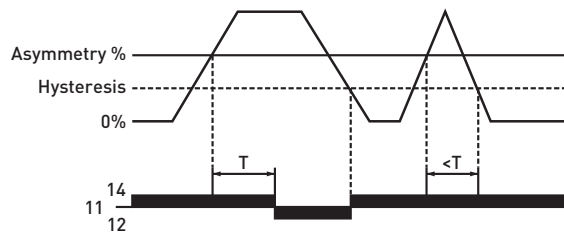
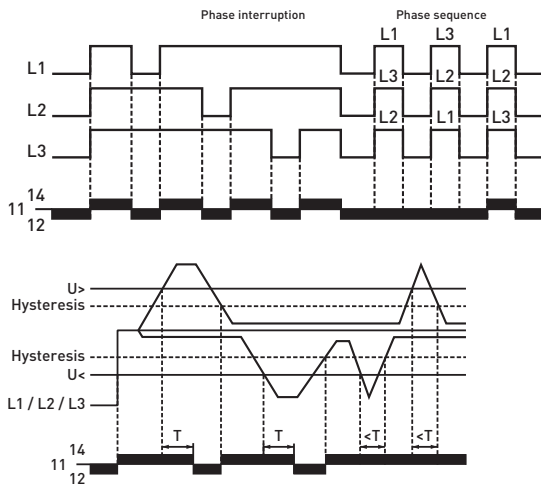
## Overall and installation dimensions



## Connection scheme



## Relay operation diagram





## Three-phase voltage-check relay e.control.v03m

It is intended for uninterrupted control of voltage values in three-phase circuits and protection of equipment from emergency operation modes, in particular, over-voltage, low-voltage, phase interruption, incorrect phase sequence, phase asymmetry.



Corresponds to EN 60730-1,  
EN 61000-6-2, EN 61000-6-4.

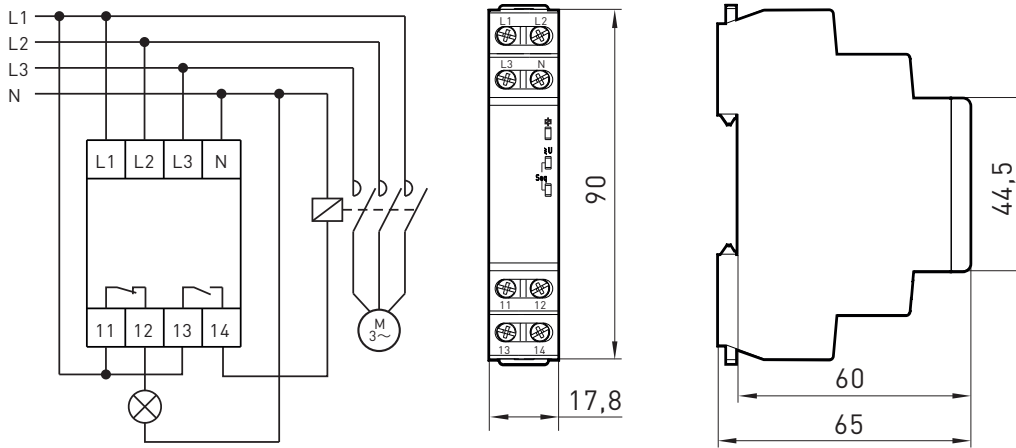


### Technical data

Parameter name		Value
Rated voltage U <sub>e</sub> , V		400
Rated frequency, Hz		50
Power terminals		L1, L2, L3
Operating voltage range, V		340-460
Number and type of contacts		1NO+1NC
Fixed setting of turning off, %	U > upper limit	115
	U < low limit	85
Fixed setting of asymmetry, %		8
Fixed setting of turning off delay, s	U > upper limit	2
	U < low limit	
	asymmetry	
Hysteresis, %		2
Time off at interruption or incorrect phase sequence, s		0,5
Error of the metering voltage, %		± 10
Rated current		8 A/250 V AC 1
Electrical life, On/Off cycles, no less		10 <sup>5</sup>
Mechanical life, On/Off cycles, no less		10 <sup>6</sup>
Cross section of connecting conductors, mm <sup>2</sup>		0,5-2,5
Tightening torque of contact clamps, Nm		0,5
Protection degree		IP20
Ambient temperature, °C		-20...+55
Altitude, m, no more		2 000
Permissible relative humidity at 40 °C (without condensation), no more		50 %
Mounting		on DIN rail 35 mm

Name	Voltage regulation range, V (fixed turning off setting)		Asymmetry, %	Delay time at turning off, s	Time off at interruption or incorrect phase sequence, s	Rated current of contacts, A	Order code
	Upper limit	Low limit					
e.control.v03m	460	340	8	2	0,5	8	p0690020

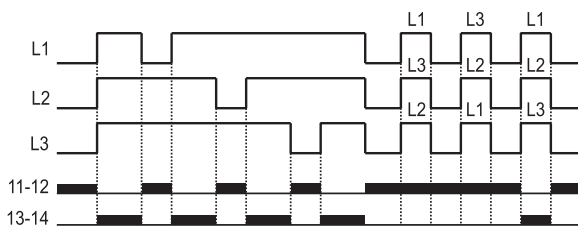
### Connection scheme and overall dimensions



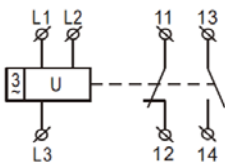
### Indicators

⊕	Operating
<>U	Protection against over/low voltage
Fails	Phase interruption
Asy	Assymetry
Seq	Incorrect phase sequence

### Relay operation diagram



### Graphic notation





## Three-phase voltage-check relay e.control.v04m

It is intended for uninterrupted control of voltage values in three-phase circuits and equipment protection from emergency operation modes, in particular, over-voltage, low-voltage, phase interruption, incorrect phase sequence, phase asymmetry.



Corresponds to EN 60730-1,  
EN 61000-6-2, EN 61000-6-4.

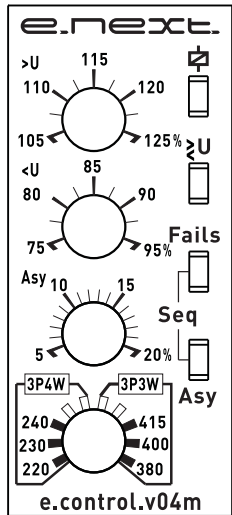


### Technical data

Parameter name		Value	
Rated voltage U <sub>e</sub> , V		380, 400, 415	220, 230, 240
Rated frequency, Hz		50	
Power terminals		L1, L2, L3	L1, L2, L3, N
Operating voltage range, V		266-540	154-312
Number and type of contacts		1NO+1NC	
Setting of turning off, %	U> upper limit	105-130	
	U< low limit	70-95	
Setting of asymmetry, %		5-20	
Range of time delay control at reclosing, s	U> upper limit	0,1-10	
	U< low limit		
	Asymmetry		
Hysteresis, %		2	
Time off at interruption or incorrect phase sequence, s		0,5	
Error of the metering voltage, %		±10	
Rated current		8 A/250 V AC 1	
Electrical life, On/Off cycles, no less		10 <sup>5</sup>	
Mechanical life, On/Off cycles, no less		10 <sup>6</sup>	
Tightening torque of contact clamps, Nm		0,5	
Protection degree		IP20	
Ambient temperature, °C		-20...+40	
Altitude, m, no more		2 000	
Permissible relative humidity at 40 °C (without condensation), no more		50 %	
Storage temperature, °C		-30...+70	
Mounting		on DIN rail 35 mm	

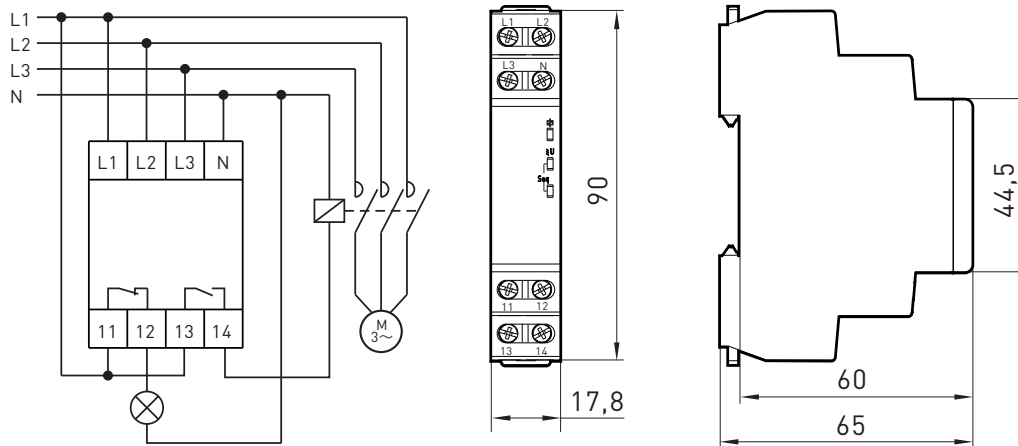
Name	Voltage control range, V				Asymmetry, %	Delay time at turning off, s	Time off at interruption or incorrect phase sequence, s	Rated current of contacts, A	Order code
	Upper limit		Low limit						
	three-wire turning on 3P3W	four-wire turning on 3P4W	three-wire turning on 3P3W	four-wire turning on 3P4W					
e.control.v04m	400-540	231-312	266-361	154-228	5-20	0,1-10	0,5	8	p0690021

**Function**

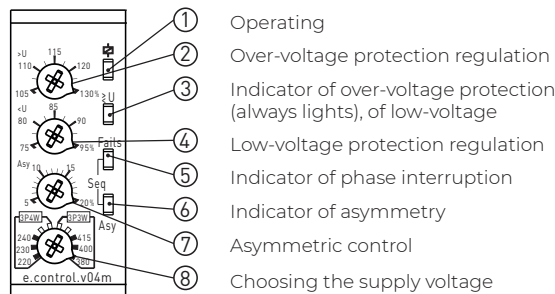


1. After supplying the voltage to the contact terminals L1, L2, L3 and (or without) (N) (depending on the connection circuit) and the normal voltage level which does not exceed the set limits (upper and lower threshold) and the absence of phase interruption, asymmetry and the correct phases sequence. After a delay of 0.5 seconds, the relay contact 13-14 is closing, 11-12 is opening, 1 LED \* lights up, other LEDs are off;
2. At over-voltage, if its action lasts more than 2 seconds, 3 LED \* lights up, the relay contact 13-14 are opening, 11-12 are closing, the LED will stop to light. When the maximum input voltage value of the phase will again be below 2 % (from the chosen set value), 3 LED will go out, 1 LED will light up, the relay contact 13-14 will be closed, 11-12 will be opened;
3. At low voltage, the 3 LED indicator starts blinking. If its action lasts more than 2 seconds, the indicator lights continuously, the relay contacts 13-14 are opening, 11-12 are closing, the indicator stops blinking. When the minimum input voltage value of the phase will again be below 2 % (from the chosen set value), 1 LED will go out, the LED will start to light up, the relay contact 13-14 is closing, 11-12 is opening;
4. At the asymmetry, when the Asy value is higher (or equal to) the set value of the asymmetry ratio 6 the LED indicator will start to go out. If the excess of the asymmetry lasts more than 2 seconds, the relay contact 13-14 is opening, 11-12 is closing, 1 LED goes out.
5. The phase interruption: when the value of the input voltage of any phase is less than 50 % from  $U_n$ , disconnected or completely absent, 5 LED indicator lights, 1 LED goes out.
6. The incorrect phase sequence: if the sequence of input voltage phases is not correct, the indicators LED Fails (5) and Asy (6) will light simultaneously. Relay contact 13-14 is opening, 11-12 is closing. Change the sequence of connections to achieve the normal sequence of the phases L1, L2, L3, after which, the relay will start to work again properly. The relay contact 13-14 is closing, 11-12 is opening.

**Connection scheme and overall dimensions**

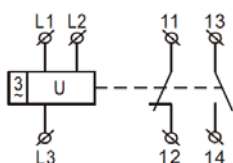


**Indicators**



⊗	Operating
<>U	Protection against over/low voltage
Fails	Phase interruption
Asy	Asymmetry
Seq	Incorrect phase sequence

**Graphic notation**







## Three-phase voltage-check relay e.control.v06

The microprocessor of voltage relay e.control.v06 (hereinafter - device or relay) is intended for control:

- value of three-phase AC voltage and protection of electricity consumers from over-voltage or low-voltage;
- correct order of phases sequence;
- electrical imbalance;
- voltage in a full-phase network (phase interruption).

The method of measuring the voltage is the true RMS value (True RMS).



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.

### Technical data

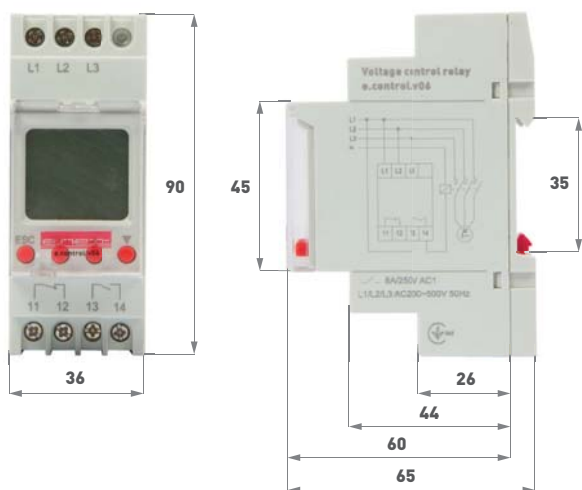
Parameter name	Value	
Rated voltage $U_e$ , V	AC 200-500	
Rated frequency, Hz	45-65	
Rated voltage of insulation $U_i$ , V	415	
Number and type of contacts	1NO+1NC	
Maximum switching current of contacts at 250 V, A	8	
Utilization category	AC-11	
Voltage regulation range, V	upper limit	Off-381-500
	low limit	260-379-Off
Step of the voltage setting control, V	1	
Range of adjustment of imbalance of phases (asymmetry)	Off-5-20 %	
Step of adjustment asymmetry setting	1	
Range of time delay control at turning off, s	over-voltage	0,1-20
	low-voltage	0,1-20
	electrical imbalance of phases	0,1-20
Range of time delay control at turning on (primary and repeated), s	0,1-30	
Range of time delay control at turning off, s	0,1-30	
Step of adjustment the time delay, s	0,1	
Time off at interruption or incorrect phase sequence, s	On-Off	
Protection from incorrect sequence of phases	On-Off	
Error of the metering voltage, %	1 %	
Hysteresis, V	6	
Maximum power consumption, VA	2	
Electrical life, On/Off cycles, no less	$10^5$	
Mechanical life, On/Off cycles, no less	$10^6$	
Cross section of connecting conductors, mm <sup>2</sup>	2,5	

# Electrical Newest Exclusive Extended Technologies

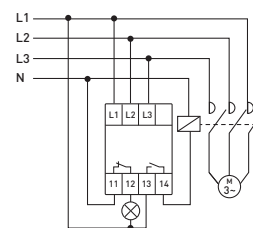
Parameter name	Value
Tightening torque of contact clamps, Nm	0,5
Protection degree	IP20
Weight, g	200
Ambient temperature, °C	-5...+40
Altitude, m, no more	2 000
Permissible relative humidity at 40 °C (without condensation), no more	50 %
Working position	arbitrary
Mounting	on DIN rail 35 mm

Name	Voltage regulation range, V (fixed turning off setting)		Asymmetry, %	Delay time at turning off, s	Delay time at turning on, s	Number and type of contacts	Order code
	Upper limit	Low limit					
e.control.v06	Off-381-500	260-379-Off	Off-5-20	0,1-20	0,1-30	1NO+1NC	p0690011

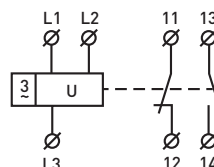
## Overall and installation dimensions



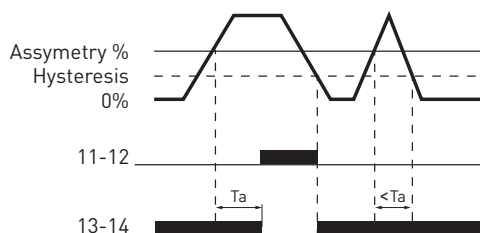
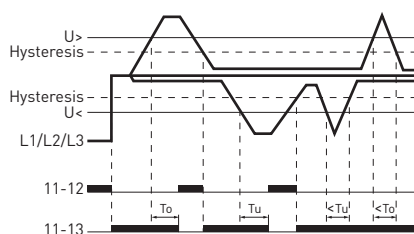
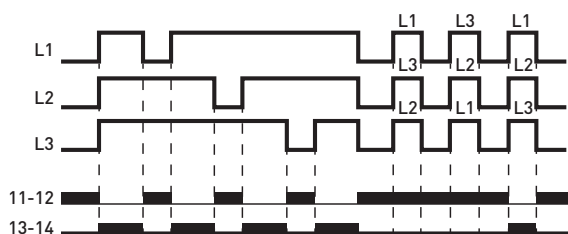
## Connection scheme



## Graphic notation



## Relay operation diagrams





## Single-phase voltage-check socket relay e.control.v07

It is intended for turning off electrical appliances of 230 V AC power in cases of low-voltage or over-voltage in the network below or above the user-specified values. The case of device is made of ABS-plastic, which is self-extinguishing.



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.



### Technical data

Parameter name	Value
Rated voltage supply, V	AC 230±10 %
Rated frequency, Hz	50
Maximum switching current of contacts, A	cosφ = 1
	cosφ = 0,7
Response time for emergency voltage, s	1-999
Discreteness of setting voltage thresholds, V	1
Error of indicating voltage, %	±1
Own power consumption, VA, no more	3,5
Electrical life, On/Off cycles, no less	100 000
Mechanical life, On/Off cycles, no less	1 000 000
Protection degree	IP20
Weight, g, no more	170
Ambient temperature, °C	-5...+40
Altitude, m, no more	2 000
Permissible relative humidity at 25 °C (without condensation), no more	70 %
Working position	arbitrary
Mounting	in a socket with grounding contact, Schuko type

Name	Voltage control range, V		Delay time at turning off, s	Delay time at turning on, s	Rated current of contacts, A	Order code
	Upper limit	Low limit				
e.control.v07	230-269	140-209	0,1	1-999	16	i0310022

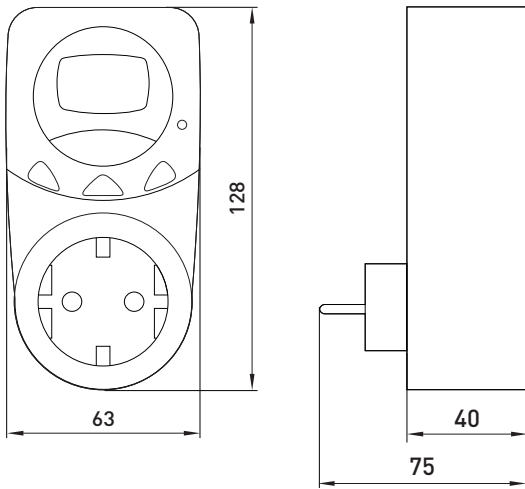
### Function



The microprocessor of relay provides the following functions:

- turning off the consumer with over/low the voltage of the network, higher/lower than the programmed level in the relay;
  - informing about the value of the voltage in the network (digital indication on the display).
- If it is necessary, the relay can be turned on without protection function from over-voltage or low-voltage in the network, or turn off completely.

### Overall and installation dimensions





## Single-phase voltage-check socket relay with indication e.control.v08, e.control.v09

They are intended for control the value of supply voltage in single-phase AC circuits and protecting of electricity consumers from over-voltage or low-voltage by turning off the supply voltage at its output of set limits with a specified time delay and automatically turning on the power supply with a given time delay at the normal (rated) voltage level is renewing.



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.



### Technical data

Parameter name	e.control.v08	e.control.v09
Rated supply, V	AC 230	
Rated frequency, Hz	50	
Rated voltage of insulation, V	400	
Contact group	1 NO	
Switching current, A	32	63
Range of time delay control at turning off, s	≥120 V-0,5 s, <120 V-0,1 s	
Range of time delay control at turning on, s	5-600	
Hysteresis, %	2	
Voltage regulation range, V:	upper limit	210-300
	low limit	120-210
Own power consumption, VA, no more	3	
Electrical life, On/Off cycles, no less	100 000	
Mechanical life, On/Off cycles, no less	1 000 000	
Maximum cross section of connecting wire, mm <sup>2</sup>	8	10
Tightening torque of contact clamps, Nm	1	
Protection degree	IP20	
Weight, g, no more	230	
Ambient temperature, °C	-5...+40	
Altitude, m, no more	2 000	
Permissible relative humidity at 40 °C (without condensation), no more	50 %	
Working position	arbitrary	
Mounting	on DIN rail 35 mm	

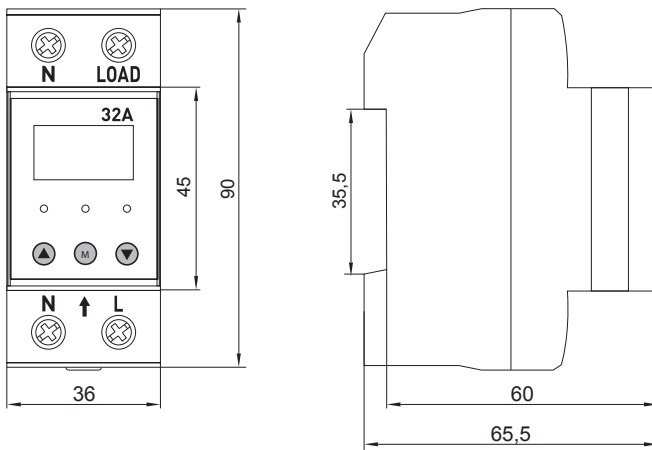
Name	Voltage regulation range, V		Time delay at turning off, s	Time delay at turning on, s	Rated current of contacts, A	Order code
	Upper limit	Low limit				
e.control.v08	210-300	120-210	0,1-0,5	5-600	32	p0690013
e.control.v09	210-300	120-210	0,1-0,5	5-600	63	p0690014

### Function

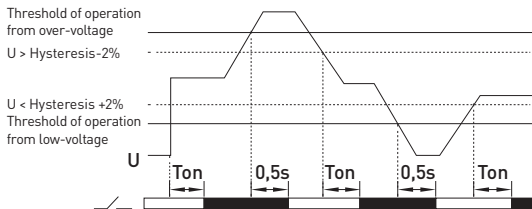


At the voltage is supplied to the contact terminals L and N at the normal voltage level which does not exceed the set limits, the current value of the voltage (blinking) is indicated on the display and the countdown of the turning on time starts. After the countdown of the turning on, the current value of the voltage in the network lights continuously, the relay is closing and the power is supplying to the load. If the network voltage exceeds the set limits, the LED indicator will blink at the display. Upon expiration of the turning off delay time at which the voltage did not stabilize, the relay is opening and relieving the power supply from the load until the voltage in the network stabilizes.

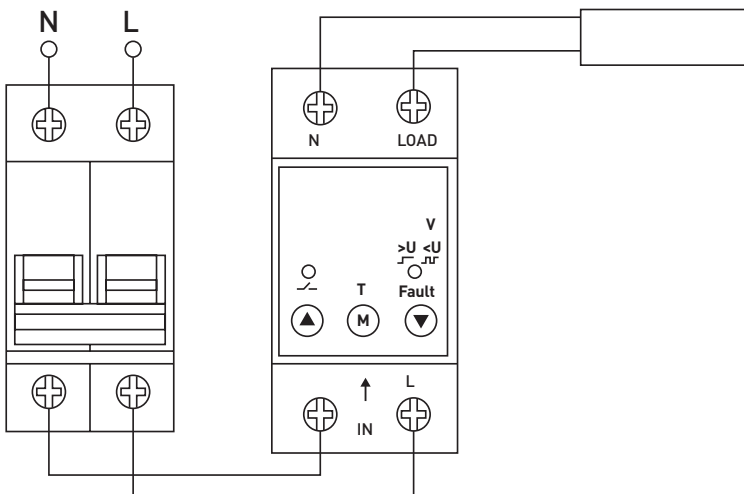
### Overall dimensions



### Relay operation diagrams



### Connection scheme





## Single-phase voltage and current check relay e.control.v10

It is intended for protection electrical appliances from voltage fluctuations in 230 V networks in cases of over/low voltage in the network below or above the values specified by the user. In addition, the device has a current limiting function.



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.



### Technical data

Parameter name	Value	
Rated voltage supply, V	AC 230±10 %	
Rated frequency, Hz	50	
Rated voltage of insulation, V	400	
Number and type of contacts	1 NO	
Maximum switching current, A	25	
Range of time delay control at turning off, s	≥120 V-1 s, <120 V-0,1 s	
Range of time delay control at turning on, s	5-600	
Hysteresis, %	2	
Voltage regulation range, V:	upper limit	210-300
	low limit	120-210
Own power consumption, VA, no more	2	
Electrical life, On/Off cycles, no less	100 000	
Mechanical life, On/Off cycles, no less	1 000 000	
Maximum cross section of connecting wire, mm <sup>2</sup>	6	
Tightening torque of contact clamps, Nm	1	
Protection degree	IP20	
Weight, g, no more	200	
Ambient temperature, °C	-5...+40	
Altitude, m, no more	2 000	
Permissible relative humidity at 40 °C (without condensation), no more	50 %	
Working position	arbitrary	
Mounting	on DIN rail 35 mm	

Name	Voltage control range, V		Delay time at turning off, s	Delay time at turning on, s	Rated current of contacts, A	Order code
	Upper limit	Low limit				
e.control.v10	210-300	120-210	0,1-0,5	5-600	25	p0690015

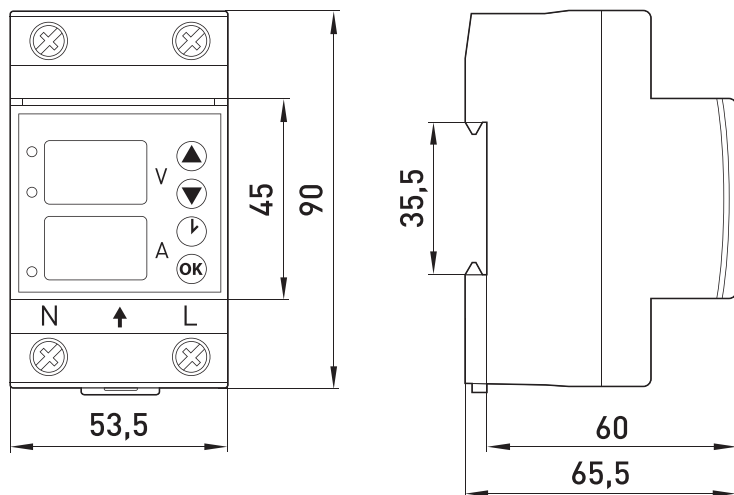
## Function

At the voltage is supplied to the contact terminals L and N at the normal voltage level which does not exceed the set limits, the current value of the voltage (blinking) is indicated on the display and the countdown of the turning on starts. After the countdown of the turning on, the current value of the voltage in the network lights continuously, the relay is closing and the power supply is supplying to the load.

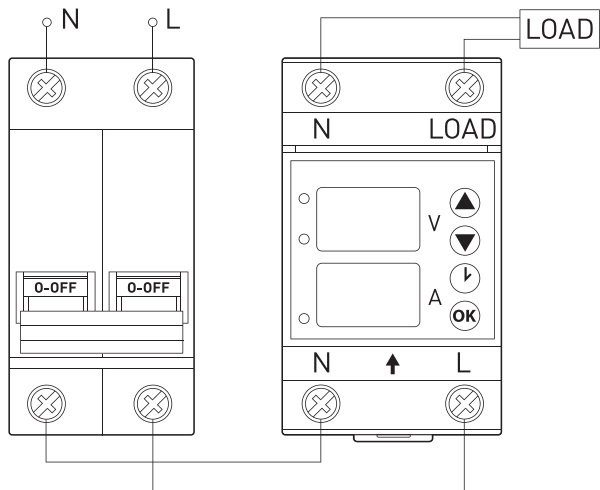
If the network voltage exceeds the setting range, the LED will blink at the display, indicating the cause of the turning On/Off (over-or low-voltage). After the turned off delay time at which the voltage is not stabilized, the relay is opening and the power is removing from the load until the voltage in the network stabilizes.

If the consumed load exceeds the programmed value in the relay, the relay after the delay time relieves the voltage from the load and the indicator > I lights up. After the setting time, the relay will turn on again. After three sequence actuations, the «Err» indication will appear on the display.

## Overall dimensions

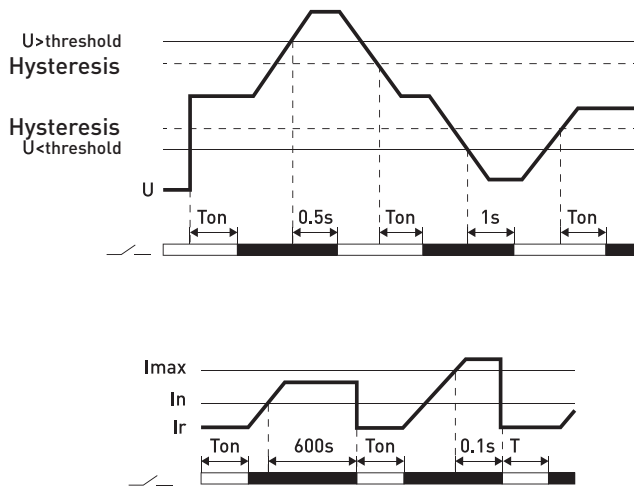


## Principal scheme

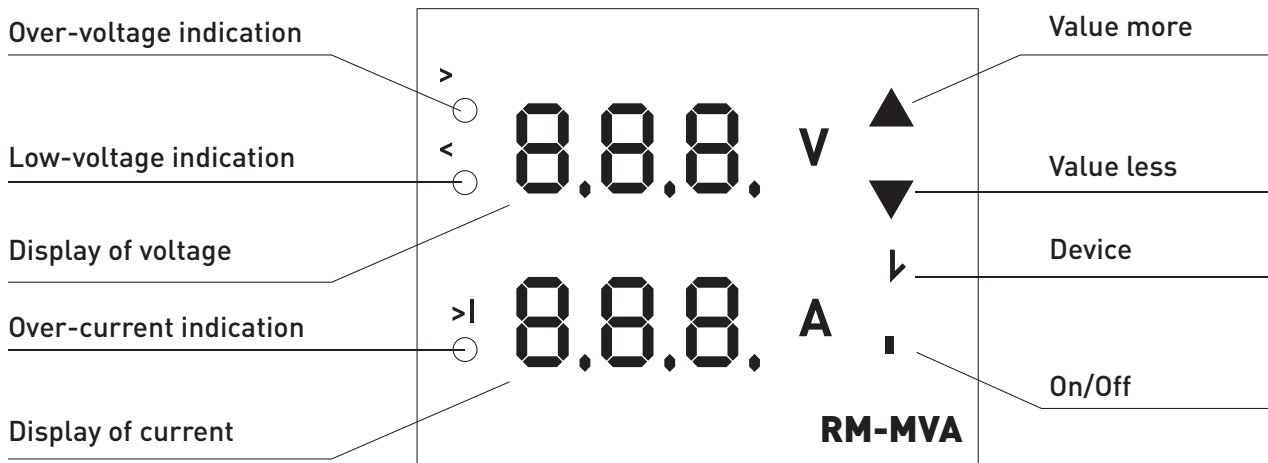




## Operating diagram



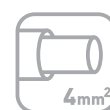
## Control panel





## Single-phase modular energy meter e.control.w04

It is intended for power metering in single-phase AC networks. The meter is not intended for calculation with energy suppliers for consumed electricity (commercial power metering), but only for internal metering. Due to its small dimensions (case width is 18 mm - 1 module) and an acceptable loads of up to 30 A, the e.control.w04 meter is ideal for providing technical (internal) power metering, especially in modular shields. The meter has a pulse output and is equipped with a kit for sealing.



060 Corresponds to EN 61326-1, EN 61326-2-2.

### Technical data

Parameter name	Value
Rated voltage Ue, V	230
Frequency, Hz	50
Rated current Ith, A	5
Maximum current, A	30
Minimum current (accounting), A	0,02
Accuracy class	1
Power (own) consumption, no more	2
Protection degree	IP51
Constant of meter imp/kWh×year	2000
Indication range of meter	0-99999
Voltage of pulse output, no more, V	27
Current connection of pulse output, no more, mA	27
Duration of pulse, s	0,009
Altitude, m, no more	2000
Ambient temperature, °C	-20...+60
Permissible relative humidity, %	<70 (at 25 °C, without condensation)
Storage temperature, °C	-30...+70
Cross section of connecting conductor, mm <sup>2</sup>	1...4
Tightening torque of contact screw, Nm	0,5



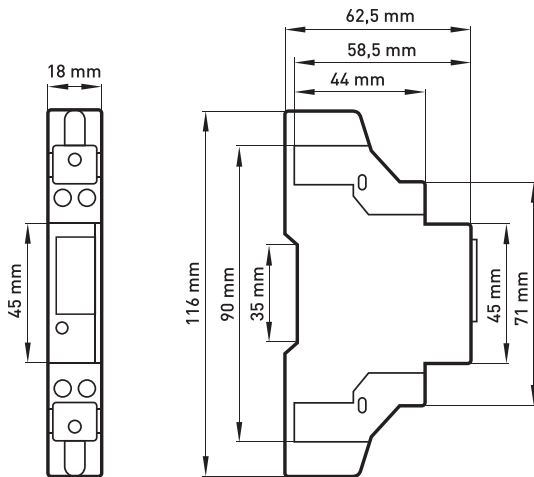
Name	Rated current at transformer connection, A	Rated current at direct connection, A	Accuracy class	Order code
e.control.w04	5	30	1,0	i0310031

## Installation and operation

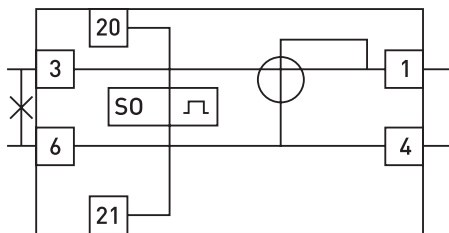
The device is installed in a plastic or metal case on a DIN rail 35 mm wide. Before installing the meter, turn off the power supply. Connect the phase conductor to terminal 1, neutral to terminal 4. The load is connected to terminal 3 and 6. When the power is turned on and the consumer starts consuming electricity, the meter will start to generate pulses proportional to the electricity consumption, as indicated by the LED under the meter display.

An auxiliary device of pulse reader is connected to terminals 20 (+) and 21 (-).

## Overall dimensions



## Connection scheme

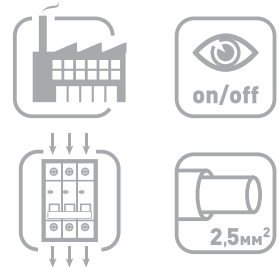




## General purpose relays e.control.p

They are intended for subdivision and transmitting control signals to the actuators devices in the control and automation circuits.

 **060** Corresponds to EN 60947-1.



### Symbolic structure





e.control.pXXXX

- e. — trademark E.NEXT
- control — series
- p — general purpose relays
- X — rated current
- X — number of contact groups
- X — voltage of control coil
- X — s — module connector for relay, L — with led-indication

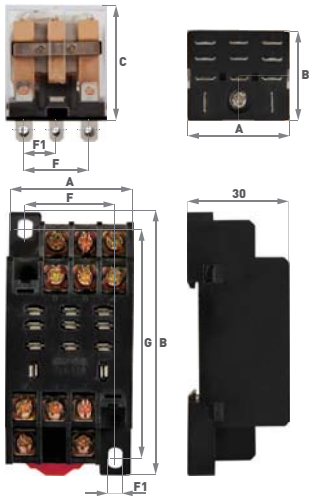
### Technical data

Parameter name	e.control.p103	e.control.p104	e.control.p53	e.control.p34
Rated current of contacts, A (250 V AC/28 V DC)	10	10	5	3
Number of contact groups	3	4	3	4
Rated voltage of control coil, V	DC 12 V, AC 12 V, DC 24 V, AC 24 V, AC 110 V, AC 230 V			
Resistance of control coil, Ohm±10 %	DC 12 V	160		
	AC 12 V	42		
	DC 24 V	640		
	AC 24 V	168		
	AC 110 V	3 500		
	AC 230 V	15 250		
Power consumption of the control coil W, no more	1,3 W			
Voltage of attracting/releasing the control coil, V	DC 12 V	9,6/1,2		
	AC 12 V	9,6/3,6		
	DC 24 V	19,5/2,4		
	AC 24 V	19,2/7,2		
	AC 110 V	96/36		
	AC 230 V	176/66		
Time of closing/opening contacts, ms	20/15			
Electrical life, On/Off cycles, no less	10 <sup>5</sup>			
Mechanical life, On/Off cycles, no less	10 <sup>7</sup>			
Resistance of insulation, MW	500			
Resistance of contacts, Mohm	50			
Weight, g, no more	50	65	35	35

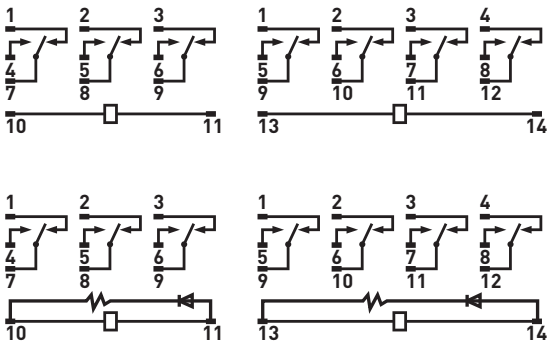
Parameter name	e.control.p103	e.control.p104	e.control.p53	e.control.p34
Protection degree of relay	IP40			
Type of connector	e.control.p103s	e.control.p104s	e.control.p53s	e.control.p34s
Weight, g, no more	80			
Protection degree of connector	IP20			
Cross section of connecting conductor, mm <sup>2</sup>	0,75-2,5		0,5-1,5	
Ambient temperature, °C	-40...+40			
Altitude, m, no more	1 000			
Permissible relative humidity at 25 °C (without condensation), no more	80 %			
Working position	arbitrary			
Mounting	on mounting panel, on DIN rail 35 mm (with connectors)			

	Name	Rated current, A	Number of contact groups	Voltage of control coil, V	Order code
	e.control.p1031	10	3	DC 12	i.ly3.12dc
	e.control.p1032			AC 12	i.ly3.12ac
	e.control.p1033			DC 24	i.ly3.24dc
	e.control.p1034			AC 24	i.ly3.24ac
	e.control.p1035			AC 110	i.ly3.110ac
	e.control.p1036			AC 230	i.ly3.230ac
	e.control.p1036L			AC 230	i.ly3n.230ac
	e.control.p1041	10	4	DC 12	i.ly4.12dc
	e.control.p1042			AC 12	i.ly4.12ac
	e.control.p1043			DC 24	i.ly4.24dc
	e.control.p1044			AC 24	i.ly4.24ac
	e.control.p1045			AC 110	i.ly4.110ac
	e.control.p1046			AC 230	i.ly4.230ac
	e.control.p1046L			AC 230	i.ly4n.230ac
	e.control.p531	5	3	DC 12	i.my3.12dc
	e.control.p532			AC 12	i.my3.12ac
	e.control.p533			DC 24	i.my3.24dc
	e.control.p534			AC 24	i.my3.24ac
	e.control.p535			AC 110	i.my3.110ac
	e.control.p536			AC 230	i.my3.230ac
	e.control.p536L			AC 230	i.my3n.230ac
	e.control.p341	3	4	DC 12	i.my4.12dc
	e.control.p342			AC 12	i.my4.12ac
	e.control.p343			DC 24	i.my4.24dc
	e.control.p344			AC 24	i.my4.24ac
	e.control.p345			AC 110	i.my4.110ac
	e.control.p346			AC 230	i.my4.230ac
	e.control.p346L				i.my4n.230ac
	e.control.p103s			10	3
e.control.p104s	4	i.ptf.14a			
e.control.p53s	5	i.pif.11a			
e.control.p34s	4	i.pif.14a			

### Overall and installation dimensions



### Graphic notation



Name	A	B	C	F	F1	G
e.control.p103	31	27	42	20	10	—
e.control.p104	41			30		—
e.control.p53	20,5			13,2	6,6	—
e.control.p34		—	—	—		
e.control.p103s	36,5	78,5	—	27,5	4,4	68
e.control.p104s	45		—	36		
e.control.p53s	29	75	—	22	4,2	59
e.control.p34s			—			

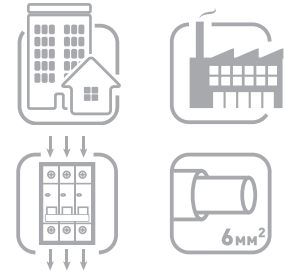


## Modular sockets on DIN rail

They are intended for intermittent connection of portable technological electrical equipment, power tools, luminaires, etc.



060 Corresponds to EN 60947-1.

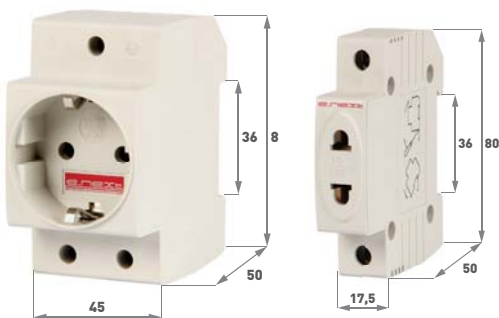


### Technical data

Parameter name	e.socket.stand.din	e.socket.pro.din.tms
Rated voltage Ue, V	AC 250	
Rated frequency, Hz	50	
Rated current In, A	10	16
Number of poles	2p	2p+PE
Mechanical life, On/Off cycles, no less	7 000	
Maximum cross section of connecting wire, mm <sup>2</sup>	6	
Tightening torque of contact clamps, Nm	2,5	
Protection degree	IP20	
Weight, g, no more	95	
Ambient temperature, °C	-25...+55	
Altitude, m, no more	2 000	
Permissible relative humidity at 25 °C (without condensation), no more	80 %	
Working position	arbitrary	
Mounting	on DIN rail 35 mm	

Name	Type	Order code
e.socket.stand.din	C type, CEE 7/16	s004001
e.socket.pro.din.tms	F type, CEE 7/4 (Shuko)	

### Overall dimensions



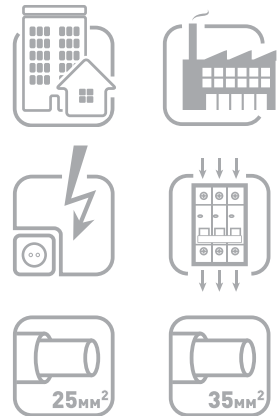


## Fuses and fuse holders on DIN rail e.fuse

They are intended for protection of low-voltage electrical networks and equipment from overload and short-circuit currents.



**060** Corresponds to EN 60269-1, EN 60269-4, EN 61000-6-2, EN 61000-6-4.



### Symbolic structure

- e. — trademark E.NEXT
- fuse — series
- X — standard size of fuse
- h — holder
- X — number of poles

e.fuse.X.h.X

- e. — trademark E.NEXT
- fuse — series
- X — standard size of fuse
- X — rated current

e.fuse.X.X

### Technical data

Parameter name	e.fuse.h		e.fuse	
	Rated voltage of insulation $U_i$ , V	AC 500		
Rated voltage $U_e$ , V	AC 230/400			
Rated frequency, Hz	50			
Number of poles	10×38	14×51	10×38	14×51
Mechanical life, On/Off cycles, no less	32	63	2, 4, 6, 8, 10, 13, 16, 20, 25, 32	25, 32, 40, 50, 63
Number of poles	1, 2, 3			
Type of fuse	gG/gL			
Maximum cross section of connecting wire, mm <sup>2</sup>	25	35		
Tightening torque of contact clamps, Nm	3			
Protection degree	IP20		IP00	
Weight, g, no more	65	110	8	15
Ambient temperature, °C	-25...+55			
Altitude, m, no more	2 000			
Permissible relative humidity at 25 °C (without condensation), no more	80 %			
Working position	vertical, horizontal, with a deviation of no more than 5°			
Mounting	on DIN rail 35 mm			



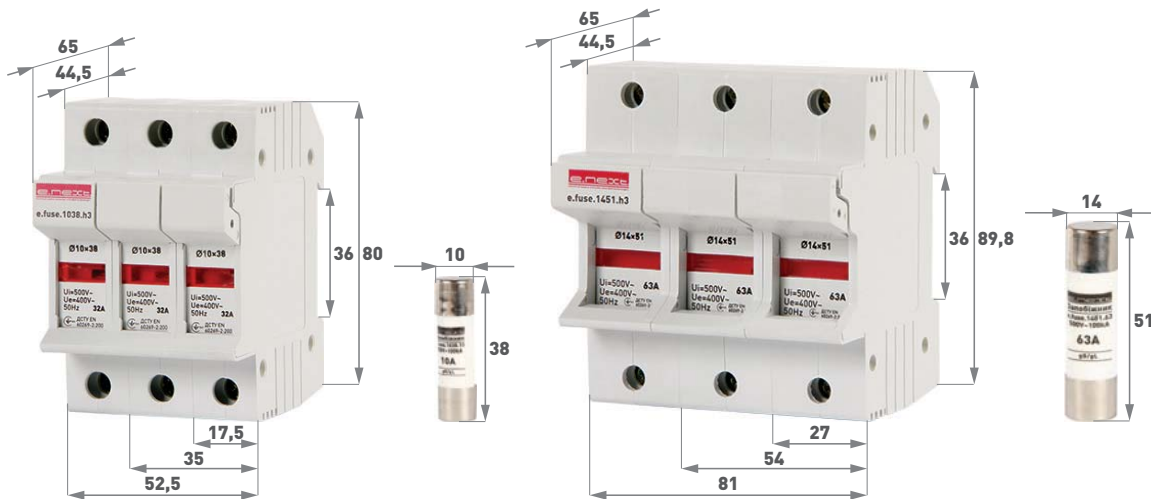


Name	Number of poles	Rated current, A	Standard size of fuse	Order code
e.fuse.1038.h1	1	32	10×38	i0300001
e.fuse.1038.h2	2			i0300002
e.fuse.1038.h3	3			i0300003
e.fuse.1451.h1	1	63	14×51	i0300004
e.fuse.1451.h2	2			i0300005
e.fuse.1451.h3	3			i0300006

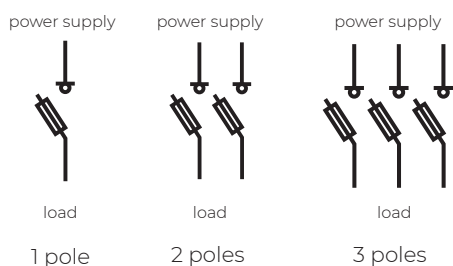


Name	Rated current, A	Heat losses, W	Voltage of control coil, V	Order code
e.fuse.1038.2	2	0,95	10×38	i0610011
e.fuse.1038.4	4	1,13		i0610012
e.fuse.1038.6	6	1,19		i0610013
e.fuse.1038.8	8	1,4		i0610014
e.fuse.1038.10	10	1,56		i0610015
e.fuse.1038.13	13	1,58		i0610016
e.fuse.1038.16	16	2,85		i0610017
e.fuse.1038.20	20	2,88		i0610018
e.fuse.1038.25	25	3		i0610019
e.fuse.1038.32	32	3,12	14×51	i0610021
e.fuse.1451.25	25	3,1		i0610020
e.fuse.1451.32	32	3,54		i0610022
e.fuse.1451.40	40	3,96		i0610023
e.fuse.1451.50	50	4,36		i0610024
e.fuse.1451.63	63	5,51		i0610025

## Overall dimensions



## Graphic notation





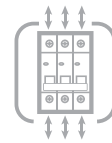
## Fuses and holders

### e.fuse.NT

They are intended for protection of low-voltage switchgear and cable lines from overload and short-circuit currents. Used in single-phase and three-phase networks with a voltage up to 660 V at a frequency of 50 Hz.



060 Corresponds to EN 60269-1, EN 60269-2.



#### Symbolic structure

e.fuse.NTX.X

- e. — trademark E.NEXT
- X — frame size of device
- X — rated current of fuses

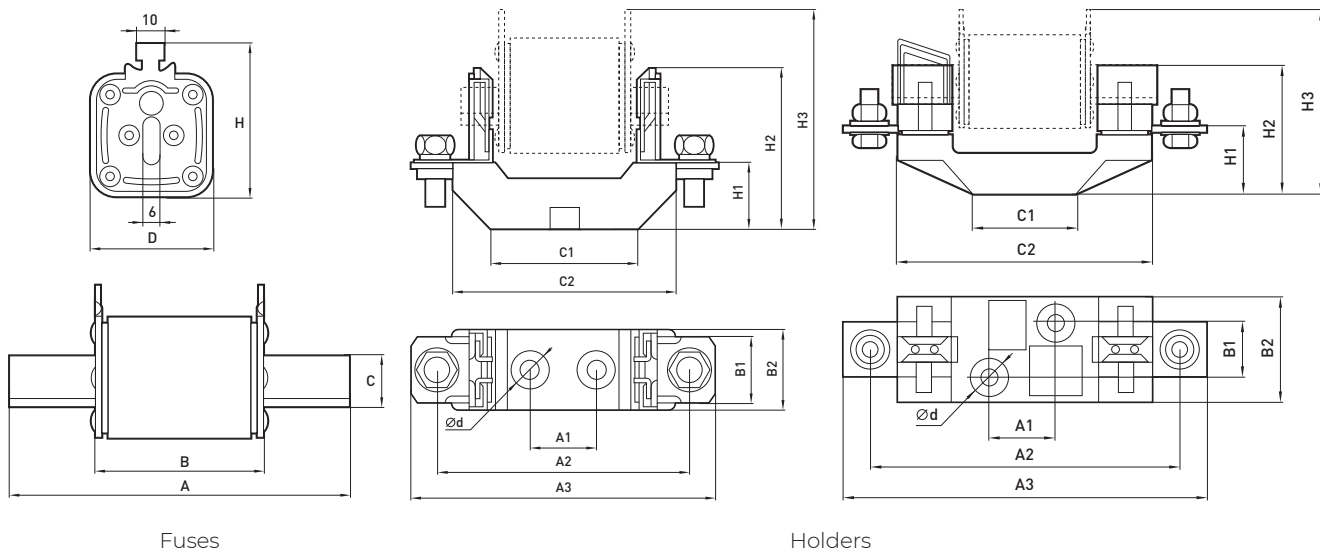
### Technical data

Parameter name	00	0	1	2	3
Rated current, A	16-125	63-160	100-250	250-400	400-630
Rated voltage Ue, V	AC 660				
Rated frequency, Hz	50				
Classification group	gG				
Ambient temperature, °C	-45...+60				
Protection degree	IP00				
Working position	vertical or horizontal				
Indicator of operation	retractable stem				
Material of contacts	copper with galvanic coating				



There is a fusing element that connects two fuse contacts inside the ceramic case of the fuse. The fusing element is made of calibrated copper and is securely connected to contact fuses due to spot welding. The contacts are made of electrotechnical copper with a galvanic coating and have the form of a «knife» to fit them into the holder with less effort. There is a retractable stem in the construction of the fuse, which allows to determine the fuse operation. For extinguishing an electric arc, the fuse is filled with high purity quartz sand.

## Overall and installation dimensions



Overall dimension	Dimensions, mm					Weight, g
	A	B	C	D	H	
00	78	49	15	29	56	175
0	118	64				252
1	135	68	20	48	60	455
2	145	68	25	53	70	650
3	145	68	32	65	80	880



Overall dimension	Dimensions, mm											Weight, g
	H1	H2	H3	A1	A2	A3	B1	B2	C1	C2	d	
00	25	60	85	25	100	120	—	30	58	87	7,5	193
0	37	72	91		150	170	—		68	130		295
1	38	84	100		175	200	30	58	60	142	10,5	550
2		100	105	200	225	60		160		770		
3		40	105	118	210	250		965				

## Amp fuses e.fuse gG type

Name	Overall dimension	Rated current, A	Order code
e.fuse.NT00.16	00	16	i0760041
e.fuse.NT00.25		25	i0760042
e.fuse.NT00.32		32	i0760043
e.fuse.NT00.50		50	i0760044
e.fuse.NT00.63		63	i0760045
e.fuse.NT00.80		80	i0760046
e.fuse.NT00.100		100	i0760047
e.fuse.NT00.125		125	i0760048
e.fuse.NT00.160		160	i0760049
e.fuse.NT0.63	0	63	i0760050
e.fuse.NT0.80		80	i0760051
e.fuse.NT0.100		100	i0760052
e.fuse.NT0.125		125	i0760053
e.fuse.NT0.160		160	i0760054

## Electrical Newest Exclusive Extended Technologies

Name	Overall dimension	Rated current, A	Order code
e.fuse.NT1.100	1	100	i0760055
e.fuse.NT1.125		125	i0760056
e.fuse.NT1.160		160	i0760057
e.fuse.NT1.200		200	i0760058
e.fuse.NT1.250		250	i0760059
e.fuse.NT2.63	2	63	i0760070
e.fuse.NT2.80		80	i0760071
e.fuse.NT2.100		100	i0760072
e.fuse.NT2.125		125	i0760073
e.fuse.NT2.160		160	i0760074
e.fuse.NT2.200		200	i0760075
e.fuse.NT2.250		250	i0760060
e.fuse.NT2.315		315	i0760061
e.fuse.NT2.400	3	400	i0760062
e.fuse.NT3.400		400	i0760063
e.fuse.NT3.630		630	i0760064

### Fuse holder

Name	Overall dimension	Rated current, A	Order code
e.fuse.NT00.h	00	160	i0760065
e.fuse.NT0.h	0		i0760066
e.fuse.NT1.h	1	250	i0760067
e.fuse.NT2.h	2	400	i0760068
e.fuse.NT3.h	3	630	i0760069

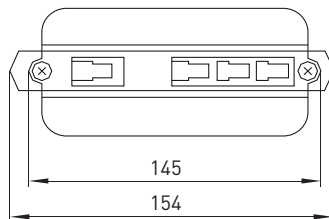
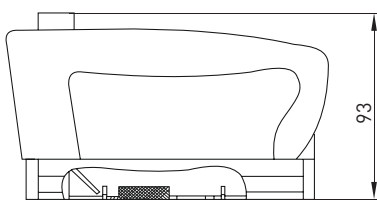
### Handle removing fuses e.industrial.fh



It is intended for installation and disassembly of e.industrial.f.NT fuses.

Name	Voltage AC, V	Order code
e.industrial.fh	1000	i0760034

### Connection scheme



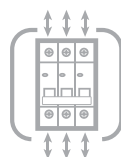


## Switch-disconnectors for vertical mounting fuses e.fuse.fsvd

They are intended for non-automatic switching of AC-circuits with voltage up to 690 V, 50 Hz, protection of low-voltage switchgear and cable lines from overload and short-circuit currents.



060 Corresponds to EN 60947-1, EN 60947-3.



### Technical data

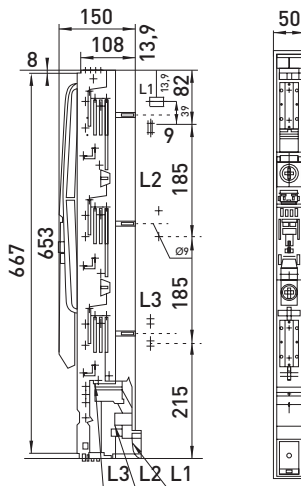
Parameter name	e.fuse.fsvd.160	e.fuse.fsvd.250	e.fuse.fsvd.400	e.fuse.fsvd.630
Poles number	3			
Rated voltage U <sub>e</sub> , V	690			
Rated frequency, Hz	50			
Rated voltage of insulation U <sub>i</sub> , V	1000			
Maximum pulse voltage, U <sub>imp</sub> , kV	10			
Limit current of short circuit with fuses, kA	100			
Utilization category	AC 23 V (380 V), AC 22 V (500 V), AC 21 V (690 V)			
Fastening of conductors	M8	M12	M12	M12
Cross section of connecting conductors, mm <sup>2</sup>	70	120	240	300
Mechanical life, cycles	1500	1200		
Protection degree	IP30			
Ambient temperature, °C	-60...+50			
Altitude, m, no more	2000			
Permissible relative humidity at 25 °C (without condensation), no more	80 %			
Working position	vertical			
Mounting	on buses			



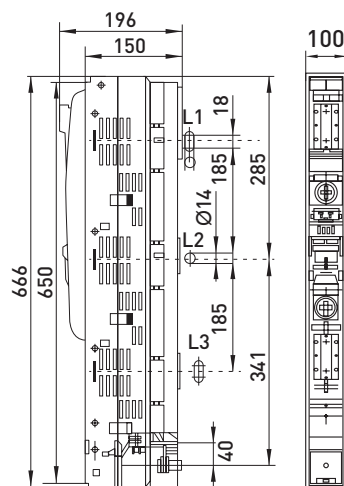
Name	Frame size of fuse	Rated current, A	Order code
e.fuse.fsvd.160	00	160	i0760088
e.fuse.fsvd.250	1	250	i0760089
e.fuse.fsvd.400	2	400	i0760090
e.fuse.fsvd.630	3	630	i0760091

\* fuses are ordered separately

## Overall and installation dimensions



e.fuse.fsvd.160



e.fuse.fsvd.(250/400/630)

## Function

Construction features:

- intended for connection with conductor buses;
- intended for installation of fuses (fuse links) knife type of NT series;
- the handle provides for turning On/Off the load in three phases simultaneously;
- the case is made of fiberglass polyamide, which is self-extinguishing. Fire resistance class v0;
- the protection degree against environmental effect IP30.

Use: the switch-disconnector is an integral part of the complete transformer substation and other switchgear.

Advantages:

- compact construction allows to save space in distribution devices (by connecting to parallel busbars);
- ensuring a visible interruption of power-supply circuit, ensures a higher level of safety during execution of repair and other works;
- the presence of protection covers for fuse holders to ensure maximum protection of the person from contact with conductive parts of the switch-disconnector;
- the presence of special holes for carrying out metering work in the operating state of the switch-disconnector;
- reliability and safety of the device due to the use of materials which are self-extinguishing;
- the presence of a locking mechanism for the handle to prevent false turning off the network.



## Moulded case circuit breakers e.industrial.ukm.S

They are intended for protection of low-voltage electrical networks and equipment against overcurrent and short-circuit currents, as well as for infrequent electrical switching of electrical networks. Frequency of operation of electromagnetic release is  $10 I_n \pm 20\%$ .



### Symbolic structure

e.industrial.ukm.XS.X

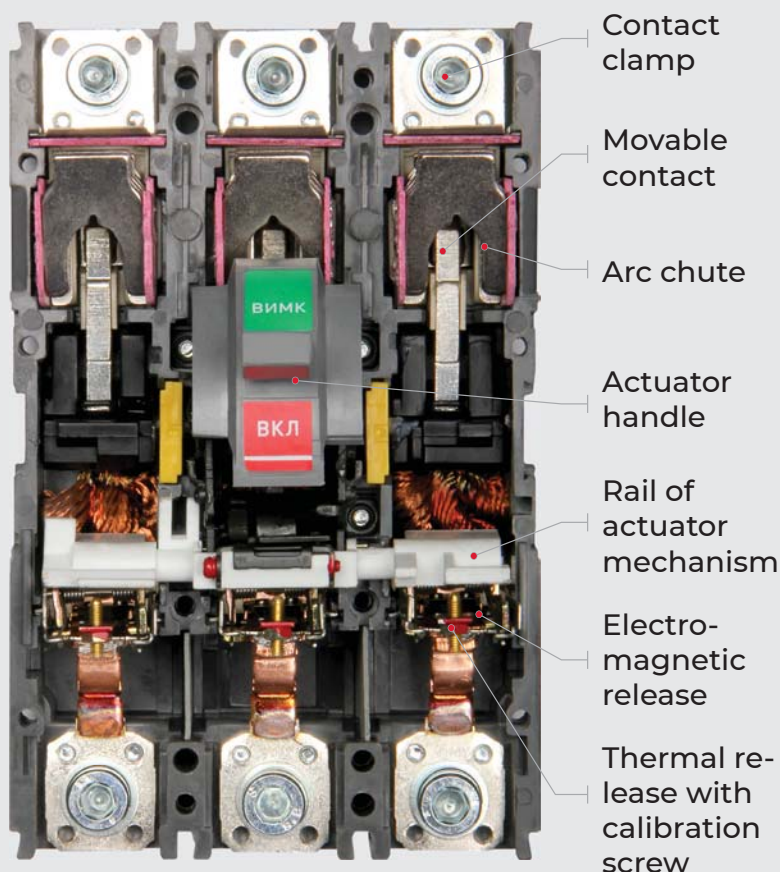
- e. — trademark E.NEXT
- industrial — name of series
- ukm — name of mould case circuit breakers series
- X — frame size of circuit breakers
- S — series of circuit breakers
- X — rated current of automatic circuit breaker

### Technical data

Parameter name	e.industrial.ukm.60S	e.industrial.ukm.100S	e.industrial.ukm.250S	e.industrial.ukm.400S	e.industrial.ukm.630S/800S
Rated voltage Ue, V	AC 600	AC 660			
Rated frequency, Hz	50				
Number of poles	3				
Utilization category	A				
Rated current, A	10, 16, 20, 25, 32, 40, 50, 63	40, 50, 63, 80, 100	100, 125, 160, 200, 225, 250	300, 400	500, 630, 800
Release of overcurrent	Magnetic-hydraulic	Combined: thermal and electromagnetic			
Voltage of insulation Ui, V	690	800			
Pulse voltage Uimp, kV	6	8			
Operating current of electromagnetic release, Im	10 In ± 20 %				
Rated breaking capacity Ics at 400 V, kA	5	15	15	45	45
Limited breaking capacity Icu at 400 V, kA	10	30	30	45	45
Electrical life, On/Off cycles, no less	6 000	6 000	2 000	1 000	500
Mechanical life, On/Off cycles, no less	8 500	8 500	7 000	4 000	2500
Maximum cross section of connecting bus, mm <sup>2</sup>	12,5×3	16,5×3	20×4	40×8	40×10
Tightening torque of bolted connection of contact clamps, Nm	10,5	10,5	22,5	22,5	22,5
Protection degree	Case of breaker – IP30, from the side of the contact clamps – IP00				
Weight, g, no more	0,75	1,1	1,78	5,7	10,9/11,4

## Electrical Newest Exclusive Extended Technologies

Parameter name	e.industrial.ukm.60S	e.industrial.ukm.100S	e.industrial.ukm.250S	e.industrial.ukm.400S	e.industrial.ukm.630S/800S
Ambient temperature, °C	-25...+40				
Altitude, m, no more	1 000				
Permissible relative humidity at 25 °C (without condensation), no more	80 %				
Working position	vertical, horizontal, with a deviation of no more than 5°				
Mounting	on mounting panel				



The moulded case of circuit breakers e.industrial.ukm.S series are made in case of a heat resistant glass-filled polyamide, which is self-extinguishing.

The protective functions of the moulded case circuit breakers of dimension 60S are carried out by a magnetic-hydraulic release in the form of a cylinder, filled with silicone oil and placed inside the coil of an electromagnet. There is a plunger with a spring inside of this cylinder, which in the case of overvoltages, moves inside the cylinder and affects on the actuator mechanism of the breaker. The distinctive features of the magnetic-hydraulic release are the independence and stability of the time-current characteristics of the breaker from the ambient temperature, the possibility of repeated turning on after emergency operation, resistance to vibrations.





The combined release executes the protective functions of the breakers of dimensions 100-800S: thermal and electromagnetic. Thermal release is a bimetallic plate made of two metals with different coefficients of temperature expansion, when it passes through the current of overload, it is heated and, bending, affects on the actuator mechanism, which turns off the circuit breaker. In the electromagnetic release of circuit breakers of electrodynamic type, when passing the short-circuit current, the metal plate is taken up to the frame of release and effecting on the actuator mechanism, turns off the breaker.

The complete set of the moulded case circuit breaker includes: interphase partitions, a set of metalware for connecting external conductors, the hex key and the set of metalware for fastening to the mounting panel.

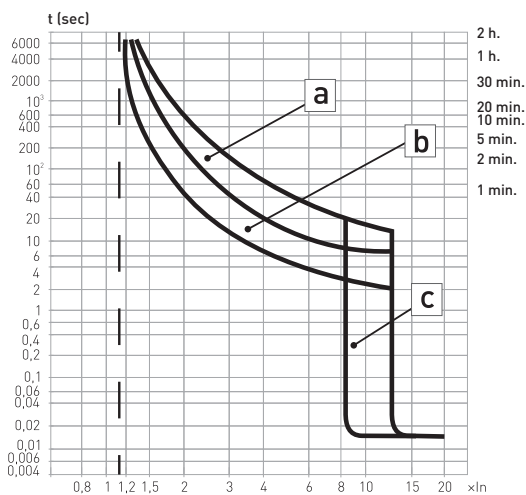


Name	Frame size	Rated current, A	Breaking capacity at AC 400 V, Icu/Ics, kA	Order code
e.industrial.ukm.60S.10	60	10	10/5	i0010015
e.industrial.ukm.60S.16		16		i0010014
e.industrial.ukm.60S.20		20		i0010016
e.industrial.ukm.60S.25		25		i0010026
e.industrial.ukm.60S.32		32		i0010001
e.industrial.ukm.60S.40		40		i0010002
e.industrial.ukm.60S.50		50		i0010003
e.industrial.ukm.60S.63		63		i0010004

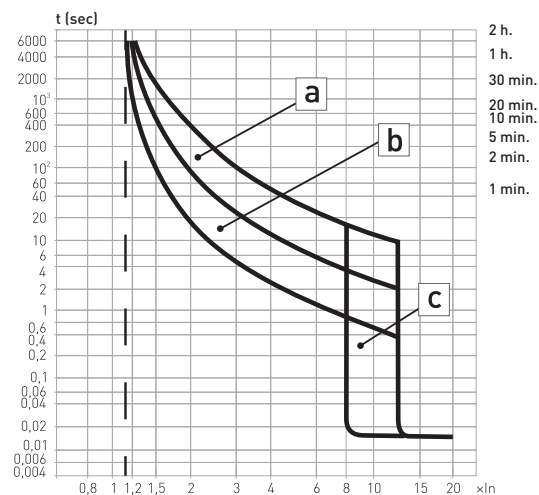


	Name	Frame size	Rated current, A	Breaking capacity at AC 400 V, I <sub>cu</sub> /I <sub>cs</sub> , kA	Order code
	e.industrial.ukm.100S.40	100	40	30/15	i0010020
	e.industrial.ukm.100S.50		50		i0010021
	e.industrial.ukm.100S.63		63		i0010022
	e.industrial.ukm.100S.80		80		i0010005
	e.industrial.ukm.100S.100		100		i0010006
	e.industrial.ukm.250S.100		250		100
e.industrial.ukm.250S.125	125	i0010018			
e.industrial.ukm.250S.160	160	i0010007			
e.industrial.ukm.250S.175	175	i0010013			
e.industrial.ukm.250S.200	200	i0010008			
e.industrial.ukm.250S.225	225	i0010019			
	e.industrial.ukm.250S.250	250	250	30/15	i0010009
	e.industrial.ukm.400S.300		400		300
e.industrial.ukm.400S.400	400	i0010010			
	e.industrial.ukm.630S.500	630	500	45/45	i0010028
	e.industrial.ukm.630S.630		630		i0010011
	e.industrial.ukm.800S.700	800	700	45/45	i0010029
	e.industrial.ukm.800S.800		800		i0010012

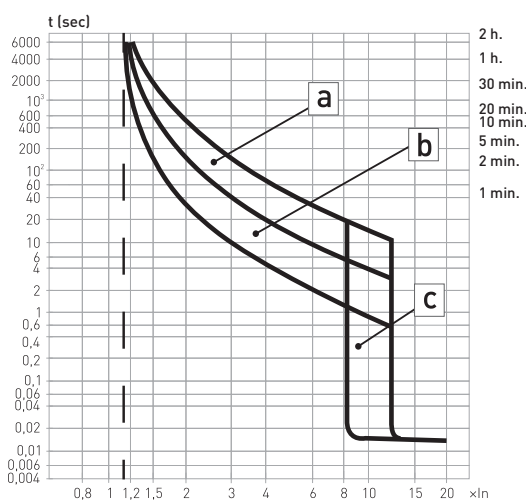
## Time-current characteristics



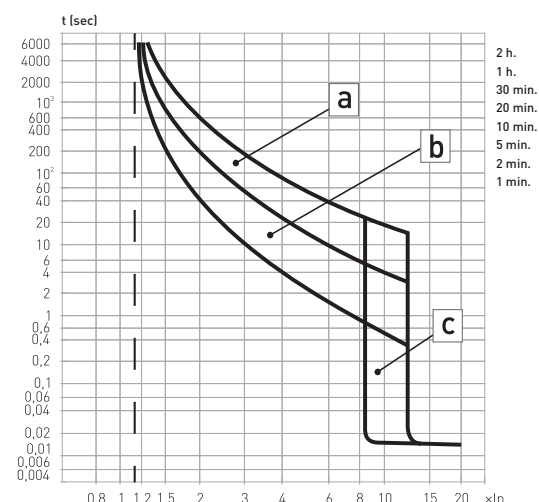
e.industrial.ukm.60-100S



e.industrial.ukm.250S



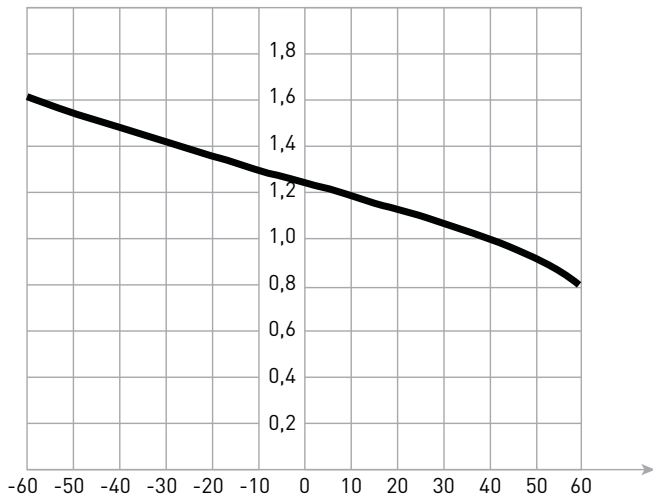
e.industrial.ukm.400S



e.industrial.ukm.630-800S

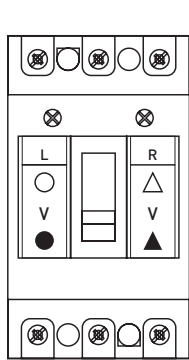
## Electrical Newest Exclusive Extended Technologies

- a - operation characteristic of the release from «cold» state at the overload currents;  
 b - operation characteristic of the release from «warm» state at the overload currents;  
 c - operation characteristic of the release at short-circuit currents.

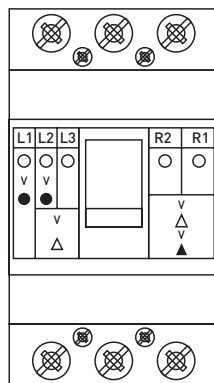


Dependence of the rated current of the moulded case circuit breaker on the ambient temperature (except 60S).

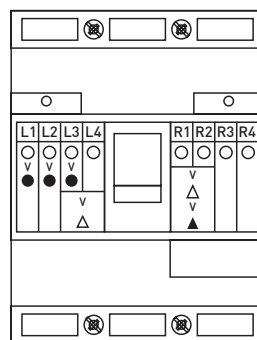
Name	e.industrial. ukm.60S	e.industrial. ukm.100S	e.industrial. ukm.250S	e.industrial. ukm.400S	e.industrial. ukm.630S/800S
Auxiliary contact	e.industrial. ukm.60.F	e.industrial. ukm.100.F	e.industrial. ukm.250.F	e.industrial.ukm.400/800.F	
Auxiliary alarm contact	e.industrial. ukm.60.B	e.industrial. ukm.100.B	e.industrial. ukm.250.B	e.industrial.ukm.400/800.B	
Shunt release	e.industrial. ukm.60.FL	e.industrial. ukm.100.FL	e.industrial. ukm.250.FL	e.industrial.ukm.400/800.FL	
Under-voltage release	e.industrial. ukm.100.QY	e.industrial. ukm.250.QY	e.industrial. ukm.400.QY	e.industrial.ukm.400/800.QY	
Turning handle	e.industrial. ukm.60S.CS	e.industrial. ukm.100S.CS	e.industrial. ukm.250S.CS	e.industrial.ukm.400/800.CS	
Electromagnetic actuator	—	e.industrial. UKM.100.MD.220	e.industrial. UKM.250.MD.220	—	
Motor-drive actuator	—	e.industrial. UKM.100.MDX.220	e.industrial. UKM.250.MDX.220	e.industrial. UKM.400. MDX.220	e.industrial. UKM.800. MDX.220
Connection bus	—	e.industrial. UKM.100S.busbar	e.industrial. UKM.250S.busbar	e.industrial. UKM.400S.busbar	e.industrial. UKM.630S.busbar



e.industrial.  
ukm.60-250S

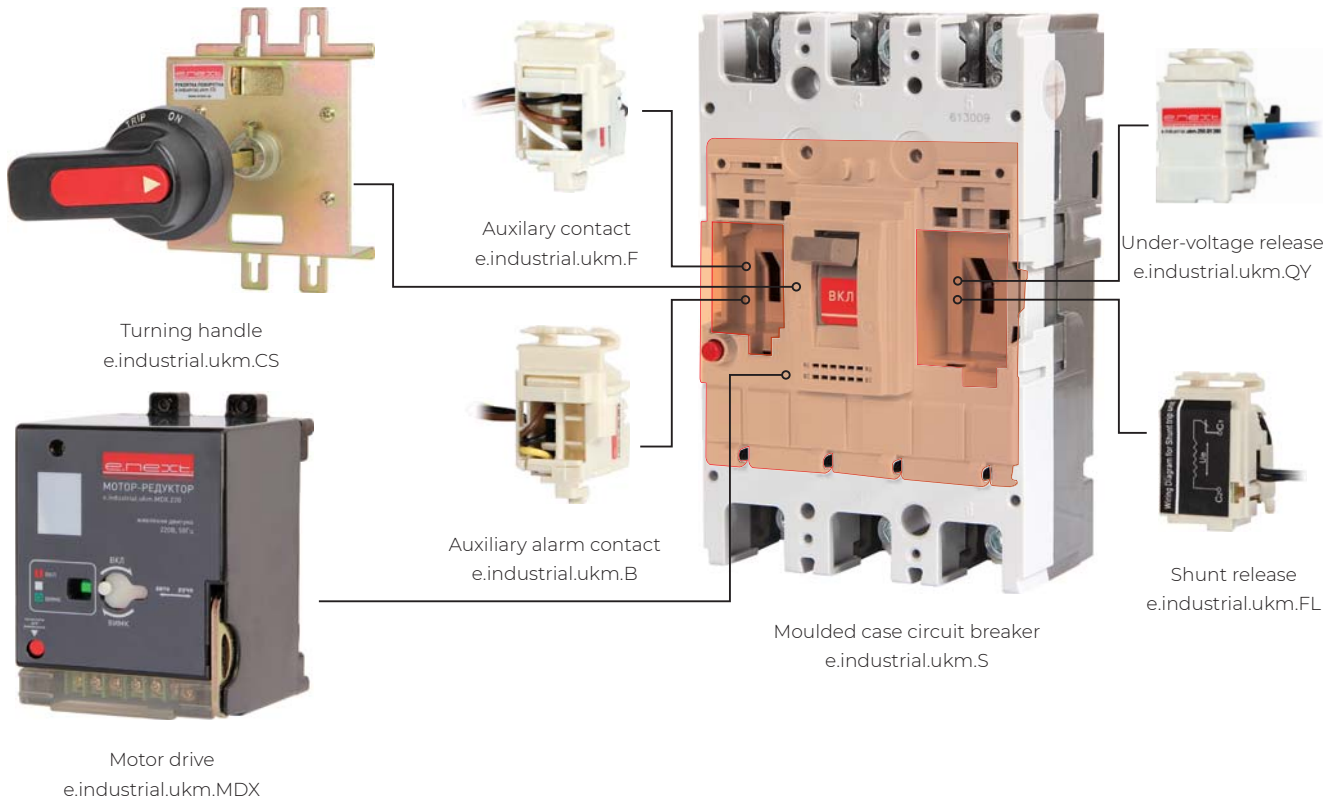


e.industrial.ukm.400S



e.industrial.ukm.  
630-800S

- auxiliary contact
- signal contact
- ∨ or
- △ shunt release
- ▲ under-voltage release

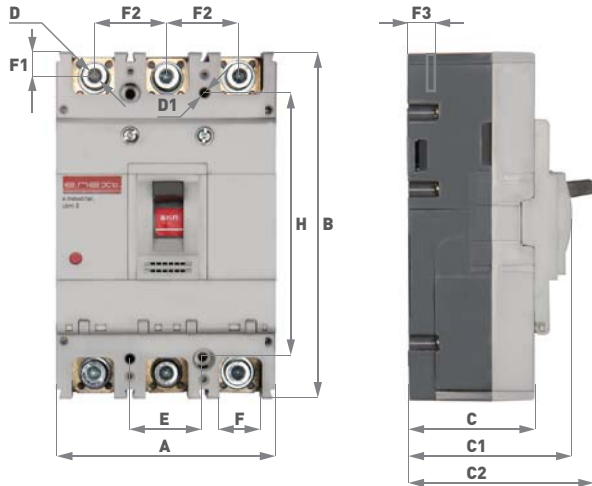


Name	Type	Rated voltage, V	Rated current/power consumption	Weight, kg, no more	Order code
e.industrial.UKM.60.F	Auxiliary contact	AC 250	3 A	0,025	i0030001
e.industrial.UKM.100.F					i0030002
e.industrial.UKM.250.F					i0030003
e.industrial.UKM.400-800.F					i0030004
e.industrial.UKM.60.B	Auxiliary signal (alarm) contact	250 AC	3 A	0,025	i0020001
e.industrial.UKM.100.B					i0020002
e.industrial.UKM.250.B					i0020003
e.industrial.UKM.400-800.B					i0020004
e.industrial.UKM.60.FL	Shunt release	AC 230-400	60 VA	0,05	i0070004
e.industrial.UKM.100.FL					i0070001
e.industrial.UKM.250.FL					i0070002
e.industrial.UKM.400-800.FL				0,075	i0070003
e.industrial.UKM.60.QY	Under-voltage release	AC 380 (turning off at 135-265 V)	180 VA	0,1	i0040001
e.industrial.UKM.100.QY					i0040002
e.industrial.UKM.250.QY				0,12	i0040003
e.industrial.UKM.400-800.QY					i0040004
e.industrial.UKM.100.MD.220	Electromagnetic actuator (operating time 0,2s)	AC 230	7,5 A	1	i0090001
e.industrial.UKM.250.MD.220			9,5 A	1,4	i0090002
e.industrial.UKM.100.MDX.220	Motor-drive actuator (operating time 0,8 s)	AC 110-230	0,5 A	1	i0080001
e.industrial.UKM.250.MDX.220				1,2	i0080002
e.industrial.UKM.400.MDX.220			2 A	3,6	i0080003
e.industrial.UKM.630-800.MDX.220				4,2	i0080004
e.industrial.ukm.60.CS	Turning handle	—	—	0,5	i0060001
e.industrial.ukm.100.CS				0,55	i0060002
e.industrial.ukm.250.CS				0,6	i0060003
e.industrial.ukm.400.CS				1,2	i0060004
e.industrial.ukm.630-800.CS				1,8	i0060005

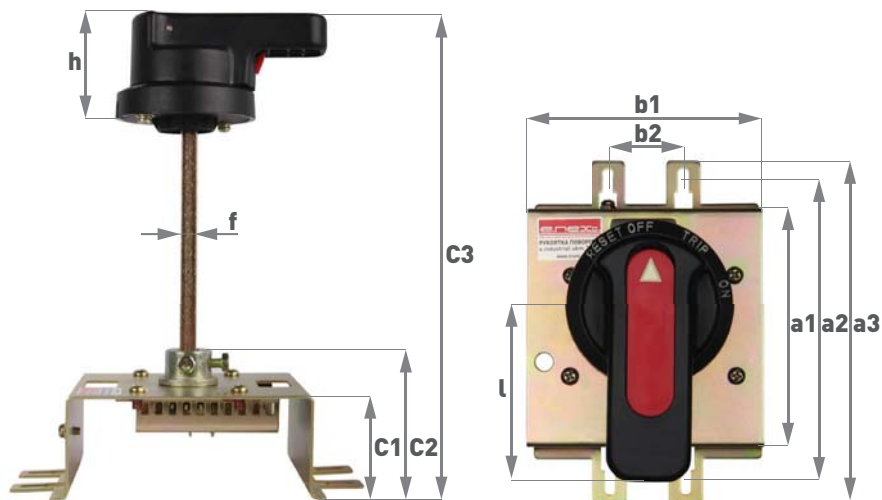
## Electrical Newest Exclusive Extended Technologies

Name	Type	Rated voltage, V	Rated current/power consumption	Weight, kg, no more	Order code
e.industrial.UKM.100S.busbar	Connection bus (under pole terminal)	—	—	0,04	i0050003
e.industrial.UKM.250S.busbar				0,065	i0050002
e.industrial.UKM.400S.busbar				0,09	i0050004
e.industrial.UKM.630S.busbar				0,28	i0050005
e.industrial.UKM.800S.busbar				0,28	i0050006

## Overall and installation dimensions

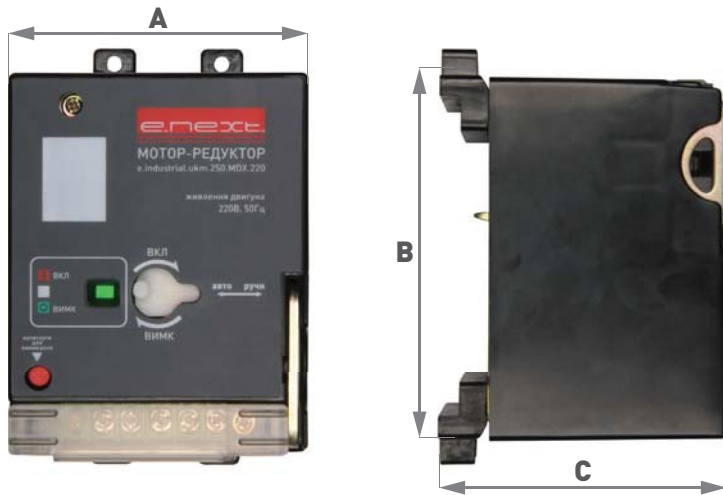


Overall dimension	A	B	C	C1	C2	D	D1	E	H	F	F1	F2	F3
e.industrial.ukm.60S	75	130	62	72	90	M6	M4	25	110	12,5	6	25	25
e.industrial.ukm.100S	90	155	61	72	92	M8	M4	30	132	16,5	8	30	27
e.industrial.ukm.250S	105	165	61	72	92	M10	M4	35	126	23	10	35	28
e.industrial.ukm.400S	140	257	97	107	155	M12	M6	44	194	25	12	44	44
e.industrial.ukm.630/800S	210	275	97	107	155	2×M8	M6	70	243	40	12	70	44/46



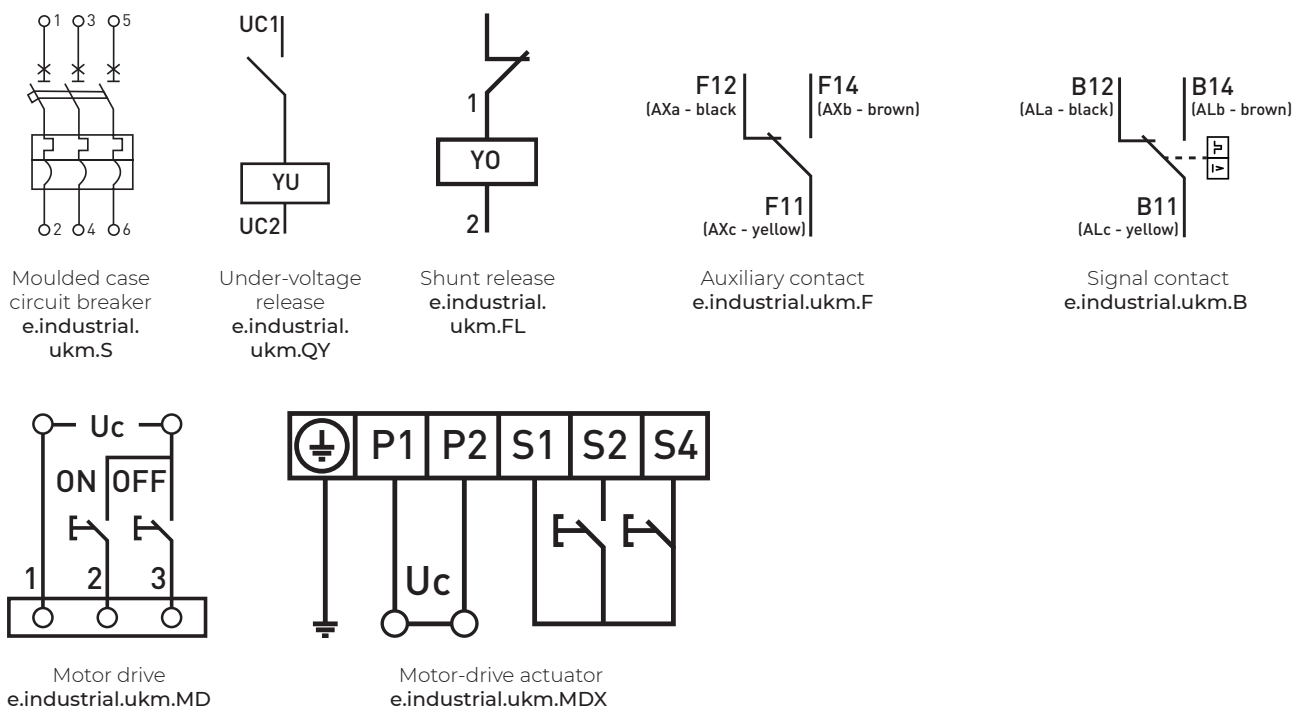
Handle	60CS	100CS	250CS	400CS	630-800CS
a1	90	110	116	185	215
a2	106 (8×4)	130 (15×5)	140 (15×5)	200 (10×5)	240
a3	120	145	160	217	258
b1	25	30	35	127	197
b2	78	82	105	140	210

Handle	60CS	100CS	250CS	400CS	630-800CS
c1	42	45	45	75	75
c2	50	58	60	90	90
c3	215	215	225	250	230
h	45	45	45	45	45
f	10	10	10	10	10
l	65	65	65	90	90



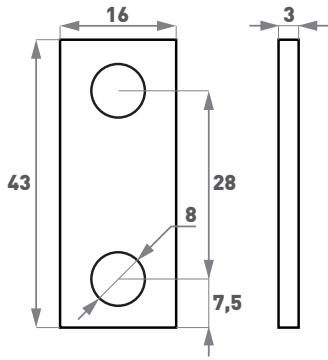
Name	A	B	C
e.industrial.UKM.100.MD.220	115	125	105
e.industrial.UKM.250.MD.220	115	130	105
e.industrial.UKM.100.MDX.220	115	125	105
e.industrial.UKM.250.MDX.220	115	130	105
e.industrial.UKM.400.MDX.220	175	200	155
e.industrial.UKM.630-800.MDX.220	175	245	155

## Graphic notation

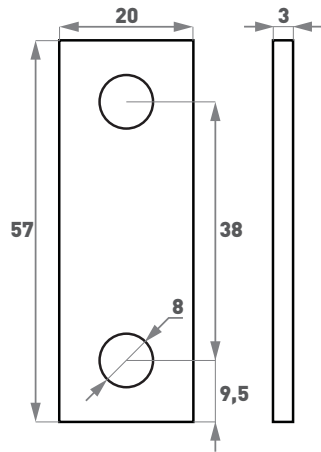


# Electrical Newest Exclusive Extended Technologies

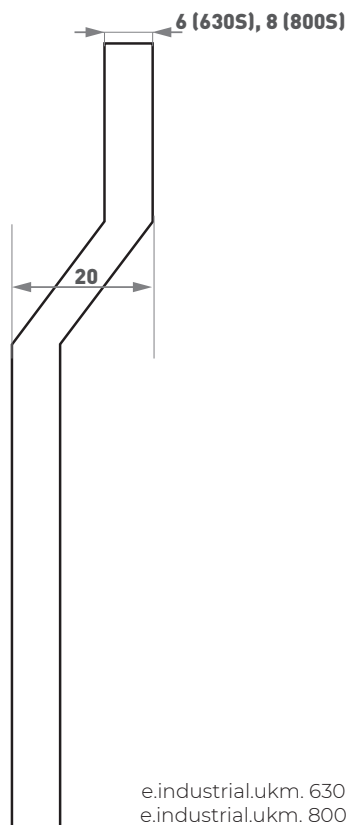
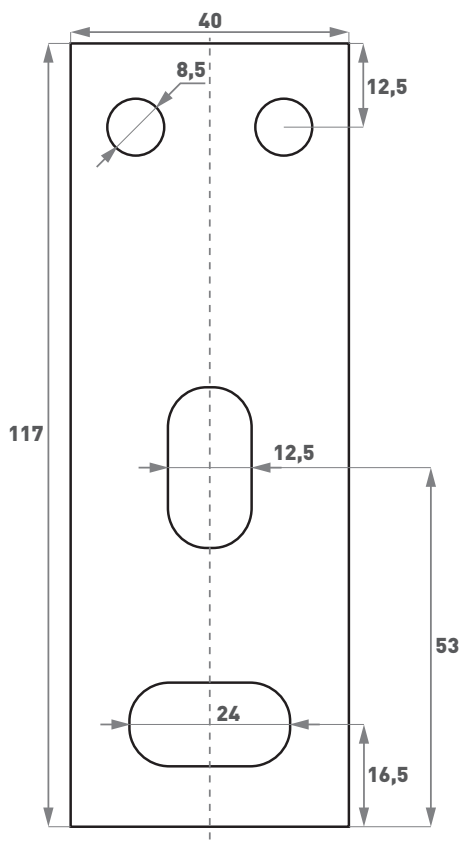
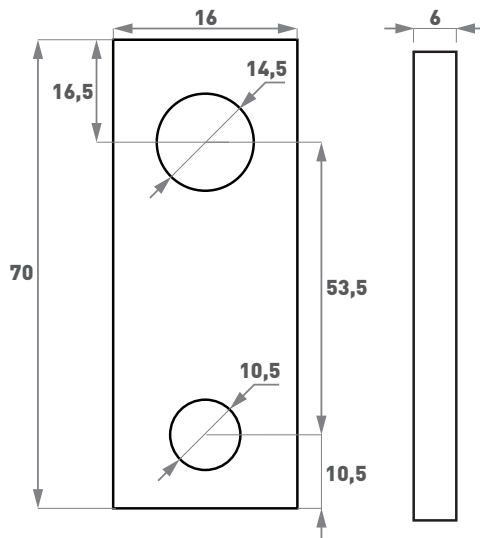
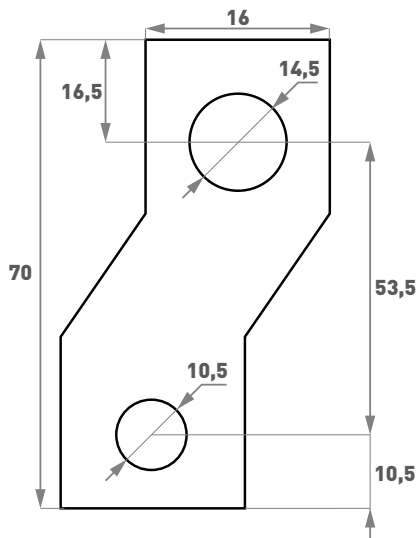
e.industrial.ukm. 100S.busbar



e.industrial.ukm. 250S.busbar



e.industrial.ukm. 400S.busbar



e.industrial.ukm. 630S.busbar  
e.industrial.ukm. 800S.busbar



## Moulded case circuit breakers e.industrial.ukm.SL

They are intended for protection of low-voltage electrical networks and equipment against overload and short-circuit currents, as well as infrequent (1 time in 30 min) operational switching of electrical networks. The moulded case circuit breakers e.industrial.ukm.SL series have been designed specifically to protect long transmission lines to eliminate possible short circuit at the end of the line due to the reduced frequency of the electromagnetic release. Frequency of operation of electromagnetic release is 3-5 I<sub>n</sub>.



060 Corresponds to EN 60947-2.

### Symbolic structure

e.industrial.ukm.XSL.X

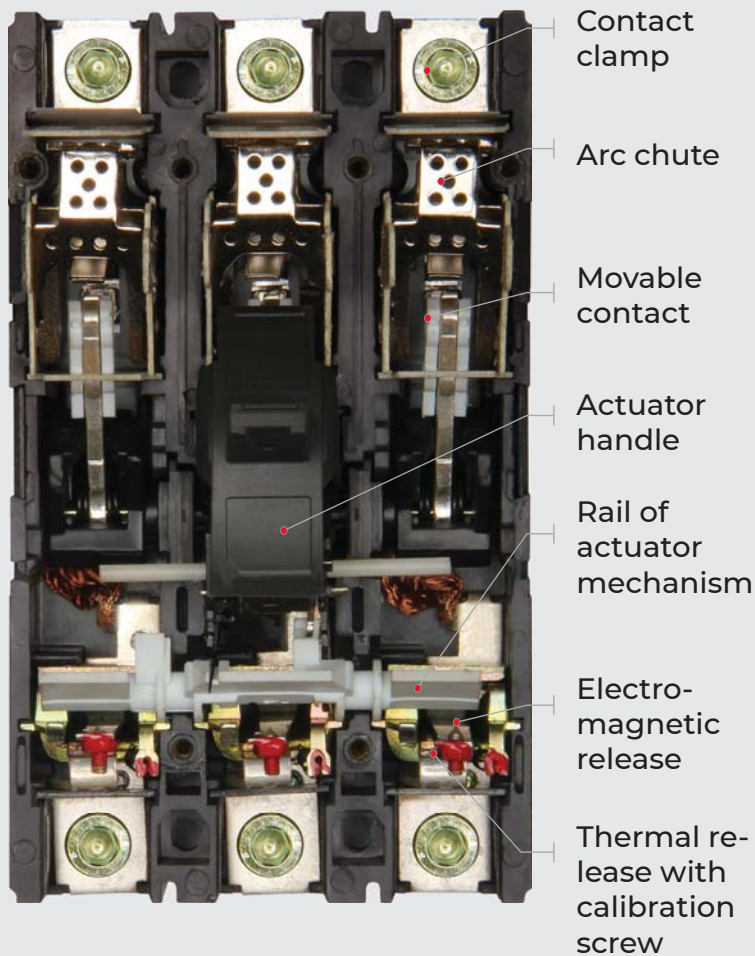
- e. — trademark E.NEXT
- industrial — name of series
- ukm — name of mould case circuit breakers series
- X — frame size of circuit breakers
- SL — series of circuit breakers
- X — rated current of automatic circuit breaker

### Technical data

Parameter name	e.industrial.ukm.100SL	e.industrial.ukm.250SL	e.industrial.ukm.400SL	e.industrial.ukm.630SL	e.industrial.ukm.800SL
Rated voltage U <sub>e</sub> , V	AC 660				
Rated frequency, Hz	50				
Number of poles	3				
Utilization category	A				
Rated current, A	32, 40, 50, 63, 80, 100	100, 125, 160, 200, 225, 250	300, 400	630	800
Release of overcurrent	Combined: thermal and electromagnetic				
Operating current of electromagnetic release, I <sub>m</sub>	3-5 I <sub>n</sub>				
Rated breaking capacity I <sub>cs</sub> at 690/400/230, kA	11/15/26	26/49/64	34/49/64	34/49/64	34/49/64
Limited breaking capacity I <sub>cu</sub> at 690/400/230, kA	15/20/35	35/65/85	45/65/85	45/65/85	45/65/85
Electrical life, On/Off cycles, no less	2000	2500	2000	2000	1500
Mechanical life, On/Off cycles, no less	10 000	8500	7000	4000	3500
Maximum cross section of connecting bus, mm <sup>2</sup>	17,5×5	20×5	30×5	40×5	40×5
Tightening torque of bolted connection of contact clamps, Nm	10,5	10,5	22,5	22,5	22,5
Protection degree	Case of breaker – IP30, from the side of the contact clamps – IP00				
Weight, g, no more	1,3	1,72	5,45	6,15	8,55

## Electrical Newest Exclusive Extended Technologies

Parameter name	e.industrial.ukm.100SL	e.industrial.ukm.250SL	e.industrial.ukm.400SL	e.industrial.ukm.630SL	e.industrial.ukm.800SL
Ambient temperature, °C	-40...+40				
Altitude, m, no more	1 000				
Permissible relative humidity at 25 °C (without condensation), no more	80 %				
Working position	vertical, horizontal, with a deviation of no more than 5°				
Mounting	on mounting panel				



The moulded case circuit breakers e.industrial.ukm.S series are made in case of a heat resistant glass-filled polyamide, which is self-extinguishing.

The combined release executes the protective functions of the device: thermal and electromagnetic. Thermal release is a bimetallic plate made of two metals with different coefficients of temperature expansion, when the current passes through it, it is heated and, bending, affects on the actuator mechanism, which turns off the circuit breaker.

The electromagnetic release of the moulded case circuit breakers of dimensions 100SL up to 63 A consists of a solenoid, which at the occurrence of a short-circuit current, affects on the actuator mechanism. In the electromagnetic release of the 100SL circuit breakers of 80 A and 250-800SL of the electrodynamic type during the short-circuit current passes, the metal plate is drawn to the release frame and, by effecting on the actuator mechanism, turns off the breaker.

The moulded case circuit breakers e.industrial.ukm.SL series are used for protection long lines of electric gear. If there is single-phase short circuit at the end of such a line, the circuit-breakers with a 10-fold release are not sufficiently sensitive and can not react to the occurrence of this emergency.

The moulded case circuit breakers e.industrial.ukm.SL series have the operation range of 3 to 5 In. of electromagnetic release, which in most cases is sufficient for turning off of short circuit at the end of long lines.

The complete set of the moulded case circuit breaker includes: interphase partitions, a set of metalware for connecting external conductors, a hex key, a set of metalware for fastening to the mounting panel.

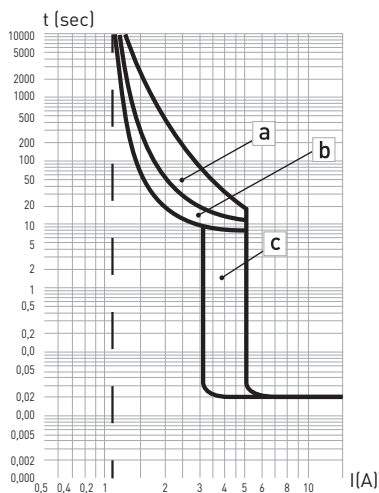
Parameter name	e.industrial.ukm.100SL	e.industrial.ukm.250SL	e.industrial.ukm.400SL
Auxiliary left contact	e.industrial.ukm.100Sm.F.left	e.industrial.ukm.250Sm.F.left	e.industrial.ukm.400Sm.F.left
Auxiliary right contact	e.industrial.ukm.100Sm.F.right	e.industrial.ukm.250Sm.F.right	e.industrial.ukm.400Sm.F.right
Auxiliary alarm contact	e.industrial.ukm.100Sm.B	e.industrial.ukm.250Sm.B	e.industrial.ukm.400Sm.B
Shunt release	e.industrial.ukm.100Sm.FL	e.industrial.ukm.250Sm.FL	e.industrial.ukm.400Sm.FL
Under-voltage release	e.industrial.ukm.100Sm.QY	e.industrial.ukm.250Sm.QY	e.industrial.ukm.400Sm.QY
Turning handle	e.industrial.ukm.100Sm.CS	e.industrial.ukm.250Sm.CS	e.industrial.ukm.400Sm.CS
Electric actuator	e.industrial.ukm.100Sm.MD.220	e.industrial.ukm.250Sm.220	e.industrial.ukm.400Sm.MD.220



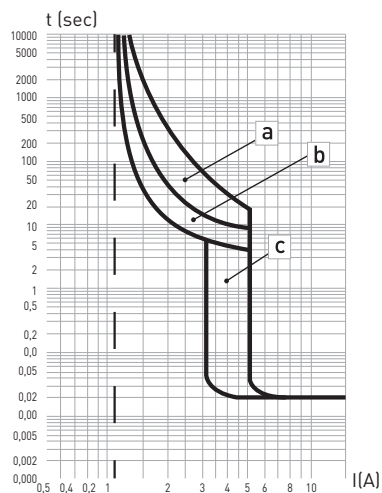


Name	Frame size	Rated current, A	Breaking capacity at AC 400 V, I <sub>cu</sub> /I <sub>cs</sub> , kA	Order code
e.industrial.ukm.100SL.32	100	32	20/15	i0660024
e.industrial.ukm.100SL.40		40		i0660011
e.industrial.ukm.100SL.50		50		i0660012
e.industrial.ukm.100SL.63		63		i0660001
e.industrial.ukm.100SL.80		80		i0660013
e.industrial.ukm.100SL.100		100		i0660002
e.industrial.ukm.250SL.100		250		100
e.industrial.ukm.250SL.125	125		i0660014	
e.industrial.ukm.250SL.160	160		i0660003	
e.industrial.ukm.250SL.175	175		i0660015	
e.industrial.ukm.250SL.200	200		i0660016	
e.industrial.ukm.250SL.225	225		i0660018	
e.industrial.ukm.250SL.250	400	250	65/49	i0660004
e.industrial.ukm.400SL.250		250		i0660019
e.industrial.ukm.400SL.400		400		i0660020
e.industrial.ukm.400SL.300	800	300	65/49	i0660025
e.industrial.ukm.630SL.630		630		i0660021
e.industrial.ukm.800SL.800	800	800	65/49	i0660022

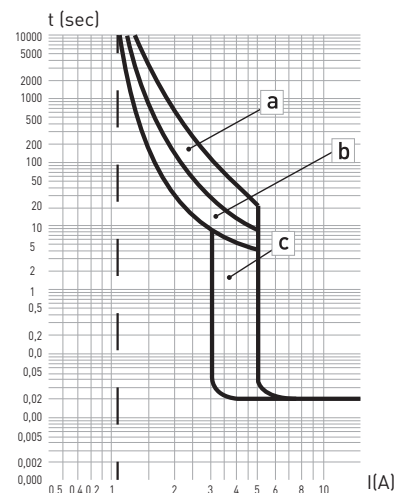
### Time-current characteristics



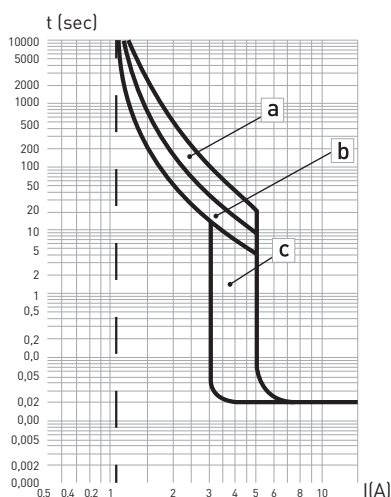
e.industrial.ukm.100SL



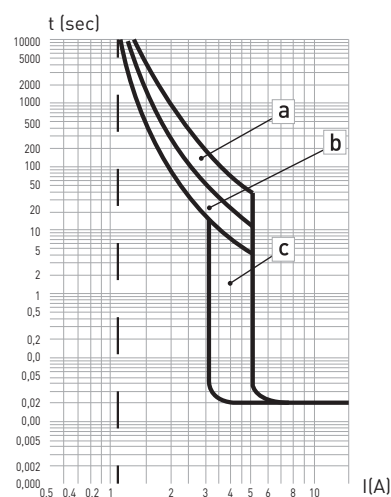
e.industrial.ukm.250SL



e.industrial.ukm.400SL



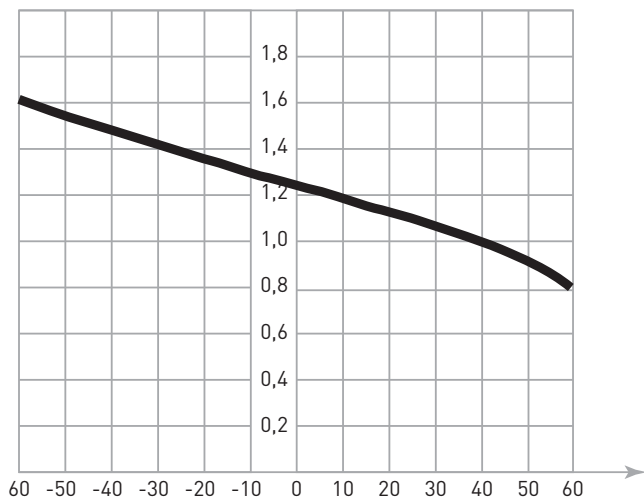
e.industrial.ukm.630SL



e.industrial.ukm.800SL

a - operation characteristic of the release started from «cold» state at the overload currents;  
 b - operation characteristic of the release started from «warm» state at the overload currents;  
 c - operation characteristic of the release at short-circuit currents.

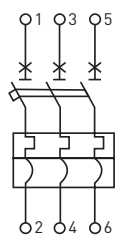
## Electrical Newest Exclusive Extended Technologies



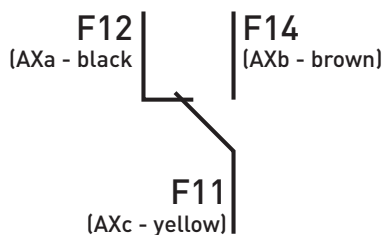
Dependence of the rated current of the moulded case circuit breaker on the ambient temperature (except 60S).

Name	Type	Rated voltage, V	Rated current/power consumption	Weight, kg, no more	Order code
e.industrial.ukm.100Sm.F.left	Auxiliary left contact	AC 250	3 A	0,025	i0670002
e.industrial.ukm.250Sm.F.left					i0670003
e.industrial.ukm.400Sm.F.left					i0670004
e.industrial.ukm.100Sm.F.right	Auxiliary right contact	AC 250	3 A	0,025	i0680002
e.industrial.ukm.250Sm.F.right					i0680003
e.industrial.ukm.400Sm.F.right					i0680004
e.industrial.ukm.100Sm.B	Auxiliary signal contact	AC 250	3 A	0,025	i0690002
e.industrial.ukm.250Sm.B					i0690003
e.industrial.ukm.400Sm.B					i0690004
e.industrial.ukm.100Sm.FL	Shunt release	AC 230	60 VA	0,05	i0700002
e.industrial.ukm.250Sm.FL				0,075	i0700003
e.industrial.ukm.400Sm.FL					i0700004
e.industrial.ukm.100Sm.QY	Under-voltage release	AC 230 (turning on at 95-165 V)	60 VA	0,1	i0710002
e.industrial.ukm.250Sm.QY				0,12	i0710003
e.industrial.ukm.400Sm.QY					i0710004
e.industrial.ukm.100Sm.MD.220	Electromagnetic actuator (operating time 0,2 s)	AC 230	7,5 A	1	i0720001
e.industrial.ukm.250Sm.MD.220			9,5 A	1,4	i0720002
e.industrial.ukm.400Sm.MDX.220	Motor-drive actuator (operating time 0,8 s)	AC 230	2 A	3,6	i0730001
e.industrial.ukm.100Sm.CS	Turning handle	—	—	0,55	i0750002
e.industrial.ukm.250Sm.CS				0,6	i0750003
e.industrial.ukm.400Sm.CS				1,2	i0750004

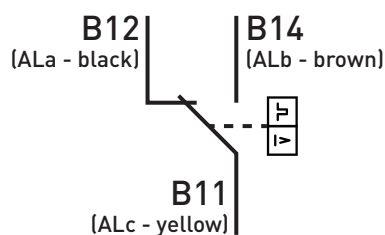
### Graphic notation



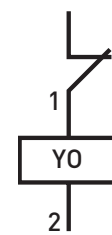
Moulded case circuit breaker  
e.industrial.ukm.SL



Auxiliary contact  
e.industrial.ukm.Sm.F



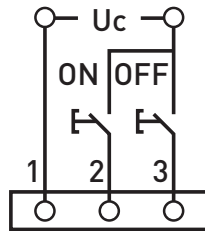
Alarm contact  
e.industrial.ukm.Sm.B



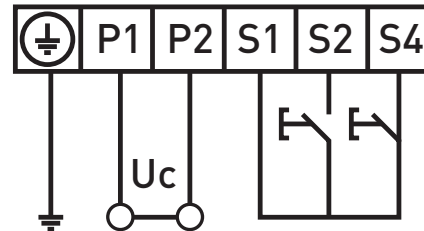
Shunt release  
e.industrial.ukm.Sm.FL



Under-voltage release  
e.industrial.ukm.Sm.QY

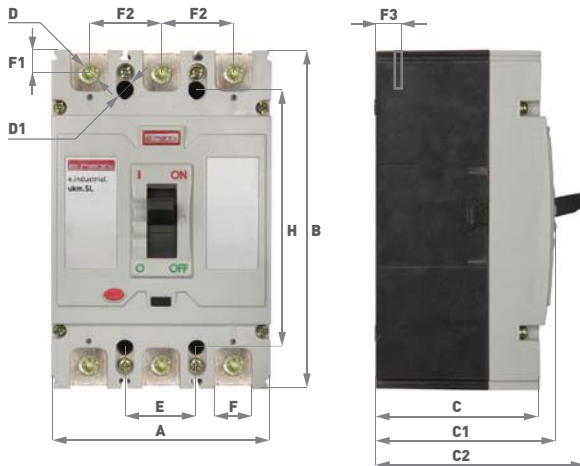


Electromagnetic actuator  
e.industrial.ukm.Sm.MD



Motor-drive actuator  
e.industrial.ukm.Sm.MDX

## Overall and installation dimensions

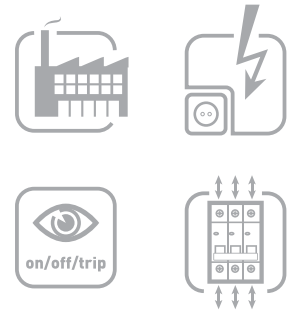


Overall dimension	A	B	C	C1	C2	D	D1	E	H	F	F1	F2	F3
e.industrial.ukm.100SL	92	157	67,5	72	86	M8	M4	30	129	17,5	10,5	30	24
e.industrial.ukm.250SL	107	165	81	89	110	M8	M4	35	126	20	10,5	35	24
e.industrial.ukm.400SL	150	257	102	112,5	146,5	M10	M6	48	194	30	16,5	48	38
e.industrial.ukm.630/800SL	210	280	107,5	116,5	155	M12	M6	70	243	44	18,5	70	40



## Moulded case circuit breakers e.industrial.ukm.1000S/1250S/1600S

They are intended for protection of low-voltage electrical networks and equipment against overload currents and short-circuit currents, as well as for infrequent operative switching of electrical networks. Frequency of operation of electromagnetic release is  $7 I_n \pm 20\%$ .



 060 Corresponds to EN 60947-2.

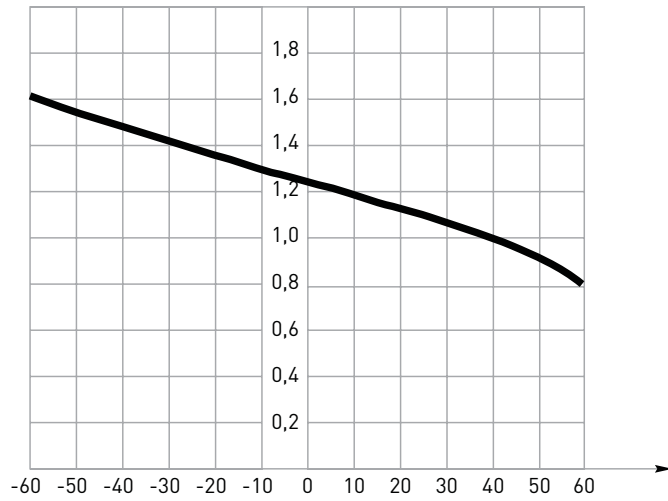
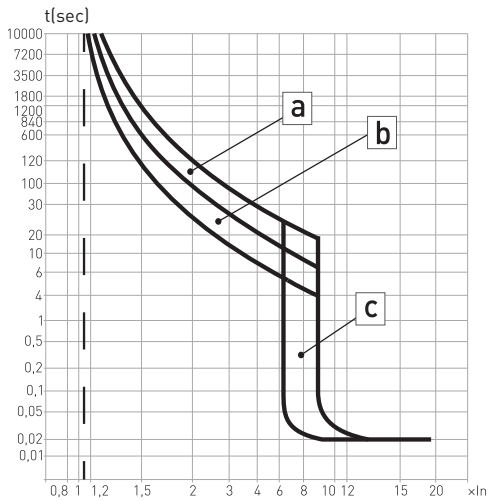
### Technical data

Parameter name	Value	
	1000S/1250S	1600S
Rated voltage $U_e$ , V	AC 660	
Rated frequency, Hz	50	
Number of poles	3	
Utilization category	A	
Rated current, A	1 000, 1 250	1 600
Release of overcurrent	Combined: thermal and electromagnetic	
Turning off current of electromagnetic release	$7 I_n \pm 20\%$	$5 I_n \pm 20\%$
Rated breaking capacity $I_{cs}$ at 400 V, kA	40	
Limited breaking capacity $I_{cu}$ at 400 V, kA	80	
Electrical life, On/Off cycles, no less	500	
Mechanical life, On/Off cycles, no less	2 500	
Protection degree	Case of breaker – IP30, from the side of the contact clamps – IP00	
Weight, g, no more	20,9	
Ambient temperature, °C	-25...+60	
Altitude, m, no more	1 000	
Permissible relative humidity at 25 °C (without condensation), no more	80 %	
Working position	vertical, horizontal, with a deviation of no more than 5°	
Mounting	on panel	

Name	Type of case	Rated current, A	Breaking capacity at AC 400 V, $I_{cu}/I_{cs}$ , kA	Order code
e.industrial.ukm.1000S	1 000	1 000	80/40	i0010023
e.industrial.ukm.1250S	1 250	1 250		i0010024
e.industrial.ukm.1500S	1 500	1 500		i0010025
e.industrial.ukm.1600S	1 600	1 600		i0010030

The construction of breakers does not provide the installation of auxiliary devices (auxiliary contacts, releases, motor actuators).

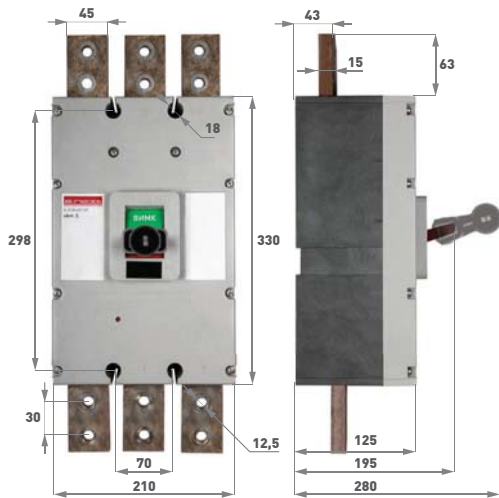
## Time-current characteristics



a - operation characteristic of the release started from «cold» state at the overload currents;  
 b - operation characteristic of the release started from «warm» state at the overload currents;  
 c - operation characteristic of the release at short-circuit currents.

Dependence of the rated current of the moulded case circuit breaker on the ambient temperature.

## Overall and installation dimensions



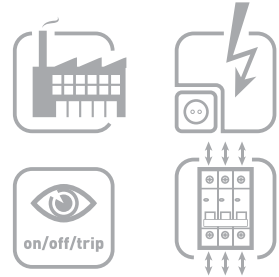


## Moulded case circuit breakers with electronic release series e.industrial.ukm.Re

They are intended for protection of low-voltage electrical networks and equipment against overload and short-circuit currents, as well as infrequent operational switching of electrical networks.



060 Corresponds to EN 60947-2.



### Symbolic structure

e.industrial.ukm.XRe.XX

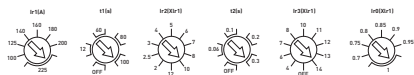
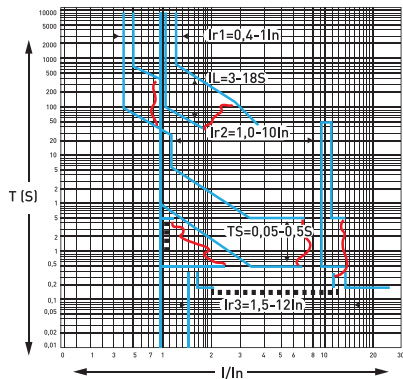
- e. — trademark E.NEXT
- industrial — name of industrial equipment series
- ukm — name of moulded case circuit breakers series
- X — frame size of circuit breakers
- Re — series of circuit breaker with adjustable rate of electronic release
- XX — rated current of circuit breaker

### Technical data

Parameter name	100Re	250Re	400Re	800Re
Rated voltage Ue, V	AC 400			
Rated frequency, Hz	50			
Number of poles	3			
Utilization category	B			
Rated current, A	100	225	400	630, 800
Release of overcurrent	Electronic adjustable			
Rated current setting of release Ir1, A	63-100	100-225	200-400	400-630 630-800
Operating time after overload t1, s	0-100, Off		0-150, Off	
Operating setting after short circuit with delay, Ir2, XIr1	(2-12)×In			
Operating time after short circuit with delay, t2, s	0-0,3, Off			
Operating setting after short circuit without delay, Ir3, XIr1	(4-14)×In			
Pre-emergency setting of indication Ir0, XIr1	(0,7-1)×In			
Rated operating breaking capacity Ics, kA	22,5	26	37,5	60
Rated limited breaking capacity Icu, kA	30	35	50	80
Operating setting after short circuit without delay, Ir3, XIr1	800			
Pre-emergency setting of indication Ir0, XIr1	8			
Rated operating breaking capacity Ics, kA	2 000	1 500	1 000	500
Rated limited breaking capacity Icu, kA	10 000	8 500	5 000	3 000
Maximum cross section of connecting buses, mm <sup>2</sup>	16,5×3	20×4	40×8	40×10
Tightening torque of bolted connection of contact clamps, Nm	10,5	22,5	22,5	22,5

Parameter name	100Re	250Re	400Re	800Re
Protection degree	Case of breaker – IP30, from the side of the contact clamps – IP00			
Weight, g, no more	1,5	2	5,5	8,5
Ambient temperature, °C	-25...+60			
Altitude, m, no more	2000			
Permissible relative humidity at 25 °C (without condensation), no more	70 %			
Working position	vertical, horizontal, with a deviation of no more than 5°			
Mounting	on panel			

## Time-current characteristics



## Description of adjustment

**Ir1** — adjustment of setpoint at thermal overload in the range according to the table (p. 135).

**t1** — adjustment of the operating time at thermal overload from 0 to 100 (150) s. It is possible to turn off the adjustment of the operating time at thermal overload.

**Ir2** — adjustment of setpoint at short circuit with a delay time in the range from 2 to 12 from the set rated current.

**t2** — adjustment of operation time at short circuit from 0 to 0,3 s. It is possible to turn off the adjustment of operation time at short circuits.

**Ir3** — adjustment of the setpoint at short circuit without delay time from 4 to 14 from the set rated current.

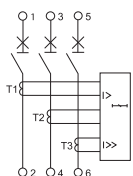
**Ir0** — adjustment of the setting of the pre-emergency indication from 0,7 to 1 of the set rated current.

**X\*** — depending on the dimensions of the circuit breaker (see Technical data).

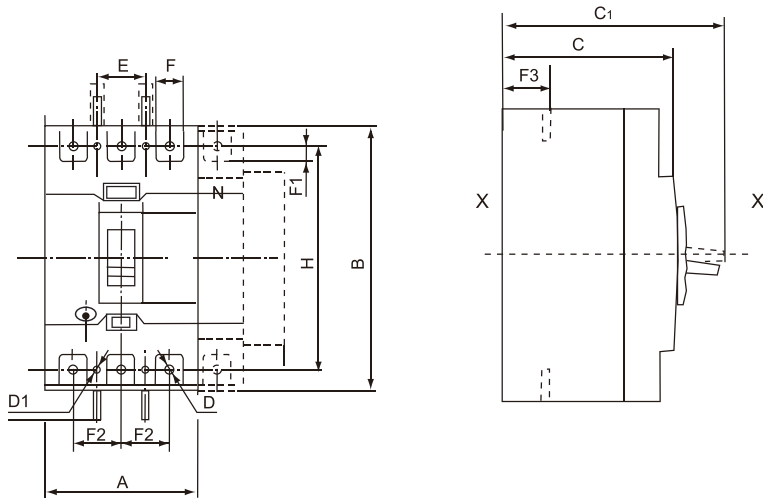
## Function

The turning off characteristic of the circuit breaker of e.industrial.ukm.Re series is independent of the ambient temperature. At the temperature close to 100 °C at the place where the breaker is located, the thermal protection of the release board will operate, which will cause the breaker to turn off. Since the power of the electronic release is carried out from the built-in current transformers, the correctness of its operation is guaranteed in the presence of a load current of at least 15 % and the presence of voltage at least in one phase.

## Graphic notation



## Overall and installation dimensions



Name	A	B	C	C1	D	D1	E	F	F1	F2	F3	H
100Re	90	157	88	104	M8	4,5	30	17,5	7,5	30	24	129
250Re	107	165	106	127		5	35	23	10	35	24	126
400Re	150	257	107	146	M10	6,5	44	25	11	44	38	194
800Re	210	280	115	155	M12	7	70	40	12	70	40	243

Name	Rated current, A	Rated operating/limited breaking capacity, kA	Order code
e.industrial.ukm.100Re.100	100	22,5/30	i0770028
e.industrial.ukm.250Re.225	225	26/35	i0770029
e.industrial.ukm.400Re.400	400	37,5/50	i0770023
e.industrial.ukm.800Re.630	630	60/80	i0770024
e.industrial.ukm.800Re.800	800		i0770025

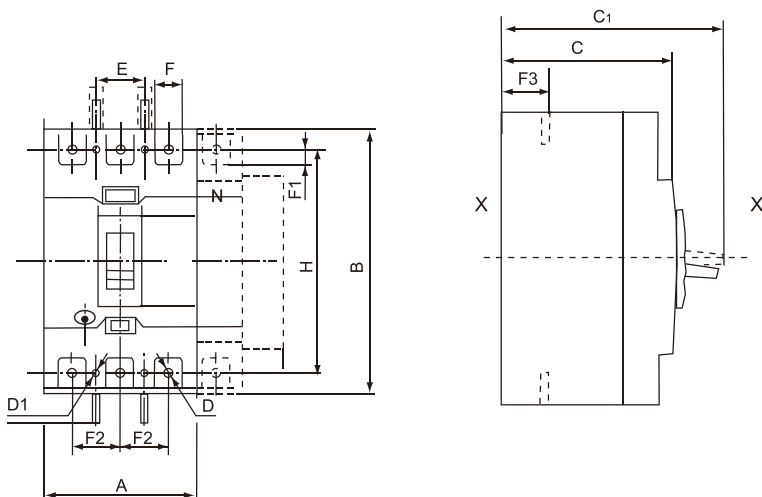
## Technical data

Parameter name	1600Re
Rated voltage Ue, V	AC 660
Rated frequency, Hz	50
Number of poles	3
Utilization category	B
Rated current, A	1000, 1600
Release of overcurrent	Electronic adjustable
Voltage of insulation Ui, V	800
Pulse sustained voltage Uimp, kV	8
Operating setting of electromagnetic release	Adjustable (1,5-12) In
Setting of thermal release	Adjustable (0,4-1) In
Rated operating breaking capacity Ics at 400 V, kA	85
Rated limited breaking capacity Icu at 400 V, kA	42
Electrical life, On/Off cycles, no less	500
Mechanical life, On/Off cycles, no less	2500
Maximum cross section of connecting bus, mm <sup>2</sup>	50×6
Tightening torque of bolted connection of contact clamps, Nm	22,5
Protection degree	Case of breaker – IP30, from the side of the contact clamps – IP00
Weight, g, no more	17,2



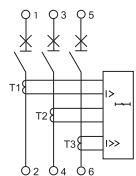
Parameter name	1600Re
Ambient temperature, °C	-25...+40
Altitude, m, no more	1 000
Permissible relative humidity at 25 °C (without condensation), no more	80 %
Working position	vertical, horizontal, with a deviation of no more than 5°
Mounting	on panel

## Overall and installation dimensions



Overall dimension	A	B	C	C1	C2	D	D1	E	H	F	F1	F2	F3
e.industrial.km.1600Re.	210	406	140	145	205	2×M12	5,5	70	378	50	7/11	70	33,5

## Graphic notation

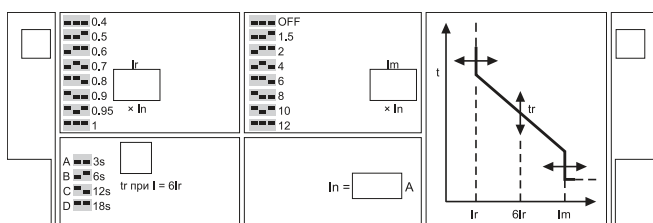


## Construction and functions

The moulded case circuit breakers with electronic release e.industrial.ukm.Re series are made in case of a heat resistant glass-filled polyamide, which is self-extinguishing.

The protection functions of circuit breakers are executed by an electronic release. Its supply and accounting of current values are provided by built-in current transformers installed in each phase. In the case of overcurrent that exceeds the setpoint, the electronic release sends a turn-off signal to the turn-off electromagnet that affects on the actuator mechanism, turns off the breaker.

The electronic release of the circuit breakers e.industrial.ukm.Re series has the following capacities:



1. Adjustment of setpoint for thermal overload in the range from 0,4 to 1 from the rated current of the breaker with a step 0,4; 0,5; 0,6; 0,7; 0,8; 0,9; 0,95; 1;
2. Adjustment of operating time at thermal overload (see table).

## Electrical Newest Exclusive Extended Technologies

Handle	Operating time, s			
	60CS	100CS	250CS	630-800CS
2lr	27	54	108	162
6lr	1	6	12	18
7,2lr	2,5	4,2	8,3	12,5

3. Adjustment of operation with a short-circuit current in the range from 1,5 to 12 from the rated current of the breaker with the step OFF, 1,5; 2; 4; 6; 8; 10; 12. Characteristics of the turning off of the circuit breaker e.industrial.ukm.Re series does not depend on the ambient temperature. At temperatures at the place where the breaker is located, close to 100 °C, the thermal protection of the release board will operate, which will cause the breaker to turn off. In each pole of the breaker is auxiliary installed electromagnetic releases with a setpoint within 15-17 In, which provide backup protection against short circuit in case of failure of the electronic release. As the power of the electronic release is carried out from embedded current transformers, the correct operation of it is guaranteed in the presence of a load current of at least 15 % and the presence of voltage at least in one phase.

Name	A	B	C
e.industrial.ukm.1600Re.1000	1 000	42/85	i0770026
e.industrial.ukm.1600Re.1600	1 600		i0770027

\* Auxiliary accessories for moulded case circuit breakers of e.industrial.ukm.1600Re series are supplied separately.

Accessory	e.industrial.ukm.1600Re	Order code
Auxiliary+alarm contact	e.industrial.ukm.1600R.FB	i081004
Shunt release	e.industrial.ukm.1600R.FL	i081008

## Motor drive e.industrial.ukm.R.MDX

Motor drive e.industrial.ukm.1600R.MDX is intended for remote turning on and off the circuit breakers e.industrial.ukm.1600Re.1000, e.industrial.ukm.1600Re.1600. Installation - on the breaker.



Name	Rated operating current, V	Rated current, A	Type	Order code
e.industrial.ukm.1600R.MDX	AC 230	3	motor drive	i081012



## Air circuit breakers

### e.acb

They are intended for protection of low-voltage electrical networks and equipment against overload and short-circuit currents, including single-phase short circuits to the ground, as well as for occasional operational switching of electrical networks.

 **060** Corresponds to EN 60947-2.



#### Symbolic structure

e.acb.XX.X

- e. — trademark E.NEXT
- acb — name of air circuit breaker series
- X — frame size of circuit breaker
- X — execution, F – fixed, D – drawout
- X — rated current of circuit breaker

### Technical data

Parameter name	e.acb.1000	e.acb.2000	e.acb.3200	e.acb.4000	e.acb.6300
Rated voltage Ue, V	AC 400/690				
Rated frequency, Hz	50				
Number of poles	3				
Utilization category	B				
Execution	Fixed, drawer				
Connecting	Electronic adjustable				
Rated current, A	630, 800, 1 000	1 000, 1 600, 2 000	2 000, 2 500, 3 200	3 200, 4 000	4 000, 5 000, 6 300
Voltage of insulation Ui, V	800	1 000			
Pulse voltage Uimp, kV	8	12			
Adjustment range of the rated current of the electronic release with long-term overload, Ir1 (error±10 %)	(0,4-1) In+Off				
Adjustment range of current rate of operation at short-circuit with delay time, Ir2 (error±10 %)	(0,4-15) In+Off				
Setpoint of operation current at short circuit without delay time, Ir3 (error±15 %)	I×In-32kA+Off	I×In-50kA+Off	In-65kA+Off	I×In-65kA+Off	I×In-85kA+Off
Adjustment range of turning off at single-phase short-circuit to the ground, Ir4 (±10 % error)	(0,2-0,8) In+Off				
Rated operating breaking capacity Ics at 400 V, kA	30	50	65	65	85
Rated limited breaking capacity Icu at 400 V, kA	42	65	80	80	100
Rated short-term current, Icw, 0,4 s	30	50	65	65	85
Switching off time, ms	23-32				
Electrical life, On/Off cycles, no less	1 000	500	500	500	500

## Electrical Newest Exclusive Extended Technologies

Parameter name	e.acb.1000	e.acb.2000	e.acb.3200	e.acb.4000	e.acb.6300
Mechanical life, On/Off cycles, no less	15 000	9 500	4 500	4 000	2 500
Protection degree	IP00				
Weight, kg, no more fixed/drawer	22/38	45/78	55/91	-/132	-/236

Terminals of control circuit, auxiliary contacts and contacts position

Electronic protection block

Turning off button

Indicator of main contacts position

Locking clip of device in a set position with a hinged lock

Indicator of device position



Manual actuator handle of spring

Turning on button

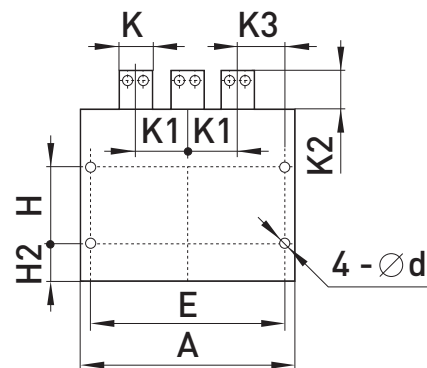
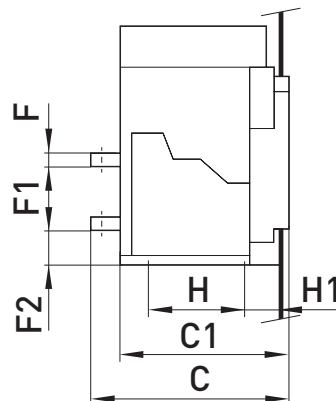
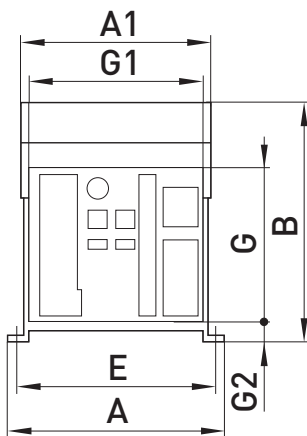
Indicator of actuator spring

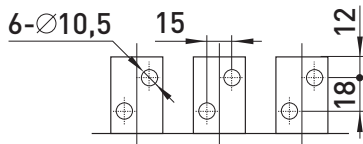
Withdrawable rails for installation/removing the device from the basket

Holes for handle of withdrawable device

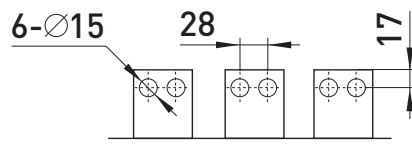
The protective function of the device is executed by an electronic release. The release has a number of settings that allow to set up a circuit breaker in a wide range of rated currents, short-circuit currents. In addition, the electronic release allows the same time to adjust the operating time of the above characteristics. At first, the circuit breaker is completed with a built-in electric drive - for remote control of the device, the shunt release - for the quick and remote turning off the circuit breaker and a block of auxiliary contacts - 4 pcs, which are used to signal the state of the device or for another purpose.

In the drawout execution, the kit includes a basket for the installation of an circuit switch and a handle, which is used for installation/removing the circuit breaker from the basket. The complete set for all automatic circuit breakers includes a set of screws for connecting copper buses to tinned terminal of automatic circuit breakers, interphase partitions, door flange and electronic release.

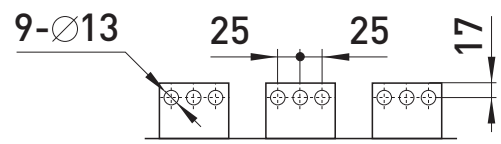




e.acb.1000F



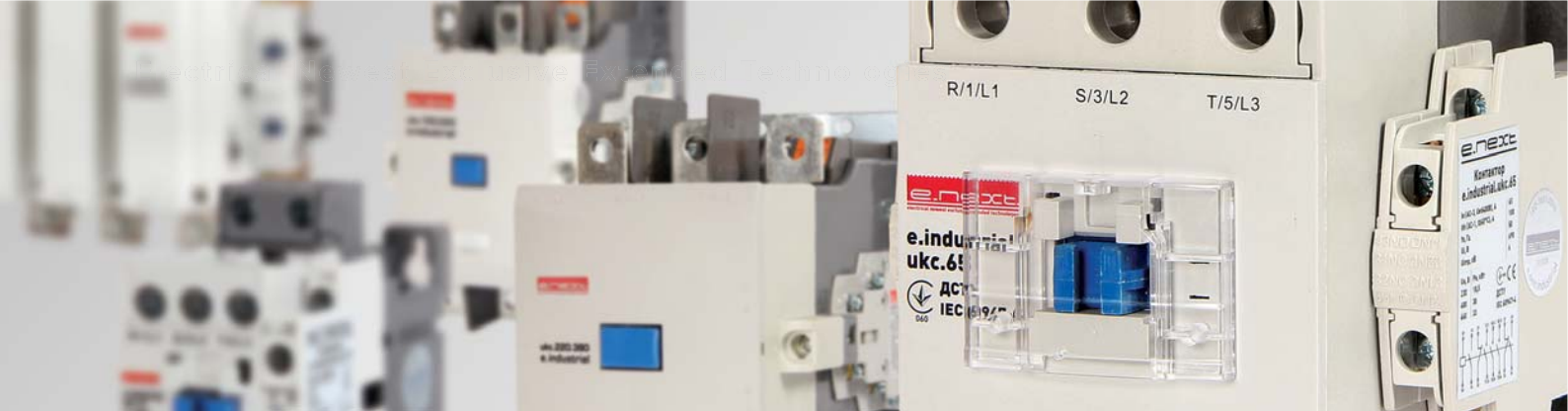
e.acb.2000F



e.acb.3200F

Name	A	AI	B	C	CI	E	F	F1	F2	G	G1	G2	H	H1	H3	d	K	K1	K2	K3	
e.acb.1000F	630	274	216	316	289	239	246	8	101,5	46,5	258	216	3	144	73	83	8,5	35	70	50	53
	1000																				
e.acb.2000F	1000, 1600	362	318	402	333	291	340	15	112	57	258	292	35	150	64	74	12	60	95	42	86
	2000																				
e.acb.3200F	2000, 2500	422	378	402	333	299,5	400	20	112	57	258	352	35	150	64	74	12	86	115	33,5	96
	3200																				

Name	Frame size	Execution	Rated current	Breaking capacity	Order code
e.acb.1000F.630	1 000	fixed	630	42/30	i0810007
e.acb.1000F.800			800		i0810008
e.acb.1000F.1000			1000		i0810009
e.acb.1000D.630		drawer	630		i0810010
e.acb.1000D.800			800		i0810011
e.acb.1000D.1000			1000		i0810001
e.acb.2000F.1000	2 000	fixed	1000	65/50	i0810012
e.acb.2000F.1600			1600		i0810006
e.acb.2000F.2000			2000		i0810005
e.acb.2000D.1000		drawer	1000		i0810013
e.acb.2000D.1600			1600		i0810002
e.acb.2000D.2000			2000		i0810004
e.acb.3200F.2000	3 200	fixed	2000	80/65	i0810014
e.acb.3200F.2500			2500		i0810015
e.acb.3200F.3200			3200		i0810016
e.acb.3200D.2000		drawer	2000		i0810017
e.acb.3200D.2500			2500		i0810003
e.acb.3200D.3200			3200		i0810018
e.acb.4000D.3200	4 000	drawer	3200	100/85	i0810019
e.acb.4000D.4000			4000		i0810020
e.acb.6300D.4000	6 300		4000		i0810021
e.acb.6300D.5000			5000		i0810022
e.acb.6300D.6300			6300		i0810023



## ▶ Contactors and accessories e.industrial.ukc

They are intended for: remote start, stop and reverse of three-phase asynchronous engines with short-circuited rotor, and also control of lighting circuits, active and weakly inductive loads.



060 Corresponds to EN 60947-1, EN 60947-4-1.



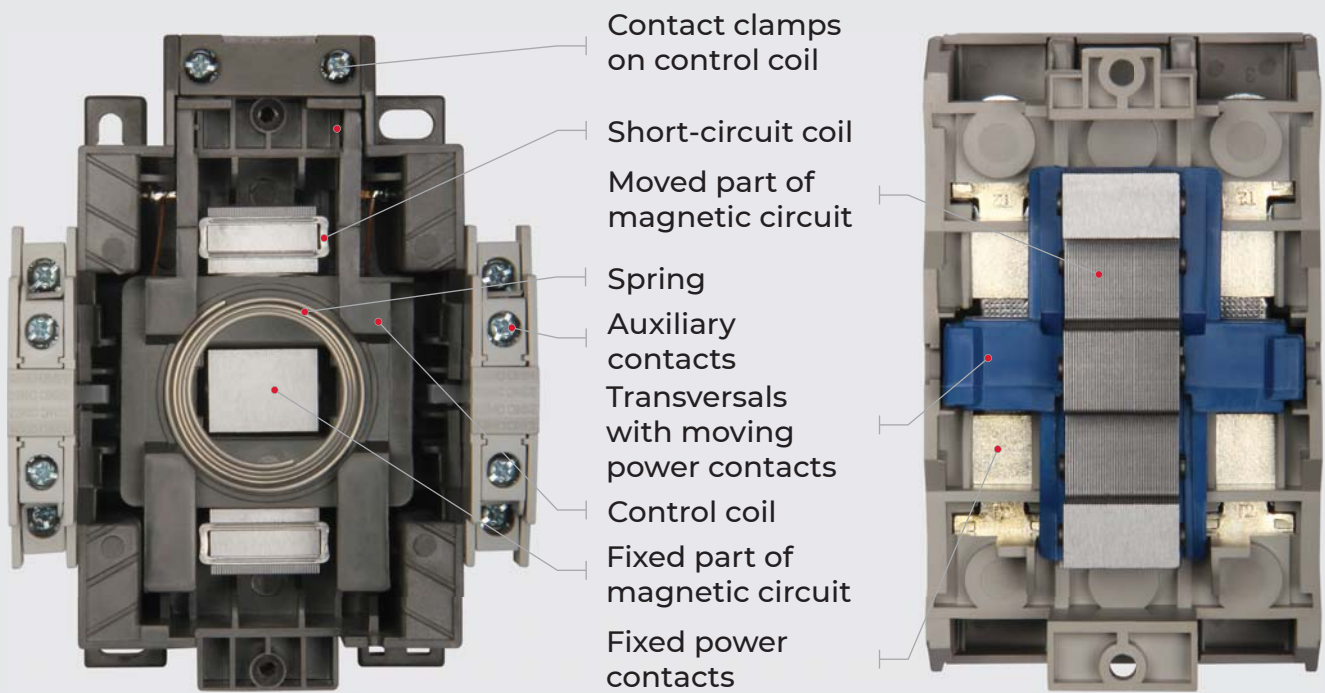
### Symbolic structure

e.industrial.ukc.X.X

- e. — trademark E.NEXT
- industrial — series
- ukc — type
- X — rated current
- X — voltage of control coil

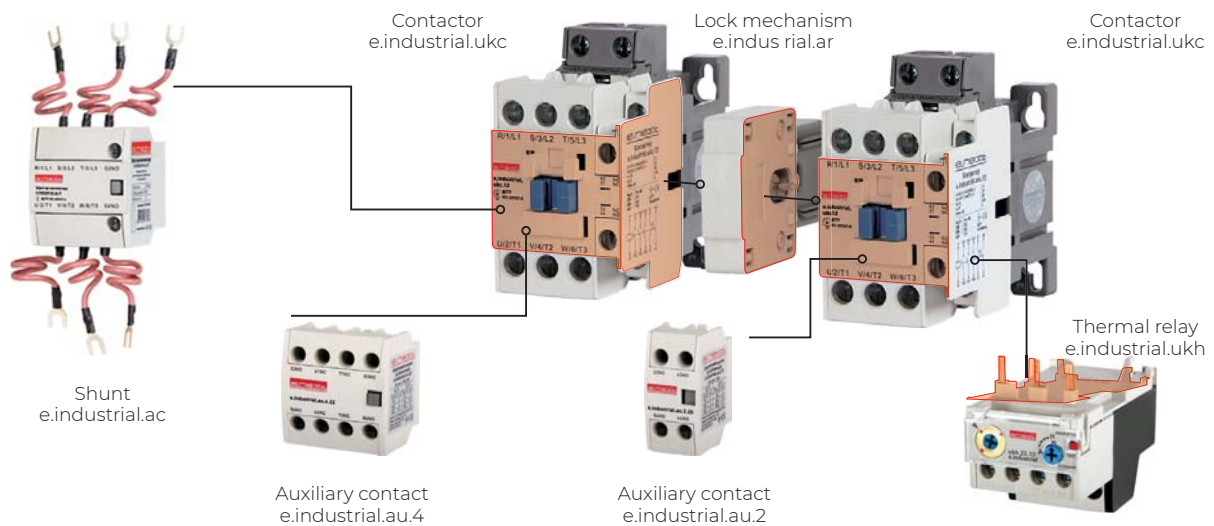
### Technical data

Parameter name		Value
Rated voltage $U_e$ , V		AC 400 (660)
Rated frequency, Hz		50
Number of poles		3
Rated current, A		6, 9, 12, 18, 25, 32, 40, 50, 65, 75, 85, 100, 120, 150, 180, 220, 330, 400, 500, 630, 800
Utilization category		AC-3
Voltage of insulation $U_i$ , V		690
Pulse voltage (1,2×50) $U_{imp}$ , kV		8
Maximum short-term overload ( $t \leq 1$ s), A		18 $I_e$
Rated voltage of control coil $U_c$ , V		24, 42, 110, 230, 400
Voltage range of control coil, V	closing	(0,8...1,1) $U_c$
	opening	(0,3...0,6) $U_c$
Protection degree		IP20 (6-85 A), IP00 (100-800 A)
Ambient temperature, °C		-25...+40
Altitude, m, no more		2 000
Permissible relative humidity at 25 °C (without condensation), no more		80 %
Working position		arbitrary
Mounting		on DIN-rail 35 mm (up to 85 A), on mounting panel



In the initial state without the voltage supply to the coil, the moving system under the action of the spring is in a normally open position. The contactor is activated by supplying the voltage to the control coil. There is a magnetic flux in the coil, which attracts the moving part of the magnetic circuit with a traverse with moving power contacts to fixed one and closes the power contacts. At the same time, the power contacts close auxiliary contacts, which can shunt the contacts button «Start» contactor. The contact press is carried out by a spring. On a fixed part of a magnetic circuit short turn from a non-magnetic material, which prevents clogging and detonation of contacts.

The turning off contactor occurs when the control coil is de-energized under the action of the turn-off spring.



### Table to fit the accessories to contactors

Contactor e.industrial.	Thermal relay	Auxiliary contacts	Lock mechanism	Add-on shunt	Control coil
ukc.6m	ukh.13M	au.m.11 au.m.22	ar12m	—	—
ukc.9M					
ukc.12M					

## Electrical Newest Exclusive Extended Technologies

Contactor e.industrial.	Thermal relay	Auxiliary contacts	Lock mechanism	Add-on shunt	Control coil
ukc.9	ukh.22	au.11lr au.2.20 au.2.11 au.4.40 au.4.04 au.4.13 au.4.31 au.4.22	ar85	ac.9	ukc.coil.40
ukc.12					
ukc.18					
ukc.25					
ukc.32 ukc.40	ukh.40				
ukc.50 ukc.65 ukc.75 ukc.85	ukh.85			ac.50	ukc.coil.85
ukc.100	ukh.100	—	—	—	ukc.coil.125
ukc.120	ukh.125	au100.11	ar150		
ukc.150	ukh.150				
ukc.180 ukc.220	ukh.220				
ukc.330	ukh.630	au.2.20 au.2.11 au.4.40 au.4.04 au.4.13 au.4.31 au.4.22	ar400		ukc.coil.330
ukc.400			ar500		ukc.coil.400
ukc.500					ukc.coil.500
ukc.630 ukc.800			ukh.800		ar800

Name	Rated current Ie, A		Rated power of controlled engine for AC-3, kW			Type and number of auxiliary contacts	Voltage of control coil Uc, V	Order code
	Utilization category		230 V	400 V	660 V			
	AC-3	AC-1						
e.industrial.ukc.6m.220	6	20	1,5	2,2	3	1NO	≈230	i.0090001
e.industrial.ukc.9m.220	9	20	2,2	4	4	1NO	≈230	i.0090017
e.industrial.ukc.12m.220	12	20	3	5,5	4	1NO	≈230	i.0090018
e.industrial.ukc.12m.220.NC	12	20	3	5,5	4	1NC	≈230	i.0090070
e.industrial.ukc.9.24	9	20	2,5	4	5,5	1NO+1NC	≈24	i.0090071
e.industrial.ukc.9.42							≈42	i.0090072
e.industrial.ukc.9.110							≈110	i.0090073
e.industrial.ukc.9.230							≈230	i.0090069
e.industrial.ukc.9.400							≈400	i.0090058
e.industrial.ukc.12.24	12	25	3	5,5	7,5	1NO+1NC	≈24	i.0090012
e.industrial.ukc.12.42							≈42	i.0090044
e.industrial.ukc.12.110							≈110	i.0090025
e.industrial.ukc.12.220							≈230	i.0090002
e.industrial.ukc.12.380							≈400	i.0090021
e.industrial.ukc.18.24	18	25	4	7,5	11	1NO+1NC	≈24	i.0090074
e.industrial.ukc.18.42							≈42	i.0090075
e.industrial.ukc.18.110							≈110	i.0090076
e.industrial.ukc.18.230							≈230	i.0090059
e.industrial.ukc.18.400							≈400	i.0090060
e.industrial.ukc.25.24	25	25	5,5	11	15	1NO+1NC	≈24	i.0090077
e.industrial.ukc.25.42							≈42	i.0090078
e.industrial.ukc.25.110							≈110	i.0090079
e.industrial.ukc.25.230							≈230	i.0090061
e.industrial.ukc.25.400							≈400	i.0090062







Name	Rated current Ie, A		Rated power of controlled engine for AC-3, kW			Type and number of auxiliary contacts	Voltage of control coil Uc, V	Order code
	Utilization category		230 V	400 V	660 V			
	AC-3	AC-1						
e.industrial.ukc.32.24	32	50	7,5	15	18,5	1NO+1NC	≈24	i.0090028
e.industrial.ukc.32.42							≈42	i.0090080
e.industrial.ukc.32.110							≈110	i.0090029
e.industrial.ukc.32.220							≈230	i.0090030
e.industrial.ukc.32.380							≈400	i.0090031
e.industrial.ukc.40.24	40	60	11	18,5	22	1NO+1NC	≈24	i.0090013
e.industrial.ukc.40.42							≈42	i.0090047
e.industrial.ukc.40.110							≈110	i.0090026
e.industrial.ukc.40.220							≈230	i.0090004
e.industrial.ukc.40.380							≈400	i.0090011
e.industrial.ukc.50.24	50	80	15	22	30	1NO+1NC	≈24	i.0090013
e.industrial.ukc.50.42							≈42	i.0090047
e.industrial.ukc.50.110							≈110	i.0090026
e.industrial.ukc.50.220							≈230	i.0090034
e.industrial.ukc.50.380							≈400	i.0090035
e.industrial.ukc.65.24	65	100	18,5	30	33	1NO+1NC	≈24	i.0090036
e.industrial.ukc.65.42							≈42	i.0090054
e.industrial.ukc.65.110							≈110	i.0090037
e.industrial.ukc.65.220							≈230	i.0090038
e.industrial.ukc.65.380							≈400	i.0090039
e.industrial.ukc.75.24	75	110	22	37	37	1NO+1NC	≈24	i.0090040
e.industrial.ukc.75.42							≈42	i.0090081
e.industrial.ukc.75.110							≈110	i.0090041
e.industrial.ukc.75.220							≈230	i.0090042
e.industrial.ukc.75.380							≈400	i.0090043
e.industrial.ukc.85.24	85	135	25	45	45	1NO+1NC	≈24	i.0090020
e.industrial.ukc.85.42							≈42	i.0090052
e.industrial.ukc.85.110							≈110	i.0090010
e.industrial.ukc.85.220							≈230	i.0090005
e.industrial.ukc.85.380							≈400	i.0090023
e.industrial.ukc.100.110	100	150	30	55	55	1NO+1NC	≈110	i.0090048
e.industrial.ukc.100.220							≈230	i.0090049
e.industrial.ukc.100.380							≈400	i.0090050
e.industrial.ukc.120.110	120	150	37	60	60	1NO+1NC	≈110	i.0090053
e.industrial.ukc.120.220							≈230	i.0090006
e.industrial.ukc.120.380							≈400	i.0090051
e.industrial.ukc.150.220	150	200	45	75	90	1NO+1NC	≈230	i.0090007
e.industrial.ukc.150.380							≈400	i.0090056
e.industrial.ukc.180.230	180	200	60	90	90	1NO+1NC	≈230	i.0090063
e.industrial.ukc.180.400							≈400	i.0090064
e.industrial.ukc.220.220	220	250	75	132	165	1NO+1NC	≈230	i.0090008
e.industrial.ukc.220.380							≈400	i.0090027
e.industrial.ukc.330.230	330	400	90	165	225	1NO	≈230	i.0090065
e.industrial.ukc.330.400							≈400	i.0090066
e.industrial.ukc.400.220	400	500	110	225	250	1NO	≈230	i.0090009
e.industrial.ukc.400.380							≈400	i.0090082
e.industrial.ukc.500.230	500	630	165	250	355	1NO	≈230	i.0090067
e.industrial.ukc.500.400							≈400	i.0090068

## Electrical Newest Exclusive Extended Technologies



Name	Rated current I <sub>e</sub> , A		Rated power of controlled engine for AC-3, kW			Type and number of auxiliary contacts	Voltage of control coil U <sub>c</sub> , V	Order code
	Utilization category		230 V	400 V	660 V			
	AC-3	AC-1						
e.industrial.ukc.630.220	630	800	200	355	400	1NO	≈230	i.0090015
e.industrial.ukc.630.380							≈400	i.0090055
e.industrial.ukc.800.220	800	1 000	220	400	450	1NO	≈230	i.0090016
e.industrial.ukc.800.380							≈400	i.0090083

## Technical data

Name	Electrical life, On/Off cycles, mln, no less		Mechanical life, On/Off cycles, mln, no less	Power consumption of control coil, VA		Operating time, ms		Power of dissipation, W
	Utilization category AC-3	Utilization category AC-1		at turning on cosφ=0,75	at hold-up cosφ=0,3	on	off	
e.industrial.ukc.m	0,5	0,65	0,8	32	6	10-17	6-9	2
e.industrial.ukc.9-25	0,75	0,85	1	95	9	10-17	6-9	2
e.industrial.ukc.32-40	0,75	0,85	1	95	9	11-19	6-10	2
e.industrial.ukc.50-85	0,5	0,65	0,8	220	17	16-25	8-15	5
e.industrial.ukc.100-150	0,45	0,6	0,75	298	12,3	37-41	47-52	4,4
e.industrial.ukc.180-220	0,35	0,4	0,5	380	11,6	39-45	39-45	4,7
e.industrial.ukc.330-400	0,3	0,35	0,4	1 075	15	40-75	100-170	14
e.industrial.ukc.500-800	0,2	0,25	0,3	1 650	22	40-80	100-200	20

## Control coils for contactors e.industrial.ukc.coil

Name	Rated current, A	Rated operating/limited breaking capacity, kA	Order code
e.industrial.ukc.coil.40.24	e.industrial.ukc.9 e.industrial.ukc.12 e.industrial.ukc.25 e.industrial.ukc.32 e.industrial.ukc.40	~24	i0160001
e.industrial.ukc.coil.40.42		~42	i0160002
e.industrial.ukc.coil.40.110		~110	i0160003
e.industrial.ukc.coil.40.220		~230	i0160012
e.industrial.ukc.coil.40.380		~400	i0160004
e.industrial.ukc.coil.85.24	e.industrial.ukc.50 e.industrial.ukc.65 e.industrial.ukc.75 e.industrial.ukc.85	~24	i0160005
e.industrial.ukc.coil.85.42		~42	i0160006
e.industrial.ukc.coil.85.110		~110	i0160007
e.industrial.ukc.coil.85.220		~230	i0160011
e.industrial.ukc.coil.85.380		~400	i0160008
e.industrial.ukc.coil.85.110	e.industrial.ukc.100 e.industrial.ukc.120	~110	i0160009
e.industrial.ukc.coil.85.220		~230	i0160029
e.industrial.ukc.coil.85.380		~400	i0160010
e.industrial.ukc.coil.150.110	e.industrial.ukc.180	~110	i0160014
e.industrial.ukc.coil.150.220		~230	i0160020
e.industrial.ukc.coil.150.380		~400	i0160015
e.industrial.ukc.coil.220.110		~110	i0160016
e.industrial.ukc.coil.220.220		~230	i0160028
e.industrial.ukc.coil.220.380	~400	i0160017	
e.industrial.ukc.coil.330.230	e.industrial.ukc.330	~230	i0160032
e.industrial.ukc.coil.330.400		~400	i0160033
e.industrial.ukc.coil.400.230	e.industrial.ukc.400	~230	i0160034
e.industrial.ukc.coil.400.400		~400	i0160035
e.industrial.ukc.coil.500.230	e.industrial.ukc.500	~230	i0160036
e.industrial.ukc.coil.500.400		~400	i0160037

Name	Rated current, A	Rated operating/limited breaking capacity, kA	Order code
e.industrial.ukc.coil.630.220	e.industrial.ukc.330 e.industrial.ukc.500	~230	i0160030
e.industrial.ukc.coil.630.380		~400	i0160019

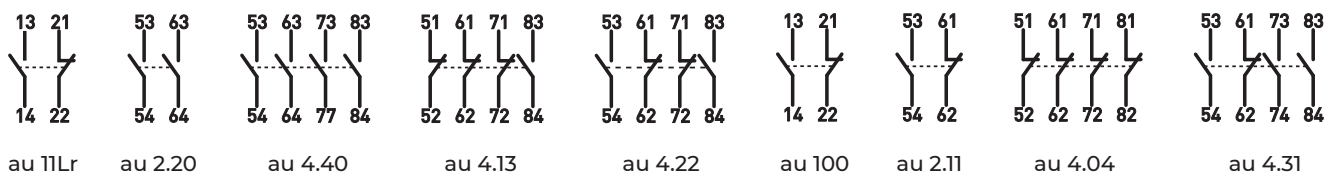
## Auxiliary contacts e.industrial.au

They are intended for increasing of the auxiliary contact group of contactor.



Name	Contacts	Order code
e.industrial.au.m.11	1NO+1NC	i0140010
e.industrial.au.m.22	2NO+2NC	i0140011
e.industrial.au.2.20	2NO	i0140002
e.industrial.au.2.11	1NO+1NC	i0140006
e.industrial.au.4.40	4NO	i0140003
e.industrial.au.4.04	4NC	i0140009
e.industrial.au.4.13	1NO+3NC	i0140008
e.industrial.au.4.31	3NO+1NC	i0140004
e.industrial.au.4.22	2NO+2NC	i0140007
e.industrial.au.11lr	1NO+1NC	i0140001
e.industrial.au.100.11	1NO+1NC	i0140005

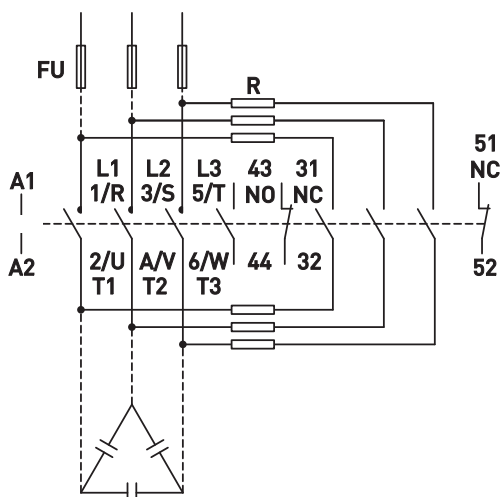
## Graphic notation of contactors



## Add-on shunt e.industrial.ac

They are intended for limiting currents at capacitors switching into reactive power compensation schemes. For protection against short-circuit currents, use fuses of type gG on (1,5...2) In. Auxiliary contacts: 1NO.

## Electric circuit diagram





Name	Maximum connected power of capacitor banks, kVAr			Rated current (In), A	Contactors	Order code
	220-240 V	400-440 V	550-600 V			
e.industrial.ac.9	6,5	12,5	18	18	e.industrial.ukc.12	i.0210001
	10	18	26	26	e.industrial.ukc.25	
	15	25	36	36	e.industrial.ukc.32	
	20	33,3	48	48	e.industrial.ukc.40	
e.industrial. ac.50	22	40	58	58	e.industrial.ukc.50	i.0210002
	25	46	66	66	e.industrial.ukc.65	
	30	54	78	78	e.industrial.ukc.75	
	35	60	92	92	e.industrial.ukc.85	

## Mechanical interlocking e.industrial.ar

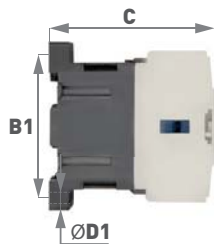
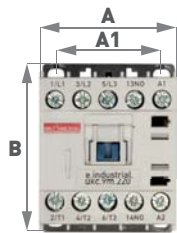
It is intended for mutual blocking of contactors against simultaneous turning on in reversal schemes, start of the engine «star-delta», automatic input of reserve, etc.



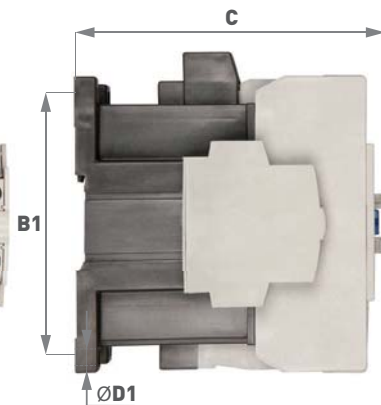
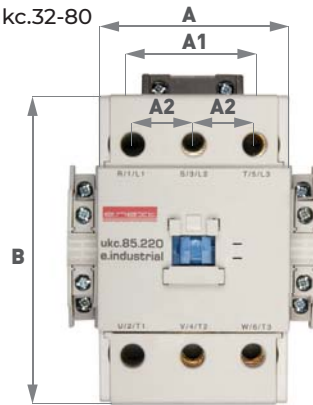
Name	Order code
e.industrial.ar.12m	i.0150004
e.industrial.ar85	i.0150001
e.industrial.ar.150	i.0150002
e.industrial.ar.400	i.0150005
e.industrial.ar.500	i.0150006
e.industrial.ar.800	i.0150007

## Overall and installation dimensions

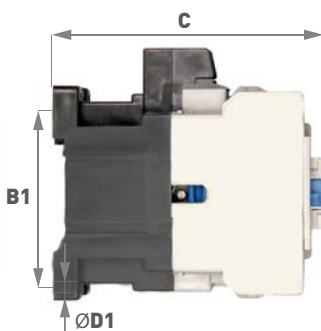
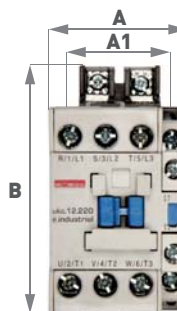
e.industrial.ukc.m



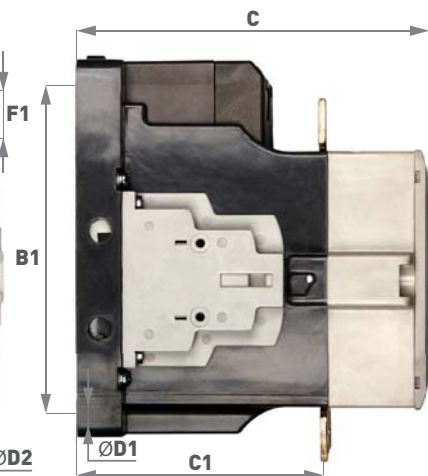
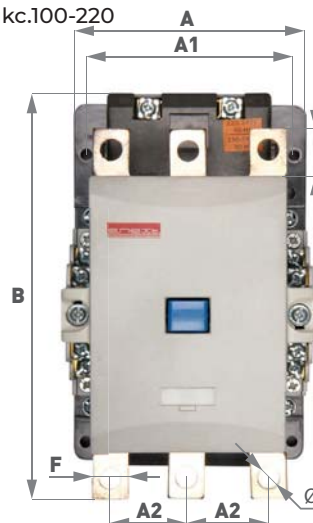
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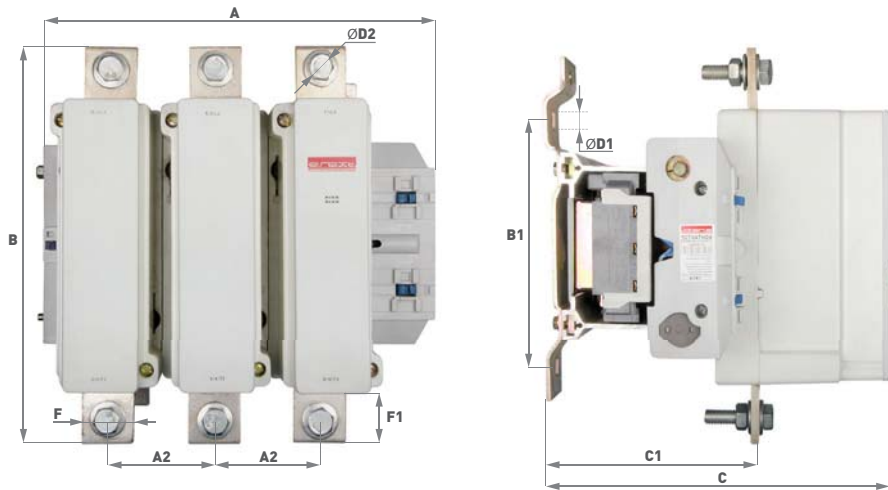
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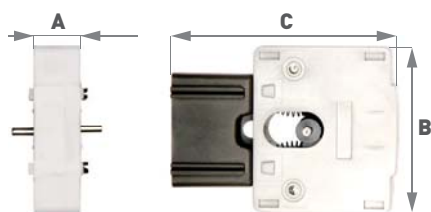
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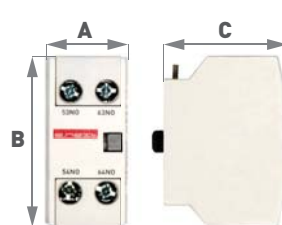
e.industrial.ukc.330-800



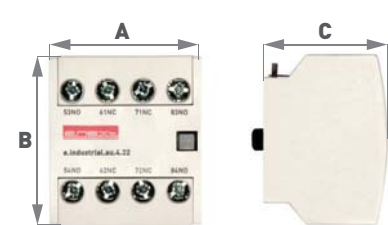
Name	A	A1	A2	B	B1	C	C1	D1	D2	F	F1
ukc.6m/ukc.9m/ukc.12m	45	35	—	58	50	57	44,3	M4	—	—	—
ukc.9/ukc.25	44	35	—	78	53	86	63	M4	—	—	—
ukc.32/ukc.40	54	35	—	83	56	94,5	65,5	M4	—	—	—
ukc.50/ukc.65/ukc.75/ukc.80	82,5	100	24	123	58	118	83	M5	M6	—	—
ukc.100/ukc.120	101	90	32	170	125	145	103	M5	M8	15	20
ukc.150	121	100	40	172	128	152	107	M6	M8	20	20
ukc.180/ukc.220	138	120	47	210	190	180	118	M6	M8	25	28
ukc.330	213	96	48	206	106	219	145	M6	M10	25	24
ukc.400	215	81	49	210	175	220	148	M8	M10	25	25
ukc.500	233	81	55	238	180	232	146	M8	M10	30	33
ukc.630	310	178	80	295	185	255	155	M8	M10	46	40
ukc.800	310	178	80	295	185	255	155	M10	M12	46	40



e.industrial.ar85-150



e.industrial.au2



e.industrial.au4

Name	A	B	C
e.industrial.au2	22	48,5	35,3
e.industrial.au4	44	48,5	35,3
e.industrial.ut	45	48,5	60
e.industrial.ar85	14	51	70
e.industrial.ar150	48,5	60	85
e.industrial.ac9/e.industrial.ac50	44	48,5	41

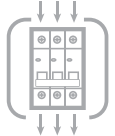


## Thermal relays e.industrial.ukh

They are intended for the protection of three-phase asynchronous engines with short-circuit rotor against: long-term current overload and indirectly against phase asymmetry and phase interruption.



060 Corresponds to EN 60947-1, EN 60947-4-1.



### Symbolic structure

e.industrial.ukh.X.X

- e. — trademark E.NEXT
- industrial — series
- ukh — type
- X — frame size
- X — rated current



Tip contacts of connection to the contactor

Disk of range adjustment of operation

«Test» button

Mode switch

Auxiliary contacts

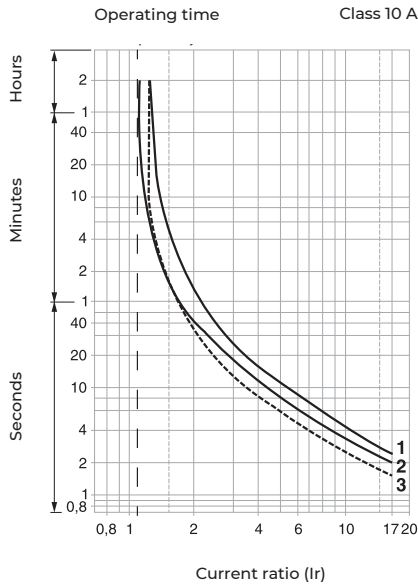
Contact clamps for connecting of conductors

## Technical data

Parameter name	Value	
Rated voltage U <sub>e</sub> , V	AC 400/660	
Rated frequency, Hz	50	
Frame size (maximum current for this standart size), A	13, 22, 40, 85, 100, 150, 200, 630	
Number of poles	3	
Voltage of insulation U <sub>i</sub> , V	690	
Pulse voltage (1,2/50) U <sub>imp</sub> , kV	6	
Operating class	10 A	
Protection degree	IP20 (dimensions 13-40), IP00 (dimensions 85-630)	
Number and type of auxiliary contacts	1NO+1NC	
Rated current of auxiliary contacts by category AC-15, A	at AC 110 V	2,5
	at AC 230 V	2
	at AC 400 V	1
Maximum cross section of connecting conductors to auxiliary contacts, mm <sup>2</sup>	1,5	
Tightening torque of contact clamps of auxiliary contacts, Nm	1,2	
Ambient temperature, °C	-25...+40	
Altitude, m, no more	2 000	
Permissible relative humidity at 25 °C (without condensation), no more	80 %	
Working position	vertical, horizontal, with a deviation of no more than 30°	
Mounting	on contactor	

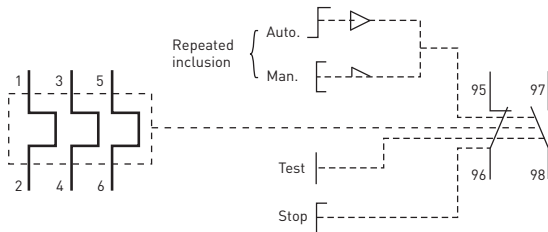
Name	Frame size	Adjustment range of turning off current, A	Installation on contactor	Maximum cross section of connecting conductors, mm <sup>2</sup>	Tightening torque of contact clamps, Nm	Weight, kg, no more	Order code
e.industrial.ukh.13m.2.5.4	13	2,5-4	e.industrial.ukc.m	4	2	0,1	i0110014
e.industrial.ukh.13m.4.6		4-6					i0110015
e.industrial.ukh.13m.5.5.8		5,5-8					i0110016
e.industrial.ukh.13m.7.10		7-10					i0110017
e.industrial.ukh.13m.9.13		9-13					i0110018
e.industrial.ukh.22.1.6	22	1-1,6	e.industrial.ukc.12 e.industrial.ukc.22	6	2,5	0,11	i0110001
e.industrial.ukh.22.2.5		1,6-2,5					i0110002
e.industrial.ukh.22.4		2,5-4					i0110003
e.industrial.ukh.22.6		4-6					i0110004
e.industrial.ukh.22.9		6-9					i0110005
e.industrial.ukh.22.13		9-13					i0110006
e.industrial.ukh.22.18		12-18					i0110007
e.industrial.ukh.22.22		16-22					i0110008
e.industrial.ukh.40.36	40	24-36	e.industrial.ukc.32 e.industrial.ukc.40	10	3	0,17	i0110009
e.industrial.ukh.40.40		28-40					i0110010
e.industrial.ukh.85.65	85	45-65	e.industrial.ukc.50 e.industrial.ukc.65 e.industrial.ukc.75 e.industrial.ukc.85	25	4	0,3	i0110011
e.industrial.ukh.85.85		63-85					i0110012
e.industrial.ukh.100.125	100	85-125	e.industrial.ukc.100 e.industrial.ukc.120	Bus	6	0,48	i0110013
e.industrial.ukh.150.150	150	100-150	e.industrial.ukc.150	Bus	6	0,6	i0110020
e.industrial.ukh.200.240	200	160-240	e.industrial.ukc.220	Bus	6	1,5	i0110021
e.industrial.ukh.630.630	630	380-630	e.industrial.ukc.400 e.industrial.ukc.630	Bus	8	1,7	i0110019

## Time-current characteristics



- 1) Symmetrical load, 3 phases, from a cold state.
- 2) 2 phases, from a cold state.
- 3) Symmetrical load, 3 phases, with long-term leakage of the set current (from the hot state).

## Graphic notation



## Overall and installation dimensions

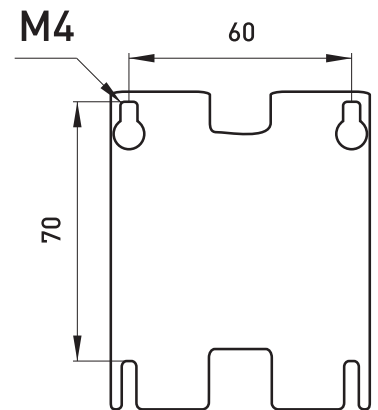
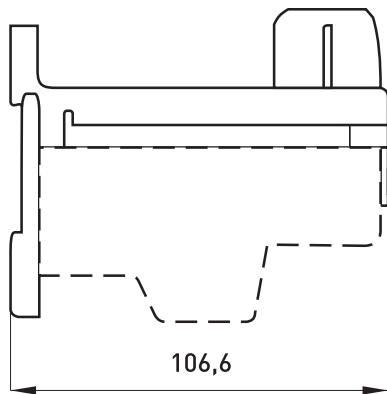
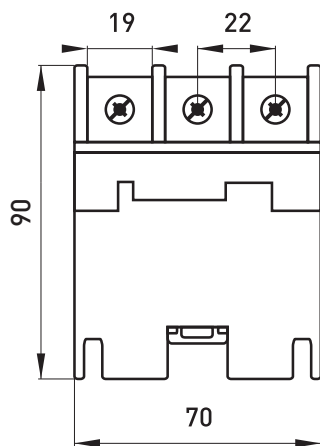
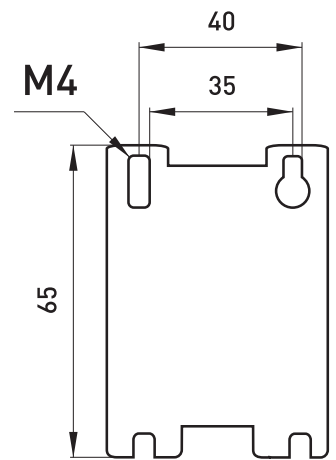
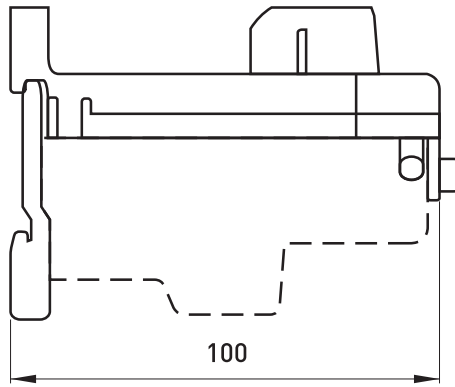
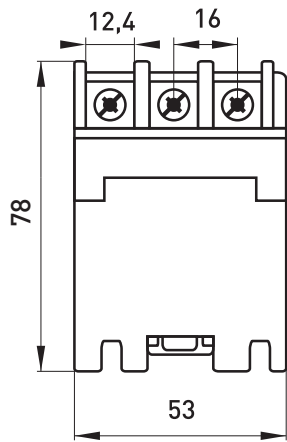
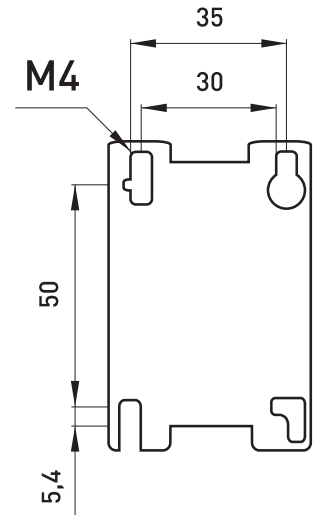
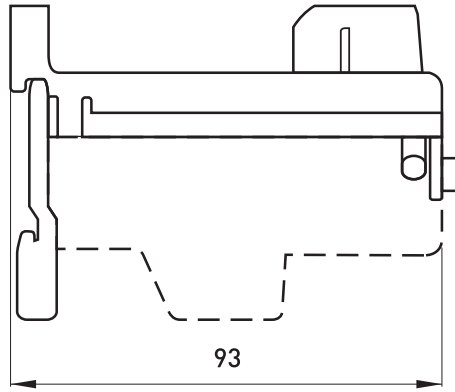
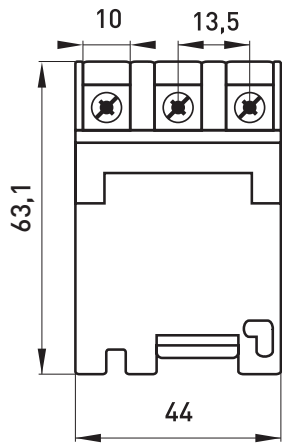
Name	A	AI	B	BI	C	DI	F	F1
e.industrial.ukh.13M	45	—	73	57,6	67,8	—	—	—
e.industrial.ukh.22	44	—	63,1	45,6	88,5	—	—	—
e.industrial.ukh.40	53	16	70,8	48,1	95,5	—	—	—
e.industrial.ukh.85	70	24	82,5	58,5	101,5	M8	—	—
e.industrial.ukh.100	103	28	89,7	67	105	M8	—	—
e.industrial.ukh.150	112	38	102,68	78,6	105	M8	20	11
e.industrial.ukh.220	152	47	141	113	175	M8	20	11
e.industrial.ukh.630	150	58	136,7	103,8	127,6	M10	29	13
e.industrial.ukh.800	150	58	136,7	103,8	127,6	M10	29	13

## Holders for thermal relay e.industrial.azh

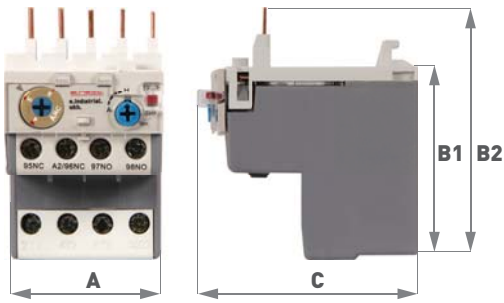


Name	Rated operating current, V	Type	Order code
e.industrial.azh.22	Holder for thermal relay e.industrial.ukh.22	1,25-5,5	i0120001
e.industrial.azh.40	Holder for thermal relay e.industrial.ukh.40	2-14	i0120002
e.industrial.azh.85	Holder for thermal relay e.industrial.ukh.85	2-38	i0120003

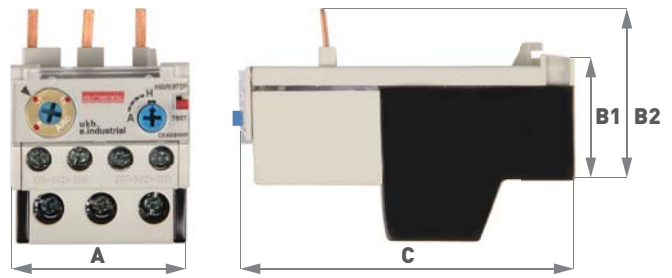




# Electrical Newest Exclusive Extended Technologies



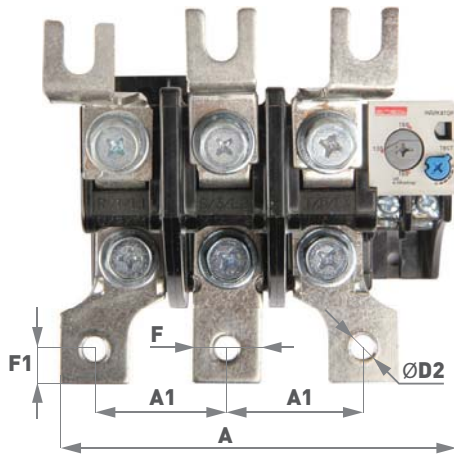
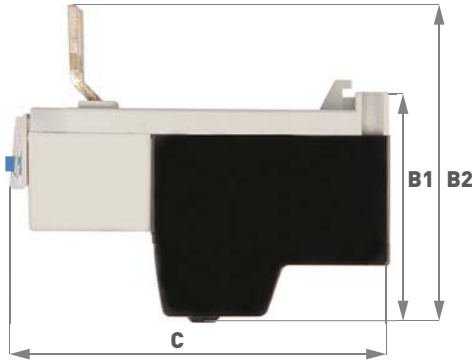
e.industrial.ukh.13M



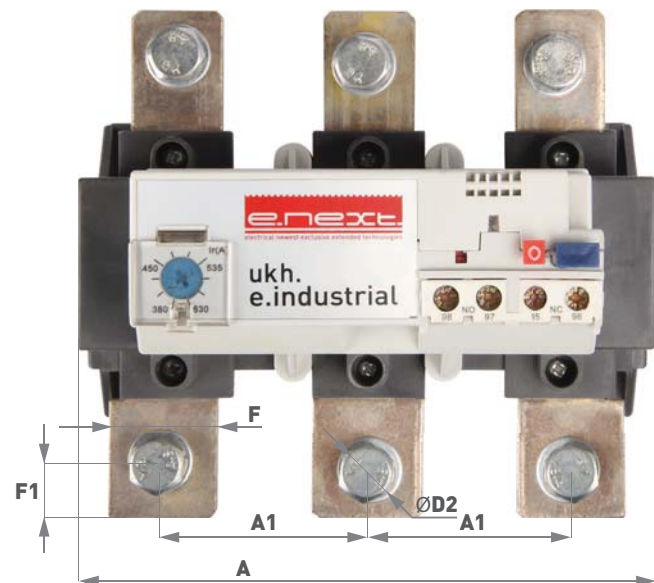
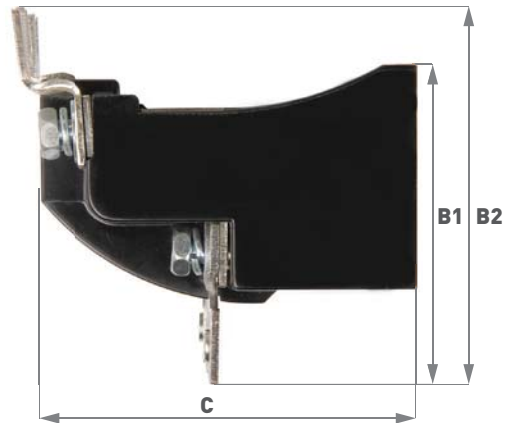
e.industrial.ukh.22-40



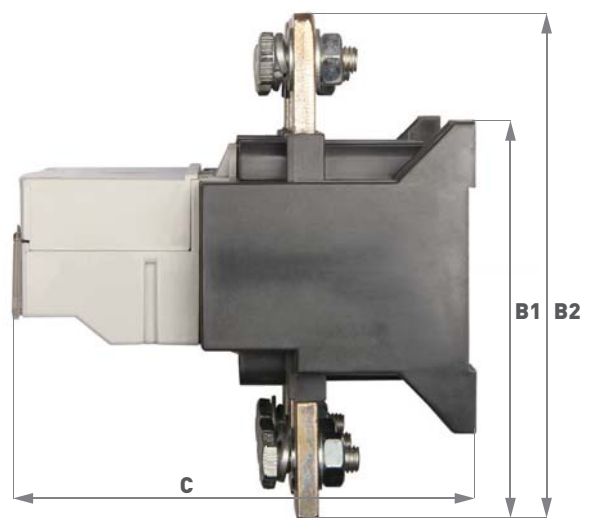
e.industrial.ukh.85



e.industrial.ukh.100-220



e.industrial.ukh.630-800



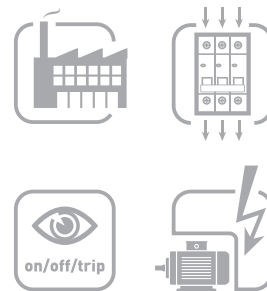


## Motor protection relay e.control.m

It is intended for control and protection of three-phase asynchronous engines with short-circuit rotor against: overload, load asymmetry, phase interruption.



060 Corresponds to EN 60730-1, EN 61000-6-2, EN 61000-6-4.



### Symbolic structure

e. — trademark E.NEXT  
control — series  
m — type  
X — execution

e.control.mX

### Technical data

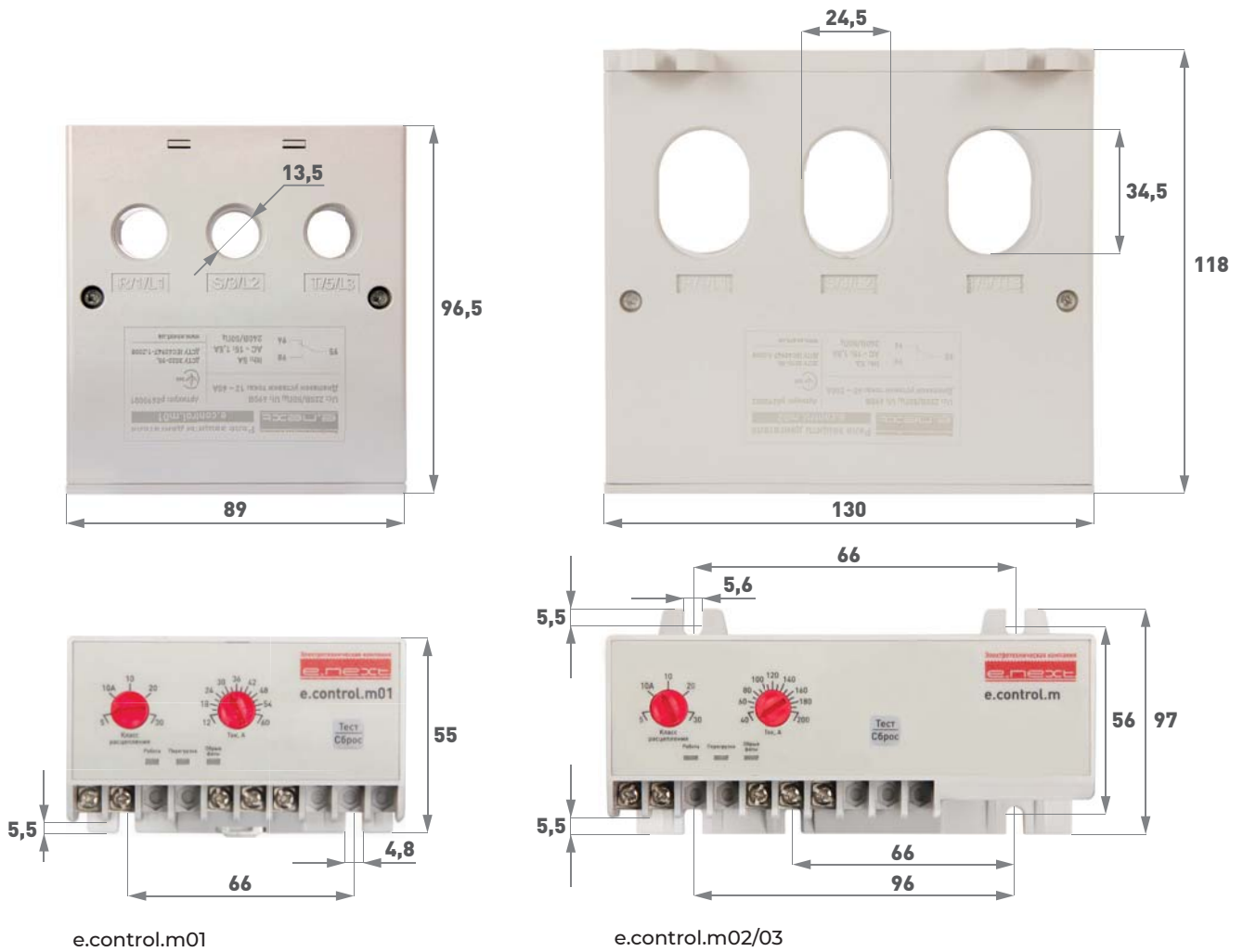
Parameter name	e.control.m01	e.control.m02	e.control.m03	e.control.m04	e.control.m05
Rated supply voltage, $U_c$ V	220±20 %				
Rated voltage of power circuit, $U_e$ V	AC 380				
Rated frequency, Hz	50				
Rated voltage of insulation $U_i$ , V	690				
Number and type of contacts	1 C/O break-before-make contact				
Maximum current of contacts at 240 V, $I_e$ A	1,5				
Current of thermal capability of contacts, $I_{th}$ A	5				
Utilization category	AC-15				
Range of adjustment setpoint at current, $I_r$ A	12-60	40-200	80-400	1-5	4-20
Time off at load asymmetry in 40 %, no more, s	5				
Time off at phase interruption, no more, s	3				
Class of operation, adjustable	5, 10, 10 A, 20, 30				
Error setting time, no more	5 %				
Maximum power consumption, VA	1,5				
Electrical life, On/Off cycles, not less	10 <sup>5</sup>				
Mechanical life, On/Off cycles, not less	10 <sup>6</sup>				
Maximum cross section of connecting conductors, mm <sup>2</sup>	2,5				
Tightening torque of contact clamps, Nm	0,5				
Protection degree	IP20				
Weight, g	235	460	490	—	—
Ambient temperature, °C	-20...+60				
Tightening torque of contact clamps, Nm	2 000				
Protection degree	50 %				

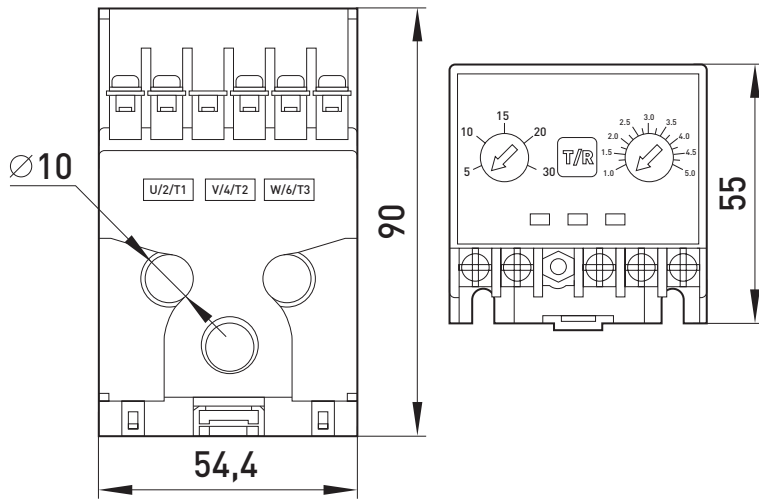
# Electrical Newest Exclusive Extended Technologies

Parameter name	e.control.m01	e.control.m02	e.control.m03	e.control.m04	e.control.m05
Weight, g	arbitrary				
Mounting	on DIN rail 35 mm	on panel	on panel	on DIN rail 35 mm	on DIN rail 35 mm

Name	Range of adjustment setpoint at current, A	Order code
e.control.m01	12-60	p0690001
e.control.m02	40-200	p0690002
e.control.m03	80-400	p0690003
e.control.m04	1-5	p0690018
e.control.m05	4-20	p0690019

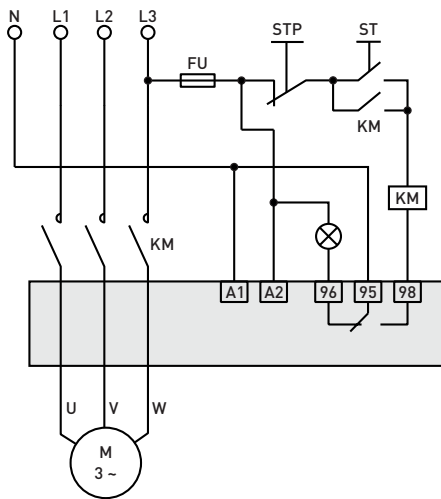
## Overall and installation dimensions





e.control.m04/05

### Connection scheme





## Rotary switches e.industrial.sb

They are intended for non-automatic switching of AC circuits with a voltage up to 400 V and a frequency of 50 Hz. Can be used as main breakers, group breakers, for control of single-phase and three-phase electric drives, switching of control circuits, signaling, metering circuits, etc.



060 Corresponds to EN 60947-1, EN 60947-3.



### Symbolic structure




e.industrial.sb.X.X.X

- e. — trademark E.NEXT
- industrial — series
- sb — type
- X — switch position
- X — number of poles
- X — rated current

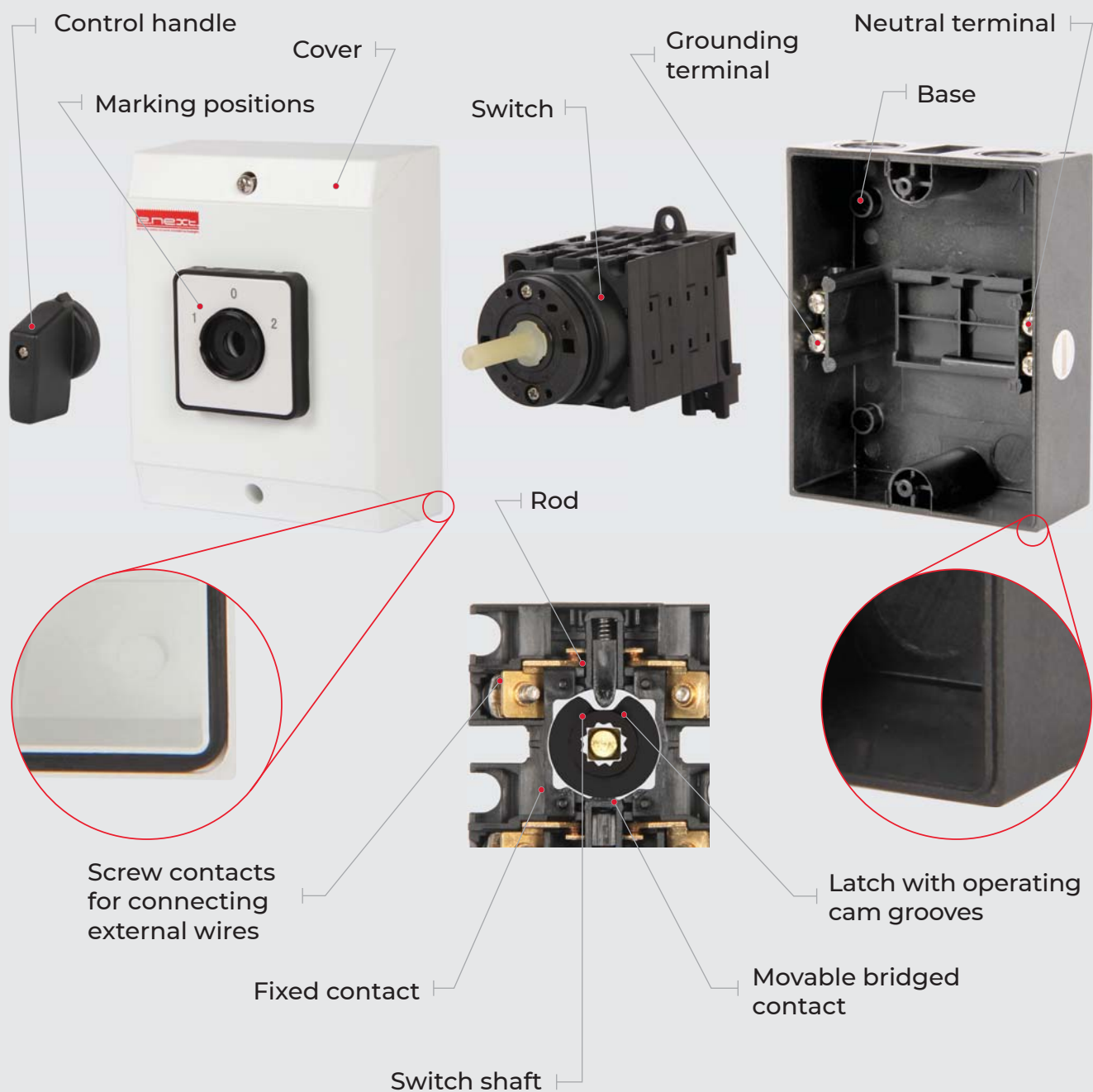
## Technical data

Parameter name		Value				
Number of poles		3, 3+N				
Rated voltage U <sub>e</sub> , V		AC 400				
Rated frequency, Hz		50				
Voltage of insulation U <sub>i</sub> , V		500				
Pulse voltage U <sub>imp</sub> , kV		6				
Switch position		0-1, 1-0-2, 0-1-2				
Rated overload current I <sub>th</sub> , A		20	32	40	63	100
Rated current I <sub>e</sub> , A	AC-21 A, AC-22 A	20	32	40	63	100
	AC-23 A	16	25	30	50	90
	AC-3	12	22	28	36	75
	AC-4	5	11	13	15	30
	AC-15	4	5	6	—	—
Rated switching power of three-phase load at 400 V, kW	AC-23 A	10	15	17,5	30	45
	AC-3	7,5	11	15	18,5	30
	AC-4	3,5	5,5	6	7,5	12
Rated conventional short-circuit current I <sub>nc</sub> , A		1 000	3 000	3 000	3 000	5 000
Fuse rating for current protection K3 gG, A		25	50	63	80	125
Electrical life, On/Off cycles, no less		3 000				
Mechanical life, On/Off cycles, no less		10 000				
Protection degree		IP20, IP65				

Parameter name	Value				
	2,5	4	10	16	35
Maximum cross section of connecting wire, mm <sup>2</sup>					
Ambient temperature, °C	-25...+40				
Altitude, m, no more	2 000				
Permissible relative humidity at 25 °C (without condensation), no more	80 %				
Working position	arbitrary				
Mounting	on DIN rail 35 mm, on mounting panel				

	Name	Rated current, A	Switch position	Number of poles	Protection degree	Weight, kg, no more	Order code
	e.industrial.sb.0-1-2.3.20	20	0-1-2	3	IP20	0,16	i0360015
	e.industrial.sb.0-1-2.3.32	32				0,24	i0360016
	e.industrial.sb.1-0-2.3.20	20	1-0-2	3	IP65	0,42	i0360005
	e.industrial.sb.1-0-2.3.32	32				0,5	i0360017
	e.industrial.sb.1-0-2.3.40	40				0,65	i0360006
	e.industrial.sb.1-0-2.3.63	63				0,72	i0360019
	e.industrial.sb.1-0-2.3.100	100				1,15	i0360007
	e.industrial.sb.1-0-2.4.20	20				3+N	0,6
	e.industrial.sb.1-0-2.4.40	40		0,7			i0360013
	e.industrial.sb.1-0-2.4.100	100		1,65			i0360014
	e.industrial.sb.1-0-3.20	20		3			0,28
	e.industrial.sb.1-0-3.32	32				0,44	i0360002
e.industrial.sb.1-0-3.63	63	0,65	i0360003				
e.industrial.sb.1-0-3.100	100	1,15	i0360004				
	e.industrial.sb.1-0-4.20	20	0-1	3	IP65	0,45	i0360008
	e.industrial.sb.1-0-4.32	32				0,48	i0360009
	e.industrial.sb.1-0-4.40	40				0,52	i0360020
	e.industrial.sb.1-0-4.63	63		3+N		0,92	i0360010
	e.industrial.sb.1-0-4.100	100				1,65	i0360011

Construction features e.industrial.sb



The rotary switches e.industrial.sb are available in the following construction executions: open - with the possibility of installing both on DIN rail 35 mm and mounting panel; in a case with protection degree of IP65; in a case with a protection degree of IP65 with the possibility to seal or install a hinged lock on the control handle.

The rotary switches consist of: contact system, switch mechanism and case. The contact system consists of fixed and movable bridged contacts, which have silver-plated contact lugs, and screw clamps for connecting external conductors. The switch mechanism is a shaft, which has plastic discs (latches) with operating cam grooves and a control handle is setting.

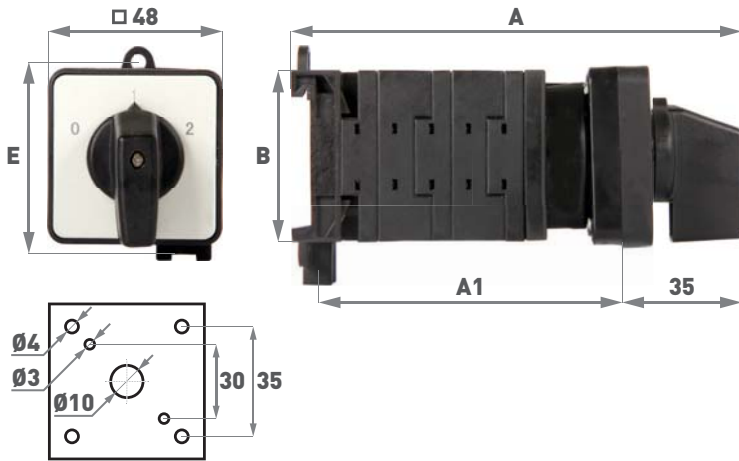
When the control handle is turning, the cam returns together with the shaft of the switch and the spring rod, mounted on the bridged movable contact, depending on the code of the switching diagram, falls into the groove of the cam, thus closing the contact, or out of the operating groove, thus breaking the contact. The high speed of contacts opening and closing provides that the electric arc is extinguished, which occurs at switching under load.

The base of case of the switches with protection degree of IP65 has a groove with a rubber seal, neutral terminals and grounding.

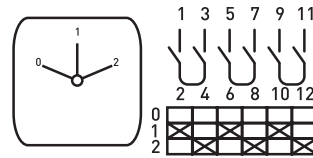


Name	A	A1	B	E
e.industrial.sb.0-1-2.3.20	115	80	48	50
e.industrial.sb.0-1-2.3.32	130	95	55	65

### Overall and installation dimensions

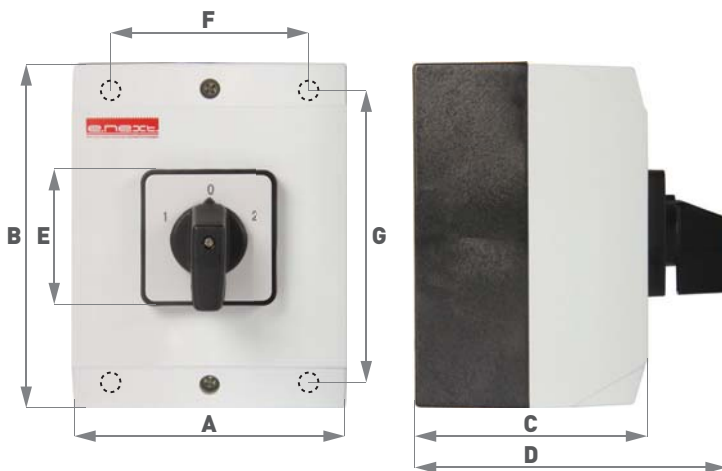


### Switching diagrams

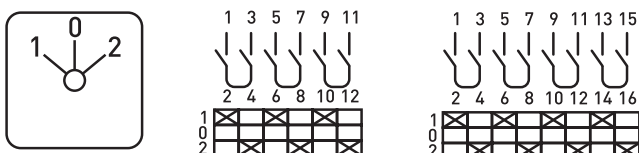


Name	A	B	C	D	E	F	G
e.industrial.sb.1-0-2.3.20	100	125	85	115	48	60	60
e.industrial.sb.1-0-2.3.40	115	175	100	130	48	90	90
e.industrial.sb.1-0-2.3.100	160	240	160	195	90	142	193
e.industrial.sb.1-0-2.4.20	100	125	85	115	48	60	60
e.industrial.sb.1-0-2.4.40	115	175	100	130	48	90	90
e.industrial.sb.1-0-2.4.100	160	240	160	195	90	142	193

### Overall and installation dimensions



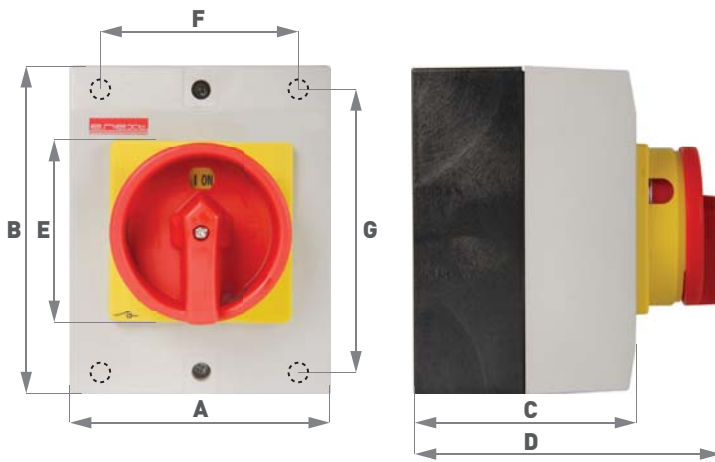
### Switching diagrams



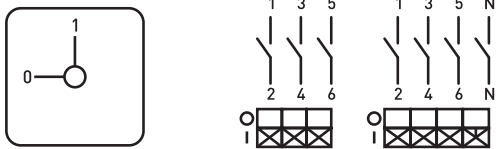
## Electrical Newest Exclusive Extended Technologies

Name	A	B	C	D	E	F	G
e.industrial.sb.1-0.3.20	80	100	65	100	65	60	60
e.industrial.sb.1-0.3.32	100	125	85	120	65	60	60
e.industrial.sb.1-0.3.63	115	175	100	130	65	90	90
e.industrial.sb.1-0.3.100	160	240	120	165	88	142	193
e.industrial.sb.1-0.4.20	80	100	65	100	65	60	60
e.industrial.sb.1-0.4.32	100	125	85	120	65	60	60
e.industrial.sb.1-0.4.63	115	175	100	130	65	90	90
e.industrial.sb.1-0.4.100	160	240	120	165	88	142	193

### Overall and installation dimensions



### Switching diagrams

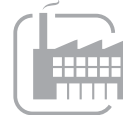




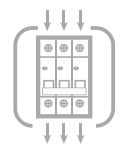
## Rotary switches

### LK

They are intended for non-automatic switching of AC circuits with a voltage up to 400 V and a frequency of 50 Hz. Can be used as main breakers, group breakers, for control of single-phase and three-phase electric drives, switching of control circuits, signaling, metering circuits, etc.



060 Corresponds to EN 60947-1, EN 60947-3.



#### Symbolic structure

LKX/ X.X - X/45

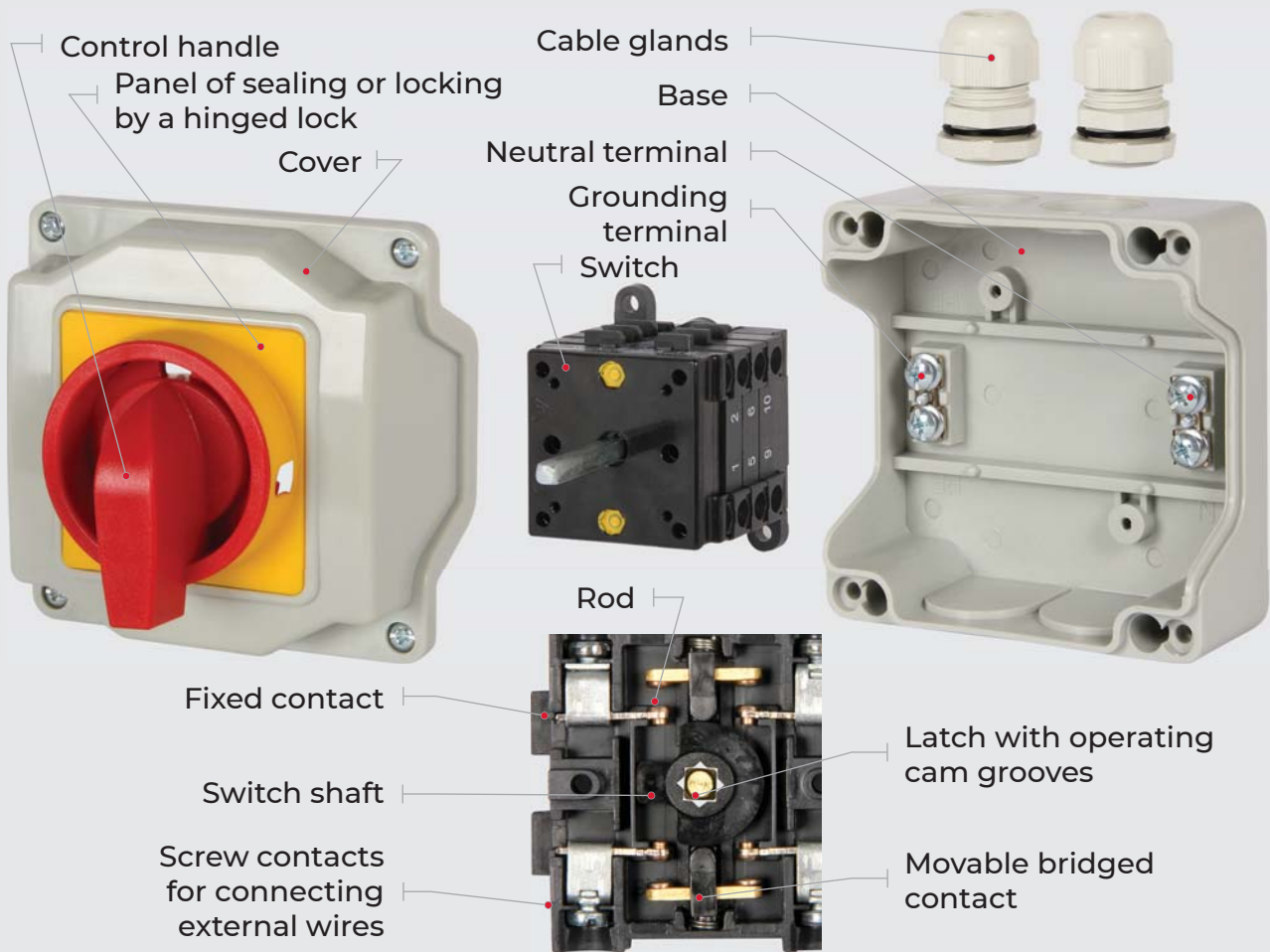
- LK — series
- X — rated current
- X — number of segments
- X — switching scheme
- X — execution

### Technical data

Parameter name		Value			
Number of poles		1, 2, 3, 4			
Rated voltage U <sub>e</sub> , V		AC 400			
Rated frequency, Hz		50			
Voltage of insulation U <sub>i</sub> , V		500			
Pulse voltage U <sub>imp</sub> , kV		6			
Switch position		0-1, 1-0-2, 0-1-2, L-0-P, 0-Y-Δ			
Rated overload current I <sub>th</sub> , A		16	25	40	63
Rated current I <sub>e</sub> , A	AC-21 A, AC-22 A	16	25	40	63
	AC-23 A	14	22	30	50
	AC-3	10	15	28	36
	AC-4	8	11	13	15
	AC-15	2,5	4	6	—
Rated switching power of three-phase load at 400 V, kW	AC-23 A	11	15	17,5	30
	AC-3	7,5	11	15	18,5
	AC-4	1,5	3	6	7,5
Rated conventional short-circuit current I <sub>nc</sub> , A		1 000	3 000		
Fuse rating for current protection K3 gG, A		20	40	63	80
Electrical life, On/Off cycles, no less		10 000			
Mechanical life, On/Off cycles, no less		25 000			
Protection degree		IP20, IP44			

## Electrical Newest Exclusive Extended Technologies

Parameter name	Value			
Maximum cross section of connecting wire, mm <sup>2</sup>	2,5	6	10	16
Ambient temperature, °C	-25...+40			
Altitude, m, no more	2 000			
Permissible relative humidity at 25 °C (without condensation), no more	80 %			
Working position	arbitrary			
Mounting	on DIN rail 35 mm, on panel			



The rotary switches LK are available in the following construction execution:

- open, with the possibility of installing both on DIN rail 35 mm and mounting panel;
- open, with the possibility of sealing or installing a hinged lock on the control handle;
- in a case with protection degree of IP44;
- in a case with protection degree of IP44 with the possibility of sealing or installing a hinged lock on the control handle;

The rotary switches consist of a contact system, switch mechanism and case (for proper execution). The contact system is recruited from separate sections - blocks- plastic bases with fixed and movable bridged contacts, which have silver-bearing contact lugs, and screw clamps for connection of external conductors are installed. The blocks are installed one by one and fixed with fixing pins.

The switch mechanism is a shaft, which has plastic discs (latches) with operating cam grooves and a control handle is setting.

When the control handle is turning, the cam returns together with the shaft of the switch and the spring rod, mounted on the bridged movable contact, depending on the code of the switching diagram, falls into the groove of the cam, thus closing the contact, or out of the operating groove, thus breaking the contact.

The double interruption and the high speed of contacts opening and closing provides that the electric arc is extinguished, which occurs at switching under load.

The base of case of the switches with protection degree of IP44 has neutral terminals and grounding terminals. The kit includes cable inputs for providing the necessary protection degree of switch.



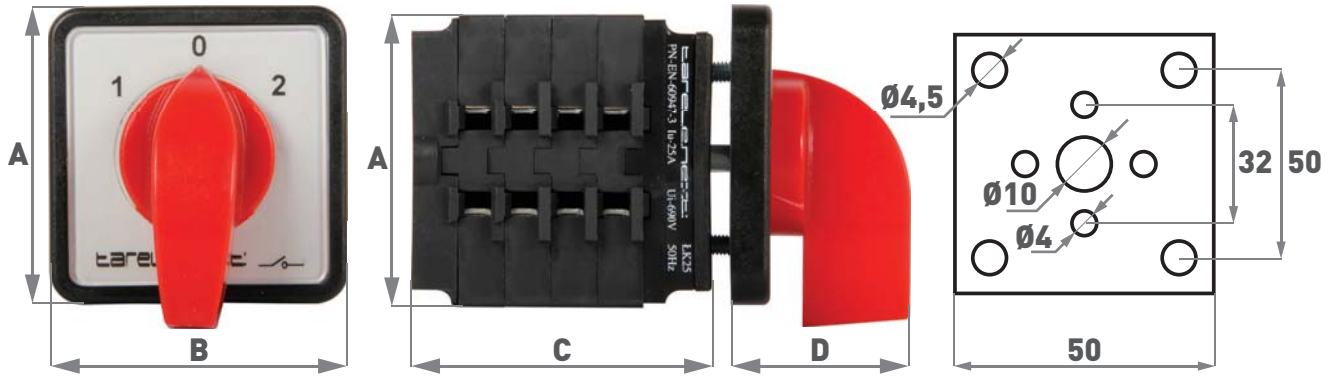
Name	Rated current, A	Switch position	Number of segments	Execution	Protection degree	Weight, kg, no more	Order code
LK16/1.216-SP/45	16	0-1	1	Mounting on DIN rail 35 mm	IP20	0,1	8367-200
LK16/2.211-SP/45			2			0,12	8317-200
LK16/3.323-SP/45		1-0-2	3			0,16	8337-200
LK16/4.322-SP/45		0-1-2	4			0,2	8327-200
LK25/1.216-SP/45	25	0-1	1			0,1	8467-200
LK25/2.211-SP/45			2			0,12	8417-200
LK25/3.323-SP/45		1-0-2	3			0,16	8437-200
LK25/4.322-SP/45		0-1-2	4			0,2	8427-200
LK40/1.216-SP/45	40	0-1	1			0,3	8667-200
LK40/2.211-SP/45			2			0,34	8617-200
LK40/3.323-SP/45		1-0-2	3			0,38	8637-200
LK40/4.322-SP/45		0-1-2	4			0,42	8627-200
LK63/2.211-SP/45	63	0-1	2			0,36	8817-200
LK63/3.323-SP/45		1-0-2	3			0,41	8837-200
LK63/4.322-SP/45		0-1-2	4			0,46	8827-200
LK16/1.216-ZP/45	16	0-1	1			Shield, with front panel	IP44 by front, IP20 from side of contacts
LK16/2.211-ZP/45			2	0,12	8311-200		
LK16/3.323-ZP/45		1-0-2	3	0,16	8331-200		
LK16/3.325-ZP/45		L-O-P	3	0,2	8351-200		
LK16/4.322-ZP/45		0-1-2	4	0,2	8321-200		
LK16/4.324-ZP/45		0-Y-Δ	4	0,2	8341-200		
LK25/1.216-ZP/45	25	0-1	1	0,1	8461-200		
LK25/2.211-ZP/45			2	0,12	8411-200		
LK25/3.323-ZP/45		1-0-2	3	0,16	8431-200		
LK25/3.325-ZP/45		L-O-P	3	0,2	8451-200		
LK25/4.322-ZP/45		0-1-2	4	0,2	8421-200		
LK25/4.324-ZP/45		0-Y-Δ	4	0,2	8441-200		
LK40/1.216-ZP/45	40	0-1	1	0,3	8661-200		
LK40/2.211-ZP/45			2	0,34	8611-200		
LK40/3.323-ZP/45		1-0-2	3	0,38	8631-200		
LK40/3.325-ZP/45		L-O-P	3	0,38	8651-200		
LK40/4.322-ZP/45		0-1-2	4	0,42	8621-200		
LK40/4.324-ZP/45		0-Y-Δ	4	0,42	8641-200		
LK63/2.211-ZP/45	63	0-1	2	0,36	8811-200		
LK63/3.323-ZP/45		1-0-2	3	0,41	8831-200		
LK63/4.322-ZP/45		0-1-2	4	0,46	8821-200		
LK16/1.216-ZK/45	16	0-1	1	Shield, with front panel, with possibility of sealing	IP44 by front, IP20 from side of contacts	0,13	8365-200
LK16/2.211-ZK/45			2			0,15	8315-200
LK16/3.323-ZK/45		1-0-2	3			0,19	8335-200
LK16/4.322-ZK/45		0-1-2	4			0,23	8325-200
LK25/1.216-ZK/45	25	0-1	1			0,13	8465-200
LK25/2.211-ZK/45			2			0,15	8415-200
LK25/3.323-ZK/45		1-0-2	3			0,19	8435-200
LK25/4.322-ZK/45		0-1-2	4			0,23	8425-200
LK40/1.216-ZK/45	40	0-1	1			0,33	8665-200
LK40/2.211-ZK/45			2			0,37	8615-200
LK40/3.323-ZK/45		1-0-2	3			0,41	8635-200
LK40/4.322-ZK/45		0-1-2	4			0,45	8625-200

## Electrical Newest Exclusive Extended Technologies

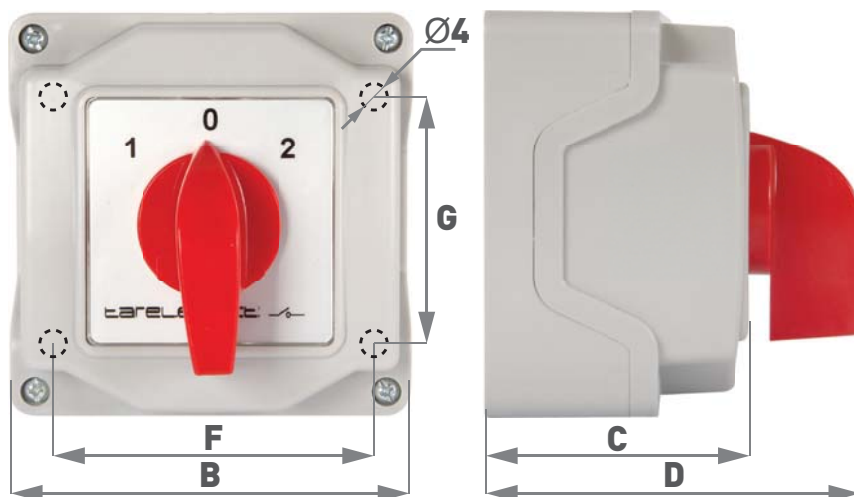


Name	Rated current, A	Switch position	Number of segments	Execution	Protection degree	Weight, kg, no more	Order code
LK63/2.211-ZK/45	63	0-1	2	Shield, with front panel, with possibility of sealing	IP44 by front, IP20 from side of contacts	0,4	8815-200
LK63/3.323-ZK/45		1-0-2	3			0,45	8835-200
LK63/4.322-ZK/45		0-1-2	4			0,5	8825-200
LK16/1.216-OB/45	16	0-1	1	In case	IP44	0,265	8364-200
LK16/2.211-OB/45			2			0,29	8314-200
LK16/3.323-OB/45		1-0-2	3			0,32	8334-200
LK16/4.322-OB/45		0-1-2	4			0,46	8324-200
LK25/1.216-OB/45	25	0-1	1			0,265	8464-200
LK25/2.211-OB/45			2			0,29	8414-200
LK25/3.323-OB/45		1-0-2	3			0,32	8434-200
LK25/4.322-OB/45		0-1-2	4			0,5	8424-200
LK40/1.216-OB/45	40	0-1	1			0,36	8664-200
LK40/2.211-OB/45			2			0,43	8614-200
LK40/3.323-OB/45		1-0-2	3			0,77	8634-200
LK40/4.322-OB/45		0-1-2	4			0,85	8624-200
LK63/2.211-OB/45	63	0-1	2			0,4	8814-200
LK63/3.323-OB/45		1-0-2	3			0,8	8834-200
LK63/4.322-OB/45		0-1-2	4			0,9	8824-200
LK16/1.216-OK/45	16	0-1	1			In case, with the possibility of sealing	IP44
LK16/2.211-OK/45			2	0,3	8318-200		
LK16/3.323-OK/45		1-0-2	3	0,33	8338-200		
LK16/4.322-OK/45		0-1-2	4	0,47	8328-200		
LK25/1.216-OK/45	25	0-1	1	0,28	8468-200		
LK25/2.211-OK/45			2	0,3	8418-200		
LK25/3.323-OK/45		1-0-2	3	0,4	8438-200		
LK25/4.322-OK/45		0-1-2	4	0,51	8428-200		
LK40/1.216-OK/45	40	0-1	1	0,37	8668-200		
LK40/2.211-OK/45			2	0,45	8618-200		
LK40/3.323-OK/45		1-0-2	3	0,8	8638-200		
LK40/4.322-OK/45		0-1-2	4	0,87	8628-200		
LK63/2.211-OK/45	63	0-1	2	0,45	8818-200		
LK63/3.323-OK/45		1-0-2	3	0,85	8838-200		
LK63/4.322-OK/45		0-1-2	4	0,95	8828-200		

## Overall and installation dimensions



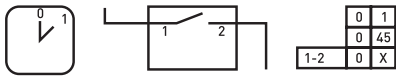
Name	A	B	C	D
LK16/1.X-ZP/45, LK25/1.X-ZP/45	52	52	30	36
LK40/1.X-ZP/45	62	68	35	
LK16/2.X-ZP/45, LK25/2.X-ZP/45	52	52	36	
LK40/2.X-ZP/45, LK63/2.X-ZP/45	62	68	50	
LK16/3.X-ZP/45, LK25/3.X-ZP/45	52	52	45	
LK40/3.X-ZP/45, LK63/3.X-ZP/45	62	68	58	
LK16/4.X-ZP/45, LK25/4.X-ZP/45	52	52	52	
LK40/4.X-ZP/45, LK63/4.X-ZP/45	62	68	70	
LK16/1.X-ZK/45, LK25/1.X-ZK/45	52	68	30	40
LK40/1.X-ZK/45	62		35	
LK16/2.X-ZK/45, LK25/2.X-ZK/45	52		36	
LK40/2.X-ZK/45, LK63/2.X-ZK/45	62		50	
LK16/3.X-ZK/45, LK25/3.X-ZK/45	52		45	
LK40/3.X-ZK/45, LK63/3.X-ZK/45	62		58	
LK16/4.X-ZK/45, LK25/4.X-ZK/45	52		52	
LK40/4.X-ZK/45, LK63/4.X-ZK/45	62		70	



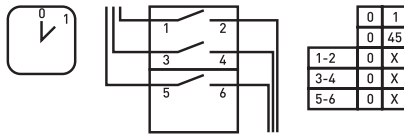
Name	A	B	C	D	F	G
LK16/X.X-OB/45, LK25/X.X-OB/45	104	104	67	97	74	90
LK40/X.X-OB/45, LK63/X.X-OB/45	147	147	90	122	116	132
LK16/X.X-OK/45, LK25/X.X-OK/45	104	104	67	100	74	90
LK40/X.X-OK/45, LK63/X.X-OK/45	147	147	90	123	116	132

Type of rotary switch, graphic notation and switching diagrams

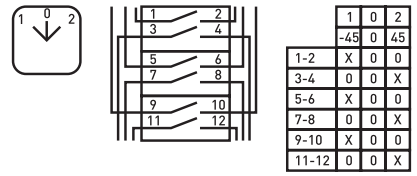
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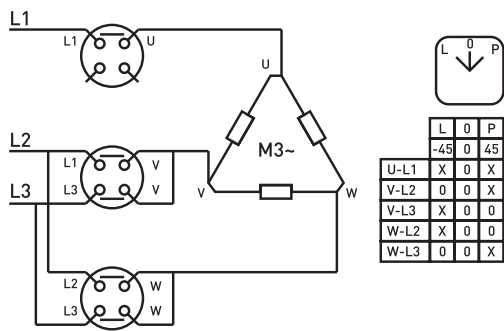
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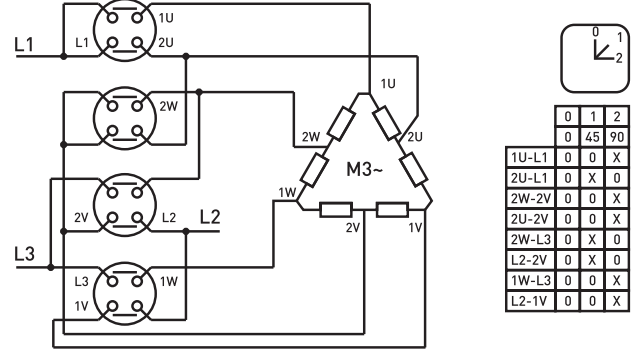
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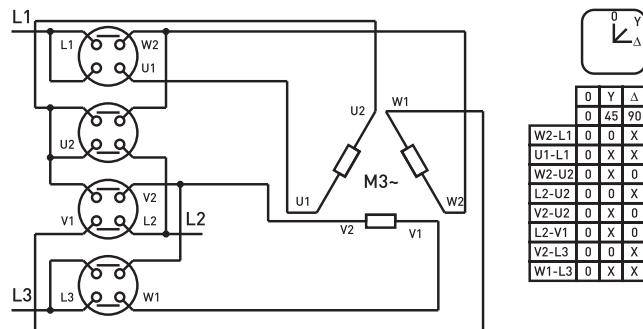
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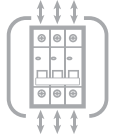






## Indicators e.ad

They are intended for light and sound indication of the state of electrical circuits, technological processes, etc.

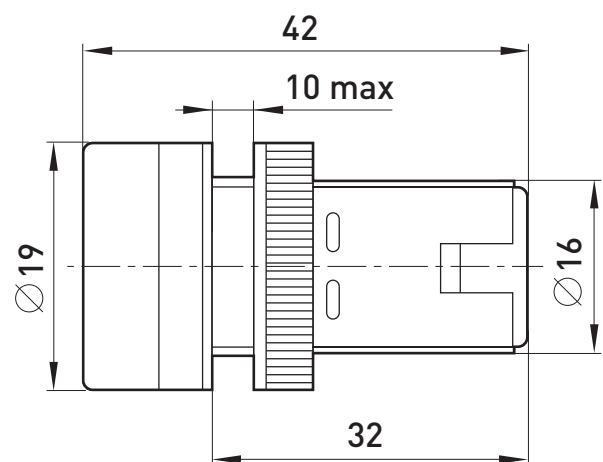
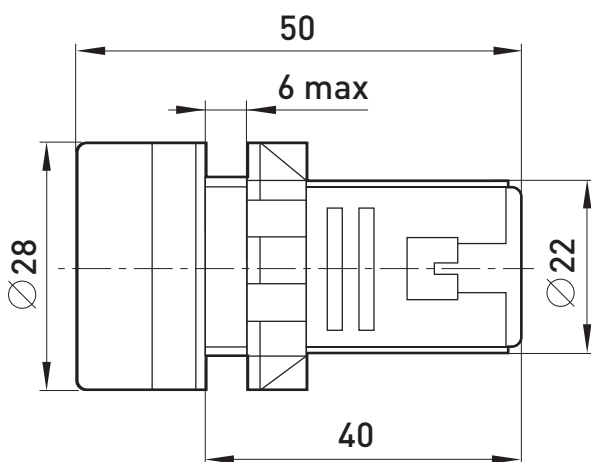


060 Corresponds to EN 60947-5-1, EN 61000-3-2, EN 61000-3-3.

### Technical data

Parameter name		Value		
Type		e.ad16	e.ad22	e.ad22.i
Rated voltage Ue, V	DC	12, 24		—
	AC	12, 24, 230		12-500
Consumption current, no more, mA		20		—
Maximum cross section of connecting conductors, mm <sup>2</sup>		1	1,5	
Installation diameter, mm		16	22	
Protection degree		IP40		
Color of light filter		white, blue, red, green, yellow	green, red	
Ambient temperature, °C		-20...+40		
Altitude, m, no more		2 000		
Permissible relative humidity at 25 °C (without condensation), no more		70 %		
Working position		arbitrary		
Mounting		panel		

### Overall and installation dimensions, mm



## Electrical Newest Exclusive Extended Technologies

Name	Rated voltage, V	Type of indication	Color	Installation diameter, mm	Order code	
e.ad16.12.green	AC/DC 12	light	green	16	s009009	
e.ad16.12.red			red		s009010	
e.ad16.230.blue	AC 230		blue		s009016	
e.ad16.230.green			green		s009013	
e.ad16.230.red			red		s009014	
e.ad16.230.white			white		s009017	
e.ad16.230.yellow			yellow		s009015	
e.ad16.24.green			AC/DC 24		green	s009011
e.ad16.24.red	red				s009012	
e.ad22.12.green	AC/DC 12		light, sound		green	22
e.ad22.12.red		red		s009019		
e.ad22.230.blue	AC 230	blue		s009025		
e.ad22.230.buzzer.red		red		s009027		
e.ad22.230.green		light		green	s009022	
e.ad22.230.red				red	s009023	
e.ad22.230.white				white	s009026	
e.ad22.230.yellow				yellow	s009024	
e.ad22.24.green	AC/DC 24	green		s009020		
e.ad22.24.red		red		s009021		
e.ad22.i.12-500.green	AC 12...500	light, digital	green		s009035	
e.ad22.i.12-500.red			red		s009034	

### Connection scheme





## Pushbuttons and switches

e.mb

They are intended for operating control of electromagnetic contactors (magnetic starters) and automatic relays in electric circuits of an AC current with a frequency of 50 Hz, voltage up to 660 V.



060 Corresponds to EN 60947-5-1, EN 61000-3-2, EN 61000-3-3.



### Technical data

Parameter name	Value
Rated voltage Ue, V	400
Rated frequency, Hz	50
Voltage of insulation Ui, V	600
Rated current of contacts In, A (for AC-15, 220/380 V)	10/6
Electrical life, On/Off cycles, no less buttons/switches	100×10 <sup>4</sup> /50×10 <sup>4</sup>
Mechanical life, On/Off cycles	500×10 <sup>4</sup> /250×10 <sup>4</sup>
Protection degree (from side of mounting panel)	IP40
Maximum cross section of connecting wire, mm <sup>2</sup>	2,5
Installation diameter, mm	22
Ambient temperature, °C	-25...+55
Altitude, m, no more	2000
Permissible relative humidity at 25 °C (without condensation), no more	85
Working position	arbitrary
Mounting	panel

### Pushbuttons MB (with metal base)

Name	Type	Color	Type of contacts	Order code
e.mb.ba21	Button without illumination, flat e.mb.ba21 black, without fixation, 1NO	black	1NO	p0810106
e.mb.ba31	Button without illumination, flat e.mb.ba31 green, without fixation, 1NO	green	1NO	p0810107
e.mb.ba42	Button without illumination, flat e.mb.ba42 red, without fixation, 1NC	red	1NC	p0810110
e.mb.ba51	Button without illumination, flat e.mb.ba51 yellow, without fixation, 1NO	yellow	1NO	p0810108
e.mb.ba61	Button without illumination, flat e.mb.ba61 blue, without fixation, 1NO	blue	1NO	p0810109
e.mb.bc31	Button «mushroom» e.mb.bc31 without fixation, green, 1NO	green	1NO	p0810116
e.mb.bc42	Button «mushroom» e.mb.bc42 without fixation, red, 1NC	red	1NC	p0810119
e.mb.bc51	Button «mushroom» e.mb.bc51 without fixation, yellow, 1NO	yellow	1NO	p0810117
e.mb.bc61	Button «mushroom» e.mb.bc61 without fixation, blue, 1NO	blue	1NO	p0810118

## Electrical Newest Exclusive Extended Technologies

Name	Type	Color	Type of contacts	Order code
e.mb.bl21	Button without illumination, buckled e.mb.bl21 black, without fixation, 1NO	black	1NO	p0810111
e.mb.bl31	Button without illumination, buckled e.mb.bl31 green, without fixation, 1NO	green	1NO	p0810112
e.mb.bl42	Button without illumination, buckled e.mb.bl42 red, without fixation, 1NC	red	1NC	p0810115
e.mb.bl51	Button without illumination, buckled e.mb.bl51 yellow, without fixation, 1NO	yellow	1NO	p0810113
e.mb.bl61	Button without illumination, buckled e.mb.bl61 blue, without fixation, 1NO	blue	1NO	p0810114
e.mb.bl8325	Double, square button without illumination e.mb.bl8325 (green+red), without fixation, 1NO+1NC	green+red	1NO+1NC	p0810120
e.mb.bs142	Button «mushroom» without illumination, rotary e.mb.bs142 red, with fixation, 1NC (unlocking by rotary)	red	1NC	p0810124
e.mb.bs542	Button «mushroom» without illumination, rotary e.mb.bs542 red, with fixation, 1NC (unlocking by rotary)	red	1NC	p0810123
e.mb.bt42	Button «mushroom» without illumination, rotary e.mb.bt42 red, with fixation, 1NC (unlocking by rotary)	red	1NC	p0810122
e.mb.bw3161	Button with illumination e.mb.bw3161 white, without fixation, 1NO	white	1NO	p0810101
e.mb.bw3361	Button with illumination e.mb.bw3361 green, without fixation, 1NO	green	1NO	p0810102
e.mb.bw3461	Button with illumination e.mb.bw3461 red, without fixation, 1NC	red	1NC	p0810103
e.mb.bw3561	Button with illumination e.mb.bw3561 yellow, without fixation, 1NO	yellow	1NO	p0810104
e.mb.bw3661	Button with illumination e.mb.bw3661 blue, without fixation, 1NO	blue	1NO	p0810105
e.mb.bw8465	Double, square button with illumination e.mb.bw8465 (flat green+buckled red), 1NO+1NC	green+red	1NO+1NC	p0810121

## Switches MB (with metal base)

Name	Type	Color	Type of contacts	Order code
e.mb.bd25	Switch without illumination e.mb.bd25 for 2 fixed positions «1-0», standard handle, black, 1NO+1NC	black	1NO+1NC	p0810133
e.mb.bd33	Switch without illumination e.mb.bd33 for 3 fixed positions «1-0-2», standard handle, black, 2NO	black	2NO	p0810134
e.mb.bj25	Switch without illumination e.mb.bj25 for 2 fixed positions «1-0» with elongated handle, black, 1NO+1NC	black	1NO+1NC	p0810135
e.mb.bj33	Switch without illumination e.mb.bj33 for 3 fixed positions «1-0-2» with elongated handle, black, 2NO	black	2NO	p0810136
e.mb.bg25.lr	Switch without illumination with key e.mb.bg25.lr for 2 fixed positions «1-0», black, 1NO+1NC (key is removed in the left position)	black	1NO+1NC	p0810137
e.mb.bg45.lrr	Switch without illumination with key e.mb.bg45.lrr for 2 fixed positions «1-0», black, 1NO+1NC (key is removed in both positions)	black	1NO+1NC	p0810138
e.mb.bk2365	Switch with illumination e.mb.bk2365 for 2 fixed positions «1-0», green, 1NO+1NC	green	1NO+1NC	p0810139
e.mb.bk2465	Switch with illumination e.mb.bk2465 for 2 fixed positions «1-0», red, 1NO+1NC	red	1NO+1NC	p0810140
e.mb.bk2565	Switch with illumination e.mb.bk2565 for 2 fixed positions «1-0», yellow, 1NO+1NC	yellow	1NO+1NC	p0810141

## Auxiliary contacts for buttons and switches MB (with metal base)

They are intended for extending of the functionality of buttons and switches in control circles.

Name	Type	Type of contacts	Order code
e.mb.be101	Auxiliary contact e.mb.be101 (NO)	1NO	p0810142

Name	Type	Type of contacts	Order code
e.mb.be102	Auxiliary contact e.mb.be102 (NC)	1NC	p0810143

## Pushbuttons MB (compact, plastic)

Name	Type	Color	Type of contacts	Order code
e.mb.ea125	Button without illumination, plastic e.mb.ea125 black, without fixation, 1NO+1NC	black	1NO+1NC	p0810130
e.mb.ea135	Button without illumination, plastic e.mb.ea135 green, without fixation, 1NO+1NC	green	1NO+1NC	p0810131
e.mb.ea145	Button without illumination, plastic e.mb.ea145 red, without fixation, 1NO+1NC	red	1NO+1NC	p0810132
e.mb.ea21	Button without illumination, plastic e.mb.ea21 black, without fixation, 1NO	black	1NO	p0810125
e.mb.ea31	Button without illumination, plastic e.mb.ea31 green, without fixation, 1NO	green	1NO	p0810126
e.mb.ea42	Button without illumination, plastic e.mb.ea42 red, without fixation, 1NO	red	1NC	p0810127
e.mb.eh135	Button without illumination, plastic e.mb.eh135 green, with fixation, 1NO+1NC (unlocking by repeated pressing)	green	1NO+1NC	p0810128
e.mb.eh145	Button without illumination, plastic e.mb.eh145 red, with fixation, 1NO+1NC (unlocking by repeated pressing)	red	1NO+1NC	p0810129

## Cases of pushbuttons e.mb.box for buttons and switches MB

They are intended for placing buttons and switches.

Name	Type	Order code
e.mb.box01	Cases of pushbutton e.mb.box01, 1-place	p0810146
e.mb.box02	Cases of pushbutton e.mb.box02, 2-place	p0810147
e.mb.box03	Cases of pushbutton e.mb.box03, 3-place	p0810148
e.mb.box04	Cases of pushbutton e.mb.box04, 4-place	p0810149
e.mb.box05	Cases of pushbutton e.mb.box05, 5-place	p0810150

## Protective cap e.mb.22a

It is intended for increasing the protection of the buttons on the front side, from IP41 to IP65.

Name	Type	Order code
e.mb.22a	Protective cap e.mb.22a, $\varnothing$ 22 mm	p0810145

## Marking holder e.mb.a

It is intended for installation on light indicators, buttons, switches,  $\varnothing$ 22 mm for the purpose of marking (and identification) of control circuits and signaling in which they are included.

Name	Type	Order code
e.mb.a	Marking holder e.mb.a	p0810144

## Constructive features (pushbuttons and switches MB with a metal base):

- the metal base increases the mechanical strength and operation life of the product.
- the possibility of connecting auxiliary contacts (in total up to 10 pieces: 5 pieces to the left+5 pieces to the right), extends the functionality of the button switches/switches in the control circles.
- the auxiliary contacts have metal mounting screws for fastening, which ensures increased durability of the connection of auxiliary contacts between themselves.
- the screw clamps of the main and auxiliary contacts provide reliable fixation of wires.
- simple and reliable system of fastening of buttons and switches to the panel with two screws.
- the presence of a rubber sealing ring in the construction provides protection against the entry of foreign objects inside the device.



## Control boxes with pushbuttons e.cs.stand.xal.d

They are intended for control electric circuits of AC current with voltage 400/230 V at frequency of 50 Hz and direct current up to 220 V, as well as various technological equipment in the schemes of automation, control and signaling.



060 Corresponds to EN 60947-5-1, EN 61000-3-2, EN 61000-3-3.



### Symbolic structure

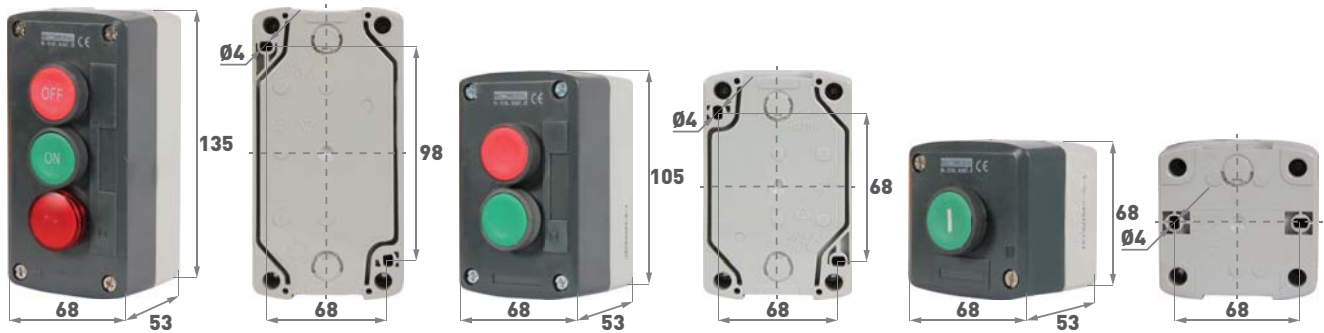
e.cs.stand.xal.d.X

- e. — trademark E.NEXT
- cs.stand.xal.d — series
- X — type

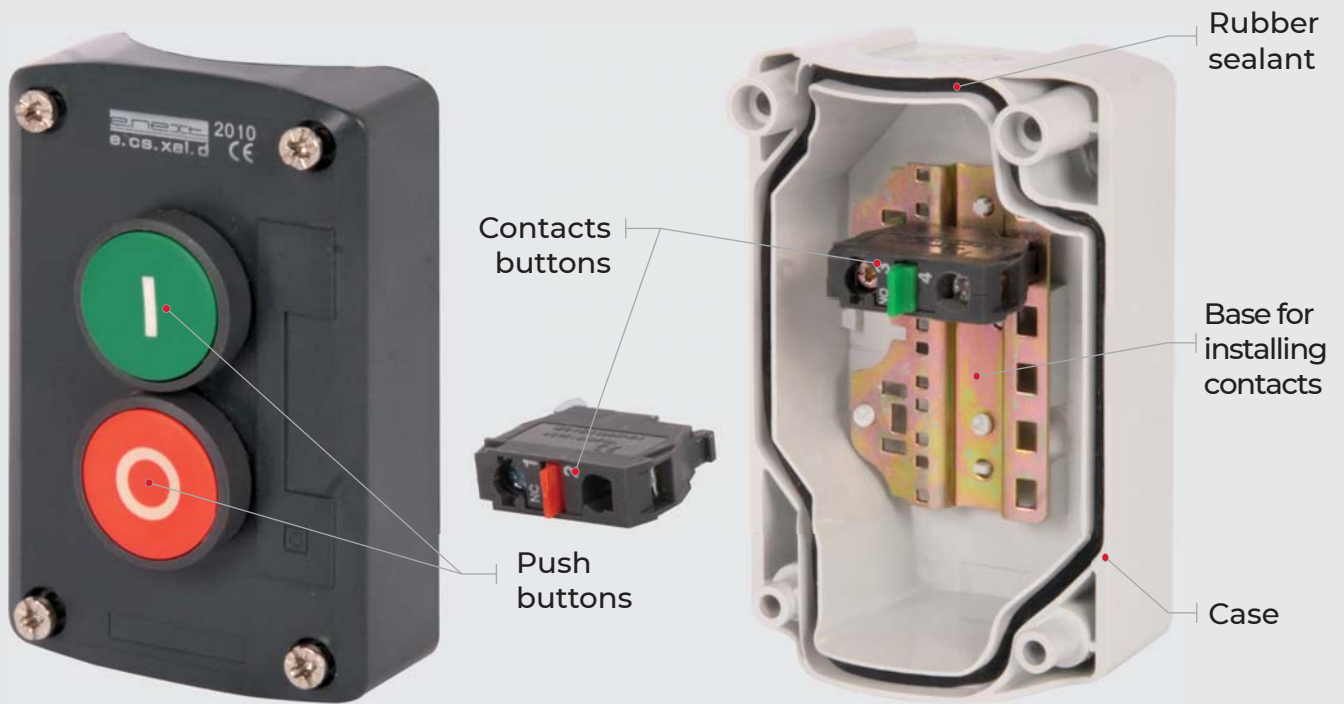
### Technical data

Parameter name	Value				
Rated voltage Ue, V	AC 400				
Rated frequency, Hz	50				
Voltage of insulation Ui, V	500				
Rated current of contacts, A by utilization category	AC voltage	400	230	110	48
	AC12	4,5	7,5	10	10
	AC15	2,5	4,5	6	6
	DC voltage	220	110	48	24
	DC12	1,3	2,5	5	10
	DC13	0,3	0,6	1,3	2,5
Rated conventional overload current Ith, A	10				
Electrical life, On/Off cycles, no less	25×10 <sup>3</sup>				
Mechanical life, On/Off cycles, no less	50×10 <sup>4</sup>				
Protection degree	IP54				
Maximum cross section of connecting wire, mm <sup>2</sup>	2,5				
Ambient temperature, °C	-10...+40				
Altitude, m, no more	2 000				
Permissible relative humidity at 25 °C (without condensation), no more	90 %				
Working position	arbitrary				
Mounting	on mounting panel				

## Overall and installation dimensions



	Name	Type	Color of pushbutton	Type of contacts	Order code
	e.cs.stand.xal.d.101	Pushbutton control box «Start» 1-place, button without symbol	green	NO	s006013
	e.cs.stand.xal.d.102	Pushbutton control box «Start» 1-place, button «I»			s006007
	e.cs.stand.xal.d.104	Pushbutton control box «Start» 1-place, button «ON»			s006008
	e.cs.stand.xal.d.111	Pushbutton control box «Stop» 1-place, button without symbol	red	NC	s006014
	e.cs.stand.xal.d.112	Pushbutton control box «Stop» 1-place, button «O»			s006009
	e.cs.stand.xal.d.117	Pushbutton control box «Stop» 1-place, button «OFF»			s006010
	e.cs.stand.xal.d.134	Pushbutton control box «Switch» 1-place, for two positions 0-1	black	NO	s006019
	e.cs.stand.xal.d.144	Pushbutton control box «Switch» 1-place, for two positions 0-1			s006020
	e.cs.stand.xal.d.164	Pushbutton control box «Stop» 1-place, button-mushroom without fixation	red	NC	s006015
	e.cs.stand.xal.d.174	Pushbutton control box «Stop» 1-place, button-mushroom with fixation, rotary turning			s006016
	e.cs.stand.xal.d.211	Pushbutton control box «Start-Stop» 2-place, buttons without symbol	green/red	NO+NC	s006018
	e.cs.stand.xal.d.213	Pushbutton control box «Start-Stop» 2-place, buttons «ON» and «OFF»			s006017
	e.cs.stand.xal.d.361.m	Pushbutton control box «Start-Stop» 3-place, with red LED-indicator 220 V, buttons «ON» and «OFF»	green/red	NO+NC	s006022
	e.cs.stand.xal.d.363.m	Pushbutton control box «Start-Stop» 3-place, with red LED-indicator 220 V, buttons «I» and «O»			s006021
	e.cb.stand.xal.no green	Auxiliary contact	green	NO	s008006
	e.cb.stand.xal.nc red	Auxiliary contact	red	NC	s008005
	e.cs.stand.xal.d.115	Pushbutton control box with buckled button, button, «O»			s006011
	e.cs.stand.xal.d.118	Pushbutton control box with buckled button, «OFF»			s006012



The pushbuttons control boxes of the e.cs.stand.xal.d series structurally consist of a case made of made of ABS-plastic, which is self-extinguishing; pushbuttons fixed on the lid; contacts installed in the case. The base of the case of the pushbutton control boxes has a groove with a rubber seal, the cover is an appropriate protrusion, which, together with the special construction of pushbuttons, provides the protection degree IP54.

In standard configuration, the pushbutton control boxes of the e.cs.stand.xal.d series are supplied with one contact - NO or NC, depending on the execution of the control box - for each button. In this case, the construction of the control box provides the possibility of setting one auxiliary contact for each pushbutton.

There is no mutual button lock in the double and triple pushbutton control boxes of the e.cs.stand.xal.d series, which should be taken into account when managing equipment and technological processes.





## Pendant control stations e.cs.stand.xac.a

They are intended for local control of operator with various lifting mechanisms, as well as other technological equipment in AC circuits with a voltage up to 660 V at a frequency of 50 Hz and a direct current up to 400 V.



060 Corresponds to EN 60947-5-1, EN 61000-3-2, EN 61000-3-3.



### Symbolic structure

e.cs.stand.xac.a.X

e. — trademark E.NEXT  
e.cs.stand.xac.a — series  
X — execution

### Technical data

Parameter name		Value					
Rated voltage U <sub>e</sub> , V		AC 660					
Rated frequency, Hz		50					
Voltage of insulation U <sub>i</sub> , V		690					
Rated current of contacts, A by utilization category	AC voltage	660	440	230	110	48	
	AC12	2,5	4,5	7,5	10	10	
	AC15	1,5	2,5	4,5	6	6	
	DC voltage	440	220	110	48	24	
	DC12	0,6	1,3	2,5	5	10	
	DC13	0,1	0,3	0,6	1,3	2,5	
Electrical life, On/Off cycles, no less		25 000					
Mechanical life, On/Off cycles, no less		50 000					
Protection degree		IP65					
Maximum cross section of connecting wire, mm <sup>2</sup>		2,5 (for contacts of buttons)					
Ambient temperature, °C		-25...+45					
Altitude, m, no more		25					
Permissible relative humidity at 25 °C (without condensation), no more		2 000					
Working position		60 %					
Mounting		arbitrary					

**Overall and installation dimensions**



Name	b	b1
e.cs.stand.xac.a.2XX	315	190
e.cs.stand.xac.a.4XX	440	250
e.cs.stand.xac.a.6XX	500	310
e.cs.stand.xac.a.8XX	560	370



Name	Type	Color of pushbutton	Order code
e.cs.stand.xac.a.271	2	2NO	s007004
e.cs.stand.xac.a.281	2	2NO+2NC	s007005
e.cs.stand.xac.a.2713.1	2+«Stop»	2NO+1NC	s007006
e.cs.stand.xac.a.2813.1	2+«Stop»	2NO+3NC	s007007
e.cs.stand.xac.a.471	4	4NO	s007008
e.cs.stand.xac.a.481	4	4NO+4NC	s007009
e.cs.stand.xac.a.4713.3	4+«Stop»	4NO+1NC	s007010
e.cs.stand.xac.a.4813.2	4+«Stop»	4NO+5NC	s007011
e.cs.stand.xac.a.671	6	6NO	s007012
e.cs.stand.xac.a.681	6	6NO+6NC	s007013
e.cs.stand.xac.a.6813	6+«Stop»	6NO+7NC	s007014
e.cs.stand.xac.a.881	8	7NO+8NC	s007015
e.cs.stand.xac.a.8813	8+«Stop»	8NO+9NC	s007016
e.cb.stand.n.o green	—	auxiliary contact NO	s008001
e.cb.stand.n.c red	—	auxiliary contact NC	s008002

The pendant control stations e.cs.stand.xac.a series consist of a case made of ABS-plastic, which is self-extinguishing; fixed pushbuttons on the cover; installed contacts in the case, and cable gland. The base of the case of the pendant control stations has a groove with a rubber seal, the cover is an appropriate protrusion, which with the special construction of pushbuttons and cable gland provides the protection degree of IP65.

The standard complete of the pendant control stations e.cs.stand. xac.a are supplied with one of the contacts NO or NC, depends on the supply, or with two contacts - NO+NC, on each button. In this construction, the possibility of installing one auxiliary contact on each button for an executor with one contact or replacement of the installed contact on a contact of another type.

The pendant control stations e.cs.stand.xac.a series have the opposite direction buttons (forward-back, right-left, up-down), have a mechanism of mutual blocking from simultaneous pressing, which improves the safety of the control of load-lifting mechanisms and other technological equipment.



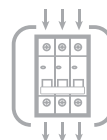


## Pendant control stations e.cob.stand

They are intended for local control of operator by various hoisting mechanisms, as well as other technological equipment in AC circuits with a voltage up to 400 V at frequency of 50 Hz.



060 Corresponds to EN 60947-5-1, EN 61000-3-2, EN 61000-3-3.



### Symbolic structure

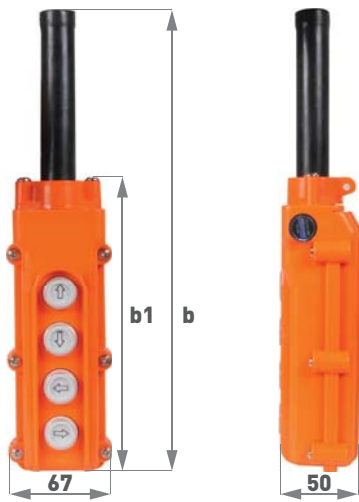
e.cob.stand.X

- e. — trademark E.NEXT
- e.cob.stand — series
- X — number of buttons

### Technical data

Parameter name		Value			
Rated voltage U <sub>e</sub> , V		AC 400			
Rated frequency, Hz		50			
Voltage of insulation U <sub>i</sub> , V		500			
Rated current of contacts, A by utilization category	AC voltage	400	230	110	48
	AC 12	2,5	4,5	10	10
	AC 15	1,5	3	6	6
Electrical life, On/Off cycles, no less		10 000			
Mechanical life, On/Off cycles, no less		30 000			
Protection degree		IP54			
Maximum cross section of connecting wire, mm <sup>2</sup>		1,5 (for contacts of buttons)			
Ambient temperature, °C		-25...+45			
Altitude, m, no more		2 000			
Permissible relative humidity at 25 °C (without condensation), no more		60 %			
Working position		arbitrary			

## Overall and installation dimensions



Name	Number of buttons	Type of auxiliary contacts	Dimensions, mm		Order code
			b	b1	
e.cob.stand.2	2	2NO	240	120	s007001
e.cob.stand.4	4	4NO	295	200	s007002
e.cob.stand.6	6	6NO	360	250	s007003
e.cob.stand.8	8	8NO	430	310	s0070004



## Limit switches e.limitswitch

They are intended for operation in the control circuits of electrotechnical devices, in electric alternating and direct current with voltage up to 400 V in industrial and household objects. Used as a lock in a variety of devices.



060 Corresponds to EN 60947-5-1, EN 61000-3-2, EN 61000-3-3.

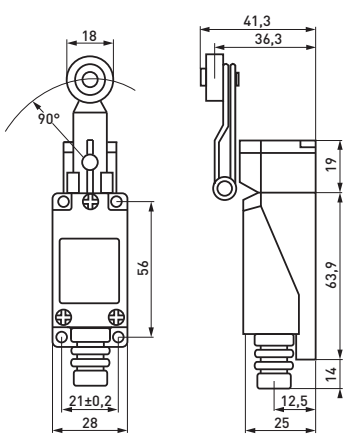


Name	Type	Color	Type of contacts	Order code
e.limitswitch.01	5	AC 250	1NO+1NC	s0070005
e.limitswitch.02				s0070006
e.limitswitch.03				s0070007
e.limitswitch.04				s0070008
e.limitswitch.05				s0070009
e.limitswitch.06				s0070010
e.limitswitch.07				s0070011
e.limitswitch.08				s0070012
e.limitswitch.09				s0070013
e.limitswitch.10				s0070014

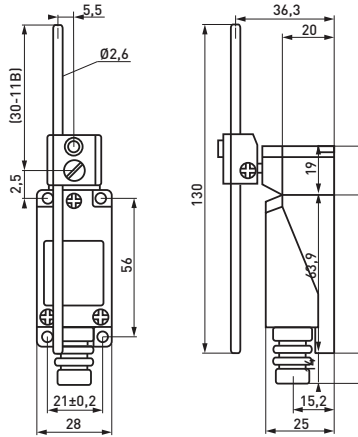
### Technical data

Parameter name	Value	
Rated voltage Ue, V	AC 250	
Rated current, A	DC	0,4
	AC	5
Number of contacts	1NO+1NC	
Electrical life, cycles	1 000 000	
Mechanical life, cycles	600 000	
Maximum cross section of connecting wire, mm <sup>2</sup>	1,5	
Protection degree	IP65	
Weight, g	150	
Ambient temperature, °C	-25...+40	
Working position	arbitrary	
Mounting	on mounting panel	

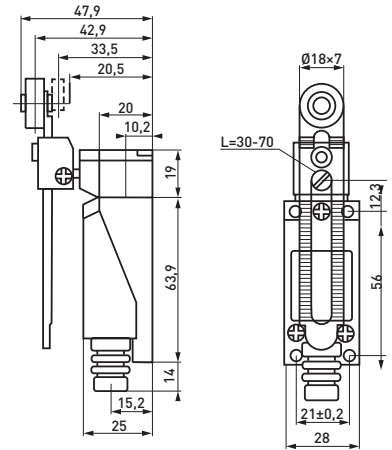
## Graphic notation and overall dimensions



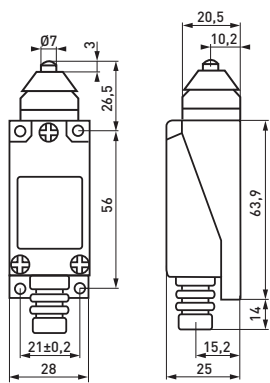
e.limitswitch.01



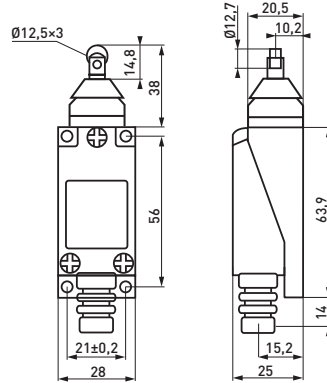
e.limitswitch.02



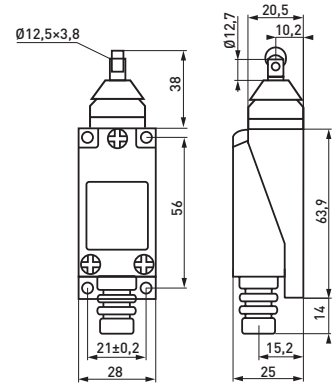
e.limitswitch.03



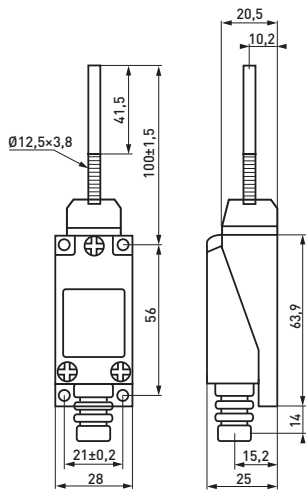
e.limitswitch.04



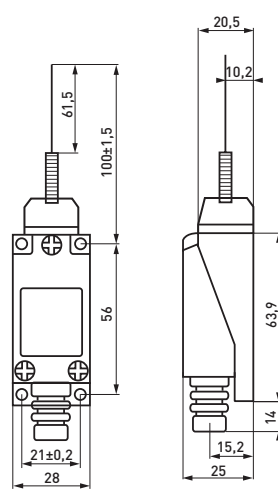
e.limitswitch.05



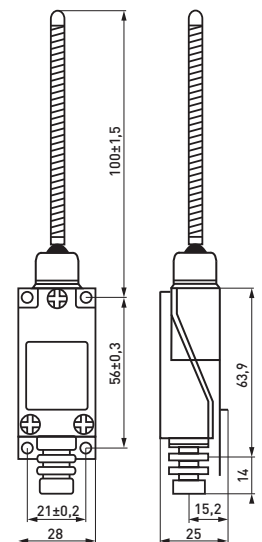
e.limitswitch.06



e.limitswitch.07



e.limitswitch.08



e.limitswitch.09