2021

iEK
REAL ABILITY

MODULAR EQUIPMENT

About us

Established	in 1999
Employees	More than 2000
Production facilities	53 thousand m³
Representative offices	14

IEK GROUP

7,5% annually	Annual sales growth
12,5 thousand	Product range
72 thousand m³	Warehouses' area
More than 50%	Of profit margin we Invest to development

Mission and values

In close cooperation with our partners we create reliable solutions for electric energy transmission, distribution and conversion, providing comfortable and safe environment for people's lives and activities.

SECURITY

CREATION AND INNOVATION

LEADERSHIP

HUMANITY

AVAILABILITY

PARTNERSHIP

RELIABILITY

R&D

Own design engineering bureau, equipped laboratories

PATENTS AND CERTIFICATES

Our Brands

Brand IEK® is the leader on electro technical and lighting markets for over 20 years.

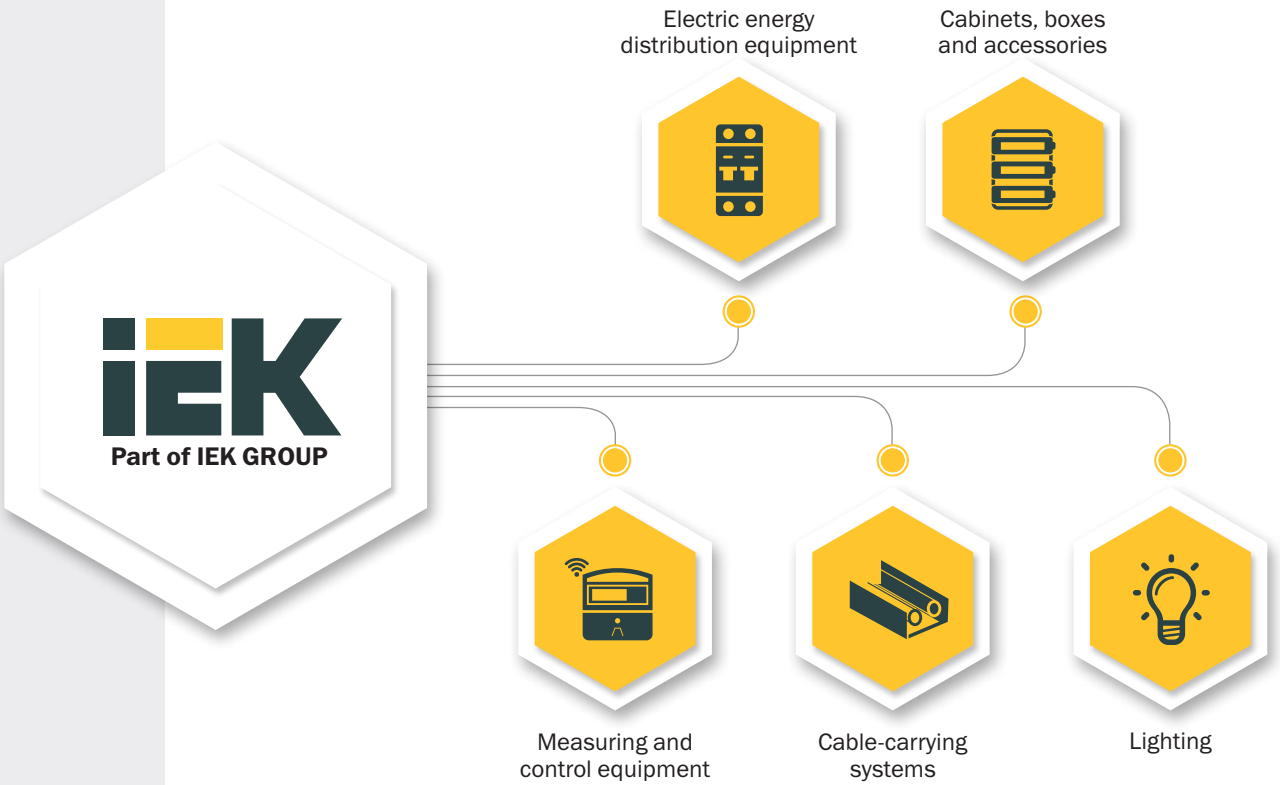
ITK® is a modern and reliable equipment for effective telecommunication solutions.

ONI® has a wide range of equipment and software automation of various industries.

LEDEL® is a professional lighting manufacturer of the project lighting for industrial, commercial, outdoor and office luminaries.

MasterSCADA® — software package for the development of control and dispatching systems

ELECTRICAL AND LIGHTING EQUIPMENT



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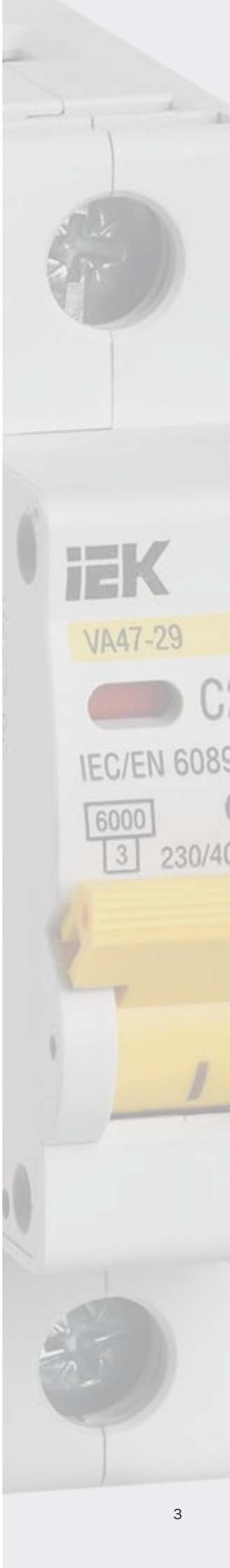


Modular circuit breakers (MCB) VA47-29

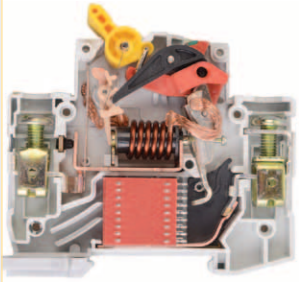
Modular circuit breakers VA47-29 are designed to protect electrical circuits with individual and group consumers of electrical energy against overload and short circuit currents of.
The circuit breakers have three types of short-circuit current response characteristics and various applications:
– household chains made of aluminum wires, – characteristic B;
– household circuits made with copper wires, – characteristics B or C;
– industrial loads with electric motors and ballasts of fluorescent lamps – characteristics C or D.

TECHNICAL CHARACTERISTICS		
	VA47-29 4,5 kA	VA47-29 6 kA
Conform to Standards	EN 60898-1	
Rated network frequency of 50/60 Hz, V	230/400	
Rated current I_n, A	0,5, 1; 2; 3; 4; 5; 6; 8; 10; 13; 16; 20; 25; 32; 40; 50; 63	
Rated breaking capacity, A	4500	6000
DC voltage, V / pole	48	
Curves range	B, C, D	
Rated impulse withstand voltage, U_{imp}, V	4000	
Number of poles	1, 2, 3, 4	
Circuit breaker protection	IP20	
Electrical endurance, cycles	6000	
Mechanical durability, cycles	20 000	
Maximum cross-section of connected wires, mm^2	25	
The presence of precious metals (silver), g / pole	0,3 0,5	
Mass of one pole, kg	0,103	
Tightening torque of terminal screws, N·m	2	
Contact position indicator (on the front panel)	yes	
Possibility of connection to connection clamps of connecting busbars	PIN, FORK	
Operating temperature range, °C	–40÷+50	
Warranty period of operation, years, from the date of sale to the consumer	5	

Logistics parameters

Group package						
number of poles	quantity, pcs	weight	length	width	height	volume
1	12	1,293	22	8,5	7,5	0,001403
2	6					
3	4					
4	3					
Transport package						
number of poles	quantity, pcs	weight	length	width	height	volume
1	144	15,5	53,1	23,5	17,5	0,021837
2	72					
3	48					
4	36					

Features



Advanced arc suppression system: increased service life, increased resistance to short circuit currents, patent
No. RU 139886.

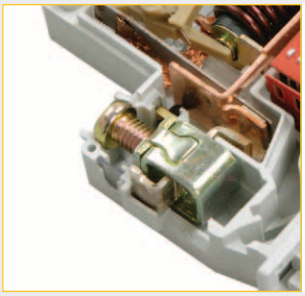
Soldering from a silver-containing composite increases the wear resistance of the contact group and reduces the transition resistance.

Possibility of simultaneous connection by FORK bus and flexible conductor to distribute the power supply of the circuit through the upper clamps, as well as the ability to connect with a PIN bus.

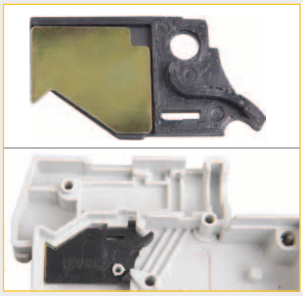
Increased housing strength in the conductor attachment area due to two additional rivets and a monolithic front panel

Contact indicator

Notches on the contact clamps, due to the larger contact area, reduce the transition resistance between the clamp and conductor and heat loss at the point of contact.



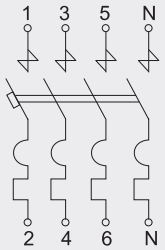
Protection against changing factory settings of the thermal release mechanism with a Plexiglass insert



Additional protection against burnout of the circuit breaker case and heat dissipation due to plastic and metal anti-burn plates

Fast installation and additional reliability of fastening on a DIN rail using the latch with double fixed position.

Schematic diagram

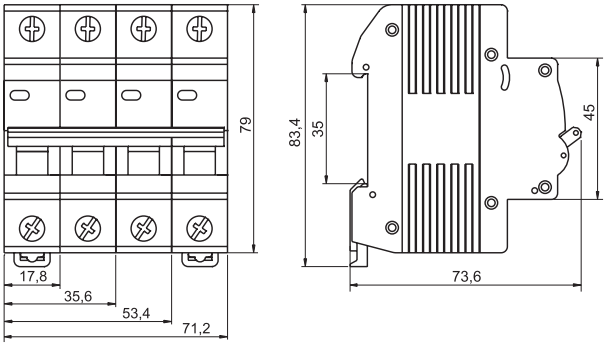


Dependence of rated current of switches on ambient temperature

Current In, A	Environment temperature, °C									
	-40	-30	-20	-10	0	10	20	30*	40	50
1	1,35	1,30	1,25	1,20	1,15	1,10	1,05	1	0,93	0,88
2	2,70	2,60	2,50	2,40	2,30	2,20	2,10	2	1,90	1,80
3	4,05	3,90	3,75	3,60	3,45	3,30	3,15	3	2,80	2,60
4	5,40	5,20	5,00	4,80	4,60	4,40	4,20	4	3,70	3,50
5	6,75	6,50	6,25	6,00	5,75	5,50	5,25	5	4,70	4,50
6	8,10	7,80	7,50	7,20	6,90	6,60	6,30	6	5,60	5,30
8	11,20	10,60	10,00	9,60	9,20	8,80	8,40	8	7,40	7,00
10	13,50	13,00	12,50	12,00	11,50	11,00	10,50	10	9,30	8,80
13	17,70	17,00	16,30	15,60	15,00	14,30	13,70	13	12,00	11,40
16	21,60	20,80	20,00	19,20	18,40	17,60	16,80	16	14,90	14,00
20	27,00	26,00	25,00	24,00	23,00	22,00	21,00	20	18,60	17,60
25	33,90	32,60	31,30	30,00	28,80	27,50	26,30	25	23,20	22,00
32	43,20	41,60	40,00	38,40	36,80	35,20	33,60	32	30,00	28,20
40	54,00	52,00	50,00	48,00	46,00	44,00	42,00	40	37,20	35,20
50	67,50	65,00	62,50	60,00	57,50	55,00	52,50	50	46,50	44,00
63	85,00	82,00	78,80	75,60	72,50	69,30	66,20	63	58,60	55,40

* Control calibration temperature of thermal releases: +30 ° C.

VA47-29 Overall and mounting dimensions



VA47-29 6 kA Curve B

Current In, A	1P	2P	3P	4P
1	MVA30-1-001-B	MVA30-2-001-B	MVA30-3-001-B	MVA30-4-001-B
2	MVA30-1-002-B	MVA30-2-002-B	MVA30-3-002-B	MVA30-4-002-B
3	MVA30-1-003-B	MVA30-2-003-B	MVA30-3-003-B	MVA30-4-003-B
4	MVA30-1-004-B	MVA30-2-004-B	MVA30-3-004-B	MVA30-4-004-B
5	MVA30-1-005-B	MVA30-2-005-B	MVA30-3-005-B	MVA30-4-005-B
6	MVA30-1-006-B	MVA30-2-006-B	MVA30-3-006-B	MVA30-4-006-B
8	MVA30-1-008-B	MVA30-2-008-B	MVA30-3-008-B	MVA30-4-008-B
10	MVA30-1-010-B	MVA30-2-010-B	MVA30-3-010-B	MVA30-4-010-B
13	MVA30-1-013-B	MVA30-2-013-B	MVA30-3-013-B	MVA30-4-013-B
16	MVA30-1-016-B	MVA30-2-016-B	MVA30-3-016-B	MVA30-4-016-B
20	MVA30-1-020-B	MVA30-2-020-B	MVA30-3-020-B	MVA30-4-020-B
25	MVA30-1-025-B	MVA30-2-025-B	MVA30-3-025-B	MVA30-4-025-B
32	MVA30-1-032-B	MVA30-2-032-B	MVA30-3-032-B	MVA30-4-032-B
40	MVA30-1-040-B	MVA30-2-040-B	MVA30-3-040-B	MVA30-4-040-B
50	MVA30-1-050-B	MVA30-2-050-B	MVA30-3-050-B	MVA30-4-050-B
63	MVA30-1-063-B	MVA30-2-063-B	MVA30-3-063-B	MVA30-4-063-B

1P

2P

3P

4P

VA47-29 6 kA Curve C

Current In, A	1P	2P	3P	4P
0,5	MVA30-1-D05-C	MVA30-2-D05-C	MVA30-3-D05-C	MVA30-4-D05-C
1	MVA30-1-001-C	MVA30-2-001-C	MVA30-3-001-C	MVA30-4-001-C
2	MVA30-1-002-C	MVA30-2-002-C	MVA30-3-002-C	MVA30-4-002-C
3	MVA30-1-003-C	MVA30-2-003-C	MVA30-3-003-C	MVA30-4-003-C
4	MVA30-1-004-C	MVA30-2-004-C	MVA30-3-004-C	MVA30-4-004-C
5	MVA30-1-005-C	MVA30-2-005-C	MVA30-3-005-C	MVA30-4-005-C
6	MVA30-1-006-C	MVA30-2-006-C	MVA30-3-006-C	MVA30-4-006-C
8	MVA30-1-008-C	MVA30-2-008-C	MVA30-3-008-C	MVA30-4-008-C
10	MVA30-1-010-C	MVA30-2-010-C	MVA30-3-010-C	MVA30-4-010-C
13	MVA30-1-013-C	MVA30-2-013-C	MVA30-3-013-C	MVA30-4-013-C
16	MVA30-1-016-C	MVA30-2-016-C	MVA30-3-016-C	MVA30-4-016-C
20	MVA30-1-020-C	MVA30-2-020-C	MVA30-3-020-C	MVA30-4-020-C
25	MVA30-1-025-C	MVA30-2-025-C	MVA30-3-025-C	MVA30-4-025-C
32	MVA30-1-032-C	MVA30-2-032-C	MVA30-3-032-C	MVA30-4-032-C
40	MVA30-1-040-C	MVA30-2-040-C	MVA30-3-040-C	MVA30-4-040-C
50	MVA30-1-050-C	MVA30-2-050-C	MVA30-3-050-C	MVA30-4-050-C
63	MVA30-1-063-C	MVA30-2-063-C	MVA30-3-063-C	MVA30-4-063-C

VA47-29 6 kA Curve D

Current In, A	1P	2P	3P	4P
6	MVA30-1-006-D	MVA30-2-006-D	MVA30-3-006-D	MVA30-4-006-D
8	MVA30-1-008-D	MVA30-2-008-D	MVA30-3-008-D	MVA30-4-008-D
10	MVA30-1-010-D	MVA30-2-010-D	MVA30-3-010-D	MVA30-4-010-D
13	MVA30-1-013-D	MVA30-2-013-D	MVA30-3-013-D	MVA30-4-013-D
16	MVA30-1-016-D	MVA30-2-016-D	MVA30-3-016-D	MVA30-4-016-D
20	MVA30-1-020-D	MVA30-2-020-D	MVA30-3-020-D	MVA30-4-020-D
25	MVA30-1-025-D	MVA30-2-025-D	MVA30-3-025-D	MVA30-4-025-D
32	MVA30-1-032-D	MVA30-2-032-D	MVA30-3-032-D	MVA30-4-032-D
40	MVA30-1-040-D	MVA30-2-040-D	MVA30-3-040-D	MVA30-4-040-D
50	MVA30-1-050-D	MVA30-2-050-D	MVA30-3-050-D	MVA30-4-050-D
63	MVA30-1-063-D	MVA30-2-063-D	MVA30-3-063-D	MVA30-4-063-D

1P

2P

3P

4P

VA47-29 4,5 kA Curve B

Current In, A	1P	2P	3P	4P
1	MVA21-1-001-B-FCN	MVA21-2-001-B-FCN	MVA21-3-001-B-FCN	MVA21-4-001-B-FCN
2	MVA21-1-002-B-FCN	MVA21-2-002-B-FCN	MVA21-3-002-B-FCN	MVA21-4-002-B-FCN
3	MVA21-1-003-B-FCN	MVA21-2-003-B-FCN	MVA21-3-003-B-FCN	MVA21-4-003-B-FCN
4	MVA21-1-004-B-FCN	MVA21-2-004-B-FCN	MVA21-3-004-B-FCN	MVA21-4-004-B-FCN
5	MVA21-1-005-B-FCN	MVA21-2-005-B-FCN	MVA21-3-005-B-FCN	MVA21-4-005-B-FCN
6	MVA21-1-006-B-FCN	MVA21-2-006-B-FCN	MVA21-3-006-B-FCN	MVA21-4-006-B-FCN
8	MVA21-1-008-B-FCN	MVA21-2-008-B-FCN	MVA21-3-008-B-FCN	MVA21-4-008-B-FCN
10	MVA21-1-010-B-FCN	MVA21-2-010-B-FCN	MVA21-3-010-B-FCN	MVA21-4-010-B-FCN
13	MVA21-1-013-B-FCN	MVA21-2-013-B-FCN	MVA21-3-013-B-FCN	MVA21-4-013-B-FCN
16	MVA21-1-016-B-FCN	MVA21-2-016-B-FCN	MVA21-3-016-B-FCN	MVA21-4-016-B-FCN
20	MVA21-1-020-B-FCN	MVA21-2-020-B-FCN	MVA21-3-020-B-FCN	MVA21-4-020-B-FCN
25	MVA21-1-025-B-FCN	MVA21-2-025-B-FCN	MVA21-3-025-B-FCN	MVA21-4-025-B-FCN
32	MVA21-1-032-B-FCN	MVA21-2-032-B-FCN	MVA21-3-032-B-FCN	MVA21-4-032-B-FCN
40	MVA21-1-040-B-FCN	MVA21-2-040-B-FCN	MVA21-3-040-B-FCN	MVA21-4-040-B-FCN
50	MVA21-1-050-B-FCN	MVA21-2-050-B-FCN	MVA21-3-050-B-FCN	MVA21-4-050-B-FCN
63	MVA21-1-063-B-FCN	MVA21-2-063-B-FCN	MVA21-3-063-B-FCN	MVA21-4-063-B-FCN

VA47-29 4,5 kA Curve C

Current In, A	1P	2P	3P	4P
0,5	MVA21-1-D05-C-FCN	MVA21-2-D05-C-FCN	MVA21-3-D05-C-FCN	MVA21-4-D05-C-FCN
1	MVA21-1-001-C-FCN	MVA21-2-001-C-FCN	MVA21-3-001-C-FCN	MVA21-4-001-C-FCN
2	MVA21-1-002-C-FCN	MVA21-2-002-C-FCN	MVA21-3-002-C-FCN	MVA21-4-002-C-FCN
3	MVA21-1-003-C-FCN	MVA21-2-003-C-FCN	MVA21-3-003-C-FCN	MVA21-4-003-C-FCN
4	MVA21-1-004-C-FCN	MVA21-2-004-C-FCN	MVA21-3-004-C-FCN	MVA21-4-004-C-FCN
5	MVA21-1-005-C-FCN	MVA21-2-005-C-FCN	MVA21-3-005-C-FCN	MVA21-4-005-C-FCN
6	MVA21-1-006-C-FCN	MVA21-2-006-C-FCN	MVA21-3-006-C-FCN	MVA21-4-006-C-FCN
8	MVA21-1-008-C-FCN	MVA21-2-008-C-FCN	MVA21-3-008-C-FCN	MVA21-4-008-C-FCN
10	MVA21-1-010-C-FCN	MVA21-2-010-C-FCN	MVA21-3-010-C-FCN	MVA21-4-010-C-FCN
13	MVA21-1-013-C-FCN	MVA21-2-013-C-FCN	MVA21-3-013-C-FCN	MVA21-4-013-C-FCN
16	MVA21-1-016-C-FCN	MVA21-2-016-C-FCN	MVA21-3-016-C-FCN	MVA21-4-016-C-FCN
20	MVA21-1-020-C-FCN	MVA21-2-020-C-FCN	MVA21-3-020-C-FCN	MVA21-4-020-C-FCN
25	MVA21-1-025-C-FCN	MVA21-2-025-C-FCN	MVA21-3-025-C-FCN	MVA21-4-025-C-FCN
32	MVA21-1-032-C-FCN	MVA21-2-032-C-FCN	MVA21-3-032-C-FCN	MVA21-4-032-C-FCN
40	MVA21-1-040-C-FCN	MVA21-2-040-C-FCN	MVA21-3-040-C-FCN	MVA21-4-040-C-FCN
50	MVA21-1-050-C-FCN	MVA21-2-050-C-FCN	MVA21-3-050-C-FCN	MVA21-4-050-C-FCN
63	MVA21-1-063-C-FCN	MVA21-2-063-C-FCN	MVA21-3-063-C-FCN	MVA21-4-063-C-FCN

VA47-29 4,5 kA Curve D

Current In, A	1P	2P	3P	4P
8	MVA21-1-008-D-FCN	MVA21-2-008-D-FCN	MVA21-3-008-D-FCN	MVA21-4-008-D-FCN
10	MVA21-1-010-D-FCN	MVA21-2-010-D-FCN	MVA21-3-010-D-FCN	MVA21-4-010-D-FCN
13	MVA21-1-013-D-FCN	MVA21-2-013-D-FCN	MVA21-3-013-D-FCN	MVA21-4-013-D-FCN
16	MVA21-1-016-D-FCN	MVA21-2-016-D-FCN	MVA21-3-016-D-FCN	MVA21-4-016-D-FCN
20	MVA21-1-020-D-FCN	MVA21-2-020-D-FCN	MVA21-3-020-D-FCN	MVA21-4-020-D-FCN
25	MVA21-1-025-D-FCN	MVA21-2-025-D-FCN	MVA21-3-025-D-FCN	MVA21-4-025-D-FCN
32	MVA21-1-032-D-FCN	MVA21-2-032-D-FCN	MVA21-3-032-D-FCN	MVA21-4-032-D-FCN
40	MVA21-1-040-D-FCN	MVA21-2-040-D-FCN	MVA21-3-040-D-FCN	MVA21-4-040-D-FCN
50	MVA21-1-050-D-FCN	MVA21-2-050-D-FCN	MVA21-3-050-D-FCN	MVA21-4-050-D-FCN
63	MVA21-1-063-D-FCN	MVA21-2-063-D-FCN	MVA21-3-063-D-FCN	MVA21-4-063-D-FCN

Modular circuit breakers (MCB) VA47-60

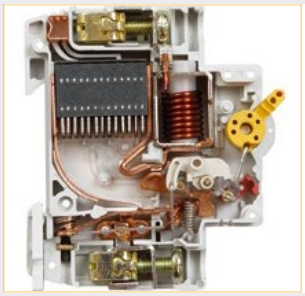
Circuit breakers type VA47-60 are designed to automatically turn off the power source when overcurrent occurs. Recommended for use in group panels (apartment and floor), billboards of registration and distribution residential, public, domestic and administrative buildings. 64 standard designs for 8 rated currents from 6 to 100 A.

TECHNICAL CHARACTERISTICS	
Conform to Standards	EN 60898-1
Rated voltage with a frequency of 50/60 Hz, V	230/400
Rated current I_n, A	6; 8; 10; 13; 16; 20; 25; 32; 40; 50; 63; 80; 100
Rated breaking capacity, A	10 000
DC voltage, V / pole	48
Curves range	B, C, D
Rated impulse withstand voltage, U_{imp}, V	4000
Number of poles	1, 2, 3, 4
Circuit breaker protection	IP20
Electrical endurance, cycles	8 000
Mechanical durability, cycles	20 000
Maximum cross-section of connected wires, mm^2	25
The presence of precious metals (silver), g / pole	0.2
Mass of one pole, kg	0,2
Tightening torque of terminal screws, N • m	2
Contact position indicator (on the front panel)	yes
Possibility of connection to connection clamps of connecting busbars	PIN, FORK
Operating temperature range, °C	–40÷+50
Warranty period of operation, years, from the date of sale to the consumer	5

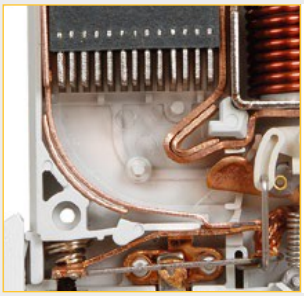
Logistics parameters

Group package						
number of poles	quantity, pcs	weight	length	width	height	volume
1	12	1,31	21,9	8,2	7,8	0,001401
2	6					
3	4					
4	3					
Transport package						
number of poles	quantity, pcs	weight	length	width	height	volume
1	180	21	43	25,5	23,5	0,025768
2	90					
3	60					
4	45					

Features



The circuit breaker design provides for two types of overcurrent protection, which significantly increases the protection of distribution and group circuits.

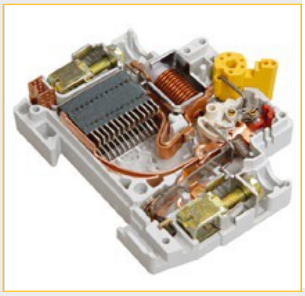


The live parts are made of high-quality electrical copper.

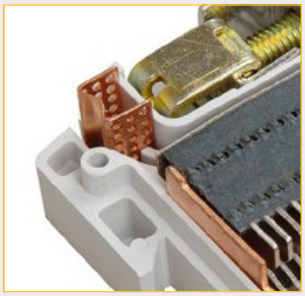
The enlarged arcing chamber allows you to break an electric arc into a large number of small arcs, thereby quickly extinguishing it.

Soldering on the contact group is made of silver-containing composite.

Possibility of double connection (PIN and FORK) both from the network side and from the load side - variability of connection and reduction of the length of conductors.



A new design of the free trip mechanism has been introduced (contact break time has been significantly reduced).

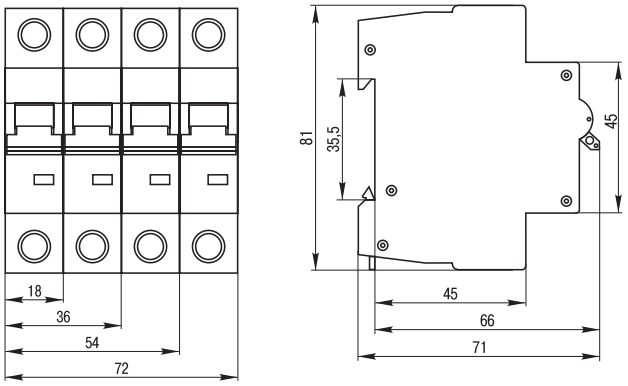


A double spark-extinguishing grate at the exit of the arcing chamber increases the fire safety of the device, preventing the ejection of combustion products to the outside.

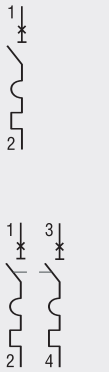
The enlarged screw head size with universal slot (+, -) facilitates installation and prevents screws from falling out during installation.

The presence of a monolithic front panel, which minimizes the risks of "divergence" of the case when tightening the screws, and also increases its strength.

VA47-60 Overall and mounting dimensions



Schematic diagram



Dependence of rated current of switches on ambient temperature

Current In, A	Environment temperature, °C									
	–40	–30	–20	–10	0	10	20	30*	40	50
1	1,35	1,30	1,25	1,20	1,15	1,10	1,05	1	0,93	0,88
2	2,70	2,60	2,50	2,40	2,30	2,20	2,10	2	1,90	1,80
3	4,05	3,90	3,75	3,60	3,45	3,30	3,15	3	2,80	2,60
4	5,40	5,20	5,00	4,80	4,60	4,40	4,20	4	3,70	3,50
5	6,75	6,50	6,25	6,00	5,75	5,50	5,25	5	4,70	4,50
6	8,10	7,80	7,50	7,20	6,90	6,60	6,30	6	5,60	5,30
8	11,20	10,60	10,00	9,60	9,20	8,80	8,40	8	7,40	7,00
10	13,50	13,00	12,50	12,00	11,50	11,00	10,50	10	9,30	8,80
13	17,70	17,00	16,30	15,60	15,00	14,30	13,70	13	12,00	11,40
16	21,60	20,80	20,00	19,20	18,40	17,60	16,80	16	14,90	14,00
20	27,00	26,00	25,00	24,00	23,00	22,00	21,00	20	18,60	17,60
25	33,90	32,60	31,30	30,00	28,80	27,50	26,30	25	23,20	22,00
32	43,20	41,60	40,00	38,40	36,80	35,20	33,60	32	30,00	28,20
40	54,00	52,00	50,00	48,00	46,00	44,00	42,00	40	37,20	35,20
50	67,50	65,00	62,50	60,00	57,50	55,00	52,50	50	46,50	44,00
63	85,00	82,00	78,80	75,60	72,50	69,30	66,20	63	58,60	55,40

* Control calibration temperature of thermal releases: +30 ° C.

1P

2P

3P

4P

VA47-60 10 kA Curve B

Current In, A	1P	2P	3P	4P
6	MVA44-1-006-B-FCN	MVA44-2-006-B-FCN	MVA44-3-006-B-FCN	MVA44-4-006-B-FCN
8	MVA44-1-008-B-FCN	MVA44-2-008-B-FCN	MVA44-3-008-B-FCN	MVA44-4-008-B-FCN
10	MVA44-1-010-B-FCN	MVA44-2-010-B-FCN	MVA44-3-010-B-FCN	MVA44-4-010-B-FCN
16	MVA44-1-016-B-FCN	MVA44-2-016-B-FCN	MVA44-3-016-B-FCN	MVA44-4-016-B-FCN
20	MVA44-1-020-B-FCN	MVA44-2-020-B-FCN	MVA44-3-020-B-FCN	MVA44-4-020-B-FCN
25	MVA44-1-025-B-FCN	MVA44-2-025-B-FCN	MVA44-3-025-B-FCN	MVA44-4-025-B-FCN
32	MVA44-1-032-B-FCN	MVA44-2-032-B-FCN	MVA44-3-032-B-FCN	MVA44-4-032-B-FCN
40	MVA44-1-040-B-FCN	MVA44-2-040-B-FCN	MVA44-3-040-B-FCN	MVA44-4-040-B-FCN
50	MVA44-1-050-B-FCN	MVA44-2-050-B-FCN	MVA44-3-050-B-FCN	MVA44-4-050-B-FCN
63	MVA44-1-063-B-FCN	MVA44-2-063-B-FCN	MVA44-3-063-B-FCN	MVA44-4-063-B-FCN
80	MVA44-1-080-B-FCN	MVA44-2-080-B-FCN	MVA44-3-080-B-FCN	MVA44-4-080-B-FCN
100	MVA44-1-100-B-FCN	MVA44-2-100-B-FCN	MVA44-3-100-B-FCN	MVA44-4-100-B-FCN

VA47-60 10 kA Curve C

Current In, A	1P	2P	3P	4P
6	MVA44-1-006-C-FCN	MVA44-2-006-C-FCN	MVA44-3-006-C-FCN	MVA44-4-006-C-FCN
8	MVA44-1-008-C-FCN	MVA44-2-008-C-FCN	MVA44-3-008-C-FCN	MVA44-4-008-C-FCN
10	MVA44-1-010-C-FCN	MVA44-2-010-C-FCN	MVA44-3-010-C-FCN	MVA44-4-010-C-FCN
16	MVA44-1-016-C-FCN	MVA44-2-016-C-FCN	MVA44-3-016-C-FCN	MVA44-4-016-C-FCN
20	MVA44-1-020-C-FCN	MVA44-2-020-C-FCN	MVA44-3-020-C-FCN	MVA44-4-020-C-FCN
25	MVA44-1-025-C-FCN	MVA44-2-025-C-FCN	MVA44-3-025-C-FCN	MVA44-4-025-C-FCN
32	MVA44-1-032-C-FCN	MVA44-2-032-C-FCN	MVA44-3-032-C-FCN	MVA44-4-032-C-FCN
40	MVA44-1-040-C-FCN	MVA44-2-040-C-FCN	MVA44-3-040-C-FCN	MVA44-4-040-C-FCN
50	MVA44-1-050-C-FCN	MVA44-2-050-C-FCN	MVA44-3-050-C-FCN	MVA44-4-050-C-FCN
63	MVA44-1-063-C-FCN	MVA44-2-063-C-FCN	MVA44-3-063-C-FCN	MVA44-4-063-C-FCN
80	MVA44-1-080-C-FCN	MVA44-2-080-C-FCN	MVA44-3-080-C-FCN	MVA44-4-080-C-FCN
100	MVA44-1-100-C-FCN	MVA44-2-100-C-FCN	MVA44-3-100-C-FCN	MVA44-4-100-C-FCN

VA47-60 10 kA Curve D

Current In, A	1P	2P	3P	4P
6	MVA44-1-006-D-FCN	MVA44-2-006-D-FCN	MVA44-3-006-D-FCN	MVA44-4-006-D-FCN
8	MVA44-1-008-D-FCN	MVA44-2-008-D-FCN	MVA44-3-008-D-FCN	MVA44-4-008-D-FCN
10	MVA44-1-010-D-FCN	MVA44-2-010-D-FCN	MVA44-3-010-D-FCN	MVA44-4-010-D-FCN
16	MVA44-1-016-D-FCN	MVA44-2-016-D-FCN	MVA44-3-016-D-FCN	MVA44-4-016-D-FCN
20	MVA44-1-020-D-FCN	MVA44-2-020-D-FCN	MVA44-3-020-D-FCN	MVA44-4-020-D-FCN
25	MVA44-1-025-D-FCN	MVA44-2-025-D-FCN	MVA44-3-025-D-FCN	MVA44-4-025-D-FCN
32	MVA44-1-032-D-FCN	MVA44-2-032-D-FCN	MVA44-3-032-D-FCN	MVA44-4-032-D-FCN
40	MVA44-1-040-D-FCN	MVA44-2-040-D-FCN	MVA44-3-040-D-FCN	MVA44-4-040-D-FCN
50	MVA44-1-050-D-FCN	MVA44-2-050-D-FCN	MVA44-3-050-D-FCN	MVA44-4-050-D-FCN
63	MVA44-1-063-D-FCN	MVA44-2-063-D-FCN	MVA44-3-063-D-FCN	MVA44-4-063-D-FCN
80	MVA44-1-080-D-FCN	MVA44-2-080-D-FCN	MVA44-3-080-D-FCN	MVA44-4-080-D-FCN
100	MVA44-1-100-D-FCN	MVA44-2-100-D-FCN	MVA44-3-100-D-FCN	MVA44-4-100-D-FCN

Modular Circuit Breaker VA47-60M

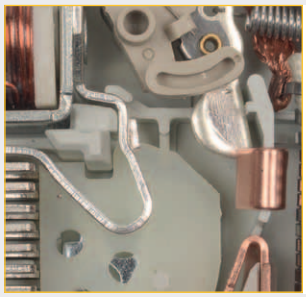
The VA47-60M circuit breakers perform the functions of automatically shutting down an electrical installation when overcurrent occur and operational control of sections of electrical circuits. The devices are perfectly suitable for use in group panels (apartment and floor), as well as in metering and distribution boards of administrative and residential buildings.

TECHNICAL CHARACTERISTICS	
Conform to Standards	EN 60898-1
Rated voltage with a frequency of 50/60 Hz, V	230/400
Rated current I_n, A	1; 2; 3; 4; 5; 6; 8; 10; 13; 16; 20; 25; 32; 40; 50; 63
Rated breaking capacity, A	6 000
DC voltage, V / pole	48
Curves range	B, C, D
Rated impulse withstand voltage, U_{imp}, V	4000
Number of poles	1, 2, 3, 4
Circuit breaker protection	IP20
Electrical endurance, cycles	8 000
Mechanical durability, cycles	20 000
Maximum cross-section of connected wires, mm^2	25
The presence of precious metals (silver), g / pole	0.2
Mass of one pole, kg	0,2
Tightening torque of terminal screws, N • m	2
Contact position indicator (on the front panel)	yes
Possibility of connection to connection clamps of connecting busbars	PIN, FORK
Operating temperature range, °C	–40÷+50
Warranty period of operation, years, from the date of sale to the consumer	5

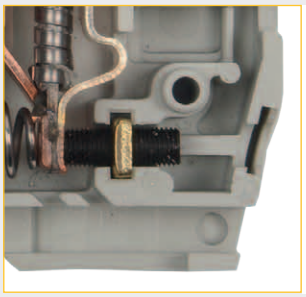
Logistic parameters

Group package						
number of poles	quantity, pcs	weight	length	width	height	volume
1	12	1,32	22	8,5	7,5	0,0014
2	6					
3	4					
4	3					
Transport package						
number of poles	quantity, pcs	weight	length	width	height	volume
1	144	16,1	53,1	23,5	17,5	0,021837
2	72					
3	48					
4	36					

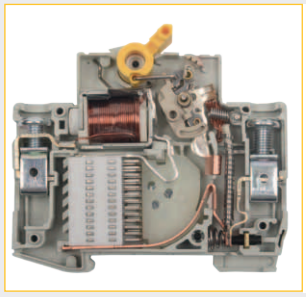
Features



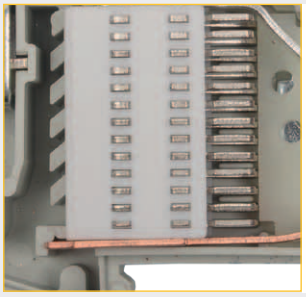
Contact Group made of silver-containing composite provides increased wear resistance of the circuit breaker.



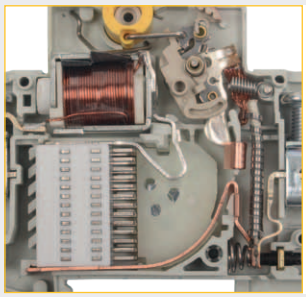
Protection with plexiglass insertion against unauthorized access



The circuit breaker design provides two types of overcurrent protection, which significantly increases the security of distribution and group chains



The enlarged arcing chamber allows you to split an electric arc into a large number of small arcs, thereby extinguishing it faster



Live parts are made of high-quality electrical copper

Fast assembly / disassembly and additional mounting reliability.

Notches on the contact terminals reduce heat loss and increase the mechanical stability of the connection.

Increased housing strength in the conductor attachment area due to two additional rivets and a monolithic front panel

VA47-60M 6 kA curve B

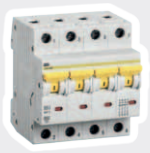
Current In, A	1P	2P	3P	4P
1	MVA31-1-001-B-FCN	MVA31-2-001-B-FCN	MVA31-3-001-B-FCN	MVA31-4-001-B-FCN
2	MVA31-1-002-B-FCN	MVA31-2-002-B-FCN	MVA31-3-002-B-FCN	MVA31-4-002-B-FCN
3	MVA31-1-003-B-FCN	MVA31-2-003-B-FCN	MVA31-3-003-B-FCN	MVA31-4-003-B-FCN
4	MVA31-1-004-B-FCN	MVA31-2-004-B-FCN	MVA31-3-004-B-FCN	MVA31-4-004-B-FCN
5	MVA31-1-005-B-FCN	MVA31-2-005-B-FCN	MVA31-3-005-B-FCN	MVA31-4-005-B-FCN
6	MVA31-1-006-B-FCN	MVA31-2-006-B-FCN	MVA31-3-006-B-FCN	MVA31-4-006-B-FCN
10	MVA31-1-010-B-FCN	MVA31-2-010-B-FCN	MVA31-3-010-B-FCN	MVA31-4-010-B-FCN
16	MVA31-1-016-B-FCN	MVA31-2-016-B-FCN	MVA31-3-016-B-FCN	MVA31-4-016-B-FCN
20	MVA31-1-020-B-FCN	MVA31-2-020-B-FCN	MVA31-3-020-B-FCN	MVA31-4-020-B-FCN
25	MVA31-1-025-B-FCN	MVA31-2-025-B-FCN	MVA31-3-025-B-FCN	MVA31-4-025-B-FCN
32	MVA31-1-032-B-FCN	MVA31-2-032-B-FCN	MVA31-3-032-B-FCN	MVA31-4-032-B-FCN
40	MVA31-1-040-B-FCN	MVA31-2-040-B-FCN	MVA31-3-040-B-FCN	MVA31-4-040-B-FCN
50	MVA31-1-050-B-FCN	MVA31-2-050-B-FCN	MVA31-3-050-B-FCN	MVA31-4-050-B-FCN
63	MVA31-1-063-B-FCN	MVA31-2-063-B-FCN	MVA31-3-063-B-FCN	MVA31-4-063-B-FCN

1P

2P

3P

4P



VA47-60M 6 kA curve C

Current In, A	1P	2P	3P	4P
1	MVA31-1-001-C-FCN	MVA31-2-001-C-FCN	MVA31-3-001-C-FCN	MVA31-4-001-C-FCN
2	MVA31-1-002-C-FCN	MVA31-2-002-C-FCN	MVA31-3-002-C-FCN	MVA31-4-002-C-FCN
3	MVA31-1-003-C-FCN	MVA31-2-003-C-FCN	MVA31-3-003-C-FCN	MVA31-4-003-C-FCN
4	MVA31-1-004-C-FCN	MVA31-2-004-C-FCN	MVA31-3-004-C-FCN	MVA31-4-004-C-FCN
5	MVA31-1-005-C-FCN	MVA31-2-005-C-FCN	MVA31-3-005-C-FCN	MVA31-4-005-C-FCN
6	MVA31-1-006-C-FCN	MVA31-2-006-C-FCN	MVA31-3-006-C-FCN	MVA31-4-006-C-FCN
10	MVA31-1-010-C-FCN	MVA31-2-010-C-FCN	MVA31-3-010-C-FCN	MVA31-4-010-C-FCN
16	MVA31-1-016-C-FCN	MVA31-2-016-C-FCN	MVA31-3-016-C-FCN	MVA31-4-016-C-FCN
20	MVA31-1-020-C-FCN	MVA31-2-020-C-FCN	MVA31-3-020-C-FCN	MVA31-4-020-C-FCN
25	MVA31-1-025-C-FCN	MVA31-2-025-C-FCN	MVA31-3-025-C-FCN	MVA31-4-025-C-FCN
32	MVA31-1-032-C-FCN	MVA31-2-032-C-FCN	MVA31-3-032-C-FCN	MVA31-4-032-C-FCN
40	MVA31-1-040-C-FCN	MVA31-2-040-C-FCN	MVA31-3-040-C-FCN	MVA31-4-040-C-FCN
50	MVA31-1-050-C-FCN	MVA31-2-050-C-FCN	MVA31-3-050-C-FCN	MVA31-4-050-C-FCN
63	MVA31-1-063-C-FCN	MVA31-2-063-C-FCN	MVA31-3-063-C-FCN	MVA31-4-063-C-FCN

VA47-60M 6 kA Curve D

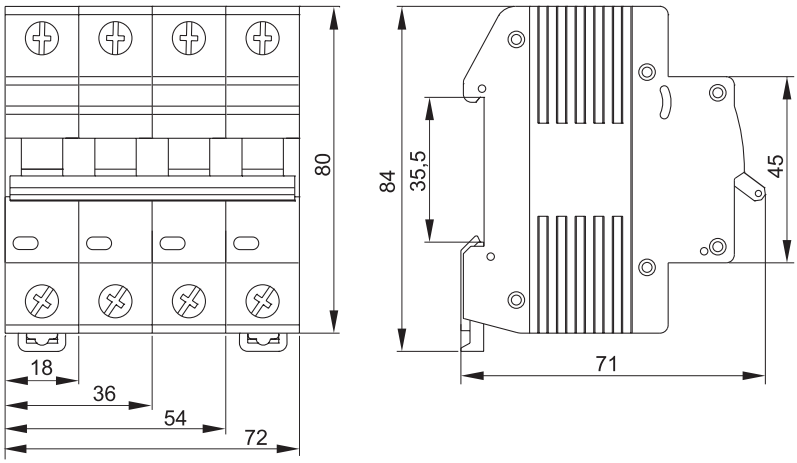
Current In, A	1P	2P	3P	4P
1	MVA31-1-001-D-FCN	MVA31-2-001-D-FCN	MVA31-3-001-D-FCN	MVA31-4-001-D-FCN
2	MVA31-1-002-D-FCN	MVA31-2-002-D-FCN	MVA31-3-002-D-FCN	MVA31-4-002-D-FCN
3	MVA31-1-003-D-FCN	MVA31-2-003-D-FCN	MVA31-3-003-D-FCN	MVA31-4-003-D-FCN
4	MVA31-1-004-D-FCN	MVA31-2-004-D-FCN	MVA31-3-004-D-FCN	MVA31-4-004-D-FCN
5	MVA31-1-005-D-FCN	MVA31-2-005-D-FCN	MVA31-3-005-D-FCN	MVA31-4-005-D-FCN
6	MVA31-1-006-D-FCN	MVA31-2-006-D-FCN	MVA31-3-006-D-FCN	MVA31-4-006-D-FCN
10	MVA31-1-010-D-FCN	MVA31-2-010-D-FCN	MVA31-3-010-D-FCN	MVA31-4-010-D-FCN
16	MVA31-1-016-D-FCN	MVA31-2-016-D-FCN	MVA31-3-016-D-FCN	MVA31-4-016-D-FCN
20	MVA31-1-020-D-FCN	MVA31-2-020-D-FCN	MVA31-3-020-D-FCN	MVA31-4-020-D-FCN
25	MVA31-1-025-D-FCN	MVA31-2-025-D-FCN	MVA31-3-025-D-FCN	MVA31-4-025-D-FCN
32	MVA31-1-032-D-FCN	MVA31-2-032-D-FCN	MVA31-3-032-D-FCN	MVA31-4-032-D-FCN
40	MVA31-1-040-D-FCN	MVA31-2-040-D-FCN	MVA31-3-040-D-FCN	MVA31-4-040-D-FCN
50	MVA31-1-050-D-FCN	MVA31-2-050-D-FCN	MVA31-3-050-D-FCN	MVA31-4-050-D-FCN
63	MVA31-1-063-D-FCN	MVA31-2-063-D-FCN	MVA31-3-063-D-FCN	MVA31-4-063-D-FCN

Dependence of rated current of switches on ambient temperature

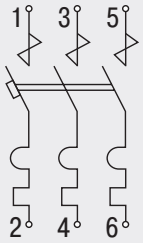
Current In, A	Environment temperature, °C									
	–40	–30	–20	–10	0	10	20	30*	40	50
1	1,35	1,30	1,25	1,20	1,15	1,10	1,05	1	0,93	0,88
2	2,70	2,60	2,50	2,40	2,30	2,20	2,10	2	1,90	1,80
3	4,05	3,90	3,75	3,60	3,45	3,30	3,15	3	2,80	2,60
4	5,40	5,20	5,00	4,80	4,60	4,40	4,20	4	3,70	3,50
5	6,75	6,50	6,25	6,00	5,75	5,50	5,25	5	4,70	4,50
6	8,10	7,80	7,50	7,20	6,90	6,60	6,30	6	5,60	5,30
8	11,20	10,60	10,00	9,60	9,20	8,80	8,40	8	7,40	7,00
10	13,50	13,00	12,50	12,00	11,50	11,00	10,50	10	9,30	8,80
13	17,70	17,00	16,30	15,60	15,00	14,30	13,70	13	12,00	11,40
16	21,60	20,80	20,00	19,20	18,40	17,60	16,80	16	14,90	14,00
20	27,00	26,00	25,00	24,00	23,00	22,00	21,00	20	18,60	17,60
25	33,90	32,60	31,30	30,00	28,80	27,50	26,30	25	23,20	22,00
32	43,20	41,60	40,00	38,40	36,80	35,20	33,60	32	30,00	28,20
40	54,00	52,00	50,00	48,00	46,00	44,00	42,00	40	37,20	35,20
50	67,50	65,00	62,50	60,00	57,50	55,00	52,50	50	46,50	44,00
63	85,00	82,00	78,80	75,60	72,50	69,30	66,20	63	58,60	55,40

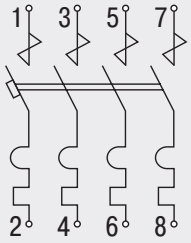
* Control calibration temperature of thermal releases: +30 °C.

VA47-60M Overall and mounting dimensions



Schematic diagram





Modular circuit breaker VA47-150

The VA 47-150 circuit breakers with a high ultimate switching capacity of 15 kA are designed for operation in single-phase or three-phase alternating current electric networks with a rated linear voltage of not more than 400 V at a frequency of 50/60 Hz.
They can be used both in the residential and administrative sectors, as well as in industrial facilities, including especially critical areas, guaranteeing safe and reliable operation of electric lines.

1P

2P

3P

4P

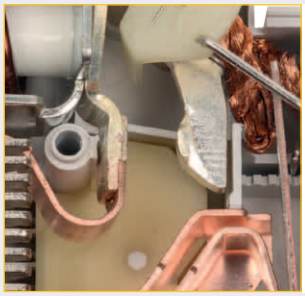
TECHNICAL CHARACTERISTICS	
Conform to Standards	EN 60898-1
Rated voltage with a frequency of 50/60 Hz, V	230/400
Rated current I_n, A	63; 80; 100; 125
Rated breaking capacity, A	15 000
DC voltage, V / pole	60
Curves range	C, D
Rated impulse withstand voltage, U_{imp}, V	6000
Number of poles	1, 2, 3, 4
Circuit breaker protection	IP20
Electrical endurance, cycles	8 000
Mechanical durability, cycles	20 000
Maximum cross-section of connected wires, mm^2	50
The presence of precious metals (silver), g / pole	0.9÷1.2
Mass of one pole, kg	0,2
Tightening torque of terminal screws, N • m	2
Contact position indicator (on the front panel)	yes
Possibility of connection to connection clamps of connecting busbars	PIN, FORK
Operating temperature range, °C	–40÷+50
Warranty period of operation, years, from the date of sale to the consumer	5

Product Range

Current I_n, A	1P	2P	3P	4P
	Item ID			
Curve B				
63	MVA50-1-063-C-ESP	MVA50-2-063-C-ESP	MVA50-3-063-C-ESP	MVA50-4-063-C-ESP
80	MVA50-1-080-C-ESP	MVA50-2-080-C-ESP	MVA50-3-080-C-ESP	MVA50-4-080-C-ESP
100	MVA50-1-100-C-ESP	MVA50-2-100-C-ESP	MVA50-3-100-C-ESP	MVA50-4-100-C-ESP
125	MVA50-1-125-C-ESP	MVA50-2-125-C-ESP	MVA50-3-125-C-ESP	MVA50-4-125-C-ESP
Curve D				
63	MVA50-1-063-D-ESP	MVA50-2-063-D-ESP	MVA50-3-063-D-ESP	MVA50-4-063-D-ESP
80	MVA50-1-080-D-ESP	MVA50-2-080-D-ESP	MVA50-3-080-D-ESP	MVA50-4-080-D-ESP
100	MVA50-1-100-D-ESP	MVA50-2-100-D-ESP	MVA50-3-100-D-ESP	MVA50-4-100-D-ESP
125	MVA50-1-125-D-ESP	MVA50-2-125-D-ESP	MVA50-3-125-D-ESP	MVA50-4-125-D-ESP

Features

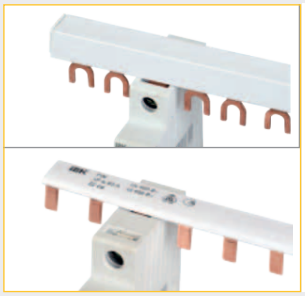
Main circuit status indicator provides accurate contact status information regardless of handle position.



Soldering from a silver-containing composite increases the wear resistance of the contact group and reduces the transition resistance. Provides increased wear resistance of the circuit breaker.

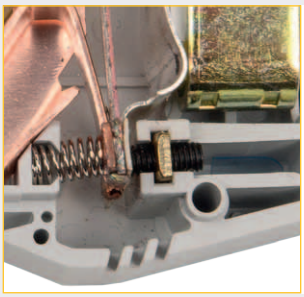
Proprietary and concise design protected by patent. Side logo engraving protects against fake.

Notches on the contact terminals reduce heat loss and increase the mechanical stability of the joint.

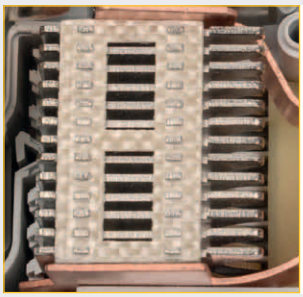


Convenience and reduced installation time. The ability to connect with the PIN bus ensures reliable connection over a larger contact area, reducing heat loss. Simultaneous connection The use of the FORK bus and flexible conductor reduces the load on the conductors.

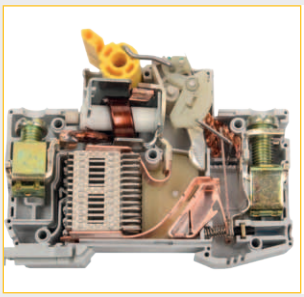
A monolithic front panel increases the strength of the housing in the area of connection of conductors and minimizes the risk of “divergence” of the housing when tightening the screws.



Plexiglass insert protection against unauthorized access.



The enlarged arcing chamber allows you to break an electric arc into a large number of small arcs, thereby quickly extinguishing it

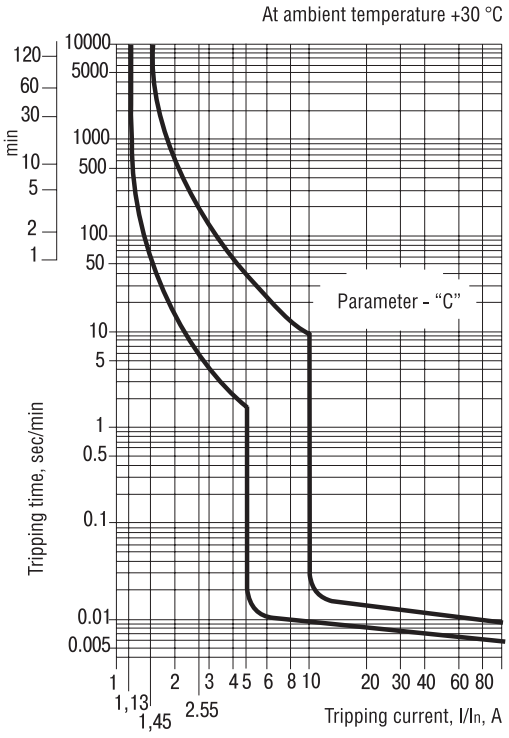


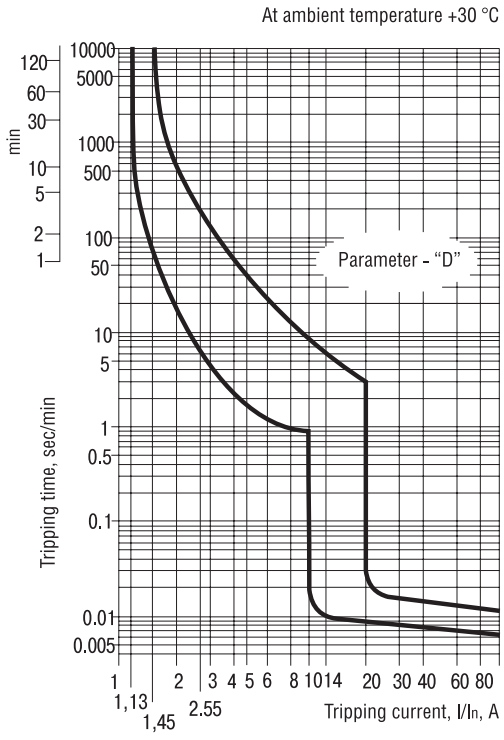
The live parts are made of high quality electrical copper

Reliable protection of the housing against burning by an electric arc in each pole is a combination of plastic and metal (copper-plated steel) plates.

Technical specifications

Time-current operating characteristics

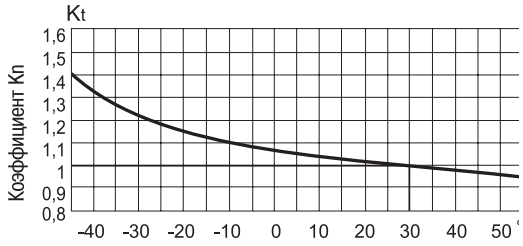




Dependence of the rated current value on the ambient temperature

Current In, A	Ambient temperature, °C									
	-40	-30	-20	-10	0	10	20	30	40	50
63	79,94	77,61	75,35	73,16	71,03	68,04	65,52	63	59,85	56,55
80	101,15	98,27	95,2	92	89,6	86,4	83,2	80	76	72,8
100	125,81	123,94	120,17	116,23	112,51	108,28	104,15	100	95,12	89,96
125	158,18	156,25	146,88	140,9	141,25	136,25	130	125	118,75	111,25

Circuit breakers load change depending on the ambient temperature



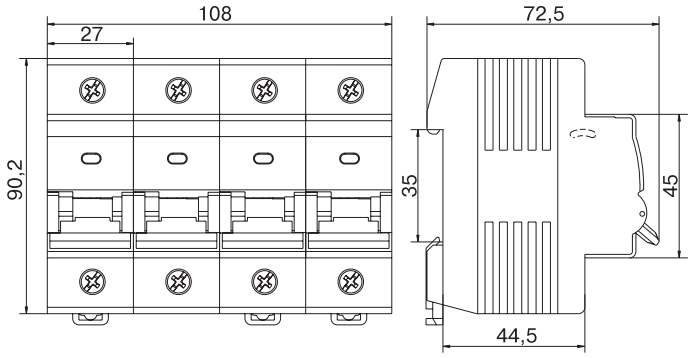
K_t – load factor depending on ambient temperature.

Time-current operating characteristics of circuit breakers operation at overcurrent

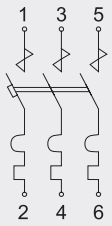
Time-current operating characteristic	The initial state of the switch	Test current	Non-disengagement or disengagement time
C; D	Cold *	1,13 I_n	t ≤ 1 hour (I_n=63 A) – no tripping t ≤ 2 hours (I_n > 63 A) – no tripping
	The test is carried out immediately after loading with a current of 1.13 I_n	1,45 I_n	t < 1 hour (I_n = 63 A) – tripping t < 2 hours (I_n > 63 A) – tripping
	Cold *	2,55 I_n	1 c < t < 120 s (I_n > 32 A) – tripping
C	Cold *	5 I_n	t ≥ 0,1 s – no tripping
		10 I_n	t < 0,1 s – tripping
D	Cold *	10 I_n	t ≥ 0,1 s – no tripping
		20 I_n	t < 0,1 s – tripping

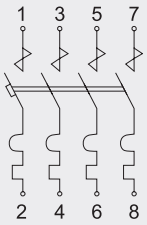
* The term "cold state" means that at the reference temperature of calibration, the current is not passed beforehand.

VA47-150 Overall and mounting dimensions



Schematic diagram





Logistics parameters

Individual package						
number of poles	quantity, pcs	weight	length	width	height	volume
1	1	0,218	9,2	2,9	7,7	0,000205
2	1	0,433	9,2	5,6	7,7	0,000397
3	1	0,645	9,2	8,3	7,7	0,000588
4	1	0,863	9,2	11	7,7	0,000779
Group package						
number of poles	quantity, pcs	weight	length	width	height	volume
1	12	2,6	34,5	9,6	8,1	0,002683
2	6					
3	4					
4	3					
Transport package						
number of poles	quantity, pcs	weight	length	width	height	volume
1	144	26	51	38	18	0,034884
2	72					
3	48					
4	36					

Residual Current Circuit Breaker (RCCB) VD1-63 and VD3-63 type AC

Electromechanical Residual Current Circuit Breaker (RCCB) VD1-63 and VD3-63 series are designed to protect people from electric shock in case of accidental unintentional contact with live parts of electrical equipment. Versions with a tripping setpoint of 300 mA are used for group protection of electrical equipment from fire caused by ignition of the insulation of wires and cables from residual current. Operation of the circuit breakers is allowed only if there is a circuit breaker connected in series with them with overcurrent protection. Products remain operational when the zero working conductor breaks.

TECHNICAL CHARACTERISTICS		
	VD1-63 type AC	VD3-63 type AC
Conform to Standards	IEC EN 61008-1 , IEC EN 61008-2-1	
Rated voltage with a frequency of 50/60 Hz, V	230/400	
Rated current I_n, A	16, 25, 32, 40, 50, 63, 80, 100	
Nominal breaking residual current $I_{\Delta n}$, mA	10, 30, 100, 300	
Nominal conditional residual short circuit current $I_{\Delta c}$, A	4500	6000
Performance characteristic with residual current	AC	
Shutdown time at rated residual current, ms	≤40	
Number of poles	2, 4	
Circuit breaker protection	IP20	
Electrical wear resistance, ON-OFF cycles, not less	4000	
Mechanical wear resistance, ON-OFF cycles, not less	10 000	
Maximum cross-section of connected wires, mm^2	35	
The presence of precious metals (silver), g / pole	0,6÷2,0	
Weight (2- / 4-pole), kg	0,2/0,4	
Operating temperature range, °C	-25÷+40	

Choosing a Serial Protection Device

Device	Current In, A							
RCCB	16	25	32	40	50	63	80	100
MCB	10	16	25	32	40	50	63	80

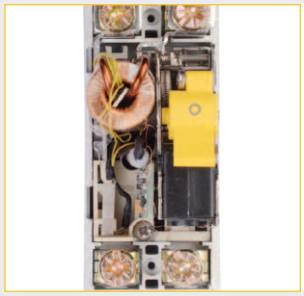
RCCB setpoint selection (IDn)

RCCB current, A	16	25–32	40–50	63	80–100
Single Consumer Protection, mA	10	30	30	30	100
Consumer Protection, mA	30	30	30 (100)	100	300
RCCB fire purpose, mA	300	300	300	300	500

Features

The “TEST” button to check the operability of the device and the correct connection.

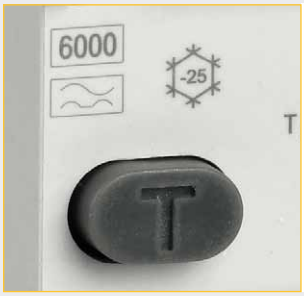
Possibility of simultaneous connection by FORK bus and flexible conductor for distribution of power supply to the circuit through the upper clamps, as well as the possibility of connecting by PIN bus.



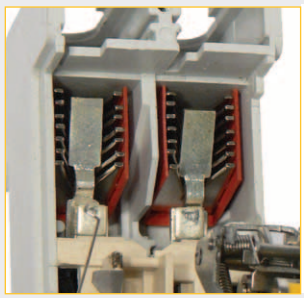
Electromechanical circuit without electronic components. It does not have its own energy consumption and maintains operability when the neutral conductor breaks.

Notches on the contact terminals reduce heat loss and increase the mechanical stability of the connection.

Main circuit status indicator provides accurate contact status information independently from the position of the handle.



A wide range of operating temperatures from –25 to +40 ° C allows using the circuit breaker in various climatic zones



Arcing chambers in each pole provide more effective suppression of an electric arch.

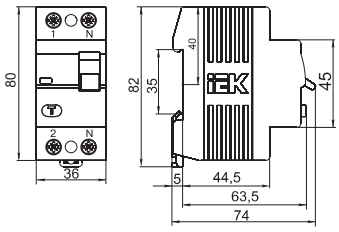
Product Range

Rated current, A	Rated residual current, mA	2P		4P	
		VD1-63, 4,5 kA	VD3-63, 6 kA	VD1-63, 4,5 kA	VD3-63, 6 kA
16	10	MDV10-2-016-10-FCN	MDV20-2-016-10-ESP	MDV10-4-016-10-FCN	MDV20-4-016-10-ESP
25		MDV10-2-025-10-FCN	MDV20-2-025-10-ESP	MDV10-4-025-10-FCN	MDV20-4-025-10-ESP
16	30	MDV10-2-016-30-FCN	MDV20-2-016-30-ESP	MDV10-4-016-30-FCN	MDV20-4-016-30-ESP
25		MDV10-2-025-30-FCN	MDV20-2-025-30-ESP	MDV10-4-025-30-FCN	MDV20-4-025-30-ESP
32		MDV10-2-032-30-FCN	MDV20-2-032-30-ESP	MDV10-4-032-30-FCN	MDV20-4-032-30-ESP
40		MDV10-2-040-30-FCN	MDV20-2-040-30-ESP	MDV10-4-040-30-FCN	MDV20-4-040-30-ESP
50		MDV10-2-050-30-FCN	MDV20-2-050-30-ESP	MDV10-4-050-30-FCN	MDV20-4-050-30-ESP
63		MDV10-2-063-30-FCN	MDV20-2-063-30-ESP	MDV10-4-063-30-FCN	MDV20-4-063-30-ESP
80		MDV10-2-080-30-FCN	MDV20-2-080-30-ESP	MDV10-4-080-30-FCN	MDV20-4-080-30-ESP
100		MDV10-2-100-30-FCN	MDV20-2-100-30-ESP	MDV10-4-100-30-FCN	MDV20-4-100-30-ESP
16	100	MDV10-2-016-100-FCN	MDV20-2-016-100-ESP	–	–
25		MDV10-2-025-100-FCN	MDV20-2-025-100-ESP	MDV10-4-025-100-FCN	MDV20-4-025-100-ESP
32		MDV10-2-032-100-FCN	MDV20-2-032-100-ESP	MDV10-4-032-100-FCN	MDV20-4-032-100-ESP
40		MDV10-2-040-100-FCN	MDV20-2-040-100-ESP	MDV10-4-040-100-FCN	MDV20-4-040-100-ESP
50		MDV10-2-050-100-FCN	MDV20-2-050-100-ESP	MDV10-4-050-100-FCN	MDV20-4-050-100-ESP
63		MDV10-2-063-100-FCN	MDV20-2-063-100-ESP	MDV10-4-063-100-FCN	MDV20-4-063-100-ESP
80		MDV10-2-080-100-FCN	MDV20-2-080-100-ESP	MDV10-4-080-100-FCN	MDV20-4-080-100-ESP
100		MDV10-2-100-100-FCN	MDV20-2-100-100-ESP	MDV10-4-100-100-FCN	MDV20-4-100-100-ESP
16	300	MDV10-2-016-300-FCN	MDV20-2-016-300-ESP	MDV10-4-016-300-FCN	MDV20-4-016-300-ESP
25		MDV10-2-025-300-FCN	MDV20-2-025-300-ESP	MDV10-4-025-300-FCN	MDV20-4-025-300-ESP
32		MDV10-2-032-300-FCN	MDV20-2-032-300-ESP	MDV10-4-032-300-FCN	MDV20-4-032-300-ESP
40		MDV10-2-040-300-FCN	MDV20-2-040-300-ESP	MDV10-4-040-300-FCN	MDV20-4-040-300-ESP
50		MDV10-2-050-300-FCN	MDV20-2-050-300-ESP	MDV10-4-050-300-FCN	MDV20-4-050-300-ESP
63		MDV10-2-063-300-FCN	MDV20-2-063-300-ESP	MDV10-4-063-300-FCN	MDV20-4-063-300-ESP
80		MDV10-2-080-300-FCN	MDV20-2-080-300-ESP	MDV10-4-080-300-FCN	MDV20-4-080-300-ESP
100		MDV10-2-100-300-FCN	MDV20-2-100-300-ESP	MDV10-4-100-300-FCN	MDV20-4-100-300-ESP

2P

4P

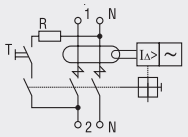
VD1-63 Overall and mounting dimensions



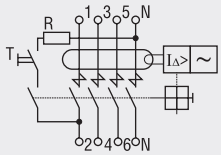
VD1-63 type AC / VD3-63 type AC

Schematic diagram

VD1-63 type A / VD3-63 type AC 2P



VD1-63 type A / VD3-63 type AC 4P



Logistics parameters

Individual package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	1	0,226	8,7	4,2	8	0,000292
4	1	0,408	8,7	7,7	8	0,000536
Transport package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	48	11,08	36	29	18	0,018792
4	24	10,2	32	29	18	0,016704

Residual Current Circuit Breaker VD1-63 and VD3-63 type A

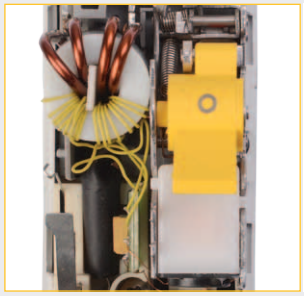
The VD1-63 and VD3-63 series type A residual switch is designed to protect a person from electric shock when accidentally inadvertently touching live parts of electrical installations in 230/400 V alternating current networks and a frequency of 50/60 Hz. The residual switch VD1-63 type A meets the requirements of EN 61008-1 as a residual switch, "functionally independent of the power source".
VD1-63 type A residual switch without built-in protection against overcurrent reacts not only to sinusoidal alternating residual currents, but also to pulsating constant residual currents. Sources of ripple current are, for example, washing machines with speed controllers, adjustable light sources, televisions, VCRs, personal computers, etc.
The VD1-63 type A residual switch is available in two- and four-pole versions for rated currents of 16, 25, 32, 40, 50, 63 A and rated breaking residual currents of 10, 30, 100 mA.

TECHNICAL CHARACTERISTICS		
	VD1-63 type A	VD3-63 type A
Conform to Standards	IEC EN 61008-1 , IEC EN 61008-2-1	
Rated voltage with a frequency of 50 Hz, V	230/400	
Rated current I_n, A	16, 25, 32, 40, 50, 63	
Nominal breaking residual current In, mA	10; 30; 100	
Rated Conditional Short Circuit Current I_{nc}, A	4500	6000
Performance characteristic for residual current with DC component, type	A	
Shutdown time at rated residual current, no more, ms	40	
Number of poles	2; 4	
Circuit breaker protection	IP20	
Electrical wear resistance, ON-OFF cycles, not less	4000	
Mechanical wear resistance, ON-OFF cycles, not less	10 000	
Maximum cross-section of connected wires, mm^2	50	
The presence of precious metals (silver), g / pole	0,51	
Weight (2- / 4-pole), kg	0,2/0,4	
Operating temperature range, ° C	–25+40	

Features

Ergonomic “TEST” button for checking the operability of the device and the correct connection.

The case is marked with terminal clamps to avoid wrong installation. Sealing the screws that connect the housing allows you to avoid unauthorized disassembly of the device.



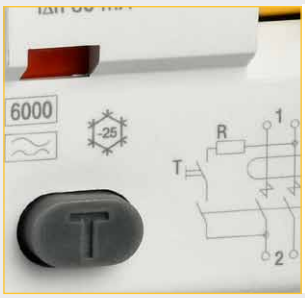
RCCB does not consume energy and remains operational when the neutral conductor breaks.

Main circuit status indicator provides accurate contact status information independently from the position of the handle.

Possibility of simultaneous connection by FORK bus and flexible conductor for distribution of power supply to the circuit through the upper clamps, as well as the possibility of connection by PIN bus.

Notches on the contact terminals reduce heat loss and increase the mechanical strength of the connection.

Arcing gratings with an increased number of plates located at each pole allow more efficient extinction of the electric arc.



Extended operating temperature range from −25 to +40 ° C allows using the switch in various climatic zones.

2P

4P

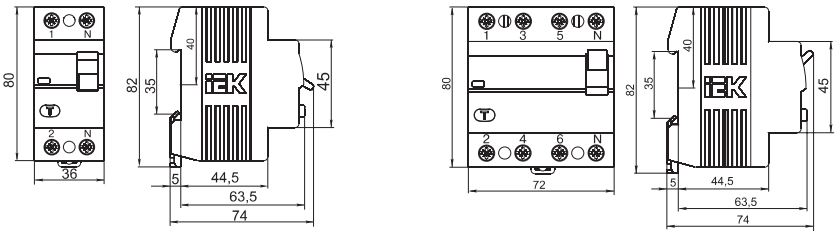
Product Range

Rated current, A	Rated residual current, mA	2P		4P	
		for VD1-63 series, 4,5 kA	for VD3-63 series, 6 kA	for VD1-63 sries, 4,5 kA	for VD3-63 series, 6 kA
16	10	MDV11-2-016-10-FCN	MDV21-2-016-010-ESP	MDV11-4-016-10-FCN	MDV21-4-016-010-ESP
25		MDV11-2-025-10-FCN	MDV21-2-025-010-ESP	MDV11-4-025-10-FCN	MDV21-4-025-010-ESP
16	30	MDV11-2-016-30-FCN	MDV21-2-016-030-ESP	MDV11-4-016-30-FCN	MDV21-4-016-030-ESP
25		MDV11-2-025-30-FCN	MDV21-2-025-030-ESP	MDV11-4-025-30-FCN	MDV21-4-025-030-ESP
32		MDV11-2-032-30-FCN	MDV21-2-032-030-ESP	MDV11-4-032-30-FCN	MDV21-4-032-030-ESP
40		MDV11-2-040-30-FCN	MDV21-2-040-030-ESP	MDV11-4-040-30-FCN	MDV21-4-040-030-ESP
50		MDV11-2-050-30-FCN	MDV21-2-050-030-ESP	MDV11-4-050-30-FCN	MDV21-4-050-030-ESP
63		MDV11-2-063-30-FCN	MDV21-2-063-030-ESP	MDV11-4-063-30-FCN	MDV21-4-063-030-ESP
80		MDV11-2-080-30-FCN	MDV21-2-080-030-ESP	MDV11-4-080-30-FCN	MDV21-4-080-030-ESP
100		MDV11-2-100-30-FCN	MDV21-2-100-030-ESP	MDV11-4-100-30-FCN	MDV21-4-100-030-ESP
16	100	MDV11-2-016-100-FCN	MDV21-2-016-100-ESP	MDV11-4-016-100-FCN	MDV21-4-016-100-ESP
25		MDV11-2-025-100-FCN	MDV21-2-025-100-ESP	MDV11-4-025-100-FCN	MDV21-4-025-100-ESP
32		MDV11-2-032-100-FCN	MDV21-2-032-100-ESP	MDV11-4-032-100-FCN	MDV21-4-032-100-ESP
40		MDV11-2-040-100-FCN	MDV21-2-040-100-ESP	MDV11-4-040-100-FCN	MDV21-4-040-100-ESP
50		MDV11-2-050-100-FCN	MDV21-2-050-100-ESP	MDV11-4-050-100-FCN	MDV21-4-050-100-ESP
63		MDV11-2-063-100-FCN	MDV21-2-063-100-ESP	MDV11-4-063-100-FCN	MDV21-4-063-100-ESP
80		MDV11-2-080-100-FCN	MDV21-2-080-100-ESP	MDV11-4-080-100-FCN	MDV21-4-080-100-ESP
100		MDV11-2-100-100-FCN	MDV21-2-100-100-ESP	MDV11-4-100-100-FCN	MDV21-4-100-100-ESP

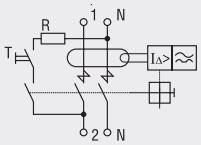
VD1-63 (type A) Overall and mounting dimensions

VD1-63 type A / VD3-63 type A

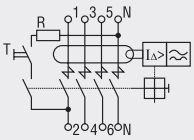
Schematic diagram



VD1-63 type A / VD3-63 type A 2P



VD1-63 type A / VD3-63 type A 4P



Logistics parameters

Individual package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	1	0,226	8,7	4,2	8	0,000292
4	1	0,408	8,7	7,7	8	0,000536
Transport package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	48	11,08	36	29	18	0,018792
4	24	10,2	32	29	18	0,016704

Residual Current Circuit Breaker VD3-63S (selective)

Residual Current Circuit Breaker without built-in protection against overcurrent, functionally independent of mains voltage, domestic or similar applications with a shutdown time of type VD3-63S, are designed to automatically turn off power in the event of residual leakage currents in single-phase and three-phase alternating current networks current rated voltage up to 400 V.
VD3-63S are designed for installation in low-voltage complex input and distribution devices operated in residential, public and industrial facilities, as well as on construction sites. Ultimate switching capacity - 6000 A.
20 standard versions for 6 rated currents from 25 to 80 A.

TECHNICAL CHARACTERISTICS	
Conform to Standards	IEC EN 61008-1, IEC EN 61008-2-1
Number of poles	2; 4
Overcurrent protection at the poles	no
Nominal breaking residual current In, mA	100; 300
Range of rated currents In, A	16; 25; 32; 40; 50; 63
Performance characteristic for residual current with DC component, type	AC
Rated Conditional Short Circuit Current Inc, A	6000
Circuit breaker protection	IP20
Electrical wear resistance, ON-OFF cycles, not less	4000
Mechanical wear resistance, ON-OFF cycles, not less	10 000
Maximum cross-section of connected wires, mm^2	50
Operating temperature range, °C	–25÷+40

Product Range

Rated current, A	Rated residual current, mA	2P	4P
25	100	MDV22-2-025-100-ESP	MDV22-4-025-100-ESP
32		MDV22-2-032-100-ESP	MDV22-4-032-100-ESP
40		MDV22-2-040-100-ESP	MDV22-4-040-100-ESP
50		MDV22-2-050-100-ESP	MDV22-4-050-100-ESP
63		MDV22-2-063-100-ESP	MDV22-4-063-100-ESP
25	300	MDV22-2-025-300-ESP	MDV22-4-025-300-ESP
32		MDV22-2-032-300-ESP	MDV22-4-032-300-ESP
40		MDV22-2-040-300-ESP	MDV22-4-040-300-ESP
50		MDV22-2-050-300-ESP	MDV22-4-050-300-ESP
63		MDV22-2-063-300-ESP	MDV22-4-063-300-ESP

2P

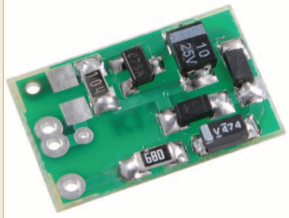
4P

Specifications

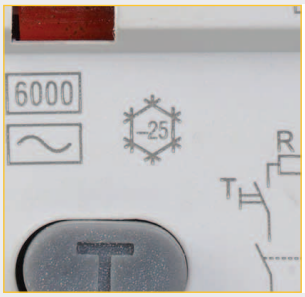
Tripping and non-tripping times for operation in the presence of residual current

Characteristic	Residual Current, A			
	$I_{\Delta n}$	2 $I_{\Delta n}$	5 $I_{\Delta n}$	500 A
Maximum shutdown time, s	0,5	0,2	0,15	0,15
Minimum non-shutdown time, s	0,13	0,06	0,05	0,04

Features

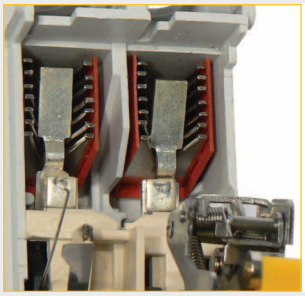


An electromechanical device with a built-in time delay circuit does not have its own energy consumption and remains operable when the neutral conductor breaks.

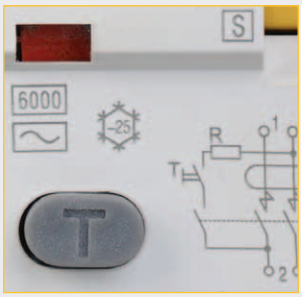


A wide range of operating temperatures from –25 to +40 ° C allows using the circuit breaker in various climatic zones.

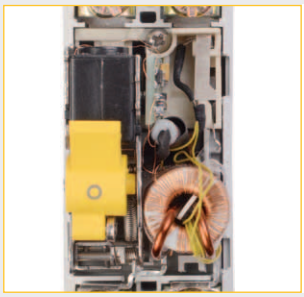
Main circuit status indicator provides accurate contact status information regardless of handle position.



Arcing chambers in each pole provide more effective suppression of an electric arch.



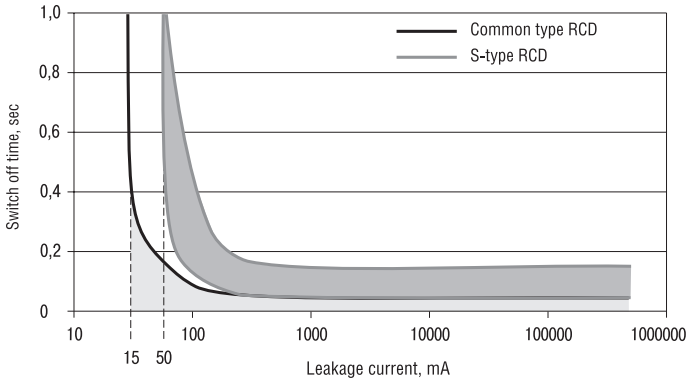
The “TEST” button to check the device’s operability and proper connection.



A new scheme of the selectivity node of increased reliability: patent No. RU 116709.

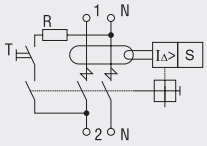
Notches on the contact clamps reduce heat loss and increase the mechanical strength of the connection.

Tripping curves for RCCBs of general type and RCCBs of type S

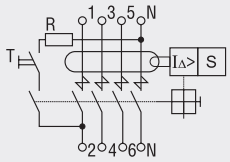


VD3-63S Schematic diagram

VD3-63S 2P



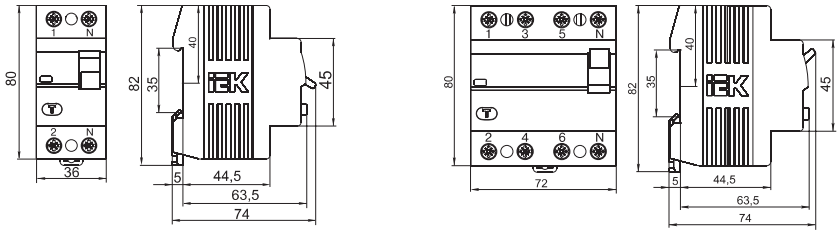
VD3-63S 4P



Values of the Joule integral and peak current maintained by VD3-63S

Rated current I_n, A	25	32	40	50	63	80
Joule integral I2 t, kA2	2,3	2,3	3	4,05	4,05	5,1
Peak current Ip, kA	6	6	11,5	28	28	47

VD1-63S Overall Dimensions



Logistics parameters

Individual package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	1	0,226	8,7	4,2	8	0,000292
4	1	0,408	8,7	7,7	8	0,000536
Transport package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	48	11,08	36	29	18	0,018792
4	24	10,2	32	29	18	0,016704

RCBOs AD12, AD12M, AD14

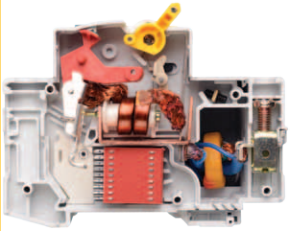
High speed safety switches provide:
– in versions with operating settings of 10, 30 and 100 mA – protection of people from electric shock with direct unintentional contact with live parts of electrical equipment;
– performed with a tripping setpoint of 300 mA - fire protection due to ignition of insulation of live parts;
– protection against overload and short circuit;
– protection against an unacceptable increase in network voltage (AD12M).

In the products, an indication of the operation from the residual current is provided, and for the AD12M also an LED indication of the on state. AD12M maintains operability while reducing the voltage of the electric network to 50 V.

As switching devices in the products, automatic switches VA47-29 of the new series are used.

TECHNICAL CHARACTERISTICS			
	AD12	AD12M	AD14
Conform to Standards	IEC EN 61009-1, IEC EN 61009-2-2		
Rated voltage with a frequency of 50 Hz, V	230		230/400
Rated current I_n, A	6, 10, 16, 20, 25, 32, 40, 50, 63	10, 16, 20, 25, 32, 40, 50, 63	6, 10, 16, 25, 32, 40, 50, 63
Nominal breaking residual current I_n, mA	10, 30, 100, 300	30	10, 30, 100, 300
Rated breaking capacity, A	4500		
Performance characteristic with residual current	AC	A	AC
Shutdown time at rated residual current, ms	≤ 40		
Number of poles	2		4
Circuit breaker protection	IP20		
Wear resistance, ON-OFF cycles, not less	20 000		10 000
Maximum cross-section of connected conductors, mm^2	2,5÷ 25		
Weight (2- / 4-pole), kg	0,26		0,29
Operating temperature range, °C	-25÷ +40		
Trigger voltage when exceeding the mains voltage U off, V	–	265 ± 10	–
The duration of exposure voltage to trip, s	0,2÷0,5		

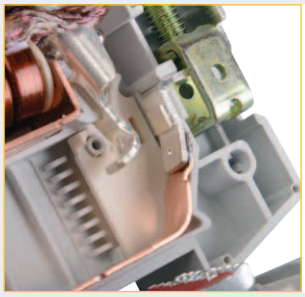
Features



Advanced arc extinguishing system: patent No. RU 139886.

Contact indicator.

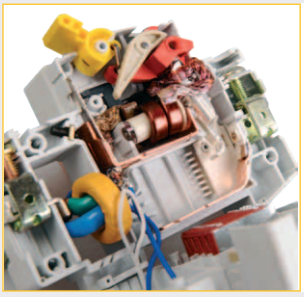
Possibility of simultaneous connection by FORK bus and flexible conductor for distribution of power supply to the circuit through the upper clamps, as well as the possibility of connecting by PIN bus



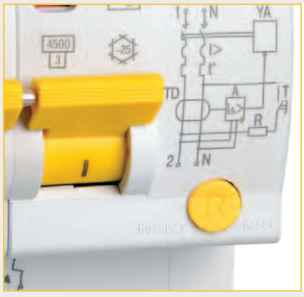
Soldering from a silver-containing composite increases the wear resistance of the contact group and reduces the transition resistance.

Increased strength in the zone of connection of conductors due to two additional rivets and a monolithic front panel.

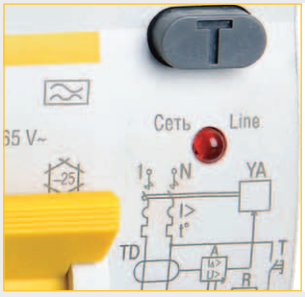
The new design AD12 / 12M / 14 allows you to connect additional devices KS47, KSV47 screwless.



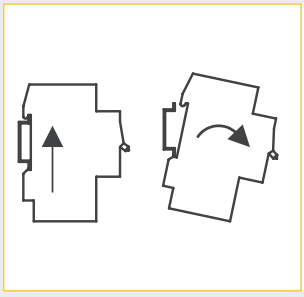
Compact energy-efficient design: the use of a smaller residual block saves space in switchgear.



The residual current trip indicator is the “Return” button.
For AD12 / 14 characteristic “AC”, for AD12M - characteristic “A”



LED indication of voltage presence on the “Load” terminals and built-in protection against long-term (265 V; 0.5 s) network overvoltage (AD12M).



Convenient assembly / disassembly without the use of tools.

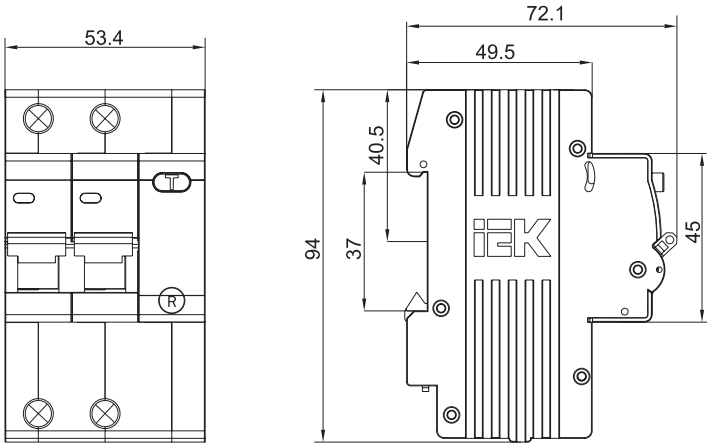
2P

4P

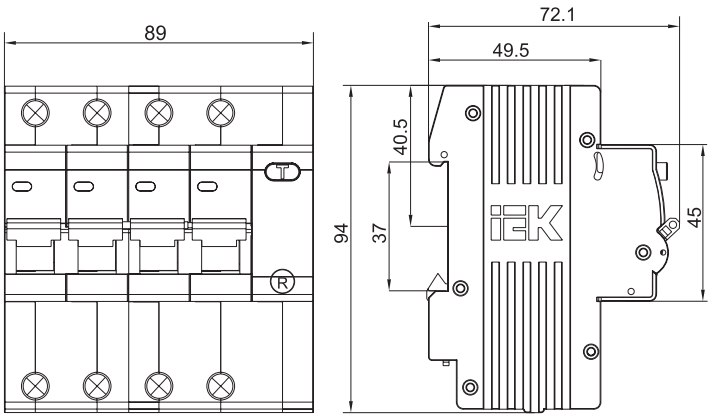
Product Range

Rated current, A	Rated residual current, A	Curves	2P		4P
			AD12	AD12M	AD14
6	10	C	MAD10-2-006-C-010-FCN		MAD10-4-006-C-010-FCN
10			MAD10-2-010-C-010-FCN		MAD10-4-010-C-010-FCN
16			MAD10-2-016-C-010-FCN		MAD10-4-016-C-010-FCN
25			MAD10-2-025-C-010-FCN		–
32			MAD10-2-032-C-010-FCN		–
40			MAD10-2-040-C-010-FCN		–
10	30	C	MAD10-2-010-C-030-FCN	MAD12-2-010-C-030-FCN	MAD10-4-010-C-030-FCN
16			MAD10-2-016-C-030-FCN	MAD12-2-016-C-030-FCN	MAD10-4-016-C-030-FCN
20			MAD10-2-020-C-030-FCN	MAD12-2-020-C-030-FCN	–
25			MAD10-2-025-C-030-FCN	MAD12-2-025-C-030-FCN	MAD10-4-025-C-030-FCN
32			MAD10-2-032-C-030-FCN	MAD12-2-032-C-030-FCN	MAD10-4-032-C-030-FCN
40			MAD10-2-040-C-030-FCN	MAD12-2-040-C-030-FCN	MAD10-4-040-C-030-FCN
50			MAD10-2-050-C-030-FCN	MAD12-2-050-C-030-FCN	MAD10-4-050-C-030-FCN
63			MAD10-2-063-C-030-FCN	MAD12-2-063-C-030-FCN	MAD10-4-063-C-030-FCN
16		B	MAD10-2-016-B-030-FCN	MAD12-2-016-B-030-FCN	–
25			MAD10-2-025-B-030-FCN	MAD12-2-025-B-030-FCN	–
10	100	C	MAD10-2-010-C-100-FCN		–
16			MAD10-2-016-C-100-FCN		MAD10-4-016-C-100-FCN
25			MAD10-2-025-C-100-FCN		MAD10-4-025-C-100-FCN
32			MAD10-2-032-C-100-FCN		MAD10-4-032-C-100-FCN
40			MAD10-2-040-C-100-FCN		MAD10-4-040-C-100-FCN
50			MAD10-2-050-C-100-FCN		MAD10-4-050-C-100-FCN
63			MAD10-2-063-C-100-FCN		MAD10-4-063-C-100-FCN
16	300	C	–		MAD10-4-016-C-300-FCN
25			MAD10-2-025-C-300-FCN		MAD10-4-025-C-300-FCN
32			–		MAD10-4-032-C-300-FCN
40			MAD10-2-040-C-300-FCN		MAD10-4-040-C-300-FCN
50			MAD10-2-050-C-300-FCN		MAD10-4-050-C-300-FCN
63			MAD10-2-063-C-300-FCN		MAD10-4-063-C-300-FCN

AD12, AD12M Overall and mounting dimensions

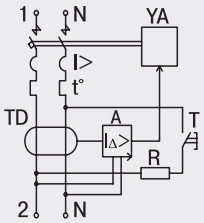


AD14 Overall and mounting dimensions

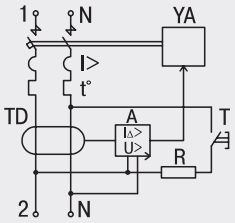


Schematic diagram

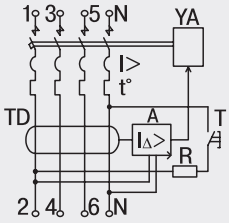
AD12



AD12M



AD14



Logistics parameters

	Group package		Transport package	
number of poles	quantity, pcs.	weight, kg	quantity, pcs.	weight, kg
2	5	1.6	40	15
4	3	1.7	24	13.6

RCBO AVDT32

Currents up to 40 A

Currents 50, 63 A

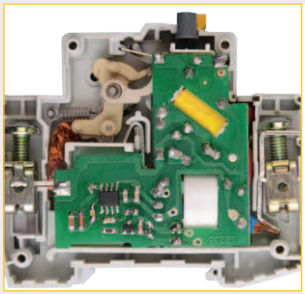
High-speed circuit breakers protect people from electric shock with direct unintentional contact with live parts of electrical equipment and protection against overload and short circuit.
When installing the circuit breaker, it is necessary to strictly observe the phasing in accordance with the markings printed on the case, since the thermal and electromagnetic releases are located in the phase pole of the device.

TECHNICAL CHARACTERISTICS	
Conform to Standards	IEC EN 61009-1, IEC EN 61009-2-2
Rated voltage with a frequency of 50 Hz, V	230
Rated current I_n, A	6; 10; 16; 20; 25; 32; 40; 50; 63
EMC trip characteristics	B, C
Number of poles	1+N
Nominal breaking residual current I_n, mA	10; 30; 100
Rated breaking capacity, A	6000
Performance characteristic with residual current, type	A
Shutdown time at nom. diff. current, ms	≤ 40
Wear resistance, ON-OFF cycles, not less	10 000
Circuit breaker protection	IP20
The presence of precious metals, g / pole	0,85
Maximum cross section of connected conductors, mm^2	25
Weight kg	0,19
Dissipation power, W, no more	6,5

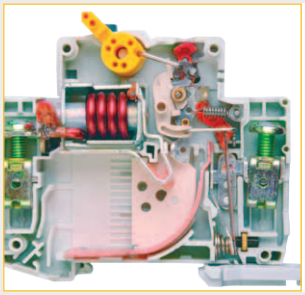
Product Range

Rated current, A	Rated residual current, A	Curves	Product ID
16	10	B	MAD22-5-016-B-10
25			MAD22-5-025-B-10
6	30	C	MAD22-5-006-C-30
10			MAD22-5-010-C-30
16			MAD22-5-016-C-30
20			MAD22-5-020-C-30
25			MAD22-5-025-C-30
32			MAD22-5-032-C-30
40			MAD22-5-040-C-30
40	100	C	MAD22-5-040-C-100
50			MAD22-5-050-C-100
63			MAD22-5-063-C-100

Features

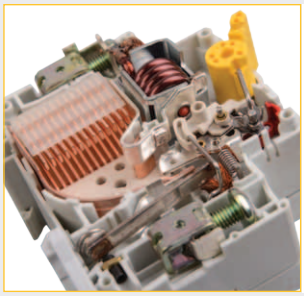


The combined circuit with an electronic residual protection module, a class D varistor and a built-in switch of the VA47-60 series provides 4 types of protection: from residual current (leakage current); short circuit; overload; as well as protection of the internal parts of the device from surge surges.



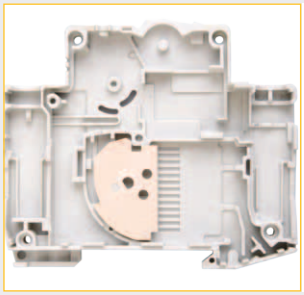
Anti-interference system, eliminating false alarms: patent No. RU 124453.

Possibility of simultaneous connection by FORK bus and flexible conductor for distribution of power supply to the circuit through the upper clamps, as well as the possibility of connecting by PIN bus.



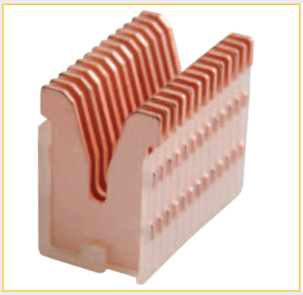
Soldering from a silver-containing composite increases the wear resistance of the contact group and reduces the transition resistance.

Main circuit status indicator provides accurate contact status information regardless of handle position.



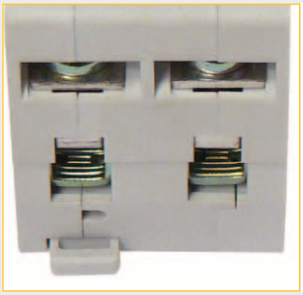
Additional protection against burn-out of the apparatus body due to the arc and heat removal due to the anti-burn plate.

A wide range of operating temperatures from –25 to +40 ° C allows using the circuit breaker in various climatic zones.



Arcing chamber of 13 steel plates for effective arc extinction.

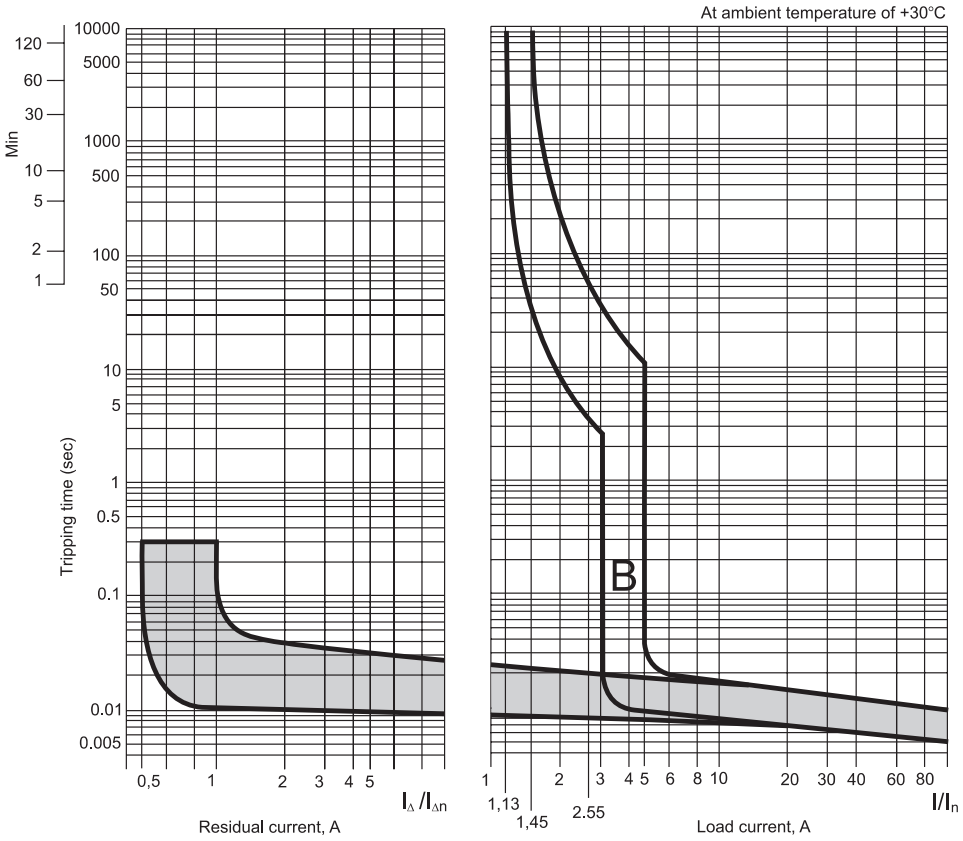
Fast installation, additional reliability of fastening on a DIN rail by means of a latch with a double fixed position.



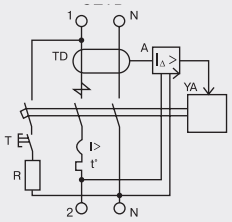
Notches on the contact terminals reduce heat loss and increase the mechanical stability of the connection.

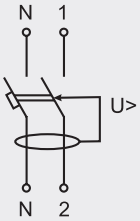
Technical characteristics

Curves of time-current switch-off operating characteristics

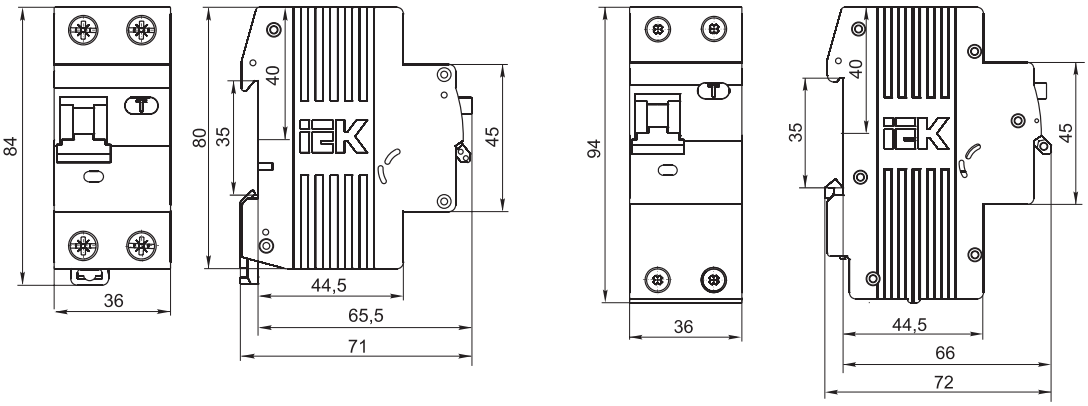


Schematic diagram

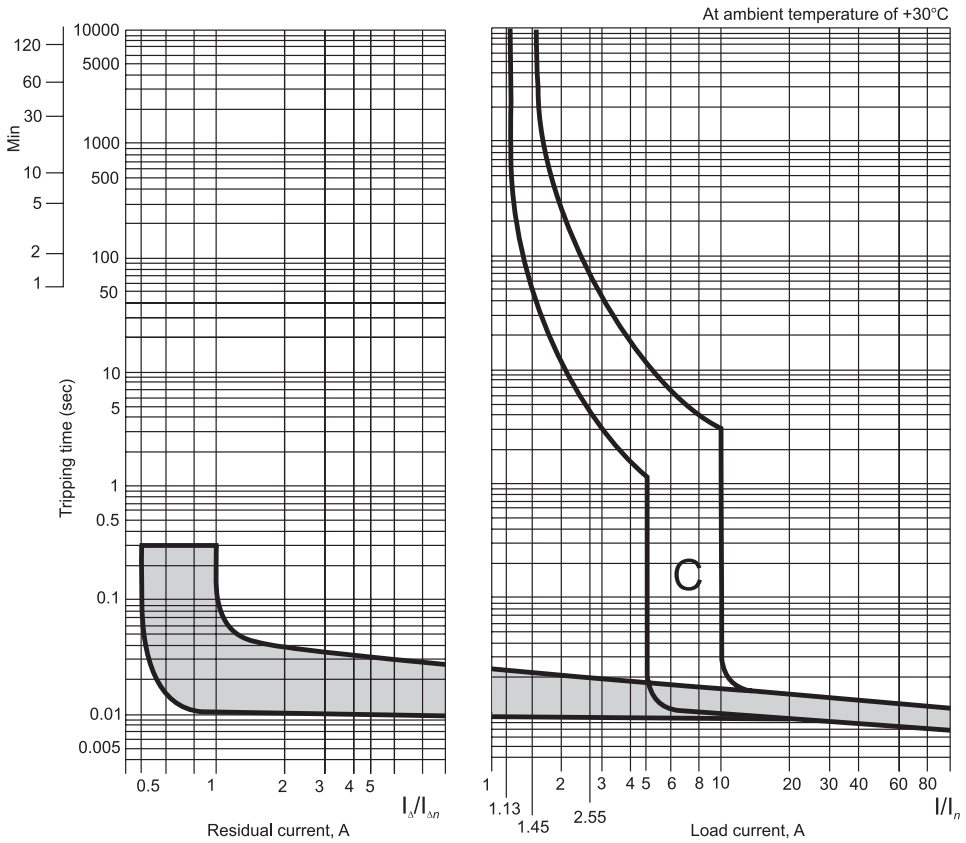




AVDT32 Overall and mounting dimensions



Curves of time-current switch-off operating characteristics



Logistics parameters

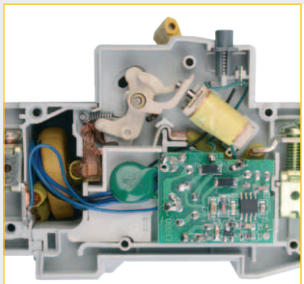
Individual package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	1	0,2	8,2	3,9	7,3	0,000402
Group package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	6	1,2	24,5	8,5	8	0,002411
Transport package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	60	12	47	27	19	0,024111

RCBO Residual Current Breaker Operated AVDT34

AVDT34 residual current circuit breakers are designed to protect a person from electric shock when the insulation of electrical installations is damaged, to prevent fires due to leakage currents to the ground, and to protect against overload and short circuit in 400 V alternating current networks with a frequency of 50 Hz.
AVDT34 with built-in protection against overcurrent respond not only to sinusoidal alternating residual currents, but also to pulsating constant residual currents. A pulsating current source is, for example, washing machines with speed controllers, adjustable light sources, televisions, VCRs, personal computers, etc. AVDT34 are available in four-pole design for rated currents of 6, 10, 16, 25, 32, 40, 50, 63 A and rated breaking residual currents of 10, 30, 100, 300 mA.

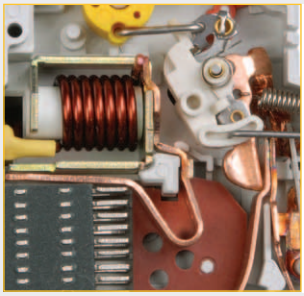
TECHNICAL CHARACTERISTICS	
Conform to Standards	IEC EN 61009-1, IEC EN 61009-2-2
Number of poles	3P+N
Overcurrent protection	In each phase pole
Rated operational voltage U_e, V	400
Operating voltage range U, V	50 ÷ 460
Nominal frequency of a network, Hz	50
Rated current I_n, A	6; 10; 16; 20; 25; 32; 40; 50; 63
Rated breaking residual current (setting) $I_{\Delta n}$, mA	10; 30; 100; 300
Rated non-disconnecting residual current $I_{\Delta n0}$, A	0,5 $I_{\Delta n}$
Rated maximum switching capacity I_{cn}, A	6000
Performance characteristic for residual current with DC component, type	A
Curves range	C
Mechanical wear resistance, ON-OFF cycles, not less	10 000
Electrical wear resistance, ON-OFF cycles, not less	6000
The maximum cross section of the wire connected to the clamps, mm^2	25
The presence of precious metals: silver, g / pole	0,8
Weight kg	0,4
Degree of protection	IP20

Features



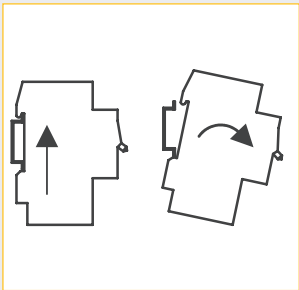
Anti-interference system, eliminating false alarms: patent No. RU 124453.

Possibility of simultaneous connection by FORK bus and flexible conductor for distribution of power supply to the circuit through the upper clamps, as well as the possibility of connecting by PIN bus.



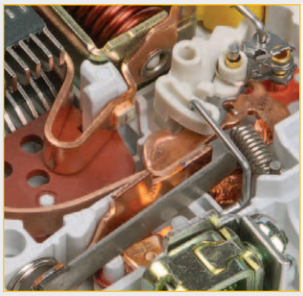
The mechanism of free uncoupling of a new design, which provides quick rupture of the main contacts

Extension of the AVDT34 line to currents of 40, 50, 63 A with a setting of 30, 100, 300 mA.



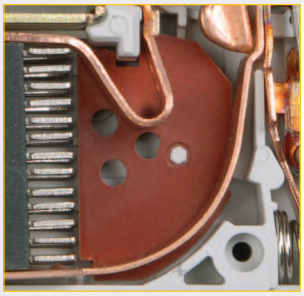
The design of the AVDT34 provides quick assembly / disassembly without the use of tools and additional reliability of mounting on a DIN rail.

Ergonomic “TEST” button for checking device operability and proper connection.

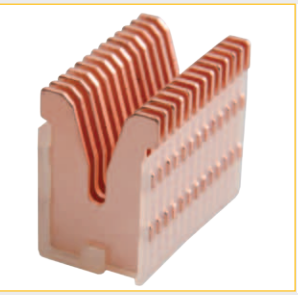


Soldering from a silver-containing composite increases the wear resistance of the contact group and reduces the transition resistance.

Notches on the contact terminals reduce heat loss and increase the mechanical stability of the connection.



The movable contact arcing plate is made in the form of a smooth curve, which greatly facilitates the arc retraction into the arcing chamber.

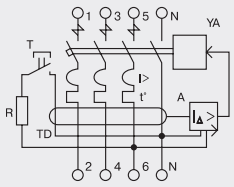


Arcing chamber of 13 steel plates for effective arc extinction.

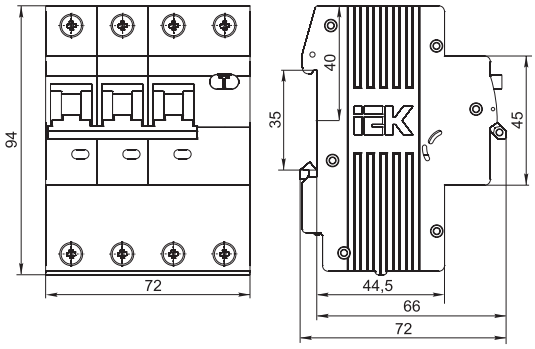
Product Range

Rated current, A	Rated residual current, mA	Product ID
6	10	MAD22-6-006-C-10
10		MAD22-6-010-C-10
16		MAD22-6-016-C-10
10	30	MAD22-6-010-C-30
16		MAD22-6-016-C-30
20		MAD22-6-020-C-30
25		MAD22-6-025-C-30
32		MAD22-6-032-C-30
40		MAD22-6-040-C-30
50		MAD22-6-050-C-30
63		MAD22-6-063-C-30
16	100	MAD22-6-016-C-100
25		MAD22-6-025-C-100
32		MAD22-6-032-C-100
40		MAD22-6-040-C-100
50		MAD22-6-050-C-100
63		MAD22-6-063-C-100
16	300	MAD22-6-016-C-300
25		MAD22-6-025-C-300
40		MAD22-6-040-C-300
50		MAD22-6-050-C-300
63		MAD22-6-063-C-300

Electric scheme



AVDT34 Overall and mounting dimensions



Logistics parameters

Individual package						
number of poles	quantity, pcs	weight	length	width	height	volume
4	1	0,467	9,5	7,3	7,3	0,000588
Group package						
number of poles	quantity, pcs	weight	length	width	height	volume
4	3	1,4	24,5	9	8	0,001764
Transport package						
number of poles	quantity, pcs	weight	length	width	height	volume
4	30	14	18	46	26	0,01764

RCBO AVDT32EM

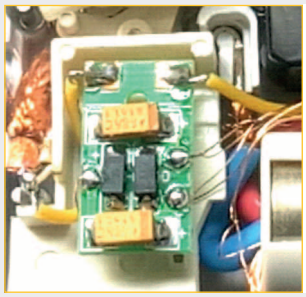
High-speed circuit breakers protect people from electric shock with direct unintentional contact with live parts of electrical equipment and protection against overload and short circuit.
When installing the circuit breaker, it is necessary to strictly observe the phasing in accordance with the markings printed on the case, since the thermal and electromagnetic releases are located in the phase pole of the device.

The AVDT32EM residual current circuit breakers combine the functions of an automatic circuit breaker and an Electromechanical RCD type A. they Disable the protected section of the network when a leakage current to earth or an overcurrent is detected.

The devices respond to both sinusoidal alternating residual current and pulsating direct residual current (type A), which allows it to be used in buildings and residential areas saturated with household appliances.
They do not have their own electricity consumption.

TECHNICAL CHARACTERISTICS	
Conform to Standards	IEC EN 61009-1, IEC EN 61009-2-2
Rated voltage with a frequency of 50 Hz, V	230
Rated current I_n, A	6; 10; 16; 20; 25; 32; 40
Curves range	C
Number of poles	1+N
Nominal breaking residual current I_n, mA	100, 300
Rated breaking capacity, A	10 000
Performance characteristic with residual current, type	A
Shutdown time at nom. diff. current, ms	≤ 40
Wear resistance, ON-OFF cycles, not less	12 000
Circuit breaker protection	IP20
The presence of precious metals, g / pole	0,85
Maximum cross section of connected conductors, mm^2	25
Weight kg	0,25
Dissipation power, W, no more	6,5

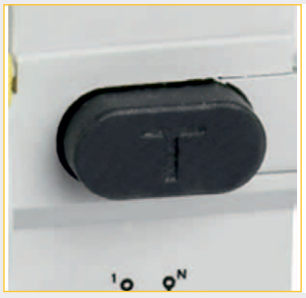
Features



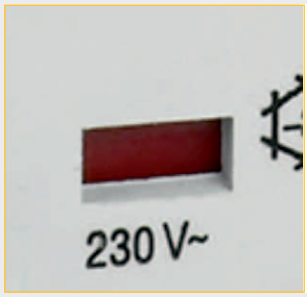
Surge overvoltage protection

Connection variability: it is possible to connect the FORK bus

Compact 2-module design



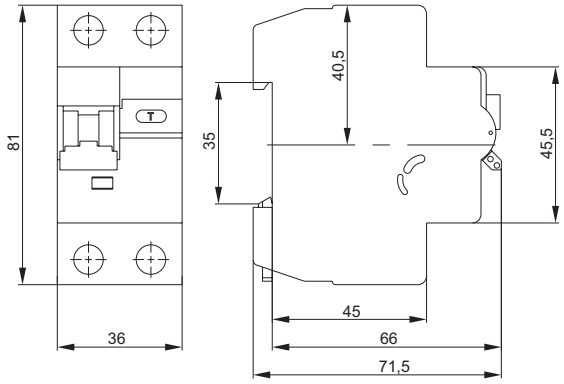
"TEST" button to check the functionality and correct connection.



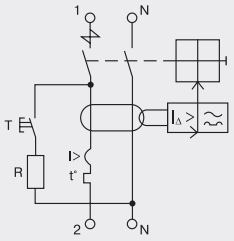
The contact status indicator is mechanically linked to the lever system of the device.

Notches on the terminals increase the mechanical stability of the connection.

AVDT32EM overall dimensions



electric scheme



Rated current, A	Rated residual current, A	Curve	Product ID
6	300	C	IND-MVD14-1-006-C-300
10			IND-MVD14-1-010-C-300
16			IND-MVD14-1-016-C-300
20			IND-MVD14-1-020-C-300
25			IND-MVD14-1-025-C-300
32			IND-MVD14-1-032-C-300
40			IND-MVD14-1-040-C-300

Logistics parameters

Individual package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	1	0,23	8,3	3,8	7,4	0,000367
Group package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	6	1,38	24,5	8,6	8	0,002200
Transport package						
number of poles	quantity, pcs	weight	length	width	height	volume
2	48	13,8	47	26	18	0,021996

Switch disconnector VN-32

The VN-32 is a switching disconnector without a protection function. Functionally, the VN-32 is a circuit breaker with double contact breaks, which eliminates overlap even with high humidity. In the versions of the 100 A and 125 A switch, two parallel contact bridges are provided in order to increase the reliability of contacting and limit heat losses at contact junctions.
The circuit breaker does not have arc suppression elements and cannot be used to turn capacitive and inductive loads on and off.

TECHNICAL CHARACTERISTICS	
Conform to Standards	IEC EN 60947-1 IEC EN 60947-3
Rated voltage with a frequency of 50/60 Hz, V	230/400
Rated operational current I_e, A	20; 25; 32; 40; 63; 80; 100; 125
Rated short-time current with t = 1 s	15 I_e
Application category	AC 22 B
Number of poles	1, 2, 3, 4
Circuit breaker protection	IP20
Electrical wear resistance, ON-OFF cycles, not less	10 000
Mechanical wear resistance, ON-OFF cycles, not less	20 000
Maximum cross-section of connected wires, mm^2	35
The presence of precious metals (silver), g / pole	1,2
Mass of one pole, no more, kg	0,13
Operating temperature range, °C	–40÷+50

1P

2P

3P

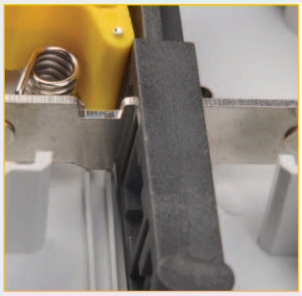
4P

Product Range

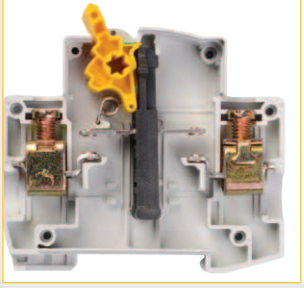
Rated current, A	1P	2P	3P	4P
20	MNV10-1-020-FCN	MNV10-2-020-FCN	MNV10-3-020-FCN	MNV10-4-020-FCN
25	MNV10-1-025-FCN	MNV10-2-025-FCN	MNV10-3-025-FCN	MNV10-4-025-FCN
32	MNV10-1-032-FCN	MNV10-2-032-FCN	MNV10-3-032-FCN	MNV10-4-032-FCN
40	MNV10-1-040-FCN	MNV10-2-040-FCN	MNV10-3-040-FCN	MNV10-4-040-FCN
63	MNV10-1-063-FCN	MNV10-2-063-FCN	MNV10-3-063-FCN	MNV10-4-063-FCN
80	MNV10-1-080-FCN	MNV10-2-080-FCN	MNV10-3-080-FCN	MNV10-4-080-FCN
100	MNV10-1-100-FCN	MNV10-2-100-FCN	MNV10-3-100-FCN	MNV10-4-100-FCN
125	MNV10-1-125-FCN	MNV10-2-125-FCN	MNV10-3-125-FCN	MNV10-4-125-FCN

Features

Increased housing strength in the conductor attachment area due to two additional rivets and monolithic front panel.



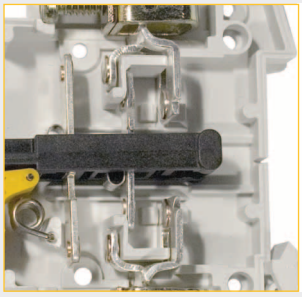
Soldering from a silver-containing composite increases the wear resistance of the contact group and reduces the transition resistance.



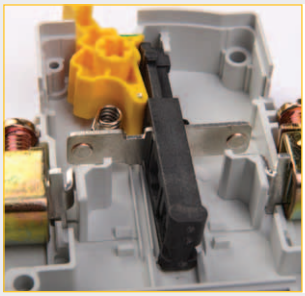
It does not have its own energy consumption and is a manual control device.

Notches on the contact terminals reduce heat loss and increase the mechanical stability of the connection.

Fast installation and additional reliability of fastening on a DIN rail by means of a latch with a double fixed position.

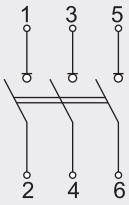


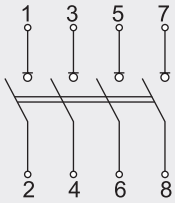
Thanks to its design (double open circuit), it virtually eliminates the breakdown and overlapping of the insulation arc even during prolonged use and heavy pollution.



Full compliance with the standard - the position of the handle on / off corresponds to the state of the contacts.

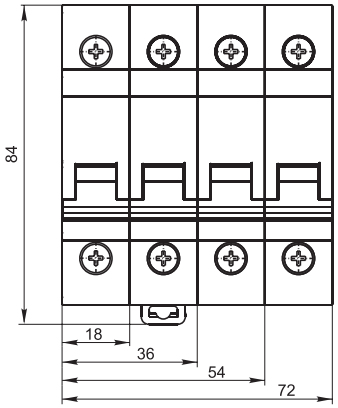
Schematic diagram

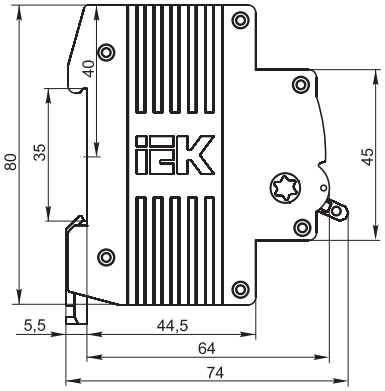




Technical Specifications

VN-32 Overall Dimensions





Logistics parameters

Group package						
number of poles	quantity, pcs	weight	length	width	height	volume
1	12	0,85	22	7,8	8,6	0,001476
2	6					
3	4					
4	3					
Transport package						
number of poles	quantity, pcs	weight	length	width	height	volume
1	240	18	44,5	32,5	23,5	0,033987
2	120					
3	80					
4	60					

Modular Contactors KM

Modular contactors of the KM type of the IEK® trademark are intended for use in alternating current networks with voltage up to 400 V and frequency 50/60 Hz and are used for switching weakly inductive loads with rated current up to 63 A.U for automation and control of various technological processes, including in lighting systems, air conditioning, ventilation, etc.

TECHNICAL CHARACTERISTICS

		KM20-20	KM20-11	KM40-11	KM40-20	KM63-11	KM63-20	KM20-22	KM20-40	KM25-22	KM25-40, AC/DC	KM40-40, AC/DC	KM63-40, AC/DC	KM40-40
Application category		AC-1, AC-7a, AC -7b												
Number of poles		2						4						
Rated operational voltage U_e, V		230						400						
Nominal frequency, Hz		50/60												
Rated insulation voltage U_i, V		500												
Rated operational current I_e, A	AC-1	20		40		63		20		25		40	63	40
	AC-7a	20		40		63		20		25		40	63	40
	AC-7b	7		15		20		7		9		18		25
Rated thermal current I_{th}, A		20		40		63		20		25		40	63	40
Power Dissipation, W / Pole		1		3		6		1		1,2		3	6	3
Rated voltage of control coil U_c, V ~		230									230(1)			230
Power consumption of the control coil in on mode, no more		14		37						37	88	88		53
Power consumption of the control coil in hold mode, no more		4,5		5						5	3,5	3,5		6,5
Control voltage ranges	Closing	195...253												
	Opening	46...172												
Rated conditional short circuit current, A		3000												
Maximum cross-section of connected single-core conductors, mm²		10		25				10		10	25	25		25
Mechanical wear resistance, comm. cycles		106												
Electrical endurance, comm. cycles		0,15 • 106												
Degree of protection		IP20												
Mounting type		35 mm DIN rail												

(1) – A rectifier bridge is installed in the control coil circuit, which allows the use of contactors in 220 V DC circuits.

Features

The solders on the contacts are made of a silver-containing material, which increases their service life, reduces contact resistance and losses.

Connection terminals allow you to connect conductors with a cross section of 1 to 25 mm^2.

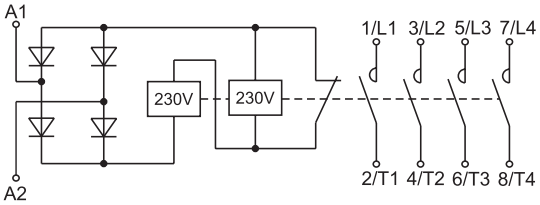
Bridge contact provides high electrical insulation properties.

Visual indication of the status of the main contacts.

Product Range

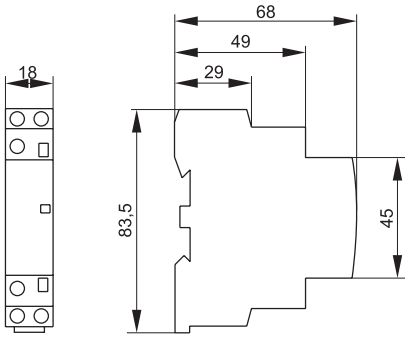
number of poles	rated current	contacs	IEK ID
2P	20A	NO+NC	MKK11-20-11-230-FCN
		2NO	MKK11-20-20-230-FCN
	40A	NO+NC	MKK11-40-11-230-FCN
		2NO	MKK11-40-20-230-FCN
	63A	NO+NC	MKK11-63-11-230-FCN
		2NO	MKK11-63-20-230-FCN
4P	20A	2NO+2NC	MKK11-20-22-230-FCN
		4NO	MKK11-20-40-230-FCN
	25A	2NO+2NC	MKK11-25-22-230-FCN
	40A	4NO	MKK11-40-40-230-FCN
4P AC/DC	25	4NO	MKK21-25-40-230-FCN
	40	4NO	MKK21-40-40-230-FCN
	63	4NO	MKK21-63-40-230-FCN

KM25-40 AC/DC, KM40-40 AC/DC, KM63-40 AC/DC

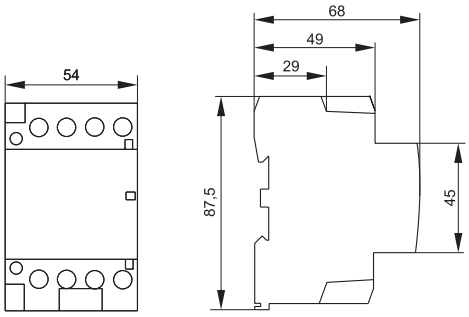


KM Overall dimensions

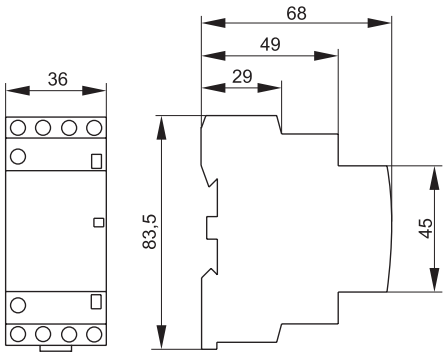
KM20-11, KM20-20



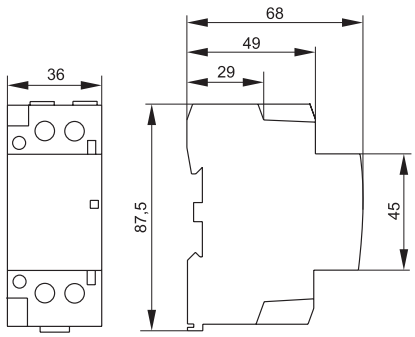
KM25-40 AC/DC, KM40-40 AC/DC, KM63-40 AC/DC, KM40-40



KM20-22, KM25-22, KM20-40



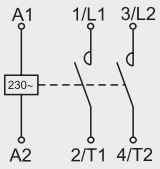
KM63-20, KM63-11, KM40-20, KM40-11



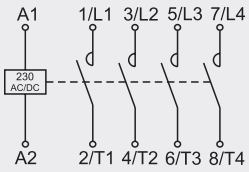
The diode bridge in the contactor circuit allows to:
- provide a low noise level when triggered;
- provide high performance;
- Do not create impulse noise.

Schematic diagram

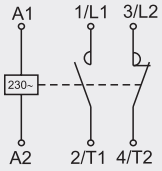
KM20-20, KM40-20, KM63-20



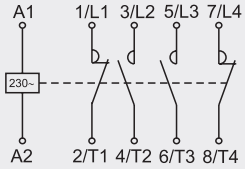
KM20-40, KM40-40



KM20-11, KM40-11, KM63-11



KM20-22, KM25-22



Logistics parameters

product ID	Group package					
	quantity, pcs	weight	length	width	height	volume
MKK11-20-20-230-FCN	8	1,044	225	89	76	0,0015219
MKK11-20-11-230-FCN		1,05				
MKK11-20-22-230-FCN	6	1,304	225	89	76	0,0015219
MKK11-20-40-230-FCN		1,296				
MKK11-25-22-230-FCN		1,304				
MKK11-40-11-230-FCN	6	1,47	225	93	76	0,0015903
MKK11-40-20-230-FCN		1,458				
MKK11-63-11-230-FCN		1,47				
MKK11-63-20-230-FCN		1,458				
MKK11-40-40-230-FCN	4	1,428	225	93	76	0,0015903
MKK21-25-40-230- AC/DC-FCN		1,424				
MKK21-40-40-230- AC/DC-FCN		1,424				
MKK21-63-40-230- AC/DC-FCN		1,424				

product ID	Transport package					
	quantity, pcs	weight	length	width	height	volume
MKK11-20-20-230-FCN	120	16,144	455	230	245	0,02563925
MKK11-20-11-230-FCN		16,15				
MKK11-20-22-230-FCN	90	20,04	455	230	245	0,02563925
MKK11-20-40-230-FCN		19,9				
MKK11-25-22-230-FCN		20,068				
MKK11-40-11-230-FCN	90	22,45	485	230	245	0,026772
MKK11-40-20-230-FCN		22,35				
MKK11-63-11-230-FCN		22,45				
MKK11-63-20-230-FCN		22,23				
MKK11-40-40-230-FCN	60	21,91	485	230	245	0,026772
MKK21-25-40-230- AC/DC-FCN		21,89				
MKK21-40-40-230- AC/DC-FCN		21,89				
MKK21-63-40-230- AC/DC-FCN		21,89				

Three-position switch-disconnector VRT-63

Three-position switch-disconnector VRT-63 is designed for switching mixed active and inductive loads in alternating current circuits with voltage up to 400 V at a frequency of 50/60 Hz. It is allowed to use in DC networks with a voltage of not more than 48 V. Scope VRT-63 – accounting and distribution equipment of residential and public buildings and structures, where it is possible to quickly disconnect from the network of certain groups of consumers of electricity.
It can be used for quick switching from the main network to a household electric generator in ATS systems and for reversing control of low-power electric motors.

TECHNICAL CHARACTERISTICS	
Conform to Standards	IEC EN 60947-1
Rated voltage with a frequency of 50/60 Hz, V	230/400
Rated current I_n, A	16; 25; 32; 40; 50; 63
DC voltage, V / pole	48
Rated impulse withstand voltage, U_{imp}, V	4000
Number of poles	1, 2, 3, 4
Switch protection degree	IP 20
Mechanical wear resistance, ON-OFF cycles, not less	30000
Electrical wear resistance, ON-OFF cycles, not less	10000
Application category	AC 220 V
Maximum cross-section of connected wires, mm^2	10
Mass of one pole, kg	0,07
Warranty period of operation, years, from the date of sale to the consumer	5

Product Range

Rated current, A	1P	2P	3P	4P
16	MPR10-1-016	MPR10-2-016	MPR10-3-016	MPR10-4-016
25	MPR10-1-025	MPR10-2-025	MPR10-3-025	MPR10-4-025
32	MPR10-1-032	MPR10-2-032	MPR10-3-032	MPR10-4-032
40	MPR10-1-040	MPR10-2-040	MPR10-3-040	MPR10-4-040
50	MPR10-1-050	MPR10-2-050	MPR10-3-050	MPR10-4-050
63	MPR10-1-063	MPR10-2-063	MPR10-3-063	MPR10-4-063

1P 2P

3P

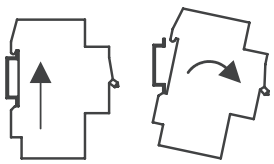
4P

Features

Proprietary and concise design protected by patent. Side logo engraving protects against fake.

A monolithic front panel increases the strength of the housing in the area where the conductors are connected and minimizes the risk of “divergence” of the housing when tightening the screws.

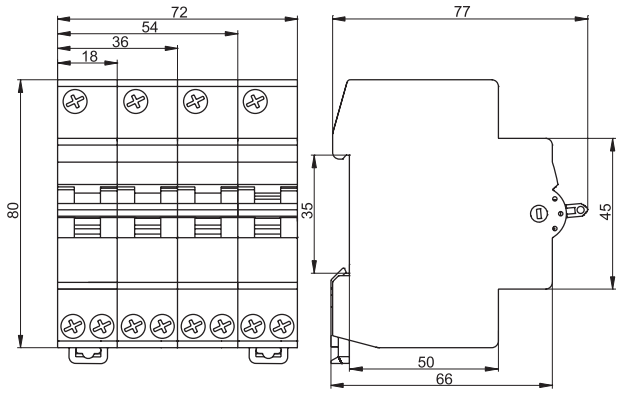
Notches on the contact terminals reduce heat loss and increase the mechanical stability of the connection.

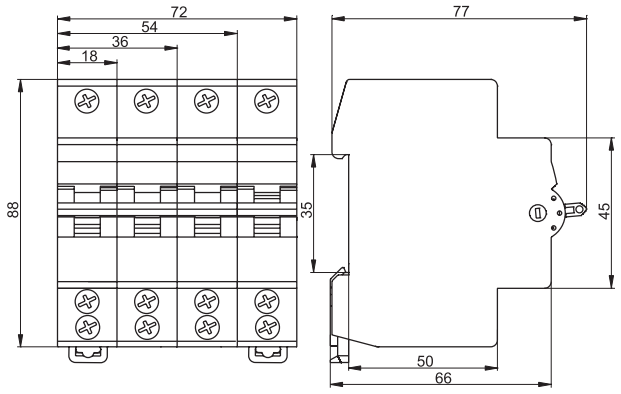


Convenient assembly / disassembly without the use of tools (for constructs 50A and 63A).

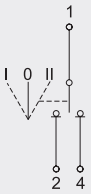
The ergonomic on / off handle design makes switching easy. Ribbed surface prevents finger slipping.

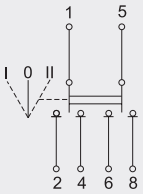
Technical Specifications

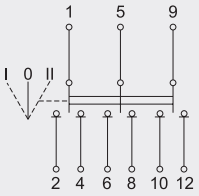


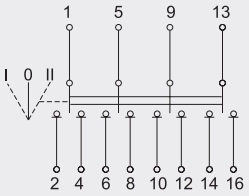


Schematic diagram









Surge Protective Devices OPS1

Surge Protective Devices OPS1 (SPD) is designed to protect the internal distribution circuits of residential and public buildings from lightning and switching surge surges.
A distinctive feature of the new modification of OPS1 is an improved indicator of residual voltage, which was reduced.

TECHNICAL CHARACTERISTICS			
	OPS1 B (I)	OPS1 C (II)	OPS1 D (III)
Conform to Standards	IEC EN 61643-1		
Rated operating voltage, V	400		230
Maximum working voltage, V	440		250
Rated discharge current 8/20 μs, kA	30	20	5
Maximum discharge current 8/20 μs, kA	60	40	10
Protection voltage level, no more, kV	2,0	1,8	1,0
Classification voltage, V	700±5%	650±5%	530±5%
Reaction time, no more, ns	25		
Number of poles	1, 2, 3, 4		
Section of the connected wires, mm^2	4÷25		

OPS1 D

OPS1 C

OPS1 B

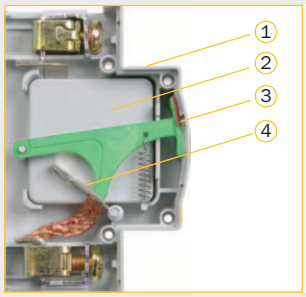
Product Range

Number of poles	OPS1 B	OPS1 C	OPS1 D
1	MOP20-1-B	MOP20-1-C	MOP20-1-B
2	MOP20-2-B	MOP20-2-C	MOP20-2-B
3	MOP20-3-B	MOP20-3-C	MOP20-3-B
4	MOP20-4-B	MOP20-4-C	MOP20-4-B

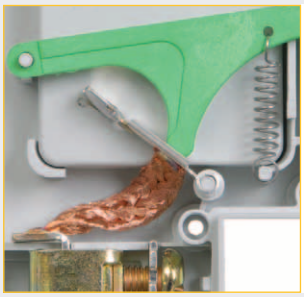
Fields of application of OPS1 in accordance with the classification voltage

Class OPS1	Purpose and place of installation of OPS1
I (B)	The first stage of protection against direct or indirect lightning discharges in power lines at the input to the object. Installed at the entrance to the building in the input distribution device (ASU) or in the main switchboard (main switchboard)
II (C)	The second stage of protection of the internal distribution circuits of the object from lightning discharges and switching overvoltage. Install in switchboards
III (D)	The third level of protection of electrical equipment from residual lightning and switching overvoltage. Install in the immediate vicinity of electrical consumers (electrical appliances)

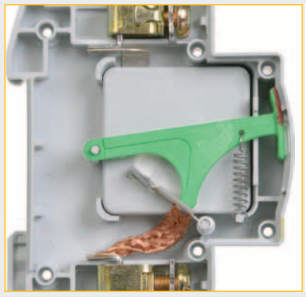
Features



1 – Body.
2 – Protective element (varistor module).
3 – Device operation indicator.
4 – Fusible insert (thermal protection).

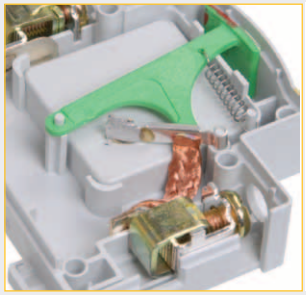


Improved fire safety due to increased reliability of the built-in thermal protection.



Improved reliability due to reduced power dissipation (by 15–20%) due to the exclusion of transient resistance in the detachable connection of the replaceable module and the product body.

The notches on the contact clamps prevent overheating and wires melting



The use of a rotary mechanism of the operating status indicator avoids indication errors.

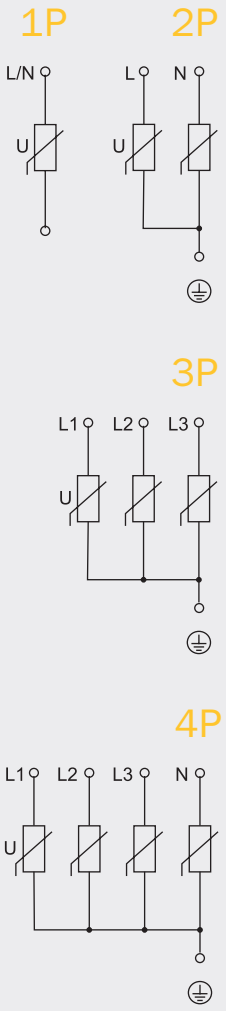
DIN rail latch with double fixed position for ease of installation.

The possibility of double simultaneous connection as a bus (PIN or FORK), and a flexible conductor section up to 25 mm2

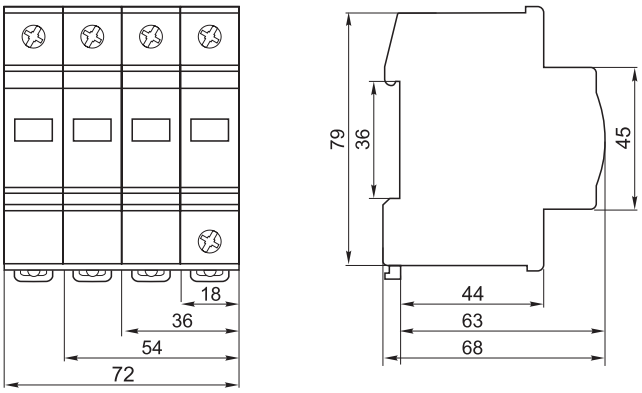
Classification of electrical equipment for overvoltage resistance

Surge category	Characteristic	Rated impulse withstand voltage, kV
I	Special equipment that, when connected to existing electrical installations in buildings, needs in additional surge protection devices. SPDs can be built into category I equipment or located between this equipment and the rest of the electrical installation (for example, personal computers that are connected to the mains via extension cords with built-in SPDs)	1,5
II	Equipment that is connected to existing electrical installations of buildings through sockets and other similar connectors (for example, household electrical appliances, electronic devices, portable tools)	2,5
III	Equipment installed inside buildings, which is part of the specific electrical installation of the building and is accessible to ordinary people and untrained personnel. Examples of such equipment are distribution boards, wiring, switches and sockets, electric stoves	4,0
IV	Equipment installed close to electrical installations of buildings (inside or outside) in front of the main switchboard, which can be an input and distribution device for multi-story buildings or an apartment panel for individual buildings (e.g. electric meters, primary overcurrent protection devices)	6,0

Schematic diagram



OPS1 Overall and mounting dimensions



Logistics parameters

product ID	Group package					
	quantity, pcs	weight	length	width	height	volume
MOP20-1-B-FCN	1	0,12	8,6	2	7	0,00012
MOP20-1-C-FCN	1	0,105				
MOP20-1-D-FCN	1	0,086				
MOP20-2-B-FCN	1	0,24		4		0,000241
MOP20-2-C-FCN	1	0,21				
MOP20-2-D-FCN	1	0,172				
MOP20-3-B-FCN	1	0,36		5,8		0,000349
MOP20-3-C-FCN	1	0,315				
MOP20-3-D-FCN	1	0,258				
MOP20-4-B-FCN	1	0,48		7,5		0,000452
MOP20-4-C-FCN	1	0,42				
MOP20-4-D-FCN	1	0,344				

Logistics parameters

product ID	Transport package					
	quantity, pcs	weight	length	width	height	volume
MOP20-1-B-FCN	120	14,4	35	19,5	31	0,021158
MOP20-1-C-FCN		12,6				
MOP20-1-D-FCN		10,32				
MOP20-2-B-FCN	60	14,4				
MOP20-2-C-FCN		12,6				
MOP20-2-D-FCN		10,32				
MOP20-3-B-FCN	40	14,4				
MOP20-3-C-FCN		12,6				
MOP20-3-D-FCN		10,32				
MOP20-4-B-FCN	30	14,4				
MOP20-4-C-FCN		12,6				
MOP20-4-D-FCN		10,32				

Power limiter OM-1R and OM-2R

Single-phase power limiters OM-1R and OM-2R IEK® is an automated device designed to detect a malfunction associated with exceeding the set value of the consumed load in electrical networks and electrical installations connected to the mains.
Ideal for use in office, industrial and residential buildings with heavy loads.

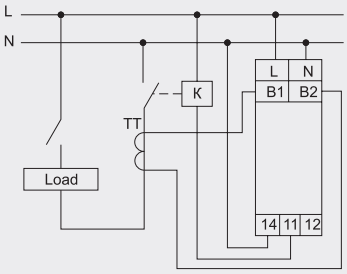
Technical Characteristics		
	OM-1P	OM-2P
Number of poles	1	2
Supply voltage	230	
Frequency Hz	50	
Rated impulse withstand voltage, V	4000	
Maximum load current, A	8	16
Maximum contactor coil current, A	2	3
Additional contacts	1 switching (contacts 11, 12, 14)	1 switching (contacts 11, 12, 14)
Range of controlled power, kW	0,2 - 1,1	0,5 - 5
Transformer secondary current, A	0,5 - 5	–
Shutdown Delay, sec	Adjustable: 2 - 40	unregulated: 1,5
Turn on delay, sec	15 - 300	10 - 100
Power consumption	0,85	
Degree of protection in accordance with IEC 60529	Limiter	IP40
	Terminal block	IP20
measurement error	≤ 1%	≤ 5%
Overvoltage category	III	
Error on / off time, %	±5	20
The maximum cross-section of the wire attached to the clamp, mm^2	6	
Weight, no more than, kg	0,06	0,08

Product range

Name	Rated current, A	Transformer
Power limiter OM-1R 8A 230V IEK	8	Works with an external transformer
Power limiter OM-2R 16A 230V IEK	16	Built-in transformer

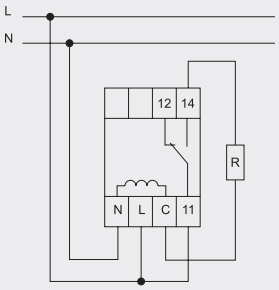
Schematic diagram

OM-1R

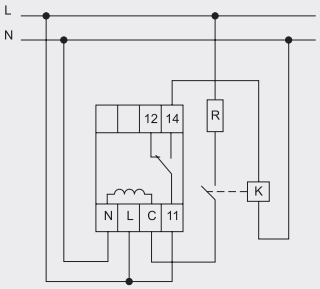


OM-2R

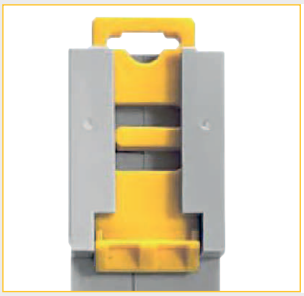
Load less 2 kW



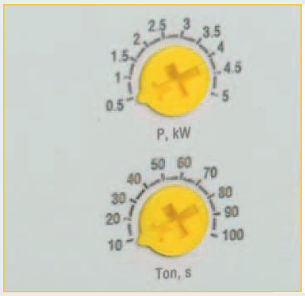
Load over 2 kW



Features

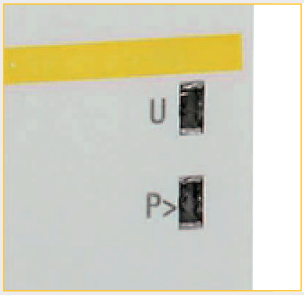


DIN rail mount



On the front panel there are regulators for limiting power and load switching.

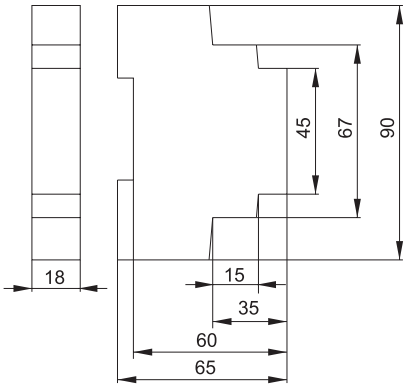
Reliable conductor connection.



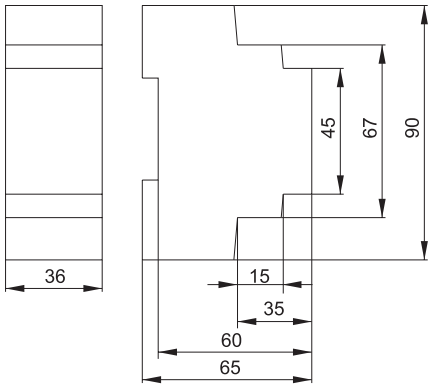
Indicator light shows network status.

OM-1R and OM-2R Overall and mounting dimensions

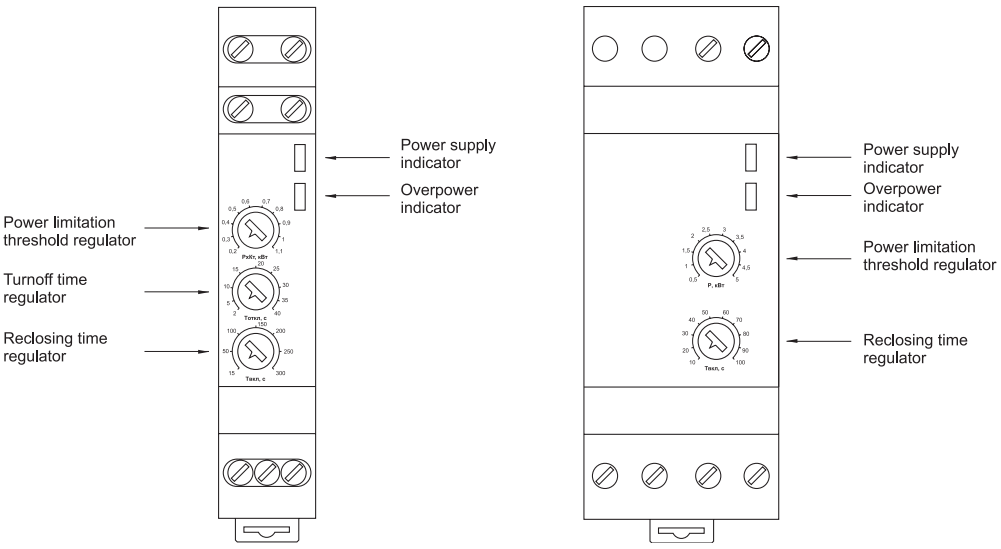
OM-1R



OM-2R



Location of controls and LED indicators on the front panels



Logistics parameters

Individual package						
product ID	quantity, pcs	weight	length	width	height	volume
MOM10-1-008	1	0,089	9,3	2	7,2	0,000223
MOM10-2-016	1	0,156	9,3	3,8	7,2	0,000446
Group package						
product ID	quantity, pcs	weight	length	width	height	volume
MOM10-1-008	12	1,067	23,5	9,7	7,6	0,002678
MOM10-2-016	6	0,933	23,5	9,7	7,6	0,002678
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MOM10-1-008	144	12,8	42	25,5	30	0,032130
MOM10-2-016	72	11,2	42	25,5	30	0,032130

Additional devices

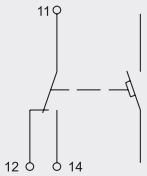
KS47 and KSV47 status contacts

KS47 performs the function of the contact status of the circuit breaker automatic: on - off.
KSV47 performs the function of signaling the position of the control mechanism of the switch. At the first cocking of the control handle, the contacts that remain in this position when the VA47 is manually turned off are switched. Contact switching will occur only when the circuit breaker trips due to overcurrent (overload or short circuit).
In the upper part of the KSV47 housing there is a button, when pressed, a forced reset of the mechanism and switching of contacts occur.
KS47 and KSV47 contain one group of switching contacts.

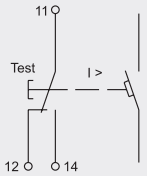
TECHNICAL CHARACTERISTICS			
		KS47	KSV47
Conform to Standards		IEC/EN 60947-1	
Rated voltage, V ~		230	230
Rated current, A		4	4
Rated operational current depending on the category of use, A	AC-15	6	6
	DC-13	1	1
Visual indication of operation, on / electric off		no	white/red
Wear resistance, V-O cycles, not less		10 000	10 000
Range of sections of the connected wires, mm^2		0,5÷2,5	0,5÷2,5
Connection to circuit breaker		left	left
Module width mm		9	9

Schematic diagram

KS47

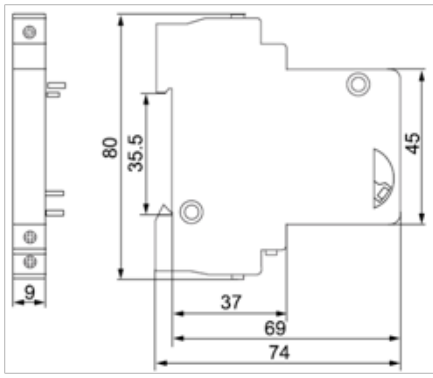


KSV47

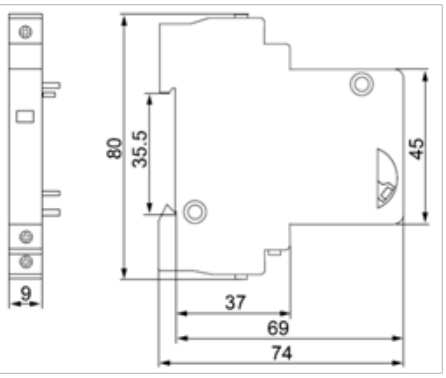


Overall and mounting dimensions

KS47

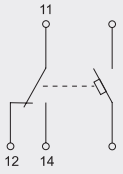


KSV47

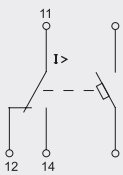


connection diagram

KS47



KSV47



Logistics parameters

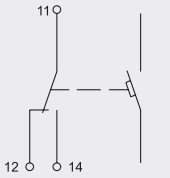
Group package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA01D-KS-1	14	0,510	22	8,5	7,2	0,001346
MVA01D-AK-1	14	0,550	22	8,5	7,2	0,001346
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA01D-KS-1	280	10,2	43	18	34	0,026316
MVA01D-AK-1	280	11	42	34	18	0,025704

KS47-60M and KSV47-60M status contacts

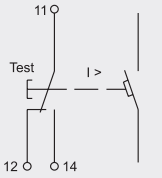
TECHNICAL CHARACTERISTICS			
		KS47-60M	KSV47-60M
Conform to Standards		IEC/EN 60947-1	
Rated voltage, V ~		230	230
Rated current, A		4	4
Rated operational current depending on the category of use, A	AC-15	6	6
	DC-13	1	1
Visual indication of operation, on / electric off		no	no
Wear resistance, V-O cycles, not less		10 000	10 000
Range of sections of the connected wires, mm^2		0,5÷2,5	0,5÷2,5
Connection to circuit breaker		left	left
Module width mm		9	9

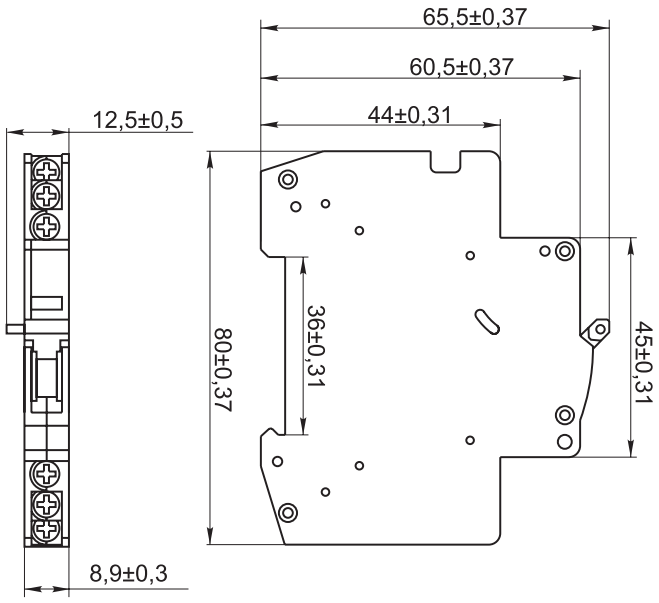
Schematic diagram

KS47-60M



KSV47-60M



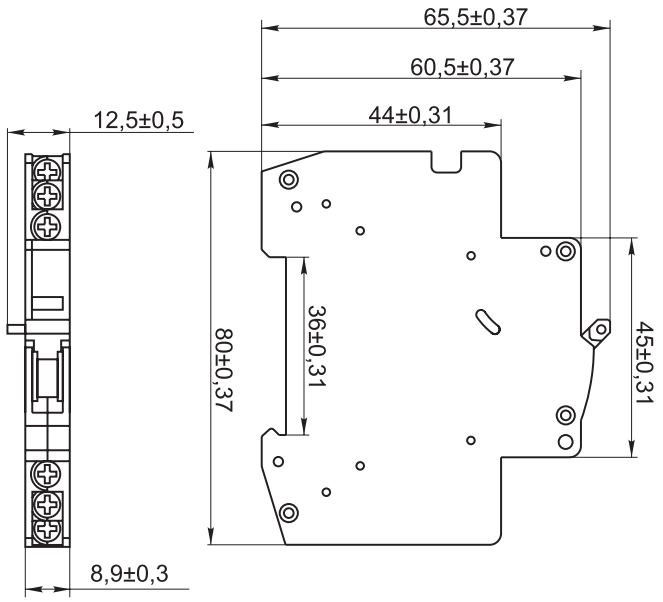


Logistics parameters

Group package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA31D-KS-1	14	0,54	17,4	8,7	7,8	0,001181
MVA31D-AK-1	14	0,55	17,4	8,7	7,8	0,001181
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA31D-KS-1	280	10,8	45	19	34	0,029070
MVA31D-AK-1	280	11	45	19	34	0,029070

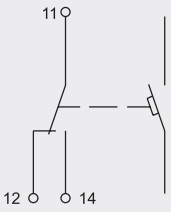
KS47-150 and KSV47-150 status contacts

TECHNICAL CHARACTERISTICS			
		KS47-150	KSV47-150
Conform to Standards		IEC/EN 60947-1	
Rated voltage, V ~		230	230
Rated current, A		4	4
Rated operational current depending on the category of use, A	AC-15	6	6
	DC-13	1	1
Visual indication of operation, on / electric off		no	no
Wear resistance, V-O cycles, not less		10 000	10 000
Range of sections of the connected wires, mm^2		0,5...2,5	0,5...2,5
Connection to circuit breaker		left	left
Module width mm		9	9

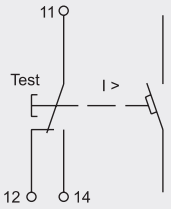


Schematic diagram

KS47-150



KSV47-150



Contacts additional universal KDU60

KDU60 is used to obtain information on the state of VA47-60 circuit breakers in automation systems technological processes or the protection of specific objects. KDU60 performs the function of additional contact and signaling the position of the cocking mechanism of a circuit breaker or residual machine. The device includes two switching contacts: status contact (KS) and status contact | emergency contact (KS | KA). Contact KC | KA operates depending on the position of the function switch, or as a status contact, either as an emergency contact.

Technical Characteristics		
Rated operating voltage, V	AC	250
	DC	110
AC frequency, Hz		50
Rated insulation voltage not less than Ui, V		415
Rated thermal current Ith, A		4
Rated operational current depending on the category of application, A	AC-13	3
	AC-15	2
	DC-12	0,5
Electrical durability not less than, cycles on-off		6000
Section of the connected wires, mm^2		0,5÷2,5
Degree of protection		IP20
Weight, kg		0,04
Side of connection to circuit breaker		left
Service life, years (from the date of commissioning)		15

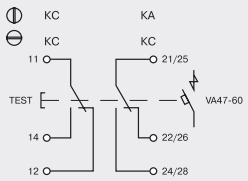
Device Contact Diagram

Rotary switch position	KS&KS				KS&KA			
The position of the cocking handle of the device and VA47-60	«O»	«I»	«O»	«O» Protection triggering	«O»	«I»	«O»	«O» Protection triggering
Flag color	blue	white	blue	blue	White or blue	white	white	blue
Contacts 11–12	+	–	+	+		–	+	+
Contacts 11–14	–	+	–	–	+	+	–	–
Contacts 21–22	+	–	+	+	–	–	–	+
Contacts 21-24	–	+	–	–	+	+	+	–

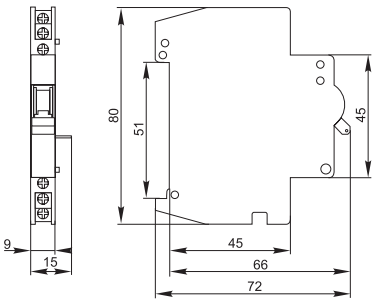
\+ contact closed
– contact open

Schematic diagram

Handle position



Overall and mounting dimensions



Logistics parameters

Group package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA30D-AKS	11	1,75	25,2	8,6	7,1	0,001539
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA30D-AKS	165	8,58	43,5	23	25	0,025013

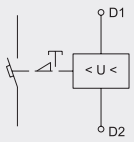
RMM47 and RN47 releases

The undervoltage / overvoltage release PMM47 is designed for tripping single-, double-, three- and four-pole circuit breakers of the VA47 series with an unacceptable decrease or increase in the voltage of the electric network. An independent RN47 release is designed for remote shutdown of circuit breakers of the VA47 series.
The releases in a 18mm case design in a single design with the switches of the VA47 series. The releases are connected to the switch on the right side.

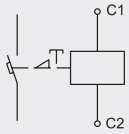
Attention! The trip units are designed for operation with circuit breakers of type VA47-29, of all poles.
The RMM47 trip unit uses an electronic relay circuit with a response time delay. At the output of the amplifier, an electromagnetic release coil is included, similar to that used in residual machines. When docking, when connected to the circuit breaker, the release lever engages with the circuit breaker reset mechanism. To inform about the circuit breaker tripping due to an unacceptable voltage drop in the network, the release case is equipped with a “return” flag button. To restart the circuit breaker, first press this button.
The RN47 release in its housing contains only the coil of the electromagnetic release, the lever of which is engaged with the reset mechanism of the switch. With remote supply of control voltage to the coil, the latch of the control mechanism of the circuit breaker is reset. The release case is equipped with a return button. To restart the circuit breaker, first press this button.

TECHNICAL CHARACTERISTICS			
		RMM47	RN47
Conform to Standards		IEC EN 60898-1	
Rated voltage, V ~		230	
Tripping voltage, V	max	165±10	–
	min	265±10	–
Power consumption, no more, VA		3	
Wear resistance, on-off cycles, not less		10 000	
Range of sections of the connected wires, mm^2		1...25	
Connection to circuit breaker		right	
Module width mm		18	

RMM47

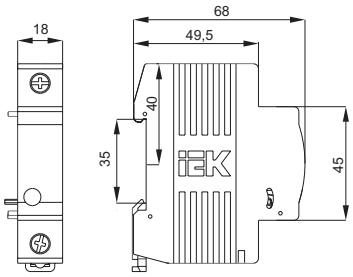


RN47

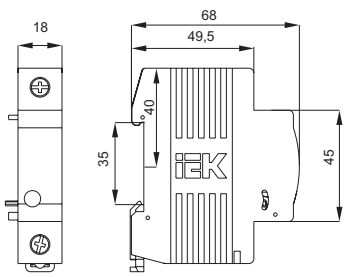


Overall and mounting dimensions

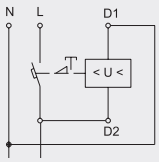
RMM47



RN47

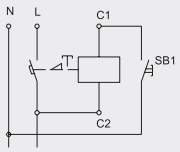


RMM47



Logistics parameters

RN47



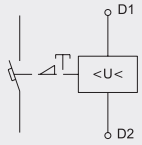
Group package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA01D-RMM	12	0,84	25,2	8,6	7,1	0,001539
MVA01D-RN	12	0,84	25,2	8,6	7,1	0,001539
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA01D-RMM	240	16,8	45,5	26,2	31	0,036955
MVA01D-RN	240	16,8	45,5	26,2	31	0,036955

RMM47-60M and RN47-60M releases

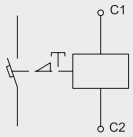
TECHNICAL CHARACTERISTICS			
		RMM47-60M	RN47-60M
Conform to Standards		IEC EN 60898-1	
Rated voltage, V ~		230	
Tripping voltage, V	max	165±10	–
	min	265±10	–
Power consumption, no more, VA		4,1	3
Wear resistance, on-off cycles, not less		10 000	
Range of sections of the connected wires, mm²		1...25	
Connection to circuit breaker		left	
Module width mm		18	

Electrical circuits

RMM47

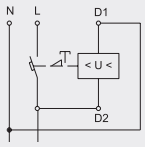


RN47

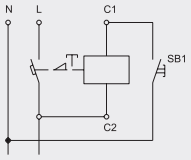


Wiring diagrams

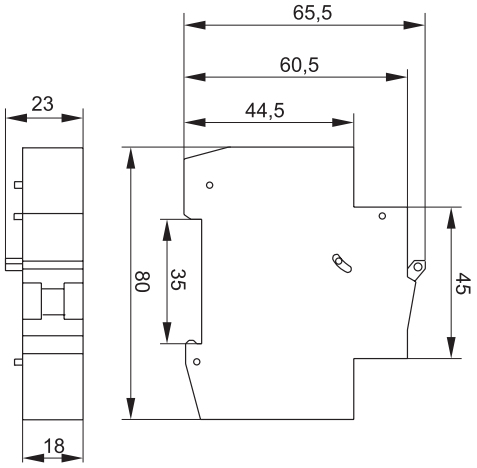
RMM47



RN47



Overall and mounting dimensions



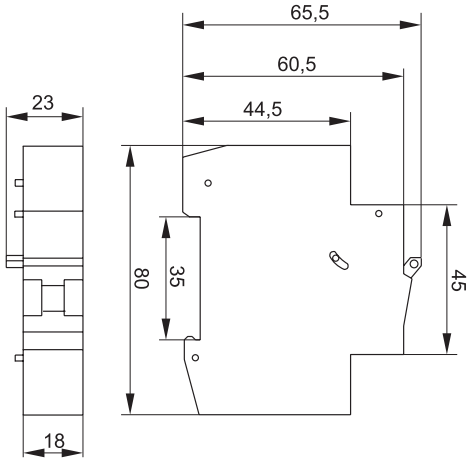
Logistics parameters

Group package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA31D-RMM	12	0,815	24,8	8,7	7,8	0,001683
MVA31D-RN	12	0,76	24,8	8,7	7,8	0,001683
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA31D-RMM	240	16,3	46	26,3	33,5	0,040528
MVA31D-RN	240	15,9	46	26,3	33,5	0,040528

RMM47-150 and RN47-150 releases

TECHNICAL CHARACTERISTICS			
		RMM47-150	RN47-150
Conform to Standards		IEC EN 60898-1	
Rated voltage, V ~		230	
Tripping voltage, V	max	165±10	–
	min	265±10	–
Power consumption, no more, VA		4,1	3
Wear resistance, on-off cycles, not less		10 000	
Range of sections of the connected wires, mm^2		1...25	
Connection to circuit breaker		left	
Module width mm		18	

Overall and mounting dimensions

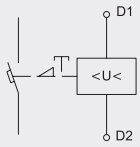


Logistics parameters

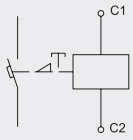
Group package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA31D-RMM	12	0,815	24,8	8,7	7,8	0,001683
MVA31D-RN	12	0,76	24,8	8,7	7,8	0,001683
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MVA31D-RMM	240	16,3	46	26,3	33,5	0,040528
MVA31D-RN	240	15,9	46	26,3	33,5	0,040528

Electrical circuits

RMM47

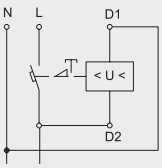


RN47

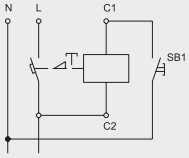


Wiring diagrams

RMM47



RN47



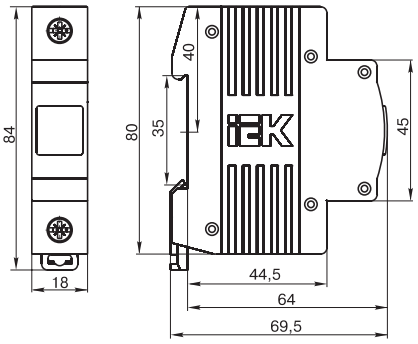
Alarm lamp LS-47 with a neon lamp
Alarm lamp LS-47M with an LED matrix

Used for light signaling the status of the involved electrical circuit.

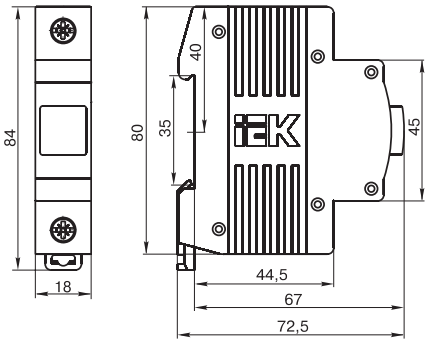
TECHNICAL CHARACTERISTICS		
Type execution	LS-47	LS-47M
Rated operational voltage, Ue, V	230	
Rated operating frequency, Hz	50/60	
Power consumption	0,5	0,01
Section of the connected conductors, mm^2	1...25	
Degree of protection	IP20	
Type of light source	Neon lamp	LED
The ability to replace the light source	–	+
Weight kg	0,035	0,037
type of installation	35mm DIN-rail	
Color	red, yellow, green, blue	
Service life, h, not less	30 000	
Warranty period	5 years	

Overall and mounting dimensions

LS-47



LS-47M



Logistics parameters

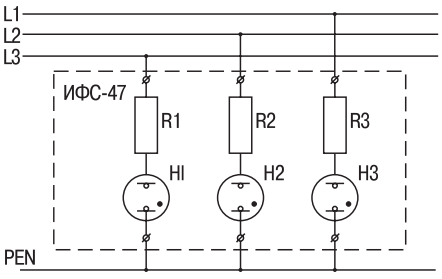
Group package						
product ID	quantity, pcs	weight	length	width	height	volume
LS-47	12	0,56	22	8,5	7,2	0,0013
LS-47M	12	0,61	22	8,5	7,5	0,0014
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
LS-47	144	11,2	44,6	23,5	31,5	0,0330
LS-47M	144	12,2	44,6	23,5	33	0,0346

Phase indicator light

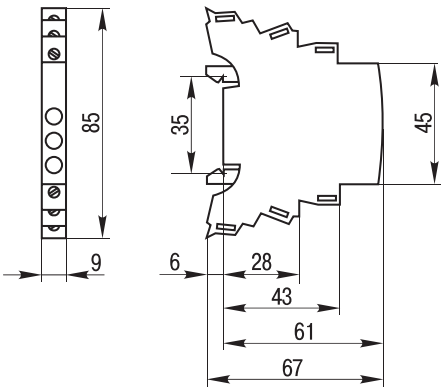
The phase light indicator IFS-47 is intended for use in three-phase AC networks with voltage up to 400 V and serves for light indication of voltage presence in each phase.

TECHNICAL CHARACTERISTICS	
Rated operational voltage Ue, V	400 ± 10%
Nominal frequency, Hz	50/60
Section of the connected conductors, mm^2	1÷2,5
Degree of protection	IP20
Type of light source	Neon lamp
Weight kg	0,04
Installation method	35 mm DIN-rail
Overall dimensions, mm	85967
Service life, h, not less	30 000
Warranty period	5 years

Schematic diagram



Overall and mounting dimensions



Logistics parameters

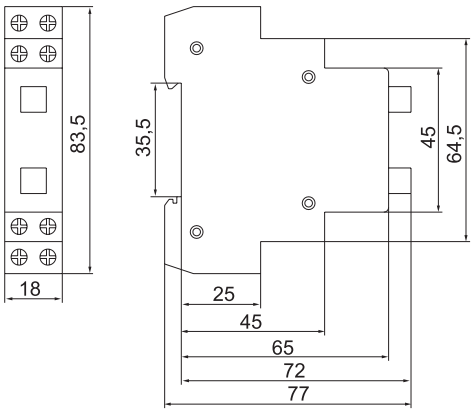
Group package						
product ID	quantity, pcs	weight	length	width	height	volume
MIF10-400	24	0,943	23	10	8	0,001840
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MIF10-400	480	18,86	24	49	35	0,041160

Control buttons modular KMU11

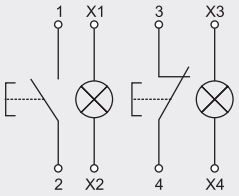
Modular control buttons of type KMU11 are designed for operational control of magnetic starters
(contactors), control, protection and automation relays and other technological equipment in AC electrical circuits with voltage up to 230 V.

TECHNICAL CHARACTERISTICS				
Conditional thermal current in the open air Ith, A			20	
Rated operating voltage, V	AC		230	
	DC		110	
Rated operational current of contacts, A	Application category		AC-12	AC-13
	AC	230 V ~	10	7,5
		120 V ~	12,5	10
		48 V ~	12,5	10
	Application category		DC-12	DC-13
	DC	230 V ~	2,5	0,6
		120 V ~	5	1,3
		48 V ~	10	2,5
Rated insulation voltage Ui, V			400	
Number of contacts	NC		1	
	NO		1	
Nominal voltage of a neon lamp, V			230	
Neon lamp current, mA			0,6	
Overcurrent protection - fuse gG, A			25	
Conditional short circuit current, A			1000	
Mechanical durability, on-off cycles 106			0,6	
Electrical durability, cycles B-O 106			0,3	
Maximum cross-section of connected conductors, mm			6	
Tightening torque of screws of connecting clamps, N m			0,4	
Degree of protection			IP20	
Overall dimensions, mm			70,31883,5	
type of instalation			35mm DIN-rail	

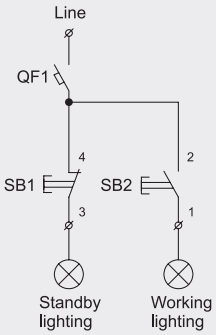
Overall and mounting dimensions



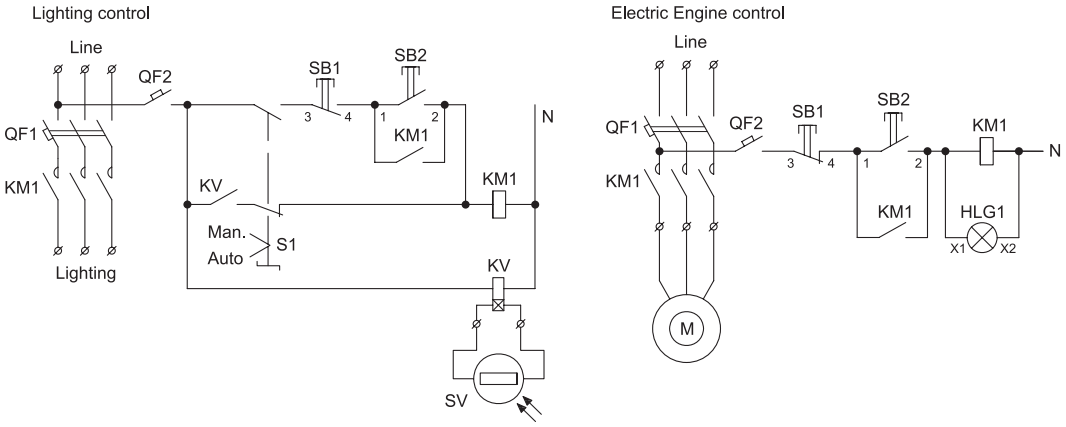
Schematic diagram



KMU11 button application diagram



Application diagram of the KM contactor and the KMU11 button *



Two independent contact groups (1 connecting and disconnecting) allow 2 control circuits to be switched at once.

QF1 and QF2 - circuit breakers;
KM1 - modular contactor;
KV - lighting relay;
SV - photocell;

M - engine;
HLG1 - lamp (green);
SB1 and SB2 - modular buttons KMU11.

* The implementation of these schemes should be carried out with the rotary switch in the "without fixing the push buttons in the lower position" mode.

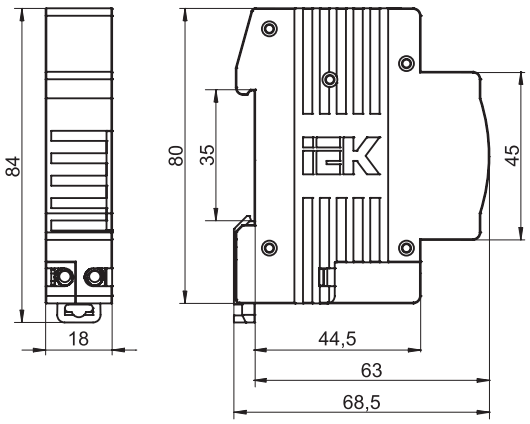
Group package						
product ID	quantity, pcs	weight	length	width	height	volume
MBD10-11-K51	12	1,42	22,4	8,8	8,4	0,001656
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MBD10-11-K51	144	12,45	53,5	24	18,5	0,023754

Electric Bell ZD-47

It serves to signal the occurrence of an emergency in the involved electrical circuit. The warranty period of operation is 3 years from the date of sale to the consumer.

TECHNICAL CHARACTERISTICS	
Number of poles	1
Rated operational voltage Ue, V	230
Rated insulation voltage Ui, V	230
Rated frequency of a network, Hz	50
Sound pressure level, dB	60
Degree of protection according to IEC 60529: 2013	IP20
Withstand voltage when testing the dielectric strength, V	1500
Insulation Resistance, MΩ	5
Service life, years, not less	15
Weight, kg, no more	0,07

Overall and mounting dimensions



Logistics parameters

Group package						
product ID	quantity, pcs	weight	length	width	height	volume
MZD10-230	12	0,94	21,7	8,6	7,2	0,001344
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MZD10-230	240	17,32	23	46	32	0,033856

Timer TE15

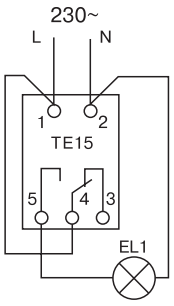
The timer is designed to count time intervals, automatically turn on / off the electrical
equipment after a given period of time and control in various technological processes. According to its characteristics, the timer corresponds to IEC 60669-2-3

TECHNICAL CHARACTERISTICS		
Rated voltage		230
Rated frequency of a network, Hz		50
Maximum load current, A	at cos φ = 1	16
	at cos φ = 0,5	8
Power consumption, no more, W		5
The number of ON / OFF cycles in the program		8
Minimum interval for setting the program runtime, min.		1
Accuracy of counting time intervals, no more, s / day		2
The time to save the installed program when the power is turned off, at least h		150
Mechanical durability, ON / OFF cycles, not less		10 000
Electrical durability, ON / OFF cycles, not less than		10 000
Degree of protection		IP20
Weight kg		0,15

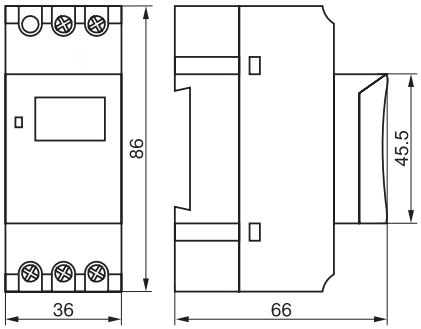
Diagram of the timer when switching the MODE button

Setting the MODE button	Changeover contacts			Relay status	Management program	The indicator of inclusion of the relay "ON"
	3	4	5			
ON	-	closed		on	off	on
OFF	closed			off	off	–
ON AUTO		closed		on	Triggering on turning off	on
AUTO OFF	closed			off	Triggering on turning on	–

Schematic diagram



Overall and mounting dimensions



Logistics parameters

Individual package						
product ID	quantity, pcs	weight	length	width	height	volume
MTA10-16-FCN	1	0,15	9,5	4,2	7,1	0,000283
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MTA10-16-FCN	100	15,21	39,5	24,8	37,5	0,036735

Lighting timer TO47

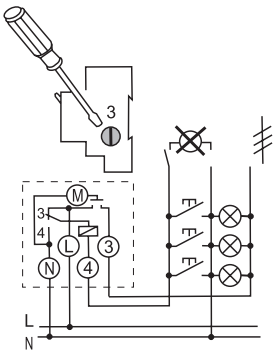
Lighting timers are designed to automatically turn on and off the lighting of the staircase, corridor or other object for a specified time range (from 1 to 7 minutes). The timer is used in lighting circuits with power up to 3.5 kW and is designed for operation with incandescent and halogen lamps.

TECHNICAL CHARACTERISTICS	
Rated current of a load circuit In, A	16
Rated voltage of a load circuit Un, V	250
Time delay adjustment, min.	1-7
Time delay setting step, min	0,5
Turn on delay, sec	<
Output current to an external control button, no more, mA	50
Class of protection against defeat el. current acc. to IEC 60730	II
The lower limit of the working temperature, °C	- 20
Nominal upper limit of operating temperature, °C	+ 50

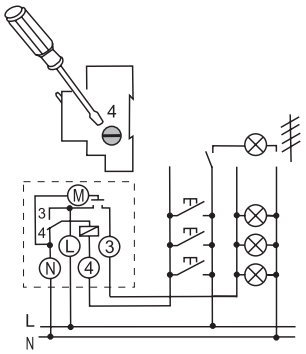
Timer Controls	The rotary knob for setting the shutdown time, used to set the timer in shutdown mode.
	Timer Mode Switch: - in position ☼, the timer contacts should be in the same position, ensuring continuous operation of the lighting; - in the position ◎, the timer must open the contacts after the time set on the rotary controller of the unit.
	Timer Contact Mode Switch: - in position "3" the timer circuit must correspond to fig. 3.2; - in position "4" the timer circuit should match pic. 3.3.

Schematic diagram

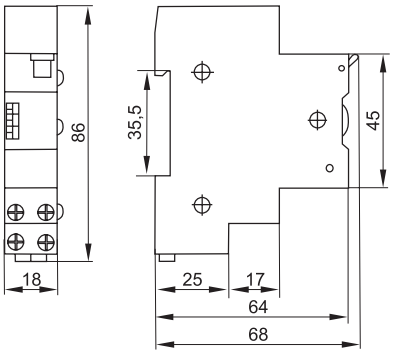
Position 3



Position 4



Overall and mounting dimensions



Logistics parameters

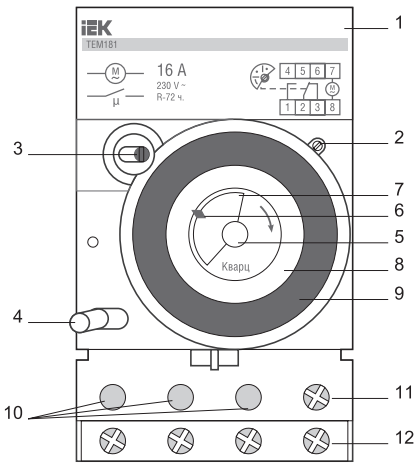
Individual package						
product ID	quantity, pcs	weight	length	width	height	volume
MTA30-16-FCN	1	0,073	10,3	6,9	1,8	0,000128
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MTA30-16-FCN	200	17	41,5	36	22,5	0,033615

Timer TEM181

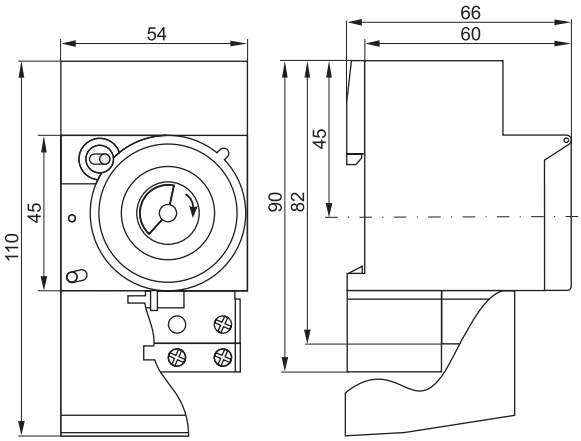
The timer is designed to count time intervals, automatically turn on / off the electrical
equipment after a given period of time and control in various technological processes. According to its characteristics, the timer corresponds to IEC 60669-2-3

TECHNICAL CHARACTERISTICS		
Rated voltage		230
Rated frequency of a network, Hz		50
Maximum load current, A	at cos = 1	16
	at cos = 0.4	8
Power consumption, no more, W		1
Maximum number of ON / OFF cycles per day		24
Minimum interval for setting the program runtime, min		30
Accuracy of counting time intervals, no more, s / day		5
Mechanical durability, ON-OFF cycles, not less than		107
Electrical durability, ON-OFF cycles, not less		105
Degree of protection according to IEC 60529		IP20
Weight kg		0,15

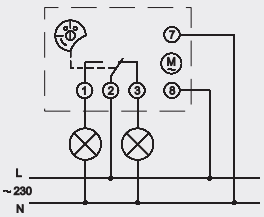
Essential elements



Overall and mounting dimensions



Schematic diagram



1 – timer case;
2 – clockwork indicator;
3 – timer switch indicator;
4 – switch drive switch;
5 – setting (correction) knob for the current time;
6 – time indicator;
7 – inner limb;
8 – external limb;
9 – program installation sector;
10 – contact conclusions "1", "2", "3";
11 – clamp "7";
12 clamp "8".

Logistics parameters

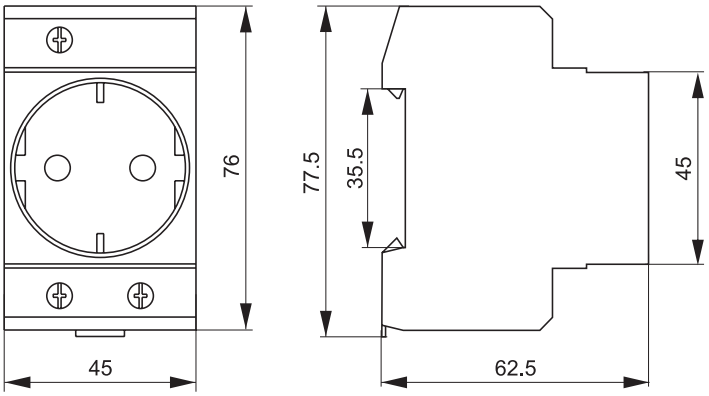
Individual package						
product ID	quantity, pcs	weight	length	width	height	volume
MTA20-16-FCN	1	0,209	11,7	5,6	7,8	0,000511
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MTA20-16-FCN	100	20,5	49	30,5	42,5	0,063516

Socket-Outlet RAR10

Designed for installation in a switchboard and is used to connect a portable lamp or low-power electric tool at the time of preventive and repair work in the electrical assembly at the installation site. According to its characteristics, it complies with IEC 60884-1

Technical Characteristics	
Rated operating voltage, V	250
Rated operating frequency, Hz	50/60
Rated current, A	16
Number of contacts	2P + E
Cross-section, connected conductors, mm^2	1,5÷2,5
Degree of protection according to IEC 529	IP20
Weight kg	0,09

Overall and mounting dimensions



Logistics parameters

Group package						
product ID	quantity, pcs	weight	length	width	height	volume
MRD10-16-FCN	5	0,561	22,5	8	8	0,001440
Transport package						
product ID	quantity, pcs	weight	length	width	height	volume
MRD10-16-FCN	100	15	43	23,5	34	0,034357

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