
1 L1
3 L2
5 L3
IEK
КМИ-10910

7 Switching equipment and control devices

Contactors
KMI series Compact Contactors

KMI compact AC contactors for general industrial application for load current from 9 to 95 A (AC; 3) are designed for startup, shutdown and reversal of asynchronous motors with a short-closed rotor at voltage up to 660 V as well as for remote control of lighting circuits (AC;5a, AC;5b), heating circuits and different low-inductive loads (AC;1), for switching of three-phase capacitors batteries (AC;6b), primary windings of three-phase low-voltage transformers (AC;6a).
All versions for load current up to 40 A have one group of closing or opening auxiliary contacts. All versions for load current above 40 A have two groups (closing or opening).
Application field of KMI series compact contactors is control of fans, pumps, air curtains, furnaces, beam cranes, machines, lighting, in automatic load transfer (ALT) systems.


СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р
ГОССТАНДАРТ РОССИИ

СЕРТИФИКАТ СООТВЕТСТВИЯ

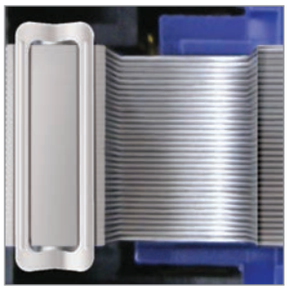
As for their constructive and technical features, KMI series compact contactors correspond to the requirements of the international and Russian standards MEK60947-4-1, GOST P50030.4.1.
KMI series compact contactors passed certification tests and a certificate of conformance with ROSS CN.ME86.B00144 was received for their serial production.

Advantages

- Extended range of KMI series compact contactors in comparison with similar domestic producers in the Russian market.
- A large range of auxiliary devices, which are always available in stock (contact extensions PKI, time lag extensions PVI, hot-wire relay RTI).
- Possibility of installation of 35 mm DIN rail (other domestic producers offer such attachment only as custom-built).
- Possibility of receipt of a reversing version with application of interlocking mechanisms.

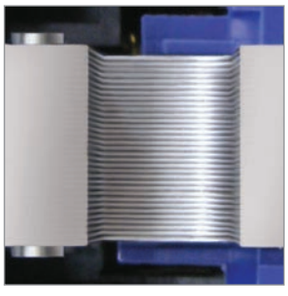
Design features

Connection contacts of special oval form provide for reliable fixation of conductors:
– for sizes 1 and 2 – with hardened disk spring washers;
– for sizes 3 and 4 – with a binding clip, enabling connection of a contract with wider section.



Short-circuited aluminum rings, pressed into polar nozzles of the moving part of the magnet system, are provided to prevent detonation.

Notches on the connection contacts reduce heating of the conductors as a result of reliable fixation at the places of connection and increase of total contact area.



As a result of application of a unique production method, the magnet system provides for optimum operating mode in the operating position (absence of noises and higher reliability of contract system).

Availability of built-in auxiliary contacts. Each contactor up to 32 A is equipped with one built-in auxiliary contact: 1c or 1o (closing or opening). Contactors from 40 to 95 A are equipped with two auxiliary contacts: 1c + 1o.

There are two methods of contactor mounting:
1. Quick mounting onto the DIN-rail: KMI from 9 to 32 A (sizes 1 and 2) – 35 mm; KMI from 40 to 95 (sizes 3 and 4) – 35 and 75 mm.
2. Installation onto a mounting panel or profile with the aid of screws.

Range

	Description	Rated operating current, A (AC 3)	Rated voltage of control coil, V	Contacts number and type	PCS/ Package	PCS/ CTN	Article
	KMI-10910 9 A 24 V/AC-3 1HO IEK	9	24	1c	1	50	KKM11-009-024-10
	KMI-10910 9 A 36 V/AC-3 1HO IEK	9	36	1c	1	50	KKM11-009-036-10
	KMI-10910 9 A 110 V/AC-3 1HO IEK	9	110	1c	1	50	KKM11-009-110-10
	KMI-10910 9 A 230 V/AC-3 1HO IEK	9	230	1c	1	50	KKM11-009-230-10
	KMI-10910 9 A 400 V/AC-3 1HO IEK	9	400	1c	1	50	KKM11-009-400-10
	KMI-10911 9 A 110 V/AC-3 1H3 IEK	9	110	1o	1	50	KKM11-009-110-01
	KMI-10911 9 A 230 V/AC-3 1H3 IEK	9	230	1o	1	50	KKM11-009-230-01
	KMI-10911 9 A 400 V/AC-3 1H3 IEK	9	400	1o	1	50	KKM11-009-400-01
	KMI-11210 12 A 24 V/AC-3 1HO IEK	12	24	1c	1	50	KKM11-012-024-10
	KMI-11210 12 A 36 V/AC-3 1HO IEK	12	36	1c	1	50	KKM11-012-036-10
	KMI-11210 12 A 110 V/AC-3 1HO IEK	12	110	1c	1	50	KKM11-012-110-10
	KMI-11210 12 A 230 V/AC-3 1HO IEK	12	230	1c	1	50	KKM11-012-230-10
	KMI-11210 12 A 400 V/AC-3 1HO IEK	12	400	1c	1	50	KKM11-012-400-10
	KMI-11211 12 A 110 V/AC-3 1H3 IEK	12	110	1o	1	50	KKM11-012-110-01
	KMI-11211 12 A 230 V/AC-3 1H3 IEK	12	230	1o	1	50	KKM11-012-230-01
	KMI-11211 12 A 400 V/AC-3 1H3 IEK	12	400	1o	1	50	KKM11-012-400-01
	KMI-11810 18 A 24 V/AC-3 1HO IEK	18	24	1c	1	50	KKM11-018-024-10
	KMI-11810 18 A 36 V/AC-3 1HO IEK	18	36	1c	1	50	KKM11-018-036-10
	KMI-11810 18 A 110 V/AC-3 1HO IEK	18	110	1c	1	50	KKM11-018-110-10
	KMI-11810 18 A 230 V/AC-3 1HO IEK	18	230	1c	1	50	KKM11-018-230-10
	KMI-11810 18 A 400 V/AC-3 1HO IEK	18	400	1c	1	50	KKM11-018-400-10
	KMI-11811 18 A 230 V/AC-3 1H3 IEK	18	230	1o	1	50	KKM11-018-230-01
	KMI-11811 18 A 110 V/AC-3 1H3 IEK	18	110	1o	1	50	KKM11-018-110-01
	KMI-11811 18 A 400 V/AC-3 1H3 IEK	18	400	1o	1	50	KKM11-018-400-01
	KMI-22510 25 A 24 V/AC-3 1HO IEK	25	24	1c	1	50	KKM21-025-024-10
	KMI-22510 25 A 36 V/AC-3 1HO IEK	25	36	1c	1	50	KKM21-025-036-10
	KMI-22510 25 A 110 V/AC-3 1HO IEK	25	110	1c	1	50	KKM21-025-110-10
	KMI-22510 25 A 230 V/AC-3 1HO IEK	25	230	1c	1	50	KKM21-025-230-10
	KMI-22510 25 A 400 V/AC-3 1HO IEK	25	400	1c	1	50	KKM21-025-400-10
	KMI-22511 25 A 110 V/AC-3 1H3 IEK	25	110	1o	1	50	KKM21-025-110-01
	KMI-22511 25 A 230 V/AC-3 1H3 IEK	25	230	1o	1	50	KKM21-025-230-01
	KMI-22511 25 A 400 V/AC-3 1H3 IEK	25	400	1o	1	50	KKM21-025-400-01
	KMI-23210 32 A 36 V/AC-3 1HO IEK	32	36	1c	1	50	KKM21-032-036-10
	KMI-23210 32 A 110 V/AC-3 1HO IEK	32	110	1c	1	50	KKM21-032-110-10
	KMI-23210 32 A 230 V/AC-3 1HO IEK	32	230	1c	1	50	KKM21-032-230-10
	KMI-23210 32 A 400 V/AC-3 1HO IEK	32	400	1c	1	50	KKM21-032-400-10
	KMI-23211 32 A 110 V/AC-3 1H3 IEK	32	110	1o	1	50	KKM21-032-110-01
	KMI-23211 32 A 230 V/AC-3 1H3 IEK	32	230	1o	1	50	KKM21-032-230-01
	KMI-23211 32 A 400 V/AC-3 1H3 IEK	32	400	1o	1	50	KKM21-032-400-01
	KMI-34012 40 A 36 V/AC-3 1HO 1H3 IEK	40	36	1c+1o	1	20	KKM31-040-036-11
	KMI-34012 40 A 110 V/AC-3 1HO 1H3 IEK	40	110	1c+1o	1	20	KKM31-040-110-11
	KMI-34012 40 A 230 V/AC-3 1HO 1H3 IEK	40	230	1c+1o	1	20	KKM31-040-230-11
	KMI-34012 40 A 400 V/AC-3 1HO 1H3 IEK	40	400	1c+1o	1	20	KKM31-040-400-11
	KMI-35012 50 A 110 V/AC-3 1HO 1H3 IEK	50	110	1c+1o	1	20	KKM31-050-110-11
	KMI-35012 50 A 230 V/AC-3 1HO 1H3 IEK	50	230	1c+1o	1	20	KKM31-050-230-11
	KMI-35012 50 A 400 V/AC-3 1HO 1H3 IEK	50	400	1c+1o	1	20	KKM31-050-400-11

Description	Rated operating current, A (AC 3)	Rated voltage of control coil, V	Contacts number and type	PCS/ Package		Article
KMI-46512 65 A 110 V/AC-3 1HO 1H3 IEK	65	110	1c+1o	1	20	KKM41-065-110-11
KMI-46512 65 A 230 V/AC-3 1HO 1H3 IEK	65	230	1c+1o	1	20	KKM41-065-230-11
KMI-46512 65 A 400 V/AC-3 1HO 1H3 IEK	65	400	1c+1o	1	20	KKM41-065-400-11
KMI-48012 80 A 110 V/AC-3 1HO 1H3 IEK	80	110	1c+1o	1	16	KKM41-080-110-11
KMI-48012 80 A 230 V/AC-3 1HO 1H3 IEK	80	230	1c+1o	1	16	KKM41-080-230-11
KMI-48012 80 A 400 V/AC-3 1HO 1H3 IEK	80	400	1c+1o	1	16	KKM41-080-400-11
KMI-49512 95 A 110 V/AC-3 1HO 1H3 IEK	95	110	1c+1o	1	16	KKM41-095-110-11
KMI-49512 95 A 230 V/AC-3 1HO 1H3 IEK	95	230	1c+1o	1	16	KKM41-095-230-11
KMI-49512 95 A 400 V/AC-3 1HO 1H3 IEK	95	400	1c+1o	1	16	KKM41-095-400-11

Technical features of KMI series compact contactors

Features		KMI-10910 KMI-10911	KMI-11210 KMI-11211	KMI-11810 KMI-11811	KMI-22510 KMI-22511	KMI-23210 KMI-23211	KMI-34012	KMI-35012	KMI-46512	KMI-48012	KMI-49512
Rated operating AC voltage U_e, V		230, 400, 660									
Rated insulation voltage U_i, V		660									
Rated impulse voltage U_{imp}, kV		8									
Rated operating current I_e, application category – AC-3 ($U_e \leq 400$ V), A		9	12	18	25	32	40	50	65	80	95
Conventional thermal current I_{th} ($t° \leq 40°$), application category – AC-1, A		25	25	32	40	50	60	80	80	125	125
ated power for AC 3, kW	230 V	2,2	3	4	5,5	7,5	11	15	18,5	22	25
	400 V	4	5,5	7,5	11	15	18,5	22	30	37	45
	660 V	5,5	7,5	10	15	18,5	30	33	37	45	45
Peak momentary load ($t \leq 1$s), A		162	216	324	450	576	720	900	1170	1440	1710
Conditional short-circuit current I_{nc}, A		1000	1000	3000	3000	3000	3000	3000	3000	5000	5000
Overcurrent protection – fuse gG, A		10	20	25	40	50	50	63	80	100	100
Coordination type		2									
Dissipated power at I_e, W/pole	AC-3	0,2	0,36	0,8	1,25	2	2,4	3,7	4,2	5,1	7,2
	AC-1	1,56	1,56	2,5	3,2	5	5,4	9,6	6,4	12,5	12,5

Technical features of control circuit of KMI series compact contactors

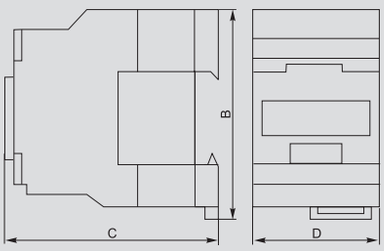
Features		KMI-10910 KMI-10911	KMI-11210 KMI-11211	KMI-11810 KMI-11811	KMI-22510 KMI-22511	KMI-23210 KMI-23211	KMI-34012	KMI-35012	KMI-46512	KMI-48012	KMI-49512
Rated control coil voltage U_c, V~		24, 36, 110, 230, 400									
Control voltage ranges	tripping	(0,8÷1,1) U_c									
	release	(0,3÷0,6) U_c									
Coil power consumption at U_c, V·A	tripping cos φ = 0,75	60	60	60	90	90	200	200	200	200	200
	holding cos φ = 0,3	7	7	7	7,5	7,5	20	20	20	20	20
Response time, ms	closing	12–22	12–22	12–22	15–24	15–24	20–26	20–26	20–26	20–35	20–35
	opening	4–19	4–19	4–19	5–19	5–19	8–12	8–12	8–12	6–20	6–20
Commutation durability, mln. cycles	AC-1	0,55	0,7	1,0	1,3	1,3	1,3	1,3	1,4	0,7	1,2
	AC-3	1,7	1,7	1,4	1,4	1,6	1,5	1,4	1,4	1,2	0,9
	AC-4	0,2	0,2	0,2	0,15	0,15	0,12	0,1	0,1	0,1	0,1
Mechanical durability, mln. cycles		15	15	15	12	10	10	10	10	5	4
Dissipated power, W		2–3	2–3	2–3	2,5–3,5	2,5–3,5	6–10	6–10	6–10	6–10	6–10

Technical features of built-in auxiliary contacts

Rated voltage U_n, V		up to 660
Rated insulation voltage U_i, V		660
Conventional thermal current ($t° \leq 40°$) I_{th}, A		10
Minimum making capacity	U_{min}, V	24
	I_{min}, mA	10
Overcurrent protection – fuse gG, A		10
Peak momentary load ($t \leq 1$ s), A		100
Insulation resistance, minimum, mOhm		10

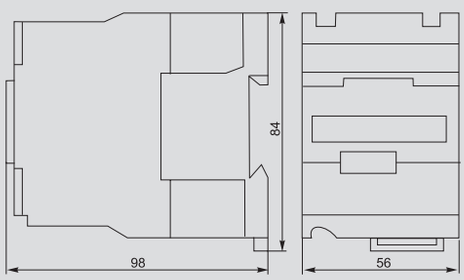
Overall dimensions and weight

KMI-10910; KMI-10911; KMI-11210; KMI-11211;
KMI-11810; KMI-11811 KMI-22510; KMI-22511



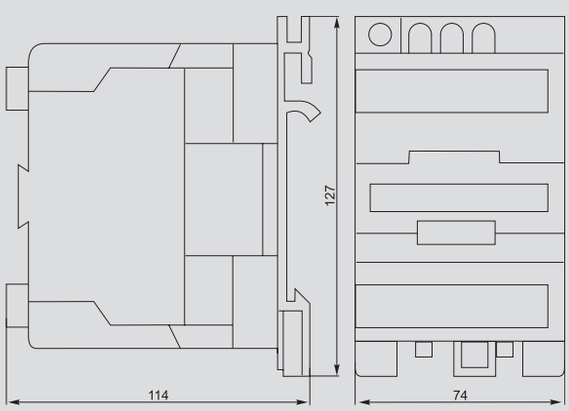
Type	Dimention, mm			Weight, max., kg
	B	C	D	
KMI-10910; KMI-10911	74	80	45	0,34
KMI-11210; KMI-11211	74	80	45	0,345
KMI-11810; KMI-11811	74	85	45	0,365
KMI-22510; KMI-22511	84	93	56	0,400

KMI-23210; KMI-23211



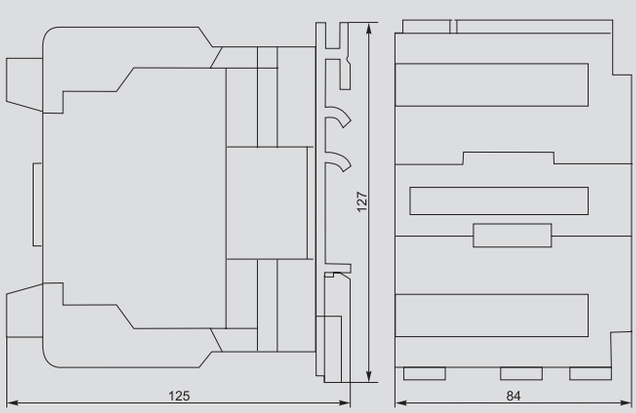
Type	Weight, max., kg
KMI-23210; KMI-23211	0,545

KMI-34010; KMI-34011
KMI-35012; KMI-46512



Type	Weight, max., kg
KMI-34010; KMI-34011	1,400
KMI-35012	1,400
KMI-46512	1,400

KMI-48012; KMI-49512



Type	Weight, max., kg
KMI-48012	1,590
KMI-49512	1,610

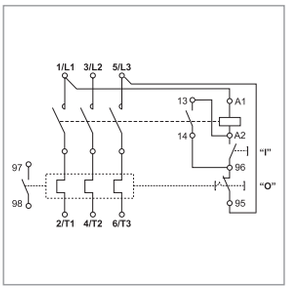
KMI Contactors with a hot-wire relay in a protective shell

KMI Contactors with a hot-wire relay in a protective shell are a complete device, consisting of KMI compact contactor, RTI hot-wire relay, a shell with glands and control buttons. They are designed for remote startup by means of direct power connection and shutdown of three-phase asynchronous motors with a short-closed rotor at AC voltage up to 400 V as well as for protection of the motors from overloads of inadmissible duration and overcurrents, occurring in case of loss of one phase. A plastic shell is used for contactors KMI 10910and KMI 23211, a metal shell is used for contactors KMI 34012 and KMI 49512.

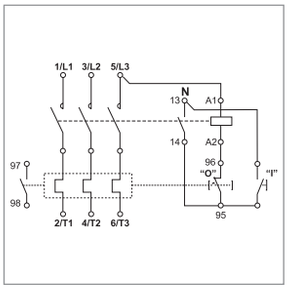
Design features

A shell with protection level IP54 allows to use the contactor at construction sites as well as in varnish-and-paint, heat-treatment and electroplating shops (on condition of placement of the equipment under a protective shed).

Factory control circuit allows to avoid faults during connection at site and shortens installation time, which is reduced only to connection of linear feed conductors.



In most cases, the load is presented by 400 V three-phase asynchronous motors. It is recommended to apply this control system for the purpose of reduction of cash expenses and working time saving, as there is no need in application of the fourth neutral working conductor, its making-off and installation.



When controlling active loads (heating circuits, lighting circuits), which use a neutral conductor, it is more reasonable to use 230 V control circuit.

Range

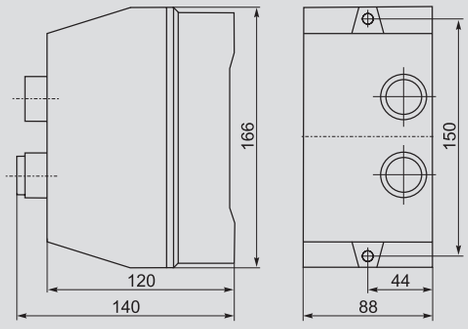
	Description	Rated operating current, A (AC 3)	Rated voltage of control coil, V	Contacts number and type	PCS/ Package	PCS/ CTN	Article
	KMI-10960 9 A in the shell 220 V/AC-3 IP54 IEK	9	220		1	20	KKM16-009-220-00
	KMI-10960 9 A in the shell 380 V/AC-3 IP54 IEK	9	380		1	20	KKM16-009-380-00
	KMI-11260 12 A in the shell 220 V/AC-3 IP54 IEK	12	220		1	20	KKM16-012-220-00
	KMI-11260 12 A in the shell 380 V/AC-3 IP54 IEK	12	380		1	20	KKM16-012-380-00
	KMI-11860 18 A in the shell 220 V/AC-3 IP54 IEK	18	220		1	20	KKM16-018-220-00
	KMI-11860 18 A in the shell 380 V/AC-3 IP54 IEK	18	380		1	20	KKM16-018-380-00
	KMI-22560 25 A in the shell 220 V/AC-3 IP54 IEK	25	220		1	16	KKM26-025-220-00
	KMI-22560 25 A in the shell 380 V/AC-3 IP54 IEK	25	380		1	16	KKM26-025-380-00
	KMI-23260 32 A in the shell 220 V/AC-3 IP54 IEK	32	220		1	16	KKM26-032-220-00
	KMI-23260 32 A in the shell 380 V/AC-3 IP54 IEK	32	380		1	16	KKM26-032-380-00
	KMI-34062 40 A in the shell 220 V/AC-3 IP54 IEK	40	220	1o	1	6	KKM36-040-220-00
	KMI-34062 40 A in the shell 380 V/AC-3 IP54 IEK	40	380	1o	1	6	KKM36-040-380-00
	KMI-35062 50 A in the shell 220 V/AC-3 IP54 IEK	50	220	1o	1	6	KKM36-050-220-00
	KMI-35062 50 A in the shell 380 V/AC-3 IP54 IEK	50	380	1o	1	6	KKM36-050-380-00
	KMI-46562 65 A in the shell 220 V/AC-3 IP54 IEK	65	220	1o	1	6	KKM46-065-220-00
	KMI-46562 65 A in the shell 380 V/AC-3 IP54 IEK	65	380	1o	1	6	KKM46-065-380-00
	KMI-48062 80 A in the shell 220 V/AC-3 IP54 IEK	80	220	1o	1	6	KKM46-080-220-00
	KMI-48062 80 A in the shell 380 V/AC-3 IP54 IEK	80	380	1o	1	6	KKM46-080-380-00
	KMI-49562 95 A in the shell 220 V/AC-3 IP54 IEK	95	220	1o	1	6	KKM46-095-220-00
	KMI-49562 95 A in the shell 380 V/AC-3 IP54 IEK	95	380	1o	1	6	KKM46-095-380-00

Technical features

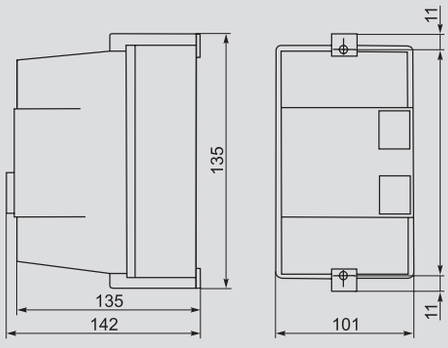
Parameters		KMI-10960 in the shell	KMI-11260 in the shell	KMI-11860 in the shell	KMI-22560 in the shell	KMI-23260 in the shell	KMI-34062 in the shell	KMI-35062 in the shell	KMI-46562 in the shell	KMI-48062 in the shell	KMI-49562 in the shell
Rated operating AC voltage U_e, V		230; 400									
Rated insulation voltage U_i, V		660									
Rated impulse voltage U_{imp}, kV		6									
Rated operating current I_e, application category – AC-3 (U_e<400 V), A		9	12	18	25	32	40	50	65	80	95
Conventional thermal current I_{th} (t°<40°), application category – AC-1, A		25	25	32	40	50	60	80	80	125	125
ated power for AC 3, kW	230 V	2,2	3	4	5,5	7,5	11	15	18,5	22	25
	400 V	4	5,5	7,5	11	15	18,5	22	30	37	45
Peak momentary load (t≤1s), A		162	216	324	450	576	720	900	1170	1440	1710
Conditional short-circuit current I_{nc}, A		1000	1000	3000	3000	3000	3000	3000	3000	5000	5000
Overcurrent protection – fuse gG, A		10	20	25	40	50	50	63	80	100	100
Coordination type		2									
Dissipated power at I_e, W/pole	AC-3	0,2	0,36	0,8	1,25	2	2,4	3,7	4,2	5,1	7,2
	AC-1	1,56	1,56	2,5	3,2	5	5,4	9,6	6,4	12,5	12,5
RTI series hot-wire relays		RTI-1314	RTI-1316	RTI-1321	RTI-1322	RTI-2355	RTI-3357	RTI-3359	RTI-3361	RTI-3363	RTI-3365
Relay setting range, A		7÷10	9÷13	12÷18	17÷25	30÷40	37÷50	48÷65	55÷70	63÷80	80÷93
Electric-shock-hazard protection class according to GOST 12.2.0007.0		II	II	II	II	II	I	I	I	I	I

Overall dimensions

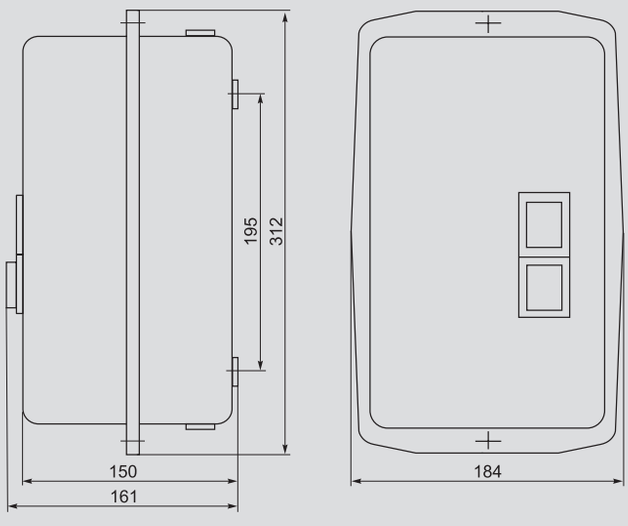
KMI-10960; KMI-11260; KMI-11860



KMI-22560;KMI-23260



KMI-34062; KMI-35062; KMI-46562;
KMI-48062; KMI-49562



7

KMIp Contactors with DC coil

KMIp series compact contactors with DC control coil for general industrial application for load current from 9 to 32 A (AC; 3) are designed for startup, shutdown and reversal of asynchronous motors with a short-closed rotor at voltage up to 660 V as well as for remote control of lighting circuits (AC;5a, AC;5b), heating circuits and different low-inductive loads (AC;1), for switching of three-phase capacitors batteries (AC;6b), primary windings of three-phase low-voltage transformers (AC;6a). All versions have one group of closing auxiliary contacts.
Application field of KMIp series compact contactors with DC control coil is control of machines, pumps, fans, air curtains, furnaces, beam cranes, lighting; in automatic load transfer (ALT) systems, uninterruptible power systems, automation protection devices, security alarm systems, industrial installation control systems; switching of three-phase capacitors batteries and primary windings of three-phase low-voltage transformers.


СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р
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As for their constructive and technical features, KMIp series compact contactors with DC control coil correspond to the requirements of the international and Russian standards MEK60947-4-1, GOST P50030.4.1.
KMIp series compact contactors with DC control coil have passed certification tests, the certificate of conformance with ROSS CN.ME86.B00623 was received for their serial production.

Advantages

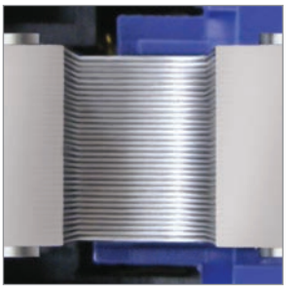
- A large range of auxiliary devices, which are always available in stock (contact extensions PKI, time lag extensions PVI, hot-wire relay RTI).
- Possibility of installation of 35 mm DIN rail (other domestic producers offer such attachment only as custom-built).
- Energy saving in case of application of DC control coil.

Design features

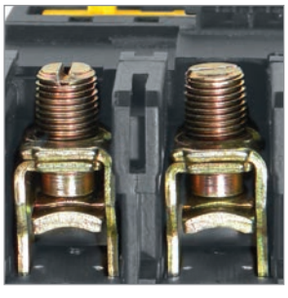
Connection contacts of oval form provide for reliable fixation of conductors with hardened disk spring washers.

Availability of built-in auxiliary contacts (closing (1HO)).

The design of the magnet system allows to reduce consumption current.



The magnet system provides for optimum operating mode in the operating position (absence of noises and higher reliability of contract system).



Notches on the connection contacts reduce heating of the conductors as a result of reliable fixation at the places of connection and increase of total contact area.

There are two methods of contactor mounting:
– quick mounting onto the DIN-rail: KMIp from 9 to 32 A (size 1 and 2) – 35 mm;
– installation onto a mounting panel or profile with the aid of screws.

Range

Description	Rated operating current, A (AC 3)	Rated control coil voltage, V	Number and type of contacts	PCS/CTN	Article
KMIp-10910 09 A 110 V/AC3 1HO IEK	9	110	1c	30	KMD11-009-110-10
KMIp-10910 09 A 220 V/AC3 1HO IEK	9	220	1c	30	KMD11-009-220-10
KMIp-11210 12 A 110 V/AC3 1HO IEK	12	110	1c	30	KMD11-012-110-10
KMIp-11210 12 A 220 V/AC3 1HO IEK	12	220	1c	30	KMD11-012-220-10
KMIp-11810 18 A 110 V/AC3 1HO IEK	18	100	1c	30	KMD11-018-110-10
KMIp-11810 18 A 220 V/AC3 1HO IEK	18	220	1c	30	KMD11-018-220-10
KMIp-22510 25 A 110 V/AC3 1HO IEK	25	110	1c	30	KMD21-025-110-10
KMIp-22510 25 A 220 V/AC3 1HO IEK	25	220	1c	30	KMD21-025-220-10
KMIp-23210 32 A 110 V/AC3 1HO IEK	32	110	1c	30	KMD21-032-110-10
KMIp-23210 32 A 220 V/AC3 1HO IEK	32	220	1c	30	KMD21-032-220-10

Technical features of KMIp

Feature name		KMIp-10910	KMIp-11210	KMIp-11810	KMIp-22510	KMIp-23210
Rated operating AC voltage U_e, V		230, 400, 660				
Rated insulation voltage U_i, V		660				
Rated impulse voltage U_{imp}, kW		6				
Rated operating current I_e, application category AC-3 (U_e<400 V), A		9	12	18	25	32
Conventional thermal current I_{th} (t°<40°), application category AC-1, A		20	20	32	40	50
Rated power for AC-3, kW	230 V	2,2	3	4	5,5	7,5
	400 V	4	5,5	7,5	11	15
	660 V	5,5	7,5	10	15	18,5
Peak momentary load (t<1 s), A		162	216	324	450	576
Conditional short-circuit current I_{nc}, A		1000		3000		
Overcurrent protection – fuse gG, A		10	20	25	40	50
Coordination type		2				
Dissipated power at I_e, W/pole	AC-3	0,2	0,36	0,8	1,25	2
	AC-1	1,56	1,56	2,5	3,2	5

Technical features of KMIp control circuit

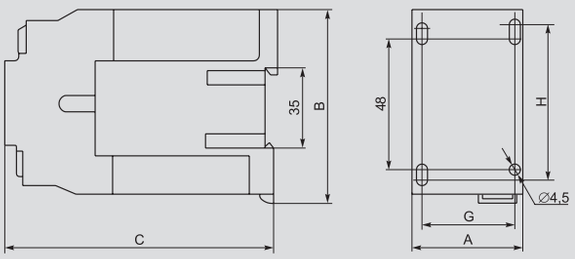
Type	Rated control coil voltage U_c, V=	Control voltage ranges		Coil power consumption at U_c, W		Response time, ms		Electrical durability, mln. switching cycles		Mechanical durability, mln. switching cycles
		tripping	release	tripping	holding	closing	opening	AC-3	AC-1	
KMIp-10910 09 A 110 V	110	(0,85÷1,1) U_c	(0,1÷0,75) U_c	7	7	70÷80	15÷20	1,7	0,55	10
KMIp-10910 09 A 220 V	220									
KMIp-11210 12 A 110 V	110			7	7			1,7	0,7	10
KMIp-11210 12 A 220 V	220									
KMIp-11810 18 A 110 V	110			7	7			1,4	1,0	10
KMIp-11810 18 A 220 V	220									
KMIp-22510 25 A 110 V	110			10	10	80÷95		1,4	1,3	8
KMIp-22510 25 A 220 V	220									
KMIp-23210 32 A 110 V	110			10	10			1,6	1,3	6
KMIp-23210 32 A 220 V	220									

Technical features of built-in auxiliary contacts

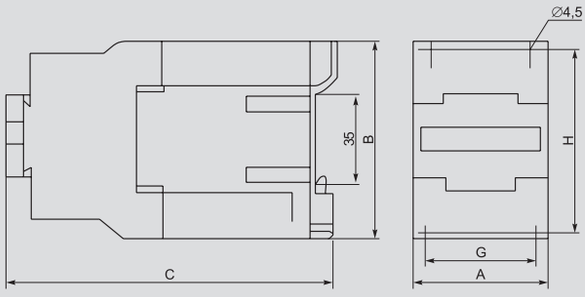
Feature name		Value
Rated voltage U_n, V	переменного тока	≤660
	постоянного тока	≤440
Rated insulation voltage U_i, V		660
Conventional thermal current (t°≤40°) I_{th}, A		10
Minimum making capacity	U_{min}, V	24
	I_{min}, mA	10
Overcurrent protection – fuse gG, A		10
Peak momentary load (t≤1 c), A		100
Insulation resistance, minimum, mOhm		>10

Overall dimensions

KMIp-10910; KMIp-11210; KMIp-11810



KMIp-22510; KMIp-23210

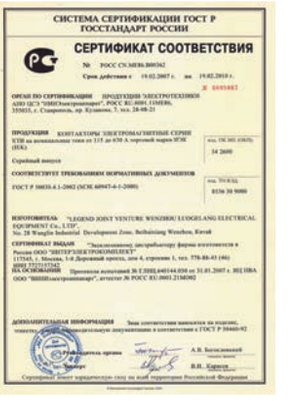


Size, mm	KMIp-10910	KMIp-11210	KMIp-11810	KMIp-22510	KMIp-23210
A	45	45	45	58	58
B	75	75	75	80	80
C	115	115	120	130	136
G	35	35	35	40÷50	40÷50
H	50÷60	50÷60	50÷60	50÷60	50÷60
Weight, max., kg	0,57	0,57	0,584	0,845	0,862

KTI series Electromagnetic Contactors

KTI series Electromagnetic Contactors are designed for application in control circuits with the purpose of startup and shutdown of asynchronous motors with a short-closed rotor in the electric mains with rated voltage up to 660V DC, and may be also used for switching-on and off other electrical installations: lighting, heaters and different inductive loads. They are applied in fans, pumps, furnaces, beam cranes, and in automatic load transfer (ALT) systems.

At the 15-th International Exhibition "Electro 2006", the contactor was awarded with a silver medal in the nomination "The Best Electrical Equipment" for the efficiency of its design solution, high operational performance and reliability.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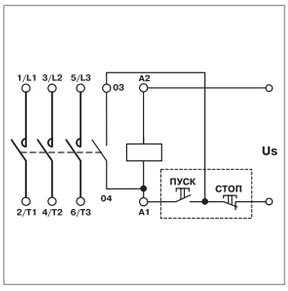
СЕРТИФИКАТ СООТВЕТСТВИЯ

As for their constructive and technical features, KTI series contactors correspond to the requirements of the international and Russian standards MEK60947-4-1, GOST P50030.4.1. KMI series contactors have passed certification tests, and the certificate of conformance with ROSS CN.ME86.B00150 was received for their serial production.

Advantages

- The simplicity of embodiment provides for convenient servicing of component parts.
- The bottom is made of aluminum profile, which provides for higher durability and lesser weight in comparison with analogs.
- A large range of auxiliary devices, which are always available in stock (contact extensions PKI, time lag extensions PVI).
- Extended range of KTI series electromagnetic contactors in comparison with similar domestic producers in the Russian market.

Design features



Circuit of each contactor has one group of closing contacts, embedded into the control coil unit. This, when involving a push-button control station, allows to assemble a simple control circuit.

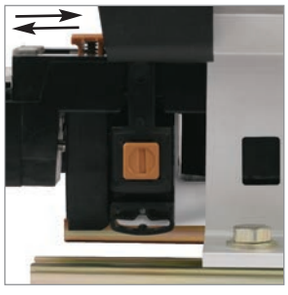
A standard allen key with a key head for 10 is used to check functioning of the contact system.

The upper cover is fixed with retaining screws. This excludes self-unscrewing. That's why KTI series contactors may be installed in places, where there is constant operating vibration.

Position indicator of the contact system is taken out to the external panel of the side cover. This allows to check the position of the working group of the contact system without disassembling the contactor.

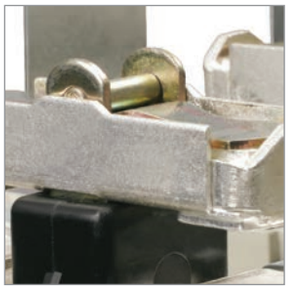
Availability of indication (factory notches) on the contacts allows to determine the degree of wear.

The design of the contactors allows to install two auxiliary extensions in any set simultaneously.



The improved design of the control coil allows removing it without a special tool (by means of retainers embedding into the contactor housing).

Factory-assembled reversing contactor is supplied with factory buses and mechanical interlock. Contactors are mounted on two metal rails, which provides for high rigidity of the structure. KTI reversing contactors are a separate group in the range of the company.



The contact of the part is covered with a silver coating, enabling usage of contactors in prolonged operating conditions. Soldering on the contact of the part is made of composites based on silver, which allows to reduce contact resistance in case of rise in temperature.

Range

	Description	Rated operating current, A (AC 3)	Rated control coil voltage, V	Type and number of contacts	PCS/ Package	PCS/CTN	Article
	Contactor KTI-5115 115 A 230 V/AC-3 IEK	115	230	1c	1	4	KKT50-115-230-10
	Contactor KTI-5115 115 A 400 V/AC-3 IEK	115	400	1c	1	4	KKT50-115-400-10
	Contactor KTI-5150 150 A 230 V/AC-3 IEK	150	230	1c	1	4	KKT50-150-230-10
	Contactor KTI-5150 150 A 400 V/AC-3 IEK	150	400	1c	1	4	KKT50-150-400-10
	Contactor KTI-5185 185 A 230 V/AC-3 IEK	185	230	1c	1	4	KKT50-185-230-10
	Contactor KTI-5185 185 A 400 V/AC-3 IEK	185	400	1c	1	4	KKT50-185-400-10
	Contactor KTI-5225 225 A 230 V/AC-3 IEK	225	230	1c	1	2	KKT50-225-230-10
	Contactor KTI-5225 225 A 400 V/AC-3 IEK	225	400	1c	1	2	KKT50-225-400-10
	Contactor KTI-5265 265 A 230 V/AC-3 IEK	265	230	1c	1	2	KKT50-265-230-10
	Contactor KTI-5265 265 A 400 V/AC-3 IEK	265	400	1c	1	2	KKT50-265-400-10
	Contactor KTI-5330 330 A 230 V/AC-3 IEK	330	230	1c	1	2	KKT50-330-230-10
	Contactor KTI-5330 330 A 400 V/AC-3 IEK	330	400	1c	1	2	KKT50-330-400-10
	Contactor KTI-6400 400 A 230 V/AC-3 IEK	400	230	1c	1	2	KKT60-400-230-10
	Contactor KTI-6400 400 A 400 V/AC-3 IEK	400	400	1c	1	2	KKT60-400-400-10
	Contactor KTI-6500 500 A 230 V/AC-3 IEK	500	230	1c	1	2	KKT60-500-230-10
	Contactor KTI-6500 500 A 400 V/AC-3 IEK	500	400	1c	1	2	KKT60-500-400-10
	Contactor KTI-7630 630 A 230 V/AC-3 IEK	630	230	1c	1	1	KKT70-630-230-10
	Contactor KTI-7630 630 A 400 V/AC-3 IEK	630	400	1c	1	1	KKT70-630-400-10

	Description	Rated operating current, A (AC 3)	Rated control coil voltage, V	Type and number of contacts	PCS/ Package	PCS/CTN	Article
	Contactor KTI-51153 reverse 115 A 230 V/AC-3 IEK	115	230	2з	1	1	KKT53-115-230-10
	Contactor KTI-51153 reverse 115 A 400 V/AC-3 IEK	115	400	2з	1	1	KKT53-115-400-10
	Contactor KTI-51503 reverse 150 A 230 V/AC-3 IEK	150	230	2з	1	1	KKT53-150-230-10
	Contactor KTI-51503 reverse 150 A 400 V/AC-3 IEK	150	400	2з	1	1	KKT53-150-400-10
	Contactor KTI-51853 reverse 185 A 230 V/AC-3 IEK	185	230	2з	1	1	KKT53-185-230-10
	Contactor KTI-51853 reverse 185 A 400 V/AC-3 IEK	185	400	2з	1	1	KKT53-185-400-10
	Contactor KTI-52253 reverse 225 A 230 V/AC-3 IEK	225	230	2з	1	1	KKT53-225-230-10
	Contactor KTI-52253 reverse 225 A 400 V/AC-3 IEK	225	400	2з	1	1	KKT53-225-400-10
	Contactor KTI-52653 reverse 265 A 230 V/AC-3 IEK	265	230	2з	1	1	KKT53-265-230-10
	Contactor KTI-52653 reverse 265 A 400 V/AC-3 IEK	265	400	2з	1	1	KKT53-265-400-10
	Contactor KTI-53303 reverse 330 A 230 V/AC-3 IEK	330	230	2з	1	1	KKT53-330-230-10
	Contactor KTI-53303 reverse 330 A 400 V/AC-3 IEK	330	400	2з	1	1	KKT53-330-400-10
	Contactor KTI-64003 reverse 400 A 230 V/AC-3 IEK	400	230	2з	1	1	KKT63-400-230-10
	Contactor KTI-64003 reverse 400 A 400 V/AC-3 IEK	400	400	2з	1	1	KKT63-400-400-10
	Contactor KTI-65003 reverse 500 A 230 V/AC-3 IEK	500	230	2з	1	1	KKT63-500-230-10
	Contactor KTI-65003 reverse 500 A 400 V/AC-3 IEK	500	400	2з	1	1	KKT63-500-400-10
	Contactor KTI-76303 reverse 630 A 230 V/AC-3 IEK	630	230	2з	1	1	KKT73-630-230-10
	Contactor KTI-76303 reverse 630 A 400 V/AC-3 IEK	630	400	2з	1	1	KKT73-630-400-10

Technical features of KTI series electromagnetic contactors

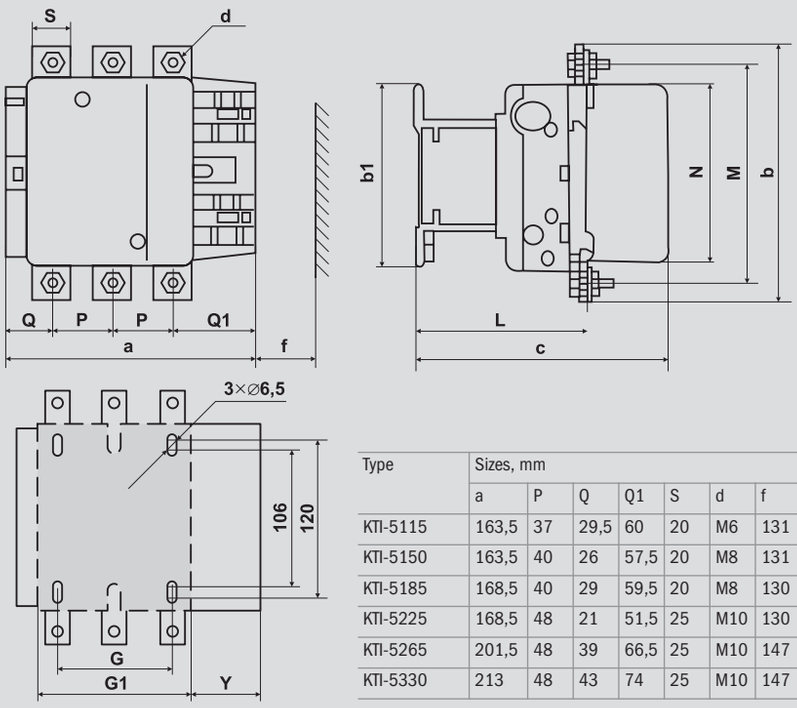
Parameters		KTI-5115	KTI-5150	KTI-5185	KTI-5225	KTI-5265	KTI-5330	KTI-6400	KTI-6500	KTI-7630
Rated operating AC voltage U_e, V		230; 400; 660								
Rated insulation voltage U_i, V		1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated operating current I_e, application category AC-3 ($U_e \leq 400$ V), A		115	150	185	225	265	330	400	500	630
Conventional thermal current I_{th} ($t° \leq 40°$), application category AC-1, A		200	250	275	315	350	400	500	700	1000
Rated power for AC-3, kW	230 V	30	40	55	63	75	100	110	147	200
	400 V	55	75	90	110	132	160	200	250	335
	660 V	80	100	110	129	160	220	280	335	450
Peak momentary load ($t \leq 1$ s), A		920	1200	1480	1800	2120	2640	3200	4000	5040
Conditional short-circuit current I_{nc}, A		5000	10 000	10 000	10 000	10 000	18 000	18 000	18 000	18 000
Overcurrent protection – fuse gG, A		200	250	315	315	400	500	500	800	1000
Coordination type		2								
Repeated momentary mode, operation cycles per hour		120	120	120	120	120	120	120	120	120
Dissipated power at rated current, W/pole	AC-3	5	8	12	16	21	31	42	45	48
	AC-1	15	22	25	32	37	44	65	88	120

Technical features of control circuit

Parameters		KTI-5115	KTI-5150	KTI-5185	KTI-5225	KTI-5265	KTI-5330	KTI-6400	KTI-6500	KTI-7630
Rated control coil voltage U_c , V		230; 400								
Control voltage range	tripping	$(0,8 \div 1,1) \cdot U_c$								
	release	$(0,35 \div 0,55) \cdot U_c$								
Coil power consumption at U_c, W	tripping $\cos \varphi = 0,3$	550	550	800	800	650	650	1075	1100	1650
	holding $\cos \varphi = 0,75$	45	45	55	55	10	10	15	18	22
Response time, ms	closing	23÷35	23÷35	20÷35	20÷35	40÷65	40÷65	40÷75	40÷75	40÷80
	opening	5÷15	5÷15	7÷15	7÷15	100÷170	100÷170	100÷170	100÷170	100÷200
Electrical durability, mln. switching cycles	AC-3	0,8	0,8	0,8	0,7	0,7	0,6	0,5	0,5	0,4
	AC-1	0,5	0,5	0,5	0,4	0,4	0,3	0,3	0,3	0,25
Mechanical durability, mln. switching cycles		1	1	1	1	1	1	0,8	0,8	0,8
Dissipated power, W/pole		12÷16	12÷16	18÷24	18÷24	8	8	14	18	20

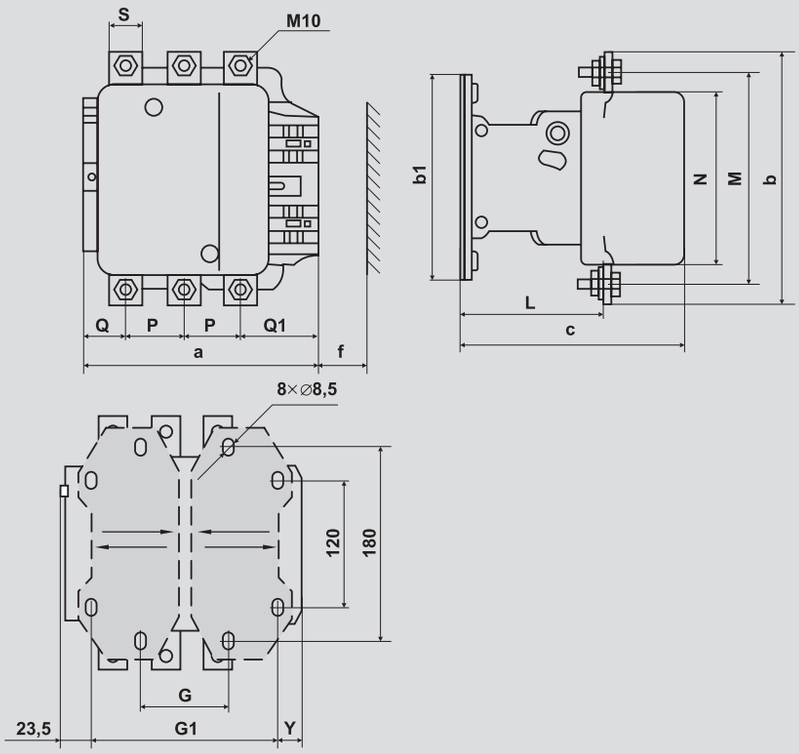
Overall and mounting dimensions

KTI-5115 ... KTI-5330



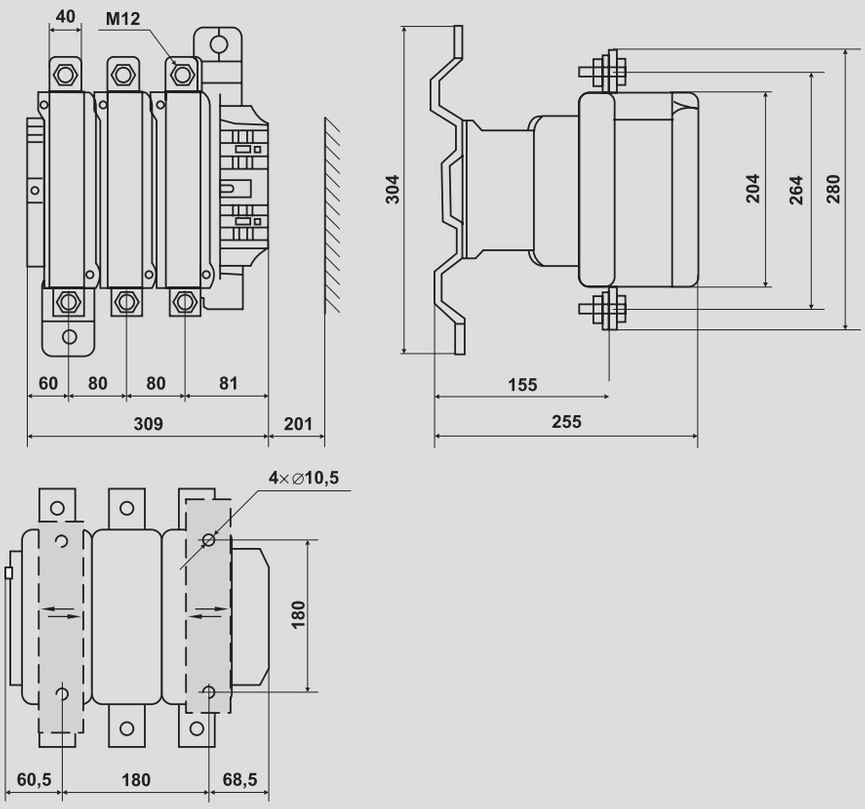
Type	Sizes, mm															
	a	P	Q	Q1	S	d	f	b	b1	M	N	c	L	G	G1	Y
KTI-5115	163,5	37	29,5	60	20	M6	131	162	137	147	124	171	107	80	106	44
KTI-5150	163,5	40	26	57,5	20	M8	131	170	137	150	124	171	107	80	106	44
KTI-5185	168,5	40	29	59,5	20	M8	130	174	137	154	127	181	113,5	80	111	44
KTI-5225	168,5	48	21	51,5	25	M10	130	197	137	172	127	181	113,5	80	111	44
KTI-5265	201,5	48	39	66,5	25	M10	147	203	145	178	147	213	141	96	140	38
KTI-5330	213	48	43	74	25	M10	147	206	145	181	158	219	145	96	154	38

KTI-6400, KTI-6500

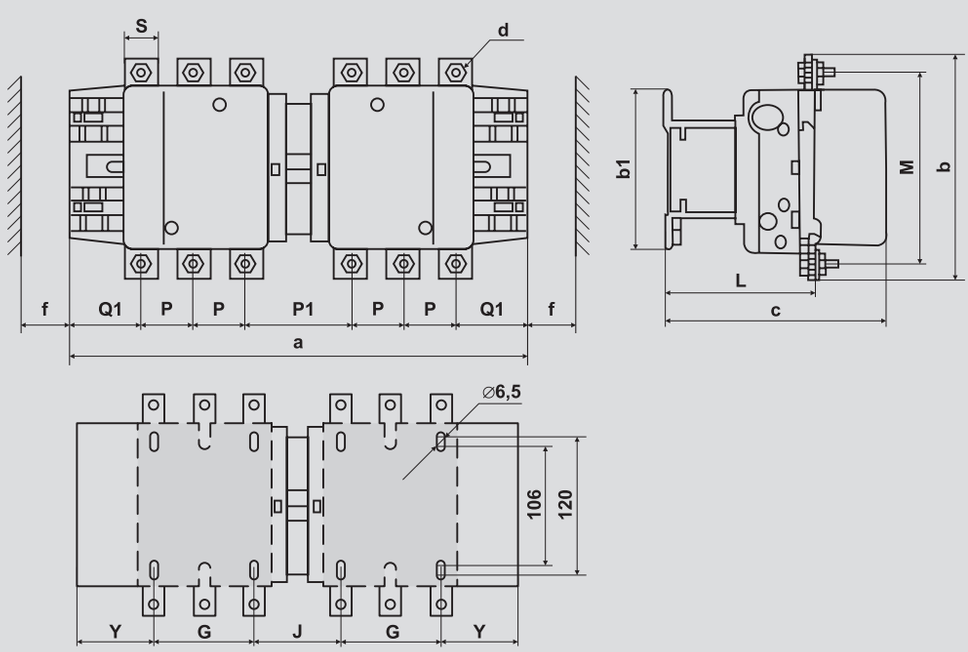


Type	Sizes, mm														
	a	P	Q	Q1	S	f	b	b1	M	N	c	L	G	G1	Y
KTI-6400	213	48	43	74	25	151	206	209	181	158	219	145	80	170	19,5
KTI-6500	233	55	46	77	30	169	238	209	208	172	232	146	80	170	39,5

KTI-7630

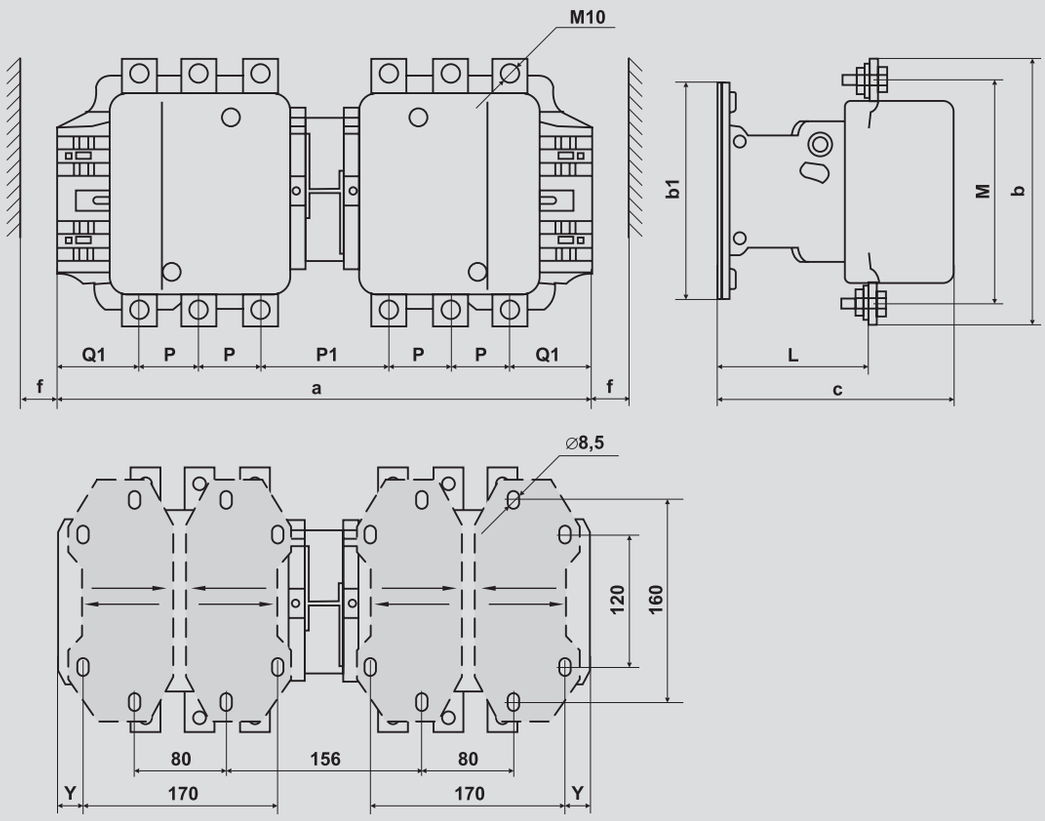


KTI-51153 ... KTI-53303



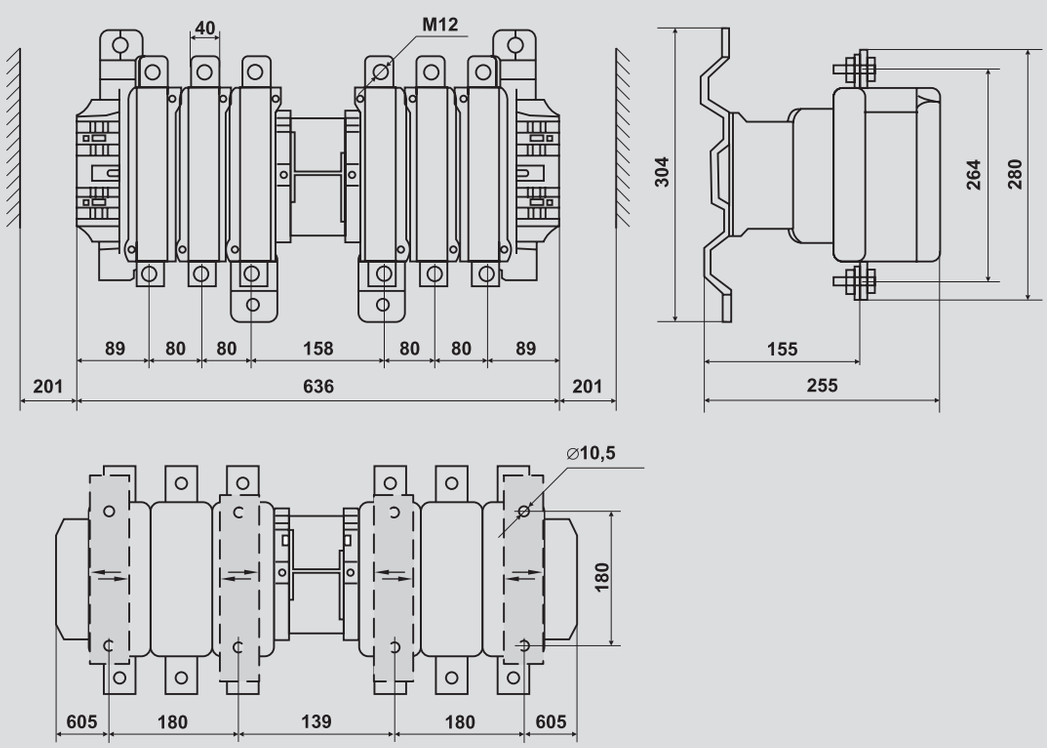
Type	Sizes, mm														
	a	P	P1	Q1	S	d	f	b	b1	M	c	L	G	J	Y
KTI-51153	346	37	78	60	20	M6	131	162	137	147	171	107	80	72	57
KTI-51503	346	40	72	57,5	20	M8	131	170	137	150	171	107	80	72	57
KTI-51853	357	40	78	59,5	20	M8	130	174	137	154	181	113,5	80	78	59,5
KTI-52253	357	48	62	51,5	25	M10	130	197	137	172	181	113,5	80	78	59,5
KTI-52653	424	48	99	66,5	25	M10	147	203	145	178	213	141	96	109	61,5
KTI-53303	445	48	105	74	25	M10	147	206	145	181	219	145	96	122	65,5

KTI-64003, KTI-65003



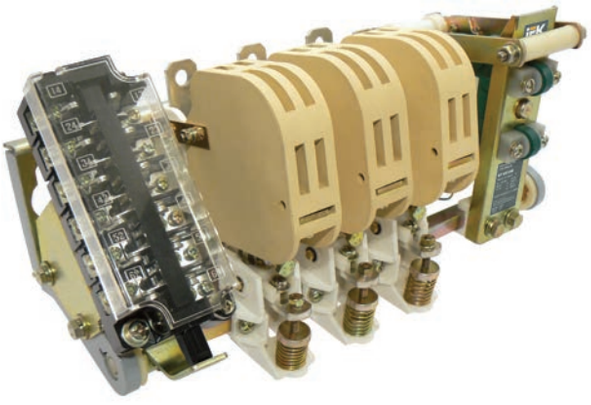
Type	Sizes, mm											
	a	P	P1	Q1	S	f	b	b1	M	c	L	Y
KTI-64003	445	48	105	74	25	151	206	209	181	219	145	19,5
KTI-65003	485	55	111	77	30	169	238	209	208	232	146	39,5

KTI-76303



Contactors of КТ6600I and КТР6600I series

Electromagnetic Contactors of КТ6600I series (with AC control coil) and of КТР6600I series (with DC control coil) are switching devices of open design with natural air cooling of general purpose for load current from 100 to 500 A and voltage up to 400 V AC, 50 Hz. They are produced with two-, three- and four-pole design in five standard sizes, the structure of which is equipped with an auxiliary switch assembly for switching-on and off alarm system and automation circuits.
Contactors are designed for application in electrical equipment for cranes, substations and distribution devices of industrial use.

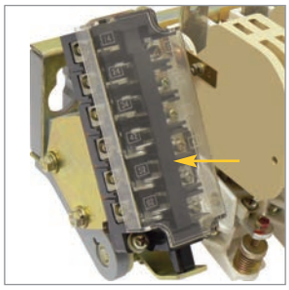


At the Exhibition "Electro 2007", the contactor КТ6613I was awarded with a gold medal.

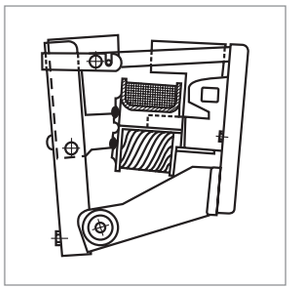
Advantages

- Wide range of contactors, including the whole line of rated currents from 100 to 500 A and supplemented with control coils with different voltage values.
- Contactors of КТ6600I and КТР6600I series may replace domestically produced contactors of series 60 and 66.
- Contacts of КТР6600I series belong to energy-saving type of electrical equipment. This is achieved at the expense of the fact that control coil has switching contacts in its circuit, and, therefore, two modes of operation: at tripping and at holding. Thus, it is possible to achieve the minimum necessary power consumption.
- The contactors have a functional structure of the auxiliary switch assembly, which allows to change the type and number of auxiliary contacts with minimum working time spending.

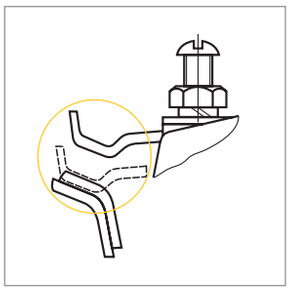
Design features



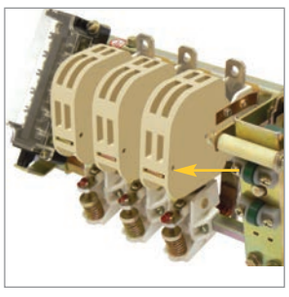
The structure of the auxiliary switch assembly allows to change the type and number of auxiliary contacts with minimum working time spending.



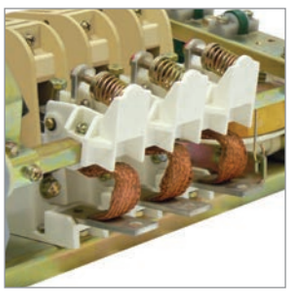
Flexible connection of the keeper and the core of the magnet system enables self-installing at tripping in the most optimum position under the action of electromagnetic forces.



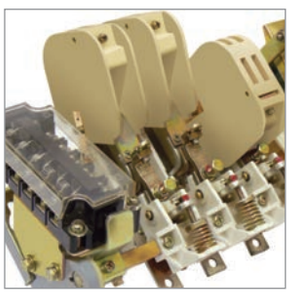
Possibility of adjustment of power contact gap and follow-through for the purpose of optimum operation mode setting.



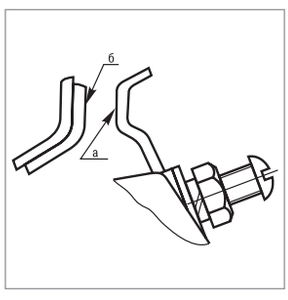
Application of new materials for production of arc-suppressing chambers allows to abandon application of asbestos, having a negative effect on the respiratory system of people.



Braid-based flexible connections allow to exclude wire break as a result of long-duration operation at constant displacement of contacts attached to the rail.

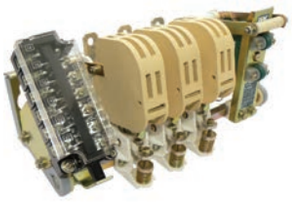


Simple design of covers of arc-suppressing chambers provide for free access to the power contacts for after-sales service of contactors.

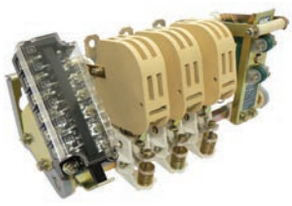


Manufacture of non-movable power contacts of copper (a), and movable contacts of silver composite (b) increases durability and allow to avoid contact burning.

Range



Description	Rated current (AC-3)	Number of poles	PCS/Package	Article
Contactor KT6612I 100 A 2p 230 V AC IEK	100	2	1	KTA11-100-230-2
Contactor KT6612I 100 A 2p 400 V AC IEK	100	2	1	KTA11-100-400-2
Contactor KT6613I 100 A 3p 230 V AC IEK	100	3	1	KTA11-100-230-3
Contactor KT6613I 100 A 3p 400 V AC IEK	100	3	1	KTA11-100-400-3
Contactor KT6614I 100 A 4p 230 V AC IEK	100	4	1	KTA11-100-230-4
Contactor KT6614I 100 A 4p 400 V AC IEK	100	4	1	KTA11-100-400-4
Contactor KT6622I 150 A 2p 230 V AC IEK	150	2	1	KTA21-150-230-2
Contactor KT6622I 150 A 2p 400 V AC IEK	150	2	1	KTA21-150-400-2
Contactor KT6623I 150 A 3p 230 V AC IEK	150	3	1	KTA21-150-230-3
Contactor KT6623I 150 A 3p 400 V AC IEK	150	3	1	KTA21-150-400-3
Contactor KT6624I 150 A 4p 230 V AC IEK	150	4	1	KTA21-150-230-4
Contactor KT6624I 150 A 4p 400 V AC IEK	150	4	1	KTA21-150-400-4
Contactor KT6632I 250 A 2p 230 V AC AC IEK	250	2	1	KTA31-250-230-2
Contactor KT6632I 250 A 2p 400 V AC IEK	250	2	1	KTA31-250-400-2
Contactor KT6633I 250 A 3p 230 V AC IEK	250	3	1	KTA31-250-230-3
Contactor KT6633I 250 A 3p 400 V AC IEK	250	3	1	KTA31-250-400-3
Contactor KT6634I 250 A 4p 230 V AC IEK	250	4	1	KTA31-250-230-4
Contactor KT6634I 250 A 4p 400 V AC IEK	250	4	1	KTA31-250-400-4
Contactor KT6642I 400 A 2p 230 V AC IEK	400	2	1	KTA41-400-230-2
Contactor KT6642I 400 A 2p 400 V AC IEK	400	2	1	KTA41-400-400-2
Contactor KT6643I 400 A 3p 230 V AC IEK	400	3	1	KTA41-400-230-3
Contactor KT6643I 400 A 3p 400 V AC IEK	400	3	1	KTA41-400-400-3
Contactor KT6644I 400 A 4p 230 V AC IEK	400	4	1	KTA41-400-230-4
Contactor KT6644I 400 A 4p 400 V AC IEK	400	4	1	KTA41-400-400-4
Contactor KT6652I 500 A 2p 230B AC IEK	500	2	1	KTA51-500-230-2
Contactor KT6652I 500 A 2p 400 V AC IEK	500	2	1	KTA51-500-400-2
Contactor KT6653I 500 A 3p 230 V AC IEK	500	3	1	KTA51-500-230-3
Contactor KT6653I 500 A 3p 400 V AC IEK	500	3	1	KTA51-500-400-3
Contactor KT6654I 500 A 4p 230 V AC IEK	500	4	1	KTA51-500-230-4
Contactor KT6654I 500 A 4p 400 V AC IEK	500	4	1	KTA51-500-400-4



Description	Rated current (AC-3)	Number of poles	PCS/Package	Article
Contactor KT6612I 100 A 2p 230 V AC IEK	100	2	1	KTA11-100-230-2
Contactor KTP6612I 100 A 2p 110 V DC IEK	100	2	1	KTD11-100-110-2
Contactor KTP6612I 100 A 2p 220 V DC IEK	100	2	1	KTD11-100-220-2
Contactor KTP6613I 100 A 3p 110 V DC IEK	100	3	1	KTD11-100-110-3
Contactor KTP6613I 100 A 3p 220 V DC IEK	100	3	1	KTD11-100-220-3
Contactor KTP6622I 150 A 2p 110 V DC IEK	150	2	1	KTD21-150-110-2
Contactor KTP6622I 150 A 2p 220 V DC IEK	150	2	1	KTD21-150-220-2
Contactor KTP6623I 150 A 3p 110 V DC IEK	150	3	1	KTD21-150-110-3
Contactor KTP6623I 150 A 3p 220 V DC IEK	150	3	1	KTD21-150-220-3
Contactor KTP6632I 250 A 2p 110 V DC IEK	250	2	1	KTD31-250-110-2
Contactor KTP6632I 250 A 2p 220 V DC IEK	250	2	1	KTD31-250-220-2
Contactor KTP6633I 250 A 3p 110 V DC IEK	250	3	1	KTD31-250-110-3
Contactor KTP6633I 250 A 3p 220 V DC IEK	250	3	1	KTD31-250-220-3
Contactor KTP6642I 400 A 2p 110 V DC IEK	400	2	1	KTD41-400-110-2
Contactor KTP6642I 400 A 2p 220 V DC IEK	400	2	1	KTD41-400-220-2
Contactor KTP6643I 400 A 3p 110 V DC IEK	400	3	1	KTD41-400-110-3
Contactor KTP6643I 400 A 3p 220 V DC IEK	400	3	1	KTD41-400-220-3

Spare parts for contactors of KT6000I and KTP6600I series

Power contacts set

It is designed for routine replacement of worn-out power contacts in contactors KT6600I and KTP6600I. The power contacts set for contactors KT6600I and KTP6600I is a set of movable and non-movable contacts. The material of the non-movable contact is silver copper with silver coating, the material of movable contact is copper with silver coating and with silver-containing composite soldering.

Arc-suppressing chambers

The are designed for replacement of failing arc-suppressing chambers in contactors KT6600I and KTP6600I. The material of the arc-suppressing chamber is DMC plastic.

Control coils

Control coils for contactors of KT6600 and KTP6600 series serve to control contactors by means of current supply to the control circuit.

Correspondence of spare parts to contactors KT6600I and KTP6600I

Description	Contactor type	Article
Contacts set 100 A IEK	KT6610I, KTP6610I	KK-100A
Contacts set 150 A IEK	KT6620I, KTP6620I	KK-150A
Contacts set 250 A IEK	KT6630I, KTP6630I	KK-250A
Contacts set 400 A IEK	KT6640I, KTP6640I	KK-400A
Contacts set 500 A IEK	KT6650I	KK-500A
Arc-suppressing chamber for KT and KTP contactors with rated current 100 A IEK	KT6610I, KTP6610I	KTA11D-AS
Arc-suppressing chamber for KT and KTP contactors with rated current 150 A IEK	KT6620I, KTP6620I	KTA21D-AS
Arc-suppressing chamber for KT and KTP contactors with rated current 250 A IEK	KT6630I, KTP6630I	KTA31D-AS
Arc-suppressing chamber for KT and KTP contactors with rated current 400 A IEK	KT6640I, KTP6640I	KTA41D-AS
Arc-suppressing chamber for KT contactors with rated current 500 A IEK	KT6650I	KTA51D-AS
Control coil KU(P)-100 110 V IEK	KTP6610I	KTD10D-KU-110-00
Control coil KU(P)-100 220 V IEK	KTP6610I	KTD10D-KU-220-00
Control coil KU(P)-100 024 V IEK	KTP6610I	KTD10D-KU-024-00
Control coil KU(P)-100 048 V IEK	KTP6610I	KTD10D-KU-048-00
Control coil KU(P)-150 110 V IEK	KTP6620I	KTD20D-KU-110-00
Control coil KU(P)-150 220 V IEK	KTP6620I	KTD20D-KU-220-00
Control coil KU(P)-150 024 V IEK	KTP6620I	KTD20D-KU-024-00
Control coil KU(P)-150 048 V IEK	KTP6620I	KTD20D-KU-048-00
Control coil KU(P)-250 024 V IEK	KTP6630I	KTD30D-KU-024-00
Control coil KU(P)-250 048 V IEK	KTP6630I	KTD30D-KU-048-00
Control coil KU(P)-250 110 V IEK	KTP6630I	KTD30D-KU-110-00
Control coil KU(P)-250 220 V IEK	KTP6630I	KTD30D-KU-220-00
Control coil KU(P)-400 024 V IEK	KTP6640I	KTD40D-KU-024-00
Control coil KU(P)-400 048 V IEK	KTP6640I	KTD40D-KU-048-00
Control coil KU(P)-400 110 V IEK	KTP6640I	KTD40D-KU-110-00
Control coil KU(P)-400 220 V IEK	KTP6640I	KTD40D-KU-220-00
Control coil KU-100/2,3 127 V IEK	KT6612, KT6613	KTA10D-KU-127-23
Control coil KU-100/2,3 230 V IEK	KT6612, KT6613	KTA10D-KU-230-23
Control coil KU-100/2,3 036 V IEK	KT6612, KT6613	KTA10D-KU-036-23
Control coil KU-100/2,3 400 V IEK	KT6612, KT6613	KTA10D-KU-400-23
Control coil KU-100/4,5 127 V IEK	KT6614	KTA10D-KU-127-45
Control coil KU-100/4,5 230 V IEK	KT6614	KTA10D-KU-230-45
Control coil KU-100/4,5 036 V IEK	KT6614	KTA10D-KU-036-45
Control coil KU-100/4,5 400 V IEK	KT6614	KTA10D-KU-400-45
Control coil KU-150/2,3 127 V IEK	KT6614	KTA20D-KU-127-23
Control coil KU-150/2,3 230 V IEK	KT6622, KT6623	KTA20D-KU-230-23
Control coil KU-150/2,3 036 V IEK	KT6622, KT6623	KTA20D-KU-036-23
Control coil KU-150/2,3 400 V IEK	KT6622, KT6623	KTA20D-KU-400-23
Control coil KU-150/4,5 036 V IEK	KT6624	KTA20D-KU-036-45
Control coil KU-150/4,5 127 V IEK	KT6624	KTA20D-KU-127-45
Control coil KU-150/4,5 230 V IEK	KT6624	KTA20D-KU-230-45
Control coil KU-150/4,5 400 V IEK	KT6624	KTA20D-KU-400-45
Control coil KU-250/2,3 036 V IEK	KT6632, KT6633	KTA30D-KU-036-23
Control coil KU-250/2,3 127 V IEK	KT6632, KT6633	KTA30D-KU-127-23
Control coil KU-250/2,3 230 V IEK	KT6632, KT6633	KTA30D-KU-230-23
Control coil KU-250/2,3 400 V IEK	KT6632, KT6633	KTA30D-KU-400-23
Control coil KU-250/4,5 036 V IEK	KT6634	KTA30D-KU-036-45
Control coil KU-250/4,5 127 V IEK	KT6634	KTA30D-KU-127-45
Control coil KU-250/4,5 230 V IEK	KT6634	KTA30D-KU-230-45
Control coil KU-250/4,5 400 V IEK	KT6634	KTA30D-KU-400-45
Control coil KU-400/2,3 036 V IEK	KT6642, KT6643	KTA40D-KU-036-23
Control coil KU-400/2,3 127 V IEK	KT6642, KT6643	KTA40D-KU-127-23
Control coil KU-400/2,3 230 V IEK	KT6642, KT6643	KTA40D-KU-230-23
Control coil KU-400/2,3 400 V IEK	KT6642, KT6643	KTA40D-KU-400-23
Control coil KU-400/4,5 036 V IEK	KT6644	KTA40D-KU-036-45
Control coil KU-400/4,5 127 V IEK	KT6645	KTA40D-KU-127-45
Control coil KU-400/4,5 230 V IEK	KT6646	KTA40D-KU-230-45
Control coil KU-400/4,5 400 V IEK	KT6647	KTA40D-KU-400-45
Control coil KU-500/2,3 036 V IEK	KT6652, KT6653	KTA50D-KU-036-23
Control coil KU-500/2,3 127 V IEK	KT6652, KT6653	KTA50D-KU-127-23
Control coil KU-500/2,3 230 V IEK	KT6652, KT6653	KTA50D-KU-230-23
Control coil KU-500/2,3 400 V IEK	KT6652, KT6653	KTA50D-KU-400-23
Control coil KU-500/4,5 036 V IEK	KT6654	KTA50D-KU-036-45
Control coil KU-500/4,5 127 V IEK	KT6654	KTA50D-KU-127-45
Control coil KU-500/4,5 230 V IEK	KT6654	KTA50D-KU-230-45
Control coil KU-500/4,5 400 V IEK	KT6654	KTA50D-KU-400-45

Technical features of power circuit

Parameters		KT6610I, KTP6610I	KT6620I, KTP6620I	KT6630I, KTP6630I	KT6640I, KTP6640I	KT6650I
Rated operating 50 Hz voltage U_e, V		400				
Rated operating current I_e, A	AC-3	100	150	250	400	500
	AC-4	80	120	200	320	400
Number of poles		2, 3, 4, 5				
Conditional short-circuit current I_{nc}, kA		5	10	10	10	18
Overcurrent protection — fuse gG, A		125	200	400	500	630
Maximum switching frequency, cycles/hr		600	600	600	300	300
Mechanical durability, mln. cycles		3,0			1,0 (0,1 for 4-pole)	
Electrical durability, mln. cycles		0,3			0,15 (0,05 for 4-pole)	

Technical features of auxiliary contacts

Parameters		KT6610I, KTP6610I	KT6620I, KTP6620I	KT6630I, KTP6630I	KT6640I, KTP6640I
Number of auxiliary contacts		3c+3o (5c +1o, 4c+2o, 2c+4o, 1c+5o)			
Rated voltage, V	AC-15	400			
	DC-13	220			
Rated thermal current, I_{the} A		10			
Rated operating current I_n, A	AC-15	5			
	DC-13	3			
Conditional short-circuit current, A		1000			
Maximum cable size, mm^2		1,5÷4			
Screw tightening torque, Nm		1,2			

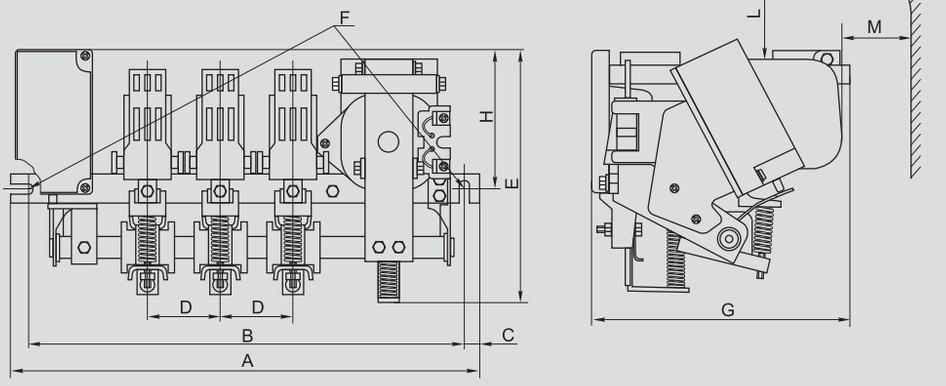
Technical features of KT contractor control circuit

Parameters		KT6610I		KT6620I		KT6630I		KT6640I		KT6650I	
Number of poles		2, 3	4	2, 3	4	2, 3	4	2, 3	4	2, 3	4
Rated control coil voltage U_c, V		36, 127, 230, 400									
Control voltage range	tripping	(0,85÷1,1) U_c									
	release	(0,2÷0,75) U_c									
Coil power consumption, V·A	tripping	920	1200	1100	1450	2100	2400	4000	9000	5600	10 000
	holding	75	125	85	100	105	175	150	230	200	330

Technical features of KTP contractor control circuit

Parameters		KTP6610I		KTP6620I		KTP6630I		KTP6640I	
Number of poles		2, 3	4	2, 3	4	2, 3	4	2, 3	4
Rated control coil voltage U_c, V		24, 48, 110, 220							
Control voltage range	tripping	(0,85÷1,1) U_c							
	release	(0,1÷0,75) U_c							
Coil power consumption, W	tripping	200	440	250	445	300	455	510	580
	holding	20	30	45	55	50	65	55	75

Overall and mounting dimensions

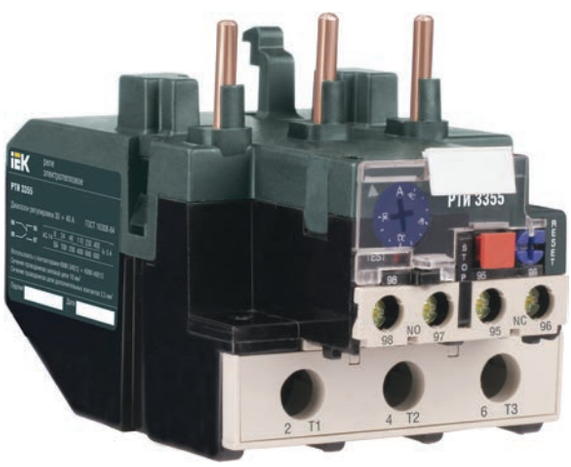


Contactor type	Size, mm														Масса, кг
	A			B			C	D	E	F	G	H	L	M	
	2 pole	3 pole	4 pole	2 pole	3 pole	4 pole									3 pole
KT6610I, KTP6610I	316	372	430	274	330	386	15	56	194	M10	195	95	80	50	7,8
KT6620I, KTP6620I	346	409	473	307	370	433	15	63	219	M10	207	130	70	70	12,5
KT6630I, KTP6630I	374	445	516	335	405	475	15	70	255	M10	230	150	70	80	17,5
KT6640I, KTP6640I	420	500	561	360	440	540	20	80	296	M12	274	165	100	80	30
KT6650I	469	566	664	404	500	596	24	96	349	M16	334	200	120	150	51

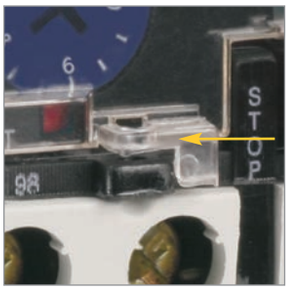
Relays and auxiliary devices for contactors

RTI series hot-wire relays

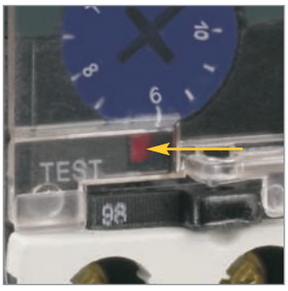
RTI series hot-wire relay is designed for motor protection from overloads, phase asymmetry, overextended startup and rotor jamming. It is mounted directly onto KMI series contactors. For the purpose of protection against short-circuit, there shall be provided fuses or automatic circuit breakers for the corresponding value of rated tripping current.



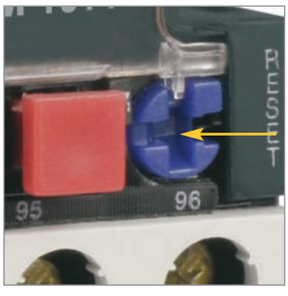
Design features



Sealing of the transparent cover, protecting the setting adjustment disc, precludes unauthorized access to adjustment of working values of setting current.

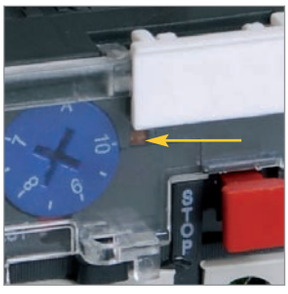


Availability of TEST button enables functional check of the device prior to its connection to the power circuit.

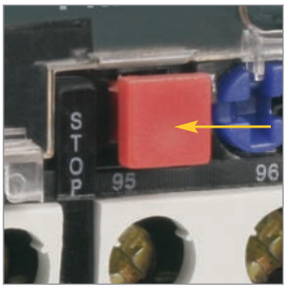


Repeated switching process may run in two modes: manual and automatic.

Availability of surface for marking allows to make indications for correspondence with the circuit, which facilitates installation.



The current status of opening and closing contacts is informed by the indicator at the front panel.



Possibility of forced contactor shutdown.

	Description	Size	Adjustment limit setting current, A	Type of contactors, used with a relay
	RTI-1301	1	0,1÷0,16	KMI-10910, KMI-10911, KMI-11210, KMI-11211, KMI-11810, KMI-11811, KMI-22510, KMI-22511
	RTI-1302	1	0,16÷0,25	
	RTI-1303	1	0,25÷0,4	
	RTI-1304	1	0,4÷0,63	
	RTI-1305	1	0,63÷1,0	
	RTI-1306	1	1,0÷1,6	
	RTI-1307	1	1,6÷2,5	
	RTI-1308	1	2,5÷4,0	
	RTI-1310	1	4,0÷6,0	
	RTI-1312	1	5,5÷8,0	
	RTI-1314	1	7,0÷10,0	
	RTI-1316	1	9,0÷13,0	KMI-11210, KMI-11211, KMI-11810, KMI-11811, KMI-22510, KMI-22511
	RTI-1321	1	12,0÷18,0	KMI-11810, KMI-11811, KMI-22510, KMI-22511
	RTI-1322	1	17,0÷25,0	KMI-22510, KMI-22511
	RTI-2355	2	28,0÷36,0	KMI-23210, KMI-23211
	RTI-3353	3	23,0÷32,0	KMI-34012, KMI-35012, KMI-46512, KMI-48012, KMI-49512
	RTI-3355	3	30,0÷40,0	KMI-34012, KMI-35012, KMI-46512, KMI-48012, KMI-49512
	RTI-3357	3	37,0÷50,0	KMI-35012, KMI-46512, KMI-48012, KMI-49512
	RTI-3359	3	48,0÷65,0	KMI-46512, KMI-48012, KMI-49512
	RTI-3361	3	55,0÷70,0	KMI-46512, KMI-48012, KMI-49512
	RTI-3363	3	63,0÷80,0	KMI-48012, KMI-49512
	RTI-3365	3	80,0÷93,0	KMI-49512

Range

	Description	Range of relay settings, A	Number and type of contacts	PCS/ Package	PCS/ CTN	Article
	Hot-wire RTI-1301 0,1-0,16 A IEK	0,1÷0,16	1c+1o	1	100	DRT10-D001-C016
	Hot-wire RTI-1302 0,16-0,25 A IEK	0,16÷0,25	1c+1o	1	100	DRT10-C016-C025
	Hot-wire RTI-1303 0,25-0,4 A IEK	0,25÷0,4	1c+1o	1	100	DRT10-C025-D004
	Hot-wire RTI-1304 0,4-0,63 A IEK	0,4÷0,63	1c+1o	1	100	DRT10-D004-C063
	Hot-wire RTI-1305 0,63-1,0 A IEK	0,63÷1,0	1c+1o	1	100	DRT10-C063-0001
	Hot-wire RTI-1306 1-1,6 A IEK	1÷1,6	1c+1o	1	100	DRT10-0001-D016
	Hot-wire RTI-1307 1,6-2,5 A IEK	1,6÷2,5	1c+1o	1	100	DRT10-D016-D025
	Hot-wire RTI-1308 2,5-4,0 A IEK	2,5÷4,0	1c+1o	1	100	DRT10-D025-0004
	Hot-wire RTI-1310 4-6 A IEK	4,0÷6,0	1c+1o	1	100	DRT10-0004-0006
	Hot-wire RTI-1312 5,5-8 A IEK	5,5÷8	1c+1o	1	100	DRT10-D055-0008
	Hot-wire RTI-1314 7-10 A IEK	7÷10	1c+1o	1	100	DRT10-0007-0010
	Hot-wire RTI-1316 9-13 A IEK	9÷13	1c+1o	1	100	DRT10-0009-0013
	Hot-wire RTI-1321 12-18 A IEK	12÷18	1c+1o	1	100	DRT10-0012-0018
	Hot-wire RTI-1322 17-25 A IEK	17÷25	1c+1o	1	100	DRT10-0017-0025
	Hot-wire RTI-2355 28-36 A IEK	28÷36	1c+1o	1	50	DRT20-0028-0036
	Hot-wire RTI-3353 23-32 A IEK	23÷32	1c+1o	1	50	DRT30-0023-0032
	Hot-wire RTI-3355 30-40 A IEK	30÷40	1c+1o	1	50	DRT30-0030-0040
	Hot-wire RTI-3357 Hot-wire 37-50 A IEK	37÷50	1c+1o	1	50	DRT30-0037-0050
	Hot-wire RTI-3359 48-65 A IEK	48÷65	1c+1o	1	50	DRT30-0048-0065
	Hot-wire RTI-3361 55-70 A IEK	55÷70	1c+1o	1	50	DRT30-0055-0070
	Hot-wire RTI-3363 63-80 A IEK	63÷80	1c+1o	1	50	DRT30-0063-0080
	Hot-wire RTI-3365 80-93 A IEK	80÷93	1c+1o	1	50	DRT30-0080-0093

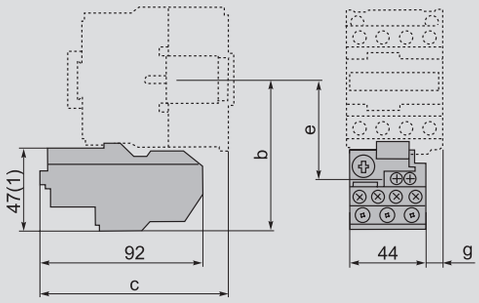
Technical features of power circuit

Parameters		RTI-1301…RTI-3353	RTI-3355…RTI-3365
Relay setting range, A		0,1÷32	30÷93
Rated operating voltage U_e, V~		230, 400, 660	230, 400, 660
Rated insulation voltage U_i, V		660	660
Rated impulse voltage U_{imp}, kV		6	6
Frequency, Hz		50	50
Maximum cable size, mm^2	flexible cable without a lug	1,5÷10	4÷35
	flexible cable with a lug	1÷4	4÷35
	rigid cable	1÷6	4÷35
Tightening torque, N·m		2	9

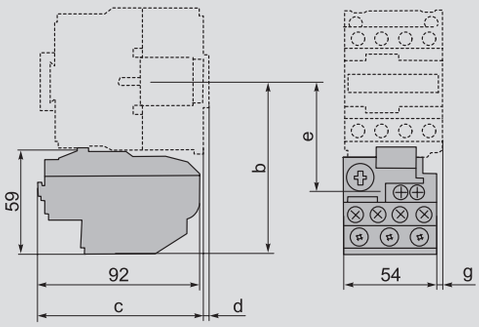
Technical features of built-in auxiliary contacts

Conventional thermal current I_{th}, A		5
Maximum power of contactor coil, connected to built-in auxiliary contacts, against voltage, V·A	110 V	400
	220 V	600
	380 V	600
Overcurrent protection – fuse gG, A		5
Cable size, mm^2		1÷2,5
Tightening torque, N·m		1,2

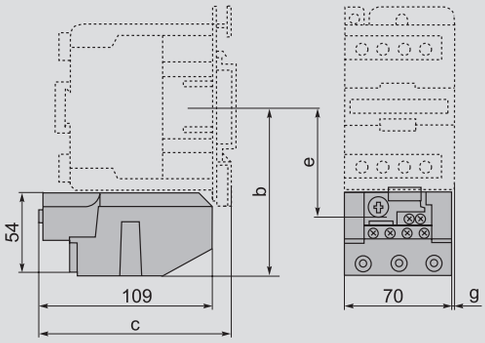
Overall and mounting dimensions



Relay type	Contactor type	Size, mm			
		b	c	e	g
RTI-1301; RTI-1302 RTI-1303; RTI-1304 RTI-1305; RTI-1306 RTI-1307; RTI-1308 RTI-1310; RTI-1312 RTI-1314; RTI-1316 RTI-1321; RTI-1322	KMI-10910 KMI-10911 KMI-11210 KMI-11211 KMI-11810 KMI-11811	81	98	50	0
	KMI-22510 KMI-22511	86	108	55	10,7
	KMI-23210 KMI-23211	86	109	55	8,1



Relay type	Contactor type	Size, mm			
		b	c	e	g
RTI-2355	KMI-23210 KMI-23211	97,5	98	60	0,5



Relay type	Contactor type	Size, mm			
		b	c	e	g
RTI-3353; RTI-3355 RTI-3357; RTI-3359 RTI-3361; RTI-3363 RTI-3365	KMI-34012	111	119	72,4	4,5
	KMI-35012	111	119	72,4	4,5
	KMI-46512	111	119	72,4	4,5
	KMI-48012	115,5	124	76,9	9,5
	KMI-49512	115,5	124	76,9	9,5

Auxiliary devices for KMI and KTI contactors

PKI series contact extensions
PVI series time lag extensions

PKI series contact extensions are designed to extend the capacities of contactor application in automation systems of process projects. Pneumatic time lag extensions allow to receive closing or opening lag for the auxiliary circuit from 0.1 to 180 s. They are used together with KMI and KTI series contactors.

Range

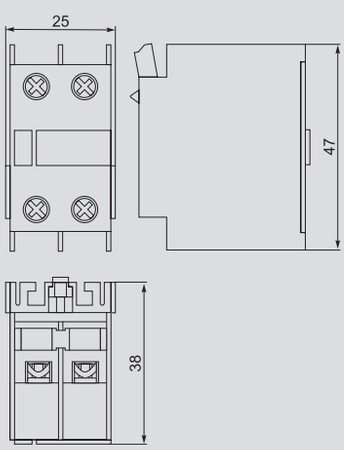
	Description	Number and type of contacts	PCS/Package	PCS/CTN	Article
	PKI-04 auxiliary contacts 4o IEK	4p	1	250	KPK10-04
	PKI-11 auxiliary contacts 1c+1o IEK	1c+1o	1	250	KPK10-11
	PKI-20 auxiliary contacts 2c IEK	2з	1	250	KPK10-20
	PKI-22 auxiliary contacts 2c+2o IEK	2з+2р	1	250	KPK10-22
	PKI-40 auxiliary contacts 4c IEK	4з	1	250	KPK10-40
	PVI-11 delay when switching on 0,1—30 s 1c+1o	1c+1o	10	200	KPV10-11-1
	PVI-12 delay when switching on 10—180 s 1c+1o	1c+1o	10	200	KPV10-11-2
	PVI-13 delay when switching on 0,1—3 s 1c+1o	1c+1o	10	200	KPV10-11-3
	PVI-21 delay when switching off 0,1—30 s 1c+1o	1c+1o	10	200	KPV20-11-1
	PVI-22 delay when switching off 10—180 s 1c+1o	1c+1o	10	200	KPV20-11-2
	PVI-23 delay when switching off 0,1—3 s 1c+1o	1c+1o	10	200	KPV20-11-3

Technical features

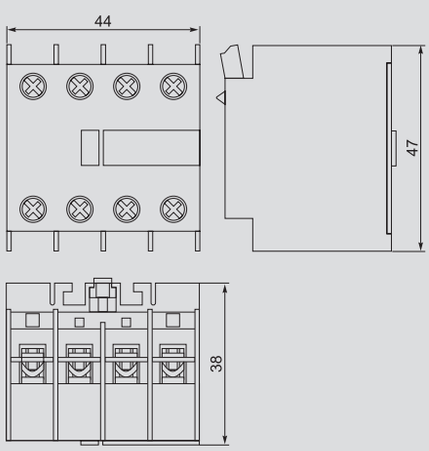
Characteristics		PKI	PVI
Rated operating AC voltage, V		up to 660	up to 660
Rated operating DC voltage, V		up to 400	up to 400
Rated current, A		10	10
Minimum making capacity	U_{min}, V	24	24
	I_{min}, mA	10	10
Rated short-time current, A		10	10
Ambient temperature, °C		–40÷+50	–40÷+50
Time lag range, s		–	0,1÷180
Weight, kg		0,03; 0,05	0,08
Mechanical durability, min, cycles On/Off		$1{,}6 \cdot 10^6$	$1{,}6 \cdot 10^6$
Protection degree		IP20	IP20

Overall dimensions

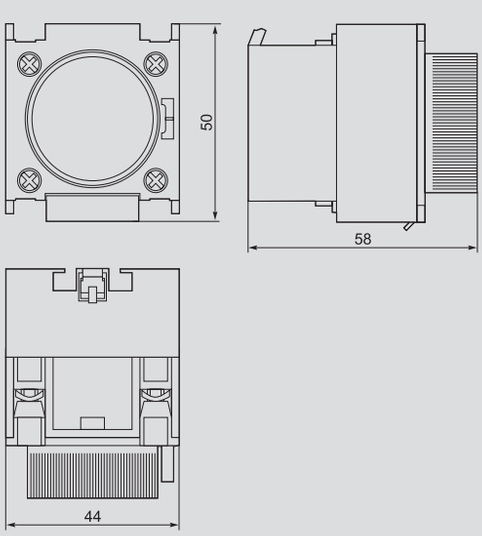
PKI-11, PKI-20



PKI-04, PKI-22, PKI-40



PVI



7

KMI control coils and interlocking mechanisms for KMI reversing circuit

Coils are designed for contractor control by means of current supply to the control circuit. Interlocking mechanisms are designed for mechanical interlocking of two contactors, precluding their simultaneous switching on when creating a reversing circuit.

Range

	Description	Rated voltage, V	PCS/Package	PCS/CTN	Article
	Control coil for KMI (09–18 A)	110	8	160	KKM10D-KU-110
	Control coil for KMI (09–18 A)	230	8	160	KKM10D-KU-230
	Control coil for KMI (09–18 A)	24	8	160	KKM10D-KU-024
	Control coil for KMI (09–18 A)	36	8	160	KKM10D-KU-036
	Control coil for KMI (09–18 A)	400	8	160	KKM10D-KU-400
	Control coil for KMI (25–32 A)	110	5	100	KKM20D-KU-110
	Control coil for KMI (25–32 A)	230	5	100	KKM20D-KU-230
	Control coil for KMI (25–32 A)	24	5	100	KKM20D-KU-024
	Control coil for KMI (25–32 A)	36	5	100	KKM20D-KU-036
	Control coil for KMI (25–32 A)	400	5	100	KKM20D-KU-400
	Control coil for KMI (40–95 A)	110	4	80	KKM30D-KU-110
	Control coil for KMI (40–95 A)	230	4	80	KKM30D-KU-230
	Control coil for KMI (40–95 A)	24	4	80	KKM30D-KU-024
	Control coil for KMI (40–95 A)	36	4	80	KKM30D-KU-036
	Control coil for KMI (40–95 A)	400	4	80	KKM30D-KU-400
	Control coil KU (115–150 A)	400	1	40	KKT50D-KU-150-400
	Control coil KU (115–150 A)	230	1	40	KKT50D-KU-150-230
	Control coil KU (185–225 A)	400	1	40	KKT50D-KU-225-400
	Control coil KU (185–225 A)	230	1	40	KKT50D-KU-225-230
	Control coil KU (265–330 A)	400	1	40	KKT50D-KU-330-400
	Control coil KU (265–330 A)	230	1	40	KKT50D-KU-330-230
	Control coil KU 400 A	400	1	20	KKT60D-KU-400-400
	Control coil KU 400 A	230	1	20	KKT60D-KU-400-230
	Control coil KU 500 A	400	1	20	KKT60D-KU-500-400
	Control coil KU 500 A	230	1	20	KKT60D-KU-500-230
	Control coil KU 630 A	400	1	20	KKT70D-KU-630-400
	Control coil KU 630 A	230	1	20	KKT70D-KU-630-230
	Interlocking mechanism for KMI (09–32 A)		1	170	KKM10D-MB
	Interlocking mechanism for KMI (40–95A)		1	150	KKM30D-MB

Starters, Switches

VKI series button switches with interlocking

VKI series button switches with a latch are designed for non-frequent switching of one- and three-phase inductive and active loads (contractor and relay control coils, lighting units and heaters). Application field is control of electrified construction machines and equipment (small-size concrete mixers, electrical tools, temporary and street lighting circuits, including luminescent, mobile fan heaters, pumps, compressors, etc.).


СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р
ФЕДЕРАЛЬНОЕ АГЕНТСТВО ПО ТЕХНИЧЕСКОМУ РЕГУЛИРОВАНИЮ И МЕТРОЛОГИИ
СЕРТИФИКАТ СООТВЕТСТВИЯ

As for their constructive and technical features, VKI series button switches correspond to the requirements of the international and Russian standards MEhK 60947-4-1, GOST R50030.4.1.
VKI series button switches have passed certification tests, and the certificate of conformance with ROSS CN.ME86.B00174 was received for their serial production.

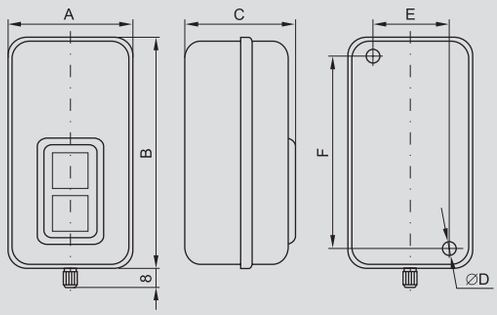
Range

	Description	Rated Switching current, A	Rated voltage, V	Number of poles			Артикул
	VKI-211	6	230/400~	3	1	120	KVK10-06-3
	VKI-216	10	230/400~	3	1	120	KVK20-10-3
	VKI-230	16	230/400~	3	1	100	KVK30-16-3

Technical features

Switch type		VKI-211	VKI-216	VKI-230
Rated voltage, V~		230/400	230/400	230/400
Power frequency, Hz		50	50	50
Rated current in the application category, A	AC-1	6	10	16
	AC-14	0,75	0,75	0,75
	AC-15	3	3	3
Overcurrent protection – fuse gG, A		6	10	16
Conditional short-circuit current, A		1000	1000	1000
Switching frequency per hour, cycles		30	30	30
Electrical durability, cycles, On/Off		10 000	10 000	10 000
Mechanical durability, cycles On/Off		20 000	20 000	20 000
Protection class according to GOST 12.2.007.0		I	I	I
Protection degree		IP40	IP40	IP40
Climatic version and location category		MRC4	MRC4	MRC4
Weight, kg		0,13	0,18	0,23
Service life, years		5	5	5

Overall dimensions



Switch type	Sizes, mm					
	A	B	C	D	E	F
VKI-211	44	82	48	4,3	20	63
VKI-216	54	85	54	4,3	34	66
VKI-230	62	102	56	4,8	40	84

PRK series manual button starters and accessories

PRK 32 starters IEK® are designed for control and protection of three-phase asynchronous motors against overload, short circuits and partial operating conditions. They combine functions of automatic circuit breaker of the motor and of a manual starter.
They are applied at industrial projects, in agriculture, construction. It is also possible to use them for local control of individual motors as well as in automatics of apartment houses and administrative buildings.
Primary application category AC-3.


СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р
ГОССТАНДАРТ РОССИИ

СЕРТИФИКАТ СООТВЕТСТВИЯ

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As for their constructive and technical features, PRK series button starters correspond to the requirements of Russian and and international standards GOST R 50030.2, GOST R 50030.4.1.
PRK series button starters have passed certification tests, and the certificate of conformance with ROSS CN.ME01.B04759 was received for their serial production.

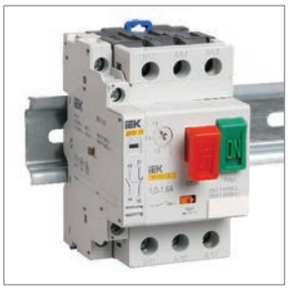
Design features

Switch locking device of a PRK32 series manual starter by means of padlock.

Joint installation of two DK32 or DK32 and DK/AK32 is possible.

Possibility of increase of the number of auxiliary contacts.

All parts of automatic circuit breaker are protected against direct touch.



Time and space saving when mount PRK32 series switch. Easy and handy adjustment of thermal release setting tripping range. TEST button may be used to test PRK32 without connection to the power circuit.

Screw sizes allows to use one and the same screw-driver when working with power terminals and control circuit terminals.

Auxiliary and emergency contacts in one and the same casing DK/AK32.

Protective shell for STOP turn-push button and transparent protector for START button, providing for IP54 protection level according to GOST 14254.

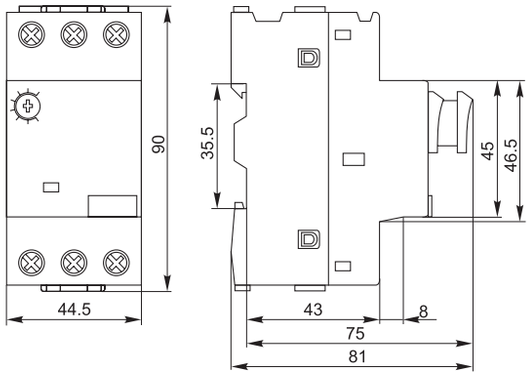
Range

Description	Setting current, A	PCS/CTN	PCS/Package	Article
Starter PRK32-0,63 I_n=0,63 A I_r=0,4-0,63 A U_e 660 V IEK	0,4÷0,63	50	1	DMS11-C63
Starter PRK32-1 I_n=1 A I_r=0,63-1 A U_e 660 V IEK	0,63÷1,0	50	1	DMS11-001
Starter PRK32-1,6 I_n=1,6 A I_r=1-1,6 A U_e 660 V IEK	1,0÷1,6	50	1	DMS11-D16
Starter PRK32-2,5 I_n=2,5A I_r=1,6-2,5A U_e 660B IEK	1,6÷2,5	50	1	DMS11-D25
Starter PRK32-4 I_n=4 A I_r=2,5-4 A U_e 660 V IEK	2,5÷4,0	50	1	DMS11-004
Starter PRK32-6,3 I_n=6,3 A I_r=4-6,3 A U_e 660 V IEK	4,0÷6,3	50	1	DMS11-D63
Starter PRK32-10 I_n=10 A I_r=6-10 A U_e 660 V IEK	6,0÷10,0	50	1	DMS11-010
Starter PRK32-14 I_n=14 A I_r=9-14 A U_e 660 V IEK	9,0÷14,0	50	1	DMS11-014
Starter PRK32-18 I_n=18 A I_r=13-18 A U_e 660 V IEK	13,0÷18,0	50	1	DMS11-018
Starter PRK32-25 I_n=25 A I_r=20-25 A U_e 660 V IEK	20,0÷25,0	50	1	DMS11-025

Technical features

Rated operating voltage U_e, V		230, 400, 660									
Rated frequency, Hz		50									
Rated operating current I_e, A		0,63	1,0	1,6	2,5	4,0	6,3	10	14	18	25
Adjustment range of thermal release setting tripping, A		0,4÷0,63	0,63÷1,0	1,0÷1,6	1,6÷2,5	2,5÷4,0	4,0÷6,3	6,3÷10	9,0÷14	13÷18	20÷25
Rated power of load of category AC 3, kW	230 V	–	–	–	0,37	0,75	1,1	2,2	3,0	4,0	5,5
	400 V	0,12	0,25	0,37	0,75	1,5	2,2	4,0	5,5	7,5	11
	660 V	0,37	0,55	1,1	1,5	30,0	4,0	7,5	9,0	11,0	18,5
Electromagnetic release setting, A		8	13	22,5	33,5	51	78	138	170	223	327
Ultimate short-circuit breaking capacity I_{cu}, kA	230 V	100	100	100	100	100	100	100	100	100	50
	400 V	100	100	100	100	100	100	100	15	15	15
	660 V	100	100	100	2,25	2,25	2,25	2,25	2,25	2,25	2,25
Heat loss, W/pole		2,5									
Electrical durability, cycles		10 000									
Mechanical durability, cycles		10 000									
Thermal protection class of the release		10A									

Overall dimensions



Auxiliary devices for PRK manual button starters

Cross setting auxiliary contact DKP32
Auxiliary contact DK32
Auxiliary and emergency contacts in one and the same casing DK/AK32

Cross setting auxiliary contacts DKP32 and auxiliary contacts DK32 are designed to increase the number of auxiliary contacts.

Auxiliary and emergency contacts in one and the same casing DK/AK32 are designed to increase the number of auxiliary contacts and indication of PRK32 tripping against overcurrents.

Range

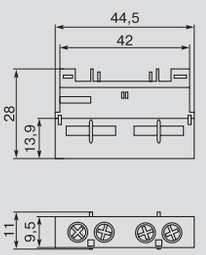
	Description	Contacts number and type	PCS/Package	PCS/CTN	Article
	Additional contact cross DKP32-11 IEK	1c+1o	20	1000	DMS11D-AE11
	Additional contact cross DKP32-20 IEK	2з	20	1000	DMS11D-AE20
	Additional contact DK32-11 IEK	1c+1o	4	200	DMS11D-AU11
	Additional contact DK32-20 IEK	2з	4	200	DMS11D-AU20
	Additional emergency contact DK/AK32-01 IEK	1o	3	150	DMS11D-FA01
	Additional emergency contact DK/AK32-02 IEK	2p	3	150	DMS11D-FA02
	Additional emergency contact DK/AK32-11 IEK	1c+1o	3	150	DMS11D-FA11
	Additional emergency contact DK/AK32-20 IEK	2з	3	150	DMS11D-FA20

Technical features

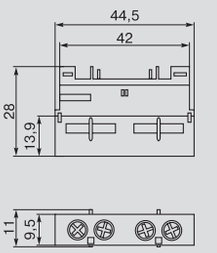
Parameters		DKP32					DK32						DK/AK32				
Rated operating voltage U_e, V		24	48	60	110	230	24	48	110	230	400	660	24	48	60	110	230
Rated current, A	AC-15	2,0	1,25	–	1,0	0,5	–	6,0	4,5	3,3	2,2	0,6	1,5	1,0	–	0,5	0,3
	DC-13	1,0	0,3	0,15	–	–	6,0	5,0	1,3	0,5	–	–	1,0	0,3	0,15	–	–
Conventional thermal current I_{th}, A	auxiliary contact	2,5					6						6				
	emergency contact	–					–						2,5				
Rated insulation voltage U_i, B		250					690						690				
Durability, not less than, cycles		10 000					10 000						10 000				
Visual tripping indication		–					–						indication of PRK32 tripping against overcurrents				
Protection degree		IP20					IP20						IP20				
Maximum cable size, mm^2		0,75÷1,5					0,75÷1,5						0,75÷1,5				
Side of connection to PRK32 starter		on top, from the side of the input clips					left						left				
Weight, kg		max. 0,1					max. 0,1						max. 0,1				

Overall dimensions

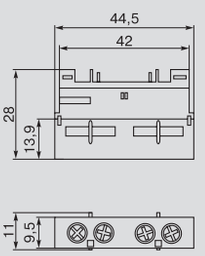
DKP32



DK32



DK/AK32



Shunt trip RN32
Undervoltage trip RM32
IP54 protective shell

Shunt trip RN32 is designed for remote disconnection of PRK 32. Undervoltage trip RM32 is designed for disconnection of PRK 32 in case of drop of mains supply voltage inadmissible for electrical equipment. Protective shell serves to provide protection level IP54 according to GOST 14254;96.

Range

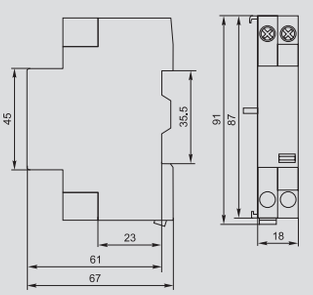
	Description	Operating voltage U_e, V	PCS/package	PCS/CTN	Article
	Shunt trip RN32 U_e 110 V IEK	110	2	100	DMS11D-SH110
	Shunt trip RN32 U_e 230 V IEK	230	2	100	DMS11D-SH230
	Shunt trip RN32 U_e 400 V IEK	400	2	100	DMS11D-SH400
	Undervoltage trip RM32 U_e 110 V IEK	110	2	100	DMS11D-UV110
	Undervoltage trip RM32 U_e 230 V IEK	230	2	100	DMS11D-UV230
	Undervoltage trip RM32 U_e 400 V IEK	400	2	100	DMS11D-UV400
	Protective shell with STOP button IP54 IEK	–	1	20	DMS11D-PC55

Technical features of shunt trip RN32

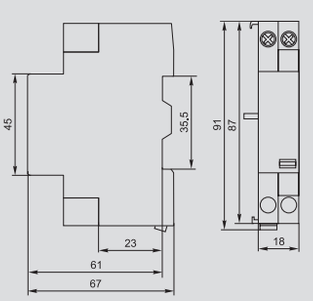
Characteristics	RN32	RM32
Rated operating voltage U_e, V	110; 230; 400	110; 230; 400
Rated power frequency, Hz	50	50
Holding voltage, V	–	$(0,85 \div 1,1)U_e$
Tripping voltage, V	$(0,7 \div 1,1)U_e$	$(0,35 \div 0,7)U_e$
Impulse power consumption, max., W	3	0,1
Protection degree	IP20	IP20
Durability, not less than, cycles	10 000	10 000
Maximum cable size, mm^2	0,75÷1,5	0,75÷1,5
Side of connection to PRK32 starter	right	right
Weight, kg	max. 0,1	max. 0,1

Overall dimensions

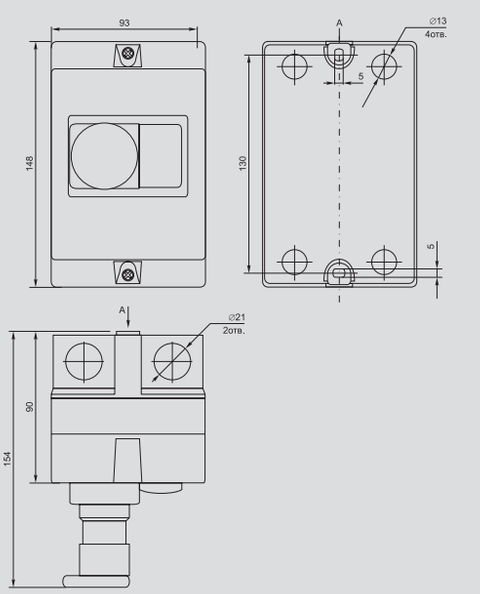
RN32



RM32



IP54 protective shell



PKP cam switches

SPECIALTY

PKP series cam switches of IEK® trademark are mechanical devices without own power consumption.
They are designed for installation as switching units in electric circuits. PKP may be used as the main switches or group switches for controlling starters based on one- and three-phase motors, switching with the required control circuit switching program, indication, metering circuits, etc.
They are used in electric circuits with voltage up to 400 V AC.

7

Advantages

- Fixation mechanism of the starter guarantees a reliable switching of the movable contacts of the switch to individual fixed positions. Driving springs of the fixation mechanism differ depending on the number of switching elements.
- The cam mechanism is an up-to-date solution of electric circuit switching by manual method, providing for the following advantages:

– minimum electrical resistance of closed contact;
– double break of electric circuit (bridge-type contact);
– high speed of contact opening and closing provides for quicker electrical arc quenching;
– provision of different efforts and easy running of the lever while switching on and off;
– achievement of wider range of switching circuits with the same set of parts and assembly units, i.e. better unification;
– higher operation resources (number of switchings before failure).

Design features

Terminals are protected against touching and cross-contact (IP20) up to 32 A.

Protection level IP54 for cased switches.

PKP switch structure provides for complete working circuit with already installed jumpers.

Control knobs with possibility of padlock installation.

Range

Description	Embodiment	Rated current, A (AC-21)	Number of input lines (poles)	Position designation	PCS/ package	PCS/ CTN	Article
PKP10-44/0 10 A «Uc-0-Ua-Ub» 4P/400 V IEK	0	10	4P	U_C–0–U_A–U_B	1	100	BCS14-010-4
PKP10-53/0 10 A «Uca-0-Uab-Ubc» 3P/400 V IEK	0	10	3P	U_{CA}–0–U_{AB}–U_{BC}	1	100	BCS13-010-5
PKP10-63/0 10 A «Ic-0-Ia-Ib» 3P/400 V IEK	0	10	3P	I_C–0–I_A–I_B	1	100	BCS13-010-6
PKP10-11/0 10 A «0-1» 1P/400 V IEK	0	10	1P	0–1	1	100	BCS11-010-1
PKP10-12/0 10 A «0-1» 2P/400 V IEK	0	10	2P	0–1	1	100	BCS12-010-1
PKP10-13/0 10 A «0-1» 3P/400 V IEK	0	10	3P	0–1	1	100	BCS13-010-1
PKP10-22/0 10 A «1-2» 2P/400 V IEK	0	10	2P	1–2	1	100	BCS12-010-3
PKP10-33/0 10 A «1-0-2» 3P/400 V IEK	0	10	3P	1–0–2	1	100	BCS13-010-2
PKP25-44/0 25 A «Uc-0-Ua-Ub» 4P/400 V IEK	0	25	4P	U_C–0–U_A–U_B	1	100	BCS14-025-4
PKP25-53/0 25 A «Uca-0-Uab-Ubc» 3P/400 V IEK	0	25	3P	U_{CA}–0–U_{AB}–U_{BC}	1	100	BCS13-025-5
PKP25-63/0 25 A «Ic-0-Ia-Ib» 3P/400 V IEK	0	25	3P	I_C–0–I_A–I_B	1	100	BCS13-025-6
PKP25-11/0 25 A «0-1» 1P/400 V IEK	0	25	1P	0–1	1	100	BCS11-025-1
PKP25-12/0 25 A «0-1» 2P/400 V IEK	0	25	2P	0–1	1	100	BCS12-025-1
PKP25-13/0 25 A «0-1» 3P/400 V IEK	0	25	3P	0–1	1	100	BCS13-025-1
PKP25-22/0 25 A «1-2» 2P/400 V IEK	0	25	2P	1–2	1	100	BCS12-025-3
PKP25-33/0 25 A «1-0-2» 3P/400 V IEK	0	25	3P	1–0–2	1	100	BCS13-025-2
PKP32-44/0 32 A «Uc-0-Ua-Ub» 4P/400 V IEK	0	32	4P	U_C–0–U_A–U_B	1	72	BCS14-032-4
PKP32-53/0 32 A «Uca-0-Uab-Ubc» 3P/400 V IEK	0	32	3P	U_{CA}–0–U_{AB}–U_{BC}	1	72	BCS13-032-5
PKP32-63/0 32 A «Ic-0-Ia-Ib» 3P/400 V IEK	0	32	3P	I_C–0–I_A–I_B	1	64	BCS13-032-6
PKP32-11/0 32 A «0-1» 1P/400 V IEK	0	32	1P	0–1	1	72	BCS11-032-1
PKP32-12/0 32 A «0-1» 2P/400 V IEK	0	32	2P	0–1	1	72	BCS12-032-1
PKP32-13/0 32 A «0-1» 3P/400 V IEK	0	32	3P	0–1	1	72	BCS13-032-1
PKP32-22/0 32 A «1-2» 2P/400 V IEK	0	32	2P	1–2	1	72	BCS12-032-3
PKP32-33/0 32 A «1-0-2» 3P/400 V IEK	0	32	3P	1–0–2	1	64	BCS13-032-2
PKP63-11/0 63 A «0-1» 1P/400 V IEK	0	63	1P	0–1	1	72	BCS11-063-1
PKP63-12/0 63 A «0-1» 2P/400 V IEK	0	63	2P	0–1	1	72	BCS12-063-1
PKP63-13/0 63 A «0-1» 3P/400 V IEK	0	63	3P	0–1	1	64	BCS13-063-1
PKP63-22/0 63 A «1-2» 2P/400 V IEK	0	63	2P	1–2	1	64	BCS12-063-3
PKP63-33/0 63 A «1-0-2» 3P/400 V IEK	0	63	3P	1–0–2	1	48	BCS13-063-2
PKP100-11/0 100 A «0-1» 1P/400 V IEK	0	100	1P	0–1	1	30	BCS11-125-1
PKP100-12/0 100 A «0-1» 2P/400 V IEK	0	100	2P	0–1	1	30	BCS12-125-1
PKP100-13/0 100 A «0-1» 3P/400 V IEK	0	100	3P	0–1	1	30	BCS13-125-1
PKP100-22/0 100 A «1-2» 2P/400 V IEK	0	100	2P	1–2	1	30	BCS12-125-3
PKP100-33/0 100 A «1-0-2» 3P/400 V IEK	0	100	3P	1–0–2	1	18	BCS13-125-2

Description	Embodiment	Rated current, A (AC-21)	Number of input lines (poles)	Position designation	PCS/ package	PCS/ CTN	Article
PKP10-11/У 10 А «off-on» 1P/400 V IEK	U	10	1P	OFF–ON	1	100	BCS21-010-1
PKP10-12/У 10 А «off-on» 2P/400 V IEK	U	10	2P	OFF–ON	1	100	BCS22-010-1
PKP10-13/У 10 А «off-on» 3P/400 V IEK	U	10	3P	OFF–ON	1	100	BCS23-010-1
PKP10-22/У 10 А «1-2» 2P/400 V IEK	U	10	2P	1–2	1	100	BCS22-010-3
PKP10-33/У 10 А «1-0-2» 3P/400 V IEK	U	10	3P	1–0–2	1	100	BCS23-010-2
PKP25-11/У 25 А «off-on» 1P/400 V IEK	U	25	1P	OFF–ON	1	100	BCS21-025-1
PKP25-12/У 25 А «off-on» 2P/400 V IEK	U	25	2P	OFF–ON	1	100	BCS22-025-1
PKP25-13/У 25 А «off-on» 3P/400 V IEK	U	25	3P	OFF–ON	1	100	BCS23-025-1
PKP25-22/У 25 А «1-2» 2P/400 V IEK	U	25	2P	1–2	1	100	BCS22-025-3
PKP25-33/У 25 А «1-0-2» 3P/400 V IEK	U	25	3P	1–0–2	1	100	BCS23-025-2
PKP32-11/У 32 А «off-on» 1P/400 V IEK	U	32	1P	OFF–ON	1	72	BCS21-032-1
PKP32-12/У 32 А «off-on» 2P/400 V IEK	U	32	2P	OFF–ON	1	72	BCS22-032-1
PKP32-13/У 32 А «off-on» 3P/400 V IEK	U	32	3P	OFF–ON	1	72	BCS23-032-1
PKP32-22/У 32 А «1-2» 2P/400 V IEK	U	32	2P	1–2	1	72	BCS22-032-3
PKP32-33/У 32 А «1-0-2» 3P/400 V IEK	U	32	3P	1–0–2	1	64	BCS23-032-2
PKP63-11/У 63 А «off-on» 1P/400 V IEK	U	63	1P	OFF–ON	1	72	BCS21-063-1
PKP63-12/У 63 А «off-on» 2P/400 V IEK	U	63	2P	OFF–ON	1	72	BCS22-063-1
PKP63-13/У 63 А «off-on» 3P/400 V IEK	U	63	3P	OFF–ON	1	64	BCS23-063-1
PKP63-22/У 63 А «1-2» 2P/400 V IEK	U	63	2P	1–2	1	64	BCS22-063-3
PKP63-33/У 63 А «1-0-2» 3P/400 V IEK	U	63	3P	1–0–2	1	48	BCS23-063-2
PKP100-11/У 100 А «0-1» 1P/400 V IEK	U	100	1P	0–1	1	30	BCS21-125-1
PKP100-12/У 100 А «0-1» 2P/400 V IEK	U	100	2P	0–1	1	30	BCS22-125-1
PKP100-13/У 100 А «0-1» 3P/400 V IEK	U	100	3P	0–1	1	30	BCS23-125-1
PKP100-22/У 100 А «1-2» 2P/400 V IEK	U	100	2P	1–2	1	30	BCS22-125-3
PKP100-33/У 100 А «1-0-2» 3P/400 V IEK	У	100	3P	1–0–2	1	18	BCS23-125-2

PKP10-13/К 10 А «off-on» 3P/400 V IP54 IEK	K	10	3P	OFF–ON	1	30	BCS33-010-1
PKP25-13/К 25 А «off-on» 3P/400 V IP54 IEK	K	25	3P	OFF–ON	1	30	BCS33-025-1
PKP32-13/К 32 А «off-on» 3P/400 V IP54 IEK	K	32	3P	OFF–ON	1	30	BCS33-032-1
PKP63-13/К 63 А «off-on» 3P/400 V IP54 IEK	K	63	3P	OFF–ON	1	18	BCS33-063-1
PKP100-13/К 100 А «0-1» 3P/400 V IP54 IEK	K	63	3P	0–1	1	8	BCS33-125-1

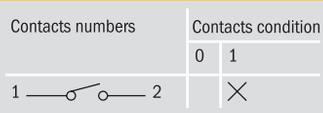
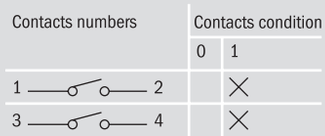
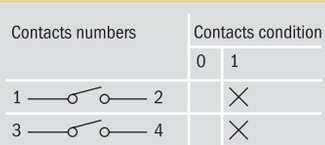
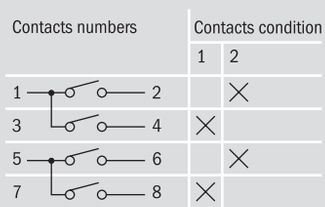
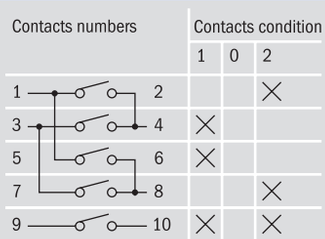
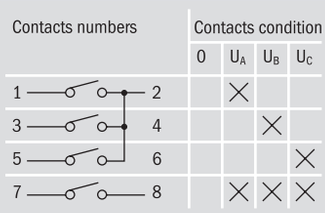
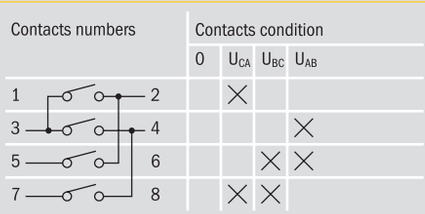
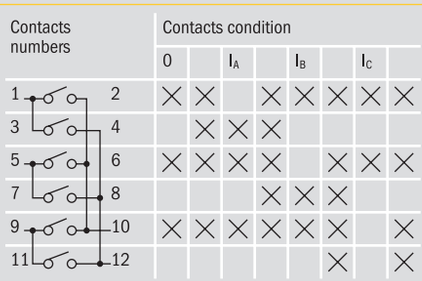
Technical features

Type		PKP10-../0 PKP10-../У		PKP25-../0 PKP25-../У		PKP32-../0 PKP32-../У		PKP63-../0 PKP63-../У		PKP100-../0 PKP100-../У	
Position designation	«0»	1 – «0–1» 2 – «1–2» 3 – «1–0–2»		4 – «U_C–0–U_A–U_B» 5 – «U_{CA}–0–U_{AB}–U_{BC}» 6 – «I_C–0–I_A–I_B»							
	«У»	1 – «OFF–ON» 2 – «1–2» 3 – «1–0–2»									
Rated insulation voltage U_i, V		660									
Conventional thermal current I_{th}, A		10		25		32		63		100	
Rated voltage U_e, В		230	400	230	400	230	400	230	400	230	400
Rated operating current I_e in the application category, A	AC-21A, AC-22A	10	10	25	25	32	32	63	63	100	100
	AC-23A	7,5	7,5	22	22	30	30	57	57	90	90
	AC-2	7,5	7,5	22	22	30	30	57	57	90	90
	AC-3	5,5	5,5	15	15	22	22	36	36	75	75
	AC-4	1,75	1,75	6,5	6,5	11	11	15	15	30	30
	AC-15	2,5	1,5	8	5	14	6	–	–	–	–
Rated power P in the application category, kW	AC-23A	3/0,8	5/1,7	5,5/3	11/5,5	7,5/4	15/7,5	15/10	30/18,5	30/15	45/22
	AC-2	2,5	3,7	5,5	11	7,5	15	18,5	30	30	45
	AC-3	1,5	2,2	4/3	7,5/3,7	5,5/4	11/5,5	11/6	18,5/11	15/7,5	30/13
	AC-4	0,37	0,55	1,5/1,1	3/2,2	2,7/1,5	5,5/3	5,5/2,4	7,5/4	0,6/3	12/5,5
Conditional short-circuit current I_{cn}, A		1000		3000						5000	
Short-circuit protection – fuse gG, A		12		40		50		80		125	
Maximum cable size, mm²		2,5		6		10		16		35	
Durability, ths. cycles	mechanical	100									
	electrical	30									
Protection degree	front panel	IP20									
	contacts	IP00									
Availability of interlock*		Mechanical with the aid of a lock									

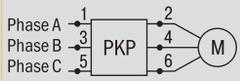
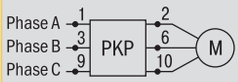
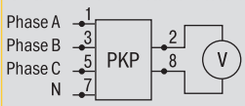
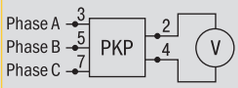
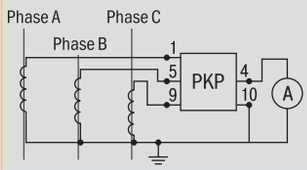
Type		PKP10-../К		PKP25-../К		PKP32-../К		PKP63-../К		PKP100-../К	
Position designation		«ОТКЛ-ВКЛ»									
Rated insulation voltage U_i, V		660								1000	
Conventional thermal current I_{th}, A		10		25		32		63		100	
Rated voltage U_e, В		230	400	230	400	230	400	230	400	230	400
Rated operating current I_e in the application category, A	AC-21A, AC-22A	10	10	25	25	32	32	50	50	80	80
	AC-23A	7,5	7,5	22	22	30	30	43	43	70	70
	AC-3	5,5	5,5	15	15	22	22	36	36	57	57
Rated power P in the application category, kW	AC-23A	1,8	3	4	7,5	7,5	11	11	22	22	37
	AC-3	1,5	2,2	3	5,5	5,5	9,0	11	18,5	18,5	30
Conditional short-circuit current I_{cn}, A		1000		3000						5000	
Short-circuit protection – fuse gG, A		12		40		50		80		125	
Maximum cable size, mm²		2,5		6		10		16		35	
Durability, ths. cycles	mechanical	100									
	electrical	30									
Protection degree		IP54									
Protection of opening for cable entry		Entry-glands									

* For type «U» No lock is included in a complete set.

Switching programs of switches and number of contract units

Switch type	Number of contract units	Switching program
PKP10 – 11/0; U PKP25 – 11/0; U PKP32 – 11/0; U PKP63 – 11/0; U PKP100 – 11/0; U	1	
PKP10 – 12/0; U PKP25 – 12/0; U PKP32 – 12/0; U PKP63 – 12/0; U PKP100 – 12/0; U	1	
PKP10 – 13/0; U; K PKP25 – 13/0; U; K PKP32 – 13/0; U; K PKP63 – 13/0; U; K PKP100 – 13/0; U; K	2	
PKP10 – 22/0; U PKP25 – 22/0; U PKP32 – 22/0; U PKP63 – 22/0; U PKP100 – 22/0; U	2	
PKP10 – 33/0; U PKP25 – 33/0; U PKP32 – 33/0; U PKP63 – 33/0; U PKP100 – 33/0; U	3	
PKP10 – 44/0 PKP25 – 44/0 PKP32 – 44/0	2	
PKP10 – 53/0 PKP25 – 53/0 PKP32 – 53/0	2	
PKP10 – 63/0 PKP25 – 63/0 PKP32 – 63/0	3	

Switch connection diagram

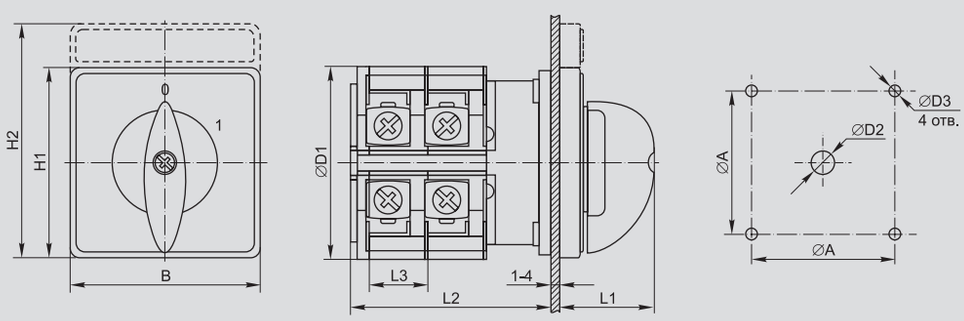
Switch type	Scheme of connection
PKP10–13/0; U; K PKP25-13/0; U; K PKP32–13/0; U; K PKP63–13/0; U; K PKP100–13/0; U; K	Startup of the motor 
PKP10–33/0; U PKP25–33/0; U PKP32–33/0; U PKP63–33/0; U PKP100–33/0; U	Reversing startup of the motor 
PKP10–44/0 PKP25–44/0 PKP32–44/0	Switch-on of a voltmeter to measure phase voltage 
PKP10–53/0 PKP25–53/0 PKP32–53/0	Switch-on of a voltmeter to measure phase voltage 
PKP10–63/0 PKP25–63/0 PKP32–63/0	Switch-on of an ammeter to measure currents in three-phase mains 

Switch arm position

Embodiment	In 60°			In 90°			
«1»		0°	+60°				
«2»					0°	+90°	
«3»	–60°	0°	+60°				
«4», «5», «6»				–90°	0°	+90°	+180°
«OFF–ON»*				–90°	0°		

Overall dimensions

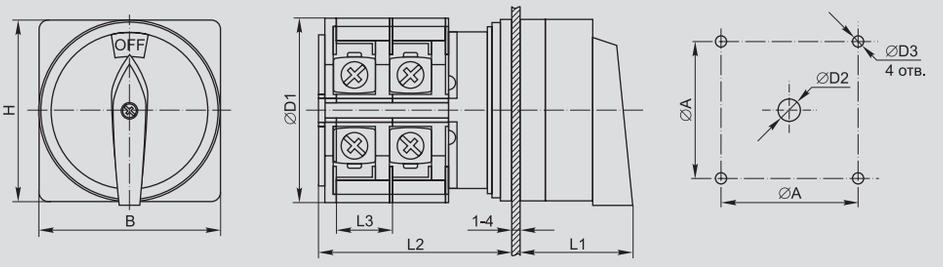
Embodiment «O»



	A	B	D1	D2	D3	H1	H2	L1	L2	L3
PKP10-…/0	36±0,5	48	43	8,5	4,5	48	60	22	22+9,6n**	9,6
PKP25-…/0	36±0,5	48	45,2	8,5	4,5	48	60	25	23+12,8n	12,8
PKP32-…/0	48±0,5	64	58	10	4,5	64	80	34	29,2+12,8n	12,8
PKP63-…/0	48±0,5	64	66	10	4,5	64	80	40	29,2+21,5n	21,5
PKP100-…/0	68±0,5	88	84	13	6	88	107	37	35+26,5n	26,5

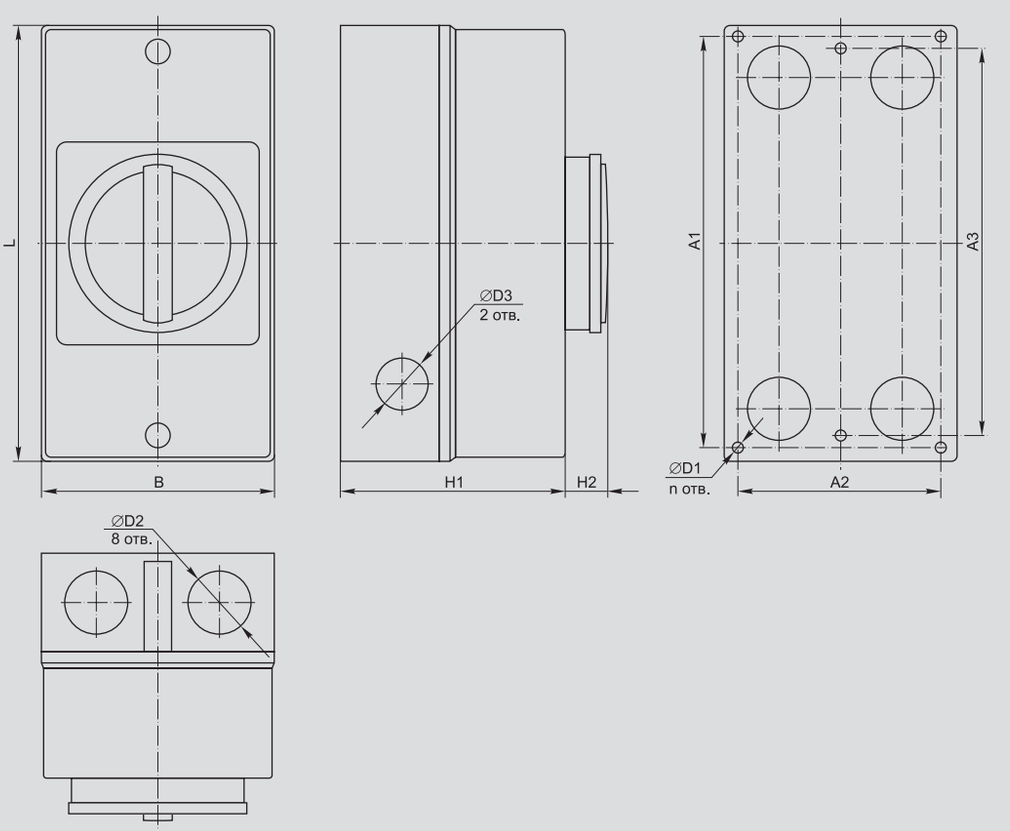
* Only for PKP of «K» embodiment.
** n – number of contract units

Embodiment «U»



	A	B	D1	D2	D3	H	L1	L2	L3
PKP10-.../У	36±0,5	48	43	8.5	4,5	48	37	22+9,6n**	9,6
PKP25-.../У	36±0,5	48	45,2	8.5	4,5	48	32	23+12,8n	12,8
PKP32-.../У	48±0,5	64	58	10	4,5	64	42	29,2+12,8n	12,8
PKP63-.../У	48±0,5	64	66	10	4,5	64	42	29,2+21,5n	21,5
PKP100-.../У	68±0,5	88	84	13	6	88	51	35+26,5n	26,5

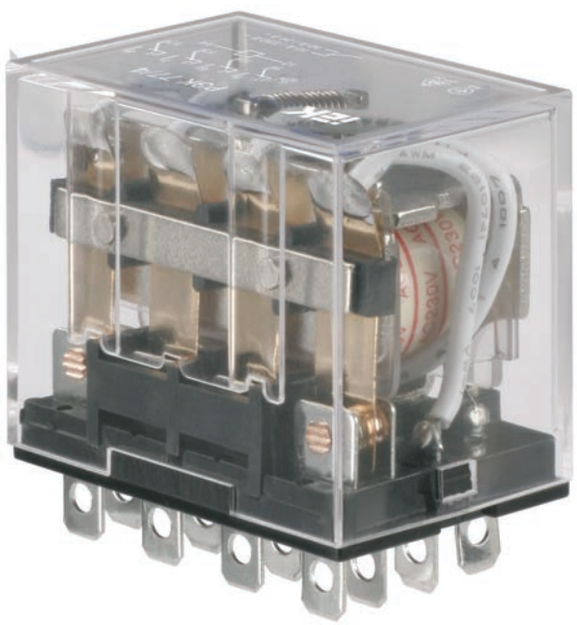
Embodiment «K»



	A1	A2	A3	B	D1	D2	D3	H1	H2	L	n
PKP10-.../K	–	–	150±0,5	85	4	23	19	83	17	160	2
PKP25-.../K	–	–	150±0,5	85	4	23	19	83	17	160	2
PKP32-.../K	–	–	150±0,5	85	4	23	19	83	17	160	2
PKP63-.../K	–	–	178±0,5	100	4	29	23	95	17	190	2
PKP100-.../K	229±0,5	124±0,5	–	145	6,5	37,5	23	105	17	250	4

Check and control relay
Slave relay REK

Slave relays of REK77 and REK78 modular series are designed to transfer control commands by actuating elements by commutation of their electrical circuits by their switching contacts.
Relay are connected to socket modular connectors RRM77 and RRM78, installed at 35-mm DIN-rail.
The connectors have lead terminals of switching contacts and a coil. In the relay silver-containing contacts are used.



Advantages

- A higher value of contacts rated current as compared to slave relay RP-21 allows using relays of REK series in circuits up to 10 A.
- Smaller dimensions of REK series relay provide an option of more rational layout of products on mounting surfaces.
- Any working position in the space.
- Use of silver-containing contacts increases their service life.
- Relay can be completed with modular socket connectors for mounting on DIN rail and mounting with screws.

Selection manual

					
Slave relay of REK77 modular series		REK77/3	REK77/4	REK78/3	REK78/4
Contacts rated current I_n, A		10	10	5	3
Number of switching contact groups		3	4	3	4
Rated control coil voltage U_c, V	AC	12; 24; 230	12; 24; 230	12; 24; 230	12; 24; 230
	DC	12; 24	12; 24	12; 24	12; 24
Connected connector type		PPM77/3	PPM77/4	PPM78/3	PPM78/4
					

Range

	Description	Contacts rated current I_n, A	Rated control coil voltage U_c, V	PCS/ package	PCS/CTN	Article
	Connector RRM77/3 for REK77/3 modular IEK			20	200	RRP10D-RRM-3
	Connector RRM77/4 for REK77/4 modular IEK			20	200	RRP10D-RRM-4
	Relay REK77/3 10 A 12 V DC IEK	10	12	20	500	RRP10-3-10-012D
	Relay REK77/3 10 A 12 V AC IEK	10	12	20	500	RRP10-3-10-012A
	Relay REK77/3 10 A 24 V DC IEK	10	24	20	500	RRP10-3-10-024D
	Relay REK77/3 10 A 24 V AC IEK	10	24	20	500	RRP10-3-10-024A
	Relay REK77/3 10 A 230 V AC IEK	10	230	20	500	RRP10-3-10-220A
	Relay REK77/4 10 A 12 V DC IEK	10	12	20	300	RRP10-4-10-012D
	Relay REK77/4 10 A 12 V AC IEK	10	12	20	300	RRP10-4-10-012A
	Relay REK77/4 10 A 24 V DC IEK	10	24	20	300	RRP10-4-10-024D
	Relay REK77/4 10 A 24 V AC IEK	10	24	20	300	RRP10-4-10-024A
	Relay REK77/4 10 A 230 V AC IEK	10	230	20	300	RRP10-4-10-220A
	Connector RRM78/3 for REK78/3 modular IEK			20	200	RRP20D-RRM-3
	Connector RRM78/4 for REK78/4 modular IEK			20	200	RRP20D-RRM-4
	REK78/3 5 A 12 V DC IEK	5	12	20	500	RRP20-3-05-012D
	REK78/3 5 A 12 V AC IEK	5	12	20	500	RRP20-3-05-012A
	REK78/3 5 A 24 V DC IEK	5	24	20	500	RRP20-3-05-024D
	REK78/3 5 A 24 V AC IEK	5	24	20	500	RRP20-3-05-024A
	REK78/3 5 A 230 V AC IEK	5	230	20	500	RRP20-3-05-220A
	REK78/4 3 A 12 V DC IEK	3	12	20	480	RRP20-4-03-012D
	REK78/4 3 A 12 V AC IEK	3	12	20	480	RRP20-4-03-012A
	REK78/4 3 A 24 V DC IEK	3	24	20	480	RRP20-4-03-024D
	REK78/4 3 A 24 V AC IEK	3	24	20	480	RRP20-4-03-024A
	REK78/4 3 A 230 V AC IEK	3	230	20	480	RRP20-4-03-220A

Main electric and mechanical features of slave relays of REK type modular series

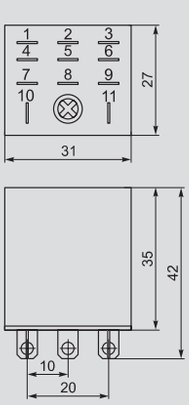
Parameters			REK77/3	REK77/4	REK78/3	REK78/4
Rated contacts current I_n, A			10	10	5	3
Rated voltage contact circuit, V	AC		230	230	230	230
	DC		24	24	24	24
Rated voltage control coils U_c, V	AC		12; 24; 230	12; 24; 230	12; 24; 230	12; 24; 230
	DC		12; 24	12; 24	12; 24	12; 24
Consumption current of coil, mA	AC	230 V	10	12	8,5	11
		24 V	125	135	60	60
		12 V	250	250	115	110
	DC	24 V	85	85	36	36
		12 V	120	120	48	70
Number of switching contact groups			3	4	3	4
Contact resistance, mOhm			50	50	50	50
Insulation resistance, mOhm			100	100	100	100
Electrical durability, min, cycles			10^5	10^5	10^5	10^5
Mechanical durability, min, cycles			10^7	10^7	10^7	10^7
Climate type and location category			MRC4	MRC4	MRC4	MRC4
Protection degree			IP40	IP40	IP40	IP40

Technical features of RRM series socket modular connectors

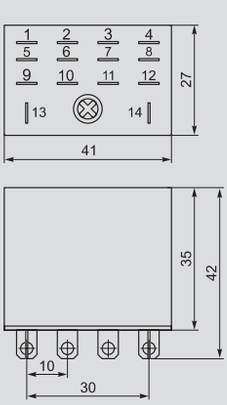
Parameters		RRM77/3	RRM77/4	RRM78/3	RRM78/4
Contact number		11	14	11	14
Rated current контактов I_n, A		10	10	5	3
Rated operating voltage, V	переменный ток	230	230	230	230
	постоянный ток	24	24	24	24
Electrical durability, min, cycles		10^5	10^5	10^5	10^5
Mechanical durability, min, cycles		10^7	10^7	10^7	10^7
Climate type and location category		УХЛ4	УХЛ4	УХЛ4	УХЛ4
Protection degree		IP20	IP20	IP20	IP20
Conductor cross-section, mm^2		0,75÷2,5	0,75÷2,5	0,5÷1,5	0,5÷1,5

Overall dimensions of slave relay of REK modular series

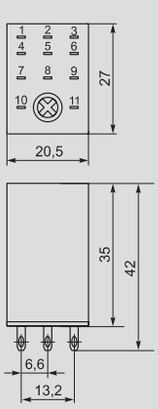
REK77/3



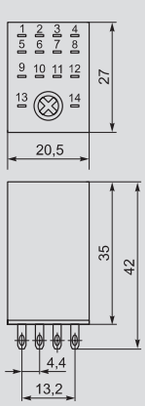
REK77/4



REK78/3



REK78/4



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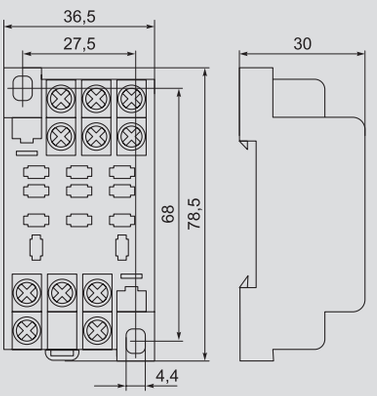
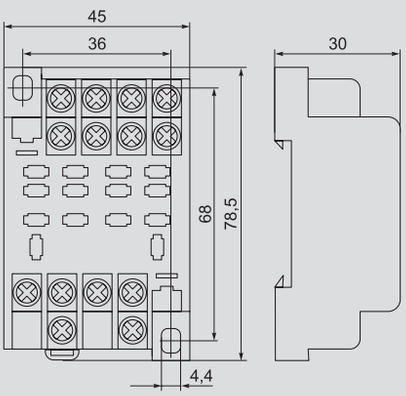
Overall dimensions of socket modular connectors RRM77, RRM78

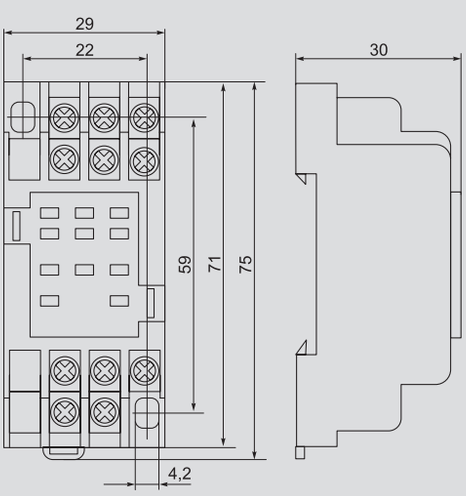
RRM77/3



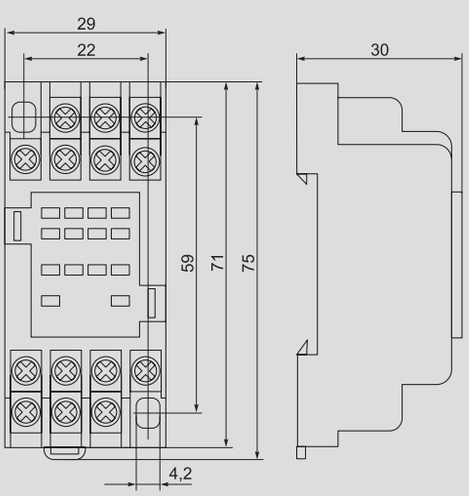
RRM77/4



RRM78/3

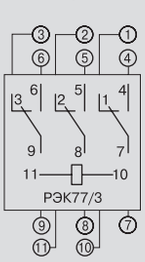


RRM78/4

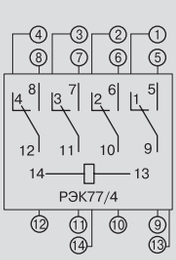


Diagrams of socket modular connectors RRM77, RRM78

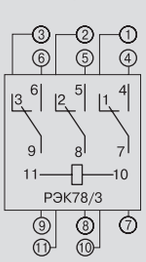
RRM77/3



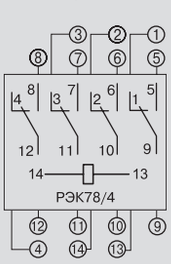
RRM77/4



RRM78/3



RRM78/4



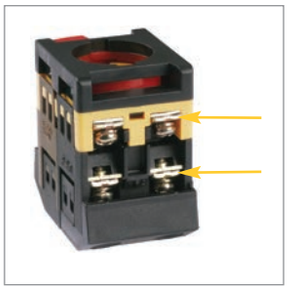
Command and signal devices
Buttons, switches, light signaling equipment

Light signaling indicators are designed to indicate the state of electric circuits. Used in electric boards, industrial environment and at power supply facilities.

Control buttons and switches are designed for online control of contactors (magnetic starters) and automation relays in electrical AC circuits, 50 Hz, voltage up to 660 V or DC circuits, voltage up to 400 V and other technological processes.
Various color options allow most efficient arrangement of boards and panels. All products comprise two units – removable head and contact module. Black contact group is a closing one (1c), brown one is an opening one (1o).

Design features

Removable head allows quick replacement of light filters and lamps.



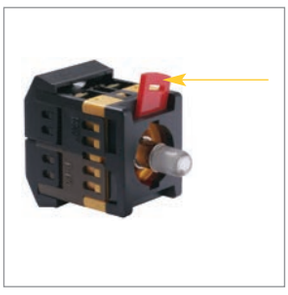
Leads are connected with screw clamps with plate washers that ensure reliable fixation of conductors.

Indicators for 12, 24, 36, 110 V can be used in AC and DC circuits.

Использование разнообразных цветовых вариантов съемных светофильтров позволяет наиболее эффективно компоновать щиты и панели.

Use of LED matrix in the indicator provides a higher light flux as compared to neon lamp and higher service life (6000 hours).

Removable neon lamp, removable LED matrix have various color options. All-purpose LED matrix for voltage 12, 24, 36, 110, 230 V AC/DC. Option of neon lamp replacement by LED matrix.



Easy installation of contact module that is attached to button block through fixation with a plastic flag.

Auxiliary opening and auxiliary closing contacts allow expanding options of commutation processes.

Rubber seal rings provide protection against penetration of foreign objects inside mechanism.

Simplified design provides an option of quick mounting and removal of the product on the board or panel.

Design features

Blocks of auxiliary contacts are mounted by means of special mounting screws, ensuring connection strength.

Reliable and convenient system of mounting products to mounting panel.

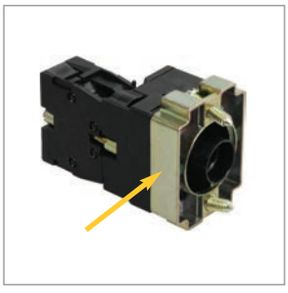
Availability of interchangeable closing (1c) and opening (1o) auxiliary contacts.

Use of LED matrices as light source with a higher service life and light emission.

Option of quick replacement of light source through use of LED matrices with BA9s base.

Rubber seal rings provide protection against penetration of foreign objects inside mechanism.

Upgraded design of push element, prohibiting spontaneous falling out.



Metal base ensuring higher service life of the product.

Range

Light signaling indicators	Description	Color	PCS/Package	PCS/CTN	Article
	AL-22 d22 mm neon/230 V cylinder	white	10	600	BLS20-AL-K01
	AL-22 d22 mm neon/230 V cylinder	yellow	10	600	BLS20-AL-K05
	AL-22 d22 mm neon/230 V cylinder	green	10	600	BLS20-AL-K06
	AL-22 d22 mm neon/230 V cylinder	red	10	600	BLS20-AL-K04
	AL-22 d22 mm neon/230 V cylinder	transparent	10	600	BLS20-AL-K08
	AL-22 d22 mm neon/230 V cylinder	blue	10	600	BLS20-AL-K07
	AL-22TE d22 mm neon/230 V cylinder	white	10	600	BLS30-ALTE-K01
	AL-22TE d22 mm neon/230 V cylinder	yellow	10	600	BLS30-ALTE-K05
	AL-22TE d22 mm neon/230 V cylinder	green	10	600	BLS30-ALTE-K06
	AL-22TE d22 mm neon/230 V cylinder	red	10	600	BLS30-ALTE-K04
	AL-22TE d22 mm neon/230 V cylinder	transparent	10	600	BLS30-ALTE-K08
	AL-22TE d22 mm neon/230 V cylinder	blue	10	600	BLS30-ALTE-K07
	ENR-22 d22 mm neon/230 V cylinder	white	10	600	BLS40-ENR-K01
	ENR-22 d22 mm neon/230 V cylinder	yellow	10	600	BLS40-ENR-K05
	ENR-22 d22 mm neon/230 V cylinder	green	10	600	BLS40-ENR-K06
	ENR-22 d22 mm neon/230 V cylinder	red	10	600	BLS40-ENR-K04
	ENR-22 d22 mm neon/230 V cylinder	blue	10	600	BLS40-ENR-K07
	AD-22DS matrix d22 mm 12 V AC/DC	white	10	600	BLS10-ADDS-012-K01
	AD-22DS matrix d22 mm 12 V AC/DC	red	10	600	BLS10-ADDS-012-K04
	AD-22DS matrix d22 mm 12 V AC/DC	yellow	10	600	BLS10-ADDS-012-K05
	AD-22DS matrix d22 mm 12 V AC/DC	green	10	600	BLS10-ADDS-012-K06
	AD-22DS matrix d22 mm 12 V AC/DC	blue	10	600	BLS10-ADDS-012-K07
	AD-22DS matrix d22 mm 24 V AC/DC	white	10	600	BLS10-ADDS-024-K01
	AD-22DS matrix d22 mm 24 V AC/DC	red	10	600	BLS10-ADDS-024-K04
	AD-22DS matrix d22 mm 24 V AC/DC	yellow	10	600	BLS10-ADDS-024-K05
	AD-22DS matrix d22 mm 24 V AC/DC	green	10	600	BLS10-ADDS-024-K06
	AD-22DS matrix d22 mm 24 V AC/DC	blue	10	600	BLS10-ADDS-024-K07
	AD-22DS matrix d22 mm 36 V AC/DC	white	10	600	BLS10-ADDS-036-K01
	AD-22DS matrix d22 mm 36 V AC/DC	red	10	600	BLS10-ADDS-036-K04
	AD-22DS matrix d22 mm 36 V AC/DC	yellow	10	600	BLS10-ADDS-036-K05
	AD-22DS matrix d22 mm 36 V AC/DC	green	10	600	BLS10-ADDS-036-K06
	AD-22DS matrix d22 mm 36 V AC/DC	blue	10	600	BLS10-ADDS-036-K07
	AD-22DS matrix d22 mm 110 V AC/DC	white	10	600	BLS10-ADDS-110-K01
	AD-22DS matrix d22 mm 110 V AC/DC	red	10	600	BLS10-ADDS-110-K04
	AD-22DS matrix d22 mm 110 V AC/DC	yellow	10	600	BLS10-ADDS-110-K05
	AD-22DS matrix d22 mm 110 V AC/DC	green	10	600	BLS10-ADDS-110-K06
	AD-22DS matrix d22 mm 110 V AC/DC	blue	10	600	BLS10-ADDS-110-K07
	AD-22DS matrix d22 mm 230 V AC	red	10	600	BLS10-ADDS-K04
	AD-22DS matrix d22 mm 230 V AC	green	10	600	BLS10-ADDS-K06
	AD-22DS matrix d22 mm 230 V AC	yellow	10	600	BLS10-ADDS-K05
	AD-22DS matrix d22 mm 230 V AC	blue	10	600	BLS10-ADDS-K07
	AD-22DS matrix d22 mm 230 V AC	white	10	600	BLS10-ADDS-K01

Description	Color	PCS/Package	PCS/CTN	Article
AD16DS matrix d16 mm 12 V AC/DC	white	10	600	BLS10-ADDS-012-K01-16
AD16DS matrix d16 mm 12 V AC/DC	red	10	600	BLS10-ADDS-012-K04-16
AD16DS matrix d16 mm 12 V AC/DC	yellow	10	600	BLS10-ADDS-012-K05-16
AD16DS matrix d16 mm 12 V AC/DC	green	10	600	BLS10-ADDS-012-K06-16
AD16DS matrix d16 mm 12 V AC/DC	blue	10	600	BLS10-ADDS-012-K07-16
AD16DS matrix d16 mm 24 V AC/DC	white	10	600	BLS10-ADDS-024-K01-16
AD16DS matrix d16 mm 24 V AC/DC	red	10	600	BLS10-ADDS-024-K04-16
AD16DS matrix d16 mm 24 V AC/DC	yellow	10	600	BLS10-ADDS-024-K05-16
AD16DS matrix d16 mm 24 V AC/DC	green	10	600	BLS10-ADDS-024-K06-16
AD16DS matrix d16 mm 24 V AC/DC	blue	10	600	BLS10-ADDS-024-K07-16
AD16DS matrix d16 mm 36 V AC/DC	white	10	600	BLS10-ADDS-036-K01-16
AD16DS matrix d16 mm 36 V AC/DC	red	10	600	BLS10-ADDS-036-K04-16
AD16DS matrix d16 mm 36 V AC/DC	yellow	10	600	BLS10-ADDS-036-K05-16
AD16DS matrix d16 mm 36 V AC/DC	green	10	600	BLS10-ADDS-036-K06-16
AD16DS matrix d16 mm 36 V AC/DC	blue	10	600	BLS10-ADDS-036-K07-16
AD16DS matrix d16 mm 110 V AC/DC	white	10	600	BLS10-ADDS-110-K01-16
AD16DS matrix d16 mm 110 V AC/DC	red	10	600	BLS10-ADDS-110-K04-16
AD16DS matrix d16 mm 110 V AC/DC	yellow	10	600	BLS10-ADDS-110-K05-16
AD16DS matrix d16 mm 110 V AC/DC	green	10	600	BLS10-ADDS-110-K06-16
AD16DS matrix d16 mm 110 V AC/DC	blue	10	600	BLS10-ADDS-110-K07-16
AD16DS matrix d16 mm 230 V AC	white	10	600	BLS10-ADDS-230-K01-16
AD16DS matrix d16 mm 230 V AC	red	10	600	BLS10-ADDS-230-K04-16
AD16DS matrix d16 mm 230 V AC	yellow	10	600	BLS10-ADDS-230-K05-16
AD16DS matrix d16 mm 230 V AC	green	10	600	BLS10-ADDS-230-K06-16
AD16DS matrix d16 mm 230 V AC	blue	10	600	BLS10-ADDS-230-K07-16

LAY5-BU63 matrix d22 мм	green	20	200	BLS50-BU-K06
LAY5-BU64 matrix d22 мм	red	20	200	BLS50-BU-K04
LAY5-BU65 matrix d22 мм	yellow	20	200	BLS50-BU-K05

Control buttons

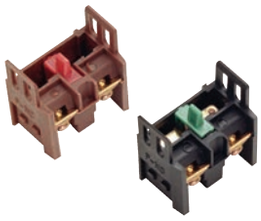
ABLF-22 d22 mm neon/230 V 1c+1o	white	10	400	BBT10-ABLF-K01
ABLF-22 d22 mm neon/230 V 1c+1o	yellow	10	400	BBT10-ABLF-K05
ABLF-22 d22 mm neon/230 V 1c+1o	green	10	400	BBT10-ABLF-K06
ABLF-22 d22 mm neon/230 V 1c+1o	red	10	400	BBT10-ABLF-K04
ABLF-22 d22 mm neon/230 V 1c+1o	transparent	10	400	BBT10-ABLF-K08
ABLF-22 d22 mm neon/230 V 1c+1o	blue	10	400	BBT10-ABLF-K07

ABLFP-22 d22 mm neon/230 V 1c+1o	white	10	400	BBT20-ABLFP-K01
ABLFP-22 d22 mm neon/230 V 1c+1o	yellow	10	400	BBT20-ABLFP-K05
ABLFP-22 d22 mm neon/230 V 1c+1o	green	10	400	BBT20-ABLFP-K06
ABLFP-22 d22 mm neon/230 V 1c+1o	red	10	400	BBT20-ABLFP-K04
ABLFP-22 d22 mm neon/230 V 1c+1o	transparent	10	400	BBT20-ABLFP-K08
ABLFP-22 d22 mm neon/230 V 1c+1o	blue	10	400	BBT20-ABLFP-K07

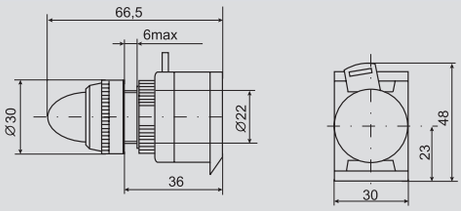
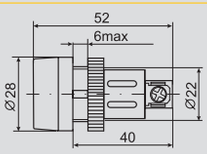
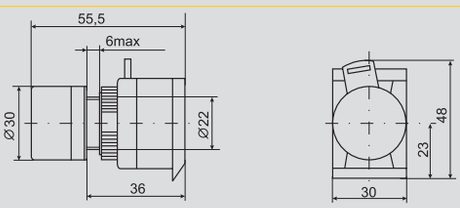
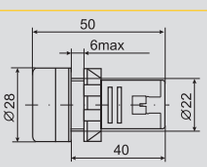
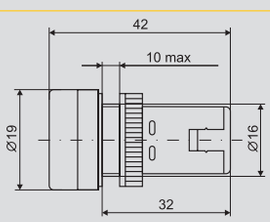
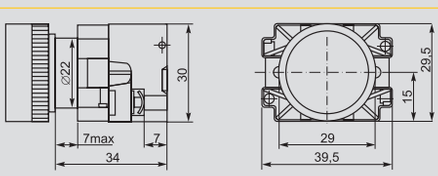
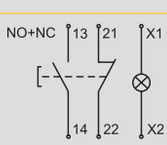
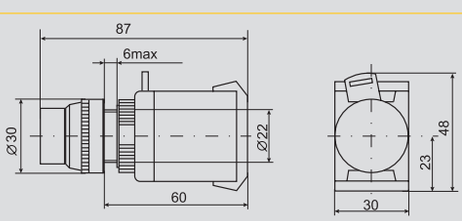
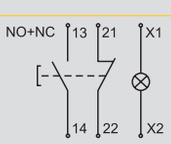
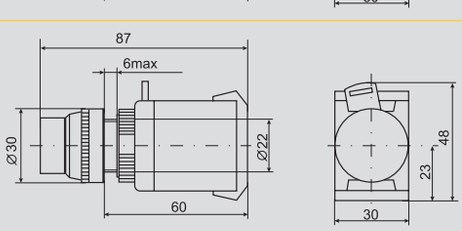
	Description	Color	PCS/Package	PCS/CTN	Article
	ABLFS-22 d22 mm neon/230 V 1c+1o	white	10	400	BBT30-ABLFS-K01
	ABLFS-22 d22 mm neon/230 V 1c+1o	yellow	10	400	BBT30-ABLFS-K05
	ABLFS-22 d22 mm neon/230 V 1c+1o	green	10	400	BBT30-ABLFS-K06
	ABLFS-22 d22 mm neon/230 V 1c+1o	red	10	400	BBT30-ABLFS-K04
	ABLFS-22 d22 mm neon/230 V 1c+1o	transparent	10	400	BBT30-ABLFS-K08
	ABLFS-22 d22 mm neon/230 V 1c+1o	blue	10	400	BBT30-ABLFS-K07
	AELA-22 “Mushroom knob” d22 mm neon/230 V 1c+1o	yellow	10	200	BBG20-AELA-K05
	AELA-22 “Mushroom knob” d22 mm neon/230 V 1c+1o	green	10	200	BBG20-AELA-K06
	AELA-22 “Mushroom knob” d22 mm neon/230 V 1c+1pK	red	10	200	BBG20-AELA-K04
	AELA-22 “Mushroom knob” d22 mm neon/230 V 1c+1o	blue	10	200	BBG20-AELA-K07
	AEA-22 “Mushroom knob” d22 mm 1c+1o	yellow	10	200	BBG30-AEA-K05
	AEA-22 “Mushroom knob” d22 mm 1c+1o	green	10	200	BBG30-AEA-K06
	AEA-22 “Mushroom knob” d22 mm 1c+1o	red	10	200	BBG30-AEA-K04
	AEA-22 “Mushroom knob” d22 mm 1c+1o	blue	10	200	BBG30-AEA-K07
	AEAL-22 “Mushroom knob” with fixation d22 mm 230 V 1c+1o	red	10	200	BBG60-AEAL-K04
	AE-22 “Mushroom knob” with fixation d22 mm 230B 1c+1o	red	10	200	BBG10-AE-K04
	ANE-22 “Mushroom knob” with fixation d22 mm neon/230 V 1c+1o	red	10	200	BBG40-ANE-K04
	APBB-22N “I-O” d22 mm neon/230 V 1c+1o	red, green	10	400	BBD10-APBB-K51
	APBB-22N “Start-Stop” d22 mm neon/230 V 1c+1o	red, green	10	400	BBD11-APBB-K51
	LAY5-BS142 “Mushroom knob” with key d22 mm 230 V 1c+1o	red	10	200	BBG50-LAY5-K04

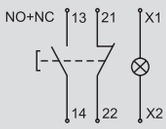
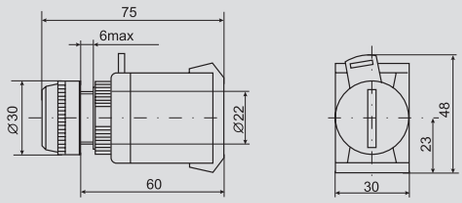
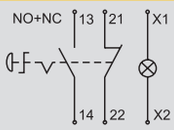
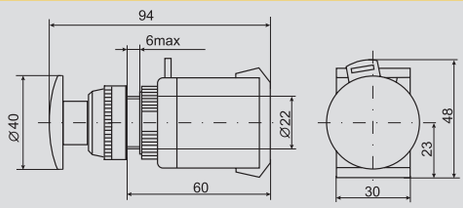
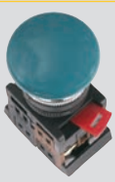
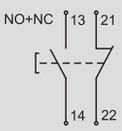
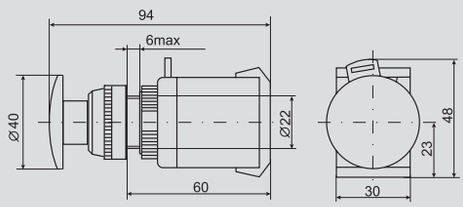
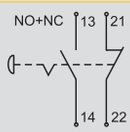
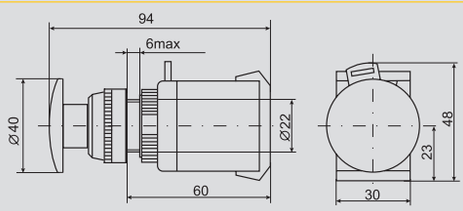
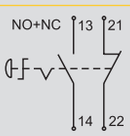
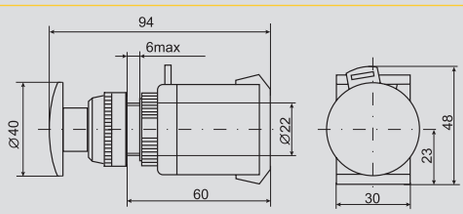
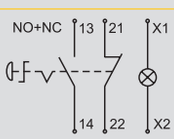
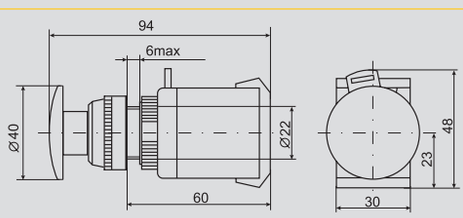
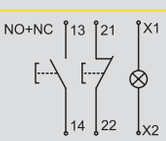
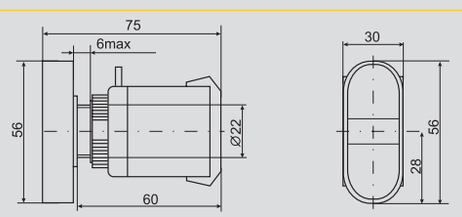
	Description	Color	PCS/Package	PCS/CTN	Article
	SB-7 “Start” d22 мм/230 V	green	10	500	BBT40-SB7-K06
	SB-7 “Stop” d22 мм/230 V	red	10	500	BBT40-SB7-K04
	PPBB-30N «I-O» d30 mm neon/230 V 1c+1o	red, green	10	200	BBD20-PPBB-K51
	PPBB-30N “Start-Stop” d30 mm neon/230 V 1c+1o	red, green	10	200	BBD21-PPBB-K51
	LAY5-BA21 not highlighted 1c	black	20	200	BBT60-BA-K02
	LAY5-BA31 not highlighted 1c	green	20	200	BBT60-BA-K06
	LAY5-BA41 not highlighted 1c	red	20	200	BBT60-BA-K04
	LAY5-BA42 not highlighted 1o	red	20	200	BBT61-BA-K04
	LAY5-BA51 not highlighted 1c	yellow	20	200	BBT60-BA-K05
	LAY5-BA61 not highlighted 1c	blue	20	200	BBT60-BA-K07
	LAY5-BC21 “Mushroom knob” not highlighted 1c	black	20	200	BBG70-BC-K02
	LAY5-BC31 “Mushroom knob” not highlighted 1c	green	20	200	BBG70-BC-K06
	LAY5-BC41 “Mushroom knob” not highlighted 1c	red	20	200	BBG70-BC-K04
	LAY5-BC42 “Mushroom knob” not highlighted 1o	red	20	200	BBG71-BC-K04
	LAY5-BC51 “Mushroom knob” not highlighted 1c	yellow	20	200	BBG70-BC-K05
	LAY5-BC61 “Mushroom knob” not highlighted 1c	blue	20	200	BBG70-BC-K07
	LAY5-BL21 not highlighted 1c	black	20	200	BBT70-BL-K02
	LAY5-BL31 not highlighted 1c	green	20	200	BBT70-BL-K06
	LAY5-BL41 not highlighted 1c	red	20	200	BBT70-BL-K05
	LAY5-BL42 not highlighted 1o	red	20	200	BBT71-BL-K04
	LAY5-BL51 not highlighted 1c	yellow	20	200	BBT71-BL-K05
	LAY5-BL61 not highlighted 1c	blue	20	200	BBT70-BL-K07
	LAY5-BS542 “Mushroom knob” emergency one with fixation	red	20	200	BBG90-BS-K04
	LAY5-BT42 “Mushroom knob” emergency rotary one with fixation	red	20	200	BBG80-BT-K04
	LAY5-BW3361 highlighted 1c	green	20	200	BBT50-BW-K06
	LAY5-BW3461 highlighted 1c	red	20	200	BBT50-BW-K04
	LAY5-BW3561 highlighted 1c	yellow	20	200	BBT50-BW-K05
	LAY5-BW8465 «I-O» double highlighted	red/ green	20	200	BBD40-BW-K51

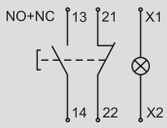
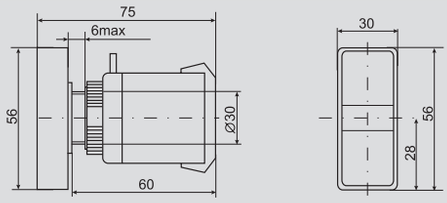
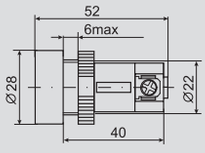
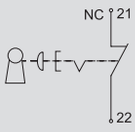
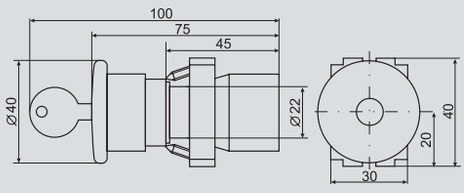
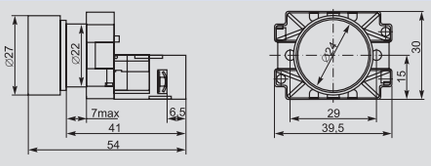
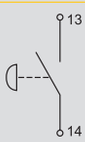
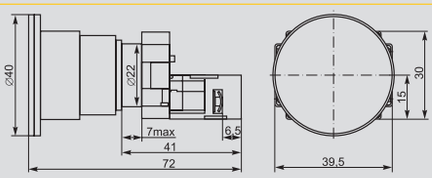
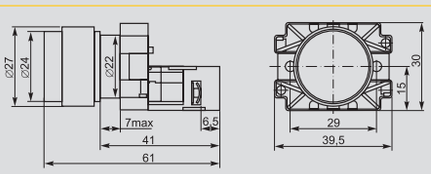
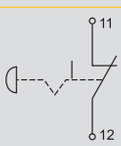
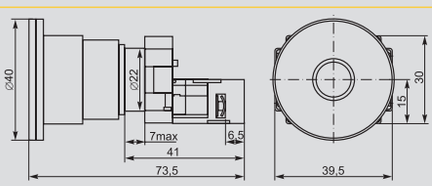
Switches	Description	Color	PCS/Package	PCS/CTN	Article
	AKS-22 with key for 2 fixed positions I-0 1c+1o	black	10	400	BSW10-AKS-2-K02
	ALCLR-22 for 3 fixed positions I-0-II 1c+1o	black	10	400	BSW10-ALCLR-3-K02
	ALC-22 for 2 fixed positions with a long handle I-0 1c+1o	black	10	400	BSW10-ALC-2-K02
	AC-22 for 2 fixed positions I-0 1c+1o	black	10	400	BSW10-AC-2-K02
	ANC-22-2 for 2 fixed positions neon/230 V I-0 1c+1o	red	10	400	BSW10-ANC-2-K04
	ANC-22-2 for 2 fixed positions neon/230 V I-0 1c+1o	green	10	400	BSW10-ANC-2-K06
	ANCLR-22-3 for 3 fixed positions neon/230B I-0-II 1c+1o	red	10	400	BSW10-ANCLR-3-K04
	ANCLR-22-3 for 3 fixed positions neon/230 V I-0-II 1c+1o	green	10	400	BSW10-ANCLR-3-K06
	LAY5-BG45 for 2 positions with key	black	20	200	BSW80-BG-2-K02
	LAY5-BD25 2 positions "I-0" stand. handle	black	20	200	BSW60-BD-2-K02
	LAY5-BD33 3 positions "I-0-II" stand. handle	black	20	200	BSW60-BD-3-K02
	LAY5-BJ25 2 positions "I-0" long handle	black	20	200	BSW70-BJ-2-K02
	LAY5-BJ33 3 positions "I-0-II" long handle	black	20	200	BSW70-BJ-3-K02
	LAY5-BK2365 2 positions	green	20	200	BSW90-BK-2-K06
	LAY5-BK2465 2 positions	red	20	200	BSW90-BK-2-K04
	LAY5-BK2565 2 positions	yellow	20	200	BSW90-BK-2-K05

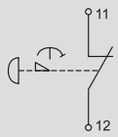
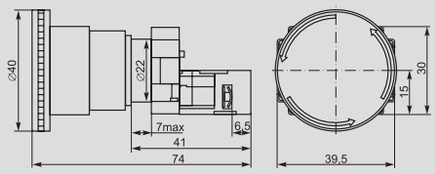
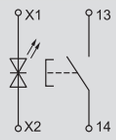
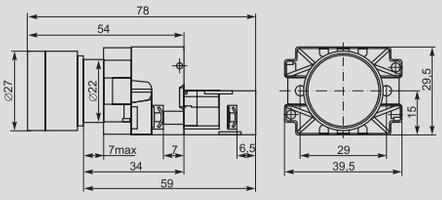
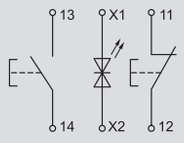
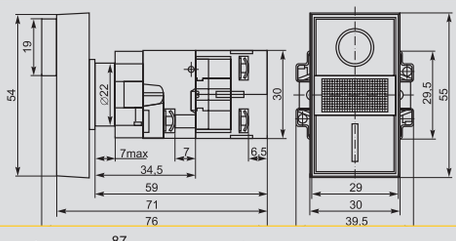
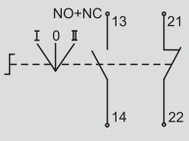
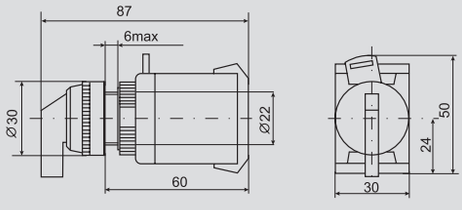
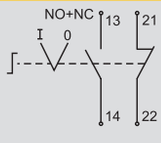
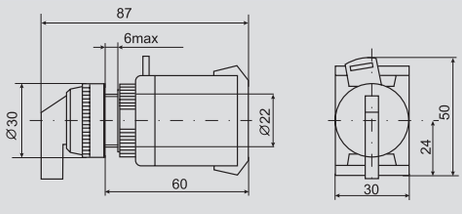
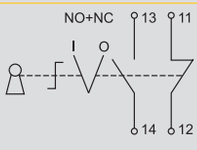
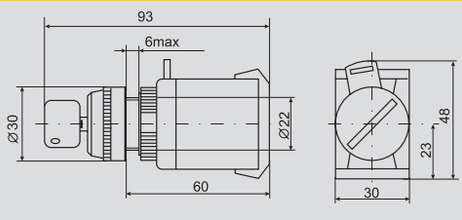
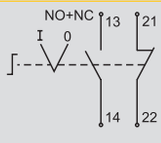
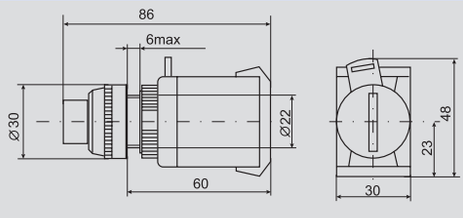
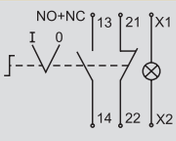
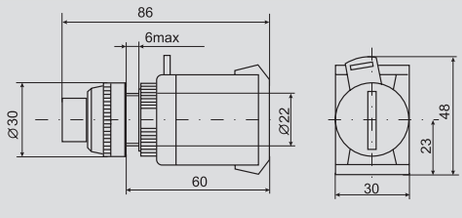
Accessories for light signaling indicators, control buttons, switches	Description	Color	PCS/Package	PCS/CTN	Article
	Add. contact for light signaling equipment 1NC	brown	4	2000	BDK10
	Add. contact for light signaling equipment 1NO	black	4	2000	BDK20
	Changeable lamp LED matrix/12 V AC/DC	green	1	50	BMS10-012-K06
	Changeable lamp LED matrix/12 V AC/DC	red	1	50	BMS10-012-K04
	Changeable lamp LED matrix/12 V AC/DC	yellow	1	50	BMS10-012-K05
	Changeable lamp LED matrix/12 V AC/DC	blue	1	50	BMS10-012-K07
	Changeable lamp LED matrix/24 V AC/DC	green	1	50	BMS10-024-K06
	Changeable lamp LED matrix/24 V AC/DC	red	1	50	BMS10-024-K04
	Changeable lamp LED matrix/24 V AC/DC	yellow	1	50	BMS10-024-K05
	Changeable lamp LED matrix/24 V AC/DC	blue	1	50	BMS10-024-K07
	Changeable lamp LED matrix/36 V AC/DC	green	1	50	BMS10-036-K06
	Changeable lamp LED matrix/36 V AC/DC	red	1	50	BMS10-036-K04
	Changeable lamp LED matrix/36 V AC/DC	yellow	1	50	BMS10-036-K05
	Changeable lamp LED matrix/36 V AC/DC	blue	1	50	BMS10-036-K07
	Changeable lamp LED matrix/48 V AC/DC	green	1	50	BMS10-048-K06
	Changeable lamp LED matrix/48 V AC/DC	red	1	50	BMS10-048-K04
	Changeable lamp LED matrix/230 V AC/DC	green	1	50	BMS10-220-K06
	Changeable lamp LED matrix/230 V AC/DC	red	1	50	BMS10-220-K04
	Changeable lamp LED matrix/230 V AC/DC	yellow	1	50	BMS10-220-K05
	Changeable lamp LED matrix/230 V AC/DC	blue	1	50	BMS10-220-K07
	Changeable neon lamp /230 V	green	100	1000	BMS20-240-K06
	Changeable neon lamp/230 B	red	100	1000	BMS20-240-K04
	Changeable cap for AL-22	green	10	4000	BLS20D-KS-AL-K06
	Changeable cap for AL-22	red	10	4000	BLS20D-KS-AL-K04
	Changeable cap for AL-22TE	green	10	4000	BLS30D-KS-ALTE-K06
	Changeable cap for AL-22TE	red	10	4000	BLS30D-KS-ALTE-K04

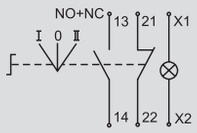
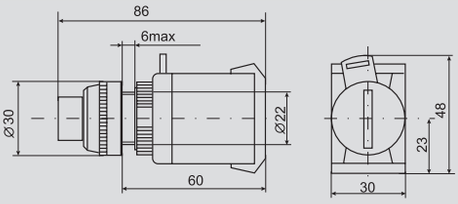
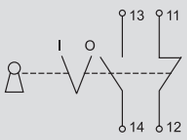
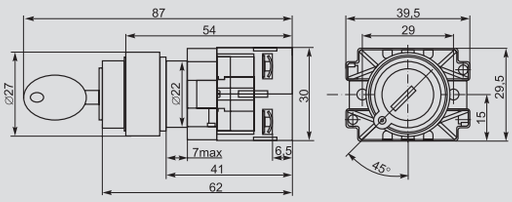
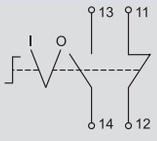
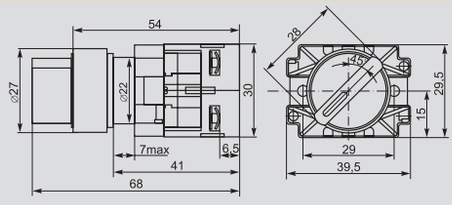
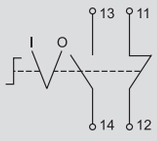
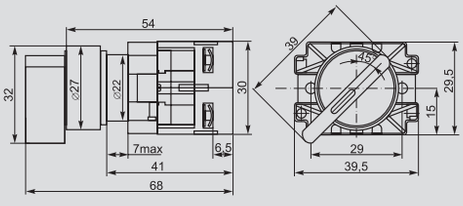
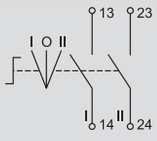
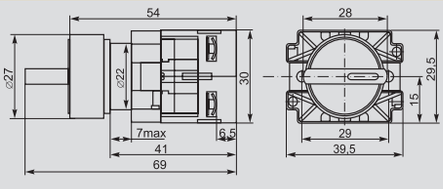
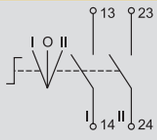
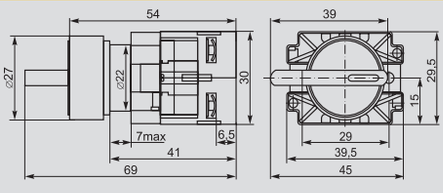
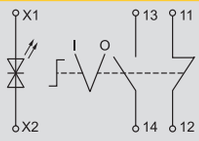
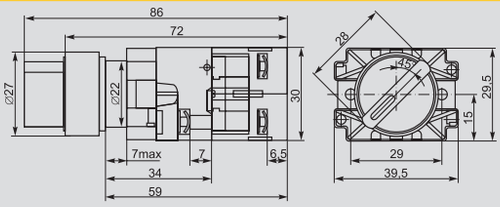
Overall and mounting dimensions of light signaling indicators, control buttons and switches

	Description	Electric circuit	Overall dimensions
	AL-22		
	ENR-22		
	AL-22TE		
	AD-22DS		
	AD-16DS		
	LAY5-BU63, LAY5-BU64, LAY5-BU65		
	ABLF-22		
	ABLFP-22		

	Description	Electric circuit	Overall dimensions
	ABLFS-22		
	AELA-22		
	AEA-22		
	AEAL-22		
	AE-22		
	ANE-22		
	APBB-22N		

	Description	Electric circuit	Overall dimensions
	PPBB-30N		
	SB-7 “Start” SB-7 “Stop”		
	LAY5-BS142		
	LAY5-BA21 LAY5-BA31 LAY5-BA41 LAY5-BA51 LAY5-BA61		
	LAY5-BC21 LAY5-BC31 LAY5-BC41 LAY5-BC51 LAY5-BC61		
	LAY5-BL21 LAY5-BL31 LAY5-BL41 LAY5-BL51 LAY5-BL61		
	LAY5-BS542		

	Description	Electric circuit	Overall dimensions
	LAY5-BT42		
	LAY5-BW3361 LAY5-BW3461 LAY5-BW3561		
	LAY5-BW8465		
	ALCLR-22		
	ALC-22		
	AKS-22		
	AC-22		
	ANC-22-2		

	Description	Electric circuit	Overall dimensions
	ANC-22-3		
	LAY5-BG45		
	LAY5-BD25		
	LAY5-BJ25		
	LAY5-BD33		
	LAY5-BJ33		
	LAY5-BK2365 LAY5-BK2465 LAY5-BK2565		

Main electric and mechanical features of control buttons and switches

Сертификат соответствия № РОСС CN.АЯ46.В46701

Parameters	Current type	
	AC	DC
Rated operating voltage, V	660 400 230 120 48	440 220 110 48 24
Rated operating current of contacts, A	Application category AC-12	Application category DC-12
	2,5 4,5 7,5 10 10	0,6 1,3 2,5 5 10
	Application category AC-15	Application category DC-13
	1,5 2,5 4,5 6 6	0,1 0,3 0,6 1,3 2,5
Electrical durability, cycles On-Off×10^3	ABLF, ABLFP, AEA – 300; ABLFS, PPBB-30N, APBB-22N – 100; ALCLR, AKS – 10	
Mechanical durability, cycles, On-Off×10^3	600 – for all devices; 100 – buttons with key and buttons with fixation	
Protection degree of button and switch mechanism	IP 40	IP 40
Allowable commutation frequency (cycles On-Off/h)	300 1200 3600	300 1200 3600
% current load of contact comp. to operating value	40 25 15	40 25 15
Ambient temperature, °C	от –10 до +40	от –10 до +40
Влажность окружающей среды	45–90% without condensate dropout	

Switch diagrams

Description	AC-22; ANC-22-2; ALC-22; LAY5-BJ25; LAY5-BK2565; LAY5-BD25		ALCLR-22; ANCLR-22; LAY5-BD33; LAY5-BJ33			AKS-22	
Grip position*	–45°	+45°	–45°	+0°	+45°	–45°	+45°
Switching compliance	0	I	I	0	II	0	I
NC contact	×		×				×
NO contact		×			×	×	

Button talfer control panels of PKT series

Button talfer control panels are designed for commutation of electric control circuits of hoisting mechanisms. They have a sealed housing made of heat-resistant ABS-plastic with installed buttons. A protective gland is designed for sealing cable entry, and between the housing and the panel a gasket seal is installed.


СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р
ГОССТАНДАРТ РОССИИ

СЕРТИФИКАТ СООТВЕТСТВИЯ

As for their constructive and technical features button panels of PKT series comply with requirements of Russian standard GOST P50030.5.1. Button panels of PKT series have passed certification tests and obtained a certificate of conformance РОСС CN.ME86.B00132 was received for their serial production.

Advantages

- Option of installing 2, 4 or 6 buttons.
- PKT housing is made of ABS-plastic, which is a non-combustible material.
- Own protective gland at the cable entry, which protects against penetration of moisture and dust inside the housing.

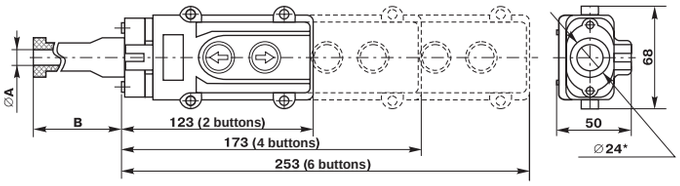
Range

	Description	PCS/Package	PCS/CTN	Article
	PKT-61 for 2 buttons IP54	1	60	BPU10-2
	PKT-62 for 4 buttons IP54	1	40	BPU10-4
	PKT-63 for 6 buttons IP54	1	30	BPU10-6

Technical features

Feature name		Type		
		PKT-61	PKT-62	PKT-63
Number of control buttons		2	4	6
Rated mains current frequency, Hz		50	50	50
Rated operating voltage U_e, V		110; 230; 400		
Application category AC-14 – control of low power electric magnets (up to 72 W):				
Rated operating current Ie at U_e, A	230 V	0,75	0,75	0,75
	400 V	–		
Application category AC-15 – control of low power electric magnets (above 72 W):				
Rated operating current Ie at U_e, A	230 V	3	3	3
	400 V	1,5	1,5	1,5
Protection degree against moist and dust penetration		IP54		

Overall dimensions



Housings of control panels for control button installation

Light signaling indicators, control buttons and switches are easily mounted in the housing of control panels.

Advantages

- Mounting option from 1 to 6 light signaling indicators, control buttons, switches.
- Panel housing is made of ABS-plastic, which is a non-combustible material.
- Own protective gland at the cable entry, which protects against penetration of moisture and dust inside the housing after mounting.

Range

	Description	Overall dimensions, mm	Color	PCS/Package	PCS/CTN	Article
	Housing KP101 for buttons, one place	75×70×65	white	1	100	BKP10-1-K01
	Housing KP102 for buttons, two places	110×70×65	white	1	100	BKP10-2-K01
	Housing KP103 for buttons, three places	150×70×65	white	1	100	BKP10-3-K01
	Housing KP104 for buttons, four places	190×70×65	white	1	50	BKP10-4-K01
	Housing KP105(6) for buttons, five (six) places	250×70×65	white	1	50	BKP10-6-K01