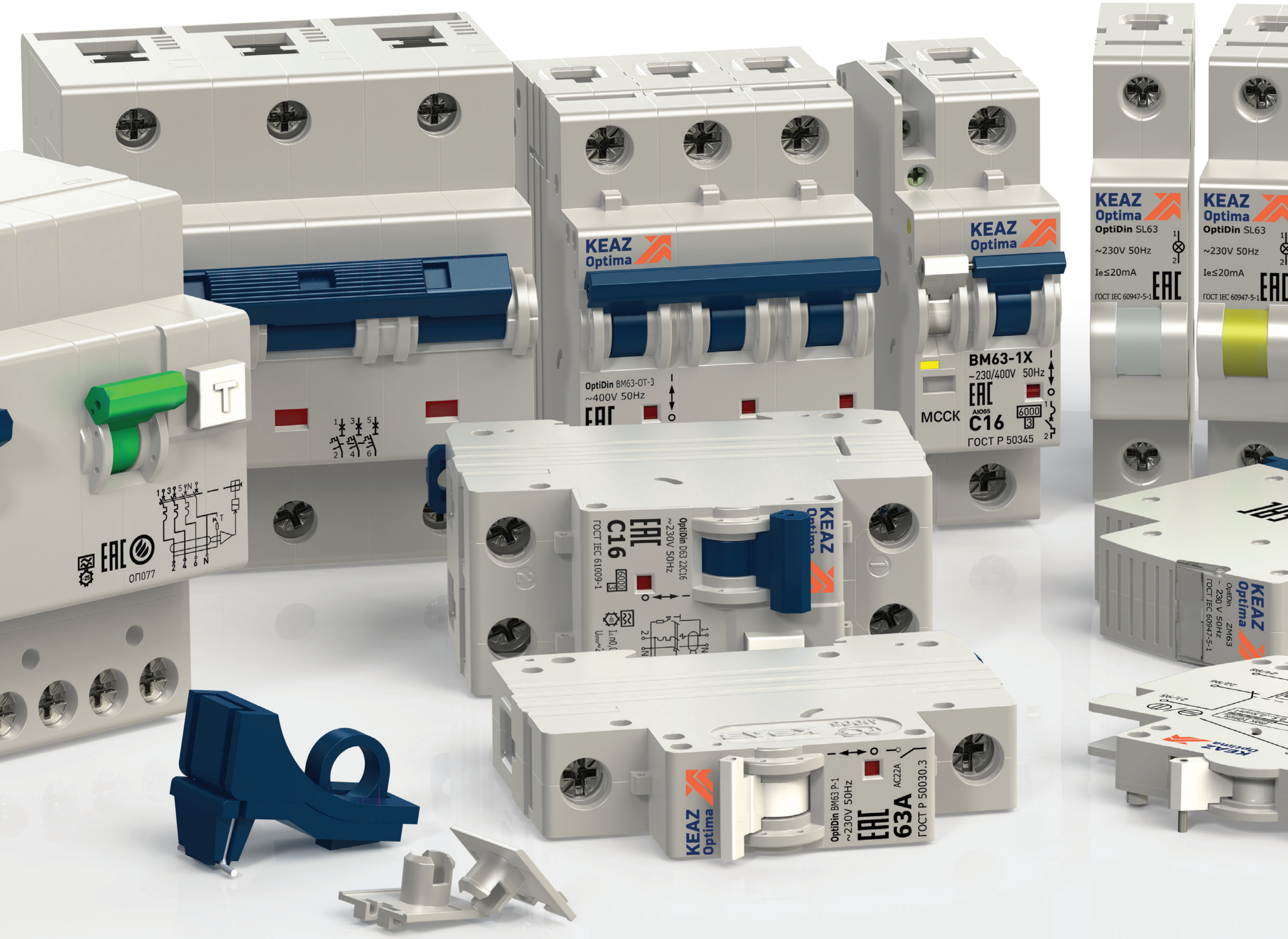
KEAZ Optima

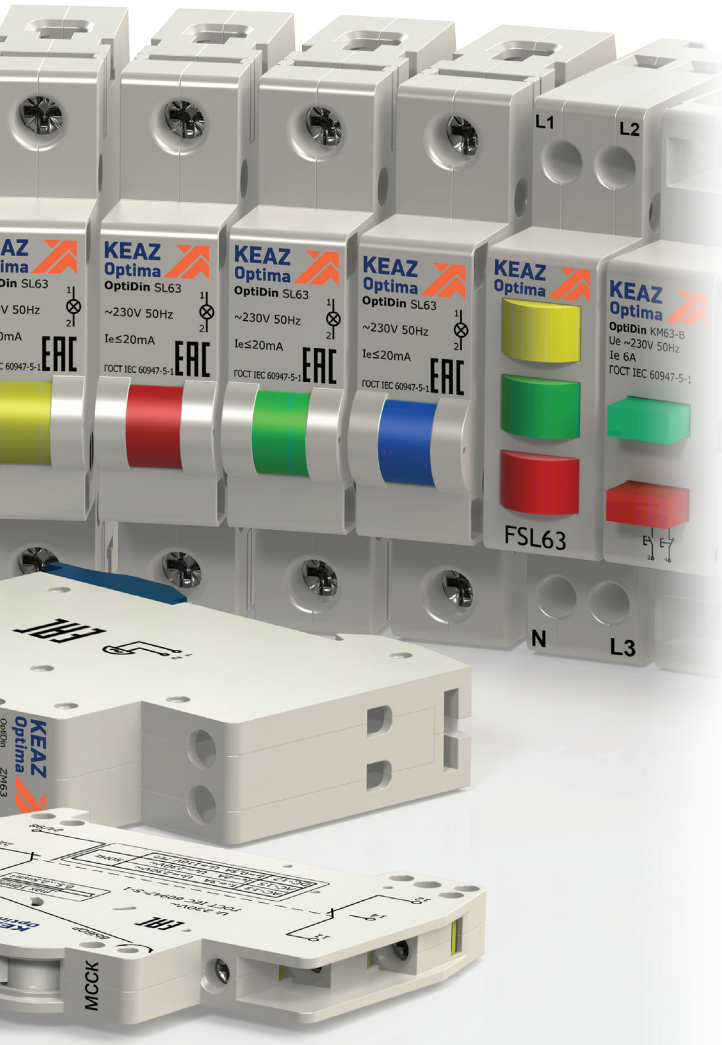
OptiDin are devices with DIN-rail installation type, providing a wide range of different functions



On the basis of OptiDin modular circuit breakers and accessories manufactured by KEAZ, it is possible to implement a solution suitable both for the protection of equipment in residential and public buildings, as well as in complex process units in production.

A wide range of OptiDin residual current circuit breakers will help you choose the right solution to protect people from electric shock and property from fire.

The range of modular contactors and relays OptiDin will allow to realize various schemes of automation of technological processes, and OptiDin surge protection devices will provide protection against lightning and switching surges, as well as protect expensive equipment from electric shock.



OptiDin devices with DIN-rail installation type

Devices on the OptiDin DIN-rail allow to implement any possible solution in all energy-saving systems.

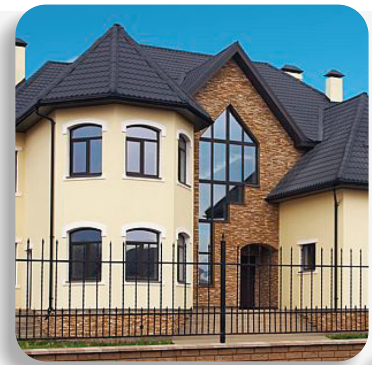
OptiDin BM63
Modular automatic circuit breakers for alternating current up to 63 A

OptiDin BM125
Modular automatic circuit breakers for alternating current up to 125 A

OptiDin DM63
Residual current circuit breakers (protection tripping devices) up to 100 A

OptiDin D63
Automatic residual current circuit breakers up to 40 A

The basic range of modular circuit breakers for currents up to 125A of OptiDin BM63 and OptiDin BM125 series is used together with the RCBO with overcurrent protection of the OptiDin D63 series or the protection tripping devices of the OptiDin DM63 series. The specified devices provide protection of human lives and equipment against overload and short-circuit currents, enabling the construction of safe power supply systems for apartment buildings and cottages.



OptiDin MK63
Modular contactors

Electromechanical modular contactors of the OptiDin MK63 series are used to control loads of small capacities that require frequent switching - lighting, ventilation, heating, air conditioning, pumps, etc.

OptiDin
Modular control and protection relays

The monitoring and control relays of the OptiDin series are designed to protect refrigerating, compressor, and air conditioning equipment of enterprises from unallowable voltage fluctuations, as well as monitoring and control of physical variables: voltage, current, power, temperature, time, etc.

OptiDin VD63
Differential current circuit breakers up to 63 A

OptiDin DM63
Residual current circuit breakers up to 100 A

OptiDin VD63 and OptiDin DM63 residual current switches protect human life and health from AC leakage through the use of universal protective characteristics of type "A". Automatic residual current switches OptiDin VD63 enable the construction of cascade protection of circuits in commercial buildings and hotels due to the availability of selective design of RCBO type "S" in the range . The electromechanical design of the OptiDin DM63 protection tripping device will provide reliable protection in emergency situations when a zero conductor breaks and ensures safe operation at any fluctuations and even power failure, both in an apartment building and at industrial enterprises.

OptiDin BM63
Modular automatic circuit breakers for alternating current up to 63 A special configuration

The only available special series of automatic circuit breakers of the OptiDin BM63 series in Russia with configuration characteristics of Z, L, K allows to protect high-tech equipment at industrial enterprises.

Modular automatic switches of direct current up to 50 A of the OptiDin BM63 DC series are used in automation and control systems of industrial processes, on transport, at solar power stations and wind power stations.

OptiDin BM63 DC
Modular circuit breakers for direct current up to 50 A

A new design of accessories has been developed that allows a shunt release and modules of auxiliary contacts to be connected to the OptiDin BM63 modular switches in various combinations.
This expands the functionality and the scope of automatic switches with accessories from residential and commercial construction to responsible solutions in manufacturing and oil and gas industry.

OptiDin BM63
Module of auxiliary and signal contacts

OptiDin BM63
Shunt release device

Surge protection devices of the OptiDin OM series protect human life and high-precision electronic equipment from impulse overvoltages caused by direct lightning strokes, lightning discharge pickups and switching of various process equipment. The specified devices are widely used in protection of cottages, industrial enterprises, especially to protect the base stations of cellular operators and data processing centers.

OptiDin OM
Surge protection device

Command and signal feeders consist of OptiDin KM63 modular buttons, OptiDin FSL63 / SL63 modular indicators, OptiDin ZM63 modular ringers.

The devices allow to organize operating control of contactors (magnetic starters), various control relays and other technological equipment in the line of devices for DIN-rail mounting.

OptiDin KM63
Buttons modular

OptiDin FSL63
Visual phase indicator

OptiDin SL63
Indicator lamp

OptiDin ZM63
Ringers modular

The OptiDin BM series circuit breakers are also available in a special configuration for using in nuclear power plants, on marine and river vessels.

OptiDin Modular circuit breakers

Modular circuit breakers are designed to protect electrical installations from overloads and short circuits, as well as for infrequent switching and disconnection of circuits manually.

Modular circuit breakers by KEAZ for direct and alternating currents are meant as devices of a wide scope of application: from use in solutions for construction, industrial facilities, construction of elite houses, shopping centers, cottages to installations in power systems of nuclear power plants, thermal power plants, ships and submarines of the Ministry of Defense of Russian Federation.

A wide range of accessories makes the use of KEAZ modular automatic devices convenient for any solution.

Designation

OptiDin BM63 - 1 N B 63 - 10 - H5 - DC - UHL3 - REG

(1) OptiDin (2) BM63 (3) 1 (4) N (5) B (6) 63 (7) 10 (8) H5 (9) DC (10) UHL3 (11) REG

1	Product range	OptiDin					
2	Configuration	BM63, BM125					
3	Number of poles	1P	1P+N	2P	3P	3P+N	4P
4	Pole without a trip unit	N					
5	Protection type	B	C	D	Z	L	K
6	Current rating, A	1, 2, 3, 4, 5, 6, 8, 10, 13, 16, 20, 25, 32, 40, 50, 63					
7	Breaking capacity, кА*	10000					
8	Shunt release built in an unprotected pole**	H1		H2		H5	
9	Used for designation of DC circuit breakers***	DC					
10	Symbol of environment and environmental class of location in compliance with the requirements of GOST 15150	UHL3 (international CT3), OM4 (international UM4)					
11	Acceptance of maritime and river register	REG					

* Specified for BM63 circuit breakers with the breaking capacity other than 6000 A
** Indicated if a shunt trip is available
*** Indicated for DC breakers

References, listed in the chapter tables, can be changed. In case the references you need are not found on the site, please contact the technical support of KEAZ.

Selection Guide

Modular circuit breakers						
Type		BM63		BM63-OT	BM63 DC	BM125
Physical appearance						
Standard of compliance		GOST P 50345	GOST P 50030.2	GOST P 50345	GOST IEC 60898-2	GOST P 50030.2
Number of poles		1P, 1P+N, 2P, 3P, 3P+N, 4P		1P, 3P	1P, 2P	1P, 1P+N, 2P, 3P, 3P+N, 4P
Auxiliary units for remote trip and signaling		available	available	available	available	
Electrical properties						
Protection type		B, C, D	Z, L, K	D	B, C, K, L, Z	C, D
Rated current In, A		1 - 63		6-63	1-50	80, 100, 125
Rated operating voltage Ue, B	AC 50 Hz	230/400		230/400	230/400	230/400
Maximum operating voltage Ue, B (max)	AC 50 Hz	400		400	400	400
Minumum operating voltage Ue, B (min)	AC 50 Hz	12		12	12	12
Rated insulation voltage Ui, V (AC current)		230/400		230/400	230/400	400
Rated impulse voltage Uimp, kV		4		4	4	4
Breaking current						
AC	Un					
Rated short-circuit breaking capacity Icn, A	230/400 V	6000, 10000		6000	6000	15000*, 20000**
DC	Un					
Rated short-circuit breaking capacity A	up to 110 V (2P)	1500				
Other specifications						
Visual display of emergency trip		available		available	available	available
Protection class rating		IP20		IP20	IP20	IP20
For more information see pp.		14		19	21	23
Accessories see pp.		27-30		-	27-30	-

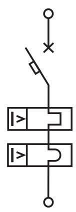
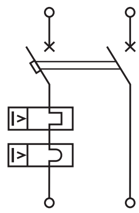
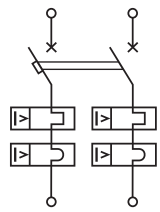
* For a C rating of 125 A and D per 100 A
** For a C rating of 80 and 100 A and D on 100 A

OptiDin BM63 Modular automatic circuit breakers for alternating current up to 63 A

Automatic switches OptiDin BM63 are designed to protect electrical circuits from overload and short-circuit currents, conducting current in a normal mode and operational make - break of the specified circuits.

Switches comply with the requirements of GOST P 50345 (AC household) and GOST IEC 60898-2 (direct current), GOST P 50030.2 (for industrial use), TP TC 004/2011 and are manufactured according to ТУ3421-040-05758109-2009.

References (Series)

OptiDin BM63 automatic circuit breaker (Icn=6000 A)																		
Number of poles	1						1+N						2					
Wiring diagrams																		
Rated current In, A	Protection type						Protection type						Protection type					
	B	C	D	Z	L	K	B	C	D	Z	L	K	B	C	D	Z	L	K
1	257917	260504	260520	260568	260552	260536	260664	260680	260696	260744	260728	260712	260584	260600	260616	260760	260648	260632
2	260491	260507	260523	260571	260555	260539	260667	260683	260699	260747	260731	260715	260587	260603	260619	260763	260651	260635
3	260493	260509	260525	260573	260557	260541	260669	260685	260701	260749	260733	260717	260589	260605	260621	260765	260653	260637
4	260495	260511	260527	260575	260559	260543	260671	260687	260703	260751	260735	260719	260591	260607	260623	260767	260655	260639
5	260497	260513	260529	260577	260561	260545	260673	260689	260705	260753	260737	260721	260593	260609	260625	260769	260657	260641
6	260499	260515	260531	260579	260563	260547	260675	260691	260707	260755	260739	260723	260595	260611	260627	260771	260659	260643
8	260500	260516	260532	260580	260564	260548	260676	260692	260708	260756	260740	260724	260596	260612	260628	260772	260660	260644
10	260487	260501	260517	260565	260549	260533	260661	260677	260693	260741	260725	260709	260581	260597	260613	260757	260645	260629
13	260488	260502	260518	260566	260550	260534	260662	260678	260694	260742	260726	260710	260582	260598	260614	260758	260646	260630
16	257918	260503	260519	260567	260551	260535	260663	260679	260695	260743	260727	260711	260583	260599	260615	260759	260647	260631
20	260489	260505	260521	260569	260553	260537	260665	260681	260697	260745	260729	260713	260585	260601	260617	260761	260649	260633
25	257919	260506	260522	260570	260554	260538	260666	260682	260698	260746	260730	260714	260586	260602	260618	260762	260650	260634
32	260492	260508	260524	260572	260556	260540	260668	260684	260700	260748	260732	260716	260588	260604	260620	260764	260652	260636
40	260494	260510	260526	260574	260558	260542	260670	260686	260702	260750	260734	260718	260590	260606	260622	260766	260654	260638
50	260496	260512	260528	260576	260560	260544	260672	260688	260704	260752	260736	260720	260592	260608	260624	260768	260656	260640
63	260498	260514	260530	260578	260562	260546	260674	260690	260706	260754	260738	260722	260594	260610	260626	260770	260658	260642
Accessories	pp. 27-30																	

ATTENTION! The references have been changed.

Batch effectiveness

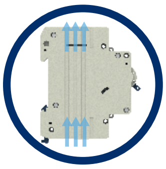
Silver-bearing solders on the movable contact to improve wear resistance and reduce the value of the transition resistance.

The accessories are fastened to the latch on the left side of the switch, ensuring fast and reliable connection with high accuracy in one click.

13 plates in the arc extinguish chamber effectively extinguish the arc and provide a safe shutdown in an emergency situation.

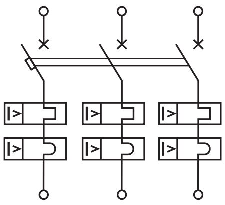
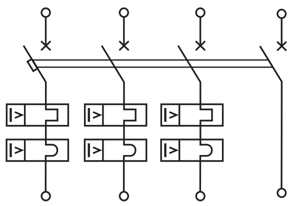
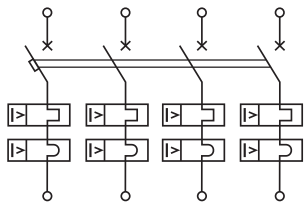
The ability to seal the handle to prevent unauthorized switching on/off.

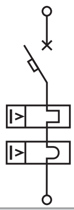
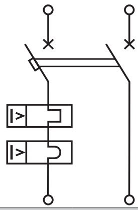
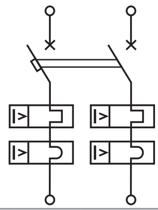
Better cooling due to the availability of profile recesses on the case.

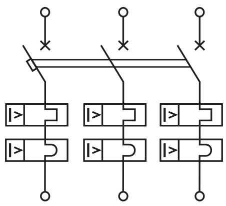
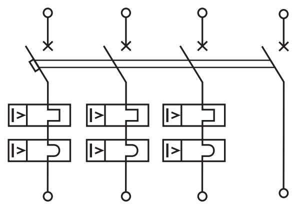
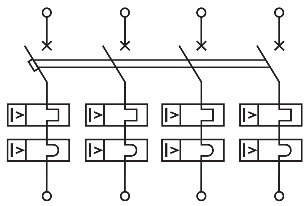


Special design of the clamps ensures: maximum hard and larger in area contact to prevent heating and reflow of the conductors.

OptiDin BM63 automatic circuit breaker (Icn=6000 A)

	3						3+N						4					
																		
	Protection type						Protection type						Protection type					
	B	C	D	Z	L	K	B	C	D	Z	L	K	B	C	D	Z	L	K
	260776	260792	260808	260856	260840	260824	260952	260968	260984	261032	261016	261000	260872	260888	260904	261048	260936	260920
	260779	260795	260811	260859	260843	260827	260955	260971	260987	261035	261019	261003	260875	260891	260907	261051	260939	260923
	260781	260797	260813	260861	260845	260829	260957	260973	260989	261037	261021	261005	260877	260893	260909	261053	260941	260925
	260783	260799	260815	260863	260847	260831	260959	260975	260991	261039	261023	261007	260879	260895	260911	261055	260943	260927
	260785	260801	260817	260865	260849	260833	260961	260977	260993	261041	261025	261009	260881	260897	260913	261057	260945	260929
	260787	260803	260819	260867	260851	260835	260963	260979	260995	261043	261027	261011	260883	260899	260915	261059	260947	260931
	260788	260804	260820	260868	260852	260836	260964	260980	260996	261044	261028	261012	260884	260900	260916	261060	260948	260932
	260773	260789	260805	260853	260837	260821	260949	260965	260981	261029	261013	260997	260869	260885	260901	261045	260933	260917
	260774	260790	260806	260854	260838	260822	260950	260966	260982	261030	261014	260998	260870	260886	260902	261046	260934	260918
	260775	260791	260807	260855	260839	260823	260951	260967	260983	261031	261015	260999	260871	260887	260903	261047	260935	260919
	260777	260793	260809	260857	260841	260825	260953	260969	260985	261033	261017	261001	260873	260889	260905	261049	260937	260921
	260778	260794	260810	260858	260842	260826	260954	260970	260986	261034	261018	261002	260874	260890	260906	261050	260938	260922
	260780	260796	260812	260860	260844	260828	260956	260972	260988	261036	261020	261004	260876	260892	260908	261052	260940	260924
	260782	260798	260814	260862	260846	260830	260958	260974	260990	261038	261022	261006	260878	260894	260910	261054	260942	260926
	260784	260800	260816	260864	260848	260832	260960	260976	260992	261040	261024	261008	260880	260896	260912	261056	260944	260928
	260786	260802	260818	260866	260850	260834	260962	260978	260994	261042	261026	261010	260882	260898	260914	261058	260946	260930

OptiDin BM63 automatic circuit breaker (Icn=6000 A)																		
Number of poles	1						1+N						2					
Wiring diagrams																		
Rated current In, A	Protection type						Protection type						Protection type					
	B	C	D	Z	L	K	B	C	D	Z	L	K	B	C	D	Z	L	K
1	260227	249245	249204	262538	260189	262554	262661	262677	249159	260217	262720	262736	262569	260230	262598	262614	262630	262645
2	262509	249271	262525	262539	260190	262555	262662	262678	262690	262705	262721	262737	262570	262585	262599	262615	262631	262646
3	262510	249273	262526	262540	260191	262556	262663	262679	262691	262706	262722	262738	262571	262586	262600	262616	262632	262647
4	262511	249274	262527	262541	260192	262557	262664	262680	262692	262707	262723	262739	262572	262587	262601	262617	262633	262648
5	262512	249250	262528	262542	260193	262558	262665	262681	262693	262708	262724	262740	262573	262588	262602	262618	262634	262649
6	262513	249252	262529	262543	260194	262559	262666	262682	262694	262709	262725	262741	262574	262589	262603	262619	262635	262650
8	262514	249253	262530	262544	260195	262560	262667	262683	262695	262710	262726	262742	262575	262590	262604	262620	262636	262651
10	262515	249249	262531	262545	260196	262561	262668	262684	262696	262711	262727	262743	262576	262591	262605	262621	262637	262652
13	262516	249254	262532	262546	260197	262562	262669	262685	262697	262712	262728	262744	262577	262592	262606	262622	262638	262653
16	260228	249256	249205	262547	260198	262563	262670	249174	262698	262713	262729	262745	262578	261342	262607	262623	262639	262654
20	262517	262521	262533	262548	260199	262564	262671	262686	262699	262714	262730	262746	262579	262593	262608	262624	262640	262655
25	260229	249258	262534	262549	260200	262565	262672	262687	262700	262715	262731	262747	262580	262594	262609	262625	262641	262656
32	265625	249261	262535	262550	260201	262566	262673	249178	262701	262716	262732	262748	262581	262595	262610	262626	262642	262657
40	262518	262522	262536	262551	260202	262567	262674	262688	262702	262717	262733	262749	262582	262596	262611	262627	262643	262658
50	262519	262523	262537	262552	260203	262568	262675	262689	262703	262718	262734	262750	262583	262597	262612	262628	262644	262659
63	262520	262524	260226	262553	260204	260212	262676	260237	262704	262719	262735	262751	262584	260222	262613	262629	260207	262660
Accessories	pp. 27-30																	

OptiDin BM63 automatic circuit breaker (Icn=10000 A)																		
Number of poles	3						3+N						4					
Wiring diagrams																		
Rated current In, A	Protection type						Protection type						Protection type					
	B	C	D	Z	L	K	B	C	D	Z	L	K	B	C	D	Z	L	K
1	262752	262768	249203	262786	262801	260211	262922	262938	260231	262964	262980	260214	262830	262846	262861	262877	262892	262907
2	262753	262769	262772	262787	262802	262817	262923	262939	262950	262965	262981	262995	262831	262847	262862	262878	262893	262908
3	262754	262770	262773	262788	262803	262818	262924	262940	262951	262966	262982	262996	262832	262848	262863	262879	262894	262909
4	262755	249288	262774	262789	262804	262819	262925	262941	262952	262967	262983	262997	262833	262849	262864	262880	262895	262910
5	262756	249247	262775	260220	262805	260210	262926	262942	262953	262968	262984	262998	262834	262850	262865	262881	262896	262911
6	262757	249248	262776	262790	262806	262820	262927	262943	262954	262969	262985	262999	262835	262851	262866	262882	262897	262912
8	262758	249246	262777	262791	262807	262821	262928	262944	262955	262970	262986	263000	262836	262852	262867	262883	262898	262913
10	262759	249251	262778	262792	262808	262822	262929	262945	262956	262971	262987	263001	262837	262853	262868	262884	262899	262914
13	262760	249255	262779	262793	262809	262823	262930	262946	262957	262972	262988	263002	262838	262854	262869	262885	262900	262915
16	262761	249257	262780	262794	262810	262824	262931	249160	262958	262973	262989	260213	262839	262855	262870	262886	262901	262916
20	262762	262771	262781	262795	262811	262825	262932	262947	262959	262974	262990	263003	262840	262856	262871	262887	262902	262917
25	262763	249206	262782	262796	262812	262826	262933	253910	262960	262975	262991	263004	262841	262857	262872	262888	262903	262918
32	262764	249207	262783	262797	262813	262827	262934	253911	262961	262976	262992	263005	262842	262858	262873	262889	262904	262919
40	262765	249192	262784	262798	262814	262828	262935	262948	262962	262977	262993	263006	262843	262859	262874	262890	262905	262920
50	262766	249164	262785	262799	262815	262829	262936	262949	262963	262978	262994	263007	262844	262860	262875	262891	262906	262921
63	262767	249163	260223	262800	262816	260215	262937	260221	260225	262979	260208	260205	262845	260224	262876	260218	260216	260219

Technical specifications

Main characteristics		
In compliance with the requirements of GOST P 50345, GOST P 5003.2		
Insulation voltage Ui, V		400
Degree of pollution		3
Rated impulse voltage Uimp, V		400
Control temperature, ° C		+30
Protection type	B	from 3In to 5In
	C	from 5In to 10In
	D	from 10In to 20In
	Z	from 3,2In to 4,8In
	L	from 6,4In to 9,6In
	K	from 9,6In to 14,4In
Application category		A
Current-limiting class		3
Additional characteristics		
Degree of protection in compliance with the requirements of GOST 14254		IP20
Silver bearing, g/pole		0,0595
Wear resistance of switches B, C, D, switching cycles	commutation	4000
	mechanical	6000
Wear resistance of switches Z, L, K, switching cycles	commutation	1500
	mechanical	8500
Overvoltage category		IV
Operating temperature range, ° C		from -60 to +40
Storage temperature range, ° C		from -65 to +50
Weight, g		
Number of poles	1P	125
	1P+N	260
	2P	225
	3P	390
	3P+N	530
	4P	490

Matching references (series) of accessories for OptiDin BM63

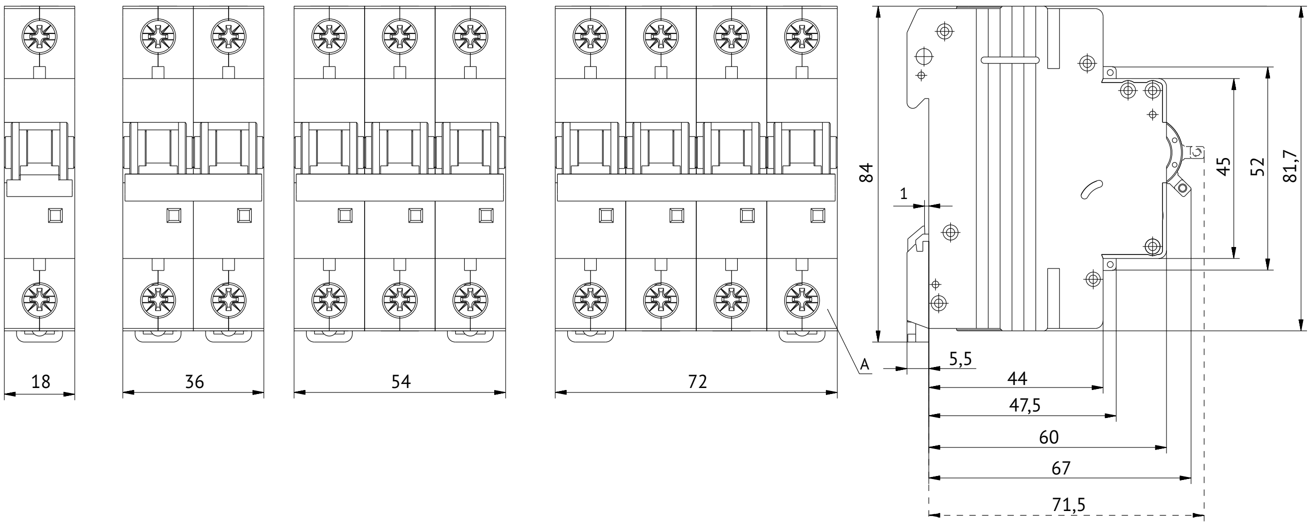
NEW accessories for modular snap-in switches		Accessories for modular circuit breakers	
Reference	Title	Reference	Title
249158	OptiDin BM63-MCCK 2	103899	Module of free and signal contacts OptiDin BM63-UHL3 (CT3)
249189	OptiDin BM63-MCK 1		No analogue available
249197	OptiDin BM63-MCK 2		No analogue available
249184	OptiDin BM63-HP230	103900	Shunt release device in a separate module OptiDin BM63-H3-230AC-UHL3 (CT3)
		114934	Shunt release device in a separate module OptiDin BM63-H4-400AC-UHL3 (CT3)
		143295	Shunt release device in a separate module OptiDin BM63-H6-110AC-UHL3 (CT3)
249177	OptiDin BM63-HP24	228607	Shunt release device a separate module OptiDin BM63-H7-12AC-UHL3 (CT3)

ATTENTION!!! Snap-in accessories are only attached to the updated line of OptiDin BM63 modular circuit breakers (pages 14-16, 21).

Wiring

Rated current In, A	Tightening torque, N/m	Without preparation of the conductor current carrying wire, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multiple core)	Inflexible copper (multiple and single core, hard)	Aluminium (multiple and single core)	Flexible copper (multiple core)	Flexible aluminium	Inflexible aluminium (hard)
1-63	2	1,5 - 10	1,5 - 16	2,5 - 10	25	16	25

Overall dimensions (mm)

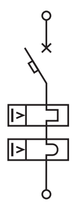
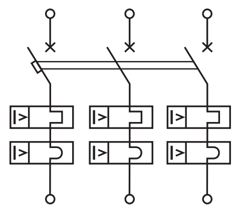


OptiDin BM63-OT Modular current limiters up to 63 A

The OptiDin BM63-OT type current limiters are designed for use in electrical circuits with the voltage of up to 400 V AC frequency of 50 Hz, their protection during overloads and short circuits, limiting power drain off the installed maximum power while operating electrotechnical devices in day-to-day life and in production, conducting current in normal mode and operative make-break (up to 30 times a day) of the specified circuits.

Limiters meet the requirements of GOST P 50345, TP TC 004/2011 and are manufactured in compliance with ТУ3421-040-05758109-2009.

References (series)

OptiDin BM63-OT		
Rated voltage Un, V	230	400
Number of poles	1P	3P
Wiring diagrams		
Rated current In, A	Protection type	Protection type
	D	D
6	219947	219958
10	219949	219960
16	219951	219962
20	219952	219963
25	219953	219964
32	219954	219965
40	219955	219966
50	219956	219967
63	219957	219968

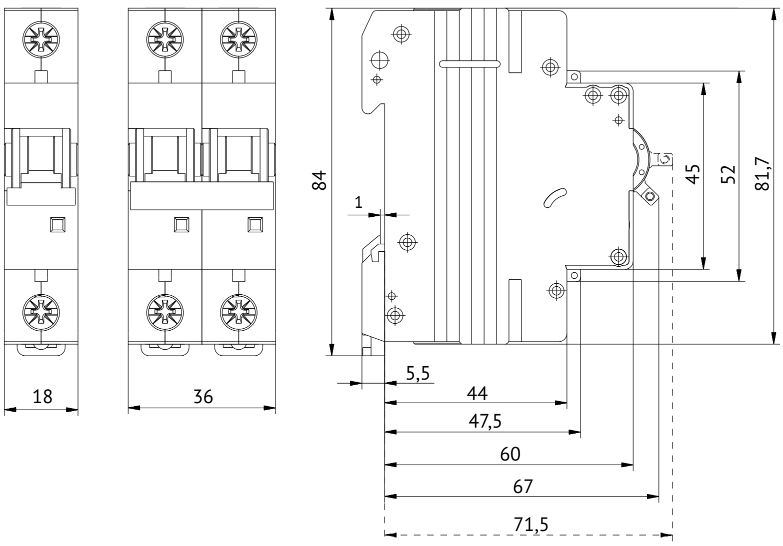
Technical specifications

Main characteristics		
In compliance with the requirements of GOST P 50345, GOST P 5003.2		
Rated short-circuit breaking capacity Icn, A		6000
Insulation voltage Ui, V		400
Degree of pollution		3
Rated impulse voltage Uimp, V		400
Control temperature, ° C		+30
Protection type	D	from 10In to 20In
Application category		A
Current-limiting class		3
Additional characteristics		
Degree of protection in compliance with the requirements of GOST 14254		IP20
Silver bearing, g/pole		0,0595
Wear resistance of switches, switching cycles	commutation	10000
	mechanical	20000
Overvoltage category		IV
Operating temperature range, ° C		from -60 to +40
Storage temperature range, ° C		from -65 to +50
Weight, g		
Number of poles	1P	125
	3P	375

Wiring

Rated current In, A	Tightening torque, Н/м	Without preparation of the conductor current carrying wire, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multiple core)	Inflexible copper (multiple and single core, hard)	Aluminium (multiple and single core)	Flexible copper (multiple core)	Flexible aluminium	Inflexible aluminium (hard)
1-63	2	1,5 - 10	1,5 - 16	2,5 - 10	25	16	25

Overall dimensions (mm)

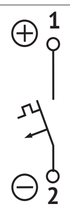
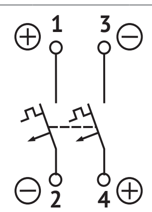


OptiDin BM63 DC Modular automatic switches on DC current up to 50 A

Automatic switches OptiDin BM63 DC are designed to protect electrical circuits of direct current from overload and short-circuit currents, conducting current in normal mode and operational make-break of the specified circuits.

Switches comply with the requirements of GOST IEC 60898-2 (direct current), TP TC 004/2011 and are manufactured according to ТУ3421-040-05758109-2009D.

References (series)

OptiDin BM63 DC										
Rated voltage Un, V	220					440				
Number of poles	1P					2P				
Wiring diagrams										
Rated current In, A	Protection type					Protection type				
	B	C	Z	L	K	B	C	Z	L	K
1	261145	261160	261205	261190	261175	261220	261235	261280	261265	261250
2	261148	261163	261208	261193	261178	261223	261238	261283	261268	261253
3	261150	261165	261210	261195	261180	261225	261240	261285	261270	261255
4	261152	261167	261212	261197	261182	261227	261242	261287	261272	261257
5	261154	261169	261214	261199	261184	261229	261244	261289	261274	261259
6	261155	261170	261215	261200	261185	261230	261245	261290	261275	261260
8	261156	261171	261216	261201	261186	261231	261246	261291	261276	261261
10	261142	261157	261202	261187	261172	261217	261232	261277	261262	261247
13	261143	261158	261203	261188	261173	261218	261233	261278	261263	261248
16	261144	261159	261204	261189	261174	261219	261234	261279	261264	261249
20	261146	261161	261206	261191	261176	261221	261236	261281	261266	261251
25	261147	261162	261207	261192	261177	261222	261237	261282	261267	261252
32	261149	261164	261209	261194	261179	261224	261239	261284	261269	261254
40	261151	261166	261211	261196	261181	261226	261241	261286	261271	261256
50	261153	261168	261213	261198	261183	261228	261243	261288	261273	261258
Accessories see pp.	27-30									

ATTENTION! The references have been changed.

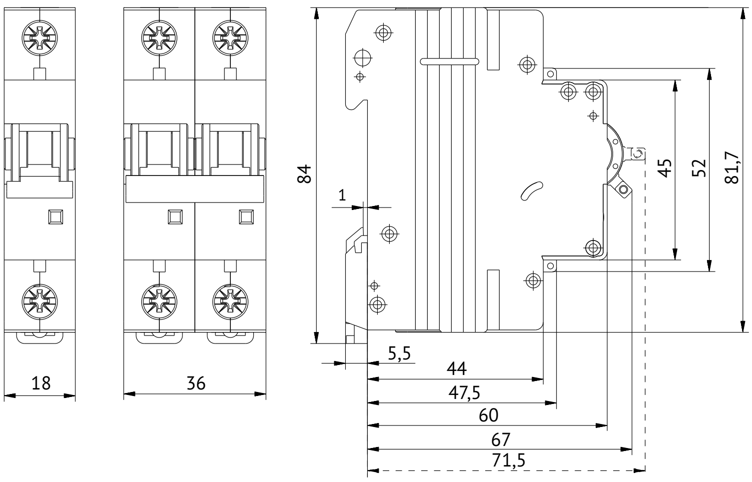
Technical specifications

Main characteristics		
In compliance with the requirements of GOST IEC 60898-2		
Insulation voltage Ui, V		400
Degree of pollution		3
Rated impulse voltage Uimp, V		400
Control temperature, ° C		+30 °C
Protection type	B	from 4In to 7In
	C	from 7In to 15In
	Z	from 3,2In to 8In
	L	from 6,4In to 15In
	K	from 9,6In to 30In
Application category		A
Current-limiting class		3
Additional characteristics		
Degree of protection in compliance with GOST 14254		IP20
Silver bearing, g/pole		0,0595
Wear resistance of switches B, C, switching cycles	commutation	1000
	mechanical	9000
Wear resistance of switches Z, L, K, switching cycles	commutation	1000
	mechanical	9000
Overvoltage category		IV
Operating temperature range, ° C		from -60 to +40
Storage temperature range, ° C		from -65 to +50
Weight, g		
Number of poles	1P	125
	2P	250

Wiring

Rated current In, A	Tightening torque, Н/м	Without preparation of the conductor current carrying wire, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multiple core)	Inflexible copper (multiple and single core, hard)	Aluminium (multiple and single core)	Flexible copper (multiple core)	Flexible aluminium	Inflexible aluminium (hard)
1-50	2	1,5 - 10	1,5 - 16	2,5 - 10	25	16	25

Overall dimensions (mm)

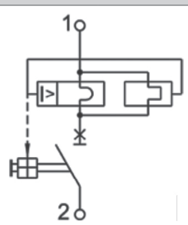
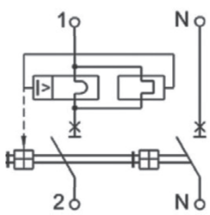
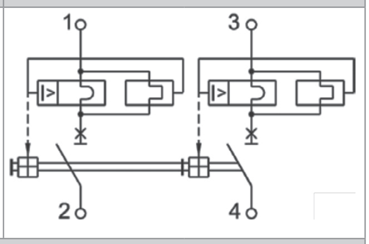


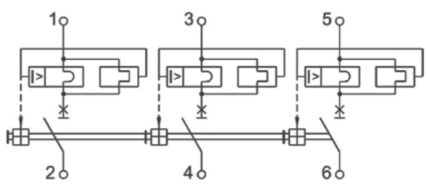
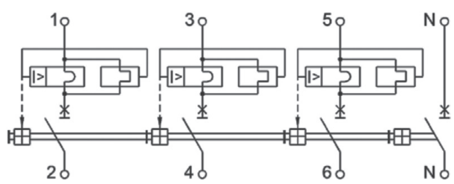
OptiDin BM125 Modular automatic circuit breakers for alternating current up to 125 A

Automatic switches OptiDin BM125 are designed to protect electrical circuits from overload and short-circuit currents, conducting current in a normal mode and operational make-break of the specified circuits.

Switches comply with the requirements of GOST P 50030.2 (for industrial use), TP TC 004/2011 and are manufactured according to ТУ3421-040-05758109-2009.

References (series)

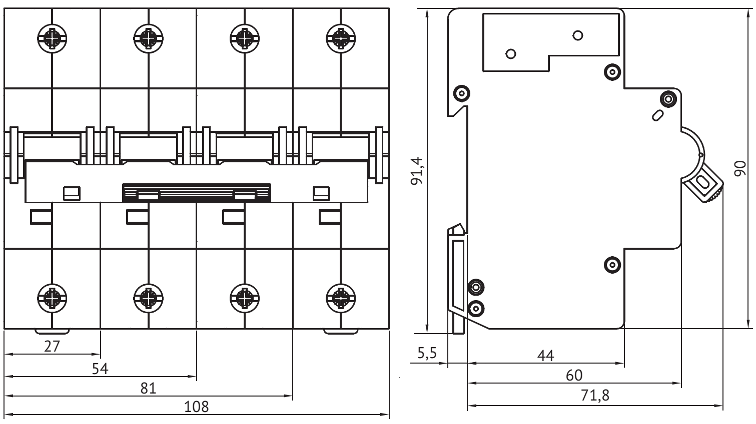
OptiDin BM125 automatic circuit breaker						
Number of poles	1P		1P+N		2P	
Wiring diagrams						
Rated current, In	Protection type					
	C	D	C	D	C	D
80	138534	138596	138540	138600	138537	138597
100	138535	138596	138541	138601	138538	138599
125	138536		138542		138539	

OptiDin BM125 automatic circuit breaker				
Number of poles	3P		3P+N	
Wiring diagrams				
Rated current, In	Protection type			
	C	D	C	D
80	138543	138602	138547	138604
100	138545	138603	138593	138605
125	138546		138594	

Technical specifications

Main characteristics		
In compliance with the requirements of GOST P 50030.2		
Insulation voltage Ui, V		400
Degree of pollution		3
Rated impulse voltage Uimp, V		400
Control temperature, ° C		+30
Protection type	C	from 5In to 10In
	D	from 10In to 20In
Application category		A
Current-limiting class		3
Additional characteristics		
Degree of protection in compliance with GOST 14254		IP20
Silver bearing per one pole, not more than, g		0,66
Wear resistance of switches C, D for In=80, 100 A, switching cycles	commutation	1500
	mechanical	8500
Wear resistance of switches C, D for In=125 A, switching cycles	commutation	1000
	mechanical	7000
Overvoltage category		IV
Operating temperature range, ° C		from -60 to +40
Storage temperature range, ° C		from -65 to +50
Weight, g		
Number of poles	1P	250
	2P	490
	3P	750
	4P	1000

Overall dimensions (mm)



Wiring

Rated current, A	Tightening torque, Н/м	Conductor cross section, mm²
80-125	3,5	2,5 - 50

OptiDin BM63P Modular load break switches on currents up to 63 A

Automatic switches OptiDin BM63P are designed for use in electrical circuits with voltage of up to 400 V AC frequency of 50 Hz and conducting current in a normal mode.

Switches of OptiDin BM63P type comply with the requirements of GOST P 50030.3, TP TC 004/2011 and are manufactured according to TY 3424-011-05758109 -2009.

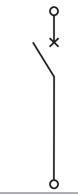
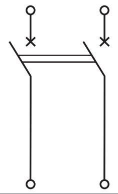
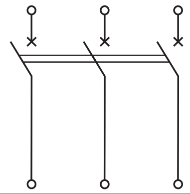
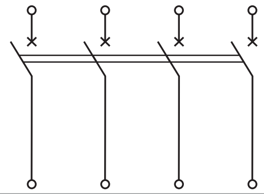
Designation

OptiDin BM63P - 1 - 40 - UHL3

1 2 3 4 5

1	**Product range**	OptiDin			
2	**Configuration**	BM63P			
3	**Number of poles**	1P	2P	3P	4P
4	**Current rating, A**	40		63	
5	**Symbol of environment and environmental class of location in compliance with the requirements of GOST 15150**	UHL3 (international CT3)			

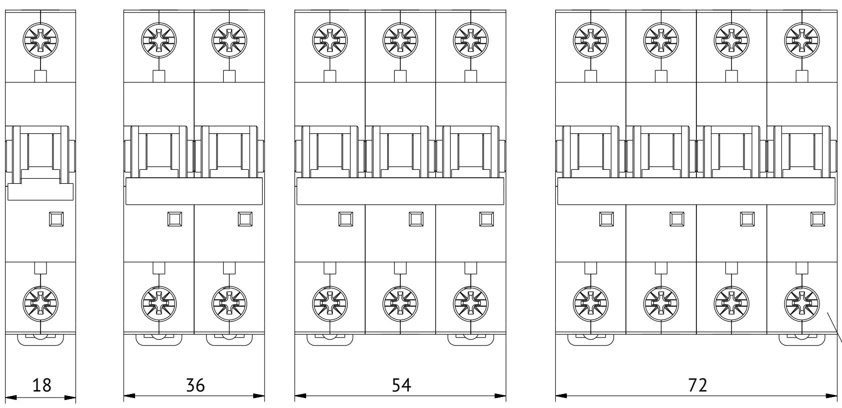
References (series)

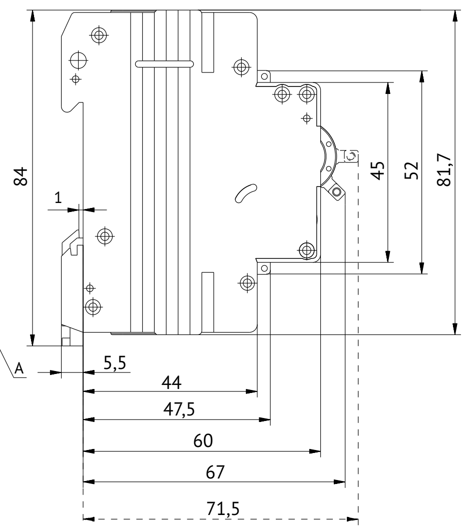
OptiDin BM63P modular load break switch				
Number of poles	1P	2P	3P	4P
Wiring diagrams				
Rated current, In				
40	103891	103893	103894	103897
63	103892	103894	103896	103898

Technical specifications

Main characteristics		
Rated voltage in the AC circuit at 50 Hz, V		230/400
Minimum operating voltage, V		24
Additional characteristics		
Cross-section of the wire connected to the terminal clamps, mm²		1,5-25
Degree of protection of the circuit breaker		IP20
Silver bearing, g		0,0595
Wear resistance, not less, cycles	commutation	1500
	mechanical	8500
Operating temperature range, °C		from -60 to +45
Weight, g		
Number of poles	1P	120
	2P	240
	3P	360
	4P	480

Overall dimensions (mm)

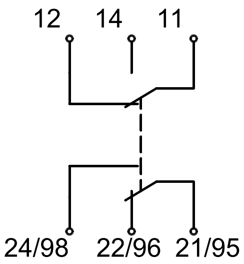




Run-time spatial position of swiches - vertical, in «|» sign (ON) - upwards.

Accessories for OptiDin modular circuit breakers

OptiDin BM63-MCCK 2 Module of auxiliary (free) and signal contacts



Function

1. Informs about the disconnection of the circuit breaker induced by a thermal or electromagnetic release;
2. Informs about the status of the main contacts of the circuit-breaker ("on", "off").

Technical specifications

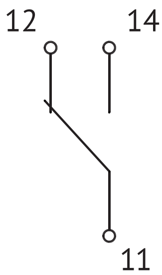
Rated operating current according to the application category, Ie	A	AC-13	3
		AC-15	2
Rated operational voltage in the alternating current circuit of frequency 50Hz, Ue	V		230
Rated operating current in accordance with the application category, Ie	A	DC-12	0,5
Rated operational voltage in the DC circuit, Ue	V		110
Number of contacts	pcs		2P (two switching)
Rated insulation voltage, Ui	V		230
Rated impulse withstand voltage, Uimp	V		2500
Rated conditional short-circuit current	A		1000
Switching wear resistance, not less than	cycles B-O		4000
Other characteristics			
Cross-section of connecting conductors	mm²		0,5-2,5
Reference			249158

Application

Auxiliary (free) contacts can be used in automation systems to signal the position of the main contacts of the circuit breaker - "closed" or "open" when switching on (off) manually, or after an automatic release caused by overloading or short circuit.

Signal contacts can be used in automation systems for signaling when the circuit-breaker trips only after automatic release due to overloading or short circuit.

Module of auxiliary contacts OptiDin BM63-MCK 1

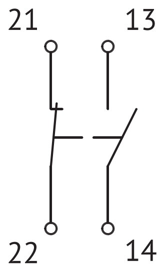


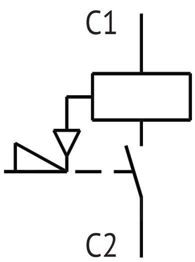
Technical specifications

Rated operating current according to the application category, Ie	A	AC-13	3
		AC-15	2
Rated operational voltage in the alternating current circuit of frequency 50Hz, Ue	V		230
Rated operating current in accordance with the application category, Ie	A	DC-12	0,5
Rated operational voltage in the DC circuit, Ue	V		110
Number of contacts	pcs		1P (one switching)
Rated insulation voltage, Ui	V		230
Rated impulse withstand voltage, Uimp	V		2500
Rated conditional short-circuit current	A		1000
Switching wear resistance, not less than	cycles B-O		4000
Other characteristics			
Cross-section of connecting conductors	mm²		0,5-2,5
Reference			249189

Application

The module of auxiliary contacts with one switching contact element is used for signaling about the position of the main contacts of the switch.

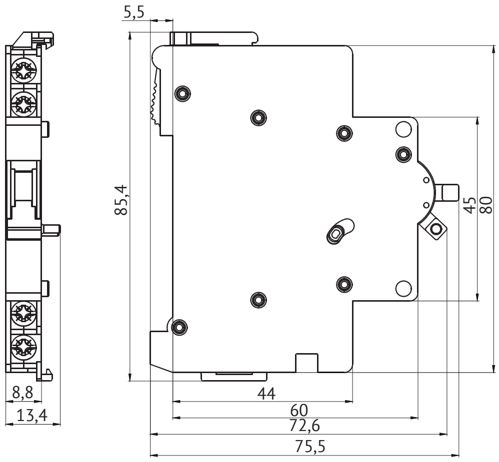
OptiDin BM63-MCK 2 Module of auxiliary contacts			
			
Technical specifications			
Rated operating current according to the application category, Ie	A	AC-13	3
		AC-15	2
Rated operational voltage in the alternating current circuit of frequency 50Hz, Ue	V		230
Rated operating current in accordance with the application category, Ie	A	DC-12	0,5
Rated operational voltage in the DC circuit, Ue	V		110
Number of contacts	pcs		1P+13 (one NC contact, one NO contact)
Rated insulation voltage, Ui	V		230
Rated impulse withstand voltage, Uimp	V		2500
Rated conditional short-circuit current	A		1000
Switching wear resistance, not less than	cycles B-O		4000
Other characteristics			
Cross-section of connecting conductors	$мм^2$		0,5-2,5
Reference			249197
Application			
The module of auxiliary contacts with one NO contact element and one NC contact element allows to connect two independent signaling circuits, which expands the functionality of technological processes automation.			

Shunt release device			
Configuration		OptiDin BM63-HP230	OptiDin BM63-HP24
			
Function			
It is intended for remote disconnection of the switch when the voltage is applied to the winding of the shunt release device and is presented as an electro-magnet with a multi-turn coil.			
Technical specifications			
Range of operation			
alternating voltage, Uc	V	110...400	12...110
constant voltage, Uc	V	110...220	12...60
Tripping time of the switch under the influence of the shunt release device, not more than	sec.	0,04	
Durability of circuit breakers when disconnected by a shunt release device, not less than	cycles B-O	1500	
Other characteristics			
Reference		249184	249177

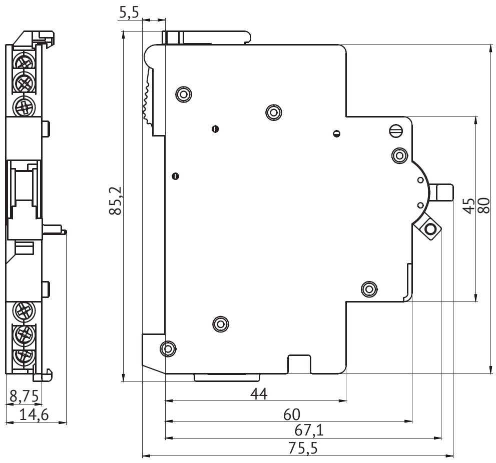
ATTENTION!!! Snap-in accessories are only attached to the updated line of OptiDin BM63 modular circuit breakers (pages 14-16, 21).

Overall dimensions of accessories (mm)

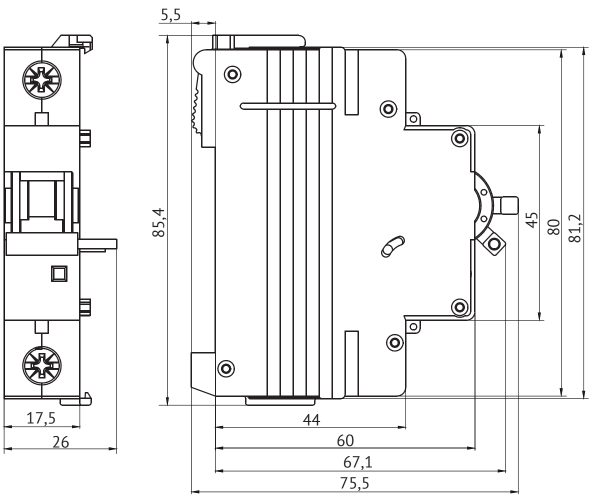
Modue of auxiliary contacts
OptiDin BM63-MCK 1
OptiDin BM63-MCK 2



Module of auxiliary and signal contacts
OptiDin BM63-MCCK 2

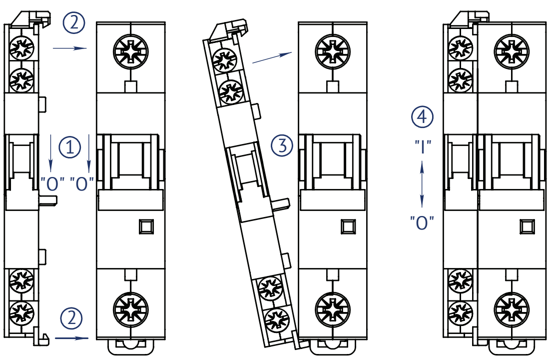


Module with a shunt release device
OptiDin BM63-HP230
OptiDin BM63-HP24



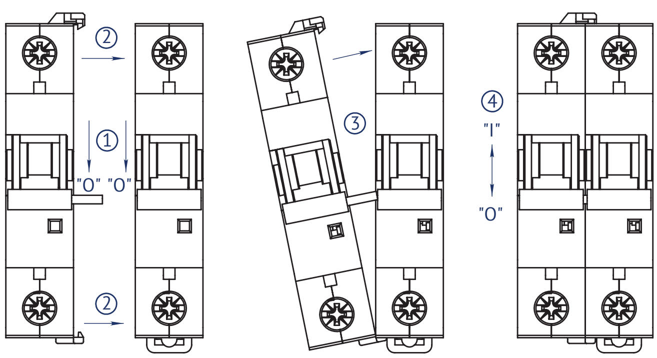
Wiring

Connection of modules with auxiliary contacts to the circuit breaker or to the module with a shunt release



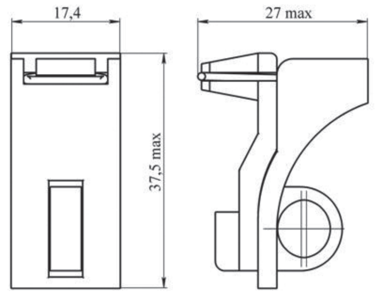
See the installation and operating instructions for the OptiDin ВМ63ГЖИК.641266.008ИМ automatic circuit breaker.
Appendix B

Connection of a shunt release in a separate module to the switch is carried out in the following sequence



See the installation and operation instructions for the OptiDin BM63 ГЖИК.641266.008IИМ automatic circuit breaker.
Appendix B

A mechanical lockout device for the OptiDin handle



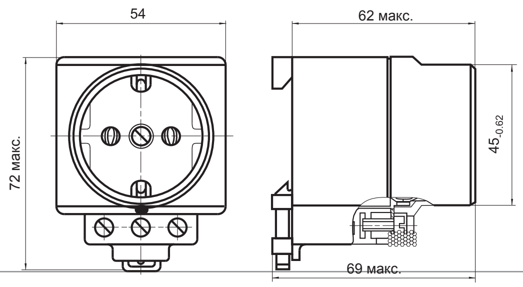
Function

The device is designed to secure the lock of the circuit breaker handle against unauthorized and accidental access, ensuring safety of the personnel.

Other characteristics

Diameter of the padlock shackle not more, mm	8
Reference	113541

OptiDin PA10 Moduar socket



Function

Sockets are intended for connection of electric equipment fitted with three-wire plugs, which provide grounding of equipment metal cases.

Technical specifications	
Rated voltage, V	230
Frequency, Hz	50
Rated current, A	16
Other characteristics	
Service life, years	10
Operating temperature range, °C	from -25 to +40
Environment	UHL in compliance with GOST 15150 (international CT)
Weight, g	120
Reference	111493

Differential protection device

Differential protection devices are switching devices, the primary function of which is protection of a human from electric shock at an accidental inadvertent contact with current-carrying parts of electrical installations in case of electrical equipment malfunction; prevention of fires after leakage current flows and earth faults.

In the range of KEAZ today there is a wide choice of automatic switches controlled by differential current with built-in overcurrent protection (RCBT) and switches controlled by differential current without built-in overcurrent protection (RCD) for various rated currents and differential current settings; for RCBOs are presented selective designs with time delay.

OptiDin D63 and OptiDin VD63 meet the requirements of GOST IEC 61009-1, TP TC 004/2011, TP TC 020/2011 and are manufactured according to ТУ3422-046-05758109-2008; OptiDin DM63 complies with the requirements of GOST IEC 61008-1, TP TC 004/2011.

Designation

OptiDin VD63 - 2 2 C 16 - A - UHL4

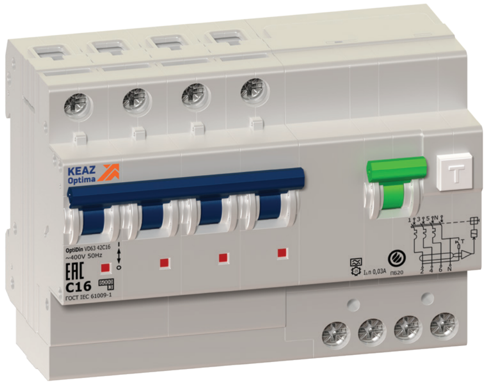
1 — OptiDin; 2 — VD63; 3 — 2; 4 — 2; 5 — C; 6 — 16; 7 — A; 8 — UHL4

No.	Parameter					
1	Product range	OptiDin				
2	RCBO configuration	DM63	D63		VD63	
3	Number of poles	2, 4	2		4	
4	Value of rated breaking differential current, A	0,1; 0,3; 0,5; 0,03	1 - 0,01	2 - 0,03	3 - 0,1	4 - 0,3
5	Operation characteristic of electromagnetic release	-	C			
6	Rated current, A	25, 40, 63, 80, 100	6, 10, 16, 20, 25, 32, 40, 50, 63			
7	Performance value in terms of residual current	A, AC	A		AC	
8	Symbol of environment and environmental class of location in compliance with the requirements of GOST 15150	UHL4 (international CT4)				

Selection Guide

		RCCB without overcurrent protection	
Type		OptiDin DM63	
Appearance			
Standard of compliance		GOST IEC 61008-1	
Number of poles		2P, 4P	
Electrical properties			
Protection type		-	
Rated current In, A		25, 40, 63, 80[1], 100[1]	
Rated residual breaking current In, A		0,03; 0,1; 0,3; 0,5[2]	
Rated residual non-tripping current, A		0,5In	
Rated operating voltage Ue, V	AC 50 Hz	230	
Type of protective characteristic (according to the operating conditions in the presence of a direct current component)		A, AC	
Rated maximum breaking capacity Icn, A		-	
Rated maximum switching and breaking capacity for residual current Icn, A		-	
Nominal conditional short-circuit current Inc, A		6000	
Nominal conditional residual short-circuit current Inc, A		6000	
Time of switching-off at double value of rated residual breaking current, no more, s		-	
Other features			
Selective design			
Trip indication		available	
Circuit breaker protection degree		IP20	

1 RCDs for rated currents of 80 and 100 A have variable overall dimensions from 25, 40, 63 A.
2 Only for RCDs with 80 and 100 A.
3 Nominal tripping residual current for selective design.

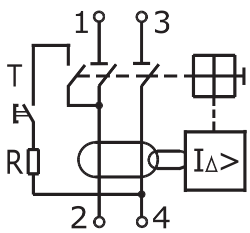
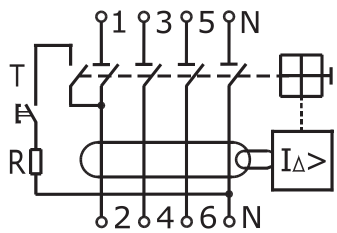
RCBO with overcurrent protection			
	OptiDin D63	OptiDin VD63	
			
	GOST IEC 61009-1	GOST IEC 61009-1	
	1P+N	1P+N	3P+N
	C	C	
	6, 10, 16, 20, 25, 32, 40	10, 16, 20, 25, 32, 40, 50, 63	
	0,01; 0,03; 0,1; 0,3	0,01; 0,03; 0,1[3]; 0,3[3]	
	0,5In	0,5In	
	230	230	400
	A	A	
	6000	6000	
	1500	3000	
	-	0,04	0,2
	-	available	available
	available	available	available
	IP20	IP20	

OptiDin DM63 Residual current circuit breakers up to 100 A

OptiDin DM63 protective shutdown device is designed for use in 50 Hz AC electric networks with a dead earthed neutral of rated voltage not exceeding 400 V and rated current up to 100 A to protect people from electric shock in the event of malfunctions of electrical equipment or by deliberate contact with exposed conductive parts of electrical installations, as well as to prevent inflaming and fires resulting from leakage currents and earth faults and operational make break of the specified chains.

OptiDin DM63 is presented as an electromechanical device that does not have its own power consumption, maintains its efficiency at any fluctuations and even voltage unavailability in the network. Complies with the requirements of GOST IEC 61008-1-2012, TP TC 004/2011.

References (Series)

Number of poles		2P					4P				
Wiring diagrams											
Performance type	Rated residual breaking current	25	40	63	80	100	25	40	63	80	100
AC	0,03	254166	254176	254186	-	-	254201	254211	254221	-	-
AC	0,1	254167	254177	254187	-	-	254202	254212	254222	-	-
AC	0,3	254168	254178	254188	-	-	254203	254213	254223	-	-
A	0,03	254266	254276	254286	254291	-	254301	254311	254321	254326	254331
A	0,1	254267	254277	254287	254292	254297	254302	254312	254322	254327	254332
A	0,3	254268	254278	254288	254293	254298	254303	254313	254323	254328	254333
A	0,5	-	-	-	254294	254299	-	-	-	254329	254334

Wiring

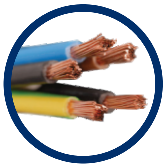
Rated current In, A	Tightening torque, N/m	Without preparation of the conductor current carrying wire, mm²		With preparation of the conductor current carrying wire, mm²	
		Copper conductors	Aluminium conductors	Copper conductors	Aluminium conductors
25-100	2	1,5-35	2,5-35	35	35

Batch effectiveness

Viable opportunity of organizing protection against all types of leakage currents - alternating, direct, intermittent current, due to the availability of AC and A type designs.

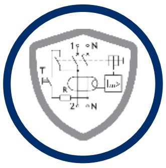
Secure working capacity from -25 to + 40 ° C.

Use of factory sealing guarantees mechanical integrity of the circuit breaker.



Availability of connecting conductors with a cross-section up to 35 mm².

The electromechanical circuit of the RCD provides reliable protection and stands guard over the life of a person and property from fire even in emergency situations when a zero conductor breaks off.



Safety shutter - prevents false connection of conductors to the RCD and guarantees safe installation.

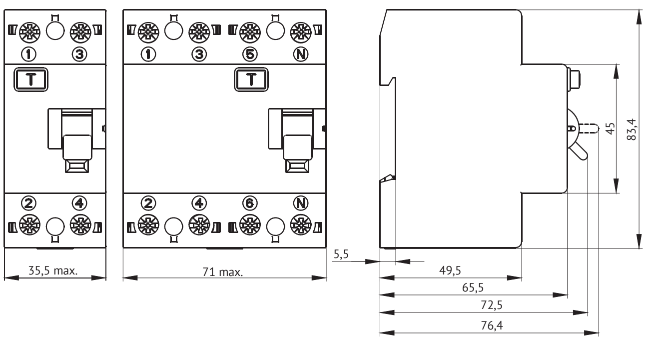
Indication of the contacts position.

Technical specifications

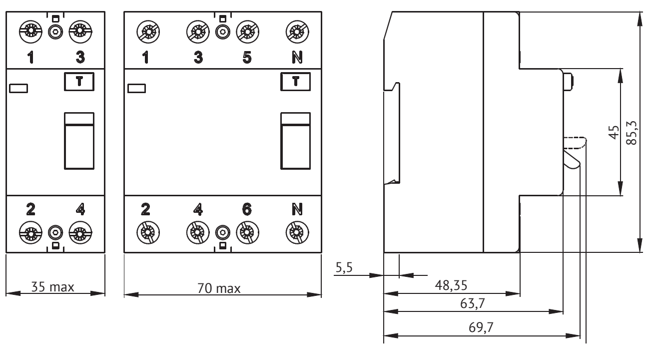
Main characteristics		
Operating voltage, V		230/400
Type of operating characteristic (according to the operating conditions if the direct current component is avaliable)		AC, A
Nominal conditional short-circuit current		6000
Additional characteristics		
Degree of protection		IP20
Wear resistance	Commutation	2000
	Mechanical	5000
Operating temperature range, °C		from -25 to +40
Weight, g		
Number of poles	2	210
	4	360

Overall dimensions (mm)

25-63 A



80-100 A



OptiDin D63 Automatic residual current circuit breakers up to 40 A

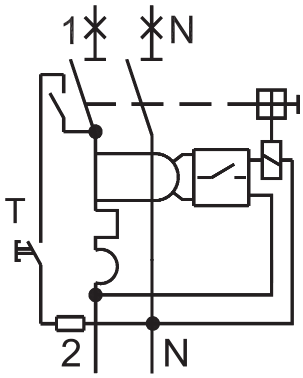
Standard of compliance: GOST P 51327.1 (IEC 61009-1)

Two-pole automatic switches OptiDin D63, controlled by residual current with built-in protection against overcurrents (hereinafter RCBOs), are installed in single-phase AC networks with frequency of 50 Hz with dead-earthed neutral of rated voltage not exceeding 230 V and rated currents up to 40 A. They are designed to protect people from electric shock in case of malfunctions of electrical equipment or in case of unintentional contact with open conductive parts of electrical installations, to prevent inflammation and fires arising from the leakage currents and earth faults, as well as to protect against overload and short circuit.

Bipolar circuit-breakers of the electronic type with one pole protected from overcurrent belong to the class of devices that functionally depend on the supply voltage (they do not automatically break in case of voltage failure) and are intended for the stationary plant with fixed wiring.

RCBOs comply with the requirements of GOST IEC 61009-1, TP TC 004/2011, TP TC 020/2011 and are manufactured according to ТУ3422-046-05758109-2008.

References (series)

OptiDin D63 Automatic residual current circuit breaker							
Number of poles	1P+N						
Wiring diagrams							
Rated residual current In, A	Rated current In, A						
	6	10	16	20	25	32	40
0,01	103498	103499	103500	103501	103502	103503	103504
0,03	103505	103506	103507	103508	103509	103510	103511
0,1	103522	103523	103512	103513	103514	103515	103516
0,3	103524	103525	103517	103518	103519	103520	103521

Batch effectiveness

Indication of the position of the contacts.

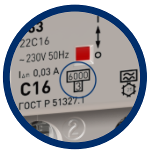
Implements three types of protection.

Increased noise immunity allows to avoid false actuation of the device.

Possibility of installation in locations with high humidity and sharp temperature changes owing to the lacquered electronic board.

Saves space in the dashboard - 36 mm. Residual current automatic circuit breaker - does not require additional automatic switch.

Possibility of connecting conductors with cross-section up to 25 mm².



Can be installed as an input device owing to the high value of maximum switching capacity - 6 kA.

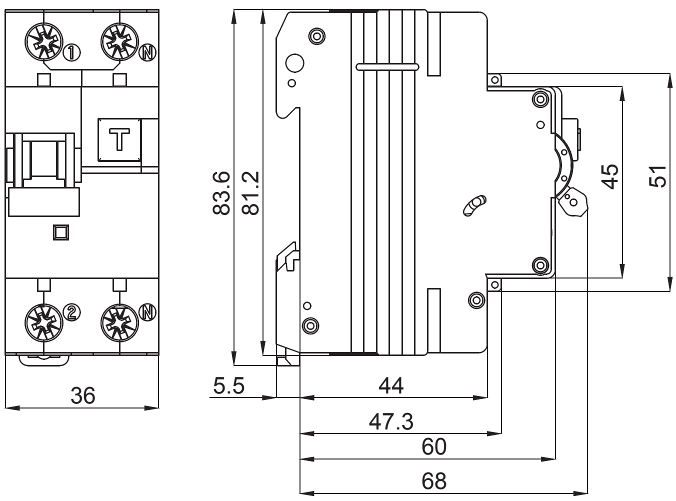
Wiring

Rated current In, A	Tightening torque, N/m	Without preparation of the conductor current carrying wire, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multiple core)	Inflexible copper (multiple and single core, hard)	Aluminium (multiple and single core)	Flexible copper (multiple core)	Flexible aluminium	Inflexible aluminium (hard)
6-40	2	1,5 - 10	1,5 - 16	2,5 - 10	25	16	25

Technical specifications

Main characteristics		
Insulation voltage, V		400
Application category		A
Current-limiting class		3
Additional characteristics		
Degree of protection		IP20
Wear resistance	commutation	2000
	mechanical	6000
Operating temperature range, ° C		from -40 to +40
Storage temperature range, ° C		from -45 to +55
Weight, g		
Number of poles	1P+N	190

Overall dimensions (mm)

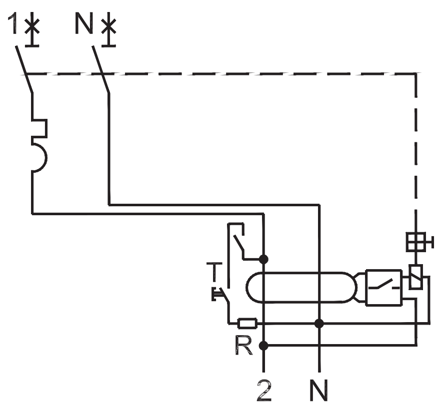


OptiDin VD63 Automatic residual current circuit breakers up to 63 A

Automatic switches of OptiDin VD63 type, controlled by risidual current with built-in protection against overcurrents (hereinafter referred to as automatic residual current circuit breakers - RCBO) are installed in 50 Hz alternating current electric circuits with dead-earthed neutral of rated voltage not exceeding 400 V and rated currents up to 63 A and designed to protect people from electric shock in case of malfunctions of electrical equipment or in case of unintentional contact with open conductive parts of electrical installations, to prevent inflammation and fires arising from the flow of leakage currents and earth fault, and to protect against overload and short circuit. RCBOs belong to a class of devices that functionally depend on the mains voltage (they do not automatically open in case of voltage failure). Bipolar RCBOs are designed for stationary installation with fixed wiring in normal and severe operating conditions in compliance with the requirements of GOST P IEC 335-1 in single-phase, four-pole and three-phase.

RCBOs comply with the requirements of GOST IEC 61009-1, TP TC 004/2011, TP TC 020/2011 and are manufactured according to ТУ3422-046-05758109-2008.

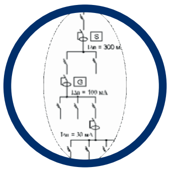
References (series)

OptiDin VD63 Automatic residual current circuit breaker								
Number of poles	1P+N							
Wiring diagrams								
Rated residual current In, A	Rated current In, A							
	10	16	20	25	32	40	50	63
0,01	103448	103449	103450	103451	-	-	-	-
0,03	103452	103453	103454	103455	103456	103457	103458	103459
0,1	103460	103461	103462	103463	103495	103496	103464	103465
0,3	-	-	-	103466	103467	103468	103469	103470

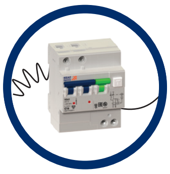
Batch effectiveness

Implements three types of protection.

Actuation cause indication - leakage current/short circuit or overload.



Possibility of constructing cascade protection of circuits due to the avalibility of selective RCBT type "S" in the line.

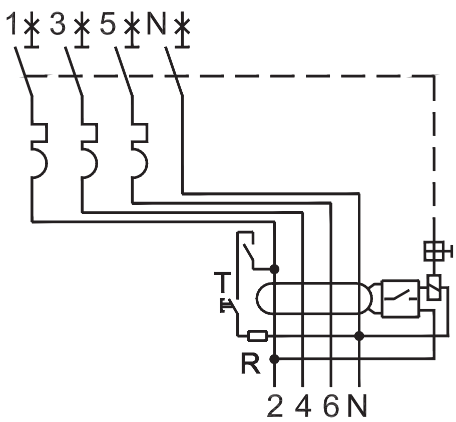


Increased noise immunity allows to avoid false actuation of the device.

Possibility of connecting conductors with cross-section up to 25 mm².

Protection against switching of a circuit in case of life-threatening leakage current.

Possibility of installation as an input device due to the high value of maximum switching capacity - 6 kA.

	3P+N								
									
	Rated current In, A								
	6	10	16	20	25	32	40	50	63
	-	103471	103472	103473	103474	-	-	-	-
	228261	103475	103476	103477	103478	103479	103480	103481	103482
		103483	103484	103485	103486	103487	103488	103489	103490
	-	145736	-	-	103491	103492	103493	103497	103494

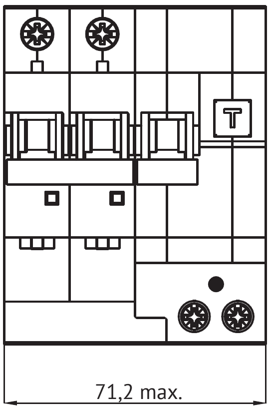
Technical specifications

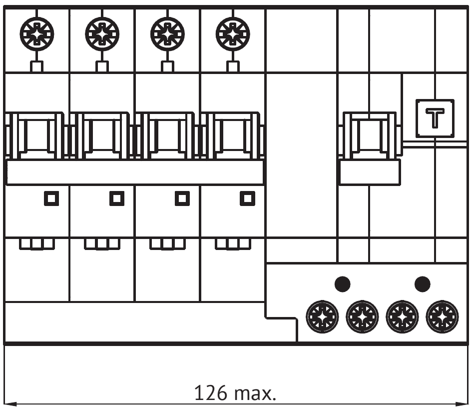
Main characteristics			
Insulation voltage, V		400	
Application category		A	
Current-limiting class		3	
Additional characteristics			
Degree of protection		IP20	
Wear resistance	commutation	4000	
	mechanical	6000	
Operating temperature range, ° C		from -25 to +40	
Storage temperature range, ° C		from -45 to +55	
Weight, g			
Number of poles		1P+N	0,39
		3P+N	0,72

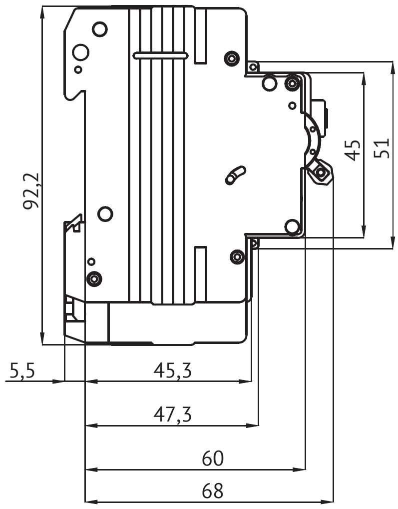
Wiring

Rated current In, A	Tightening torque, N/m	Without preparation of the conductor current carrying wire, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multiple core)	Inflexible copper (multiple and single core, hard)	Aluminium (multiple and single core)	Flexible copper (multiple core)	Flexible aluminium	Inflexible aluminium (hard)
6-40	2	1,5 - 10 мм²	1,5 - 16 мм²	2,5 - 10 мм²	25 мм²	16 мм²	25 мм²

Overall dimensions (mm)







Surge protection devices

Surge protection devices OptiDin OM (impulse surge arresters) are designed to protect against switching and lightning impulse overvoltages.

SPDs OptiDin OM are installed in entrance points of power input in the main switchboard, in supplementary switchboards and directly on electrical machines, devices and equipment.

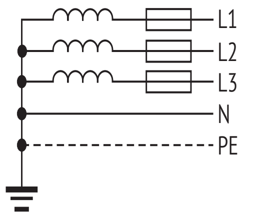
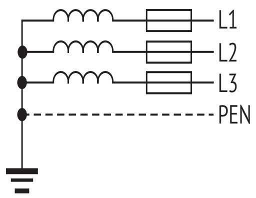
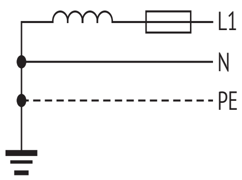
Designation

OptiDin OM u - I - 1 + N U - 280 / 25 / X R S

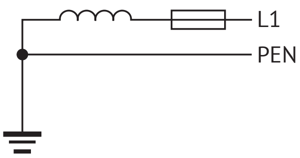
(1) OptiDin (2) OM (3) u (4) I (5) 1 (6) N (7) U (8) 280 (9) 25 (10) X (11) R (12) S

1	Product range	OptiDin						
2	Configuration	OM						
3	Monobloc configuration	u						
4	SPD type	I			II			
5	Number of poles or the neutral pole of a monobloc configuration (letter N)	1P	1P+N	2P	3P	3P+N	4P	N
6	Availability of a pole for a neutral conductor	N						
7	Monobloc type of a pole configuration fitting a neutral conductor	U						
8	Maximum operating voltage (phase), V	260			280			
9	Value of impulse current (for class I SPD) or the maximum discharge current (for class II SPD), kA	12,5	25	30	40	50	100	
10	Availability of the function to interrupt residual current	X						
11	Availability of pins for remote signaling	R						
12	Availability of a wear condition indicator	S						

Selection Guide

Current type	Earth system type		Number of poles	Title	Reference	Protected conductors
Alternating current, three-phase power supply	TN-S/TT		3P+N	OptiDin OM-I-3+Nu-280/12,5	114275	L1, L2, L3, N, PE
			3P+N	OptiDin OM-I-3+Nu-280/12,5/R	114277	
			4P	OptiDin OM-I-4-280/12,5	114243	
			4P	OptiDin OM-I-4-280/12,5/R	114247	
			4P	OptiDin OM-I-4-280/12,5/RS	114263	
			4P	OptiDin OM-I-4-280/12,5/S	114260	
			3P+N	OptiDin OM-II-3+N-280/40	114311	
			3P+N	OptiDin OM-II-3+N-280/40/R	114313	
			4P	OptiDin OM-II-4-280/40	114297	
			4P	OptiDin OM-II-4-280/40/R	114301	
			4P	OptiDin OM-II-4-280/40/RS	114309	
			4P	OptiDin OM-II-4-280/40/S	114307	
			4P	OptiDin OM-II-4-280/40/X	114303	
			4P	OptiDin OM-II-4-280/40/XR	114305	
	TN-C		3P	OptiDin OM-I-3-280/12,5	114242	L1, L2, L3, PEN
			3P	OptiDin OM-I-3-280/12,5/R	114246	
			3P	OptiDin OM-I-3-280/12,5/RS	114262	
			3P	OptiDin OM-I-3-280/12,5/S	114258	
			3P	OptiDin OM-II-3-280/40	114296	
			3P	OptiDin OM-II-3-280/40/R	114300	
			3P	OptiDin OM-II-3-280/40/RS	114308	
			3P	OptiDin OM-II-3-280/40/S	114306	
			3P	OptiDin OM-II-3-280/40/X	114302	
			3P	OptiDin OM-II-3-280/40/XR	114304	
Alternating current, single-phase supply	TN-S/TT		1P+N	OptiDin OM-I-1+N-280/12,5	114251	L1, L2, L3, N, PE
			1P+N	OptiDin OM-I-1+N-280/12,5/R	114252	
			1P+N	OptiDin OM-I-1+Nu-280/12,5	114278	
			1P+N	OptiDin OM-I-1+Nu-280/12,5/R	114279	
			2P	OptiDin OM-I-2-280/12,5	114209	
			2P	OptiDin OM-I-2-280/12,5/R	114245	
			2P	OptiDin OM-I-2-280/12,5/RS	114274	
			2P	OptiDin OM-I-2-280/12,5/S	114272	
			1P+N	OptiDin OM-II-1+N-280/40	114310	
			1P+N	OptiDin OM-II-1+N-280/40/R	114312	
			2P	OptiDin OM-II-2-280/40	114295	
			2P	OptiDin OM-II-2-280/40/R	114299	
			2P	OptiDin OM-II-2-280/40/RS	114440	
			2P	OptiDin OM-II-2-280/40/S	114414	
			2P	OptiDin OM-II-2-280/40/X	114320	
			2P	OptiDin OM-II-2-280/40/XR	114412	

	SPD classification							
	SPD class test		Design of the SPD			Overvoltage protection method		
	Class I+II+III	Class II+III	Design with removable module	Output for remote signaling	Wear condition indicator	Switching voltage GDT	Limiting voltage MOV	Combined type MOV + GDT
	+		+			+	+	
	+		+	+		+	+	
	+		+				+	
	+		+	+			+	
	+		+	+	+		+	
	+		+		+		+	
		+	+			+	+	
		+	+	+		+	+	
		+	+				+	
		+	+	+			+	
		+	+	+	+		+	
		+	+		+		+	
		+	+					+
		+	+	+				+
	+		+				+	
	+		+	+			+	
	+		+	+	+		+	
	+		+		+		+	
		+	+				+	
		+	+	+			+	
		+	+	+	+		+	
		+	+		+		+	
		+	+					+
		+	+	+				+
	+		+			+	+	
	+		+	+		+	+	
	+		+			+	+	
	+		+	+		+	+	
	+		+				+	
	+		+	+			+	
	+		+	+	+		+	
	+		+		+		+	
		+	+			+	+	
		+	+	+		+	+	
		+	+				+	
		+	+	+			+	
		+	+	+	+		+	
		+	+		+		+	
		+	+					+
		+	+	+				+

Current type	Earth system type		Number of poles	Title	Reference	Protected conductors	
Alternating current, single-phase supply	TN-C		1P	OptiDin OMu-I-1-280/12,5/X	114283	L1, PEN	
			1P	OptiDin OMu-I-1-280/12,5/XR	114284		
			1P	OptiDin OMu-I-1-280/25/X	114288		
			1P	OptiDin OMu-I-1-280/25/XR	114291		
			1P	OptiDin OMu-I-1-280/30/X	114292		
			1P	OptiDin OMu-I-N-260/100	114286		
			1P	OptiDin OMu-I-N-260/50	114281		
			1P	OptiDin OM-I-1-280/12,5	114201		
			1P	OptiDin OM-I-1-280/12,5/R	114244		
			1P	OptiDin OM-I-1-280/12,5/RS	114273		
			1P	OptiDin OM-I-1-280/12,5/S	114271		
			1P	OptiDin OM-I-N-260/12,5	114269		
			1P	OptiDin OM-II-1-130/40	149961		
			1P	OptiDin OM-II-1-280/40	114294		
			1P	OptiDin OM-II-1-280/40/R	114298		
			1P	OptiDin OM-II-1-280/40/RS	114439		
			1P	OptiDin OM-II-1-280/40/S	114413		
			1P	OptiDin OM-II-1-280/40/X	114318		
			1P	OptiDin OM-II-1-280/40/XR	114411		
			1P	OptiDin OM-II-1-385/40	227679		
			1P	OptiDin OM-II-1-550/40	147311		
			1P	OptiDin OM-II-1-750/30	147312		
			1P	OptiDin OM-II-N-260/40	114315		

	SPD classification								
	SPD class test		Design of the SPD				Overvoltage protection method		
	Class I+II+III	Class II+III	Monobloc design	Design with removable module	Output for remote signaling	Wear condition indicator	Switching voltage GDT	Limiting voltage MOV	Combined type MOV + GDT
	+		+						+
	+		+		+				+
	+		+						+
	+		+		+				+
	+		+						+
	+		+				+		
	+		+				+		
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		+		+				+	
		+		+				+	
		+		+	+			+	
		+		+	+	+		+	
		+		+		+		+	
		+		+					+
		+		+	+				+
		+		+				+	
		+		+				+	
		+		+				+	
		+		+			+		

OptiDin OM(u)-I Surge protection devices of I + II + III classes

The OptiDin OMu-I surge protection devices are designed to protect electrical networks and devices from the effects of an overvoltage wave caused by a close, direct or indirect lightning strike. They are designed in the form of a monoblock with a serial connection of a varistor and an arrester, so that a complete separation of L-> N, N -> PE is provided, without residual currents.

The surge protection devices by OptiDin OM-I are designed for the potential equalization in the event of a direct lightning strike. They are installed on the input side of external conductors in the main switchboard and contain removable plug-in varistors.

The surge protection devices OptiDin OM (u) -I are available with or without remote signaling. Mounting on a 35 mm DIN rail.

SPD comply with the requirements of GOST P 51992.

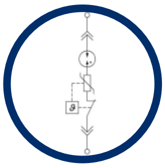
Batch effectiveness

Information input about the protection status and the need of devices replacement due to the availability of a wear degree indicator of the varistor module at operation.

Improved surge diverting properties in monoblock designs.

Safety when replacing plug-in modules due to the possibility of installing the module in any position.

There is a place for additional information input.



Designs with residual current interruption function exclude leakage currents. Due to this property the SPD can be installed upstream the electricity meter.

Marked on outputs allow to exclude wrong connection of conductors at installation.

Availability of an additional contact for remote signaling about the status of the device makes it possible to remotely control the degree of wear of the device.

Technical specifications

Main characteristics		
Operating frequency, Hz		50/60
Operating voltage, V		230/400
Status indication in models	Green	fully functional
	Yellow*	partially worn, replacement recommended
	Red	out of order, immediate replacement is required
Switching alarm contact		M3/0,25 N/m, 0,2 ... 1,5 mm^2, max. 250 B~/1 A
Additional characteristics		
Operating temperature range, ° C		from - 40 to +70
Degree of protection		IP20
Mounting on profile DIN rail, mm		35 x 7,5
Compliance with regulations	GOST P 51992 / IEC 61643-1	Class I + class II + class III
	STN EN 61643-11/A11	Type 1 [T1] + type 2 [T2] + type 3 [T3]
	VDE 0675-06	Class B + class C + class D
Weight, g		
OptiDin OM-I-1		190
OptiDin OM-I-1+N		278
OptiDin OM-I-1+Nu		300
OptiDin OM-I-2		340
OptiDin OM-I-3		490
OptiDin OM-I-3+Nu		550
OptiDin OM-I-4		640
OptiDin OM-I-N		128
OptiDin OMu-I-1-280/12,5		240
OptiDin OMu-I-1-280/25		450
OptiDin OMu-I-1-280/30		450
OptiDin OMu-I-N-260/50		150
OptiDin OMu-I-N-260/100		260

* For models with wear status indicator

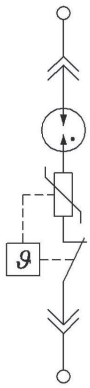
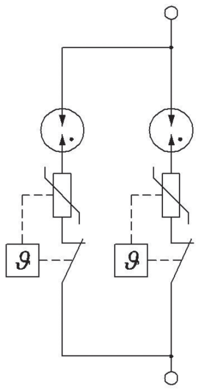
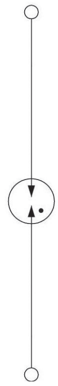
Wiring

Min./max. tightening torque, N/m	2-3
Cross section of the connecting conductor, mm^2: - wire - cable	 4-35 4-35

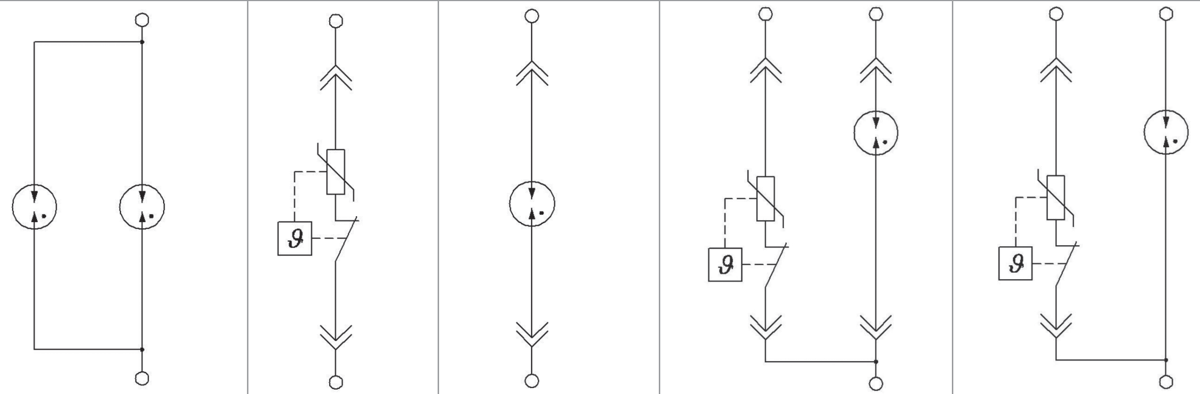
Plug-in modules	
OptiDin OM-I-0-280/12,5	261378
OptiDin OM-I-0-280/12,5/S	261379
OptiDin OM-I-0N-280/12,5	261380

References (series)

OptiDin OM(u)-I

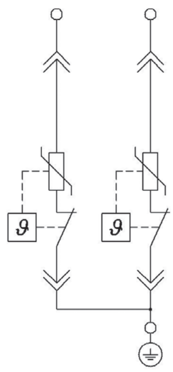
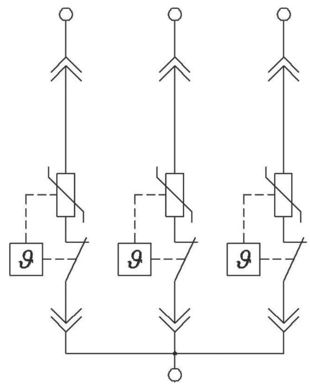
Appearance						
Number of poles		1P			N	
Wiring diagrams						
Rated voltage of alternating current Un, V		230	230	230	230	
Maximum continuous operating voltage Uc, V		280	280	280	280	
Surge current Iimp (10/350), kA		12,5	25	30	50	
Maximum discharge current Imax (8/20), kA		50	60	60	80	
Rated discharge current In (8/20), kA		30	40	40	50	
Ultimate pressure level Up, kV		≤1,5	≤1,5	≤1,5	≤1,5	
Response time tA, ns		<100	<100	<100	<100	
Open circuit voltage [T3] UOC, kV		6	6	6		
Prospective short-circuit current of the power supply Ip, kAef		25	25	25		
Rating of the protective fuse gL/gG, A		≤160	≤250	≤315		
Temporary overvoltage UTOV, V AC		335	335	335		
Residual current IPE, µA		<1	<1	<1	<1	
Follow current If, A					100	
References						
General design					114281	
	With a remote alarm contact					
With a wear indicator						
	With a remote alarm contact					
With residual current interrupt function		114283	114288	114292		
	With a remote alarm contact	114284	114291			

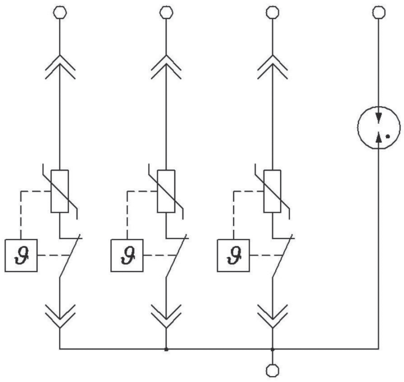
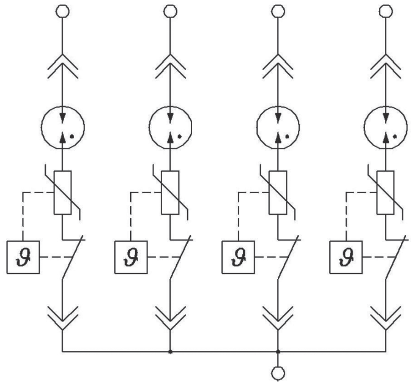
	N	1P	N	1P+N	



	230	230	230	230	230
	260	280	260	280/260 N/PE	280/260 N/PE
	100	12.5	12.5	12.5	12.5/50 N/PE
	100	50	40	50/40 N/PE	50/80 N/PE
	100	30	20	30/20 N/PE	30/50 N/PE
	≤1,5	≤1,3	≤1,5	≤1,3/≤1,5 N/PE	≤1,3/≤1,5 N/PE
	<100	<25		<25/<100 N/PE	<25/<100 N/PE
	6	20	6	20/6 N/PE	20/10 N/PE
		25		25 L/N	25 L/N
		≤160		≤160 L/N	≤160 L/N
		335		335 L/N	335 L/N
	<1		<1	<1 N/PE	<1 N/PE
	100		100	100 N/PE	100 N/PE
	114286	114201	114269	114251	114278
		114244		114252	114279
		114271			
		114273			

OptiDin OM(u)-I

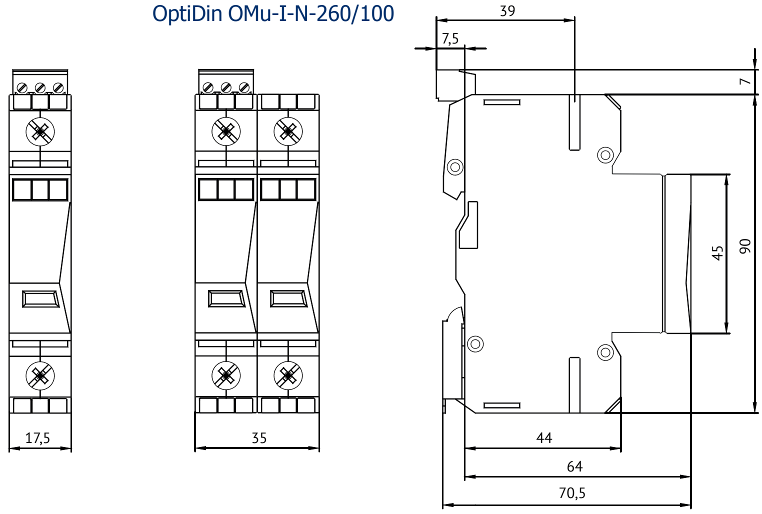
OptiDin OM(u)-I			
Appearance			
Number of poles		2P	3P
Wiring diagrams			
Rated voltage of alternating current Un, V		230	230
Maximum continuous operating voltage Uc, V		280	280
Surge current Iimp (10/350), kA		12,5	12,5
Maximum discharge current Imax (8/20), kA		50	50
Rated discharge current In (8/20), kA		30	30
Ultimate pressure level Up, kV		≤1,3	≤1,3
Response time tA, ns		<25	<25
Open circuit voltage [T3] UOC, kV		20	20
Prospective short-circuit current of the power supply Ip, kAef		25 L/N	25 L/N
Rating of the protective fuse gL/gG, A		≤160 L/N	≤160 L/N
Temporary overvoltage UTOV, V AC		335 L/N	335 L/N
Residual current IPE, μA			
Follow current If, A			
References			
General design		114209	114242
	With a remote alarm contact	114245	114246
With wear indicator		114272	114258
	With a remote alarm contact	114274	114262

		
	3P+N	4P
		
	230	230
	280	280
	12,5	12,5
	50/80 N/PE	50
	30/50 N/PE	30
	≤1,3/≤1,5 N/PE	≤1,3
	<25/<100 N/PE	<25
	20/10 N/PE	20
	25 L/N	25
	≤160 L/N	≤160
	335 L/N	335
	<1 N/PE	
	100 N/PE	
	114275	114243
	114277	114247
		114260
		114263

Overall dimensions (mm)

OptiDin OMu-I-1-280/12,5
OptiDin OMu-I-1-260/50

OptiDin OMu-I-1-280/25
OptiDin OMu-I-1-280/30
OptiDin OMu-I-N-260/100



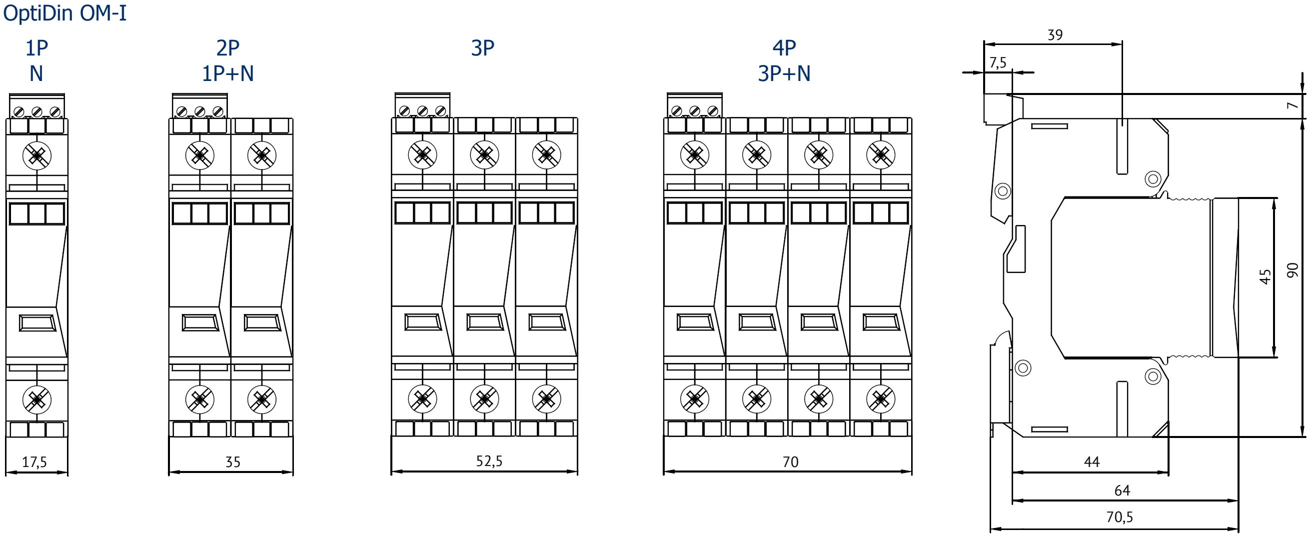
OptiDin OM-I

1P
N

2P
1P+N

3P

4P
3P+N



OptiDin OM-II Surge protection devices of II + III classes

Class II surge protection devices are designed for protection against category III overvoltages, for which a maximum overvoltage of 4 kV is established by coordinating insulation for 230/400 V networks.

These SPDs serve to drain the energy of the overvoltage pulses in the distribution network of the object. They are installed, mainly, in secondary switchboards.

OptiDin OM-II surge protection devices are designed to drain the energy of overvoltage pulses in power supply systems of buildings. They, as a rule, are installed in secondary switchboards and contain a built-in connected varistor. OptiDIn OM-II surge protection devices are available with or without remote signaling. The installation is carried out on a 35 mm DIN rail.

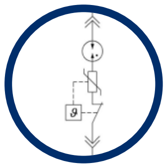
SPDs meet the requirements of GOST P 51992.

Batch effectiveness

Information input about the protection status and the need of replacement of the devices due to the availability of a wear degree indicator of the varistor module at operation.

Safety when replacing plug-in modules due to the possibility of installing the module in any position.

There is a place for additional information input.



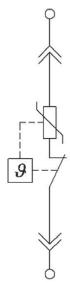
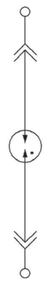
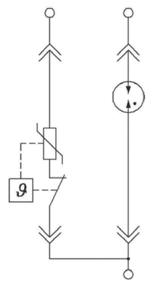
Designs with residual current interruption function exclude leakage currents.

Marked on outputs allow to exclude wrong connection of conductors at installation.

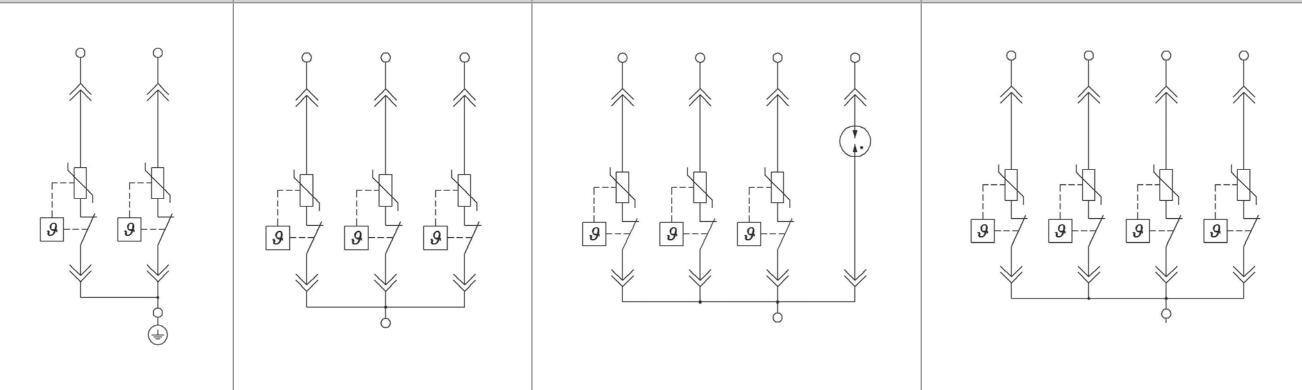
Availability of an additional contact for remote signaling about the status of the device makes it possible to remotely control the degree of wear of the device.

References (series)

OptiDin OM-II

Appearance							
Number of poles		1P				N	1P+N
Wiring diagrams							
Rated voltage of alternating current Un, V		230	120	385	470	230	230
Maximum continuous operating voltage Uc, V		280	130	385	550	260	280/260 N/PE
Maximum discharge current Imax (8/20), kA		40				40	40
Rated discharge current In (8/20), kA		20				20	20
Ultimate pressure level Up, kV		≤1,45	≤0,85	≤1,8	≤2,65	≤1,45	≤1,45
Response time tA, ns		<25				<150	<25/<150 N/PE
Open circuit voltage [T3] UOC, kV		6				6	6
Prospective short-circuit current of the power supply Ip, kAef		25					25 L/N
Rating of the protective fuse gL/gG, A		≤125					≤125
Temporary overvoltage UTOV, V AC		335	175	560	685		335 L/N
Residual current IPE, µA						<1	<1 N/PE
Follow current If, A						100	100 N/PE
References							
General design		114294	149961	227679	147311	114315	114310
	With a remote alarm contact	114298					114312
With wear indicator		114413					
	With a remote alarm contact	114439					
With residual current interrupt function		114318					
	With a remote alarm contact	114411					

	2P	3P	3P+N	4P



	230	230	230	230
	280	280	280	280
	40	40	40	40
	20	20	20	20
	≤1,45	≤1,45	≤1,45	≤1,45
	<25	<25	<25/<150 N/PE	<25
	6	6	6	6
	25 L/N	25 L/N	25 L/N	25
	≤125 L/N	≤125 L/N	≤125 L/N	≤125
	335 L/N	335 L/N	335 L/N	335
			<1 N/PE	
			100 N/PE	
	114295	114296	114311	114297
	114299	114300	114313	114301
	114414	114306		114307
	114440	114308		114309
	114320	114302		114303
	114412	114304		114305

Plug-in modules

Title	References
OptiDin OM-II-0-280/40	261381
OptiDin OM-II-0-280/40/S	261382
OptiDin OM-II-0-280/40/X	261383
OptiDin OM-II-0N-260/40	261384

Technical specifications

Main characteristics		
Operating frequency, Hz		50/60
Operating voltage, V		230/400
Status indication in models	Green	fully functional
	Yellow*	partially worn, replacement recommended
	Red	out of order, immediate replacement is required
Switching alarm contact		M3/0,25 N/m, 0,2 ... 1,5 mm², max. 250 B~/1 A
Additional characteristics		
Operating temperature range, ° C		from - 40 to +70
Degree of protection		IP20
Mounting on profile DIN rail, mm		35 x 7,5
Compliance with regulations	GOST P 51992 / IEC 61643-1	Class I + class II + class III
	STN EN 61643-11/A11	Type 1 [T1] + type 2 [T2] + type 3 [T3]
	VDE 0675-06	Class B + class C + class D
Weight, g		
OptiDin OM-II-1		145
OptiDin OM-II-1+N		233
OptiDin OM-II-2		255
OptiDin OM-II-3		355
OptiDin OM-II-3+N		443
OptiDin OM-II-4		460
OptiDin OM-II-N		128

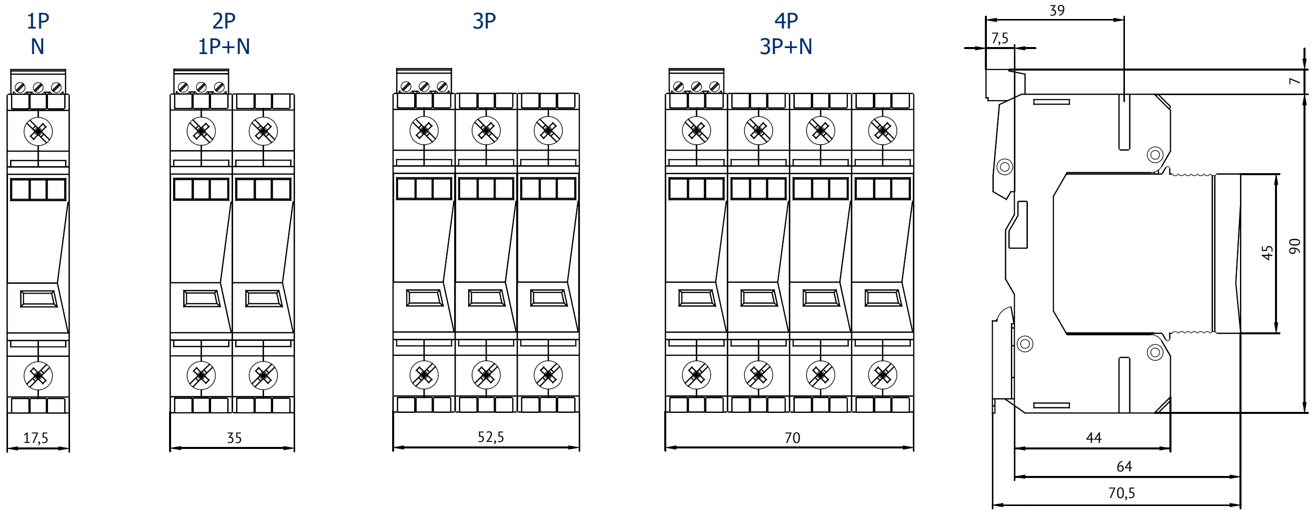
* For models with wear status indicator

Wiring

Min./max. tightening torque, N/m	2-3
Cross section of the connecting conductor, mm²: - wire - cable	 4-35 4-35

Overall dimensions (mm)

OptiDin OM-I



Modular contactors

Electromechanical modular contactors KEAZ are applied in automation and control systems for a variety of technological processes, including air conditioning, ventilation, heating and lighting systems.

Designation

OptiDin MK63 - 25 4 0 - 230 AC

1 (OptiDin), 2 (MK63), 3 (25), 4 (4), 5 (0), 6 (230), 7 (AC)

1	**Product range**	OptiDin				
2	**Configuration**	MK63				
3	**Rated operating current of the contactor, A**	20, 25, 40, 63				
4	**Number of normally open (NO) contacts**	0	1	2	3	4
5	**Number of normally closed (NC) contacts**	0	1	2	3	4
6	**Voltage of the control coil circuit, V**	24		230		
7	**Type of coil current**	AC		AC/DC		

OptiDin MK63 Modular contactors for currents up to 63 A

OptiDin MK63 modular contactors are designed for frequent switching of loads with a rated current up to 63 A - electric boilers, direct heating convectors, heat accumulators. The devices are applied for automation and control of a variety of technological processes, including air conditioning, ventilation, lighting.

The OptiDin MK63 provides visual indication of the status of contacts. The main circuit voltage is 230V and 400V AC at 50Hz. The supply voltage of the control coils is 24 and 230 V (AC and DC).

Modular contactors are installed in the distribution cabinets of residential and office premises, hotels, hospitals, shopping centers, industrial buildings and public places.

OptiDin MK63 is applied for remote switching and automatic monitoring of equipment, such as:
- single-phase and three-phase electric motors;
- a variety of pumps;
- air conditioning;
- electric heaters;
- lighting equipment.

The contactors comply with the requirements of GOST P 50030.4.1

Batch effectiveness

It is possible to implement contactors equipped with a varistor for overvoltage protection, as well as a rectifier, which allows the contactor to be controlled either by direct or alternating current.

AC/DC

There is an additional place for marking on each contactor.

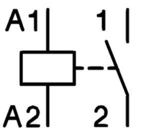
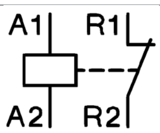
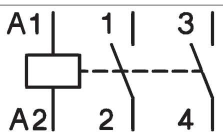
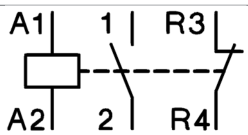
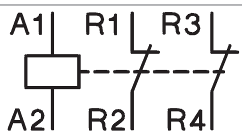
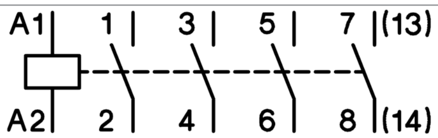
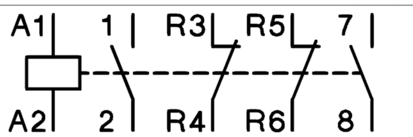
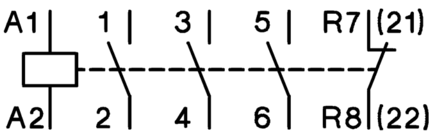
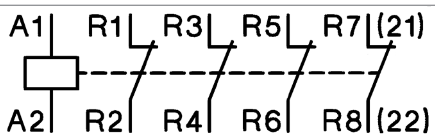
The design of the contactors implies installation on a 35 mm DIN rail.

Dummy module prevents contactors from overheating when immediately adjacent directly one to another.

IP20

All contactors are IP20 protection type.

References (series)

			Rated current In, A	
Wiring diagram	Main circuit contacts type	Control coil voltage , V	Type of coil current	
	1NO	24	AC	
			AC/DC	
		230	AC	
			AC/DC	
	1NC	24	AC	
			AC/DC	
		230	AC	
			AC/DC	
	2NO	24	AC	
			AC/DC	
		230	AC	
			AC/DC	
	1NO+1NC	24	AC	
			AC/DC	
		230	AC	
			AC/DC	
	2NC	24	AC	
			AC/DC	
		230	AC	
			AC/DC	
	4NO	24	AC	
			AC/DC	
		230	AC	
			AC/DC	
	2NO+2NC	24	AC	
			AC/DC	
		230	AC	
			AC/DC	
	3NO+1NC	24	AC	
			AC/DC	
		230	AC	
			AC/DC	
	4NC	24	AC	
			AC/DC	
		230	AC	
			AC/DC	

	OptiDin MK63-20	OptiDin MK63-25	OptiDin MK63-40	OptiDin MK63-63
	20	25	40	63
	236841	236850		
	236814	236823		
	236840	236849		
	236813	236822		
	236843	236852		
	236816	236825		
	236842	236851		
	236815	236824		
	236844	236778		
	233825	236779		
	114090	236853		
	236817	236826		
	236846	236778		
	236819	236828		
	236845	236855		
	236818	236827		
	236848	236857		
	236821	236830		
	236847	236856		
	236820	236829		
		236880	236780	236782
		236138	236781	236783
		114095	114128	114136
		236868	236892	236899
		236882	236907	236909
		236139	236896	142270
		114118	114130	114137
		236869	236895	236902
		236881	236906	236908
		150912	236894	236901
		114120	114131	114138
			236893	236900
		236883		236910
		236871	236898	236905
		114124	114135	114139
		236870	236897	236904

Technical specifications

Type		OptiDin MK63-20		OptiDin MK63-25		OptiDin MK63-40		OptiDin MK63-63	
Main characteristics									
Module width		1		2		3			
Mechanical durability, cycle		3000000							
Ambient temperature, ° C		-5 ... +55							
Storage temperature, ° C		-30 ... +80							
Number of contactors (immediately adjacent without setting OptiDin P730 dummy module)	≤ 40 °C	up to 3							
	40 - 55 °C	up to 2							
Stable contact		17 B; ≥ 50 мА							
Minimum open contact clearance, mm		3,6							
Power loss per pole, W		1,7		2,2		4		8	
Resistance to overcurrent, A		72		68		176		240	
Maximum fuse current (gL) Iv, A		20		25		63		80	
Maximum commutation frequency, cycle/h	DC-1	300							
	AC-1/AC-3/AC-5b/AC-6b	600 600							
	AC-15	1200 1200							
	load free	3000 3000							
Control circuit									
Coil voltage range Uc, %		85...110							
Voltage type		AC	AC/DC	AC	AC/DC	AC	AC/DC	AC	AC/DC
Available coil voltages Uc, V		24, 230							
Rated frequency, Hz		50/60 *1)							
Testing discharge voltage, μs, kV		2							
Coil consumption, VA / W	Switching	12/10	2,1/2,1	33/25	2,6/2,6 *2)	5/5		5/5	
	Hold	2,8/1,2	2,1/2,1	5,5/1,6	2,6/2,6 *2)	5/5 5/5		5/5 5/5	
On/off delay, ms	Switching	15-25	15-45	10-30		15-20		15-20	
	Disconnection	10-30	20-50	10-60		35-45		35-45	
Power contacts									
Rated insulation voltage Ui, V		30		440		440			
Withstand impulse voltage Uimp, kV		4							
Thermal current Ith, A		20		25		40		63	
Rated operating voltage Ue, V		230		400		400 400			
Rated frequency f, Hz		50/60							
Rated operating current Ie, A	AC-1/AC-7a	20		25		40		63	
Rated load power Pe, kW	AC-1/AC-7a single-phase, 230 V	4		5,4		8,7		13,3	
	AC-1/AC-7a three-phase, 400 V			16		26		40	
Electrical wear resistance, cycle	AC-1/AC-7a	200000				100000			
Rated operating current Ie, A	AC-3/AC-7b	NO: 9 NC: 6		8,5		22		30	
Rated load power Pe, kW	AC-3/AC-7b single-phase, 230 V	NO: 1,3 NC: 0,75		1,3 *3)		3,7 *3)		5 *3)	
	AC-3/AC-7b three-phase, 400 V			4		11		15	
Electrical contact wear resistance, cycle	AC-3/AC-7b	300000		500000		150000			
Switching capacitors C, μF	AC-6b at 230 V	30		36		220		330	
Electrical wear resistance of contacts	AC-6b	100000				100000			
DC-1 (L/R ≤ 1 ms) DC current breaking capacity, A									
1 pole	Ue = 24 V DC	20		25		40		63	
	Ue = 48 V DC	15		20		24		26	
	Ue = 60 V DC	10		15		18		20	
	Ue = 110 V DC	6		6		4		4	
	Ue = 220 V DC	0,6		0,6		1,2		1,2	

Type		OptiDin MK63-20	OptiDin MK63-25	OptiDin MK63-40	OptiDin MK63-63
2 pole serial attached	Ue = 24 V DC	20	25	40	63
	Ue = 48 V DC	18	25	38	42
	Ue = 60 V DC	15	20	32	34
	Ue = 110 V DC	10	10	10	10
	Ue = 220 V DC	6	6	8	8
3 pole serial attached	Ue = 24 V DC		25	40	63
	Ue = 48 V DC		25	40	63
	Ue = 60 V DC		25	40	63
	Ue = 110 V DC		20	30	35
	Ue = 220 V DC		15	20	30
4 pole serial attached	Ue = 24 V DC		25	40	63
	Ue = 48 V DC		25	40	63
	Ue = 60 V DC		25	40	63
	Ue = 110 V DC		20	40	63
	Ue = 220 V DC		15	40	63
Electrical wear resistance, cycle	DC-1	100000		100000	
DC-3 (L/R ≤ 2 ms) DC current breaking capacity, A					
1 pole	Ue = 24 V DC	10	15	22	25
	Ue = 48 V DC	5	8	10	11
	Ue = 60 V DC	2	4	5	5
	Ue = 110 V DC	1	1,3	1,5	1,5
	Ue = 220 V DC	0,1	0,2	0,3	0,3
2 pole serial attached	Ue = 24 V DC	20	25	40	45
	Ue = 48 V DC	10	16	20	22
	Ue = 60 V DC	8	12	16	18
	Ue = 110 V DC	4	5,5	5	5
	Ue = 220 V DC	0,4	0,6	1	1
3 pole serial attached	Ue = 24 V DC		25	40	63
	Ue = 48 V DC		25	40	45
	Ue = 60 V DC		25	32	35
	Ue = 110 V DC		15	15	18
	Ue = 220 V DC		3	4	5
4 pole serial attached	Ue = 24 V DC		25	40	63
	Ue = 48 V DC		25	40	63
	Ue = 60 V DC		25	40	63
	Ue = 110 V DC		20	40	63
	Ue = 220 V DC		8	10	10
Electrical wear resistance, cycle	DC-3	100000		100000	
DC-5 (L/R ≤ 7,5 ms) DC current breaking capacity, A					
1 pole	Ue = 24 V DC	10	15	20	25
	Ue = 48 V DC	4	5	8	10
	Ue = 60 V DC	1	3	4	5
	Ue = 110 V DC	0,3	0,5	1	1
	Ue = 220 V DC	0,06	0,1	0,2	0,2
2 pole serial attached	Ue = 24 V DC	20	25	40	45
	Ue = 48 V DC	8	15	18	20
	Ue = 60 V DC	6	10	14	15
	Ue = 110 V DC	2	4	5	5
	Ue = 220 V DC	0,2	0,4	0,8	0,8
3 pole serial attached	Ue = 24 V DC		25	40	63
	Ue = 48 V DC		25	40	44
	Ue = 60 V DC		20	28	30
	Ue = 110 V DC		12	12	15
	Ue = 220 V DC		2	3	4
4 pole serial attached	Ue = 24 V DC		25	40	63
	Ue = 48 V DC		25	40	63
	Ue = 60 V DC		25	40	63
	Ue = 110 V DC		15	35	45
	Ue = 220 V DC		5	8	10

Type		OptiDin MK63-20	OptiDin MK63-25	OptiDin MK63-40	OptiDin MK63-63
Electrical wear resistance, cycle	DC-5	100000		100000	
Auxiliary contacts unit OptiDin MK63-RH					
Rated operating voltage Ue, V		230	400	400	
Rated insulation voltage Ui, V		230	440	440	
Impulse withstand voltage Uimp, kV		4			
Thermal current Ith, A		20	25	40	63
Rated operating current Ie, A	AC-15 single-phase, 230 V	6			
	AC-15 three-phase, 400 V		4	4	
Electrical wear resistance, cycle	AC-15	300000	500000	150000	
Weight, g					
OptiDin MK63-20				135	
OptiDin MK63-25				275	
OptiDin MK63-40				430	
OptiDin MK63-63				430	
OptiDin MK63-RH				30	
OptiDin MK63-P730				13	

*1) AC / DC can be controlled by alternating voltage with a frequency of 40 to 400 Hz
*2) Coil consumption for main contacts type -04 is 3,8 VA/3,8 W
*3) Data for single-phase power correspond to main contacts of type -22, -20 and -02

Additional devices for quick and safe installation

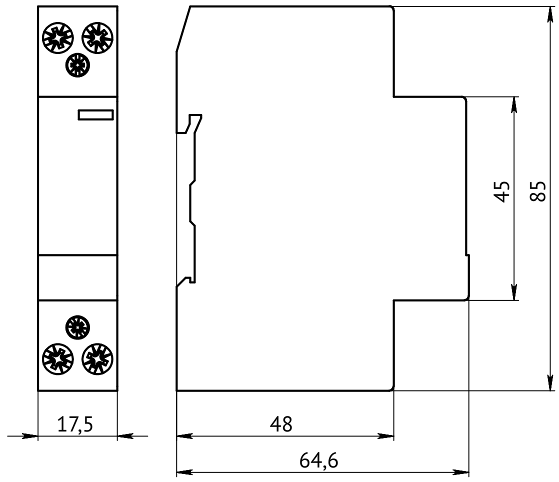
Appearance	Title	Reference
	Auxiliary contact unit OptiDin MK63-RH11	114158
	dummy module OptiDin MK63-P730	114177

Wiring

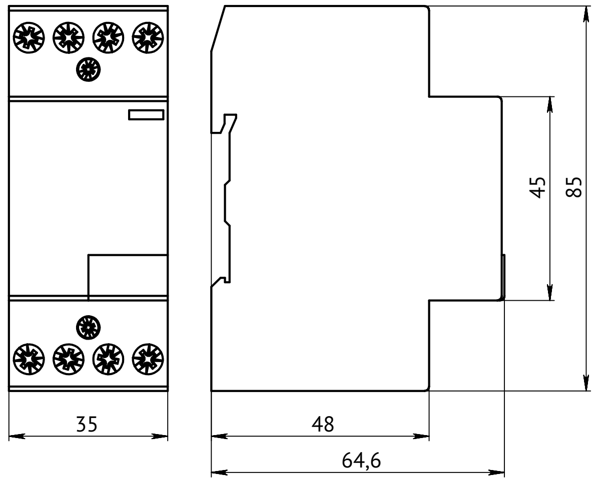
Device type	Conductor cross-section connected to the main circuit, mm²		Conductor cross-section connected to the control circuit, mm²	
	Single-core	Multicore	Single-core	Multicore
OptiDin MK63-20	1-10	1-6	1-2,5	1-2,5
OptiDin MK63-25	1-10	1-6	1-2,5	1-2,5
OptiDin MK63-40	1,5-20	1,5-16	1-2,5	1-2,5
OptiDin MK63-63	1,5-20	1,5-16	1-2,5	1-2,5
OptiDin MK63-RH	0,5-2,5	0,5-2,5	-	-

Overall dimensions (mm)

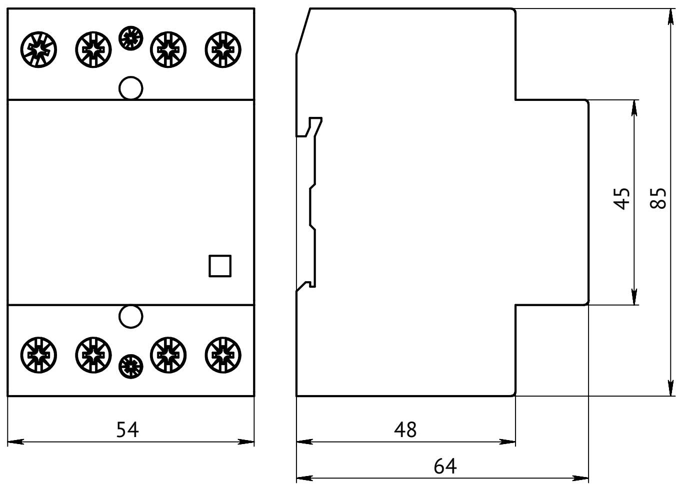
OptiDin MK63-20



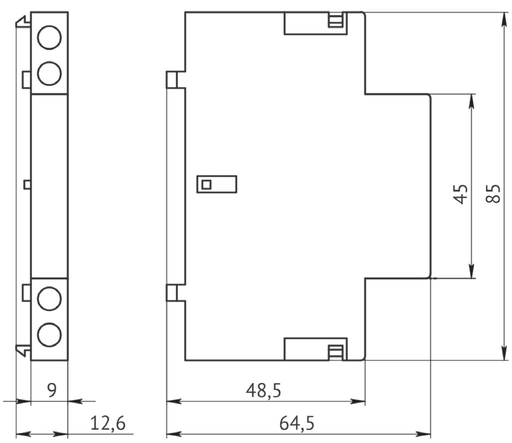
OptiDin MK63-25



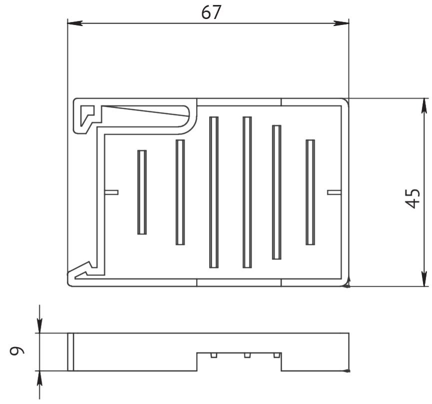
OptiDin MK63-40
OptiDin MK63-63



OptiDin MK63-RH



OptiDin MK63-P730



The table for choosing optimal modification of the OptiDin MK63 contactors for switching of various illumination sources

Lamp Type	Power, W	Current, A	Compensating capacitor, uF	The maximum number of lamps per pole at 230 V, 50 Hz			
				OptiDin MK63- 20	OptiDin MK63- 25	OptiDin MK63- 40	OptiDin MK63- 63
Vacuum and halogen incandescent lamps	15	0,07	-	130	130	260	330
	25	0,11	-	80	80	160	200
	40	0,18	-	50	50	100	125
	60	0,26	-	33	66	65	85
	75	0,33	-	26	26	53	66
	100	0,44	-	20	20	40	50
	150	0,65	-	13	13	26	33
	200	0,87	-	10	10	20	25
	300	1,30	-	6	6	13	16
	500	2,17	-	3	3	8	10
	1000	4,35	-	1	1	4	5
Compact fluorescent lamps, serial connection	10	0,19	1,4	50	60	105	165
	13	0,18	1,4	50	60	105	165
	18	0,23	1,7	40	50	85	135
	26	0,33	2,5	30	35	60	95
	18	0,38	2,7	25	30	50	80
	24	0,35	2,7	25	30	50	80
	36	0,44	3,4	20	25	45	70
Compact fluorescent lamps, parallel connection	5	0,18	2,2	13	16	100	150
	7	0,18	2,1	14	17	104	157
	9	0,17	2,0	15	18	110	165
	10	0,19	2,2	13	16	100	150
	11	0,16	1,7	17	21	125	194
	13	0,18	1,8	16	20	120	183
	18	0,23	2,3	13	15	95	143
	26	0,33	3,3	9	11	66	100
	18	0,38	4,2	7	8	52	78
	24	0,35	3,6	8	10	61	91
	36	0,44	4,4	6	8	50	75
Compact fluorescent lamps with electronic starting-regulating equipment (electronic control gear (ECG))	5	0,05	-	45	63	180	250
	7	0,05	-	45	63	180	250
	9	0,07	-	32	45	128	180
	10	0,07	-	32	45	128	180
	11	0,07	-	32	45	128	180
	13	0,07	-	32	45	128	180
	18	0,22	-	10	14	40	57
	24	0,22	-	10	14	40	57
	26	0,22	-	10	14	40	57
	32	0,22	-	10	14	40	57
	36	0,22	-	10	14	40	57
	40	0,22	-	10	14	40	57
	42	0,22	-	10	14	40	57
	55	0,28	-	8	11	32	45
	57	0,28	-	8	11	32	45
	70	0,35	-	6	9	25	36
	80	0,41	-	5	8	22	30
	120	0,58	-	4	5	15	22
	2x9	0,11	-	2x16	2x22	2x90	2x125
	2x10	0,11	-	2x16	2x22	2x90	2x125
	2x11	0,11	-	2x16	2x22	2x90	2x125
	2x13	0,11	-	2x16	2x22	2x90	2x125
	2x18	0,30	-	2x5	2x7	2x20	2x28
	2x24	0,31	-	2x5	2x7	2x20	2x28
	2x26	0,31	-	2x5	2x7	2x20	2x28
	2x32	0,31	-	2x5	2x7	2x20	2x28
	2x36	0,31	-	2x5	2x7	2x20	2x28
	2x40	0,40	-	2x4	2x6	2x18	2x26
	2x42	0,40	-	2x4	2x6	2x18	2x26
	2x55	0,55	-	2x3	2x5	2x16	2x22
	2x57	0,55	-	2x3	2x5	2x16	2x22
Fluorescent lamps - without correction or with consequent correction	11	0,16	1,3	55	70	125	200
	18	0,37	2,7	22	24	90	140
	24	0,35	2,5	22	24	90	140
	36	0,34	3,4	17	20	65	95
	58	0,67	5,3	14	17	45	70
	65	0,67	5,3	14	17	35	50
	85	0,80	5,3	12	15	25	40

Lamp Type	Power, W	Current, A	Compensating capacitor, uF	The maximum number of lamps per pole at 230 V, 50 Hz			
				OptiDin MK63- 20	OptiDin MK63- 25	OptiDin MK63- 40	OptiDin MK63- 63
Fluorescent lamps - stabilizing circuit	2x11	0,07	-	2x50	2x60	2x140	2x200
	2x18	0,11	-	2x30	2x40	2x100	2x150
	2x24	0,14	-	2x24	3x31	2x78	2x118
	2x36	0,22	-	2x17	2x24	2x65	2x95
	2x58	0,35	-	2x10	2x14	2x40	2x60
	2x65	0,35	-	2x9	2x13	2x30	2x45
	2x85	0,47	-	2x6	2x10	2x20	2x30
Fluorescent lamps - parallel correction	11	0,16	3,5	9	10	62	94
	18	0,37	4,5	7	8	48	73
	24	0,35	4,5	7	8	48	73
	36	0,34	4,5	7	8	48	73
	58	0,67	7,0	4	5	31	47
	65	0,67	7,0	4	5	31	47
	85	0,80	8,0	3	4	27	41
Fluorescent lamps with electronic starting-regulating equipment (electronic control gear (ECG))	18	0,09	-	25	35	100	140
	36	0,16	-	15	20	52	75
	58	0,25	-	14	19	50	72
	2x18	0,17	-	2x12	2x17	2x50	2x70
	2x36	0,32	-	2x7	2x10	2x26	2x38
	2x58	0,49	-	2x7	2x9	2x25	2x36
Mercury lamps of high pressure without correction	50	0,61	-	14	18	38	55
	80	0,80	-	10	13	29	42
	125	1,15	-	7	9	20	29
	250	2,15	-	4	5	10	15
	400	3,25	-	2	3	7	10
	700	5,40	-	1	2	4	6
	1000	7,50	-	1	1	3	4
Mercury lamps of high pressure - parallel correction	50	0,25	7	4	5	31	47
	80	0,41	8	4	5	27	41
	125	0,65	10	3	4	22	33
	250	1,22	18	1	2	12	18
	400	1,95	25	1	1	9	13
	700	3,45	45	-	-	5	7
	1000	4,80	60	-	-	4	5
Metal halide lamps - without correction	50	0,35	-	18	22	43	60
	80	1,00	-	10	12	23	32
	125	1,80	-	5	7	12	18
	250	3,00	-	3	4	7	10
	400	3,50	-	3	3	6	9
	700	9,50	-	1	1	2	3
	1000	16,50	-	-	-	1	1
Metal halide lamps - parallel correction	35	0,25	6	5	6	36	50
	70	0,45	12	2	3	18	25
	150	0,75	20	1	1	11	15
	250	1,50	33	-	1	6	9
	400	2,50	35	-	1	6	8
	1000	5,80	95	-	-	2	3
	2000	11,50	148	-	-	1	2
High-pressure sodium lamps - without correction	150	1,80	-	5	6	17	22
	250	3,00	-	3	4	10	13
	400	4,70	-	2	2	6	8
	1000	10,30	-	-	1	3	3
High-pressure sodium lamps - with correction	150	0,83	20	1	1	11	16
	250	1,50	33	-	1	6	10
	400	2,40	48	-	-	4	6
	1000	6,30	106	-	-	2	3
Low-pressure sodium lamps - without correction	18	0,35	-	22	27	71	90
	35	1,50	-	7	9	23	30
	55	1,50	-	7	9	23	30
	90	2,40	-	4	5	14	19
	135	3,50	-	3	4	10	13
	180	3,50	-	3	4	10	13
Low-pressure sodium lamps - parallel correction	18	0,35	5	6	7	44	66
	35	0,31	20	1	1	11	16
	55	0,42	20	1	1	11	16
	90	0,63	26	1	1	8	12
	135	0,94	45	-	-	4	7
	180	1,16	40	-	-	5	8
Transformers for low-pressure halogene incandescent lamps	20	-	-	40	52	110	174
	50	-	-	20	24	50	80
	75	-	-	13	16	35	54
	100	-	-	10	12	27	43
	150	-	-	7	9	19	29
	200	-	-	5	6	14	23
	300	-	-	3	4	9	14

Modular command and signal feeders

OptiDin SL63 and FSL63 Modular indicators

Signal lamps are intended for light indication of the operating status of electrical equipment in electrical circuits with a voltage of up to 230 V AC at a frequency of 50 Hz.

The light indicators of the phases are intended for the light indication of the supply voltage in each phase.

Signal lamps and phase light indicators comply with the requirements of GOST P 50030.5.1 (appendix J), TP TC 004/2011 and are manufactured according to ТУ3428-070-05758109-2012.

Designation

OptiDin SL63 - R 230 AC - UHL3

1 2 3 4 5 6

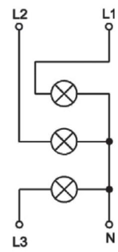
<table>
<tr><td>1</td><td>Products range</td><td colspan="20">OptiDin</td></tr>
<tr><td>2</td><td>Configuration of the lamp</td><td colspan="20">SL63</td></tr>
<tr><td>3</td><td>Color specification code</td><td colspan="4">R - red</td><td colspan="4">Y - yellow</td><td colspan="4">G - green</td><td colspan="4">B - blue</td><td colspan="4">W - white</td></tr>
<tr><td>4</td><td>Rated operational voltage, V</td><td colspan="5">230</td><td colspan="5">110</td><td colspan="5">48</td><td colspan="5">24</td></tr>
<tr><td>5</td><td>Current type</td><td colspan="10">AC</td><td colspan="10">AC/DC</td></tr>
<tr><td>6</td><td>Symbol of environment and environmental class of location in compliance with the requirements of GOST 15150</td><td colspan="20">UHL3 (international CT3)</td></tr>
</table>

OptiDin FSL63 - 230 - UHL3

1 2 3 4

<table>
<tr><td>1</td><td>Products range</td><td colspan="4">OptiDin</td></tr>
<tr><td>2</td><td>Type of phase light indicator</td><td colspan="4">FSL63</td></tr>
<tr><td>3</td><td>Rated operating voltage, V</td><td>230</td><td>110</td><td>48</td><td>24</td></tr>
<tr><td>4</td><td>Symbol of environment and environmental class of location in compliance with the requirements of GOST 15150</td><td colspan="4">UHL3 (international CT3)</td></tr>
</table>

References (series)

Type		Signal lamps OptiDin SL63					Phase light indicator OptiDin FSL63
Appearance							
Wiring diagrams							
Color		Red	Yellow	Green	Blue	White	
Rated operating voltage in the alternating current circuit of frequency 50 UV, Ue, V	Current type						
24	AC/DC	138609	138613	138617	138621	138625	
48	AC/DC	138608	138612	138616	138620	138624	
110	AC	138607	138611	138615	138619	138623	
230	AC	138606	138610	138614	138618	138622	138626

Technical specifications

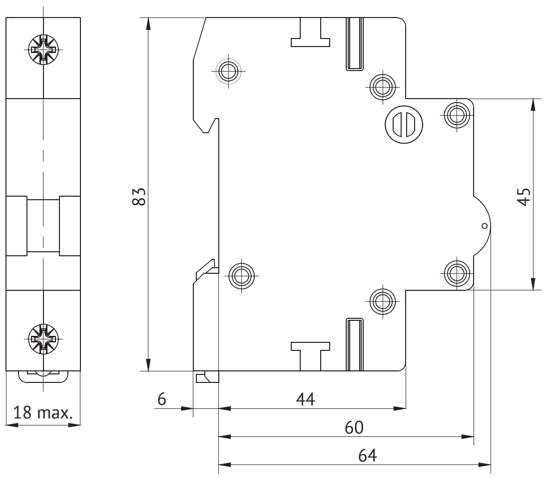
	OptiDin SL63	OptiDin FSL63
Main characteristics		
Insulation voltage Ui, V	230	400
Degree of pollution	3	
Nominal operating current of the information index, at 230 V, not more than, A	0,02	
Consumed rated electric power (power consumption), no more, VA	5	15
Operating mode	Prolonged	
Additional characteristics		
Degree of protection in compliance with the requirements of GOST14254	IP20	
Environment in compliance with the requirements of GOST 15150	UHL3	
Operating temperature range, ° C	from -60 to +40	
Storage temperature range, ° C	from -45 to +50	
Weight, g		
OptiDin SL63	68	
OptiDin FSL63	100	

Wiring

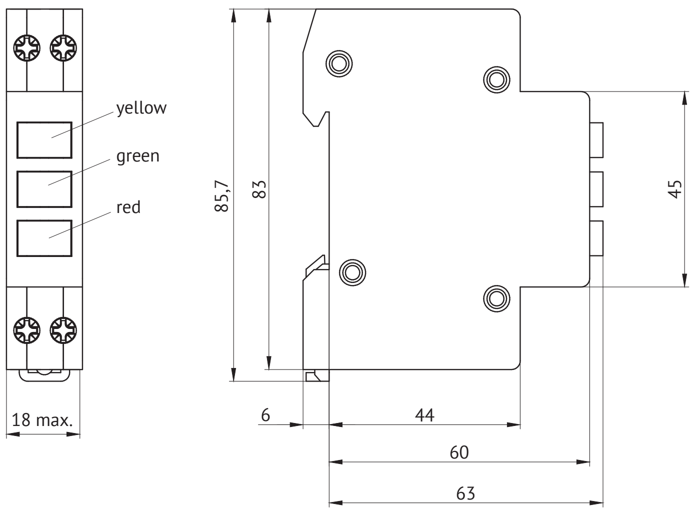
Tightening torque, N/m	Signal lamps			Tightening torque, N/m	Phase light indicator		
	Conductor cross-section, mm²				Conductor cross-section, mm²		
	Copper flexible (multicore)	Copper hard (multicore and single-core)	Aluminum (multicore and single-core)		Copper flexible (multicore)	Aluminum flexible	Aluminum inflexible (hard)
1,5	1,5 - 6			0,5	1,5 - 25		

Overall dimensions (mm)

OptiDin SL63



OptiDin FSL63



OptiDin KM63 Modular Buttons

The control buttons OptiDin KM63 are designed for operational control of contactors (magnetic starters), various automation relays and other technological equipment in electrical circuits of alternating current with the voltage up to 230 V.

The specified buttons meet the requirements of GOST P 50030.5.1, TP TC 004/2011 and are manufactured in compliance with ТУ3428-071-05758109-2012.

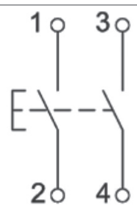
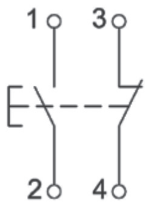
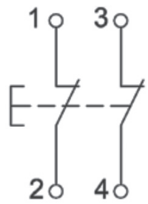
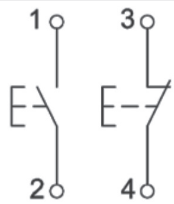
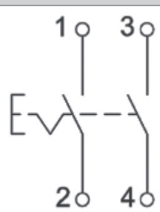
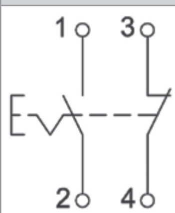
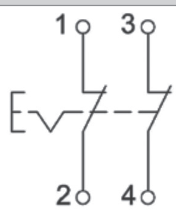
Designation

OptiDin KM63 - C - 11 - UHL3

1 (OptiDin), 2 (KM63), 3 (C), 4 (11), 5 (UHL3)

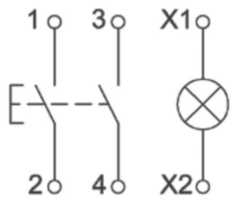
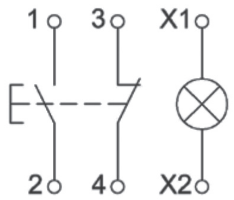
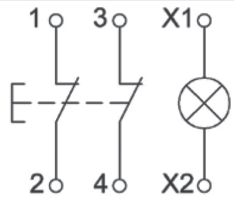
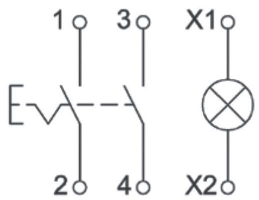
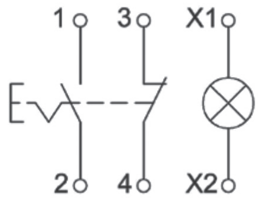
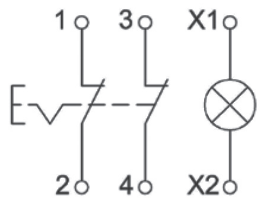
1	Products range	OptiDin				
2	Configuration	KM63				
3	Type of control mechanism construction and functions of the contact element	A	B	C	AF	CF
4	Order and numerical designation of a number of NO and NC contacts	10	01	11	20	02
5	Symbol of environment and environmental class of location in compliance with the requirements of GOST 15150	UHL3 (international CT3)				

Reference (series)

	Button modular			Modular button with two independent controls	
Appearance					
Wiring diagrams					
Without fixing the control unit in the lower position	138899	138998	138800	138904	
Wiring diagrams					
With the control unit in the lower position	138902	138901	138903		

Technical specifications

Main characteristics		OptiDin KM63
Rated operating voltage, alternating current 50 Hz, Ue, V		230
Rated operating current Ie, A		6
Insulation voltage Ui, V		230
Additional characteristics		
Degree of protection according to GOST 14254		IP20
Durability, cycles	commutation	100 000
	mechanical	250 000
Overcurrent protection: automatic switch of type OptiDin BM63 with type B, on rated current, A		8
Conditional short-circuit current, A		1000
Power consumed by one normally closed contact, not more than, W		3
Conditional thermal current in the open air Ith, A		16
Conditional heat sheath current, Ithe, A		6
Environment execution in accordance with GOST 15150		UHL3
Operating temperature range, ° C		from -60 to +40
Storage temperature range, ° C		from -45 to +50
Weight, g		68

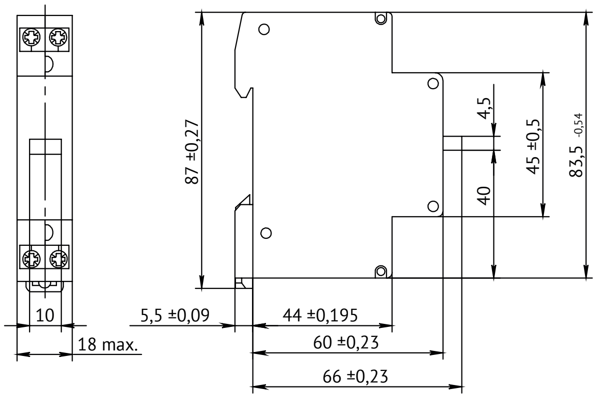
	Button modular with a built-in green indicator light		
			
			
	138906	138905	138907
			
	138909	138908	138910

Wiring

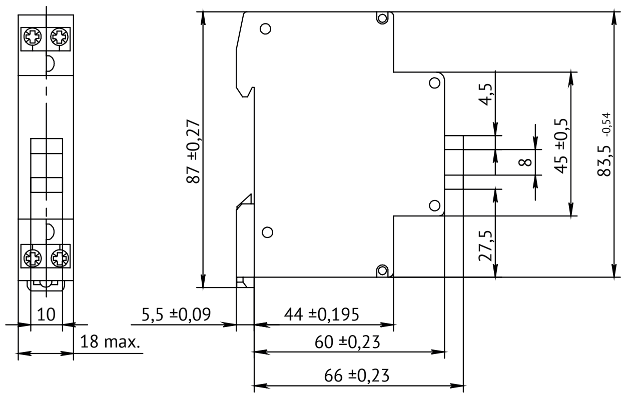
Tightening torque, N/m	Terminal pin clamps			Tightening torque, N/m	Terminals of light indicator outputs		
	Conductor cross-section, mm²				Conductor cross-section, mm²		
	Copper flexible (multicore)	Copper inflexible (multicore and single-core)	Aluminum (multicore and single-core)		Copper flexible (multicore)	Aluminum inflexible (hard)	Aluminum flexible
0,8	1,5 - 6			0,4	0,5 - 4		

Overall dimensions (mm)

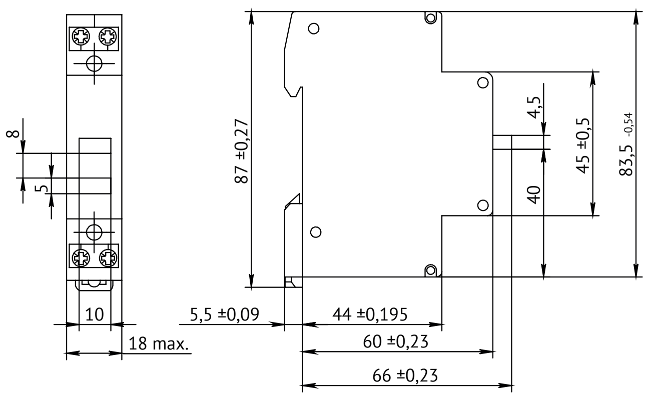
OptiDin KM63-A(AF)



OptiDin KM63-B



OptiDin KM63-C(CF)



OptiDin ZM63 Modular ringers

The electrical modular ringers are designed for use in AC networks with voltages up to 230 V and serve to signal the occurrence of emergency situations (FAULTS) in electrical circuits.

The specified ringers meet the requirements of GOST P 7220-87, GOST P 50030.5.1, TP TC 004/2011.

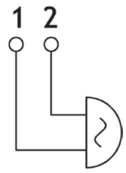
Designation

OptiDin ZM63 - 230 AC - UHL3

1 2 3 4 5

1	**Products range**	OptiDin		
2	**Configuration of the phase indicator**	ZM63		
3	**Rated operational voltage, V**	230	24	12
4	**Current type**	AC		
5	**Symbol of environment and environmental class of location in compliance with the requirements of GOST 15150**	UHL3 (international CT3)		

References (series)

Type	Ringers modular OptiDin ZM63
Schematic circuit diagram	
Rated operating voltage, alternating current 50 Hz, Ue, V	
12	138630
24	138629
230	138627

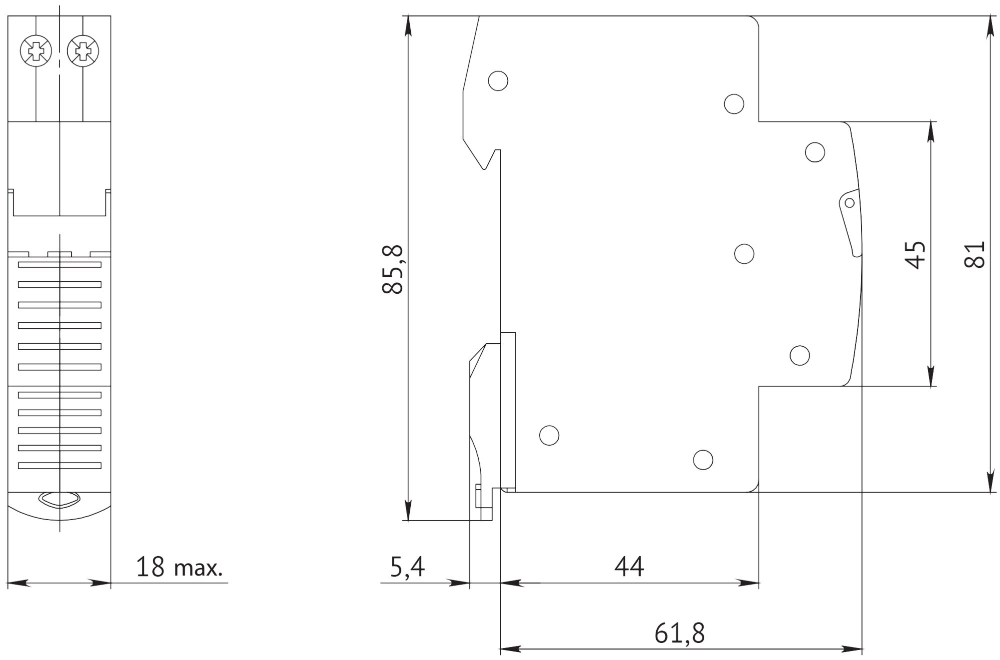
Technical specifications

Parameter title	OptiDin ZM63
Number of poles	single-pole
Rated operating voltage, V	12, 24, 110, 230
Sound volume, not more than, dB	90
Rated operational current Ie, at voltage 230 V, not more, A	0,03
Rated frequency, Hz	50
Degree of protection according to GOST 14254	IP20
Cross-section of the wire connected to the terminal clamps, mm^2	1,5 ÷ 6
Average service life, years	10
Environment and placement category in compliance with the requirements of GOST 15150	UHL3
Operation mode	intermittent
Rated impulse withstand voltage, V	230
Weight, g	100

Wiring

Tightening torque, N/m	Conductor cross-section, mm²	
	Copper flexible (multicore and single-core)	Aluminum (multicore and single-core)
1,5	1,5 - 6	

Overall dimensions (mm)



Time-current characteristics of switches

Dependence of the rated operating currents of the overcurrent releases of automatic circuit breakers OptiDin BM63, OptiDin BM63 DC from ambient temperature.

	Ambient temperature (° C)												
In(A)	-25	-20	-10	0	10	20	**30**	35	40	45	50	55	60
1	1,2	1,2	1,2	1,1	1,09	1,05	**1**	1	0,94	0,94	0,93	0,9	0,89
2	2,4	2,4	2,3	2,2	2,2	2,1	**2**	2	1,9	1,9	1,9	1,8	1,8
3	3,5	3,4	3,3	3,3	3,3	3,2	**3**	2,9	2,8	2,8	2,75	2,7	2,7
4	4,9	4,8	4,7	4,5	4,3	4,2	**4**	3,9	3,9	3,8	3,7	3,6	3,5
5	5,9	5,8	5,7	5,6	5,4	5,2	**5**	4,9	4,8	4,6	4,5	4,3	4,3
6	7,3	7,2	7	6,7	6,54	6,38	**6**	5,82	5,64	5,6	5,6	5,4	5,3
8	9	8,9	8,9	8,8	8,7	8,4	**8**	7,8	7,5	7,4	7,2	7,2	7
10	12	12	12	11	10,9	10,5	**10**	9,6	9,3	9,3	9,2	9	8,9
13	16	16	15	15	14	14	**13**	13	13	12	12	12	12
16	20	19	19	18	17,44	16,8	**16**	15,52	15,04	15	14,8	14	14
20	24	24	23	22	21,8	21	**20**	19,4	18,8	18,5	18,2	18	18
25	31	30	29	28	27,25	26,3	**25**	24,25	23,5	24	23	23	22
32	39	38	37	36	35	33,6	**32**	31	30	30	30	29	28
40	49	48	47	45	43	42	**40**	38,4	36,8	37	36	36	35
50	61	60	58	56	54,5	52,5	**50**	48,5	47	47	46	45	44
63	77	76	73	71	68,7	66,2	**63**	61,1	59,2	60	58	57	56

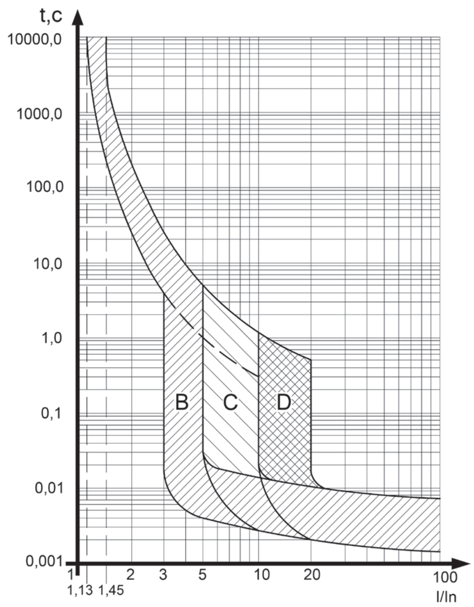
Control temperature + 30 ° C

Time-current characteristics of automatics of switches OptiDin BM63 in accordance with GOST R 50345

Switches with the type B of protection characteristics
The electromagnetic release operates in the range from 3 to 5 In.
Thermal release does not work for 1 hour at a current of 1.13 In and is activated for 1 hour at a current 1.45 In.

Switches with the type of protective characteristic C
The electromagnetic release operates in the range from 5 to 10 In.
Thermal release does not work for 1 hour at a current of 1.13 In and is activated for 1 hour at a current 1.45 In.

Switches with type of protective characteristic D
The electromagnetic release operates in the range from 10 to 20 In.
Thermal release does not work for 1 hour at a current of 1.13 In and is activated for 1 hour at a current 1.45 In.

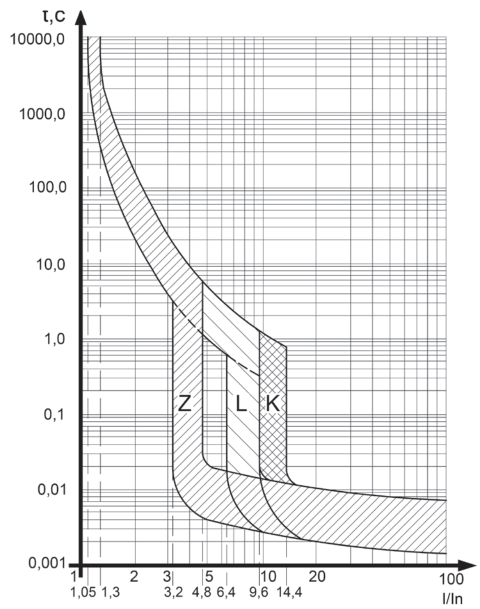


Time-current characteristics of automatic switches OptiDin BM63 in accordance with GOST R 50030.2

Switches with Z type protective characteristics
The electromagnetic release operates in the range from 3.2 In to 4.8 In.
Thermal release does not work for 1 hour at a current of 1.05 In and operates for 1 hour at a current 1.3 In.

Switches with the type of protection characteristics L
The electromagnetic release operates in the range from 6.4 In to 9.6 In.
Thermal release does not work for 1 hour at a current of 1.05 In and operates for 1 hour at a current 1.3 In.

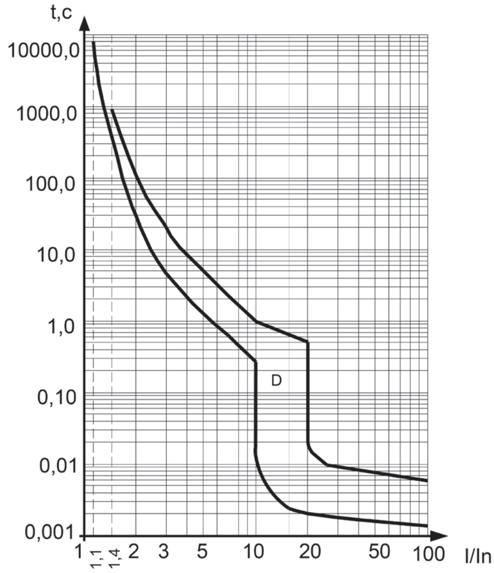
Switches with type of protection characteristics K
The electromagnetic release operates in the range from 9.6 In to 14.4 In.
Thermal release does not work for 1 hour at a current of 1.05 In and operates for 1 hour at a current 1.3 In.



Time-current characteristics of automatic switches OptiDin BM63-OT according to GOST 50345

Switches with with D type of protective characteristics

The electromagnetic release trips in the range from 10 to 20 In. The thermal release does not trip for 1 hour at a current of 1.1 In and is activated for 1 hour at a current of 1.4 In. 05 In and operates for 1 hour at a current of 1.3 In.



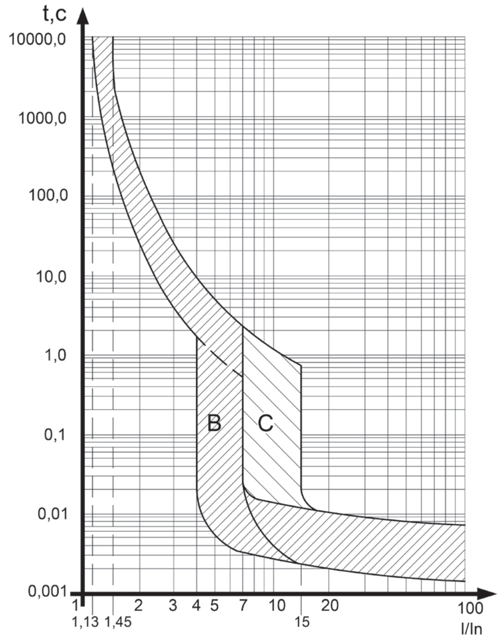
Time-current characteristics of the automatic switch OptiDin BM63 DC according to GOST IEC 60898-2

Switches with the B type of protective characteristics

The electromagnetic release trips in the range from 3 to 5 In. The thermal release does not trip for 1 hour at a current of 1.13 In and is activated for 1 hour at a current of 1.45 In.

Switches with the C type of protective characteristics

The electromagnetic release trips in the range from 5 to 10 In. The thermal release does not trip for 1 hour at a current of 1.13 In and is activated for 1 hour at a current of 1.45 In.



Time-current characteristics of the automatic switch OptiDin BM63 DC according to GOST IEC 60898-2

Switches with Z type of protective characteristics

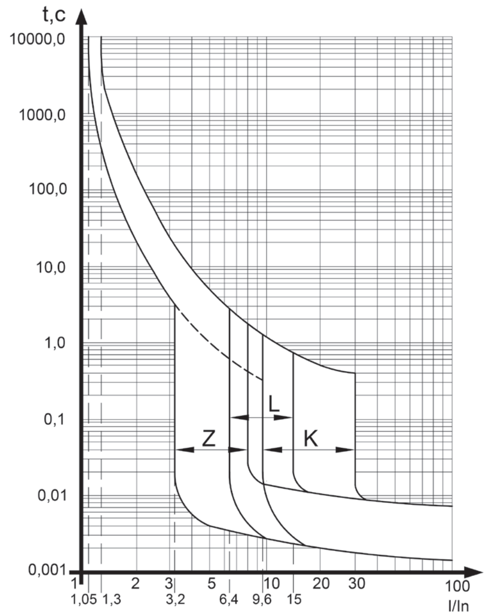
The electromagnetic release trips in the range from 3.2 to 4.8 In. The thermal release does not trip for 1 hour at a current of 1.05 In and is activated for 1 hour at a current of 1.3 In.

Switches with the L type of protective characteristics

The electromagnetic release trips in the range from 6.4 to 9.6 In. The thermal release does not trip for 1 hour at a current of 1.05 In and is activated for 1 hour at a current of 1.3 In.

Switches with K type of protective characteristics

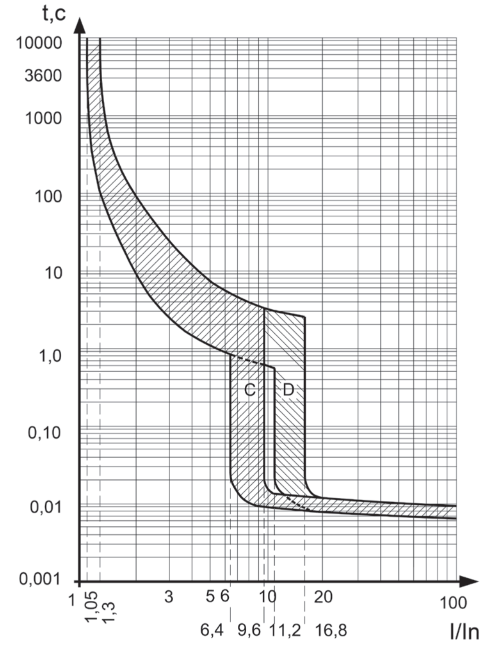
The electromagnetic release trips in the range from 9.6 to 14.4 In.
The thermal release does not trip for 1 hour at a current of 1.05 In and is activated for 1 hour at a current of 1.3 In.



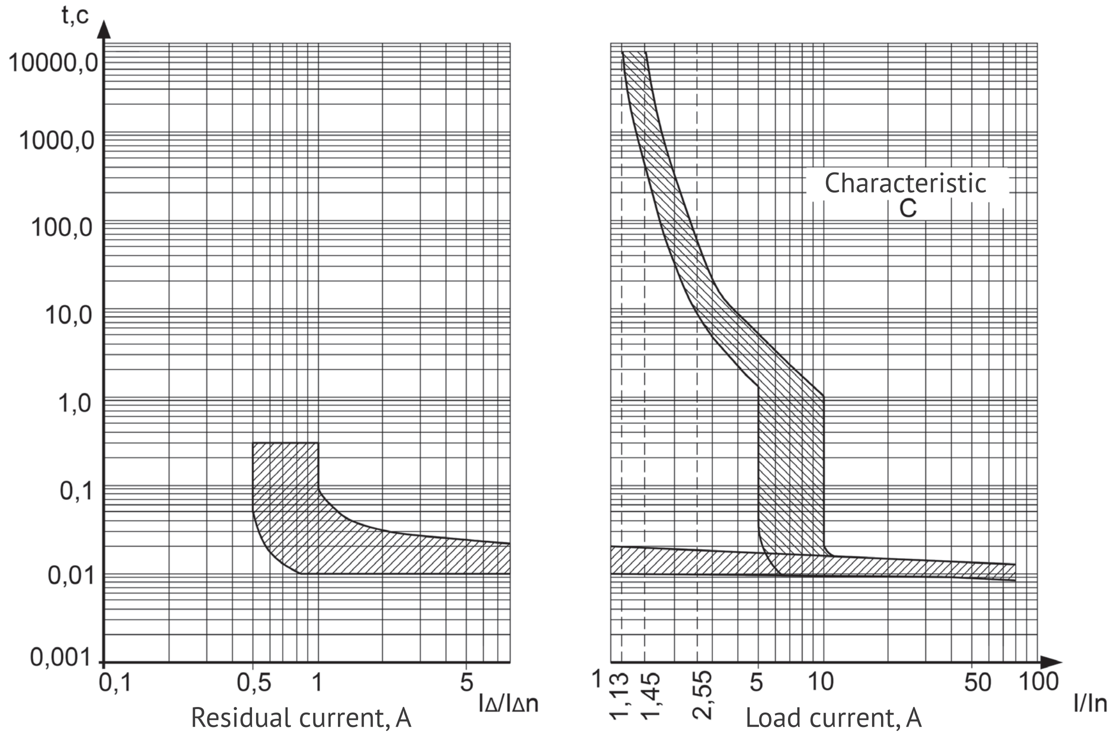
Time-current characteristics of automatic switches OptiDin BM125 in accordance with GOST R 50030.2

Switches with the C type of protective characteristics
The electromagnetic release trips in the range from 5 to 10 In. The thermal release does not trip for 2 hours at a current of 1.05 In and is activated for 2 hours at a current of 1.3 In.

Switches with D type of protective characteristics
The electromagnetic release trips in the range from 10 In to 20 In.
The thermal release does not trip for 2 hours at a current of 1.05 In and is activated for 2 hours at a current of 1.3 In.



Time-current characteristics of automatic RCBOs OptiDin D63 and OptiDin VD63 GOST IEC 61009-1



a) b)

a) Trip characteristic and time threshold values for residual current tripping.

b) Protection characteristic in the conditions of action of overcurrents at a reference temperature plus 30º + 5ºC, from a cold position, when current is directed through all protected poles of the RCBO.