OptiDin
Din-rail devices

OptiDin series of din-rail devices are used for power protection and distribution systems in all main industries. Proposed devices may have approvals of the Russian Shipping Register (RSR), Russian Marine and River Shipping Register (RMRS), as well as the nuclear power plant licensing.

Miniature circuit breakers

OptiDin BM63 7

In (A):
1 to 63
I (set.): B; C; D;
Z (4In); L (8In);
K (12In)
Icn, Icu (kA):
4,5; 6; 10; 15;
20; 25

OptiDin BM63 DC 16

In (A):
1 to 50
I (set.): B; C;
Z; L; K
Icn, Icu (kA): 6
Normal and
reverse polarity

OptiDin BM125 20

In (A):
80 to 125
I (set.): C; D
Icu (kA): 15; 20

Load breakers

OptiDin BM63P, BM63PL 26

In (A):
20 to 125
Ue (B):
AC — 230; 400;
230/400
General wear
resistance: to
14,000

Residual current devices

OptiDin DM63 32

In (A):
25 to 100
Icn (kA): 4,5; 6
Type: A; AC
Residual current
IΔn (mA): 10; 30;
100; 300
Type:
electromechanical

OptiDin D63 40

In (A):
6 to 40
Icn (kA): 4,5; 6
Type: A; AC
I (set.): C
Residual current
IΔn (mA): 10; 30;
100; 300

OptiDin VD63 46

In (A):
6 to 63
Icn (kA): 6; 10
Type: A
I (set.): B; C; D
Residual current
IΔn (mA): 10; 30;
100; 300

Accessories

SPD

OptiDin OM 48

Protection types:
I; II; III
Imp. current Iimp
(10/350) (кА),
7 to 100
Max. discharge
current Imax
(8/20) (kA),
7 to 80

Modular contactors

OptiDin MK-100 59

In (A):
20 to 100
Type and
voltage of
control coil (B):
24; 48; 110;
230 AC

Modular command and signaling devices

OptiDin SL63 70

Ue (B):
AC — from 24
to 230;
DC — from 24
to 48
Operating
temperature
range:
-60 to +40 °C

OptiDin FSL63 70

Ue (B):
AC — from 24
to 230
Operating
temperature
range:
-60 to +40 °C

OptiDin KM63 72

Ue (B):
AC — 230
Operating
temperature
range:
-60 to +40 °C

OptiDin ZM63 74

Ue (B):
AC — from 12
to 230
High sound
volume, dB:
80 – 95

OptiDin

↗ Miniature circuit breakers

▸ Selection guide

Miniature circuit breakers										
Type		BM63 4,5kA	BM63		BM63-OT	BM63 DC		BM125		
Appearance										
Standards		GOST IEC 60898-1	GOST IEC 60898-1	GOST P 50030.2	GOST IEC 60898-1	GOST IEC 60898-2	GOST P 50030.2	GOST IEC 60947-2		
Number of poles		1P, 2P, 3P, 4P	1P, 1P+N, 2P, 3P, 3P+N, 4P		1P, 3P	1P, 2P, 3P, 4P		1P, 1P+N, 2P, 3P, 3P+N, 4P		
Auxiliary devices for remote tripping and signaling		no	yes		yes	yes		yes		
Electrical specifications										
Protective characteristic type		B, C	B, C, D	Z, L, K	D	B, C	Z, L, K	C, D		
Rated current In, A		6–63	1–63		6–63	1–50	1–50	80, 100, 125		
Rated operating voltage in 50 Hz AC circuit Ue, V	single-pole	230/400	230/400		230/400	-		230/400		
	double-pole	230	230		230	-		230		
	three-pole, four-pole	400	400		400	-		400		
Rated operating voltage in DC circuit Ue, V	single-pole	-	-		-	220		-		
	double-pole	-	110		-	440		-		
	three-pole	-	-		-	660		-		
	four-pole	-	-		-	880		-		
Minimum operating voltage Ue, V (min.)		24	24		24	24		24		
Rated impulse voltage Uimp, kV		4	4		4	4		4		
Tripping current										
Rated short-circuit tripping capacity in 50 Hz AC circuits Icn, A		4500	6000, 10000, 15000, 20000, 25000		6000	-		15000*, 20000**		
Rated short-circuit breaking capacity in DC circuits Icn, A		-	1500***		-	6000		-		
Other specifications										
Fault trip indication		yes	yes		yes	yes				
IP rating		IP20	IP20		IP20	IP20		IP20		
For more information, see page		12	14		18	19		21		
Accessories		-	page 23–25							

* For parameter C at 125 A and D at 100 A
** For characteristic C at 80 and 100 A and D at 80 A
*** It is allowed to use double-pole AC circuit breakers in a DC circuit with voltage up to 110 V, while the rated maximum breaking capacity (Icn) shall be 1,500 A.

OptiDin BM63 Miniature circuit breakers

Miniature circuit breakers are designed to protect electrical installations from overcurrent and short circuits, as well as for infrequent manual circuit switching on/off.

KEAZ DC and AC miniature circuit breakers are devices for a wide range of applications: from use in solutions for construction, industrial facilities, construction of elite residential facilities, shopping centers and cottages to applications in power systems of nuclear power plants, thermal power plants, ships and submarines of the Ministry of Defense of the Russian Federation.

The wide range of accessories makes the use of KEAZ Miniature circuit breakers a convenient choice for any solution.

Designation

OptiDin BM63 - 1 N C 16 - 10 - DC - RP - UHL3 REG - RR

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

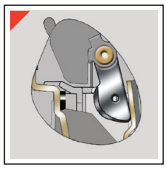
1	Series	OptiDin					
2	Configuration	BM63					
3	Number of poles	1P	1P+N	2P	3P	3P+N	4P
4	Pole with no release device	N					
5	Protective characteristic designation	B	C	D	Z	L	K
6	Rated current value of thermal release, A	1, 2, 3, 4, 5, 6, 8, 10, 13, 16, 20, 25, 32, 40, 50, 63					
7	Tripping capacity value, kA	10, 15, 20, 25					
8	Designation of DC circuit breakers	DC					
9	Designation of reverse polarity for DC circuit breakers	RP					
10	Designation of climatic category and placement category as per GOST 15150	UHL3 (international TC3), OM4 (international UM4)					
11	Acceptance by the Sea and River Shipping Register	REG					
12	Design versions for deliveries to railway infrastructure facilities	RR					

OptiDin BM63 4,5 kA Miniature AC circuit breakers up to 63 A

OptiDin BM63 circuit breakers are designed to protect electrical circuits from overcurrent and short circuit currents, conduction of current in normal duty and operational on/off switching of these circuits.

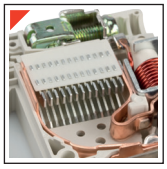
The circuit breakers comply with the requirements of GOST IEC 60898-1 (domestic AC), TR TS 004/2011.

Series advantages



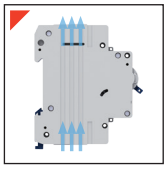
Silver-containing soldering on the fixed contact to increase wear resistance and reduce the contact resistance value.

The QR code helps obtain detailed information about the product, full specifications, and related documentation on the official website.



13 plates in the arc quenching chamber effectively quench arcs and ensure safe shutdown in emergencies.

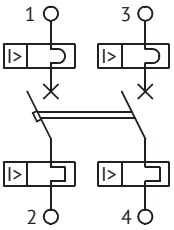
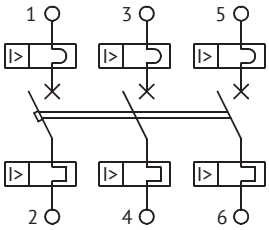
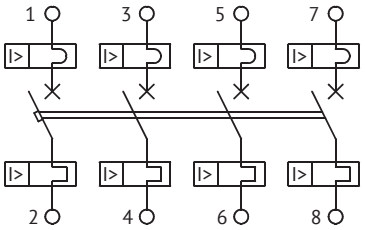
The barcode provides quick identification of the device for sales in retail trade networks, as well as on online trading platforms.



Better cooling due to shaped recesses on the housing.

Special design of the lead terminals provides: the tightest and largest contact area to prevent heating and melting of conductors.

Items

OptiDin BM63 Circuit breaker (Icu = 4500 A)								
Number of poles	1		2		3		4	
Circuit diagrams								
Rated current In, A	Protective characteristic type		Protective characteristic type		Protective characteristic type		Protective characteristic type	
	C	B	C	B	C	B	C	B
6	326792	329499	326801	329508	326810	329517	326819	329526
10	326793	329500	326802	329509	326811	329518	326820	329527
16	326794	329501	326803	329510	326812	329519	326821	329528
20	326795	329502	326804	329511	326813	329520	326822	329529
25	326796	329503	326805	329512	326814	329521	326823	329530
32	326797	329504	326806	329513	326815	329522	326824	329531
40	326798	329505	326807	329514	326816	329523	326825	329532
50	326799	329506	326808	329515	326817	329524	326826	329533
63	326800	329507	326809	329516	326818	329525	326827	329534

Technical specification

Parameter		Value
Number of poles		1, 2, 3, 4
Overcurrent protection		all poles
Rated operating voltage in 50 Hz AC circuit, V	single-pole	230/400
	double-pole	230
	three-pole, four-pole	400
Minimum operating voltage, V		24
Rated operating current in AC circuit, A		6; 10; 16; 20; 25; 32; 40; 50; 63
Protective characteristic type		B, C
Rated ultimate short-circuit tripping capacity Icu, A		4500
General wear resistance of circuit breakers, cycles		10000
Switching wear resistance, cycles		5000
Protection class as per GOST 14254		IP20
Cross-section of wire connected to lead terminals, mm²		1÷25
Climatic category and placement category as per GOST 15150		UHL3 (international TC3)
Operation mode		continuous

Connection

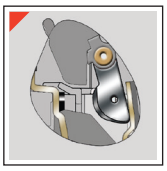
Rated current In, A	Tightening torque, N/m	Without preparation of current conductor core, mm²			With preparation of current conductor core, mm²	
		Flexible copper (multicore)	Rigid copper (multicore and singlecore)	Aluminum (multicore and singlecore)	Flexible copper multicore	Flexible and rigid aluminum
6–63	2	1–10	1–16	1–10	25	16–25

OptiDin BM63 6 kA Miniature AC circuit breakers up to 63 A

OptiDin BM63 circuit breakers are designed to protect electrical circuits from overcurrent and short circuit currents, conduction of current in normal duty and operational on/off switching of these circuits.

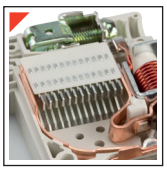
The products comply with the requirements of GOST IEC 60898-1 (domestic AC) and GOST R 50030.2 (industrial purpose), TR TS 004/2011 and are manufactured as per TU 3421040057581092009.

Series advantages



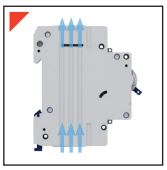
Silver-containing soldering on the moving and fixed contact to increase wear resistance and reduce the contact resistance value.

Accessories snap on to the left side of the circuit breaker, ensuring a fast, secure one-click highprecision connection.



13 plates in the arc quenching chamber effectively quench arcs and ensure safe shutdown in emergencies.

The handle can be locked out to prevent unauthorized switching on/off.



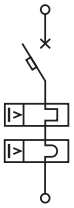
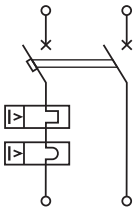
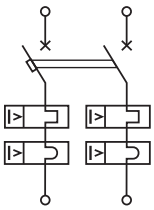
Better cooling due to shaped recesses on the housing.

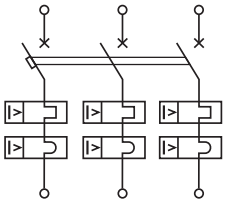
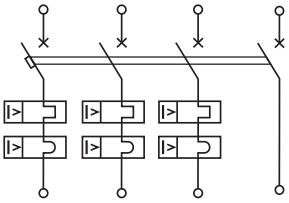
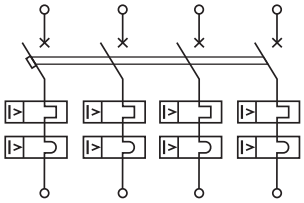
Special design of the lead terminals provides: the tightest and largest contact area to prevent heating and melting of conductors.

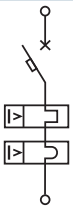
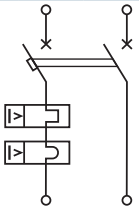
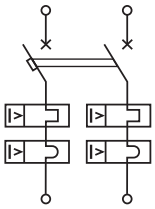
The barcode provides quick identification of the device for sales in retail trade networks, as well as on online trading platforms.

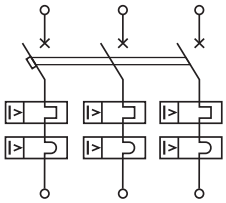
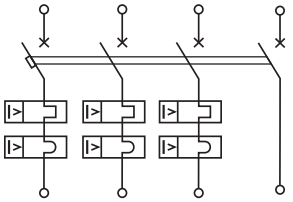
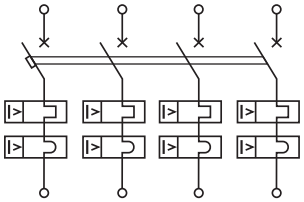
The QR code helps obtain detailed information about the product, full specifications, and related documentation on the official website.

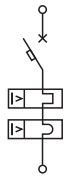
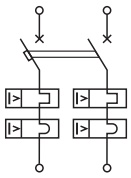
Items

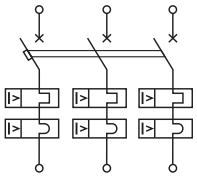
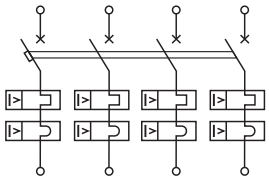
OptiDin BM63 circuit breaker (Icu = 6000 A)																		
Number of poles	1						1+N						2					
Circuit diagrams																		
Rated current In, A	Protective characteristic type						Protective characteristic type						Protective characteristic type					
	B	C	D	Z	L	K	B	C	D	Z	L	K	B	C	D	Z	L	K
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	page 23–25																	

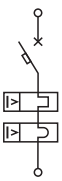
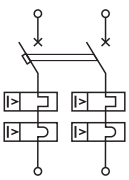
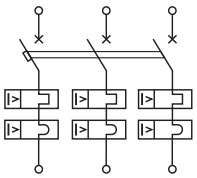
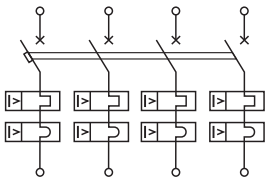
OptiDin BM63 circuit breaker (Icu = 6000 A)																		
Number of poles	3						3+N						4					
Circuit diagrams																		
Rated current In, A	Protective characteristic type						Protective characteristic type						Protective characteristic type					
	B	C	D	Z	L	K	B	C	D	Z	L	K	B	C	D	Z	L	K
1	260776	260792	260808	260856	260840	260824	260952	260968	260984	261032	261016	261000	260872	260888	260904	261048	260936	260920
2	260779	260795	260811	260859	260843	260827	260955	260971	260987	261035	261019	261003	260875	260891	260907	261051	260939	260923
3	260781	260797	260813	260861	260845	260829	260957	260973	260989	261037	261021	261005	260877	260893	260909	261053	260941	260925
4	260783	260799	260815	260863	260847	260831	260959	260975	260991	261039	261023	261007	260879	260895	260911	261055	260943	260927
5	260785	260801	260817	260865	260849	260833	260961	260977	260993	261041	261025	261009	260881	260897	260913	261057	260945	260929
6	260787	260803	260819	260867	260851	260835	260963	260979	260995	261043	261027	261011	260883	260899	260915	261059	260947	260931
8	260788	260804	260820	260868	260852	260836	260964	260980	260996	261044	261028	261012	260884	260900	260916	261060	260948	260932
10	260773	260789	260805	260853	260837	260821	260949	260965	260981	261029	261013	260997	260869	260885	260901	261045	260933	260917
13	260774	260790	260806	260854	260838	260822	260950	260966	260982	261030	261014	260998	260870	260886	260902	261046	260934	260918
16	260775	260791	260807	260855	260839	260823	260951	260967	260983	261031	261015	260999	260871	260887	260903	261047	260935	260919
20	260777	260793	260809	260857	260841	260825	260953	260969	260985	261033	261017	261001	260873	260889	260905	261049	260937	260921
25	260778	260794	260810	260858	260842	260826	260954	260970	260986	261034	261018	261002	260874	260890	260906	261050	260938	260922
32	260780	260796	260812	260860	260844	260828	260956	260972	260988	261036	261020	261004	260876	260892	260908	261052	260940	260924
40	260782	260798	260814	260862	260846	260830	260958	260974	260990	261038	261022	261006	260878	260894	260910	261054	260942	260926
50	260784	260800	260816	260864	260848	260832	260960	260976	260992	261040	261024	261008	260880	260896	260912	261056	260944	260928
63	260786	260802	260818	260866	260850	260834	260962	260978	260994	261042	261026	261010	260882	260898	260914	261058	260946	260930
Accessories	page 23–25																	

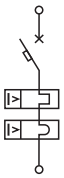
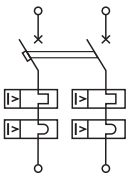
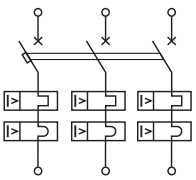
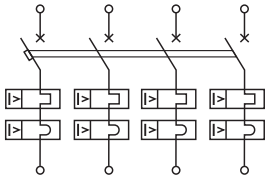
OptiDin BM63 circuit breaker (Icu = 10000 A)																		
Number of poles	1						1+N						2					
Circuit diagrams																		
Rated current In, A	Protective characteristic type						Protective characteristic type						Protective characteristic type					
	B	C	D	Z	L	K	B	C	D	Z	L	K	B	C	D	Z	L	K
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	-	262716	262732	-	262581	262595	262610	262626	262642	262657
40	262518	262522	-	262551	260202	-	262674	262688	-	262717	262733	-	262582	262596	-	262627	262643	-
50	262519	262523	-	262552	260203	-	262675	262689	-	262718	262734	-	262583	262597	-	262628	262644	-
63	262520	262524	-	262553	260204	-	262676	260237	-	262719	262735	-	262584	260222	-	262629	260207	-
Accessories	page 23–25																	

OptiDin BM63 circuit breaker (Icu = 10000 A)																		
Number of poles	3						3+N						4					
Circuit diagrams																		
Rated current In, A	Protective characteristic type						Protective characteristic type						Protective characteristic 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	-	262976	262992	-	262842	262858	262873	262889	262904	262919
40	262765	249192	-	262798	262814	-	262935	262948	-	262977	262993	-	262843	262859	-	262890	262905	-
50	262766	249164	-	262799	262815	-	262936	262949	-	262978	262994	-	262844	262860	-	262891	262906	-
63	262767	249163	-	262800	262816	-	262937	260221	-	262979	260208	-	262845	260224	-	260218	260216	-
Accessories	page 23–25																	

OptiDin BM63 circuit breaker (Icu=15000 A)												
Number of poles	1						2					
Circuit diagrams												
Rated current In, A	Protective characteristic type						Protective characteristic type					
	B	C	D	Z	L	K	B	C	D	Z	L	K
1	342171	341872	341885	-	-	-	341898	341911	341924	-	-	-
2	341860	341873	341886	-	-	-	341899	341912	341925	-	-	-
3	341861	341874	341887	-	-	-	341900	341913	341926	-	-	-
4	341862	341875	341888	-	-	-	341901	341914	341927	-	-	-
5	341863	341876	341889	-	-	-	341902	341915	341928	-	-	-
6	341864	341877	341890	-	-	-	341903	341916	341929	-	-	-
8	341865	341878	341891	-	-	-	341904	341917	341930	-	-	-
10	341866	341879	341892	-	-	-	341905	341918	341931	-	-	-
13	341867	341880	341893	-	-	-	341906	341919	341932	-	-	-
16	341868	341881	341894	-	-	-	341907	341920	341933	-	-	-
20	341869	341882	341895	-	-	-	341908	341921	341934	-	-	-
25	341870	341883	341896	-	-	-	341909	341922	341935	-	-	-
32	341871	341884	341897	342027	342040	342053	341910	341923	341936	342066	342079	342092
Accessories	page 23–25											

OptiDin BM63 circuit breaker (Icu=15000 A)												
Number of poles	3						4					
Circuit diagrams												
Rated current In, A	Protective characteristic type						Protective characteristic type					
	B	C	D	Z	L	K	B	C	D	Z	L	K
1	341937	341950	341963	-	-	-	341976	341989	342002	-	-	-
2	341938	341951	341964	-	-	-	341977	341990	342003	-	-	-
3	341939	341952	341965	-	-	-	341978	341991	342004	-	-	-
4	341940	341953	341966	-	-	-	341979	341992	342005	-	-	-
5	341941	341954	341967	-	-	-	341980	341993	342006	-	-	-
6	341942	341955	341968	-	-	-	341981	341994	342007	-	-	-
8	341943	341956	341969	-	-	-	341982	341995	342008	-	-	-
10	341944	341957	341970	-	-	-	341983	341996	342009	-	-	-
13	341945	341958	341971	-	-	-	341984	341997	342010	-	-	-
16	341946	341959	341972	-	-	-	341985	341998	342011	-	-	-
20	341947	341960	341973	-	-	-	341986	341999	342012	-	-	-
25	341948	341961	341974	-	-	-	341987	342000	342013	-	-	-
32	341949	341962	341975	342105	342118	342131	341988	342001	342014	342144	342157	342170
Accessories	page 23–25											

OptiDin BM63 circuit breaker (Icu=20000 A)												
Number of poles	1			2			3			4		
Circuit diagrams												
Rated current In, A	Protective characteristic type			Protective characteristic type			Protective characteristic type			Protective characteristic type		
	Z	L	K	Z	L	K	Z	L	K	Z	L	K
20	342025	342038	342051	342064	342077	342090	342103	342116	342129	342142	342155	342168
25	342026	342039	342052	342065	342078	342091	342104	342117	342130	342143	342156	342169
Accessories	page 23–25											

OptiDin BM63 circuit breaker (Icu=25000 A)												
Number of poles	1			2			3			4		
Circuit diagrams												
Rated current In, A	Protective characteristic type			Protective characteristic type			Protective characteristic type			Protective characteristic type		
	Z	L	K	Z	L	K	Z	L	K	Z	L	K
1	342015	342028	342041	342054	342067	342080	342093	342106	342119	342132	342145	342158
2	342016	342029	342042	342055	342068	342081	342094	342107	342120	342133	342146	342159
3	342017	342030	342043	342056	342069	342082	342095	342108	342121	342134	342147	342160
4	342018	342031	342044	342057	342070	342083	342096	342109	342122	342135	342148	342161
5	342019	342032	342045	342058	342071	342084	342097	342110	342123	342136	342149	342162
6	342020	342033	342046	342059	342072	342085	342098	342111	342124	342137	342150	342163
8	342021	342034	342047	342060	342073	342086	342099	342112	342125	342138	342151	342164
10	342022	342035	342048	342061	342074	342087	342100	342113	342126	342139	342152	342165
13	342023	342036	342049	342062	342075	342088	342101	342114	342127	342140	342153	342166
16	342024	342037	342050	342063	342076	342089	342102	342115	342128	342141	342154	342167
Accessories	page 23–25											

Technical specification

Basic specifications		
As per GOST IEC 60898-1, GOST R 50030.2		
Pollution rating		3
Rated impulse voltage Uimp, V		4000
Test temperature, °C		+30
Protective characteristic type	B	3In to 5In
	C	5In to 10In
	D	10In to 20In
	Z	3,2In to 4,8In
	L	6,4In to 9,6In
	K	9,6In to 14,4In
Application category		A
Energy limiting class		3
Additional specifications		
Protection class as per GOST 14254		IP20
Silver content, g/pole		0,0595
CB wear resistance, cycles	switching	4000
	general	10000
Overvoltage category		IV
Operating temperature range, °C		-60 to +40
Storage temperature range, °C		-65 to +50
Weight, g		
Number of poles	1P	125
	1P+N	260
	2P	225
	3P	390
	3P+N	530
	4P	490

Accessories suitable for OptiDin BM63

Snap-on accessories for miniature circuit breakers			
Code	Name	Code	Name
249158	OptiDin BM63-MSSK 2	249184	OptiDin BM63-NR230
249189	OptiDin BM63-MSK 1	249177	OptiDin BM63-NR24
249197	OptiDin BM63-MSK 2	333065	OptiDin BM63-RMMN

WARNING!!! Snap-on accessories can be attached only to the line of OptiDin BM63 6 kA...25 kA miniature circuit breakers, the line of OptiDin VD63, OptiDin D63 6 kA residual current devices, load breakers OptiDin BM63P and current limiters OptiDin BM63-OT.

Connection

Rated current In, A	Tightening torque, N/m	Without preparation of current conductor core, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multicore)	Rigid copper (multicore and single-core)	Aluminum (multicore and single-core)	Flexible copper (multicore)	Flexible aluminum	Rigid aluminum
1–63	2	1,5–10	1,5–16	2,5–10	25	16	25

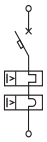
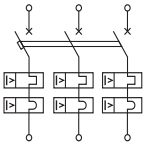
For overall dimensions, see p. 22

OptiDin BM63-OT Modular current limiters up to 63 A

OptiDin BM63-OT current limiters are designed for use in electrical circuits with voltage up to 400 V AC, frequency 50 Hz to protect such circuits against overcurrent and short circuits, to limit withdrawal of the pre-set maximum power during operation of electrical devices for domestic and industrial purposes, and to conduct current in normal duty and operational on-off switching (up to 30 times a day) modes.

The limiters comply with the requirements of GOST IEC 60898-1, TR TS 004/2011 and are manufactured as per TS 3421-040-05758109-2009.

Items

OptiDin BM63-OT		
Rated voltage Un, V	230	400
Number of poles	1P	3P
Circuit diagrams		
Rated current In, A	Protective characteristic type	Protective characteristic 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
Accessories	page 23–25	

Technical specification

Basic specifications		
As per GOST IEC 60898-1		
Rated limit short-circuit tripping capacity Icn, A		6000
Pollution rating		3
Rated impulse voltage Uimp, V		4000
Test temperature, °C		+30
Protective characteristic type	D	10In to 20In
Application category		A
Energy limiting class		3
Additional specifications		
Protection class as per GOST 14254		IP20
Silver content, g/pole		0,0595
CB wear resistance, cycles	switching	10000
	mechanical	20000
Overvoltage category		IV
Operating temperature range, °C		-60 to +40
Storage temperature range, °C		-65 to +50
Weight, g		
Number of poles	1P	125
	3P	375

Connection

Rated current In, A	Tightening ptorque, N/m	Without preparation of current conductor core, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multicore)	Rigid copper (multicore and single-core)	Aluminum (multicore and single-core)	Flexible copper (multicore)	Flexible aluminum	Rigid aluminum
1–63	2	1,5–10	1,5–16	2,5–10	25	16	25

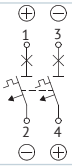
For overall dimensions, see p. 22

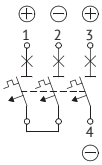
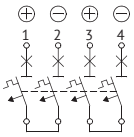
OptiDin BM63 DC Miniature DC circuit breakers up to 50 A

OptiDin BM63 DC circuit breakers are designed to protect DC electrical circuits from overcurrent and short circuit currents, to conduct current in normal duty and operational on-off switching modes of these circuits.

The circuit breakers comply with the requirements of GOST IEC 60898-2 (direct current), GOST R 50030.2 (industrial application), TR TS 004/2011 and are manufactured as per TS 3421-040-05758109-2009, TS 3421--040-05758109-2009D.

Items

OptiDin BM63 DC										
Rated voltage Un, V	220					440				
Number of poles	1P					2P				
Circuit diagrams										
Rated current In, A	Protective characteristic type					Protective characteristic 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	page 23–25									

OptiDin BM63 DC										
Rated voltage Un, V	660					880				
Number of poles	3P					4P				
Circuit diagrams										
Rated current In, A	Protective characteristic type					Protective characteristic type				
	B	C	Z	L	K	B	C	Z	L	K
1	337987	338002	338048	338033	338017	338063	338078	338123	338108	338093
2	337990	338005	338051	338036	338020	338066	338081	338126	338111	338096
3	337992	338007	338053	338038	338022	338068	338083	338128	338113	338098
4	337994	338009	338055	338040	338024	338070	338085	338130	338115	338100
5	337996	338011	338057	338042	338027	338072	338087	338132	338117	338102
6	337997	338012	338058	338043	338028	338073	338088	338133	338118	338103
8	337998	338013	338059	338044	338029	338074	338089	338134	338119	338104
10	337984	337999	338045	338030	338014	338060	338075	338120	338105	338090
13	337985	338000	338046	338031	338015	338061	338076	338121	338106	338091
16	337986	338001	338047	338032	338016	338062	338077	338122	338107	338092
20	337988	338003	338049	338034	338018	338064	338079	338124	338109	338094
25	337989	338004	338050	338035	338019	338065	338080	338125	338110	338095
32	337991	338006	338052	338037	338021	338067	338082	338127	338112	338097
40	337993	338008	338054	338039	338023	338069	338084	338129	338114	338099
50	337995	338010	338056	338041	338025	338071	338086	338131	338116	338101
Accessories	page 23–25									

Technical specification

Basic specifications		
As per GOST IEC 60898-2, GOST R 50030.2		
Pollution rating		3
Rated impulse voltage Uimp, V		4000
Test temperature, °C		+30 °C
Protective characteristic type	B	4In to 7In
	C	7In to 15In
	Z	3,2In to 8In
	L	6,4In to 15In
	K	9,6In to 30In
Application category		A
Energy limiting class		3
Additional specifications		
Protection class as per GOST 14254		IP20
Silver content, g/pole		0,0595
CB wear resistance B, C, cycles	switching	1000
	general	10000
CB wear resistance Z, L, K, cycles	switching	1500
	general	10000
Overvoltage category		IV
Operating temperature range, °C		-60 to +40
Storage temperature range, °C		-65 to +50
Weight, g		
Number of poles	1P	125
	2P	250
	3P	375
	4P	500

Accessories suitable for OptiDin BM63

Snap-on accessories for miniature circuit breakers	
Code	Name
249158	OptiDin BM63-MSSK 2
249189	OptiDin BM63-MSK 1
249197	OptiDin BM63-MSK 2
249184	OptiDin BM63-NR230
249177	OptiDin BM63-NR24
333065	OptiDin BM63-RMMN

WARNING!!! Snap-on accessories can be attached only to the line of OptiDin BM63 6 kA...25 kA miniature circuit breakers, the line of OptiDin VD63, OptiDin D63 6 kA residual current devices, load breakers OptiDin BM63P and current limiters OptiDin BM63-OT.

Connection

Rated current In, A	Tightening ptorque, N/m	Without preparation of current conductor core, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multicore)	Rigid copper (multicore and single-core)	Aluminum (multicore and single-core)	Flexible copper (multicore)	Flexible aluminum	Rigid aluminum
1–50	2	1,5–10	1,5–16	2,5–10	25	16	25

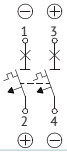
For overall dimensions, see p. 22

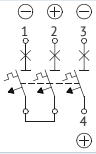
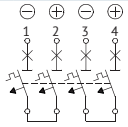
OptiDin BM63 DC RP Miniature DC Circuit Breakers up to 50 A

OptiDin BM63 DC RP circuit breakers are designed to protect DC electrical circuits from overcurrent and short circuit currents, to conduct current in normal duty and operational on-off switching modes of these circuits. This design version of the circuit breakers is made with reversed poles to enable the bottom connection of the mains.

The circuit breakers comply with the requirements of GOST IEC 60898-2 (direct current), GOST R 50030.2 (industrial application), TR TS 004/2011 and are manufactured as per TU 3421040057581092009, TU 3421-040057581092009D.

Items

OptiDin BM63 DC RP										
Rated voltage Un, V	220					440				
Number of poles	1P					2P				
Circuit diagrams										
Rated current In, A	Protective characteristic type					Protective characteristic type				
	B	C	Z	L	K	B	C	Z	L	K
1	339174	339189	339234	339219	339204	339249	339264	339309	339294	339279
2	339177	339192	339237	339222	339207	339252	339267	339312	339297	339282
3	339179	339194	339239	339224	339209	339254	339269	339314	339299	339284
4	339181	339196	339241	339226	339211	339256	339271	339316	339301	339286
5	339183	339198	339243	339228	339213	339258	339273	339318	339303	339288
6	339184	339199	339244	339229	339214	339259	339274	339319	339304	339289
8	339185	339200	339245	339230	339215	339260	339275	339320	339305	339290
10	339171	339186	339231	339216	339201	339246	339261	339306	339291	339276
13	339172	339187	339232	339217	339202	339247	339262	339307	339292	339277
16	339173	339188	339233	339218	339203	339248	339263	339308	339293	339278
20	339175	339190	339235	339220	339205	339250	339265	339310	339295	339280
25	339176	339191	339236	339221	339206	339251	339266	339311	339296	339281
32	339178	339193	339238	339223	339208	339253	339268	339313	339298	339283
40	339180	339195	339240	339225	339210	339255	339270	339315	339300	339285
50	339182	339197	339242	339227	339212	339257	339272	339317	339302	339287
Accessories	page 23–25									

OptiDin BM63 DC RP										
Rated voltage Un, V	660					880				
Number of poles	3P					4P				
Circuit diagrams										
Rated current In, A	Protective characteristic type					Protective characteristic type				
	B	C	Z	L	K	B	C	Z	L	K
1	339324	339339	339384	339369	339354	339399	339414	339459	339444	339429
2	339327	339342	339387	339372	339357	339402	339417	339462	339447	339432
3	339329	339344	339389	339374	339359	339404	339419	339464	339449	339434
4	339331	339346	339391	339376	339361	339406	339421	339466	339451	339436
5	339333	339348	339393	339378	339363	339408	339423	339468	339453	339438
6	339334	339349	339394	339379	339364	339409	339424	339469	339454	339439
8	339335	339350	339395	339380	339365	339410	339425	339470	339455	339440
10	339321	339336	339381	339366	339351	339396	339411	339456	339441	339426
13	339322	339337	339382	339367	339352	339397	339412	339457	339442	339427
16	339323	339338	339383	339368	339353	339398	339413	339458	339443	339428
20	339325	339340	339385	339370	339355	339400	339415	339460	339445	339430
25	339326	339341	339386	339371	339356	339401	339416	339461	339446	339431
32	339328	339343	339388	339373	339358	339403	339418	339463	339448	339433
40	339330	339345	339390	339375	339360	339405	339420	339465	339450	339435
50	339332	339347	339392	339377	339362	339407	339422	339467	339452	339437
Accessories	page 23–25									

Technical specification

Basic specifications		
As per GOST IEC 60898-2, GOST R 50030.2		
Pollution rating		3
Rated impulse voltage Uimp, V		4000
Test temperature, °C		+30 °C
Protective characteristic type	B	4In to 7In
	C	7In to 15In
	Z	3,2In to 8In
	L	6,4In to 15In
	K	9,6In to 30In
Application category		A
Energy limiting class		3
Additional specifications		
Protection class as per GOST 14254		IP20
Silver content, g/pole		0,0595
CB wear resistance B, C, cycles	switching	1000
	general	10000
CB wear resistance Z, L, K, cycles	switching	1500
	general	10000
Overvoltage category		IV
Operating temperature range, °C		-60 to +40
Storage temperature range, °C		-65 to +50
Weight, g		
Number of poles	1P	125
	2P	250
	3P	375
	4P	500

Accessories suitable for OptiDin BM63

Snap-on accessories for miniature circuit breakers	
Code	Name
249158	OptiDin BM63-MSSK 2
249189	OptiDin BM63-MSK 1
249197	OptiDin BM63-MSK 2
249184	OptiDin BM63-NR230
249177	OptiDin BM63-NR24
333065	OptiDin BM63-RMMN

WARNING!!! Snap-on accessories can be attached only to the line of OptiDin BM63 6 kA...25 kA miniature circuit breakers, the line of OptiDin VD63, OptiDin D63 6 kA residual current protection devices, load breakers OptiDin BM63P and current limiters OptiDin BM63-OT.

Connection

Rated current In, A	Tightening ptorque, N/m	Without preparation of current conductor core, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multicore)	Rigid copper (multicore and single-core)	Aluminum (multicore and single-core)	Flexible copper (multicore)	Flexible aluminum	Rigid aluminum
1–50	2	1,5–10	1,5–16	2,5–10	25	16	25

For overall dimensions, see p. 22

OptiDin BM125 Miniature AC circuit breakers up to 125 A

OptiDin BM125 circuit breakers are designed to protect electrical circuits from overcurrent and short circuit currents, to conduct current in normal duty and operational on-off switching modes of these circuits.

The circuit breakers comply with the requirements of GOST IEC 60947-2, TR TS 004/2011 and are manufactured as per TS3421-040-5758109-2009.

The range includes design versions of OptiDin BM125 circuit breakers assembled with a shunt trip. Availability of the shunt trip allows to remotely disconnect the protected power supply lines.

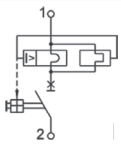
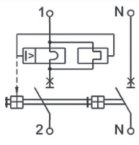
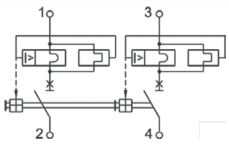
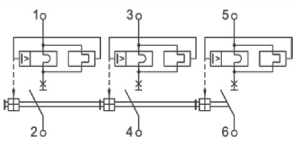
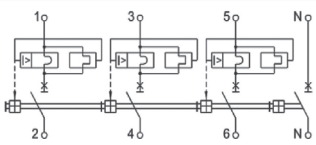
Designation

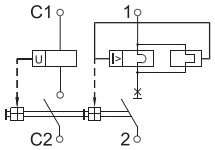
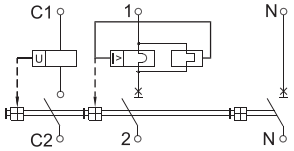
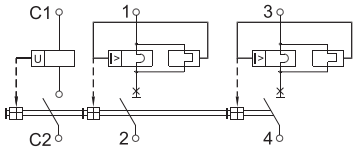
OptiDin BM125 - 1 N C 125 - NO - 8In - UHL3 REG

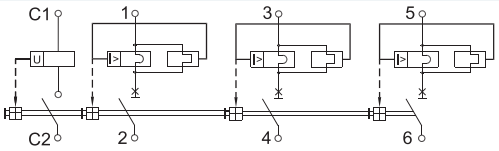
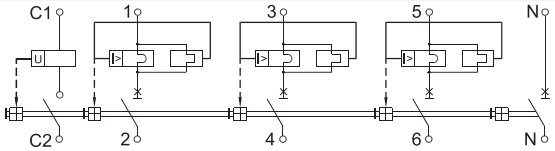
1 2 3 4 5 6 7 8 9 10

1	Series	OptiDin					
2	Configuration	BM125					
3	Number of poles	1P	1P+N	2P	3P	3P+N	4P
4	Pole with no release device	N					
5	Protective characteristic designation	C			D		
6	Rated current value of overcurrent release, A	80, 100, 125					
7	Presence of module with shunt trip	NO					
8	Short-circuit tripping device setpoint	8In, 14In					
9	Designation of climatic category and placement category as per GOST 15150	UHL3 (international TC3), OM4 (international UM4)					
10	Acceptance by the Sea and River Shipping Register	REG					

Items

OptiDin BM125 circuit breaker										
Number of poles	1P		1P+N		2P		3P		3P+N	
Circuit diagrams										
Rated current, In	Protective characteristic type						Protective characteristic type			
	C	D	C	D	C	D	C	D	C	D
80	138534	138596	138540	138600	138537	138597	138543	138602	138547	138604
100	138535	138596	138541	138601	138538	138599	138545	138603	138593	138605
125	138536		138542		138539		138546		138594	

OptiDin BM125 circuit breaker with shunt trip						
Number of poles	1P		1P+N		2P	
Circuit diagrams						
Rated current, In	Protective characteristic type					
	C	D	C	D	C	D
80	336365	336367	336375	336377	336370	336372
100	336363	336366	336373	336376	336368	336371
125	336364	-	336374	-	336369	-

OptiDin BM125 circuit breaker with shunt trip				
Number of poles	3P		3P+N	
Circuit diagrams				
Rated current, In	Protective characteristic type			
	C	D	C	D
80	336380	336382	336385	336387
100	336378	336381	336383	336386
125	336379	-	336384	-

See page 23-25 for accessories

Technical specification

Basic specifications		
As per GOST IEC 60947-2		
Pollution rating		3
Rated impulse voltage Uimp, V		4000
Test temperature, °C		+30
Protective characteristic type	C	5In to 10In
	D	10In to 20In
Application category		A
Energy limiting class		3
Additional specifications		
Protection class as per GOST 14254		IP20
Silver content per pole, max., g		0,66
Wear resistance of circuit breakers C, D for In = 80, 100 A, cycles	switching	1500
	general	10000
Wear resistance of circuit breakers C, D for In = 125 A, cycles	switching	1000
	general	8000
Overvoltage category		IV
Operating temperature range, °C		-60 to +40
Storage temperature range, °C		-65 to +50
Weight, g		
Number of poles	1P	220
	2P	450
	3P	680
	3P+N	900

Accessories suitable for OptiDin BM125

Snap-on accessories for miniature circuit breakers	
Code	Name
329843	OptiDin BM125-MSK 2

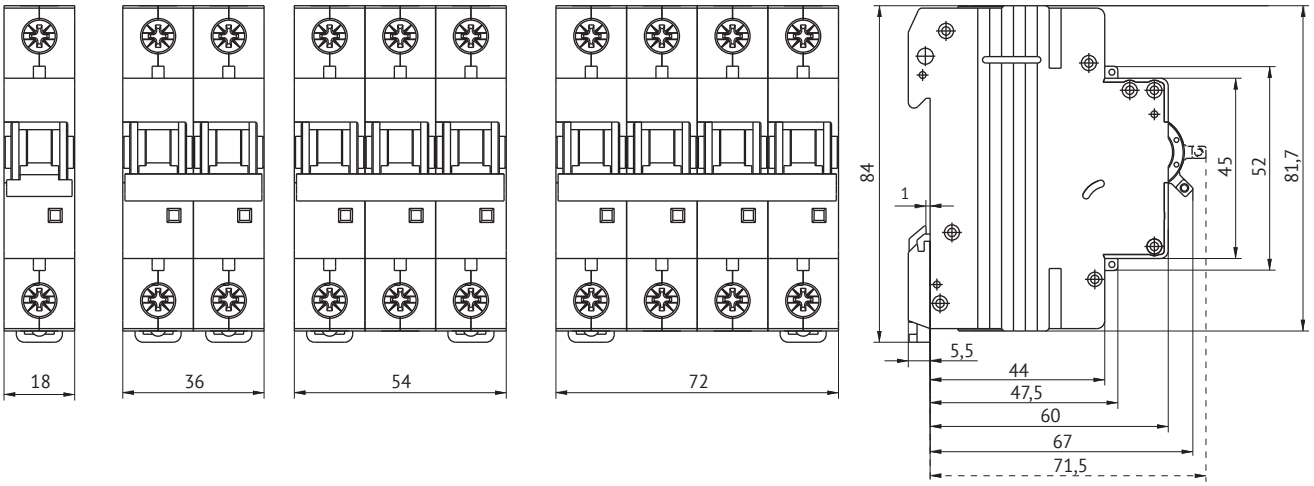
Connection

Rated current, A	Tightening ptorque, N/m	Cross-section of connected conductors, mm²
80–125	3,5	2,5–50

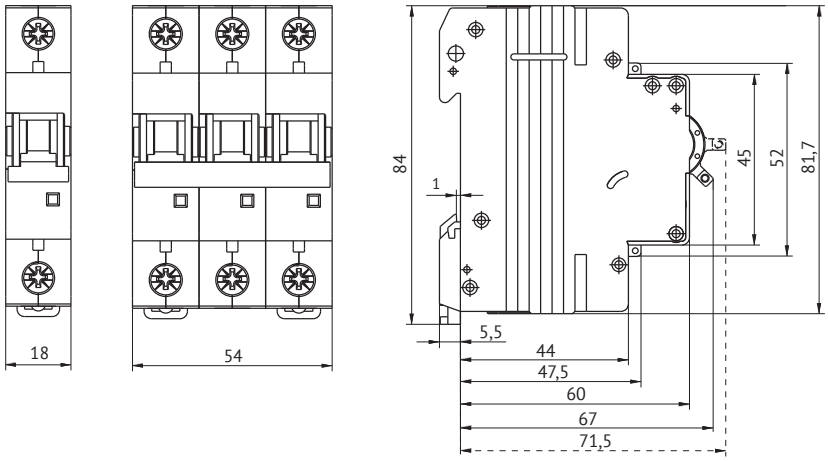
For overall dimensions, see p. 22

Overall dimensions (mm)

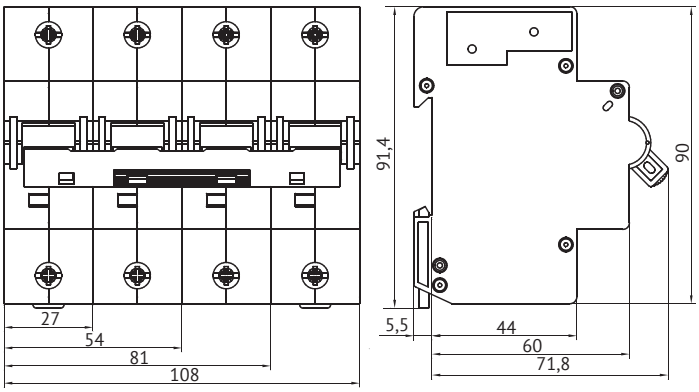
OptiDin BM63 and OptiDin BM63DC



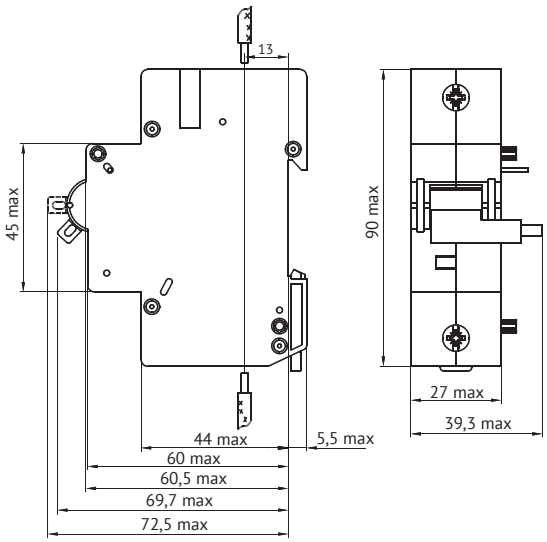
OptiDin BM63OT



OptiDin BM125



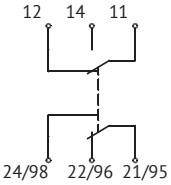
BM125-NR230



Supplied only complete with a circuit breaker.

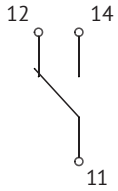
Accessories for OptiDin miniature circuit breakers, residual current circuit breakers, load breakers and current limiters

Module of free and signal contacts OptiDin BM63-MSSK 2



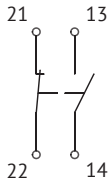
Function			
1. Informs about circuit breaker disconnection by a thermal or electromagnetic release; 2. Informs about the state of the circuit breaker main contacts («on», «off»).			
Technical specification			
Rated operating current by application category, Ie	A	AC-13	3
		AC-15	2
Rated operating voltage in 50 Hz AC circuit, Ue	B		230
Rated operating current by application category, Ie	A	DC-12	0,5
Rated operating voltage in DC circuit, Ue	B		220
Number of contacts	pcs		2P (two switching)
Rated insulation voltage, Ui	B		230
Rated impulse withstand voltage, Uimp	B		2500
Rated conditional short-circuit current	A		1000
Switching wear resistance, min.	cycles B-O		4000
Other characteristics			
Cross-section of connected conductors	mm²		0,5–2,5
Code			249158
Application			
Free contacts can be used in automation systems to signal the position of the circuit breaker main contacts — «closed» or «open» when switched on (off) manually, as well as after automatic opening caused by overcurrent or short circuit. Signaling contacts can be used in automation systems to signal disconnection of the circuit breaker only after automatic opening caused by overcurrent or short circuit.			

Free contact module OptiDin BM63-MSK 1



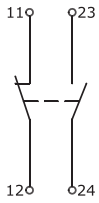
Technical specification			
Rated operating current by application category, Ie	A	AC-13	3
		AC-15	2
Rated operating voltage in 50 Hz AC circuit, Ue	B		230
Rated operating current by application category, Ie	A	DC-12	0,5
Rated operating voltage in DC circuit, Ue	B		220
Number of contacts	pcs		1P (one switching)
Rated insulation voltage, Ui	B		230
Rated impulse withstand voltage, Uimp	B		2500
Rated conditional short-circuit current	A		1000
Switching wear resistance, min.	cycles B-O		4000
Other characteristics			
Cross-section of connected conductors	mm²		0,5–2,5
Code			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.			

Free contact module OptiDin BM63-MSK 2



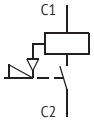
Technical specification			
Rated operating current by application category, Ie	A	AC-13	3
		AC-15	2
Rated operating voltage in 50 Hz AC circuit, Ue	B		230
Rated operating current by application category, Ie	A	DC-12	0,5
Rated operating voltage in DC circuit, Ue	B		220
Number of contacts	pcs		1P+13 (one NC contact, one NO contact)
Rated insulation voltage, Ui	B		230
Rated impulse withstand voltage, Uimp	B		2500
Rated conditional short-circuit current	A		1000
Switching wear resistance, min	cycles B-O		4000
Other characteristics			
Cross-section of connected conductors	mm²		0,5–2,5
Code			249197
Application			
Free contacts module with one opening contact and one closing contact allows connection of two independent signaling circuits, thus expanding the process automation functionality.			

Free contact module OptiDin BM125-MSK 2



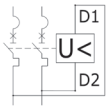
Technical specification				
Rated operating voltage and rated operating current	Current type	Application category	Rated operating voltage (Ue), V	Rated operating current (Ie), A
	Alternating current	AC-13	230	6
			400	2
	Direct current	DC-13	60	4
			110	2
			220	0,5
Rated conditional short-circuit current, A			1000	
Rated insulation voltage (Ui), V			230	
Switching wear resistance, min, cycles B-O			10000	
Number of contacts			1P+13 (one NC contact, one NO contact)	
Other characteristics				
Cross-section of connected conductors, мм²			0,5 to 4	
Code			329843	
Application				
Free contact module with one opening contact and one closing contact allows connection of two independent signaling circuits, thus expanding the process automation functionality.				

OptiDin BM63-NR shunt trip



Design version		OptiDin BM63-NR230	OptiDin BM63-NR24
Function			
Designed for remote tripping of the circuit breaker when voltage is applied to the winding of the shunt release, structurally it is an electromagnet with a multi-turn voltage coil.			
Technical specification			
Tripping range			
under AC voltage, Ut	B	110...400	12...110
under DC voltage, Ut	B	110...220	12...60
Tripping time of circuit breakers when triggered by a shunt release, max.	sec	0,04	
Wear resistance of circuit breakers when triggered by a shunt release, min.	cycles B-O	1500	
Other characteristics			
Code		249184	249177

Undervoltage and overvoltage release OptiDin BM63-RMMN

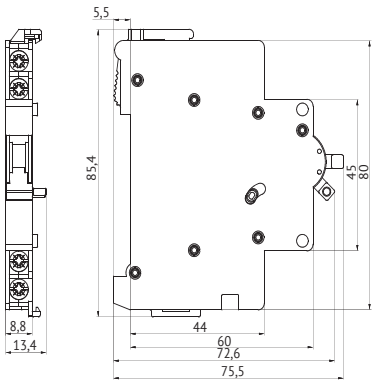


Design version		OptiDin BM63-RMMN
Function		
Designed to automatically disconnect the circuit breaker when the mains voltage drops or rises above the set levels.		
Technical specification		
Tripping range		
minimum tripping voltage, Ut	B	165 V ± 10%
maximum tripping voltage, Ut	B	265 V ± 10%
Rated insulation voltage, Ui	B	230
Rated impulse withstand voltage, Uimp	кВ	2,5
Other characteristics		
Code		333065

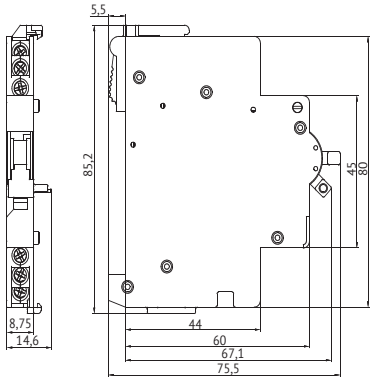
WARNING!!! Snap-on accessories can be attached only to the line of OptiDin BM63 6 kA...25 kA miniature circuit breakers, the line of OptiDin VD63, OptiDin D63 6 kA residual current protection devices, load breakers OptiDin BM63P and current limiters OptiDin BM63-OT.

Overall dimensions of accessories (mm)

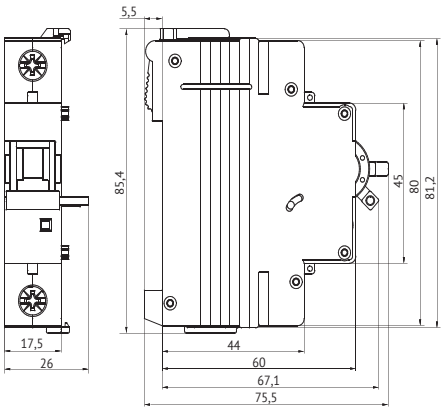
Free contact module
OptiDin BM63-MSK 1, OptiDin BM63-MSK 2



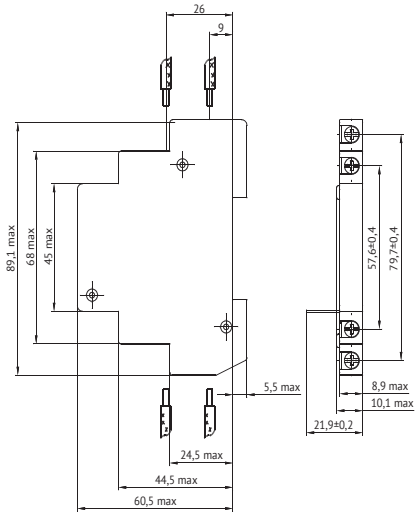
Module of free and signal contacts
OptiDin BM63-MSSK 2



Modules with shunt trip OptiDin BM63-NR230 and OptiDin BM63-NR24
Undervoltage and overvoltage release OptiDin BM63-RMMN

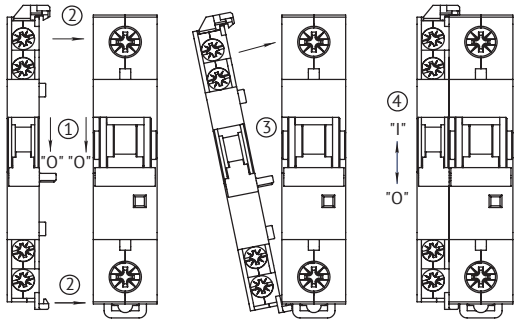


Free contact module OptiDin BM125-MSK 2



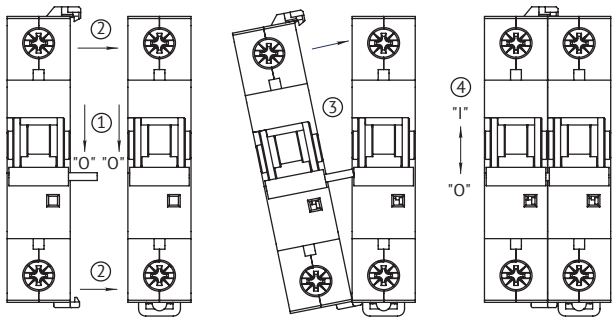
Connection

Connecting modules with auxiliary contacts to a circuit breaker or to a module with a shunt trip or an undervoltage/overvoltage release



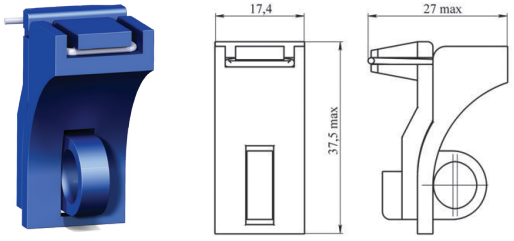
see Operation manual for auxiliary contact modules ГЖИК.685112.030РЭ

Connection of a shunt trip or undervoltage/overvoltage release in a separate module to the circuit breaker shall be carried out in the following sequence



see Operation manual for shunt trip ГЖИК.641266.029РЭ and operation manual for undervoltage and overvoltage release ГЖИК.641266.059РЭ

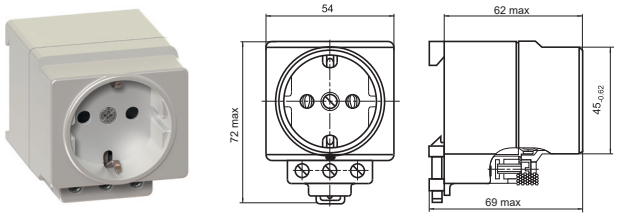
OptiDin handle mechanical locking device



The device is designed to completely block the circuit breaker handle against unauthorized and accidental access, thus guaranteeing the safety of personnel.	
Other characteristics	
Padlock shackle diameter, mm	8
Code	113541

WARNING!!! Snap-on accessories can be attached only to the line of OptiDin BM63 6 kA...25 kA miniature circuit breakers, the line of OptiDin VD63, OptiDin D63 6 kA residual current protection devices, load breakers OptiDin BM63P and current limiters OptiDin BM63-OT

OptiDin PA10 modular socket



Sockets are intended for connection of electric equipment fitted with three-wire plugs, which provide grounding of equipment metal cases.	
Technical specification	
Rated voltage, V	230
Frequency, Hz	50
Rated current, A	16
Other characteristics	
Service life, years	10
Operating temperature range, °C	-25 to +40
Climatic version	UH in compliance with GOST 15150
Weight, g	120
Code	111493

OptiDin

↗ Modular load breakers

OptiDin BM63PL, OptiDin BM63P load breakers (hereinafter referred to as switches) are designed for use in electrical circuits with voltage up to 400 V AC, frequency 50/60 Hz, to conduct current in normal duty and operational on-off switching modes of these circuits under load.

The switches comply with the requirements of GOST IEC 60947-3, TR TS 004/2011.

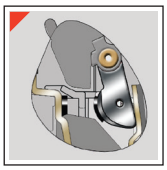
Designation

OptiDin BM63PL - 1 - 40 - UHL3

1 2 3 4 5

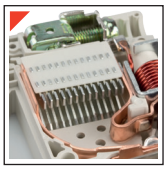
1	Series	OptiDin			
2	Configuration	BM63PL, BM63P			
3	Number of poles	1P	2P	3P	4P
4	Rated current value, A	32, 40, 63, 80, 100, 125			
5	Climatic version	UHL3 (international TC3)			

Series advantages



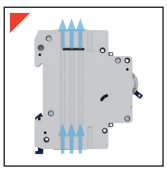
Silver-containing soldering on the moving contact to increase wear resistance and reduce the contact resistance value.

The QR code helps obtain detailed information about the product, full specifications, and related documentation on the official website.



13 plates in the arc quenching chamber effectively quench arcs and ensure safe shutdown in emergencies.

The handle can be locked out to prevent unauthorized switching on/off.



Better cooling due to shaped recesses on the housing.

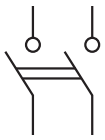
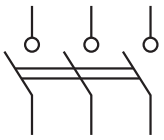
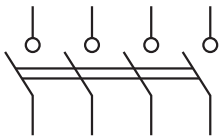
Special design of the lead terminals provides: the tightest and largest contact area to prevent heating and melting of conductors.

The barcode provides quick identification of the device for sales in retail trade networks, as well as on online trading platforms.

OptiDin BM63PL Modular load breakers for currents up to 125 A

OptiDin BM63PL load breakers (hereinafter referred to as switches) are designed for use in electrical circuits with voltage up to 400 V AC, frequency 50/60 Hz, to conduct current in normal duty and operational on-off switching modes of these circuits under load. The switches comply with the requirements of GOST IEC 60947-3, TR TS 004/2011, TR EAEU 037/2016.

Items

BM63PL Modular load breaker				
Number of poles	1P	2P	3P	4P
Circuit diagrams				
Rated current In, A				
32	328155	328162	328168	328174
40	328157	328163	328169	328175
63	328158	328164	328170	328176
80	328159	328165	328171	328177
100	328160	328166	328172	328178
125	328161	328167	328173	328179

Technical specification

Parameter		Value
Number of poles		1; 2; 3; 4
Rated frequency, Hz		50/60
Rated operating voltage, V, in 50/60 Hz AC circuit	single-pole	230/400
	double-pole	230
	three-pole and four-pole	400
Minimum operating voltage, V		24
Rated operating current, (Ie), A		32, 40, 63, 80, 100, 125
Application category		AC-22A
Rated short-time withstand current (through current) with a passage duration of 1 s, A		1500
Rated activating capacity under short-circuit conditions at a power factor of 0.9, A		2500
Rated conditional short-circuit current, kA		5000
General wear resistance of switch, cycles		14000
Switching wear resistance of switch, cycles		4000
Rated impulse withstand voltage, kV		4
Switch power consumption, max., V·A, per pole		15
Protection class as per GOST 14254		IP20
Cross-section of wire connected to lead terminals, mm^2		1÷50
Climatic category and placement category as per GOST 15150		UHL3
Average service life, years		15
Operation mode		continuous

Connection

Rated current In, A	Tightening ptorque, N/m	Cross-section of connected conductors, mm^2	
		Flexible (multicore) copper and aluminum conductors	Rigid (single-core) copper and aluminum
32–125	3,5	1 до 50	

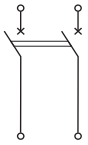
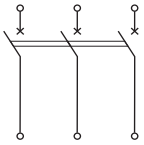
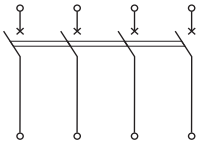
OptiDin BM63P Modular load breakers for currents up to 63 A

OptiDin BM63P load breakers are designed for use in electrical circuits with voltage up to 400 V AC, frequency 50 Hz and conduction of current in normal duty mode.

OptiDin BM63P breakers comply with the requirements of GOST IEC 60947-3-2016, TR TS 004/2011 and are manufactured as per TS 3424-011-05758109-2009.

A wide range of accessories makes the use of KEAZ modular load breakers a convenient choice for any solution.

Items

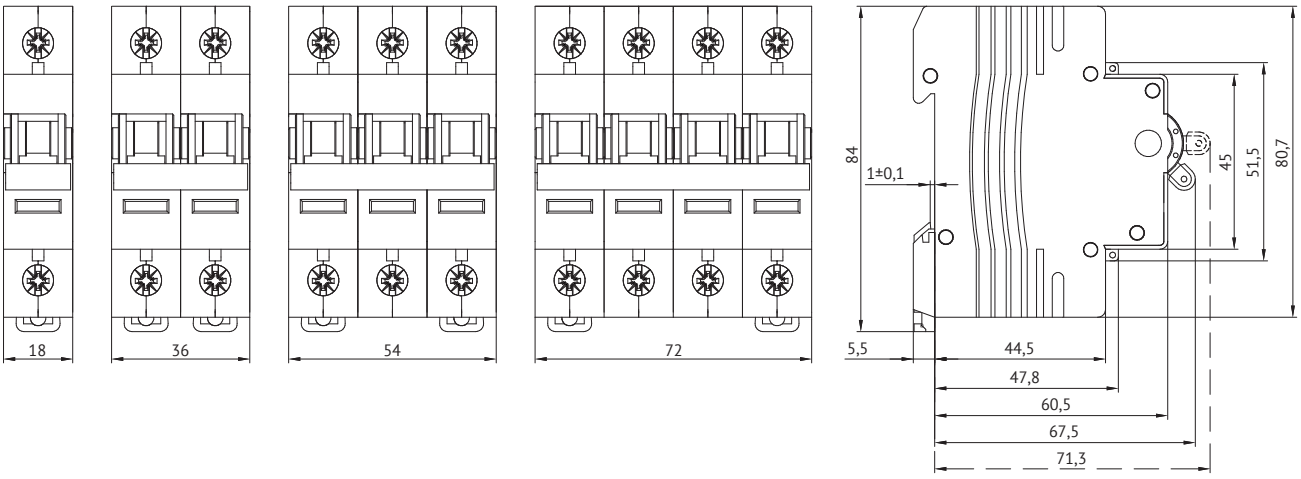
OptiDin BM63P Modular load breaker				
Number of poles	1P	2P	3P	4P
Circuit diagrams				
Rated current In, A				
20	332973	332974	332975	332976
32	332870	332880	332898	332969
40	103891	103893	103894	103897
63	103892	103894	103896	103898
Accessories	page 23–25			

Technical specification

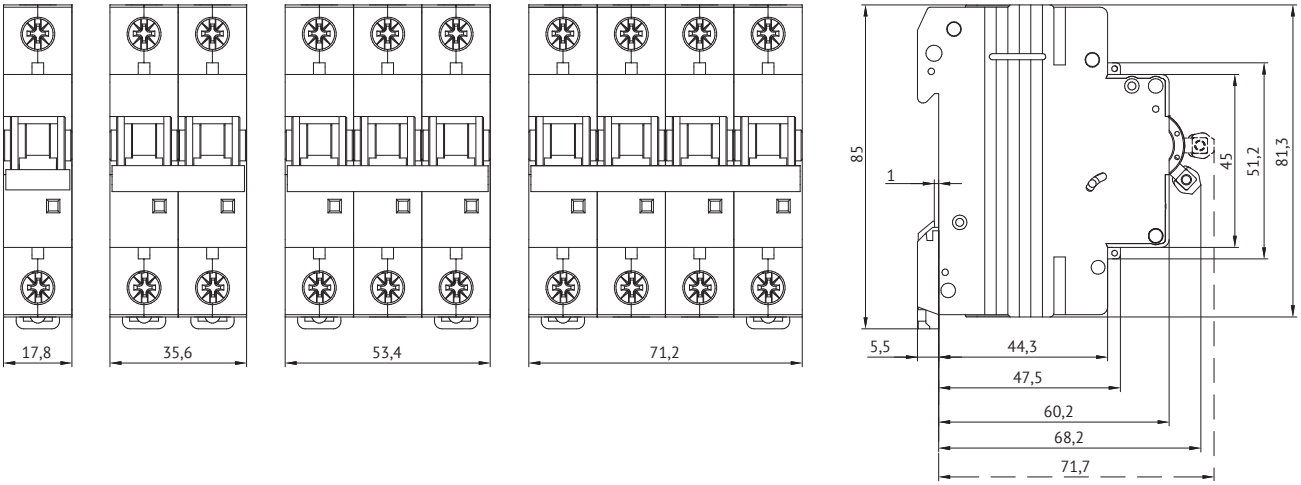
Basic specifications		
Rated voltage in 50 Hz AC circuit, V		230/400
Minimum operating voltage, V		24
Additional specifications		
Cross-section of wire connected to lead terminals, mm^2		1,5–25
Switch IP rating		IP20
Silver content, g		0,0595
Wear resistance, min., cycles	Switching	1500
	Mechanical	8500
Operating temperature range, °C		-60 to +40
Weight, g		
Number of poles	1P	120
	2P	240
	3P	360
	4P	480

Overall dimensions (mm)

OptiDin BM63PL



OptiDin BM63P



OptiDin

Residual current devices

Residual current devices are switching devices, the main purpose of which is to protect a person from electric shock in case of accidental, unintentional contact with current-carrying parts of electrical installations in case of electrical equipment malfunctions; prevention of fires caused by the flow of leakage currents and ground faults.

Currently, KEAZ product range includes a wide selection of residual current operated circuit breakers with integral overcurrent protection (RCBOs) and residual current operated circuit breakers without integral overcurrent protection (RCCB) for various rated currents and residual current setpoints; selective versions with a trip time delay are available for RCBOs.

OptiDin D63 and OptiDin VD63 RCBOs comply with the requirements of GOST IEC 61009-1, TR TS 004/2011, TR TS 020/2011, EAEU TR 037/2016; OptiDin DM63 RCCB comply with the requirements of GOST IEC 61008-1, TR TS 004/2011, EAEU TR 037/2016.

A wide range of accessories makes the use of KEAZ residual current circuit breakers a convenient choice for any solution.

Designation

OptiDin VD63 - 2 2 C 16 - A - UHL4

1 2 3 4 5 6 7 8

1	Series	OptiDin		
2	Type of RCBO or RCCB (RCD)	DM63	D63	VD63
3	Number of poles	2, 4	2	2, 4
4	Rated residual operating current value, A	0,01; 0,03; 0,1; 0,3	0,01; 0,03; 0,1; 0,3	0,01; 0,03; 0,1; 0,3
5	Electromagnetic tripping device activation characteristic	-	C	
6	Rated current value, A	25, 40, 63, 80, 100	6, 10, 16, 20, 25, 32, 40	6, 10, 16, 20, 25, 32, 40, 50, 63
7	Residual current operating characteristic type designation	A, AC	A, AC	A, AS
8	Climatic version	UHL4 (international TC4); U3 (international T)		

Selection guide

	RCCB (without overcurrent protection)		RCBO (with overcurrent protection)				
Type	OptiDin DM63 4,5 kA	OptiDin DM63	OptiDin D63 4,5 kA	OptiDin D63	OptiDin D63 6 kA	OptiDin VD63	
Appearance							
Standards	GOST IEC 61008-1		GOST IEC 61009-1	GOST IEC 61009-1	GOST IEC 61009-1	GOST IEC 61009-1	
Number of poles	2P, 4P		2P	2P	2P	2P	4P
Electrical specifications							
Protective characteristic type	-		C	C	C	B, C, D	
Rated current In, A	25, 40, 63	25, 40, 63, 80, 100	6, 10, 16, 20, 25, 32, 40			10, 16, 20, 25, 32, 40, 50, 63	
Rated residual operating current IΔn, A	0,01; 0,03; 0,1; 0,3		0,03; 0,1	0,01; 0,03; 0,1; 0,3		0,01; 0,03; 0,1*; 0,3*	
Rated residual non-triggering current IΔn, A	0,5		0,5	0,5	0,5	0,5	
Rated operating voltage in 50 Hz AC circuit Ue, V	230		230	230	230	230	400
Protective characteristic type (according to the operating conditions in presence of the DC component)	A, AC		AC	A	A	A	
Rated maximum making capacity Icn, A	-		4500	6000	6000	6000	
Rated short-circuit residual current making and breaking capacity Icn, A	-		3000	1500	1500	3000	
Rated conditional short-circuit current (Inc), A	4500	6000	-	-	-	-	
Rated conditional residual short-circuit current (Inc), A	4500	6000	-	-	-	-	
Tripping time at double value of rated residual tripping current, max., s	-		-	-	-	0,04	0,2
Other specifications							
Availability of customized version	-		-	-	-	yes	yes
Fault trip indication	yes		yes	yes	yes	yes	yes
Switch IP rating	IP20		IP20	IP20	IP20	IP20	IP20
Accessories	-		-	-	page 23-25		

* Customized versions are available for 100 mA and 300 mA residual currents.

WARNING!!! Snap-on accessories can be attached only to the line of OptiDin BM63 6 kA...25 kA miniature circuit breakers, the line of OptiDin VD63, OptiDin D63 6 kA residual current protection devices, load breakers OptiDin BM63P and current limiters OptiDin BM63-OT.

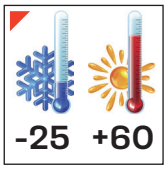
OptiDin DM63 4,5 kA Electromechanical residual current circuit breakers (RCCB) for currents up to 63 A

The residual current devices (RCCB) are designed for use in one- and three-phase 50/60 Hz AC systems with a solidly grounded neutral with a rated voltage not exceeding 400 V and a rated current up to 63 A to protect people from electric shock in case of electrical equipment malfunctions or in case of unintentional contact with exposed conductive parts of electrical installations, as well as to prevent ignition and fires resulting from the flow of leakage currents and ground faults and operational switching on and off of these circuits. OptiDin DM63 is an electromechanical device that does not have its own power consumption, remains operational in case of any fluctuations and even in case of critically low voltage.

Complies with the requirements of GOST IEC 61008-1, TR TS 004/2011, EAEU TR 037/2016.

Series advantages

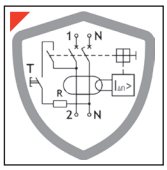
Protection against leakage current types AC and A allows for an optimal level of household safety.



The RCB operates in all systems with a solidly grounded neutral within a wide temperature range from -25 to +60 °C.

The high quality and affordable price of the OptiDin 4.5 kA RCB allows assembling a high-reliability, budget-friendly switchboard.

The barcode and the part number allow to quickly identify the device and sell it in retail trade networks, as well as on online trading platforms.

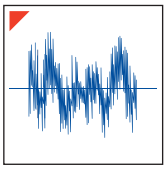


Functionally independent of the mains voltage, the RCCB is distinguished by a high level of reliability in emergency situations, including a break in the neutral conductor.

The QR code allows to quickly get detailed information and technical advice about the product, full technical specifications, and related documentation on the official website.

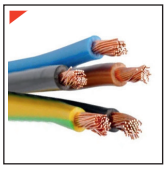
The status indicator independent of the handle allows to identify the circuit condition and speeds up safe maintenance of the switchboard.

Domestic production allows the use of OptiDin DM63 RCCB in projects with requirements for import substitution.



Increased noise immunity guarantees absence of false alarms. This allows to place a RCCB, a smart home system and/or a Wi-Fi router in one home electrical panel.

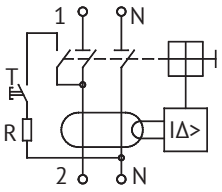
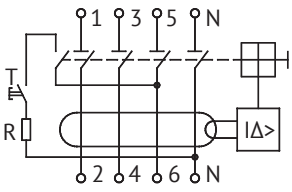
The entire OptiDin line with LSC of 4.5 kA, including new RCCB, is kept in stock at KEAZ warehouses, which ensures prompt delivery to sites.



Possibility of connecting conductors of various sections from 1 to 35 mm^2 provides convenient installation.

Reliability and durability, confirmed by a 5-year guarantee and a service life of at least 15 years.

Items

Number of poles		2P			4P		
Circuit diagrams							
Operating characteristic type	Rated residual tripping current	25	40	63	25	40	63
AC	0,01	343882	-	-	-	-	-
AC	0,03	343888	343889	343890	343891	343892	343893
AC	0,1	-	343895	343896	-	343898	343899
AC	0,3	343900	343901	343902	343903	343904	343905
A	0,03	343912	343913	-	343915	343916	-

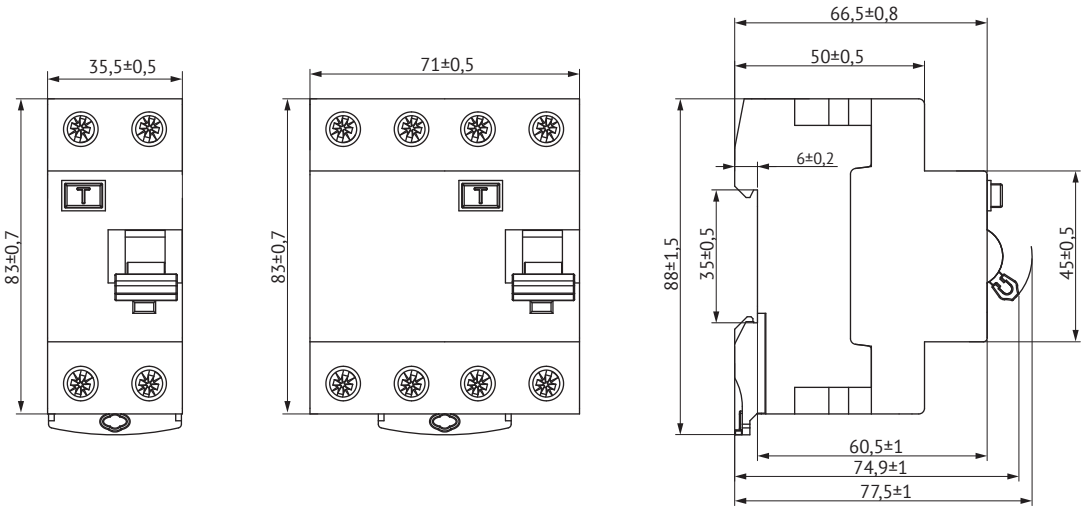
Technical specification

Basic specifications		
Operating voltage, V	2P	230
	4P	230/400
Operating characteristic type (according to the operating conditions in presence of the DC component)		AC, A
Rated conditional short-circuit current		4500
Additional specifications		
IP rating		IP20
Wear resistance	Switching	5000
	Mechanical	10000
Operating temperature range, °C		-25 to +60
Weight, g		
Number of poles	2	210
	4	360

Connection

Rated current In, A	Tightening ptorque, N/m	Without preparation of current conductor core, mm²		With preparation of the conductor current carrying wire, mm²	
		Copper conductors	Aluminum conductors	Copper conductors	Aluminum conductors
25–63	3,5±0,4	1–25	1–25	25–35	25–35

Overall dimensions (mm)



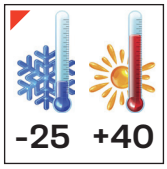
OptiDin DM63 6 kA Residual current circuit breakers up to 100 A

OptiDin DM63 RCCB is designed for use in 50 Hz AC systems with a solidly grounded neutral with a rated voltage not exceeding 400 V and a rated current up to 100 A to protect people from electric shock in case of electrical equipment malfunctions or in case of unintentional contact with exposed conductive parts of electrical installations, as well as to prevent ignition and fires resulting from the flow of leakage currents and ground faults and operational switching on and off of these circuits.

OptiDin DM63 is an electromechanical device that does not have its own power consumption, remains operational in case of any fluctuations and even the absence of mains voltage. Complies with the requirements of GOST IEC 61008-1, TR TS 004/2011, EAEU TR 037/2016.

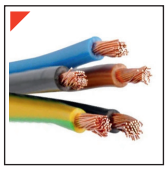
Series advantages

The ability to organize protection against all types of leakage currents — AC, DC, pulsating, due to the availability of AC and A versions.

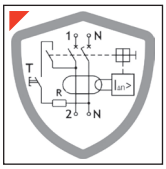


Steady performance at -25 to +40 °C.

The use of a factory seal is a confirmation of the mechanical integrity of the device.

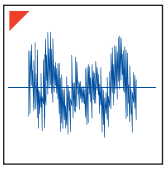


Possibility of connecting conductors of various sections from 1 to 35 mm² ensures convenience of installation.



The circuit and mechanical diagram of the RCCB provides reliable protection and guards human life and property from fire even in emergency situations when the neutral conductor breaks.

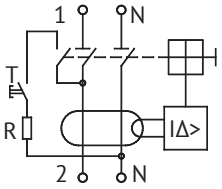
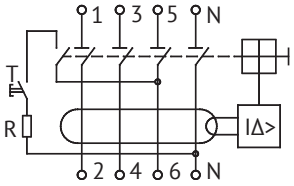
The status indicator independent of the handle allows to identify the circuit condition and speeds up safe maintenance of the switchboard.



Increased noise immunity guarantees absence of false alarms. This allows to place a RCCB, a smart home system and/or a Wi-Fi router in one home electrical panel.

Reliability and durability, confirmed by a 5-year guarantee and a service life of at least 15 years.

Items

Number of poles		2P					4P				
Circuit diagrams											
Operating characteristic type	Rated residual tripping current	25	40	63	80	100	25	40	63	80	100
AC	0,01	254165	254175	254185	254190	254195	254200	254210	254220	254225	254230
AC	0,03	254166	254176	254186	254191	254196	254201	254211	254221	254226	254231
AC	0,1	254167	254177	254187	254192	254197	254202	254212	254222	254227	254232
AC	0,3	254168	254178	254188	254193	254198	254203	254213	254223	254228	254233
A	0,01	254265	254275	254285	254290	254295	254300	254310	254320	254325	254330
A	0,03	254266	254276	254286	254291	254296	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

Technical specification

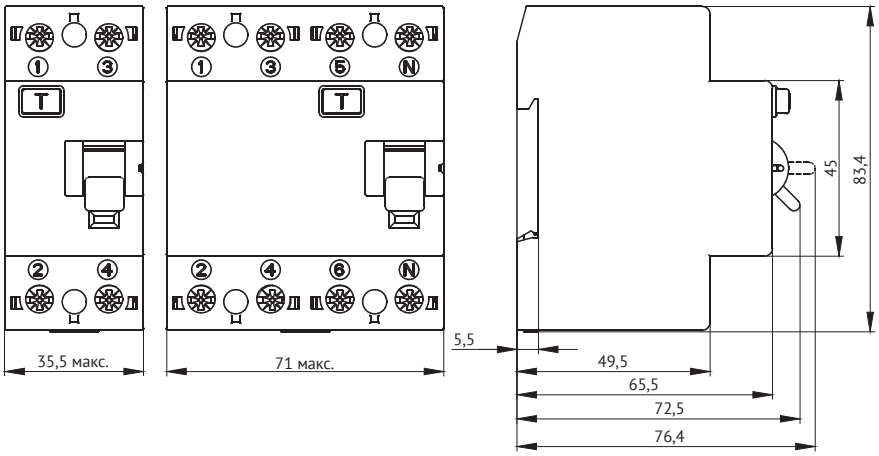
Basic specifications		
Operating voltage, V		230/400
Operating characteristic type (according to the operating conditions in presence of the DC component)		AC, A
Rated conditional short-circuit current		6000
Additional specifications		
IP rating		IP20
Wear resistance	Switching	6000
	Mechanical	20000
Operating temperature range, °C		-25 to +40
Weight, g		
Number of poles	2	210
	4	360

Connection

Rated current, A	Tightening ptorque, N/m	Without preparation of current conductor core, mm²		With preparation of the conductor current carrying wire, mm²	
		Copper conductors	Aluminum conductors	Copper conductors	Aluminum conductors
25–100	2	1,5–35	2,5–35	35	35

Overall dimensions (mm)

25-100 A



OptiDin MD-L Motor drive

The motor drive provides:
- remote electric control (closing and opening) of type OptiDin DM63 residual current circuit breakers (RCCBs);
- RCCB resetting after tripping;
- manual operation of RCCB with a lever.

2 operation options after opening:
- possibility of remote resetting of the residual current circuit breaker and/or automatic resetting of the RCCB after tripping (the number and frequency of automatic recloses are configured on the device);
- prohibition of remote resetting and automatic resetting after tripping.

Device interfaces provide:
- RCCB status indication using built-in status contacts (1NO+1NC);
- configuration of the number of RCCB recloses when tripping: 0-1-3-5-7;
- configuration of the frequency of recloses, s: 10-30-60-120-180;
- remote device control.

Attention: the OptiDin MD-L motor drive is supplied complete with type OptiDin DM63 RCCB.

Designation

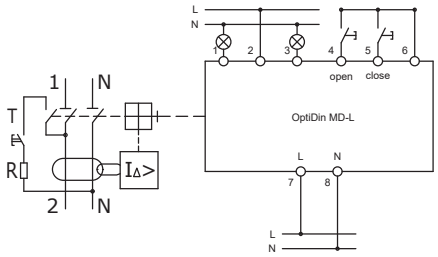
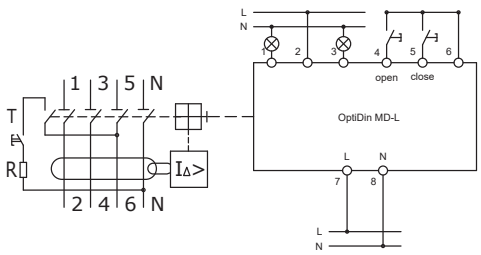
OptiDin MD-L - UHL4
(1) (2)

1	Series	OptiDin MD-L
2	Climatic version	UHL4 (international TC4)

OptiDin MD-L + OptiDin DM63 - 2 2 25 - A - UHL4
(1) (2) (3) (4) (5) (6) (7)

1	Motor drive series	OptiDin MD-L
2	RCCB series	OptiDin DM63
3	Number of RSSB poles	2, 4
4	Rated residual operating current value, A	1 — 0,01; 2 — 0,03; 3 — 0,1; 4 — 0,3
5	Rated current value, A	25, 40, 63, 80, 100
6	Designation of residual current operating characteristic type	A, AC
7	Climatic version	UHL4 (international TC4) ; U3 (international T)

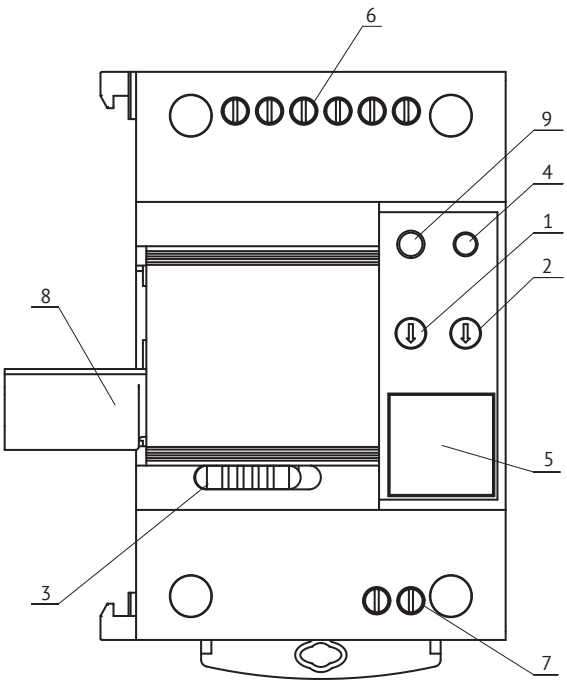
Items

Number of poles		2P					4P				
Circuit diagrams											
Operating characteristic type	Rated residual tripping current	25	40	63	80	100	25	40	63	80	100
AC	0,01	on request									
AC	0,03	361852	361841	361843	on request		361845	361847	361849	on request	
AC	0,1	on request									
AC	0,3	on request									
A	0,01	on request									
A	0,03	361842	on request	361844	on request						
A	0,1	on request									
A	0,3	on request						361846	361848	on request	

Technical specification

Parameter	Value
Current type	AC
Current frequency, Hz	50/60
Rated operating voltage, V	230
Rated insulation voltage, V	230
Electric insulation strength, V	2000
Mechanical wear resistance, cycles	6000
Rated impulse withstand voltage (Uimp), kV	4
Power consumption in standby mode, V·A	1,5
Power consumption in close/open mode, max, V·A	2
Protection class as per GOST 14254-2015	IP20
Cross-section of wire connected to terminal clamps, mm^2	0,5 – 2,5
Tightening torque of lead wires fastening screws, N·m	0,4±0,1
MD weight, kg	0,246
Climatic category and placement category as per GOST 15150-69	UHL4
Integrated contacts, number of contacts	1NO+1NC
Current type of auxiliary contacts	AC
Current frequency of auxiliary contacts, Hz	50/60
Rated current of auxiliary contacts, A	1
Rated voltage of auxiliary contacts, V	230
Operation mode	continuous

Controls

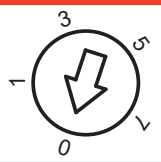
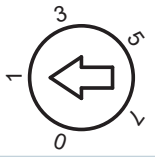
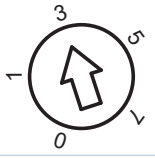
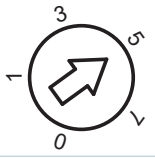
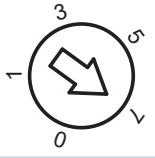
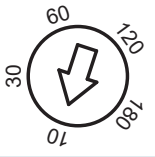
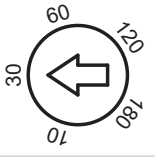
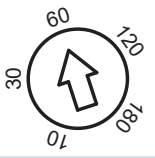
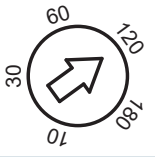
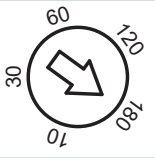


1 — repetition switch;
2 — repetition time switch;
3 — closing switch;
4 — operating status indicator;
5 — indicator of actual RCCB trippings;
6 — terminals for connection of alarm, remote closing and opening;
7 — terminals to connect MD power supply;
8 — activation/deactivation handle,
9 — reset button.

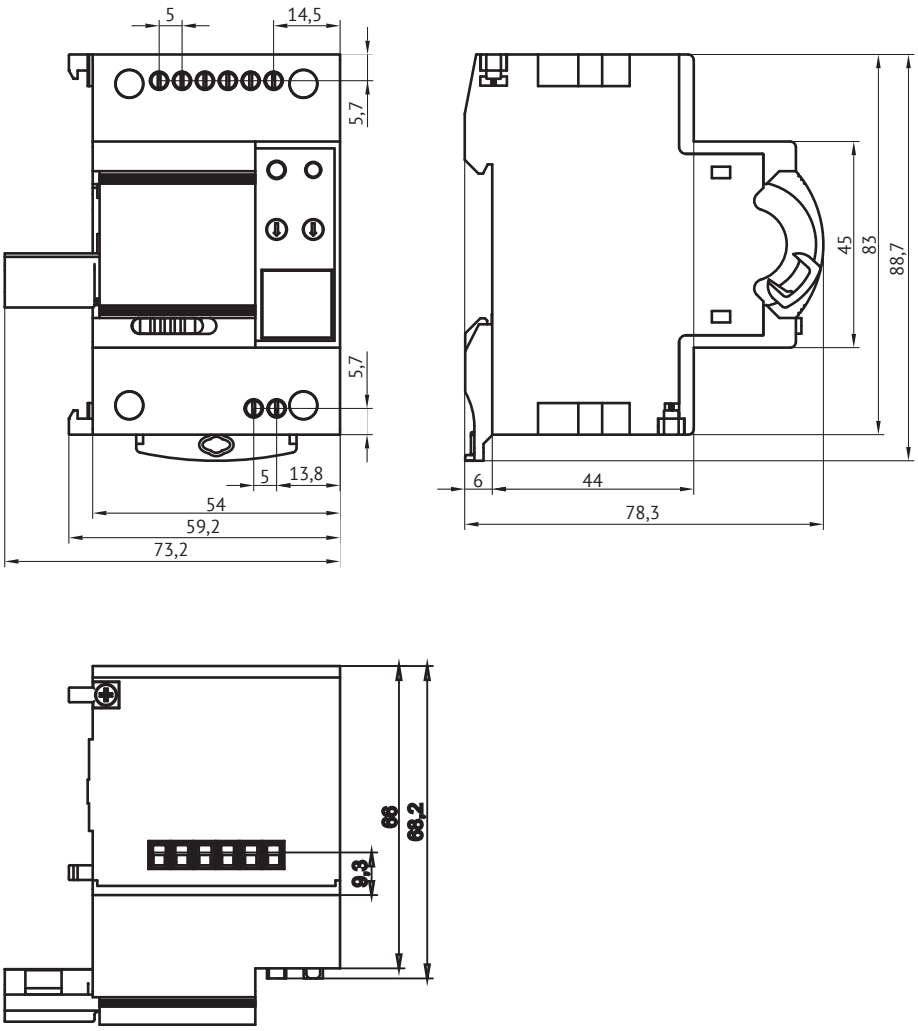
Device status indication

LED color (4)	Status	Description
Green	Always on	MD operating in normal mode
Red	Always on	MD inactive
	Rare blinking (1 s on, 1 s off)	Activation in progress

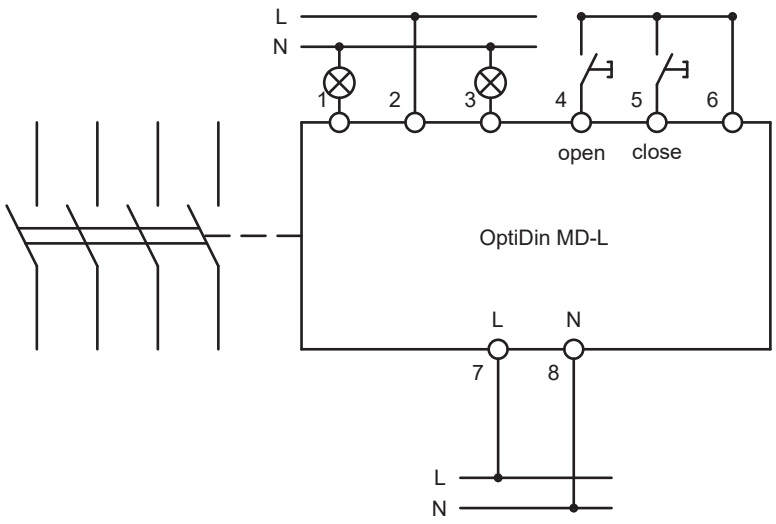
Device control

Switch	Position	Description
Repetition switch (1)		Number of recloses 0
		Number of recloses 1
		Number of recloses 3
		Number of recloses 5
		Number of recloses 7
Repetition time switch (2)		Time between recloses 10 seconds
		Time between recloses 30 seconds
		Time between recloses 60 seconds
		Time between recloses 120 seconds
		Time between recloses 180 seconds
Closing switch (3)	O	Deactivation of remote access, deactivation of recloses
	I	Activation of remote access, activation of recloses
Reset button (9)	-	Long pressing (3 s) results in zeroing of the number of recloses on RCCB tripping, The number of recloses is displayed on the digital indicator (5).

Overall dimensions (mm)



Circuit diagrams



OptiDin D63 4,5 kA Residual current circuit breakers with overcurrent protection up to 40 A

OptiDin D63 residual current operated circuit breakers with integral overcurrent protection (RCBO) are designed for use in single-phase 50 Hz AC circuits with a solidly grounded neutral with a rated voltage not exceeding 230 V and rated currents up to 40 A, to protect people from electric shock in case of electrical equipment malfunctions or unintentional contact with exposed conductive parts of electrical installations, as well as to prevent ignition and fires resulting from the flow of leakage currents and ground faults, to protect against overcurrent and short circuits and operational switching on and off of the specified circuits.

The RCBOs comply with the requirements of GOST IEC 61009-1, TR TS 004/2011, TR TS 020/2011, TR EAEU 037/2016.

Series advantages

Contact position indication

Provides three types of protection

Increased noise immunity prevents false triggering of the device.

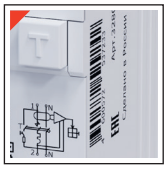
Can be installed in locations with high humidity and sudden temperature changes due to the varnished electronic board.

Switchboard space saving — 36 mm. RCBO does not require additional CB.

Suitable for conductors up to 25 mm²

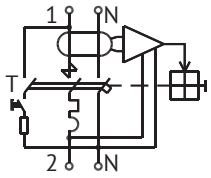
Possibility of installation as input device due to high value of limiting switching capacity (LSC) — 4.5 kA.

The QR code allows to quickly get information about the product, full technical specifications, and related documentation on the official website.



The barcode provides quick identification of the device for sales in retail trade networks, as well as on online trading platforms.

Items

OptiDin D63 RCBO							
Number of poles	1P+N						
Circuit diagrams							
Rated residual current IΔn, A	Rated current In, A						
	6	10	16	20	25	32	40
0,03	328103	328097	328098	328099	328100	328101	328102
0,1	328110	328104	328105	328106	328107	328108	328109

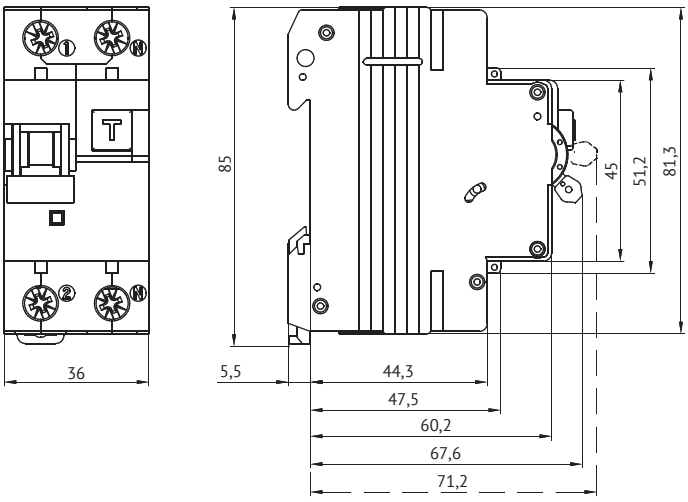
Connection

Rated current In, A	Tightening ptorque, N/m	Without preparation of current conductor core, mm²			With preparation of the conductor current carrying wire, mm²	
		Flexible copper (multicore)	Rigid copper (multicore and singlecore)	Aluminum (multicore and singlecore)	Flexible copper multicore	Flexible and rigid aluminum
6–63	2	1–10	1–16	1–10	25	16, 25

Technical specification

Parameter	Value
Number of poles	double-pole with one overcurrent protected pole
Rated operating voltage Ue, V	230
Rated insulation voltage Ui, V	230
Rated impulse withstand voltage (Uimp), kV	4
Rated frequency, Hz	50
Rated operating current In, A	6; 10; 16; 20; 25; 32; 40
Protective characteristic type	C
Rated residual tripping current IΔn, A	0,03; 0,1
Rated residual non-tripping current IΔn, A	0,5 IΔn
Rated short-circuit breaking capacity Icn, A	4500
Rated residual making and breaking capacity IΔm, A	3000
Operating characteristic in case of residual current with DC component, type	AC
Mechanical wear resistance, cycles	6000
Switching wear resistance, cycles	4000
Protection class as per GOST 14254	IP20
Cross-section of wire connected to lead terminals, mm²	1÷25
Average service life of RCBO, years	15
Silver content, g	0,119
Climatic category and placement category as per GOST 15150	U3
Operating mode	continuous
No-load power consumption (VA)	max 0,7
Weight of RCBO, kg	0,19
Note: IΔn — determines the effective value of the alternating current at the rated frequency.	

Overall dimensions (mm)



OptiDin D63 Residual current circuit breakers with overcurrent protection up to 40 A with no connections for accessories

OptiDin D63 double-pole residual current operated circuit breakers with integral overcurrent protection (hereinafter referred to as RCBOs) shall be installed in single-phase 50 Hz AC systems with a solidly grounded neutral with a 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 electrical equipment malfunctions or unintentional contact with exposed conductive parts of electrical installations, to prevent ignition and fires resulting from the flow of leakage currents and ground faults, as well as to protect against overcurrent and short circuit.

Double-pole circuit breakers of electronic type with one overcurrent protected pole belong to the class of devices that are functionally dependent on the mains voltage (not opening automatically in the event of a power failure) and are designed for fixed installation with fixed wiring.

The RCBOs comply with the requirements of GOST IEC 61009-1, TR TS 004/2011, TR TS 020/2011 and are manufactured as per TS3422-046-05758109-2008.

Series advantages

Contact position indication

Provides three protection types

Increased noise immunity prevents false triggering of the device.

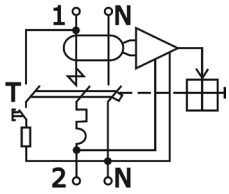
Can be installed in locations with high humidity and sudden temperature changes due to the varnished electronic board.

Switchboard space saving — 36 mm. RCBO does not require additional CB.

Suitable for conductors up to 25 mm^2

Can be installed as an input device due to high value of limiting switching capacity (LSC) — 6 kA.

Items

OptiDin D63 RCBO							
Number of poles	1P+N						
Circuit diagrams							
Rated residual current IΔn, 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

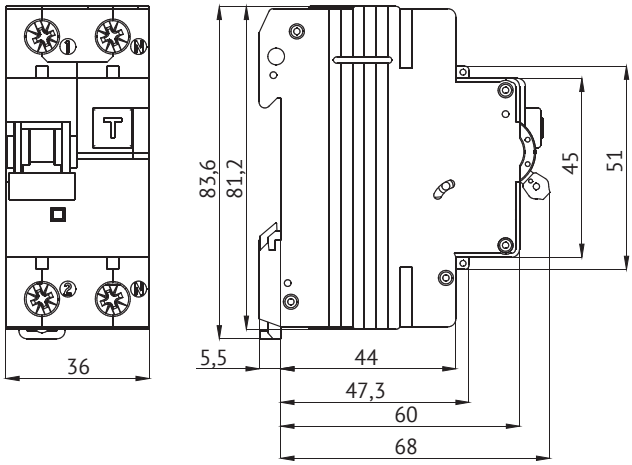
Connection

Rated current, A	Tightening ptorque, N/m	Without preparation of current conductor core, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multicore)	Rigid copper (multicore and single-core)	Aluminum (multicore and single-core)	Flexible copper (multicore)	Flexible aluminum	Rigid aluminum
6–40	2	1,5–10	1,5–16	2,5–10	25	16	25

Technical specification

Basic specifications		
Insulation voltage, V		400
Application category		A
Energy limiting class		3
Additional specifications		
IP rating		IP20
Wear resistance	Switching	4000
	Mechanical	6000
Operating temperature range, °C		-40 to +55
Storage temperature range, °C		-45 to +55
Weight, g		
Number of poles	1P+N	190

Overall dimensions (mm)



OptiDin D63 6 kA Residual current circuit breakers with overcurrent protection up to 40 A

OptiDin D63 double-pole residual current operated circuit breakers with integral overcurrent protection (hereinafter referred to as RCBOs) shall be installed in single-phase 50 Hz AC systems with a solidly grounded neutral with a 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 electrical equipment malfunctions or unintentional contact with exposed conductive parts of electrical installations, to prevent ignition and fires resulting from the flow of leakage currents and ground faults, as well as to protect against overcurrent and short circuit.

Double-pole circuit breakers of electronic type with one overcurrent protected pole belong to the class of devices that are functionally dependent on the mains voltage (not opening automatically in the event of a power failure) and are designed for fixed installation with fixed wiring.

The RCBOs comply with the requirements of GOST IEC 61009-1, TR TS 004/2011, TR TS 020/2011 and are manufactured as per TU 3422-046-05758109-2008.

A wide range of accessories makes the use of KEAZ OptiDin RCBOs a convenient choice for any solution.

Series advantages

Contact position indication

Provides three types of protection

Increased noise immunity prevents false triggering of the device.

Can be installed in locations with high humidity and sudden temperature changes due to the varnished electronic board.

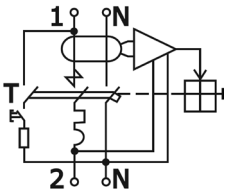
Switchboard space saving — 36 mm. RCBO does not require additional CB.

Suitable for conductors up to 25 mm²

Can be installed as an input device due to high value of limiting switching capacity (LSC) — 6 kA.

Accessories snap on to the left side of the circuit breaker, ensuring a fast, secure connection with high precision in one click.

Items

OptiDin D63 RCBO							
Number of poles	1P+N						
Circuit diagram							
Rated residual current IΔn, A	Rated current In, A						
	6	10	16	20	25	32	40
0,01	333140	333124	333134	333136	333137	333138	333139
0,03	333147	333141	333142	333143	333144	333145	333146
0,1	333154	333148	333149	333150	333151	333152	333153
0,3	333161	333155	333156	333157	333158	333159	333160
Accessories	page 24-26						

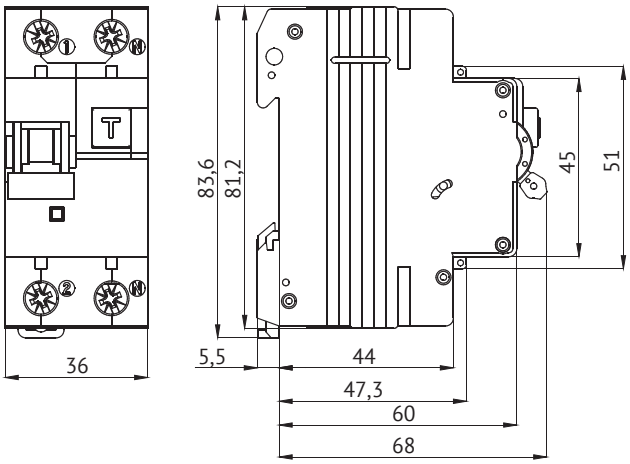
Connection

Rated current, A	Tightening ptorque, N/m	Without preparation of current conductor core, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multicore)	Rigid copper (multicore and single-core)	Aluminum (multicore and single-core)	Flexible copper (multicore)	Flexible aluminum	Rigid aluminum
6–40	2	1,5–10	1,5–16	2,5–10	25	16	25

Technical specification

Basic specifications		
Insulation voltage, V		400
Application category		A
Energy limiting class		3
Additional specifications		
IP rating		IP20
Wear resistance	Switching	4000
	Mechanical	6000
Operating temperature range, °C		-40 to +55
Storage temperature range, °C		-45 to +55
Weight, g		
Number of poles	1P+N	190

Overall dimensions (mm)



Accessories suitable for OptiDin D63 6kA

Snap-on accessories for miniature circuit breakers	
Code	Name
249158	OptiDin BM63-MSSK 2
249189	OptiDin BM63-MSK 1
249197	OptiDin BM63-MSK 2
249184	OptiDin BM63-NR230
249177	OptiDin BM63-NR24
333065	OptiDin BM63-RMMN

WARNING!!! Snap-on accessories can be attached only to the line of OptiDin BM63 6 kA...25 kA miniature circuit breakers, the line of OptiDin VD63, OptiDin D63 6 kA residual current protection devices, load breakers OptiDin BM63P and current limiters OptiDin BM63-OT.

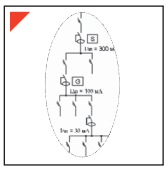
OptiDin VD63 Residual current circuit breakers with overcurrent protection up to 63 A

OptiDin VD63 residual current operated circuit breakers with integral overcurrent protection (hereinafter referred to as RCBO) are installed in 50 Hz AC circuits with a solidly grounded neutral with a rated voltage not exceeding 400 V and rated currents up to 63 A. They are designed to protect people from electric shock in case of electrical equipment malfunctions or unintentional contact with exposed conductive parts of electrical installations, to prevent ignition and fires resulting from the flow of leakage currents and ground faults, as well as to protect against overcurrent and short circuit. RCBOs belong to a class of devices that are functionally dependent on the mains voltage (not opening automatically in the event of a power failure). Double-pole RCBOs are designed for fixed installation with fixed wiring in normal and harsh operating conditions as per GOST 30345.0-95 in single-phase, and four-pole RCBOs — in threephase systems.

The RCBOs comply with the requirements of GOST IEC 61009-1, TR TS 004/2011, TR TS 020/2011 and are manufactured as per TS3422-046-05758109-2008.

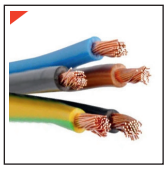
Series advantages

Provides three types of protection



Possibility of building cascade protection of circuits due to the presence in the line of customized RCBOs of «S» type.

Trip cause indication — leakage currents/short circuit or overcurrent.



Suitable for conductors up to 25 mm^2

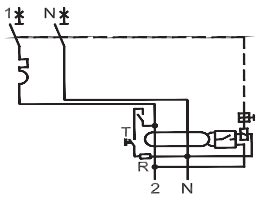
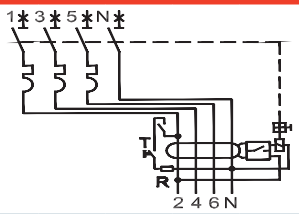
Increased noise immunity prevents false triggering of the device.

Can be installed as an input device due to high value of limiting switching capacity (LSC) — 6 kA.

Protection against turning on the circuit that has a lifethreatening leakage current in it.

Accessories snap on to the left side of the circuit breaker, ensuring a fast, secure connection with high precision in one click.

Items

OptiDin VD63 RCBO																		
Circuit diagrams																		
Protective characteristic type	Number of poles	1P+N									3P+N							
	Rated residual current IΔn, A	Rated current In, A																
		10	16	20	25	32	40	50	63	6	10	16	20	25	32	40	50	63
B	0,01	338285	338286	338287	338288						338312	338313	338314	338315				
	0,03	338289	338290	338291	338292	338293	338294	338295	338296	338324	338316	338317	338318	338319	338320	338321	338322	338323
	0,1	338297	338298	338299	338301 338300*	338302	338303	338305 338304*	338306		338325	338326	338327	338329 338328*	338331 338330*	338332	338333	338334
	0,3				338307	338308	338309	338310	338311		145736			338335	338337 338336*	338338	338339	338341 338340*
C	0,01	103448	103449	103450	103451						103471	103472	103473	103474				
	0,03	103452	103453	103454	103455	103456	103457	103458	103459	228261	103475	103476	103477	103478	103479	103480	103481	103482
	0,1	103460	103461	103462	103463 218721*	103495	103496	103464 222722*	103465		103483	103484	103485	103486 236719*	103487 274847*	103488	103489	103490
	0,3				103466	103467	103468	103469	103470					103491	103492 236721*	103493	103497	103494 250090*
D	0,01	338342	338343	338344	338345						338369	338370	338371	338372				
	0,03	338346	338347	338348	338349	338350	338351	338352	338353	338381	338373	338374	338375	338376	338377	338378	338379	338380
	0,1	338354	338355	338356	338358 338357*	338359	338360	338362 338361*	338363		338382	338383	338384	338386 338385*	338388 338387*	338389	338390	338391
	0,3				338364	338365	338366	338367	338368					338392	338394 338393*	338395	338396	338398 338397*
Accessories		page 23-25																

* selective design

WARNING!!! Snap-on accessories can be attached only to the line of OptiDin BM63 6 kA...25 kA miniature circuit breakers, the line of OptiDin VD63, OptiDin D63 6 kA residual current protection devices, load breakers OptiDin BM63P and current limiters OptiDin BM63-OT.

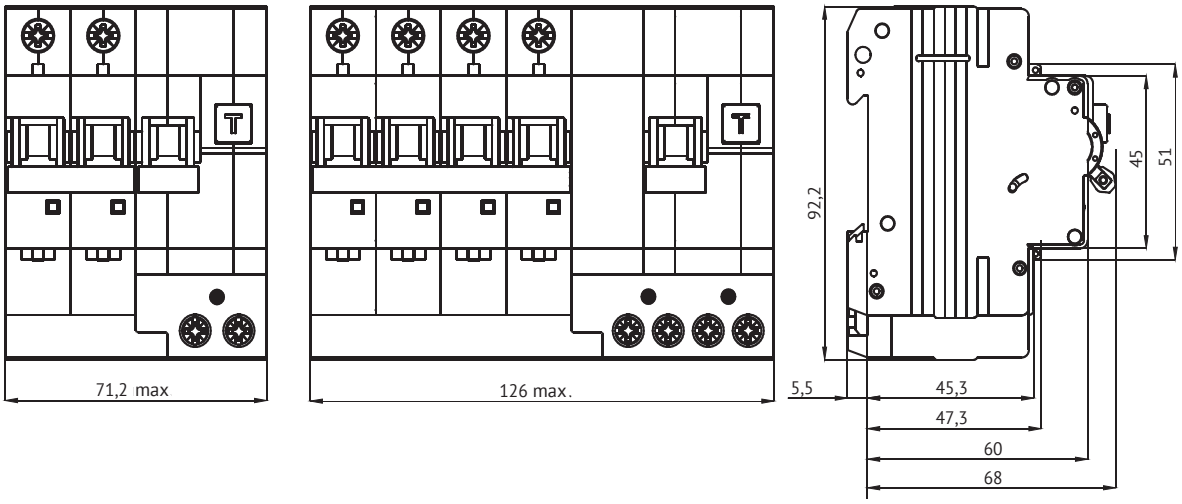
Technical specification

Basic specifications			
Application category		A	
Energy limiting class		3	
Additional specifications			
IP rating		IP20	
Wear resistance	Switching	4000	
	Mechanical	6000	
Operating temperature range, °C		-25 to +55	
Storage temperature range, °C		-45 to +55	
Weight, g			
Number of poles		1P+N	0,39
		3P+N	0,72

Connection

Rated current, A	Tightening ptorque, N/m	Without preparation of current conductor core, mm²			With preparation of the conductor current carrying wire, mm²		
		Flexible copper (multicore)	Rigid copper multi-core and single-core)	Aluminum multi-core and single-core)	Flexible copper (multicore)	Flexible aluminum	Rigid aluminum
6–40	2	1,5–10	1,5–16	2,5–10	25	16	25

Overall dimensions (mm)



OptiDin

↗ Surge protection devices

The OptiDin OM surge protection devices (surge arresters) are designed to protect against switching and lightning surges.

The OptiDin OM SPDs are installed at the points of entry of electricity in the main switchboard, in secondary switchboards and directly on electrical machines, instruments and equipment.

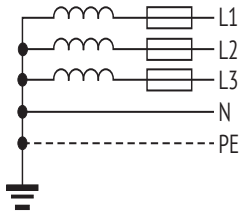
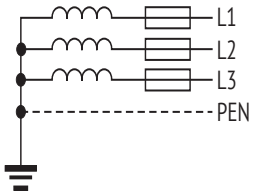
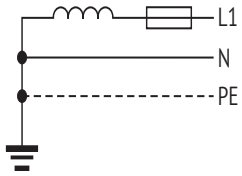
Designation

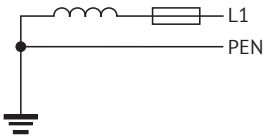
OptiDin OM u - I - 1 + N U - 280 / 25 / X R S

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12)

1	Series	OptiDin										
2	Configuration	OM										
3	One-piece configuration	u										
4	Surge protection device type	I						II				
5	Number of poles or neutral pole (letter N) of a single-piece version	1P		1P+N		2P		3P		3P+N		4P	N
6	Presence of pole for neutral conductor	N										
7	Single-piece configuration of pole for neutral conductor	U										
8	Maximum operating voltage (phase), V	260						280				
9	Impulse current (for surge protection device type I) or maximum discharge current (for surge protection device type II), kA	12,5		25		30		40		50		100
10	Presence of residual current suppression function	X										
11	Presence of remote signaling terminals	R										
12	Presence of wear indicator	S										

Selection guide

Current type	Grounding system type		Number of poles	Product name	Code	Protected conductors
AC, 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	
AC, single-phase power 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	

Current type	Grounding system type		Number of poles	Product name	Code	Protected conductors
AC, single-phase power 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	

Surge protection device classification								
Test class		Surge protection device design			Overvoltage protection method		
Surge protection device class I+II+III	Surge protection device class II+III	Removable module design	Remote signaling terminal	Wear indicator	Switching voltage CDT	Limiting voltage MOV	Combined type MOV+CDT
+		+			+	+	
+		+	+		+	+	
+		+				+	
+		+	+			+	
+		+	+	+		+	
+		+		+		+	
	+	+			+	+	
	+	+	+		+	+	
	+	+				+	
	+	+	+			+	
	+	+	+	+		+	
	+	+		+		+	
	+	+					+
	+	+	+				+
+		+				+	
+		+	+			+	
+		+	+	+		+	
+		+		+		+	
	+	+				+	
	+	+	+			+	
	+	+	+	+		+	
	+	+		+		+	
	+	+					+
	+	+	+				+
+		+			+	+	
+		+	+		+	+	
+		+			+	+	
+		+	+		+	+	
+		+				+	
+		+	+			+	
+		+	+	+		+	
+		+		+		+	
	+	+			+	+	
	+	+	+		+	+	
	+	+				+	
	+	+	+			+	
	+	+	+	+		+	
	+	+		+		+	
	+	+					+
	+	+	+				+

Surge protection device classification								
Test class		Surge protection device design				Overvoltage protection method		
Surge protection device class I+II+III	Surge protection device class II+III	Single-piece design	Removable module design	Remote signaling terminal	Wear indicator	Switching voltage CDT	Limiting voltage MOV	Combined type MOV+CDT
+		+						+
+		+		+				+
+		+						+
+		+		+				+
+		+						+
+		+				+		
+		+				+		
+			+				+	
+			+	+			+	
+			+	+	+		+	
+			+		+		+	
+			+			+		
	+		+				+	
	+		+	+			+	
	+		+				+	
	+		+	+			+	
	+		+	+	+		+	
	+		+		+		+	
	+		+					+
	+		+	+				+
	+		+				+	
	+		+				+	
	+		+			+		

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

The OptiDin OMuI surge protection devices are designed to protect mains and devices from the effects of a surge wave caused by a close, direct or indirect lightning strike. They are designed as a one-piece unit with a varistor and arrester connected in series, which ensures a complete separation of L>N, N>PE, without residual currents.

The OptiDin OMI surge protection devices are designed to equalize potentials in the event of a direct lightning strike. They are installed at the input of external conductors in the main switchboard and contain replaceable pluggable varistors.

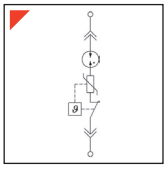
The OptiDin OM(u)I surge protection devices are available with or without remote signaling. Mounting on a 35 mm din-rail SPDs comply with the requirements of GOST R 51992.

Series advantages

Informing about the status of protection and the need to replace devices due to the presence of indicator for varistor module wear during operation.

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

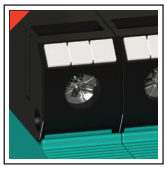
Improved current-carrying properties in onepiece versions.



Models with a residual current suppression function eliminate leakage currents, making it possible to install SPDs in front of the electricity meter.

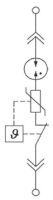
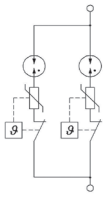
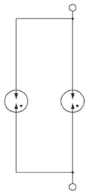
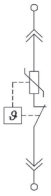
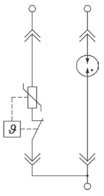
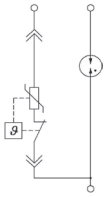
Space is provided for placement of additional information.

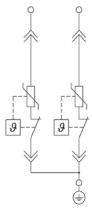
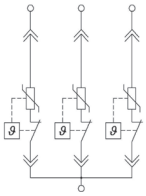
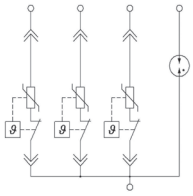
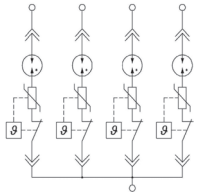
Availability of an additional contact for remote signaling allows to remotely monitor the device status.



Marked terminals allow to avoid incorrect connection of conductors during installation.

Items

OptiDin OM(u)-I										
Appearance										
Number of poles		1P			N	N	1P	N	1P+N	
Circuit diagrams										
Rated AC voltage Un, V		230	230	230	230	230	230	230	230	230
Maximum continuous operating voltage Uc, V		280	280	280	280	260	280	260	280/260 N/PE	280/260 N/PE
Impulse current Iimp (10/350), kA		12,5	25	30	50	100	12,5	12,5	12,5	12,5/50 N/PE
Maximum discharge current Imax (8/20), kA		50	60	60	80	100	50	40	50/40 N/PE	50/80 N/PE
Rated discharge current In (8/20), kA		30	40	40	50	100	30	20	30/20 N/PE	30/50 N/PE
Protection voltage level Up, kV		≤1,5	≤1,5	≤1,5	≤1,5	≤1,5	≤1,3	≤1,5	≤1,3/≤1,5 N/PE	≤1,3/≤1,5 N/PE
Response time tA, ns		<100	<100	<100	<100	<100	<25		<25/<100 N/PE	<25/<100 N/PE
Open circuit voltage [T3] UOC, kV		6	6	6		6	20	6	20/6 N/PE	20/10 N/PE
Estimated short-circuit current of power supply Ip, kAef		25	25	25			25		25 L/N	25 L/N
Protective fuse rating gL/gG, A		≤160	≤250	≤315			≤160		≤160 L/N	≤160 L/N
Temporary overvoltage UTOV, V AC		335	335	335			335		335 L/N	335 L/N
Residual current IPE, μA		<1	<1	<1	<1	<1		<1	<1 N/PE	<1 N/PE
Follow current If, A					100	100		100	100 N/PE	100 N/PE
Items										
General design					114281	114286	114201	114269	114251	114278
	With remote alarm contact						114244		114252	114279
With wear indicator							114271			
	With remote alarm contact						114273			
With residual current suppression function		114283	114288	114292						
	With remote alarm contact	114284	114291							

OptiDin OM(u)-I					
Appearance					
Number of poles		2P	3P	3P+N	4P
Circuit diagrams					
Rated AC voltage Un, V		230	230	230	230
Maximum continuous operating voltage Uc, V		280	280	280	280
Impulse current Iimp (10/350), kA		12,5	12,5	12,5	12,5
Maximum discharge current Imax (8/20), kA		50	50	50/80 N/PE	50
Rated discharge current In (8/20), kA		30	30	30/50 N/PE	30
Protection voltage level Up, kV		≤1,3	≤1,3	≤1,3/≤1,5 N/PE	≤1,3
Response time tA, ns		<25	<25	<25/<100 N/PE	<25
Open circuit voltage [T3] UOC, kV		20	20	20/10 N/PE	20
Estimated short-circuit current of power supply Ip, kAef		25 L/N	25 L/N	25 L/N	25
Protective fuse rating gL/gG, A		≤160 L/N	≤160 L/N	≤160 L/N	≤160
Temporary overvoltage UTOV, V AC		335 L/N	335 L/N	335 L/N	335
Residual current IPE, μA				<1 N/PE	
Follow current If, A				100 N/PE	
Items					
General design		114209	114242	114275	114243
	With remote alarm contact	114245	114246	114277	114247
With wear indicator		114272	114258		114260
	With remote alarm contact	114274	114262		114263

Technical specification

Basic specifications		
Operating frequency, Hz		50/60
Operating voltage, V		230/400
Status indication in models	Green	in operating condition
	Yellow*	partially worn, replacement recommended
	Red	out of order, immediate replacement required
Signaling changeover contact		M3/0,25 N/m, 0,2 ... 1,5 mm², max. 250 V~/1 A
Additional specifications		
Operating temperature range, °C		- 40 to +70
IP rating		IP20
Mounting on profiled din-rail		35 x 7,5 mm
Compliance with regulations	COST R 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 indicator

Connection

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

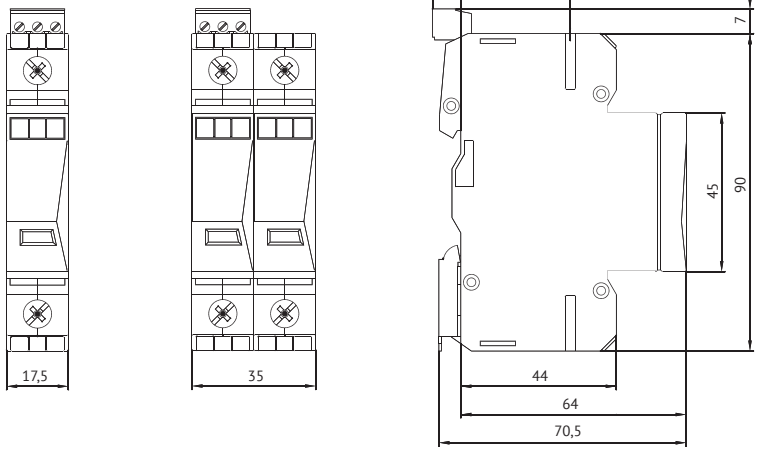
Plug-in modules

Name	Code
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

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



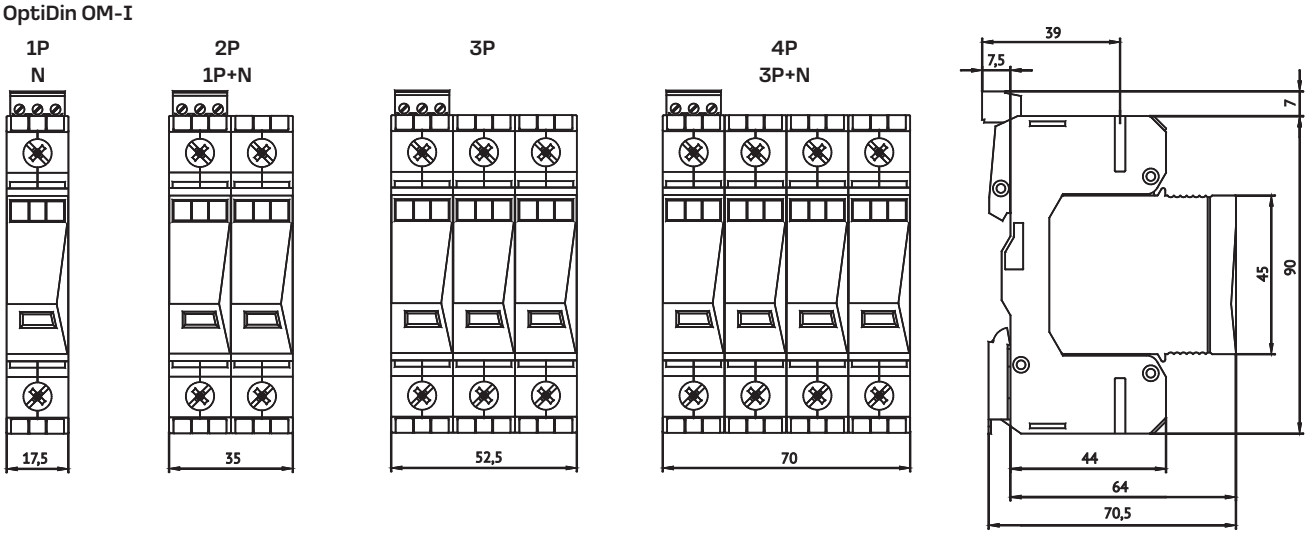
OptiDin OM-I

1P
N

2P
1P+N

3P

4P
3P+N



OptiDin OM-II Class II+III surge protection devices

Class II surge protection devices are designed for surge protection category III, for which a maximum overvoltage of 4 kV is established through insulation coordination for 230/400 V networks. These surge protectors serve to dissipate the energy of surge voltages in the electrical distribution network of a facility and are installed mainly, in secondary distribution boards.

OptiDin OMII surge protection devices are designed to dissipate surge energy in power systems of buildings. They are usually installed in secondary switchboards and contain an integrated plug-in varistor. The OptiDin OMII surge protection devices are available with or without remote signaling. Mounting is carried out on a 35 mm din-rail.

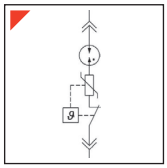
SPDs comply with the requirements of GOST R 51992.

Series advantages

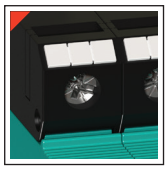
Informing about the status of protection and the need to replace devices due to the presence of indicator for varistor module wear during operation.

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

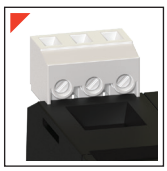
Space is provided for placement of additional information.



Models with a residual current suppression function eliminate leakage currents, making it possible to install SPDs in front of the electricity meter.

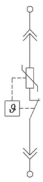
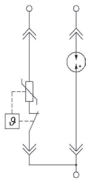
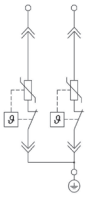
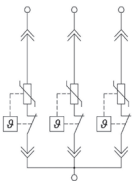
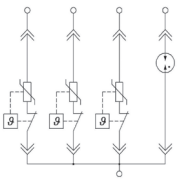
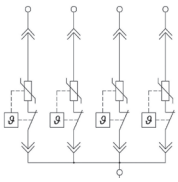


Marked terminals allow to avoid incorrect connection of conductors during installation.



Availability of an additional contact for remote signaling allows to remotely monitor the device status.

Items

OptiDin OM-II											
Appearance											
Number of poles		1P			N	1P+N	2P	3P	3P+N	4P	
Circuit diagrams											
Rated AC voltage Un, V	230	120	385	470	230	230	230	230	230	230	
Maximum continuous operating voltage Uc, V	280	130	385	550	260	280/260 N/PE	280	280	280	280	
Maximum discharge current Imax (8/20), kA	40				40	40	40	40	40	40	
Rated discharge current In (8/20), kA	20				20	20	20	20	20	20	
Protection voltage level Up, kV	≤1,45	≤0,85	≤1,8	≤2,65	≤1,45	≤1,45	≤1,45	≤1,45	≤1,45	≤1,45	
Response time tA, ns	<25				<150	<25/<150 N/PE	<25	<25	<25/<150 N/PE	<25	
Open circuit voltage [T3] UOC, kV	6				6	6	6	6	6	6	
Estimated short-circuit current of power supply Ip, kAef	25					25 L/N	25 L/N	25 L/N	25 L/N	25	
Protective fuse rating gL/gG, A	≤125					≤125	≤125 L/N	≤125 L/N	≤125 L/N	≤125	
Temporary overvoltage UTOV, V AC	335	175	560	685		335 L/N	335 L/N	335 L/N	335 L/N	335	
Residual current IPE, μA					<1	<1 N/PE			<1 N/PE		
Follow current If, A					100	100 N/PE			100 N/PE		
Items											
General design		114294	149961	227679	147311	114315	114310	114295	114296	114311	114297
	With remote alarm contact	114298					114312	114299	114300	114313	114301
With wear indicator		114413						114414	114306		114307
	With remote alarm contact	114439						114440	114308		114309
With residual current suppression function		114318						114320	114302		114303
	With remote alarm contact	114411						114412	114304		114305

Connection

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

Plug-in modules

Name	Code
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

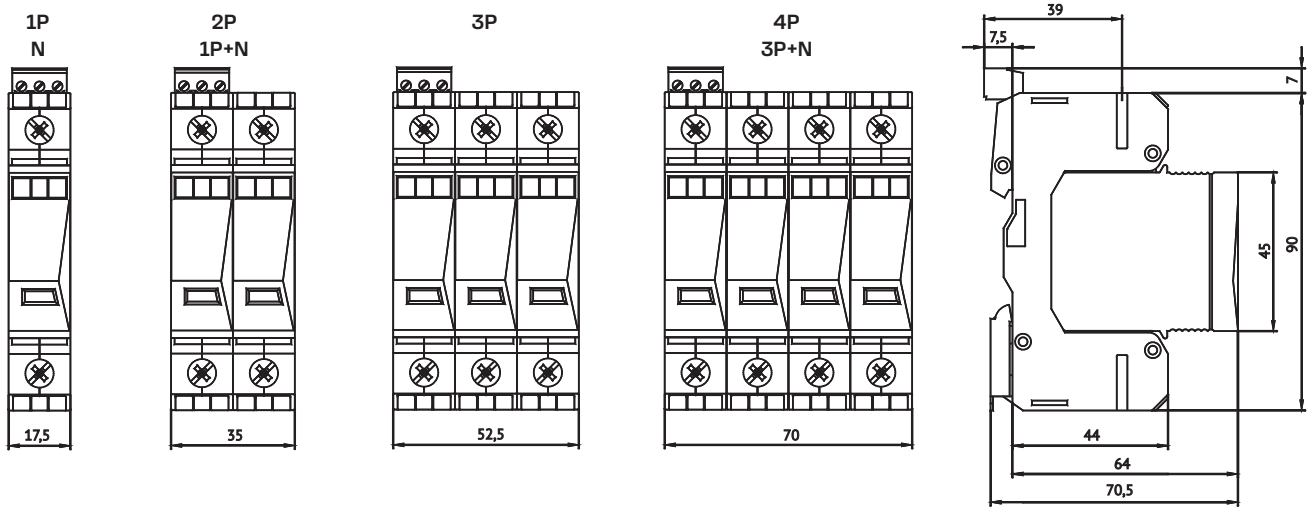
Technical specification

Basic specifications		
Operating frequency, Hz		50/60
Operating voltage, V		230/400
Status indication in models	Green	in operating condition
	Yellow*	partially worn, replacement recommended
	Red	out of order, immediate replacement required
Signaling changeover contact		M3/0,25 N/m, 0,2 ... 1,5 mm², max. 250 V~/1 A
Additional specifications		
Operating temperature range, °C		от - 40 до +70
IP rating		IP20
Mounting on profiled din-rail		35 x 7,5 mm
Compliance with regulations	COST R 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 indicator

Overall dimensions (mm)

OptiDin OM-II



OptiDin
Modular contactors

Electromechanical modular contactors KEAZ are used in automation and control systems of various technological processes, including in air conditioning, ventilation, heating and lighting systems.

Designation

OptiDin MK-100 - 25 4 0 - 230 AC (L)

1 2 3 4 5 6 7 8

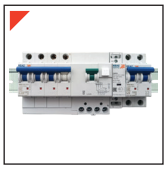
1	Series	OptiDin					
2	Configuration	MK-100			MK-100 (L)		
3	Rated operating current of contactor, A	20, 25, 40, 63, 80, 100			20, 25, 40, 63		
4	Number of normally open (NO) contacts	0	1	2	3	4	
5	Number of normally closed (NC) contacts	0	1	2	3	4	
6	Control coil circuit voltage, V	24, 48, 110, 230			230		
7	Control coil current type	AC					
8	Modification	-			L		

Series advantages

The contact status indication allows you to visually determine the status of the main circuit.

Silent operation. Modernized design. Contactors have no rattle of magnetic and contact system, even at voltage reduction by 60%, which allows to use them in places with frequent stay of people.

Silver-containing contacts provide high switching and mechanical wear resistance.



Din-rail mounting. The contactors are designed to be mounted on a 35 mm din-rail, which makes it possible to use the contactors together with modular devices in enclosures and to cover them with a plastron.

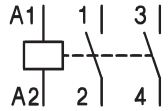
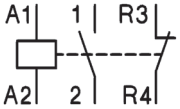
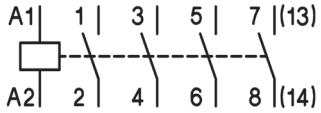
OptiDin MK-100 (L) Modular contactors for currents up to 63 A

Modular contactors OptiDin MK100 (L) are intended for use as components in control circuits for electric drives, ventilation and air conditioning systems, heating, lighting, process automation systems, where frequent and remote load switching with a rated current of up to 63 A is required. OptiDin MK-100 (L) is provided with a visual indication for the contacts status. The voltage in the main contacts circuit is 230 and 400 V AC, frequency 50 Hz. The rated voltage of the control coil is 230V AC. Can also be used for DC circuits. Modular contactors are installed in switchboards of residential and office premises, hotels, hospitals, shopping centers, industrial buildings and public places.

OptiDin MK-100 (L) are used for remote switching and automatic control of equipment such as:
lighting equipment;
single-phase and three-phase electric motors;
various pumps;
air conditioners;
electric heaters.

Contactors comply with requirements of GOST IEC 60947-4-1-2021, TR TS 004/2011.

Items

				OptiDin MK-100 (L)			
Appearance							
Electrical circuit diagram	Main circuit contact type	Control coil voltage, V	Control coil current type	Rated current In, A			
				20	25	40	63
	2NO	230	AC	343728	343730	343732	343734
	1NO+1NC	230	AC	343727	343729		
	4NO	230	AC		343731	343733	343735

Technical specification

Parameter		OptiDin MK-100-20 (L) (2 poles)	OptiDin MK-100-25 (L) (2 poles)	OptiDin MK-100-25 (L) (4 poles)	OptiDin MK-100-40 (L) (2 poles)	OptiDin MK-100-40 (L) (4 poles)	OptiDin MK-100-63 (L) (2 poles)	OptiDin MK-100-63 (L) (4 poles)
Technical parameters								
Main circuit rated current, A		20; 25; 40; 63						
Main circuit rated voltage, V	Alternating current, AC	230; 400						
	Direct current, DC	220						
Type of control circuit current, V		230AC						
Operating range of control circuit voltage, %		85-110						
Rated frequency, Hz		50						
Rated voltage of contactors for insulation, V		500						
Rated conditional short-circuit current, A		3000						
Minimum opening of open contacts, mm		3						
Switching wear resistance, cycles	AC-1/AC-7a	150000						
	AC-3/AC-7b	150000						
Mechanical wear resistance, cycles		1000000						
Impulse withstand voltage, kV		6						
Protection rating as per GOST 14254-2015		IP20						
Control circuit screws tightening torque, N·m		0,5						
Installation tool slot type for tightening of the control circuit screws		PZ1						
Main circuit screw tightening torque, N·m			1,2		2			
Installation tool slot type for tightening of the main circuit screws			PZ1		PZ2			
Operating position in space*		Fixing on din-rail with control circuit terminals up and down						
Environmental pollution degree		3						
Group of operating conditions according to GOST 30631-99**		M7						
Operating temperature range, °C		- 45 to + 60						
Power loss per pole, W		2	3	2	3	3	7	7
Maximum switching frequency, cycle/h	DC-1, DC-3	60						
	AC-1, AC-3		300		600			
	No load	1000						
Control circuit								
Control circuit power consumption, no more, V·A	Switching on	9	9	25	25	45	25	45
	Retention	4,2	4,2	6	6	8	6	8
Switch-on delay, ms		7-16	7-16	9-15	9-15	11-15	9-15	11-15
Switch-off delay, ms		6-12	6-12	4-8	4-8	6-13	4-8	6-13
Contact specifications								
Rated operating current, A	AC-1/AC-7a	20	25	25	40	40	63	63
	AC-3/AC-7b	-	9	9	-	-	32	32
Rated load power for application category AC1/AC7a at 230 V, kW		4	5	-	9	-	11,6	-
Rated load power for application category AC1/AC7a at 400 V, kW		-	-	16	-	25,7	-	40
Rated load power for application category AC3/AC7b at 230 V, kW		1,2	1,5	-	3	-	3,3	-
Rated load power for application category AC3/AC7b at 400 V, kW		-	-	4	-	9	-	11
Breaking capacity at direct current (main circuit voltage 220 V, application category DC-1), A								
NO contacts	1 pole	0,4	0,5	0,5	0,7	0,7	0,7	0,7
	2 poles in series	-	4	4	5	5	6	6
	3 poles in series	-	-	10	-	15	-	16
	4 poles in series	-	-	15	-	20	-	21
NC contacts	1 pole	0,3	0,4	0,4	0,5	0,5	0,5	0,5
	2 poles in series	-	3	3	3,5	3,5	4,5	4,5
	3 poles in series	-	-	7,5	-	11	-	12
	4 poles in series	-	-	11	-	15	-	15,5
Breaking capacity at direct current (main circuit voltage 220 V, application category DC-3), A								
NO contacts	1 pole	-	0,1	0,1	0,3	0,3	0,3	0,3
	2 poles in series	-	0,5	0,5	1	1	1	1
	3 poles in series	-	-	3	-	4	-	4
	4 poles in series	-	-	8	-	10	-	10
NC contacts	1 pole	-	0,075	0,075	0,2	0,2	0,2	0,2
	2 poles in series	-	0,375	0,375	0,75	0,75	0,75	0,75
	3 poles in series	-	-	2	-	3	-	3
	4 poles in series	-	-	6	-	7,5	-	7,5

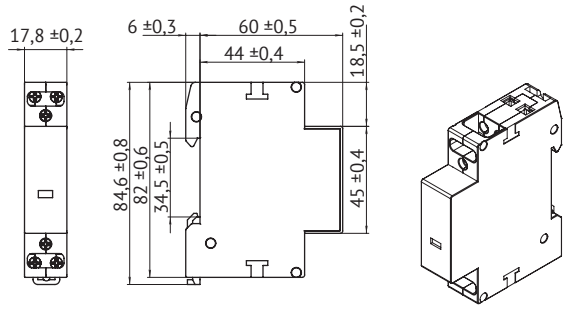
* Deviation from vertical position up to 90° to the right and left is allowed.
** Vibration loads with a frequency from 5 to 100 Hz with acceleration up to 1 g.

Connection

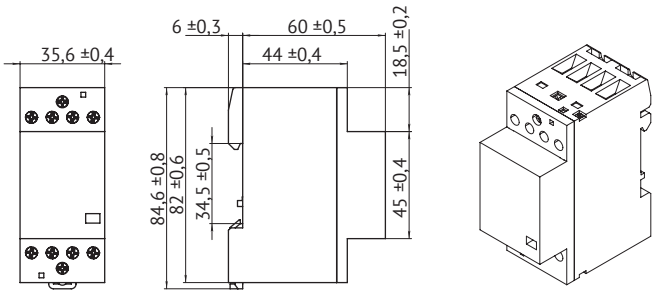
Device	Cross-section of conductor connected to main circuit, mm²		Cross-section of conductor connected to control circuit, mm²	
	Single-core	Multicore	Single-core	Multicore
OptiDin MK100-20	1,5-10	1,5-6	0,75 - 2,5	
OptiDin MK100-25				
OptiDin MK100-40	1,5-25	1,5-16		
OptiDin MK100-63				

Overall dimensions (mm)

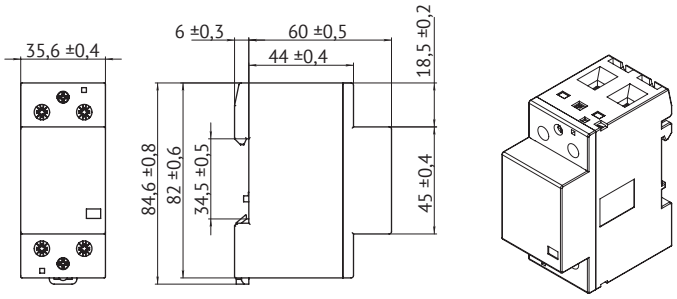
OptiDin MK-100-20 (L), OptiDin MK-100-25 (L) 2-pole version



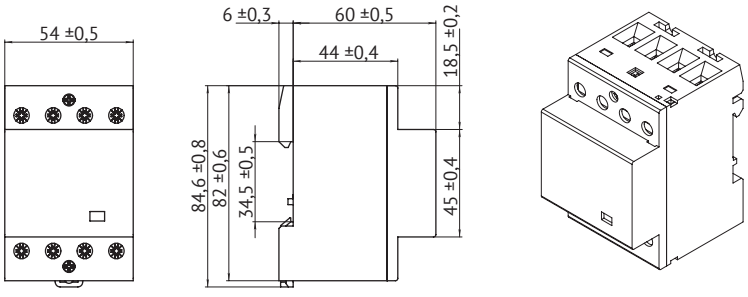
OptiDin MK-100-25 (L) 4-pole version



OptiDin MK-100-40 (L), OptiDin MK-100-63 (L) 2-pole version



OptiDin MK-100-40 (L), OptiDin MK-100-63 (L) 4-pole version



Selection table for optimal modification of OptiDin MK-100 (L) contactors for switching various light sources

Lamp type	Power, W	Maximum number of lamps per pole at 230 V, 50 Hz			
		OptiDin MK-100 -20 (L)	OptiDin MK-100-25 (L)	OptiDin MK-100-40 (L)	OptiDin MK-100-63 (L)
Vacuum and halogen incandescent lamps	15	86	110	228	480
	25	52	72	180	290
	40	32	50	122	195
	60	21	33	86	130
	75	17	26	69	104
	100	13	20	52	78
	150	8	13	34	52
	200	6	10	26	39
	250	5	8	20	31
	300	4	6	17	26
	500	2	4	10	15
	1000	1	2	5	7
Energy-saving lamps	3	42	52	83	120
	5	42	52	83	120
	7	42	52	83	120
	9	36	45	72	104
	11	33	41	65	94
	15	30	37	59	85
	20	29	36	57	82
	23	28	35	56	81
Fluorescent lamps					
Single-lamp without compensation	18	22	24	90	140
	28	22	24	90	140
	36	17	20	65	95
	58	14	17	45	70
Single-lamp with compensation	18	7	8	48	73
	28	7	8	48	73
	36	7	8	48	73
	58	4	5	31	47
Two-lamp with series compensation	18	30	40	100	150
	28	24	31	78	118
	36	17	24	65	95
	58	10	14	40	60
Compact fluorescent lamps with electronic control gear (ECG)					
Single-lamp	18	25	31	49	71
	28	18	22	35	50
	36	14	17	27	39
	58	8	10	16	23
Two-lamp	18	12	15	24	35
	28	9	11	17	25
	36	7	8	13	19
	58	4	5	8	11
Compact fluorescent lamps					
Normal power supply	5	38	48	77	121
	7	27	34	54	86
	9	21	26	42	67
	11	17	21	35	55
Electronic power supply	5	39	49	78	124
	7	39	49	78	124
	9	30	38	60	96
	11	25	31	50	79
High-pressure mercury lamps					
No compensation	50	14	18	38	55
	80	10	13	29	42
	125	7	9	20	29
	250	4	5	10	15
	400	2	3	7	10
Feedback compensation	50	4	5	31	47
	80	4	5	27	41
	125	3	4	22	33
	250	1	2	12	18
	400	1	1	9	13

Lamp type	Power, W	Maximum number of lamps per pole at 230 V, 50 Hz			
		OptiDin MK-100 -20 (L)	OptiDin MK-100-25 (L)	OptiDin MK-100-40 (L)	OptiDin MK-100-63 (L)
Metal halide lamps					
No compensation	35	18	22	43	60
	70	10	12	23	32
	150	5	7	12	18
	250	3	4	7	10
	400	3	3	6	9
Feedback compensation	35	5	6	36	50
	70	2	3	18	25
	150	1	1	11	15
	250	-	1	6	9
	400	-	1	6	8
Low-pressure sodium lamps					
No compensation	18	22	27	71	90
	35	7	9	23	30
	55	7	9	23	30
	90	4	5	14	19
	135	3	4	10	13
	180	3	4	10	13
Feedback compensation	18	6	7	44	66
	35	1	1	11	16
	55	1	1	11	16
	90	1	1	8	12
	135	-	-	4	7
	180	-	-	4	7
High-pressure sodium lamps					
No compensation	150	5	6	17	22
	250	3	4	10	13
	400	2	2	6	8
	1000	-	1	3	3
Feedback compensation	150	1	1	11	16
	250	-	1	6	10
	400	-	-	4	6
	1000	-	-	2	3

OptiDin MK-100 Modular contactors for currents up to 100 A

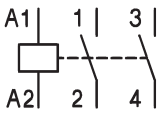
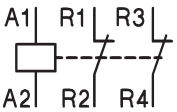
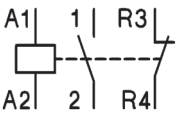
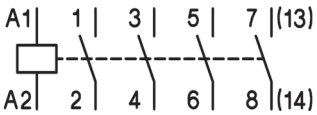
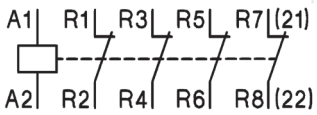
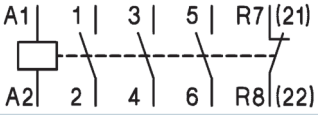
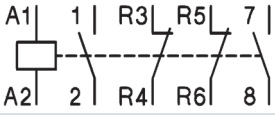
OptiDin MK-100 modular contactors are designed for frequent switching of loads with rated current up to 100 A typical for electric boilers, direct heating convectors, heat accumulators. The devices are used to automate and control various processes, including those in air conditioning, ventilation, and lighting systems.

OptiDin MK-100 is provided with a visual indication for the contacts status. The voltage in the main contacts circuit is 230 and 400 V AC, frequency 50 Hz. The supply voltage for the control coils is 24, 48, 110 and 230 V (AC). Modular contactors are installed in switchboards of residential and office premises, hotels, hospitals, shopping centers, industrial buildings and public places.

OptiDin MK-100 are used for remote switching and automatic control of equipment such as: single-phase and three-phase electric motors;
various pumps;
air conditioners;
electric heaters;
lighting equipment.

Contactors comply with requirements of GOST IEC 60947-4-1.

Items

				OptiDin MK-100					
				Appearance					
Electrical circuit diagram	Main circuit contact type	Control coil voltage, V	Control coil current type	Rated current In, A					
				20	25	40	63	80	100
	2NO	24	AC	321126	321138	321166	321170	321222	321226
		48	AC	321125	321137	321165	321169	321221	321225
		110	AC	321124	321136	321164	321168	321220	321224
		230	AC	321123	321135	321163	321167	321219	321223
	2NC	24	AC	321130	321142	321174	321178	321230	321234
		48	AC	321129	321141	321173	321177	321229	321233
		110	AC	321128	321140	321172	321176	321228	321232
		230	AC	321127	321139	321171	321175	321227	321231
	1NO+1NC	24	AC	321134	321146	321182	321186	321238	321242
		48	AC	321133	321145	321181	321185	321237	321241
		110	AC	321132	321144	321180	321184	321236	321240
		230	AC	321131	321143	321179	321183	321235	321239
	4NO	24	AC		321150	321190	321194	321246	321250
		48	AC		321149	321189	321193	321245	321249
		110	AC		321148	321188	321192	321244	321248
		230	AC		321147	321187	321191	321243	321247
	4NC	24	AC		321154	321198	321202	321254	321258
		48	AC		321153	321197	321201	321253	321257
		110	AC		321152	321196	321200	321252	321256
		230	AC		321151	321195	321199	321251	321255
	3NO+1NC	24	AC		321162	321206	321210	321262	321266
		48	AC		321161	321205	321209	321261	321265
		110	AC		321160	321204	321208	321260	321264
		230	AC		321159	321203	321207	321259	321263
	2NO+2NC	24	AC		321158	321214	321218	321270	321274
		48	AC		321157	321213	321217	321269	321273
		110	AC		321156	321212	321216	321268	321272
		230	AC		321155	321211	321215	321267	321271

Technical specification

Parameter		OptiDin MK-100-20 (2 poles)	OptiDin MK-100-25 (2 poles)	OptiDin MK-100-25 (4 poles)	OptiDin MK-100-40 (2,4 poles)	OptiDin MK-100-63 (2,4 poles)	OptiDin MK-100-80 (2,4 poles)	OptiDin MK-100-100 (2,4 poles)
Technical parameters								
Rated operating voltage of main circuit, V		440						
Mechanical wear resistance, cycles		3000000						
Rated insulation voltage, V		690						
Minimum opening of open contacts, mm		3						
Power loss per pole, W		2	3	2	3	7	7	7
Overcurrent resistance, A		72	72	72	216	240	240	240
Maximum switching frequency, cycle/h	DC-1, DC-3	60						
	AC-1, AC-3	300			600			
	No load	1000						
Test discharge voltage 1.2/50 µs (GOST IEC 61000-4-5), kV		6						
Impulse withstand voltage, kV		6						
Control circuit								
Rated coil voltage, V		24, 48, 110, 230						
Coil voltage operating range, %		85...110						
Rated frequency, Hz		50(50/60)						
Coil power consumption, max., VA/W	Switching on	9/1,6	9/1,6	25/2,5	45/2,6		45/2,6	45/2,6
	Retention	4,2/1,6	4,2/1,6	6–4	8/2,6		8/2,6	8/2,6
Switch-on delay, ms		7–16	7–16	9–15	11–15	11–15	11–15	11–15
Switch-off delay, ms		6–12	6–12	4–8	6–13	6–13	6–13	6–13
Contact specifications								
Rated operating current, A	AC-1/AC-7a	20	25	25	40	63	80	100
	AC-3/AC-7b	-	-	9	27	30	38	48
Rated load power for application category AC3/AC7b at 230 V, kW		1,1	1,3	-	-	-	-	-
Rated load power for application category AC3/AC7b at 400 V, kW		1,2	4	4	12,5	15	19	24
Electrical wear resistance, cycles	AC-1/AC-7a	250000						
	AC-3/AC-7b	250000						

Connection

Device	Cross-section of conductor connected to main circuit, mm²		Cross-section of conductor connected to control circuit, mm²	
	Single-core	Multicore	Single-core	Multicore
OptiDin MK-100-20	1–10	1–6	1–2,5	1–2,5
OptiDin MK-100-25	1–10	1–6	1–2,5	1–2,5
OptiDin MK-100-40	1,5–20	1,5–16	1–2,5	1–2,5
OptiDin MK-100-63	1,5–20	1,5–16	1–2,5	1–2,5
OptiDin MK-100-80	1,5–20	1,5–16	1–2,5	1–2,5
OptiDin MK-100-100	1,5–20	1,5–16	1–2,5	1–2,5
OptiDin MK11	0,5–2,5	0,5–2,5	-	-

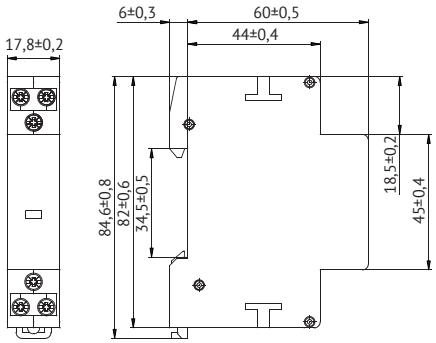
Additional devices for quick and safe installation

Appearance	Name	Code
	OptiDin MK11 Auxiliary contact block	321328

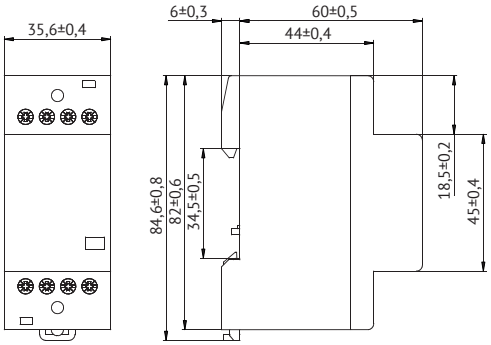
WARNING!!! OptiDin MK11 auxiliary contact block is not suitable for installation on single-module contactors, i.e. for rated currents of 20, 25A with two poles (contacts) of the main circuit.

Overall dimensions (mm)

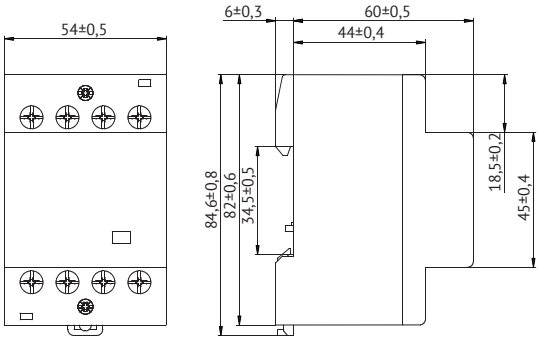
OptiDin MK-100-20



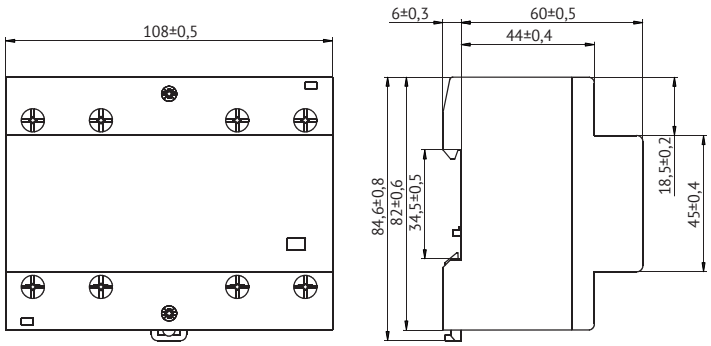
OptiDin MK-100-25



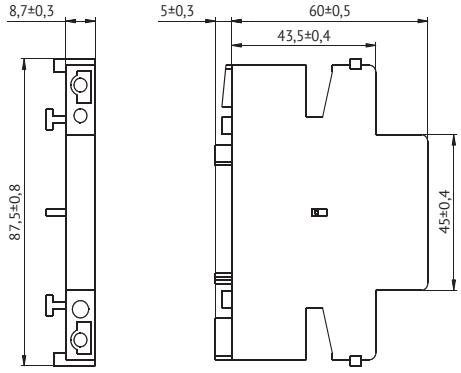
OptiDin MK-100-40
OptiDin MK-100-63



OptiDin MK-100-80
OptiDin MK-100-100



OptiDin MK11



Selection table for optimal modification of OptiDin MK-100 contactors for switching of various light sources

Lamp type	Power, W	Maximum number of lamps per pole at 230 V, 50 Hz					
		OptiDin MK-100-20	OptiDin MK-100-25	OptiDin MK-100-40	OptiDin MK-100-63	OptiDin MK-100-80	OptiDin MK-100-100
Vacuum and halogen incandescent lamps	15	86	110	228	480	610	762
	25	52	72	180	290	368	460
	40	32	50	122	195	248	310
	60	21	33	86	130	165	206
	75	17	26	69	104	132	165
	100	13	20	52	78	99	124
	150	8	13	34	52	66	83
	200	6	10	26	39	50	62
	250	5	8	20	31	39	49
	300	4	6	17	26	33	41
	500	2	4	10	15	19	24
	1000	1	2	5	7	9	11
Energy-saving lamps	3	42	52	83	120	152	190
	5	42	52	83	120	152	190
	7	42	52	83	120	152	190
	9	36	45	72	104	132	165
	11	33	41	65	94	119	149
	15	30	37	59	85	108	135
	20	29	36	57	82	104	130
	23	28	35	56	81	103	129
Fluorescent lamps							
Single-lamp without compensation	18	22	24	90	140	178	222
	28	22	24	90	140	178	222
	36	17	20	65	95	121	151
	58	14	17	45	70	89	111
Single-lamp with compensation	18	7	8	48	73	93	116
	28	7	8	48	73	93	116
	36	7	8	48	73	93	116
	58	4	5	31	47	60	75
Two-lamp with series compensation	18	30	40	100	150	190	238
	28	24	31	78	118	150	187
	36	17	24	65	95	121	151
	58	10	14	40	60	76	95
Compact fluorescent lamps with electronic control gear (ECG)							
Single-lamp	18	25	31	49	71	90	113
	28	18	22	35	50	63	79
	36	14	17	27	39	50	62
	58	8	10	16	23	29	37
Two-lamp	18	12	15	24	35	44	56
	28	9	11	17	25	32	40
	36	7	8	13	19	24	30
	58	4	5	8	11	14	17
Compact fluorescent lamps							
Normal power supply	5	38	48	77	121	154	192
	7	27	34	54	86	109	137
	9	21	26	42	67	85	106
	11	17	21	35	55	70	87
Electronic power supply	5	39	49	78	124	157	197
	7	39	49	78	124	157	197
	9	30	38	60	96	122	152
	11	25	31	50	79	100	125
High-pressure mercury lamps							
No compensation	50	14	18	38	55	70	87
	80	10	13	29	42	53	67
	125	7	9	20	29	37	46
	250	4	5	10	15	19	24
	400	2	3	7	10	13	16
Feedback compensation	50	4	5	31	47	60	75
	80	4	5	27	41	52	65
	125	3	4	22	33	42	52
	250	1	2	12	18	23	29
	400	1	1	9	13	17	21

Lamp type	Power, W	Maximum number of lamps per pole at 230 V, 50 Hz					
		OptiDin MK-100-20	OptiDin MK-100-25	OptiDin MK-100-40	OptiDin MK-100-63	OptiDin MK-100-80	OptiDin MK-100-100
Metal halide lamps							
No compensation	35	18	22	43	60	76	95
	70	10	12	23	32	41	51
	150	5	7	12	18	23	29
	250	3	4	7	10	13	16
	400	3	3	6	9	11	14
Feedback compensation	35	5	6	36	50	63	79
	70	2	3	18	25	32	40
	150	1	1	11	15	19	24
	250	-	1	6	9	11	14
	400	-	1	6	8	10	13
Low-pressure sodium lamps							
No compensation	18	22	27	71	90	114	143
	35	7	9	23	30	38	48
	55	7	9	23	30	38	48
	90	4	5	14	19	24	30
	135	3	4	10	13	17	21
	180	3	4	10	13	17	21
Feedback compensation	18	6	7	44	66	84	105
	35	1	1	11	16	20	25
	55	1	1	11	16	20	25
	90	1	1	8	12	15	19
	135	-	-	4	7	9	11
	180	-	-	4	7	9	11
High-pressure sodium lamps							
No compensation	150	5	6	17	22	28	35
	250	3	4	10	13	17	21
	400	2	2	6	8	10	13
	1000	-	1	3	3	4	5
Feedback compensation	150	1	1	11	16	20	25
	250	-	1	6	10	13	16
	400	-	-	4	6	8	10
	1000	-	-	2	3	4	5

OptiDin

Modular command and signaling devices

OptiDin SL63 and FSL63 Modular indicators

Signal lamps are designed for light indication of the operating state of electrical equipment in electrical circuits with voltage up to 230 V AC, frequency 50 Hz.

Phase indicator lights are designed for light indication of voltage presence in each of the phases.

Signal lamps and phase indicator lights comply with the requirements of GOST R 50030.5.1 (Appendix J), TR TS 004/2011 and are manufactured as per TS3428-070-05758109-2012.

Designation

OptiDin SL63 - R 230 AC - UHL3

1 2 3 4 5 6

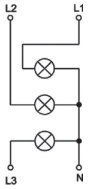
1	Series	OptiDin				
2	Lamp type and configuration	SL63				
3	Conventional color designation	R — red	Y — yellow	G — green	B — blue	W — white
4	Rated operating voltage, V	230	110	48	24	
5	Current type	AC	AC/DC			
6	Climatic version	UHL3 (international TC3)				

OptiDin FSL63 - 230 - UHL3

1 2 3 4

1	Series	OptiDin			
2	Phase indicator light type	FSL63			
3	Rated operating voltage, V	230	110	48	24
4	Climatic version	UHL3 (international TC3)			

Items

Type		Signal lamps OptiDin SL63					Phase indicator light OptiDin FSL63
Rated operating voltage in 50 Hz AC circuit Ue, V	Current type	 					 
		Red	Yellow	Green	Blue	White	
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 specification

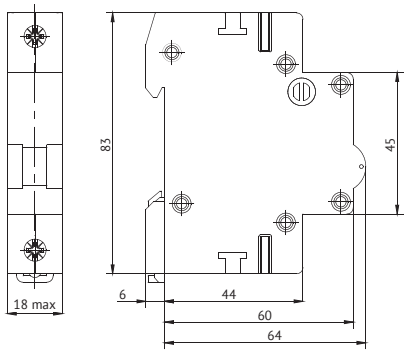
	OptiDin SL63	OptiDin FSL63
Basic specifications		
Insulation voltage Ui, V	230	400
Pollution rating	3	
Rated operating current of information indicator at 230 V, max., A	0,02	
Rated electric power consumption, max., VA	5	15
Operating mode	Continuous	
Additional specifications		
Protection class as per GOST 14254	IP20	
Climatic category as per GOST 15150	UHL3	
Operating temperature range, °C	-60 to +40	
Storage temperature range, °C	-45 to +50	
Weight, g		
OptiDin SL63	68	
OptiDin FSL63	100	

Connection

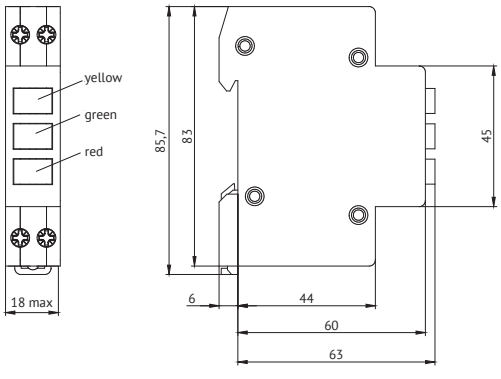
Tightening ptorque, N/m	Signal lamps			Tightening ptorque, N/m	Phase indicator light		
	Conductor cross-section, mm²				Conductor cross-section, mm²		
	Flexible copper (multicore)	Rigid copper (multicore and single-core)	Aluminum (multicore and single-core)		Flexible copper (multicore)	Flexible aluminum	Aluminum rigid
1,5	1,5–6			0,5	1,5–25		

Overall dimensions (mm)

OptiDin SL63



OptiDin FSL63



OptiDin KM63 Modular buttons

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

The buttons comply with the requirements of GOST R 50030.5.1, TR TS 004/2011 and are manufactured as per TS3428-071-05758109-2012.

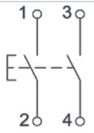
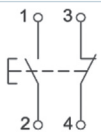
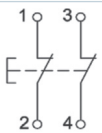
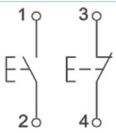
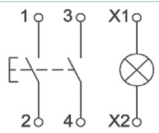
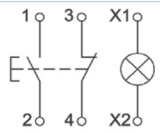
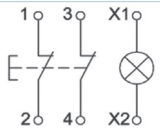
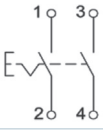
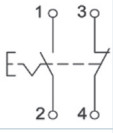
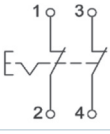
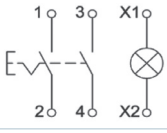
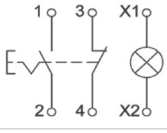
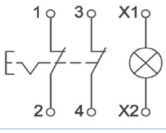
Designation

OptiDin KM63 - C - 11 - UHL3

1 2 3 4 5

1	Series	OptiDin				
2	Configuration	KM63				
3	Type of control mechanism design and contact element function	A	B	C	AF	CF
4	Order and numerical designation of make and break contacts number	10	01	11	20	02
5	Climatic category and placement category as per GOST 15150	UHL3 (international TC3)				

Items

	Modular button			Modular button with two independent controls	Modular button with built-in green indicator light		
Appearance							
Circuit diagrams							
Without locking of control in lower position	138899	138998	138800	138904	138906	138905	138907
Circuit diagrams							
With locking of control in lower position	138902	138901	138903		138909	138908	138910

Technical specification

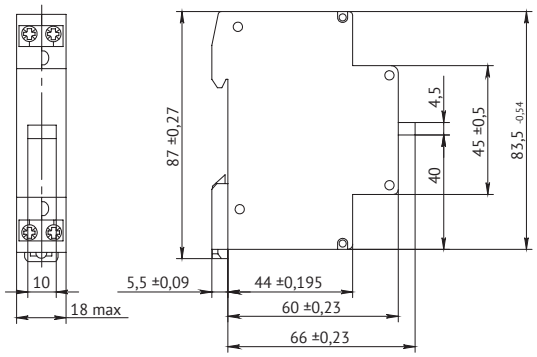
Basic specifications		OptiDin KM63
Rated operating voltage in 50 Hz AC circuit. Ue, V		230
Rated operation current Ie, A		6
Insulation voltage Ui, V		230
Additional specifications		
Protection class as per GOST 14254		IP20
Wear resistance, циклов	Switching	100 000
	Mechanical	250 000
Overcurrent protection: circuit breaker type OptiDin BM63 with characteristic type B, for rated current, A		8
Conventional short-circuit current, A		1000
Power consumption by one normally closed contact, max., W		3
Conventional free air thermal current Ith, A		16
Conventional enclosed thermal current Ithe, A		6
Climatic category as per GOST 15150		UHL3
Operating temperature range, °C		от -60 до +40
Storage temperature range, °C		от -45 до +50
Weight, g		
OptiDin KM63		68

Connection

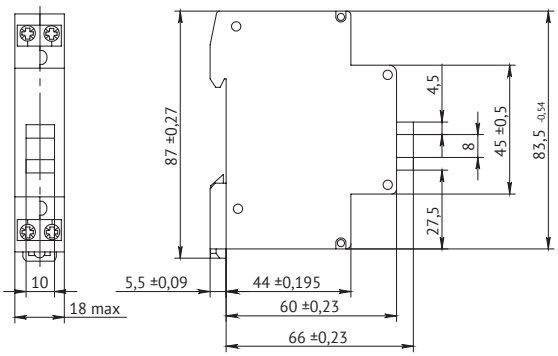
Tightening ptorque, N/m	Button lead clamps			Tightening ptorque, N/m	Indicator light lead clamps		
	Conductor cross-section, mm²				Conductor cross-section, mm²		
	Flexible copper (multicore)	Rigid copper (multicore and single-core)	Aluminum (multicore and single-core)		Flexible copper (multicore)	Flexible aluminum	Aluminum rigid
0,8	1,5–6			0,4	0,5–4		

Overall dimensions (mm)

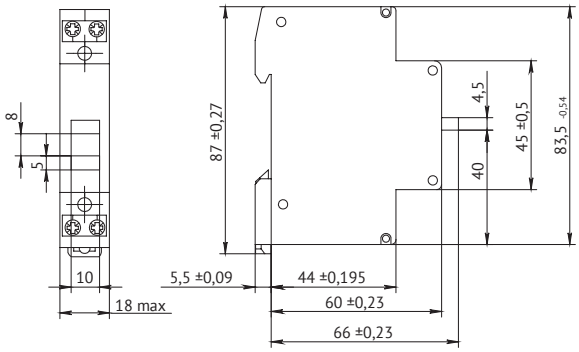
OptiDin KM63-A(AF)



OptiDin KM63-B



OptiDin KM63-C(CF)



OptiDin ZM63 Modular bells

Modular electric bells are designed for use in 230 V AC mains and serve to signal emergency situations in electrical circuits.

The bells comply with the requirements of GOST R 7220-87, GOST R 50030.5.1, TR TS 004/2011.

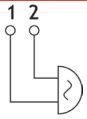
Designation

OptiDin ZM63 - 230 AC - UHL3

1 2 3 4 5

1	Series	OptiDin		
2	Phase indicator configuration	ZM63		
3	Rated operating voltage, V	230	24	12
4	Current type	AC		
5	Climatic category and placement category as per GOST 15150	UHL3		

Items

Type	OptiDin ZM63
Circuit diagrams	
Rated operating voltage in 50 Hz AC circuit, Ue, V	
12	138630
24	138629
230	138627

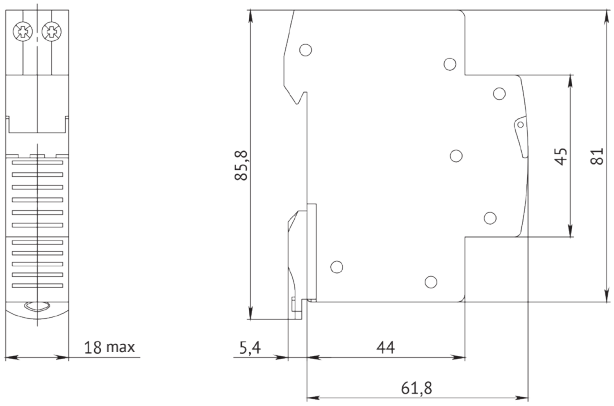
Technical specification

Parameter	Value
Number of poles	single-pole
Rated operating voltage, V	12, 24, 110, 230
Sound volume, max, dB	90
Rated operating current Ie, at 230 V, max, A	0,03
Rated frequency, Hz	50
Protection class as per GOST 14254	IP20
Cross-section of wire connected to lead clamps, mm²	1,5 ÷ 6
Average service life, years	10
Climatic category and placement category as per GOST 15150	UHL3
Operation mode	intermittent
Rated impulse withstand voltage, V	230
Macca OptiDin ZM63, r	100

Connection

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

Overall dimensions (mm)



Circuit breaker time current curve

Dependence of rated operating currents of overcurrent trip devices of OptiDin BM63, OptiDin BM63 DC circuit breakers on 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

Test temperature +30 °C

OptiDin BM63 circuit breaker time current curve as per GOST IEC 60898-1

Circuit breakers with protective characteristic type V
Electromagnetic release trips in the range of 3 to 5 In. The thermal release does not trip within 1 hour at 1.13 In and trips within 1 hour at 1.45 In.

Circuit breakers with protective characteristic type C
Electromagnetic release trips in the range of 5 to 10 In.
The thermal release does not trip within 1 hour at 1.13 In and trips within 1 hour at 1.45 In.

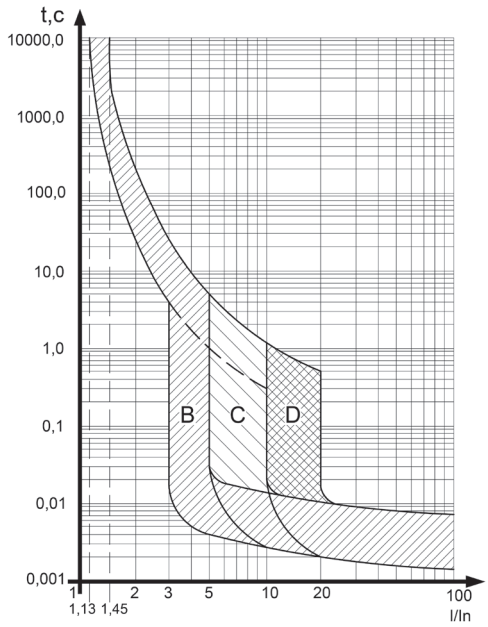
Circuit breakers with protective characteristic type D
Electromagnetic release trips in the range of 10 to 20 In.
The thermal release does not trip within 1 hour at 1.13 In and trips within 1 hour at 1.45 In.

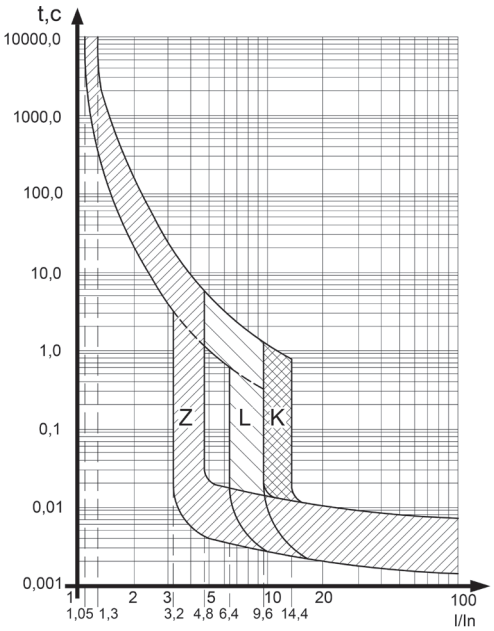
OptiDin BM63 circuit breaker time current curve as per GOST R 50030.2

Circuit breakers with protective characteristic type Z
Electromagnetic release trips in the range of 3.2 to 4.8 In.
The thermal release does not trip within 1 hour at 1.05 In and trips within 1 hour at 1.3 In.

Circuit breakers with protective characteristic type L
Electromagnetic release trips in the range of 6.4 to 9.6 In.
The thermal release does not trip within 1 hour at 1.05 In and trips within 1 hour at 1.3 In.

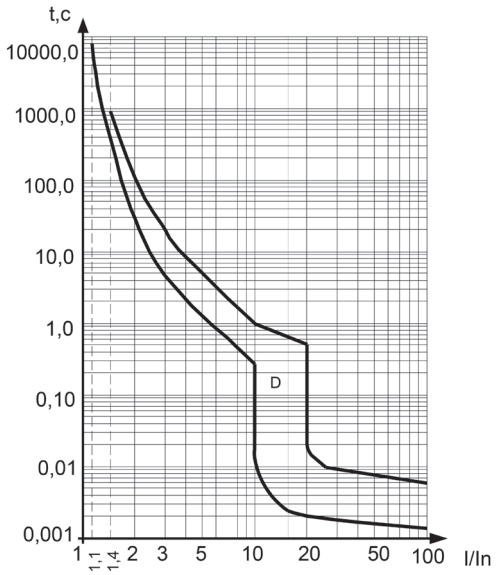
Circuit breakers with protective characteristic type K
Electromagnetic release trips in the range of 9.6 to 14.4 In.
The thermal release does not trip within 1 hour at 1.05 In and trips within 1 hour at 1.3 In





OptiDin BM63-OT circuit breaker time current curve as per GOST IEC 60898-1

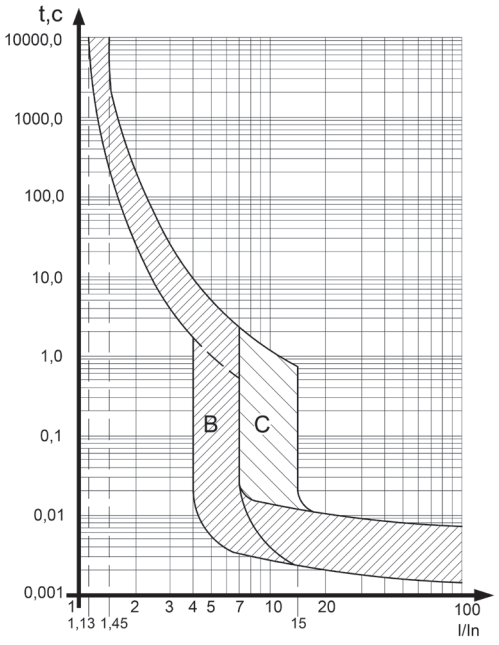
Circuit breakers with protective characteristic type D
Electromagnetic release trips in the range of 10 to 20 In.
The thermal release does not trip within 1 hour at 1.1 In and trips within 1 hour at 1.4 In.
05 In and trips within 1 hour at 1.3 In,



OptiDin BM63 DC DC circuit breaker time current curve as per GOST IEC 60898-2

Circuit breakers with protective characteristic type V
Electromagnetic release trips in the range of 3 to 5 In.
The thermal release does not trip within 1 hour at 1.13 In and trips within 1 hour at 1.45 In.

Circuit breakers with protective characteristic type C
Electromagnetic release trips in the range of 5 to 10 In.
The thermal release does not trip within 1 hour at 1.13 In and trips within 1 hour at 1.45 In.

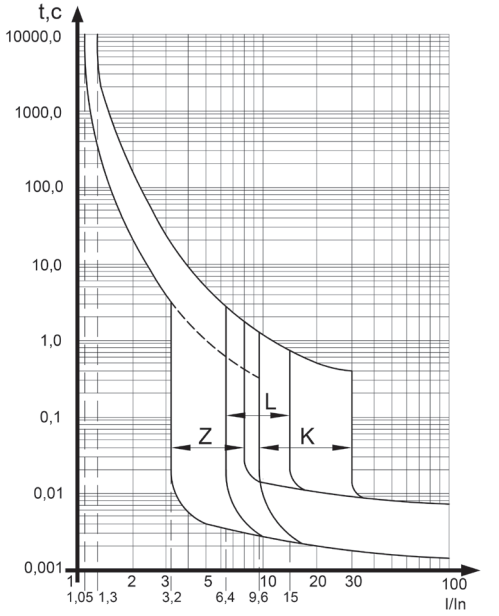


OptiDin BM63 DC circuit breaker time current curve as per GOST R 50030.2

Circuit breakers with protective characteristic type Z
Electromagnetic release trips in the range of 3.2 to 4.8 In.
The thermal release does not trip within 1 hour at 1.05 In and trips within 1 hour at 1.3 In.

Circuit breakers with protective characteristic type L
Electromagnetic release trips in the range of 6.4 to 9.6 In.
The thermal release does not trip within 1 hour at 1.05 In and trips within 1 hour at 1.3 In.

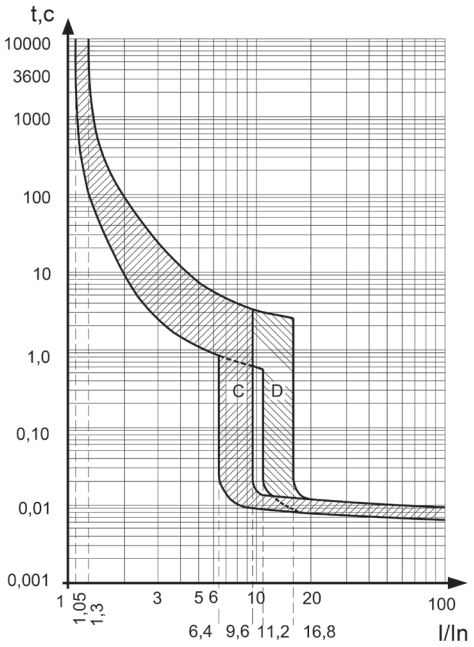
Circuit breakers with protective characteristic type K
Electromagnetic release trips in the range of 9.6 to 14.4 In.
The thermal release does not trip within 1 hour at 1.05 In and trips within 1 hour at 1.3 In.



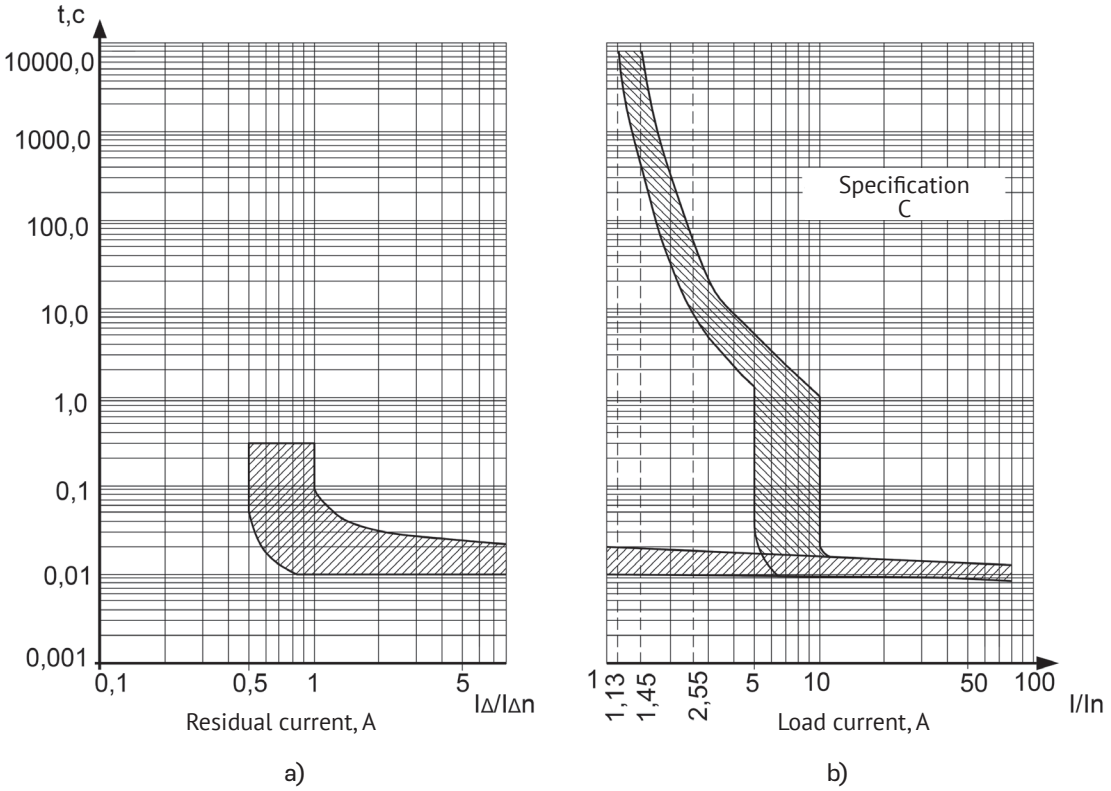
OptiDin BM125 circuit breaker time current curve as per GOST IEC 60947-2

Circuit breakers with protective characteristic type C
Electromagnetic release trips in the range of 5 to 10 In.
The thermal release does not trip within 2 hours at 1.05 In and trips within 2 hour at 1.3 In.

Circuit breakers with protective characteristic type D
Electromagnetic release trips in the range of 10 In to 20 In.
The thermal release does not trip within 2 hours at 1.05 In and trips within 2 hours at 1.3 In.



Time current curve of OptiDin D63 and OptiDin VD63 RCBOs as per GOST IEC 61009-1



a) Tripping characteristic and trip time limits for residual current.
b) Protective characteristic under overcurrent conditions at a test temperature of plus 30°5°C, from a cold state, when current is passed through all protected poles of the RCBO.