

MINIATURE CIRCUIT BREAKERS LTS

- Series of miniature circuit breakers up to 63 A, AC 230/400 V a DC 60 V / pole.
- For protection of cables and conductors against over-load and short-circuit.
- Tripping characteristics B, C, D according to EN 60898-1.
- Breaking capacity 10 kA.



LTS-10B-1



LTS-16B-1N



LTS-10C-2

Miniature circuit breakers 1-pole

I _n [A]	Characteristic B		Characteristic C		Characteristic D		Number of modules	Weight [kg]	Package [pcs]
	Type	Order code	Type	Order code	Type	Order code			
0,5	-	-	LTS-0,5C-1	OEZ:41967	LTS-0,5D-1	OEZ:41984	1	0.178	12
1	LTS-1B-1	OEZ:41952	LTS-1C-1	OEZ:41968	LTS-1D-1	OEZ:41985	1	0.195	12
1,6	-	-	LTS-1,6C-1	OEZ:41969	LTS-1,6D-1	OEZ:41986	1	0.178	12
2	LTS-2B-1	OEZ:41953	LTS-2C-1	OEZ:41970	LTS-2D-1	OEZ:41987	1	0.178	12
4	LTS-4B-1	OEZ:41954	LTS-4C-1	OEZ:41971	LTS-4D-1	OEZ:41988	1	0.178	12
6	LTS-6B-1	OEZ:41955	LTS-6C-1	OEZ:41972	LTS-6D-1	OEZ:41989	1	0.178	12
8	LTS-8B-1	OEZ:41956	LTS-8C-1	OEZ:41973	LTS-8D-1	OEZ:41990	1	0.178	12
10	LTS-10B-1	OEZ:41957	LTS-10C-1	OEZ:41974	LTS-10D-1	OEZ:41991	1	0.178	12
13	LTS-13B-1	OEZ:41958	LTS-13C-1	OEZ:41975	LTS-13D-1	OEZ:41992	1	0.178	12
16	LTS-16B-1	OEZ:41959	LTS-16C-1	OEZ:41976	LTS-16D-1	OEZ:41993	1	0.198	12
20	LTS-20B-1	OEZ:41960	LTS-20C-1	OEZ:41977	LTS-20D-1	OEZ:41994	1	0.196	12
25	LTS-25B-1	OEZ:41961	LTS-25C-1	OEZ:41978	LTS-25D-1	OEZ:41995	1	0.178	12
32	LTS-32B-1	OEZ:41962	LTS-32C-1	OEZ:41979	LTS-32D-1	OEZ:41996	1	0.196	12
40	LTS-40B-1	OEZ:41963	LTS-40C-1	OEZ:41980	LTS-40D-1	OEZ:41997	1	0.178	12
50	LTS-50B-1	OEZ:41964	LTS-50C-1	OEZ:41981	LTS-50D-1	OEZ:41998	1	0.178	12
63	LTS-63B-1	OEZ:41965	LTS-63C-1	OEZ:41982	LTS-63D-1	OEZ:41999	1	0.178	12

Miniature circuit breakers 1+N-pole

I _n [A]	Characteristic B		Characteristic C		Characteristic D		Number of modules	Weight [kg]	Package [pcs]
	Type	Order code	Type	Order code	Type	Order code			
2	LTS-2B-1N	OEZ:43292	LTS-2C-1N	OEZ:42011	LTS-2D-1N	OEZ:43294	2	0.347	6
4	LTS-4B-1N	OEZ:43293	LTS-4C-1N	OEZ:42012	LTS-4D-1N	OEZ:43295	2	0.347	6
6	LTS-6B-1N	OEZ:42000	LTS-6C-1N	OEZ:42013	LTS-6D-1N	OEZ:42024	2	0.347	6
8	LTS-8B-1N	OEZ:42001	LTS-8C-1N	OEZ:42014	LTS-8D-1N	OEZ:42025	2	0.347	6
10	LTS-10B-1N	OEZ:42002	LTS-10C-1N	OEZ:42015	LTS-10D-1N	OEZ:42026	2	0.347	6
13	LTS-13B-1N	OEZ:42003	LTS-13C-1N	OEZ:42016	LTS-13D-1N	OEZ:42027	2	0.347	6
16	LTS-16B-1N	OEZ:42004	LTS-16C-1N	OEZ:42017	LTS-16D-1N	OEZ:42028	2	0.347	6
20	LTS-20B-1N	OEZ:42005	LTS-20C-1N	OEZ:42018	LTS-20D-1N	OEZ:42029	2	0.347	6
25	LTS-25B-1N	OEZ:42006	LTS-25C-1N	OEZ:42019	LTS-25D-1N	OEZ:42030	2	0.347	6
32	LTS-32B-1N	OEZ:42007	LTS-32C-1N	OEZ:42020	LTS-32D-1N	OEZ:42031	2	0.347	6
40	LTS-40B-1N	OEZ:42008	LTS-40C-1N	OEZ:42021	LTS-40D-1N	OEZ:42032	2	0.347	6
50	LTS-50B-1N	OEZ:42009	LTS-50C-1N	OEZ:42022	LTS-50D-1N	OEZ:42033	2	0.347	6
63	LTS-63B-1N	OEZ:42010	LTS-63C-1N	OEZ:42023	LTS-63D-1N	OEZ:42034	2	0.347	6

Miniature circuit breakers 2-pole

I _n [A]	Characteristic B		Characteristic C		Characteristic D		Number of modules	Weight [kg]	Package [pcs]
	Type	Order code	Type	Order code	Type	Order code			
0,5	-	-	LTS-0,5C-2	OEZ:42050	LTS-0,5D-2	OEZ:42067	2	0.347	6
1	LTS-1B-2	OEZ:42035	LTS-1C-2	OEZ:42051	LTS-1D-2	OEZ:42068	2	0.347	6
1,6	-	-	LTS-1,6C-2	OEZ:42052	LTS-1,6D-2	OEZ:42069	2	0.347	6
2	LTS-2B-2	OEZ:42036	LTS-2C-2	OEZ:42053	LTS-2D-2	OEZ:42070	2	0.347	6
4	LTS-4B-2	OEZ:42037	LTS-4C-2	OEZ:42054	LTS-4D-2	OEZ:42071	2	0.347	6
6	LTS-6B-2	OEZ:42038	LTS-6C-2	OEZ:42055	LTS-6D-2	OEZ:42072	2	0.347	6
8	LTS-8B-2	OEZ:42039	LTS-8C-2	OEZ:42056	LTS-8D-2	OEZ:42073	2	0.347	6
10	LTS-10B-2	OEZ:42040	LTS-10C-2	OEZ:42057	LTS-10D-2	OEZ:42074	2	0.347	6
13	LTS-13B-2	OEZ:42041	LTS-13C-2	OEZ:42058	LTS-13D-2	OEZ:42075	2	0.347	6
16	LTS-16B-2	OEZ:42042	LTS-16C-2	OEZ:42059	LTS-16D-2	OEZ:42076	2	0.347	6
20	LTS-20B-2	OEZ:42043	LTS-20C-2	OEZ:42060	LTS-20D-2	OEZ:42077	2	0.347	6
25	LTS-25B-2	OEZ:42044	LTS-25C-2	OEZ:42061	LTS-25D-2	OEZ:42078	2	0.347	6
32	LTS-32B-2	OEZ:42045	LTS-32C-2	OEZ:42062	LTS-32D-2	OEZ:42079	2	0.347	6
40	LTS-40B-2	OEZ:42046	LTS-40C-2	OEZ:42063	LTS-40D-2	OEZ:42080	2	0.347	6
50	LTS-50B-2	OEZ:42047	LTS-50C-2	OEZ:42064	LTS-50D-2	OEZ:43090	2	0.347	6
63	LTS-63B-2	OEZ:42048	LTS-63C-2	OEZ:42065	LTS-63D-2	OEZ:43089	2	0.347	6

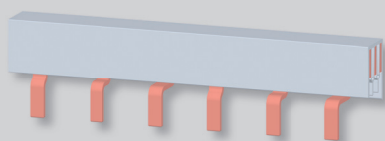
MINIATURE CIRCUIT BREAKERS LTS



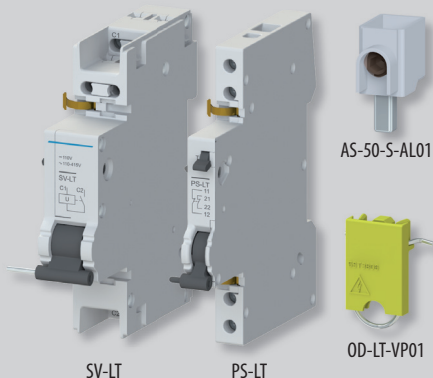
LTS-25B-3



LTS-32B-3N



S3L



SV-LT

PS-LT

AS-50-S-AL01

OD-LT-VP01

Miniature circuit breakers 3-pole

I _n [A]	Characteristic B		Characteristic C		Characteristic D		Number of modules	Weight [kg]	Package [pcs]
	Type	Order code	Type	Order code	Type	Order code			
0,5	-	-	LTS-0,5C-3	OEZ:42096	LTS-0,5D-3	OEZ:42113	3	0.485	4
1	LTS-1B-3	OEZ:42081	LTS-1C-3	OEZ:42097	LTS-1D-3	OEZ:42114	3	0.485	4
1,6	-	-	LTS-1,6C-3	OEZ:42098	LTS-1,6D-3	OEZ:42115	3	0.485	4
2	LTS-2B-3	OEZ:42082	LTS-2C-3	OEZ:42099	LTS-2D-3	OEZ:42116	3	0.485	4
4	LTS-4B-3	OEZ:42083	LTS-4C-3	OEZ:42100	LTS-4D-3	OEZ:42117	3	0.485	4
6	LTS-6B-3	OEZ:42084	LTS-6C-3	OEZ:42101	LTS-6D-3	OEZ:42118	3	0.489	4
8	LTS-8B-3	OEZ:42085	LTS-8C-3	OEZ:42102	LTS-8D-3	OEZ:42119	3	0.485	4
10	LTS-10B-3	OEZ:42086	LTS-10C-3	OEZ:42103	LTS-10D-3	OEZ:42120	3	0.485	4
13	LTS-13B-3	OEZ:42087	LTS-13C-3	OEZ:42104	LTS-13D-3	OEZ:42121	3	0.485	4
16	LTS-16B-3	OEZ:42088	LTS-16C-3	OEZ:42105	LTS-16D-3	OEZ:42122	3	0.491	4
20	LTS-20B-3	OEZ:42089	LTS-20C-3	OEZ:42106	LTS-20D-3	OEZ:42123	3	0.485	4
25	LTS-25B-3	OEZ:42090	LTS-25C-3	OEZ:42107	LTS-25D-3	OEZ:42124	3	0.485	4
32	LTS-32B-3	OEZ:42091	LTS-32C-3	OEZ:42108	LTS-32D-3	OEZ:42125	3	0.486	4
40	LTS-40B-3	OEZ:42092	LTS-40C-3	OEZ:42109	LTS-40D-3	OEZ:42126	3	0.485	4
50	LTS-50B-3	OEZ:42093	LTS-50C-3	OEZ:42110	LTS-50D-3	OEZ:42127	3	0.501	4
63	LTS-63B-3	OEZ:42094	LTS-63C-3	OEZ:42111	LTS-63D-3	OEZ:42128	3	0.487	4

Miniature circuit breakers 3+N-pole


I _n [A]	Characteristic B		Characteristic C		Characteristic D		Number of modules	Weight [kg]	Package [pcs]
	Type	Order code	Type	Order code	Type	Order code			
2	LTS-2B-3N	OEZ:42129	LTS-2C-3N	OEZ:43092	LTS-2D-3N	OEZ:43296	4	0.683	3
4	LTS-4B-3N	OEZ:42130	LTS-4C-3N	OEZ:43091	LTS-4D-3N	OEZ:43297	4	0.683	3
6	LTS-6B-3N	OEZ:42131	LTS-6C-3N	OEZ:42142	LTS-6D-3N	OEZ:42153	4	0.683	3
8	LTS-8B-3N	OEZ:42132	LTS-8C-3N	OEZ:42143	LTS-8D-3N	OEZ:42154	4	0.683	3
10	LTS-10B-3N	OEZ:42133	LTS-10C-3N	OEZ:42144	LTS-10D-3N	OEZ:42155	4	0.683	3
13	LTS-13B-3N	OEZ:42134	LTS-13C-3N	OEZ:42145	LTS-13D-3N	OEZ:42156	4	0.683	3
16	LTS-16B-3N	OEZ:42135	LTS-16C-3N	OEZ:42146	LTS-16D-3N	OEZ:42157	4	0.683	3
20	LTS-20B-3N	OEZ:42136	LTS-20C-3N	OEZ:42147	LTS-20D-3N	OEZ:42158	4	0.683	3
25	LTS-25B-3N	OEZ:42137	LTS-25C-3N	OEZ:42148	LTS-25D-3N	OEZ:42159	4	0.683	3
32	LTS-32B-3N	OEZ:42138	LTS-32C-3N	OEZ:42149	LTS-32D-3N	OEZ:42160	4	0.683	3
40	LTS-40B-3N	OEZ:42139	LTS-40C-3N	OEZ:42150	LTS-40D-3N	OEZ:42161	4	0.683	3
50	LTS-50B-3N	OEZ:42140	LTS-50C-3N	OEZ:42151	LTS-50D-3N	OEZ:43298	4	0.683	3
63	LTS-63B-3N	OEZ:42141	LTS-63C-3N	OEZ:42152	LTS-63D-3N	OEZ:43299	4	0.683	3

Accessories

Auxiliary and signal switches	PS-LT, SS-LT	page B36
Shunt trips	SV-LT	page B37
Undervoltage releases	SP-LT	page B37
Locking insert	OD-LT-VU02	page B39
Sealing insert	OD-LT-VP01	page B39
Interconnecting busbars	S1L, S2L, S3L, S4L	page B45
Terminal extension	AS-50-S-AL01	page B47

MINIATURE CIRCUIT BREAKERS LTS

Specifications

Type	LTS	
Standards	EN 60898-1	
Approval marks		
Number of poles	1, 1+N, 2, 3, 3+N	
Tripping characteristics	B, C, D	
Rated current	I_n	0,5 ÷ 63 A
Rated operating voltage	U_e	AC 230/400 V
Max. operating voltage	U_{max}	AC 250/440 V, DC 60 V / 1 protected pole
Min. operating voltage (1 pole)	U_{min}	AC/DC 24 V
Rated insulation voltage	U_i	AC 250/440 V
Rated frequency	f_n	50/60 Hz
Rated short-circuit breaking capacity (EN 60898-1)	I_{cn}	AC 10 kA
Rated short-circuit ultimate breaking capacity (EN 60947-2)	I_{cu}	AC 10 kA
Electrical endurance	10 000 operating cycles	
Mechanical endurance	10 000 operating cycles	
Energy limitation class	3	
Mounting on "U" rail according to EN 60715 - Type	TH 35	
Degree of protection - with connected conductors	IP20	
Connection		
Conductor Cu	see table Connection range	
Screw head type	PZ2	
Torque	max. 3.5 Nm	
Top or bottom connection	top/bottom	
Operating conditions		
Ambient temperature	°C	-25 ÷ +55 °C, max. 95 % air humidity
Storage temperature	°C	-40 ÷ +75 °C
Working position	arbitrary	
Climatic resistance (EN 60068-2-30)	6 operating cycles	

Connection range

Number of connected conductors	Rigid conductor (solid, stranded)	Conductor flexible with a sleeve	Conductor flexible without a sleeve ¹⁾
1x conductor	1x (0.75 ÷ 35) mm ²	1x (0.75 ÷ 25) mm ²	1x (1 ÷ 35) mm ²
2x conductor	2x (0.75 ÷ 10) mm ²	2x (0.75 ÷ 4) mm ²	2x (1 ÷ 4) mm ²
1x conductor + interconnecting busbar	1x (10 ÷ 25) mm ² + interconnecting busbar pin thickness max. 1.5 mm	1x (6 ÷ 16) mm ² ²⁾ + interconnecting busbar pin thickness max. 1.5 mm	-

¹⁾ The conductor must be twisted before insertion to a terminal; individual conductor fibres must not stick out of the terminal.

²⁾ In case of use of a sleeve without plastic neck: conductor 1x (6 ÷ 25) mm².

If more conductors are used they must be of the same type and cross-section.

MINIATURE CIRCUIT BREAKERS LTS

Internal impedance Z, powers losses P, impedance of fault loop Z_Σ

I _n [A]	Characteristic B		Characteristic C		Characteristic D		Max. impedance of fault loop Z _Σ [Ω] ²⁾					
	Z ¹⁾	P ¹⁾	Z ¹⁾	P ¹⁾	Z ¹⁾	P ¹⁾	Characteristic B		Characteristic C		Characteristic D	
	[mΩ/pole]	[W/pole]	[mΩ/pole]	[W/pole]	[mΩ/pole]	[W/pole]	t ≤ 0,4 s	t ≤ 5 s	t ≤ 0,4 s	t ≤ 5 s	t ≤ 0,4 s	t ≤ 5 s
0.5	-	-	3551	0.9	3551	0.9	-	-	46.0	92.0	23.0	92.0
1	1954	2.0	1172	1.2	1089	1.1	46.0	46.0	23.0	46.0	15.3	46.0
1.6	-	-	510	1.3	466	1.2	-	-	14.4	28.8	9.6	28.8
2	461	1.8	297	1.2	273	1.1	23.0	23.0	11.5	23.0	7.6	23.0
4	98.0	1.6	76.0	1.2	68.0	1.1	11.5	11.5	5.8	11.6	3.8	11.6
6	52.0	1.9	43.0	1.6	39.0	1.4	7.6	7.6	3.8	7.6	2.5	7.6
8	22.0	1.4	11.9	0.8	11.8	0.8	5.8	5.8	2.8	5.7	1.9	5.7
10	19.3	1.9	9.1	0.9	8.6	0.9	4.6	4.6	2.3	4.6	1.1	4.6
13	12.3	2.1	9.1	1.5	8.2	1.4	3.6	3.6	1.7	3.4	0.9	3.4
16	7.1	1.8	6.0	1.5	4.8	1.2	2.9	2.9	1.4	2.8	0.7	2.8
20	6.1	2.5	5.0	2.0	4.1	1.6	2.3	2.3	1.1	2.2	0.5	2.2
25	4.8	3.0	3.7	2.3	3.7	2.3	1.8	1.8	0.9	1.8	0.4	1.8
32	2.6	2.7	2.6	2.6	2.6	2.7	1.4	1.4	0.7	1.4	0.3	1.4
40	2.2	3.4	2.1	3.3	2.1	3.3	1.1	1.1	0.6	1.2	0.3	1.2
50	1.6	4.0	1.4	3.6	1.4	3.6	0.9	0.9	0.5	1.0	0.2	1.0
63	1.3	5.0	1.3	5.0	1.3	5.0	0.7	0.7	0.4	0.8	0.2	0.8

¹⁾ Average values per protected pole

²⁾ For TN network, U₀ = AC 230 V, according to EN 60364-4-41; if the measured value exceeds the table value, we recommend to use residual current circuit breaker.

Correction of rated current I_n

Correction of circuit breaker rated current I_n is determined by relation I_{n1} = K_T x K_N x I_n where:

I_{n1} ... is corrected rated current of the circuit breaker

I_n ... is rated current of the circuit breaker (i.e. the one placed separately at reference temperature 30 °C)

K_T ... is correction factor taking ambient temperature into account

K_N ... is correction factor taking into account placement of more loaded circuit breakers side-by-side

1) Correction factor K_T

For concrete circuit breaker type (I_n, characteristic, number of poles), determine correction curve number (1, 2 or 3) in the table, and using the correction curve number and given ambient temperature on the graph, determine Correction factor K_T.

Characteristic	Number of poles	Rated current of the circuit breaker I _n [A]														
		0,5	1	1.6	2	4	6	10	13	16	20	25	32	40	50	63
		Correction curve number														
B	1	-	3	-	3	2	2	1	1	1	1	1	1	1	1	1
	1+N, 2	-	3	-	3	3	3	1	1	1	1	1	1	2	1	1
	3, 3+N	-	3	-	3	3	3	1	2	2	2	2	2	2	2	2
C	1	2	2	3	3	2	2	1	1	1	1	2	1	1	1	1
	1+N, 2	2	2	3	3	2	2	1	1	1	2	2	1	1	1	2
	3	2	2	3	3	3	3	1	2	2	2	2	1	2	2	2
D	3+N	2	2	3	3	3	3	1	2	2	2	2	2	2	2	2
	1	2	3	3	3	2	2	1	1	1	1	1	1	1	1	1
	1+N, 2	2	3	3	3	2	2	1	1	1	1	1	1	2	1	2
	3, 3+N	2	3	3	3	3	3	1	1	1	1	2	2	2	2	2

2) Correction factor K_N

Determine correction factor K_N according to the number of circuit breakers placed side-by-side.

Correction factor K _N for circuit breakers placed side-by-side				
Number of circuit breakers side-by-side	1	2 ÷ 3	4 ÷ 6	> 7
Correction factor K _N	1.00	0.90	0.88	0.85

Example

Task: How rated current I_n = 32 A will change for circuit breaker LTS-32C-3 at ambient temperature 10 °C and for 4 circuit breakers placed side-by-side?

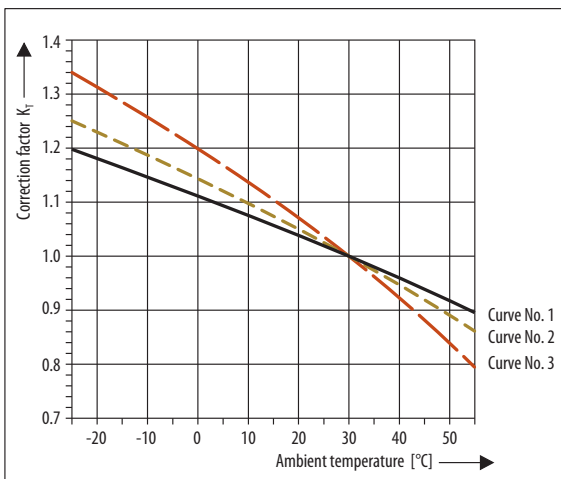
Determination of K_T: For characteristic C, number of poles 3, and I_n 32 A it is possible to take correction curve No. 1 from the table. For intersection of the correction curve No. 1 and ambient temperature 10 °C it is possible to determine correction factor K_T = 1.07.

Determination of K_N: For 4 circuit breakers LTS-32C-1 placed side-by-side it is possible to determine from the table correction factor K_N = 0,88.

Correction I_{n1}: new rated current

$$I_{n1} = K_T \times K_N \times I_n = 1.07 \times 0.88 \times 32 \text{ A} = 30.13 \text{ A}$$

Correction factor K_T depending on ambient temperature



MINIATURE CIRCUIT BREAKERS LTS

Selectivity and short-circuit current with backup fuse

Selectivity of LTS miniature circuit breakers of characteristic B with backup fuses [kA]

I _n [A]	Fuse of type gG								
	16 A	20 A	25 A	35 A	40 A	50 A	63 A	80 A	100 A
1	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
2	0.6	1	3.3	10.0	10.0	10.0	10.0	10.0	10.0
4	0.4	0.5	0.9	2.1	2.7	3.8	10.0	10.0	10.0
6	0.4	0.5	0.8	1.9	2.3	3.1	6.7	10.0	10.0
8	-	0.5	0.8	1.7	2.0	2.6	5.0	6.2	10.0
10	-	0.5	0.7	1.5	1.7	2.2	4.0	4.9	10.0
13	-	0.4	0.7	1.4	1.6	2.1	3.5	4.2	8.4
16	-	0.4	0.6	1.2	1.5	1.9	3.1	3.8	7.2
20	-	-	0.6	1.2	1.4	1.8	2.9	3.5	6.6
25	-	-	-	1.1	1.3	1.6	2.7	3.2	5.7
32	-	-	-	-	1.1	1.4	2.3	2.8	4.9
40	-	-	-	-	-	1.4	2.3	2.8	4.9
50	-	-	-	-	-	-	1.9	2.3	3.9
63	-	-	-	-	-	-	-	2.3	3.6

Selectivity of LTS miniature circuit breakers of characteristic D with backup fuses [kA]

I _n [A]	Fuse of type gG								
	16 A	20 A	25 A	35 A	40 A	50 A	63 A	80 A	100 A
0.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1	0.6	0.9	2.0	10.0	10.0	10.0	10.0	10.0	10.0
1.6	0.5	0.6	1.1	3.5	4.9	9.1	10.0	10.0	10.0
2	0.4	0.6	0.9	2.5	3.2	4.4	10.0	10.0	10.0
4	-	0.5	0.7	1.6	2.0	2.6	5.0	6.4	10.0
6	-	0.4	0.7	1.3	1.6	2.1	3.7	4.6	10.0
8	-	-	0.6	1.1	1.2	1.6	2.6	3.2	6.0
10	-	-	0.6	1.1	1.2	1.6	2.6	3.2	6.0
13	-	-	0.5	1.0	1.1	1.4	2.3	2.8	5.0
16	-	-	0.5	1.0	1.1	1.4	2.3	2.8	5.0
20	-	-	-	0.5	0.9	1.1	1.4	2.2	4.7
25	-	-	-	-	0.9	1.1	1.4	2.2	4.7
32	-	-	-	-	-	0.9	1.2	1.9	4.1
40	-	-	-	-	-	-	1.2	1.9	4.1
50	-	-	-	-	-	-	-	1.6	3.1
63	-	-	-	-	-	-	-	-	2.0

Selectivity of LTS miniature circuit breakers of characteristic C with backup fuses [kA]

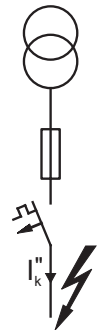
I _n [A]	Fuse of type gG								
	16 A	20 A	25 A	35 A	40 A	50 A	63 A	80 A	100 A
0.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1	0.8	1.6	8.3	10.0	10.0	10.0	10.0	10.0	10.0
1.6	0.5	0.8	1.6	10.0	10.0	10.0	10.0	10.0	10.0
2	0.4	0.6	1.0	2.9	3.9	5.9	10.0	10.0	10.0
4	-	0.5	0.8	1.9	2.3	3.1	6.1	7.9	10.0
6	-	0.5	0.7	1.4	1.7	2.3	4.2	5.3	10.0
8	-	-	0.6	1.1	1.3	1.7	3.0	3.7	8.0
10	-	-	0.6	1.1	1.3	1.7	3.0	3.7	8.0
13	-	-	0.6	1.1	1.2	1.6	2.5	3.1	5.8
16	-	-	0.6	1.1	1.2	1.6	2.5	3.1	5.8
20	-	-	0.5	1.0	1.1	1.4	2.3	2.8	5.1
25	-	-	-	1.0	1.1	1.4	2.3	2.8	5.1
32	-	-	-	-	1.0	1.3	2.1	2.5	4.4
40	-	-	-	-	-	1.3	2.1	2.5	4.4
50	-	-	-	-	-	-	1.8	2.2	3.5
63	-	-	-	-	-	-	-	2.2	3.5

The time selectivity of particular combination up to the value of short-circuit current I_k'' shown in the table is ensured in case of short-circuit behind the LTS circuit breaker with back-up fuse-link.

Which means that at short-circuit of particular combination under the I_k'' value only the circuit breaker actuates. In case the short-circuit current value is bigger than I_k'' value then also the back-up fuse-link actuates.

Example:

Miniature circuit breaker LTS-10B-.. actuates earlier than back-up fuse-link with rated current 50 A up to short-circuit current 2.2 kA.



Max. short-circuit current with backup fuse kA

In case that short-circuit current passing through the circuit breaker is not known in the place of installation or is higher than breaking capacity of the circuit breaker, backup fuse must be used to eliminate circuit breaker overload.

Characteristic B	I _n [A]	Backup fuse of gG type					
		50 A	63 A	80 A	100 A	125 A	160 A
	1	50	50	70	25	25	25
	2	50	50	70	25	25	25
	4	50	50	70	25	25	25
	6	50	50	70	25	25	25
	8	50	50	70	20	20	20
	10	50	50	70	20	20	20
	13	50	50	70	15	15	15
	16	50	50	70	15	15	15
	20	50	50	70	25	25	25
	25	50	50	70	25	25	25
	32	50	50	70	25	25	25
	40	-	50	70	10	10	10
	50	-	-	70	10	10	10
	63	-	-	-	10	10	10

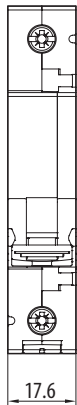
Characteristic D	I _n [A]	Backup fuse of gG type					
		50 A	63 A	80 A	100 A	125 A	160 A
	0.5	50	50	70	25	25	25
	1	50	50	70	25	25	25
	1.6	50	50	70	25	25	25
	2	50	50	70	25	25	25
	4	50	50	70	25	25	25
	6	50	50	25	25	25	25
	8	50	50	25	20	20	20
	10	50	50	10	10	10	10
	13	50	50	15	15	15	15
	16	50	50	70	25	25	25
	20	50	50	70	25	25	25
	25	50	50	70	25	25	25
	32	50	50	70	25	25	25
	40	-	50	70	10	10	10
	50	-	-	70	10	10	10
	63	-	-	-	10	10	10

Characteristic C	I _n [A]	Backup fuse of gG type					
		50 A	63 A	80 A	100 A	125 A	160 A
	0.5	50	50	70	25	25	25
	1	50	50	70	25	25	25
	1.6	50	50	70	25	25	25
	2	50	50	70	25	25	25
	4	50	50	70	25	25	25
	6	50	50	25	25	25	25
	8	50	50	25	20	20	20
	10	50	50	10	10	10	10
	13	50	50	15	15	15	15
	16	50	50	70	25	25	25
	20	50	50	70	25	25	25
	25	50	50	70	25	25	25
	32	50	50	70	25	25	25
	40	-	50	70	10	10	10
	50	-	-	70	10	10	10
	63	-	-	-	10	10	10

MINIATURE CIRCUIT BREAKERS LTS

Dimensions

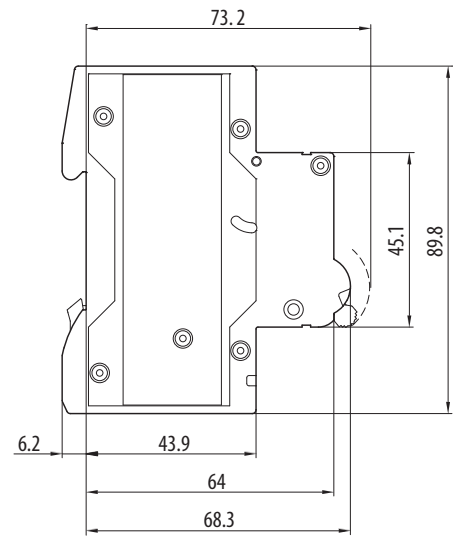
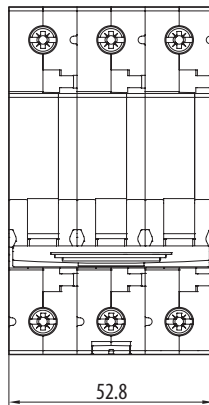
LTS...-1



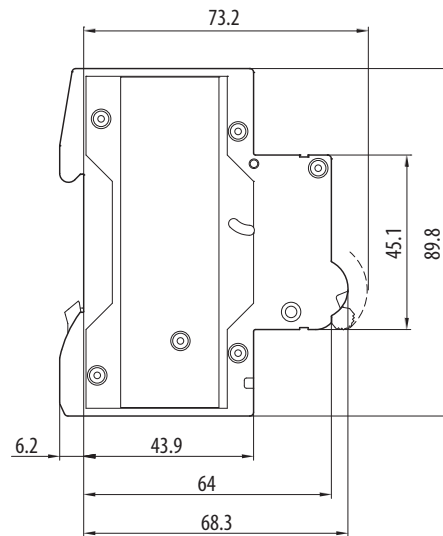
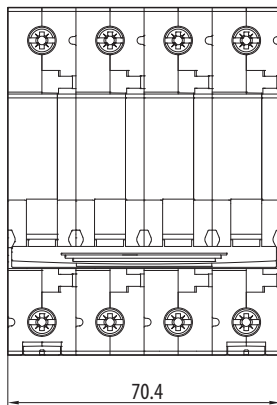
LTS...-2
LTS...-1N



LTS...-3



LTS...-3N

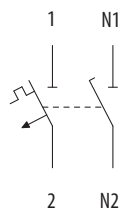


Diagram

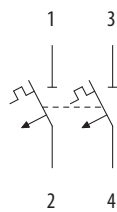
LTS...-1



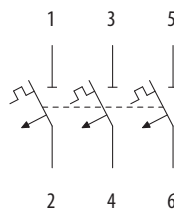
LTS...-1N



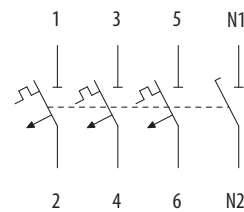
LTS...-2



LTS...-3

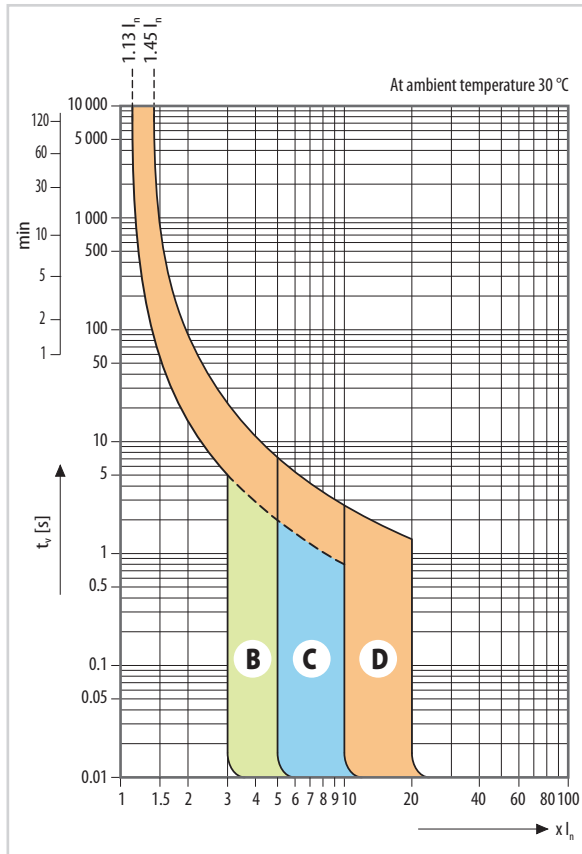


LTS...-3N



MINIATURE CIRCUIT BREAKERS LTS

Characteristics



- **Characteristic B:** for protection of line of electrical circuits with equipment, which does not cause current surges. The short-circuit release is set to $(3 \div 5) I_n$.
- **Characteristic C:** for protection of line of electrical circuits with equipment, which causes current surges. The short-circuit release is set to $(5 \div 10) I_n$.
- **Characteristic D:** for protection of line of electrical circuits with equipment, which causes high current surges. The short-circuit release is set to $(10 \div 20) I_n$.

Tripping characteristics of circuit breakers according to EN 60898-1

Thermal release	Tripping characteristic type	
	B, C, D	
Conventional non-tripping current	I_{nt} for $t \geq 1$ hr	$I_{nt} = 1.13 I_n$
Conventional tripping current	I_t for $t < 1$ hr	$I_t = 1.45 I_n$
Current I_3 for	$1 s < t < 60 s$ (for $I_n \leq 32 A$)	$I_3 = 2.55 I_n$
	$1 s < t < 120 s$ (for $I_n > 32 A$)	

t - break time of the circuit breaker

Electromagnetic release	Tripping characteristic type			
	B	C	D	
Current I_4 for	$0.1 s < t < 45 s$ (for $I_n \leq 32 A$)	$I_4 = 3 I_n$		
	$0.1 s < t < 90 s$ (for $I_n > 32 A$)			
	$0.1 s < t < 15 s$ (for $I_n \leq 32 A$)	$I_4 = 5 I_n$		
	$0.1 s < t < 30 s$ (for $I_n > 32 A$)			
	$0.1 s < t < 4 s^{1)}$ (for $I_n \leq 32 A$)			$I_4 = 10 I_n$
$0.1 s < t < 8 s$ (for $I_n > 32 A$)				
Current I_5 for	$t < 0.1 s$	$I_5 = 5 I_n$	$I_5 = 10 I_n$	$I_5 = 20 I_n$

t - break time of the circuit breaker

¹⁾ For $I_n \leq 10 A$ it is permissible that $t < 8 s$.

Characteristics I²t

