

MINIATURE CIRCUIT BREAKERS - RI50



MINIATURE CIRCUIT BREAKERS OF RI 50 SERIES 50 ARE USED FOR THE PROTECTION OF INSTALLATIONS AND DEVICES (OVERLOAD AND SHORT CIRCUIT), AND AS A DISCONNECTOR IN CASE OF ELECTRIC SHOCK



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BENEFITS

- Due the low permissible I^2t (let through) values can be used smaller size of metal boxes
- Low let-through energy under short-circuit conditions ensures longer life of contacts and reduces thermal stresses in the distribution circuit
- RI 50 reduces the energy loss due to a unique contact configuration and reduction of hot spots. Watt loss per pole for RI 50 is far lower than that specified in IEC/EN 60898
- An optional operating position
- IP20 degree of protection; IP40 degree of protection after installation in a distribution box
- An additional colour indication of the position of main contacts (red: contacts closed; green: contacts open)

TYPES

RI 51	single-pole
RI 51N	single pole + neutral pole
RI 52	two-pole
RI 53	three-pole
RI 53N	three-pole + neutral pole
RI 54	four pole

ORDERING DATA

Miniature circuit breakers RI50 up to 63 A	page 6-5
Accessories	page 6-11
Connections	page 6-27

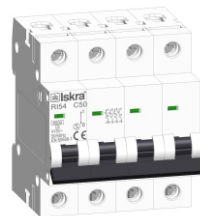
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Technical characteristics	page 6-13
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MINIATURE CIRCUIT BREAKERS - RI50

RI50 - B characteristics

Type	Rated current I _n (A)	Rated voltage U _n (V)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
RI51 B6	6	240	1	786.091.006	100	12
RI51 B10	10	240	1	786.091.007	100	12
RI51 B16	16	240	1	786.091.008	100	12
RI51 B20	20	240	1	786.091.009	100	12
RI51 B25	25	240	1	786.091.010	100	12
RI51 B32	32	240	1	786.091.011	100	12
RI51 B40	40	240	1	786.091.012	100	12
RI51 B50	50	240	1	786.091.013	100	12
RI51 B63	63	240	1	786.091.014	100	12
RI51N B6	6	240/415	1 + N	786.091.015	200	6
RI51N B10	10	240/415	1 + N	786.091.016	200	6
RI51N B16	16	240/415	1 + N	786.091.017	200	6
RI51N B20	20	240/415	1 + N	786.091.018	200	6
RI51N B25	25	240/415	1 + N	786.091.019	200	6
RI51N B32	32	240/415	1 + N	786.091.020	200	6
RI51N B40	40	240/415	1 + N	786.091.021	200	6
RI51N B50	50	240/415	1 + N	786.091.022	200	6
RI51N B63	63	240/415	1 + N	786.091.023	200	6
RI52 B6	6	240/415	2	786.091.024	200	6
RI52 B10	10	240/415	2	786.091.025	200	6
RI52 B16	16	240/415	2	786.091.026	200	6
RI52 B20	20	240/415	2	786.091.027	200	6
RI52 B25	25	240/415	2	786.091.028	200	6
RI52 B32	32	240/415	2	786.091.029	200	6
RI52 B40	40	240/415	2	786.091.030	200	6
RI52 B50	50	240/415	2	786.091.031	200	6
RI52 B63	63	240/415	2	786.091.032	200	6
RI53 B6	6	415	3	786.091.033	300	4
RI53 B10	10	415	3	786.091.034	300	4
RI53 B16	16	415	3	786.091.035	300	4
RI53 B20	20	415	3	786.091.036	300	4
RI53 B25	25	415	3	786.091.037	300	4
RI53 B32	32	415	3	786.091.038	300	4
RI53 B40	40	415	3	786.091.039	300	4
RI53 B50	50	415	3	786.091.040	300	4
RI53 B63	63	415	3	786.091.041	300	4
RI53N B6	6	415	3 + N	786.091.042	400	3
RI53N B10	10	415	3 + N	786.091.043	400	3
RI53N B16	16	415	3 + N	786.091.044	400	3
RI53N B20	20	415	3 + N	786.091.045	400	3
RI53N B25	25	415	3 + N	786.091.046	400	3
RI53N B32	32	415	3 + N	786.091.047	400	3
RI53N B40	40	415	3 + N	786.091.048	400	3
RI53N B50	50	415	3 + N	786.091.049	400	3
RI53N B63	63	415	3 + N	786.091.050	400	3
RI54 B6	6	415	4	786.091.051	400	3
RI54 B10	10	415	4	786.091.052	400	3
RI54 B16	16	415	4	786.091.053	400	3
RI54 B20	20	415	4	786.091.054	400	3
RI54 B25	25	415	4	786.091.055	400	3
RI54 B32	32	415	4	786.091.056	400	3
RI54 B40	40	415	4	786.091.057	400	3
RI54 B50	50	415	4	786.091.058	400	3
RI54 B63	63	415	4	786.091.059	400	3

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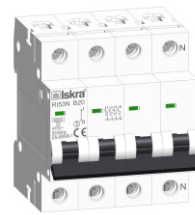
ORDERING DATA

MINIATURE CIRCUIT BREAKERS - RI50

RI50 - C characteristics

Type	Rated current I _n (A)	Rated voltage U _n (V)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
RI51 C6	6	240	1	786.091.100	100	12
RI51 C10	10	240	1	786.091.101	100	12
RI51 C16	16	240	1	786.091.102	100	12
RI51 C20	20	240	1	786.091.103	100	12
RI51 C25	25	240	1	786.091.104	100	12
RI51 C32	32	240	1	786.091.105	100	12
RI51 C40	40	240	1	786.091.106	100	12
RI51 C50	50	240	1	786.091.107	100	12
RI51 C63	63	240	1	786.091.108	100	12
RI51N C6	6	240/415	1 + N	786.091.109	200	6
RI51N C10	10	240/415	1 + N	786.091.110	200	6
RI51N C16	16	240/415	1 + N	786.091.111	200	6
RI51N C20	20	240/415	1 + N	786.091.112	200	6
RI51N C25	25	240/415	1 + N	786.091.113	200	6
RI51N C32	32	240/415	1 + N	786.091.114	200	6
RI51N C40	40	240/415	1 + N	786.091.115	200	6
RI51N C50	50	240/415	1 + N	786.091.116	200	6
RI51N C63	63	240/415	1 + N	786.091.117	200	6
RI52 C6	6	240/415	2	786.091.118	200	6
RI52 C10	10	240/415	2	786.091.119	200	6
RI52 C16	16	240/415	2	786.091.120	200	6
RI52 C20	20	240/415	2	786.091.121	200	6
RI52 C25	25	240/415	2	786.091.122	200	6
RI52 C32	32	240/415	2	786.091.123	200	6
RI52 C40	40	240/415	2	786.091.124	200	6
RI52 C50	50	240/415	2	786.091.125	200	6
RI52 C63	63	240/415	2	786.091.126	200	6
RI53 C6	6	415	3	786.091.127	300	4
RI53 C10	10	415	3	786.091.128	300	4
RI53 C16	16	415	3	786.091.129	300	4
RI53 C20	20	415	3	786.091.130	300	4
RI53 C25	25	415	3	786.091.131	300	4
RI53 C32	32	415	3	786.091.132	300	4
RI53 C40	40	415	3	786.091.133	300	4
RI53 C50	50	415	3	786.091.134	300	4
RI53 C63	63	415	3	786.091.135	300	4
RI53N C6	6	415	3 + N	786.091.136	400	3
RI53N C10	10	415	3 + N	786.091.137	400	3
RI53N C16	16	415	3 + N	786.091.138	400	3
RI53N C20	20	415	3 + N	786.091.139	400	3
RI53N C25	25	415	3 + N	786.091.140	400	3
RI53N C32	32	415	3 + N	786.091.141	400	3
RI53N C40	40	415	3 + N	786.091.142	400	3
RI53N C50	50	415	3 + N	786.091.143	400	3
RI53N C63	63	415	3 + N	786.091.144	400	3
RI54 C6	6	415	4	786.091.145	400	3
RI54 C10	10	415	4	786.091.146	400	3
RI54 C16	16	415	4	786.091.147	400	3
RI54 C20	20	415	4	786.091.148	400	3
RI54 C25	25	415	4	786.091.149	400	3
RI54 C32	32	415	4	786.091.150	400	3
RI54 C40	40	415	4	786.091.151	400	3
RI54 C50	50	415	4	786.091.152	400	3
RI54 C63	63	415	4	786.091.153	400	3

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ORDERING DATA

RI50

Auxiliary contacts

Type	Ordering No.	Weight (g)	Packaging (pcs)
PS50E-11	786.091.154	42	1

Shunt trip release

Type	Control voltages U _c (V)	Ordering No.	Weight (g)	Packaging (pcs)
VC50E 230	230	786.091.155	82	1

Undervoltage release

Type	Control voltages U _c (V)	Ordering No.	Weight (g)	Packaging (pcs)
VC50E 230	110 - 415	786.091.156	78	1

MINIATURE CIRCUIT BREAKERS - RI50

Type	Symbol	Unit	RI50
Area of use			AC systems
Standards			IEC/EN 60898-1
Approvals			SEMKO, CE
Number of poles			1,1+N, 2, 3, 3+N, 4
Tripping characteristics			B, C
Rated currents	I_n	A	6 ... 63
Rated voltage	U_n	V	240/415 (single-pole) 415 (multi-pole)
Rated DC voltage	U_n	V	60 (single-pole) 110 (multi-pole)
Max. time constant for DC voltage	t	ms	15/60 V DC max.
Rated impulse withstand voltage	U_{imp}	kV	4
Rated insulation voltage	U_i	V	500
Rated frequency	f	Hz	50/60
Rated short-circuit breaking capacity	I_{cu}, I_{cs}	kA	6
Service short-circuit breaking capacity	I_{cs}	kA	6
Selectivity class			3
Electrical endurance		op.c.	4000
Mechanical endurance		op.c.	100 000
Terminal capacity		mm ²	up to 25
Screw type			M5
Screw head			PZ2
Tightening torque		Nm	2
Mounting			35 mm DIN rail acc. to EN 60715
Degree of protection			IP 20
Ambient temperature		°C	-25 ... 55
Altitude		m	2000
Above max. altitude the voltages U_i and U_n are reduced by 1.2%, nominal rating I_n is reduced by 0.4% for every additional 100 m			
Mounting position			any
Resistance against vibrations			3 g (8 ... 50 Hz)
Accessories			Auxiliary contact PS50E-11
			Shunt trip release VC50E
			Undervoltage release PC50E

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TECHNICAL DATA

MINIATURE CIRCUIT BREAKERS - ACCESSORIES

RI50

AUXILIARY CONTACT BLOCK

Type	Symbol	Unit	PS 50E-11
Standards			IEC/EN 60947-5-1
Number of contacts			1 change-over *
Rated operational voltage	U_e	V	230
Rated insulation voltage	U_i	V	400
Rated frequency	f	Hz	50/60
Rated thermal current	I_{th}	A	6
Rated operational current	I_e		AC-15: 230 V / 4 A DC-13: 110 V / 0.4
Rated oconditional short-circuit current		A	800
Fuse gG		A	6
Mounting			on left side of device
Degree of protection			IP 20
Terminal capacity	S	mm ²	0.5 ... 2.5 (Cu wire)
Screw type			M2.5
Screw head			PZ2
Tightening torque			1

* Change-over contacts indicate the position of main contacts of circuit breaker

UNDERVOLTAGE RELEASE

Type	Symbol	Unit	PC 50E
Standards			IEC/EN 60947-1
Rated voltage	U_n	V	230
Rated frequency	f	Hz	50
Power consumption	P	W	3
Mounting			Right side of device
Terminal capacity	S	mm ²	0.75 ... 2.5
Screw type			M5
Screw head			PZ2
Tightening torque		Nm	2
Degree of protection			IP 20
Operating limits			Pick-up voltage: 85% U_n Drop-out voltage: 35% U_n

SHUNT RELEASE

Type	Symbol	Unit	VC 50E
Standards			IEC/EN 60947-1
Rated voltage	U_n	V	230 *
Rated impulse withstand voltage	U_{imp}	kV	4
Rated making overvoltage		kV	4
Rated frequency	f	Hz	50/60
Max. switching off current (voltage of VC)		A (V)	0.9 (125); 0.6 (230); 0.3 (400)
Mounting			on right side of circuit breaker (switch)
Degree of protection			IP 20
Terminal capacity	S	mm ²	1.5 ... 6
Screw type			M5
Screw head			PZ2
Tightening torque		Nm	2.5
Operating limits			70 ... 110 % U_n
Tripping time		ms	max. 50

* Other rated voltage of AC and DC on request

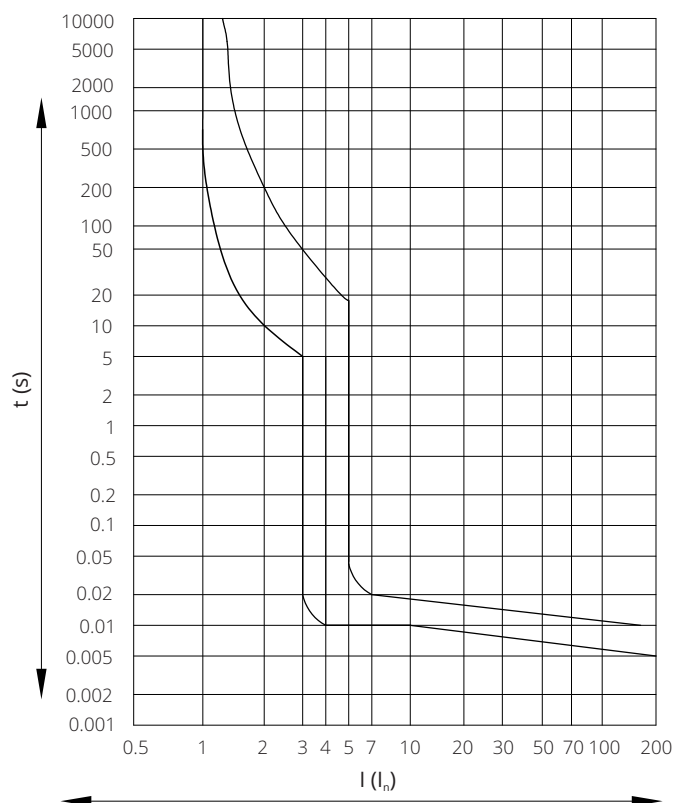
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TECHNICAL DATA

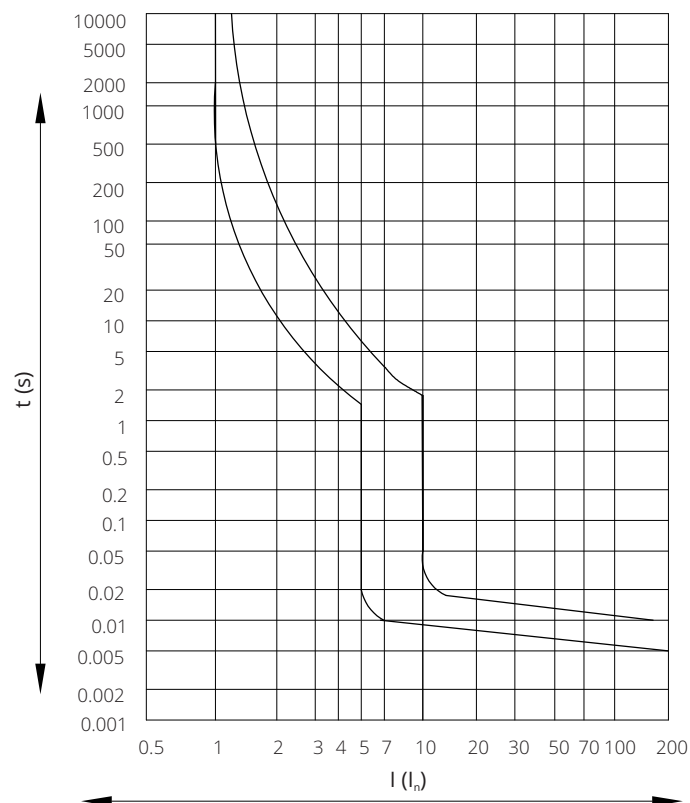
MINIATURE CIRCUIT BREAKERS - RI50

Tripping characteristics

Characteristics B acc. to EN 60 898

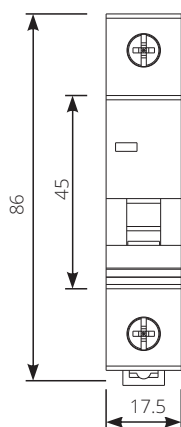


Characteristics C acc. to EN 60 898

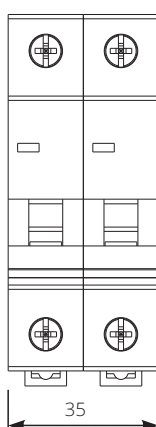


MINIATURE CIRCUIT BREAKERS - RI50

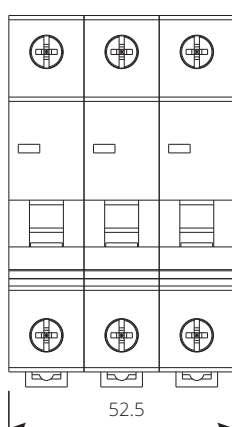
RI51



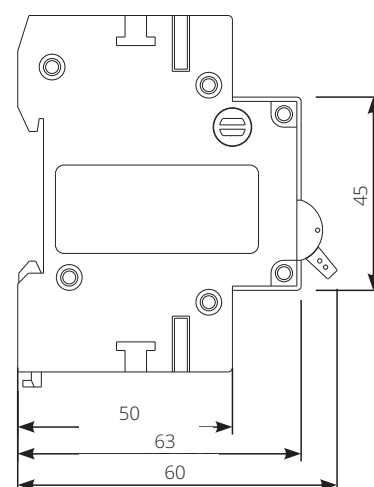
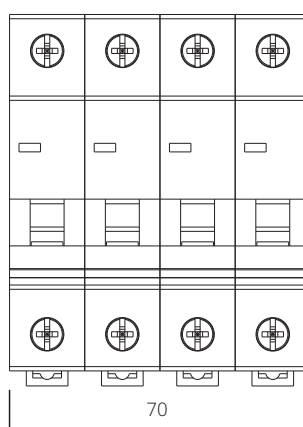
RI52



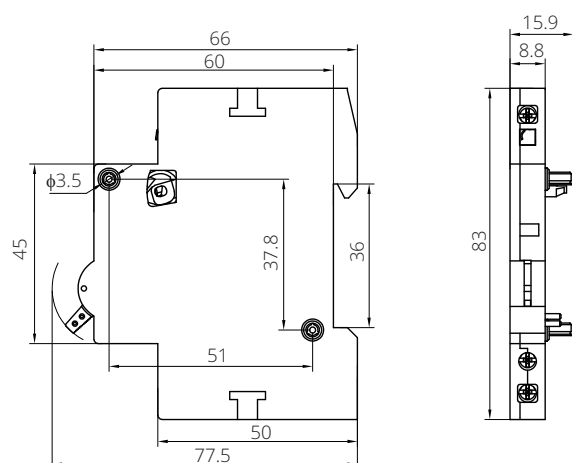
**RI52 +N
RI53**



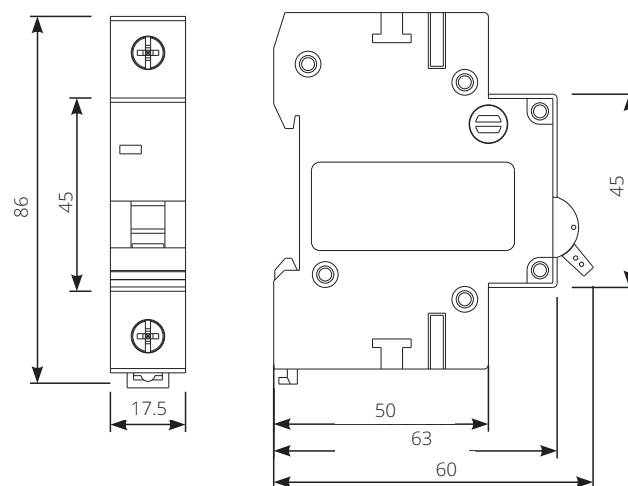
**RI53 +N
RI54**



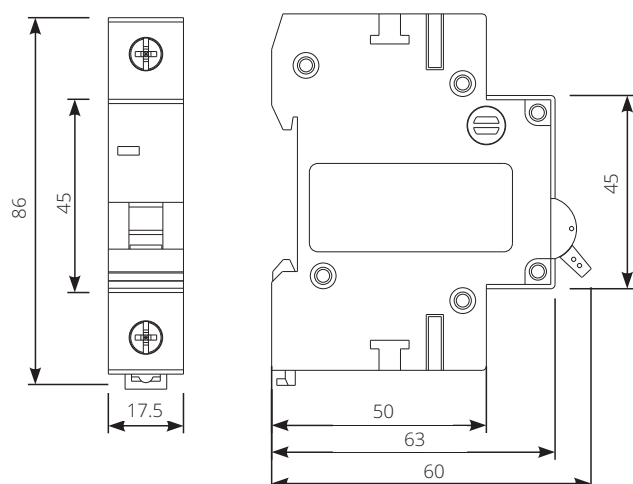
AUXILIARY CONTACT PS50E-11



SHUNT TRIP RELEASE VC50E



UNDervOLTAGE RELEASE PC50E



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DIMENSIONS