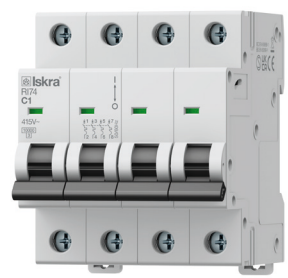
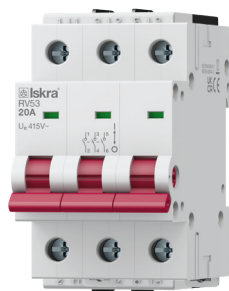


# Low Voltage Switchgear Residential



# RI50 6 kA Miniature Circuit Breakers



Miniature circuit breakers of RI 50 series are used for the protection of installations and devices (over-load and short circuit), and as a disconnecter in case of electric shock.

## 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

## Benefits

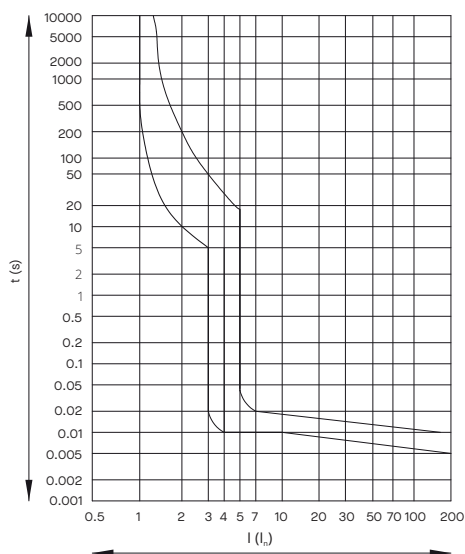
- ▶ Due the low permissible L2T (let through) values can be used smaller size of metal boxes
- ▶ Low let-through energy under short-circuit conditions ensures longer life of contacts and reduces thermal stresses in the distribution circuit
- ▶ RI 50 reduces the energy loss due to a unique contact configuration 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)

## RI50 characteristics

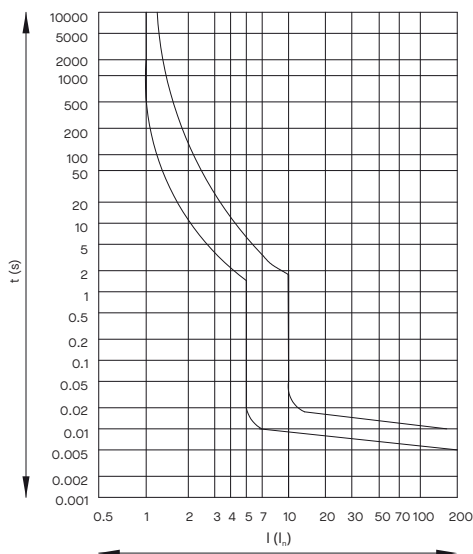
Technical data	Symbol	Unit	RI50
Area of use			AC systems
Standards			IEC/EN 60898-1
Approvals			SEMKO, CE
Number of poles			1,1+N, 2, 3, 3+N, 4
Tripping characteristics			B, C
Rated current	$I_n$	A	6 ... 63
Rated voltage	$U_n$	V	240/415 (single-pole) 415 (multi-pole)
Rated DC voltage	$U_n$	V	60 (single-pole) 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	$I_{cu}, I_{cn}$	kA	6
Service short-circuit breaking capacity	$I_{cs}$	kA	6
Selectivity class			3
Electrical endurance		op.c.	4 000
Mechanical endurance		op.c.	100 000
Terminal capacity		mm <sup>2</sup>	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	2 000
Mounting position			any
Resistance against vibrations			3 g (8 ... 50 Hz)
Accessories			Auxiliary contact PS50E-11 Shunt trip release VC50E Undervoltage release PC50E

## Tripping characteristics

Characteristics B acc. to EN 60 898



Characteristics C acc. to EN 60 898



RI50 – B characteristics

Type	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	Number of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RI51</b>							
RI51 B6	6	240	1	786.091.006	100	12	120
RI51 B10	10	240	1	786.091.007	100	12	120
RI51 B16	16	240	1	786.091.008	100	12	120
RI51 B20	20	240	1	786.091.009	100	12	120
RI51 B25	25	240	1	786.091.010	100	12	120
RI51 B32	32	240	1	786.091.011	100	12	120
RI51 B40	40	240	1	786.091.012	100	12	120
RI51 B50	50	240	1	786.091.013	100	12	120
RI51 B63	63	240	1	786.091.014	100	12	120
<b>RI51N</b>							
RI51N B6	6	240/415	1+N	786.091.015	200	6	60
RI51N B10	10	240/415	1+N	786.091.016	200	6	60
RI51N B16	16	240/415	1+N	786.091.017	200	6	60
RI51N B20	20	240/415	1+N	786.091.018	200	6	60
RI51N B25	25	240/415	1+N	786.091.019	200	6	60
RI51N B32	32	240/415	1+N	786.091.020	200	6	60
RI51N B40	40	240/415	1+N	786.091.021	200	6	60
RI51N B50	50	240/415	1+N	786.091.022	200	6	60
RI51N B63	63	240/415	1+N	786.091.023	200	6	60
<b>RI52</b>							
RI52 B6	6	240/415	2	786.091.024	200	6	60
RI52 B10	10	240/415	2	786.091.025	200	6	60
RI52 B16	16	240/415	2	786.091.026	200	6	60
RI52 B20	20	240/415	2	786.091.027	200	6	60
RI52 B25	25	240/415	2	786.091.028	200	6	60
RI52 B32	32	240/415	2	786.091.029	200	6	60
RI52 B40	40	240/415	2	786.091.030	200	6	60
RI52 B50	50	240/415	2	786.091.031	200	6	60
RI52 B63	63	240/415	2	786.091.032	200	6	60
<b>RI53</b>							
RI53 B6	6	415	3	786.091.033	300	4	40
RI53 B10	10	415	3	786.091.034	300	4	40
RI53 B16	16	415	3	786.091.035	300	4	40
RI53 B20	20	415	3	786.091.036	300	4	40
RI53 B25	25	415	3	786.091.037	300	4	40
RI53 B32	32	415	3	786.091.038	300	4	40
RI53 B40	40	415	3	786.091.039	300	4	40
RI53 B50	50	415	3	786.091.040	300	4	40
RI53 B63	63	415	3	786.091.041	300	4	40
<b>RI53N</b>							
RI53N B6	6	415	3+N	786.091.042	400	3	30
RI53N B10	10	415	3+N	786.091.043	400	3	30
RI53N B16	16	415	3+N	786.091.044	400	3	30
RI53N B20	20	415	3+N	786.091.045	400	3	30
RI53N B25	25	415	3+N	786.091.046	400	3	30
RI53N B32	32	415	3+N	786.091.047	400	3	30
RI53N B40	40	415	3+N	786.091.048	400	3	30
RI53N B50	50	415	3+N	786.091.049	400	3	30
RI53N B63	63	415	3+N	786.091.050	400	3	30
<b>RI54</b>							
RI54N B6	6	415	4	786.091.051	400	3	30
RI54N B10	10	415	4	786.091.052	400	3	30
RI54N B16	16	415	4	786.091.053	400	3	30
RI54N B20	20	415	4	786.091.054	400	3	30
RI54N B25	25	415	4	786.091.055	400	3	30
RI54N B32	32	415	4	786.091.056	400	3	30
RI54N B40	40	415	4	786.091.057	400	3	30
RI54N B50	50	415	4	786.091.058	400	3	30
RI54N B63	63	415	4	786.091.059	400	3	30



## RI50 – C characteristics

Type	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RI51</b>							
RI51 C6	6	240	1	786.091.100	100	12	
RI51 C16	16	240	1	786.091.102	100	12	
RI51 C10	10	240	1	786.091.101	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	

<b>RI51N</b>							
RI51N C6	6	240/415	1 + N	786.091.109	200	6	
RI51N C16	16	240/415	1 + N	786.091.111	200	6	
RI51N C10	10	240/415	1 + N	786.091.110	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	

<b>RI52</b>							
RI52 C6	6	240/415	2	786.091.118	200	6	
RI52 C16	16	240/415	2	786.091.120	200	6	
RI52 C10	10	240/415	2	786.091.119	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	

<b>RI53</b>							
RI53 C6	6	415	3	786.091.127	300	4	
RI53 C16	16	415	3	786.091.129	300	4	
RI53 C10	10	415	3	786.091.128	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	



## RI50 – C characteristics

Type	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RI53N</b>							
RI53N C6	6	415	3 + N	786.091.136	400	3	
RI53N C16	16	415	3 + N	786.091.138	400	3	
RI53N C10	10	415	3 + N	786.091.137	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	
<b>RI54</b>							
RI54 C6	6	415	4	786.091.145	400	3	
RI54 C16	16	415	4	786.091.147	400	3	
RI54 C10	10	415	4	786.091.146	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	



## Accessories for RI50

### Auxiliary contacts

Type	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
PS50E-11	786.091.154	42	1	



### Shunt trip release

Type	Control voltages $U_c$ (V)	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
VC50 230V	230	786.091.155	82	1	



### Undervoltage release

Type	Control voltages $U_c$ (V)	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
PC50 230V	110 - 415	786.091.156	78	1	



**Auxiliary contact block**

Technical data	Symbol	Unit	PS50E-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	$I_e$	V	AC-15: 230 V / 4 A DC-13: 110 V / 0.4
Rated conditional short-circuit current		A	800
Fuse gG		A	6
Mounting			on left side of device
Degree of protection			IP 20
Terminal capacity	S	mm <sup>2</sup>	0.5 ... 2.5 (Cu wire)
Screw type	$I_{cs}$	A	M2.5
Screw head			PZ2
Tightening torque		Nm	1

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

**Undervoltage release**

Technical data	Symbol	Unit	PC50E
Standards			IEC/EN 60947-1
Rated voltage	$U_e$	V	230
Rated frequency	f	Hz	50
Power consumption	P	W	3
Mounting			on right side of device
Degree of protection			IP 20
Terminal capacity	S	mm <sup>2</sup>	0.5 ... 2.5 (Cu wire)
Screw type	$I_{cs}$	A	M5
Screw head			PZ2
Tightening torque		Nm	2
Operating limits			Pick-up voltage: 85% $U_n$ Drop-out voltage: 35% $U_n$

**Shunt release**

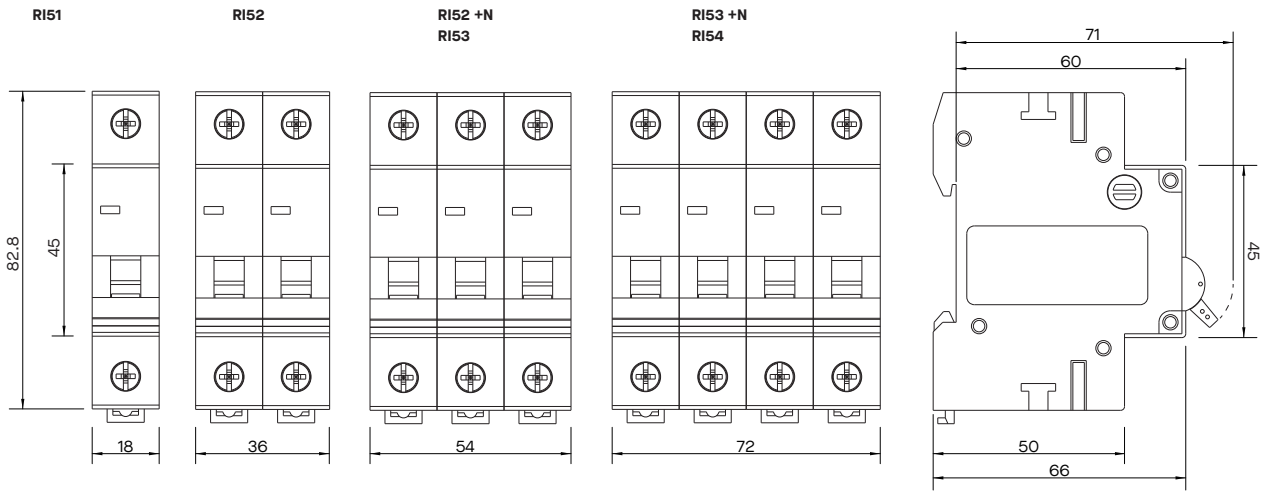
Technical data	Symbol	Unit	VC50E
Standards			IEC/EN 60947-1
Rated voltage	$U_n$	V	230*
Rated impulse withstand voltage	$U_{imp}$	kV	4
Rated making overvoltage		kV	4
Rated frequency	f	Hz	50/60
Max. switching off current (voltage of VC)		A (V)	0.9 (125); 0.6 (230); 0.3 (400)
Mounting			on right side of circuit breaker (switch)
Degree of protection			IP 20
Terminal capacity	S	mm <sup>2</sup>	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



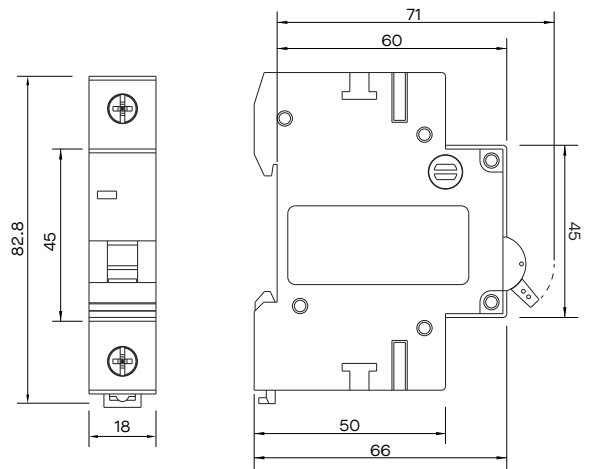
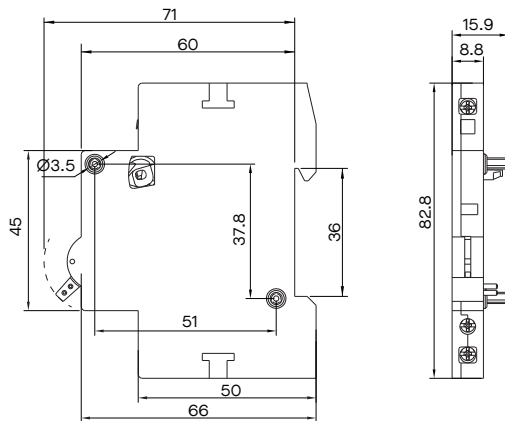
Dimensions

(mm)

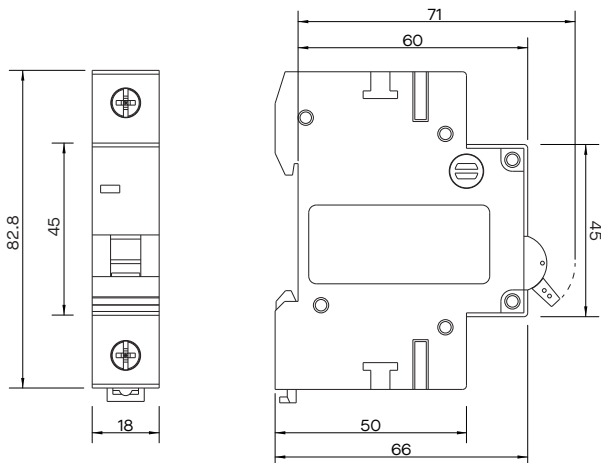


AUXILIARY CONTACT PS50E-11

SHUNT TRIP RELEASE VC50E



UNDERVOLTAGE RELEASE PC50E





# RI21N

## Miniature Circuit Breakers

6 kA



### Applications

Miniature circuit breakers of RI series are used for switching, conducting and switching off the current not only in normal operating conditions but also in special conditions in a circuit such as short circuit. They are used for overcurrent protection of house installations, industrial electric distributions and devices.

### Features

- ▶ Miniature circuit breaker RI21N is a device with protected line pole and switched neutral pole
- ▶ 1-pole + N in single housing
- ▶ Sealing possibility
- ▶ Indication of contacts state
- ▶ Mounting on the DIN rail and simple replacement

### Standards

- ▶ IEC/EN 60898 -1

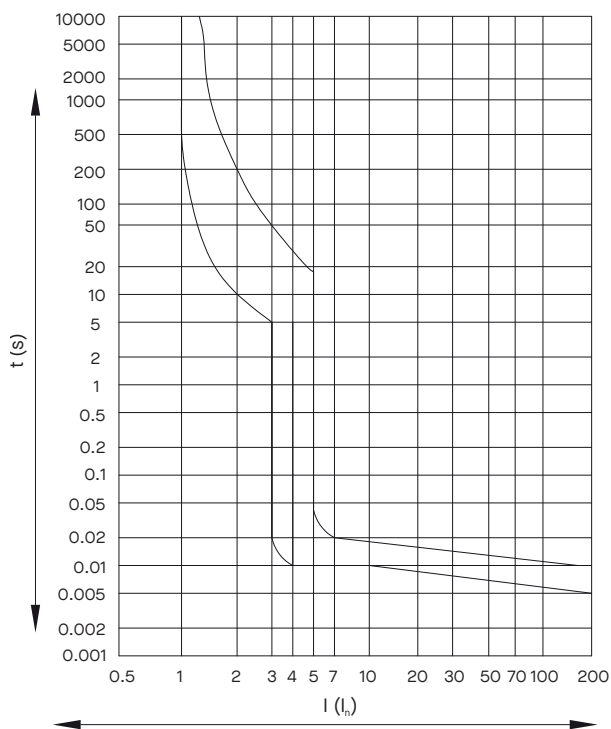


## RI21N characteristics

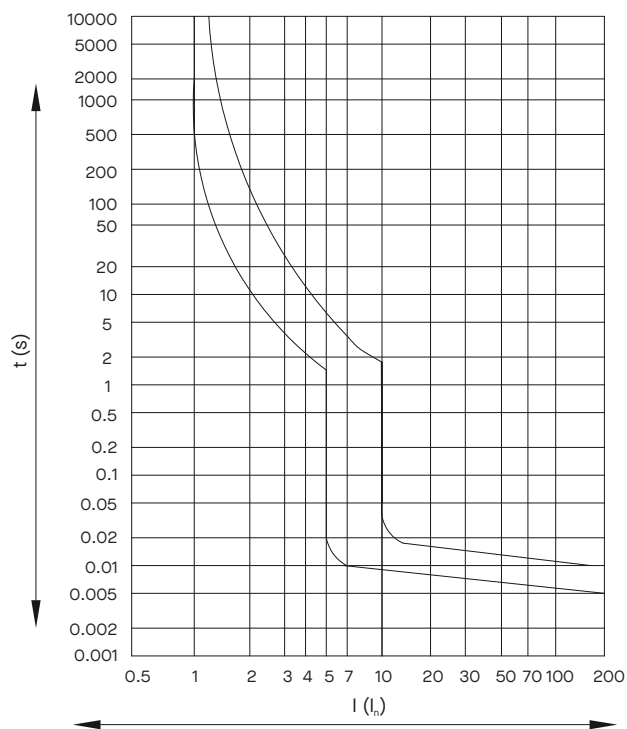
Technical data	Symbol	Unit	RI21N
Standards			IEC/EN 60898 -1
Approvals			CE, KEMA
Number of poles			1 + N
Rated current	$I_n$	A	2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63
Tripping characteristics			B, C
Rated voltage	$U_n$	VAC	230/240
Rated frequency	$f$	Hz	50/60
Rated short circuit capacity	$I_{cn}$	kA	6
Rated impulse withstand voltage	$U_{imp}$	kV	4
Tightening torque		Nm	1.2
Terminals		mm <sup>2</sup>	1 - 11
Electrical endurance		op. c.	10 000
Mechanical endurance		op. c.	200 000
Mounting			35mm DIN rail acc. to EN 60715
Protection degree			IP20

## Tripping characteristics

Characteristics B acc. to EN 60 898



Characteristics C acc. to EN 60 898



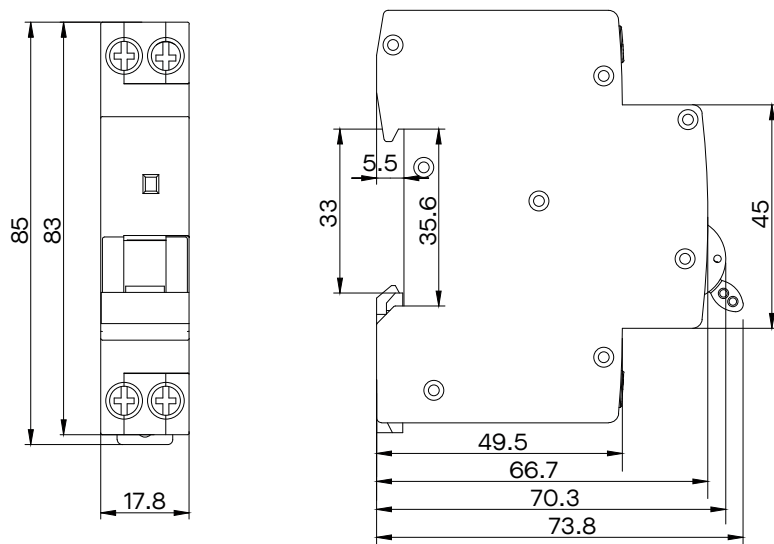
## RI21N – Characteristics

Type	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	Number of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RI21 C type</b>							
RI21N C2	2			786.100.529			
RI21N C4	4			786.100.522			
RI21N C6	6			786.100.523			
RI21N C10	10			786.100.510			
RI21N C16	16			786.100.511			
RI21N C20	20			786.100.512			
RI21N C25	25			786.100.524			
RI21N C32	32			786.100.525			
RI21N C40	40			786.100.531			
<b>RI21 B type</b>							
RI21N B2	2			786.100.528			
RI21N B4	4			786.100.518			
RI21N B6	6			786.100.519			
RI21N B10	10			786.100.513			
RI21N B16	16			786.100.514			
RI21N B20	20			786.100.515			
RI21N B25	25			786.100.520			
RI21N B32	32			786.100.521			
RI21N B40	40			786.100.530			
<b>RI21 D type</b>							
RI21N D20	20			786.100.532			



## Dimensions

(mm)



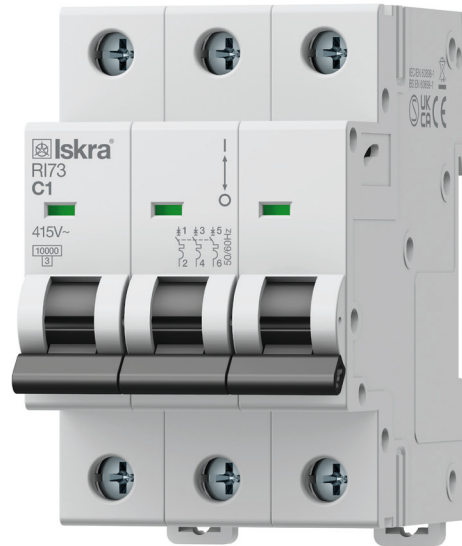
## Wiring diagram

1P+N



# RI70 10 kA

## Miniature Circuit Breakers



### Types

RI71	single-pole
RI72	two-pole
RI73	three-pole
RI74	four-pole
RI71N	single-pole + neutral pole
RI73N	three-pole + neutral pole

### Benefits

- ▶ Protection against both overload and short circuit, function of isolation
- ▶ High Breaking Capacity [ $I_{cn}$ ]: 10 kA
- ▶ High Rated Service Breaking Capacity [ $I_{cs}$ ]: 7.5 kA
- ▶ Contact position indicator
- ▶ 35 mm DIN rail mounting and screw mounting
- ▶ Full range accessories are available



Technical data	Symbol	Unit	RI70
Standards			IEC/EN 60898-1
Rated current	$I_n$	A	0.5, 1, 2, 3, 4, 6, 8, 10, 13, 16, 20, 25, 32, 40, 50, 63
Rated voltage	$U_n$	V	AC 230/240, AC 400/415
Breaking capacity	$I_{cn}$	kA	10
Service breaking capacity	$I_{cs}$	kA	7.5
Rated frequency	$f_n$	Hz	50/60
Tripping characteristics			B, C, D
Number of poles			1P, 2P, 3P, 4P, 1P+N, 3P+N
Rated impulse withstand voltage	$U_{imp}$	kV	4
Electrical endurance			10000 cycles
Mechanical endurance			20000 cycles
Terminal			pillar type
Cable termination		mm <sup>2</sup>	25
Torque of screw		Nm	2.5
Ambient temperature		°C	-25 ... +55
Storage temperature		°C	-40 ... +70
IP degree			IP20

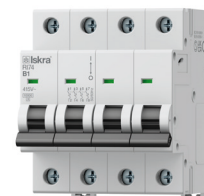
### RI70 – B characteristics

Type	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RI71</b>							
RI71 B0.5	0.5	230/240	1	786.091.495	100	12	120
RI71 B1	1	230/240	1	786.091.272	105	12	120
RI71 B2	2	230/240	1	786.091.273	102	12	120
RI71 B3	3	230/240	1	786.091.274	104	12	120
RI71 B4	4	230/240	1	786.091.275	104	12	120
RI71 B6	6	230/240	1	786.091.276	104	12	120
RI71 B8	8	230/240	1	786.091.277	105	12	120
RI71 B10	10	230/240	1	786.091.278	105	12	120
RI71 B13	13	230/240	1	786.091.279	104	12	120
RI71 B16	16	230/240	1	786.091.280	104	12	120
RI71 B20	20	230/240	1	786.091.281	105	12	120
RI71 B25	25	230/240	1	786.091.282	105	12	120
RI71 B32	32	230/240	1	786.091.283	105	12	120
RI71 B40	40	230/240	1	786.091.284	110	12	120
RI71 B50	50	230/240	1	786.091.285	117	12	120
RI71 B63	63	230/240	1	786.091.286	123	12	120
<b>RI72</b>							
RI72 B0.5	0.5	415	2	786.091.484	200	6	60
RI72 B1	1	415	2	786.091.287	210	6	60
RI72 B2	2	415	2	786.091.288	220	6	60
RI72 B3	3	415	2	786.091.289	220	6	60
RI72 B4	4	415	2	786.091.290	220	6	60
RI72 B6	6	415	2	786.091.291	225	6	60
RI72 B8	8	415	2	786.091.292	226	6	60
RI72 B10	10	415	2	786.091.293	226	6	60
RI72 B13	13	415	2	786.091.294	226	6	60
RI72 B16	16	415	2	786.091.295	225	6	60
RI72 B20	20	415	2	786.091.296	226	6	60
RI72 B25	25	415	2	786.091.297	226	6	60
RI72 B32	32	415	2	786.091.298	226	6	60
RI72 B40	40	415	2	786.091.299	235	6	60
RI72 B50	50	415	2	786.091.300	235	6	60
RI72 B63	63	415	2	786.091.301	246	6	60
<b>RI73</b>							
RI73 B0.5	0.5	415	2	786.091.496	300	4	40
RI73 B1	1	415	3	786.091.302	315	4	40
RI73 B2	2	415	3	786.091.303	306	4	40
RI73 B3	3	415	3	786.091.304	312	4	40
RI73 B4	4	415	3	786.091.305	312	4	40
RI73 B6	6	415	3	786.091.306	312	4	40
RI73 B8	8	415	3	786.091.307	312	4	40
RI73 B10	10	415	3	786.091.308	312	4	40
RI73 B13	13	415	3	786.091.309	312	4	40
RI73 B16	16	415	3	786.091.310	312	4	40
RI73 B20	20	415	3	786.091.311	315	4	40
RI73 B25	25	415	3	786.091.312	315	4	40
RI73 B32	32	415	3	786.091.313	315	4	40
RI73 B40	40	415	3	786.091.314	330	4	40
RI73 B50	50	415	3	786.091.315	351	4	40
RI73 B63	63	415	3	786.091.316	367	4	40



## RI70 – B characteristics

Type	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RI74</b>							
RI74 B0.5	0.5	415	4	786.091.497	400	3	30
RI74 B1	1	415	4	786.091.317	420	3	30
RI74 B2	2	415	4	786.091.318	424	3	30
RI74 B3	3	415	4	786.091.319	432	3	30
RI74 B4	4	415	4	786.091.320	432	3	30
RI74 B6	6	415	4	786.091.321	432	3	30
RI74 B8	8	415	4	786.091.322	432	3	30
RI74 B10	10	415	4	786.091.323	432	3	30
RI74 B13	13	415	4	786.091.324	432	3	30
RI74 B16	16	415	4	786.091.325	448	3	30
RI74 B20	20	415	4	786.091.326	448	3	30
RI74 B25	25	415	4	786.091.327	448	3	30
RI74 B32	32	415	4	786.091.328	447	3	30
RI74 B40	40	415	4	786.091.329	448	3	30
RI74 B50	50	415	4	786.091.330	468	3	30
RI74 B63	63	415	4	786.091.331	489	3	30
<b>RI71N</b>							
RI71N B0.5	0.5	230/240	1+N	786.091.501	199	6	60
RI71N B1	1	230/240	1+N	786.091.332	204	6	60
RI71N B2	2	230/240	1+N	786.091.333	201	6	60
RI71N B3	3	230/240	1+N	786.091.334	203	6	60
RI71N B4	4	230/240	1+N	786.091.335	203	6	60
RI71N B6	6	230/240	1+N	786.091.336	203	6	60
RI71N B8	8	230/240	1+N	786.091.337	204	6	60
RI71N B10	10	230/240	1+N	786.091.338	204	6	60
RI71N B13	13	230/240	1+N	786.091.339	203	6	60
RI71N B16	16	230/240	1+N	786.091.340	203	6	60
RI71N B20	20	230/240	1+N	786.091.341	204	6	60
RI71N B25	25	230/240	1+N	786.091.342	204	6	60
RI71N B32	32	230/240	1+N	786.091.343	204	6	60
RI71N B40	40	230/240	1+N	786.091.344	209	6	60
RI71N B50	50	230/240	1+N	786.091.345	216	6	60
RI71N B63	63	230/240	1+N	786.091.346	222	6	60
<b>RI73N</b>							
RI73N B0.5	0.5	415	3+N	786.091.503	400	3	30
RI73N B1	1	415	3+N	786.091.347	414	3	30
RI73N B2	2	415	3+N	786.091.348	405	3	30
RI73N B3	3	415	3+N	786.091.349	411	3	30
RI73N B4	4	415	3+N	786.091.350	411	3	30
RI73N B6	6	415	3+N	786.091.351	411	3	30
RI73N B8	8	415	3+N	786.091.352	411	3	30
RI73N B10	10	415	3+N	786.091.353	411	3	30
RI73N B13	13	415	3+N	786.091.354	411	3	30
RI73N B16	16	415	3+N	786.091.355	411	3	30
RI73N B20	20	415	3+N	786.091.356	414	3	30
RI73N B25	25	415	3+N	786.091.357	414	3	30
RI73N B32	32	415	3+N	786.091.358	414	3	30
RI73N B40	40	415	3+N	786.091.359	429	3	30
RI73N B50	50	415	3+N	786.091.360	466	3	30
RI73N B63	63	415	3+N	786.091.361	466	3	30



### RI70 – C characteristics

Type	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RI71</b>							
RI71 C0.5	0.5	230/240	1	786.091.483	100	12	120
RI71 C1	1	230/240	1	786.091.182	105	12	120
RI71 C2	2	230/240	1	786.091.183	102	12	120
RI71 C3	3	230/240	1	786.091.184	104	12	120
RI71 C4	4	230/240	1	786.091.185	104	12	120
RI71 C6	6	230/240	1	786.091.186	104	12	120
RI71 C8	8	230/240	1	786.091.187	105	12	120
RI71 C10	10	230/240	1	786.091.188	105	12	120
RI71 C13	13	230/240	1	786.091.189	104	12	120
RI71 C16	16	230/240	1	786.091.190	104	12	120
RI71 C20	20	230/240	1	786.091.191	105	12	120
RI71 C25	25	230/240	1	786.091.192	105	12	120
RI71 C32	32	230/240	1	786.091.193	105	12	120
RI71 C40	40	230/240	1	786.091.194	110	12	120
RI71 C50	50	230/240	1	786.091.195	117	12	120
RI71 C63	63	230/240	1	786.091.196	123	12	120



<b>RI72</b>							
RI72 C0.5	0.5	415	2	786.091.492	200	6	60
RI72 C1	1	415	2	786.091.197	210	6	60
RI72 C2	2	415	2	786.091.198	220	6	60
RI72 C3	3	415	2	786.091.199	220	6	60
RI72 C4	4	415	2	786.091.200	220	6	60
RI72 C6	6	415	2	786.091.201	225	6	60
RI72 C8	8	415	2	786.091.202	226	6	60
RI72 C10	10	415	2	786.091.203	226	6	60
RI72 C13	13	415	2	786.091.204	226	6	60
RI72 C16	16	415	2	786.091.205	225	6	60
RI72 C20	20	415	2	786.091.206	226	6	60
RI72 C25	25	415	2	786.091.207	226	6	60
RI72 C32	32	415	2	786.091.208	226	6	60
RI72 C40	40	415	2	786.091.209	235	6	60
RI72 C50	50	415	2	786.091.210	235	6	60
RI72 C63	63	415	2	786.091.211	246	6	60



<b>RI73</b>							
RI73 C0.5	0.5	415	3	786.091.493	300	4	40
RI73 C1	1	415	3	786.091.212	315	4	40
RI73 C2	2	415	3	786.091.213	306	4	40
RI73 C3	3	415	3	786.091.214	312	4	40
RI73 C4	4	415	3	786.091.215	312	4	40
RI73 C6	6	415	3	786.091.216	312	4	40
RI73 C8	8	415	3	786.091.187	312	4	40
RI73 C10	10	415	3	786.091.218	312	4	40
RI73 C13	13	415	3	786.091.189	312	4	40
RI73 C16	16	415	3	786.091.220	312	4	40
RI73 C20	20	415	3	786.091.221	315	4	40
RI73 C25	25	415	3	786.091.222	315	4	40
RI73 C32	32	415	3	786.091.223	315	4	40
RI73 C40	40	415	3	786.091.224	330	4	40
RI73 C50	50	415	3	786.091.225	351	4	40
RI73 C63	63	415	3	786.091.226	367	4	40



### RI70 – C characteristics

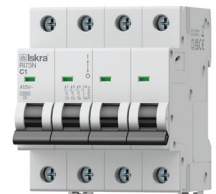
Type	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RI74</b>							
RI74 C0.5	0.5	415	4	786.091.494	400	3	30
RI74 C1	1	415	4	786.091.227	420	3	30
RI74 C2	2	415	4	786.091.228	424	3	30
RI74 C3	3	415	4	786.091.229	432	3	30
RI74 C4	4	415	4	786.091.230	432	3	30
RI74 C6	6	415	4	786.091.231	432	3	30
RI74 C8	8	415	4	786.091.232	432	3	30
RI74 C10	10	415	4	786.091.233	432	3	30
RI74 C13	13	415	4	786.091.234	432	3	30
RI74 C16	16	415	4	786.091.235	448	3	30
RI74 C20	20	415	4	786.091.236	448	3	30
RI74 C25	25	415	4	786.091.237	448	3	30
RI74 C32	32	415	4	786.091.238	447	3	30
RI74 C40	40	415	4	786.091.239	448	3	30
RI74 C50	50	415	4	786.091.240	468	3	30
RI74 C63	63	415	4	786.091.241	489	3	30



<b>RI71N</b>							
RI71N C0.5	0.5	230/240	1+N	786.091.500	199	6	60
RI71N C1	1	230/240	1+N	786.091.242	204	6	60
RI71N C2	2	230/240	1+N	786.091.243	201	6	60
RI71N C3	3	230/240	1+N	786.091.244	203	6	60
RI71N C4	4	230/240	1+N	786.091.245	203	6	60
RI71N C6	6	230/240	1+N	786.091.246	203	6	60
RI71N C8	8	230/240	1+N	786.091.247	204	6	60
RI71N C10	10	230/240	1+N	786.091.248	204	6	60
RI71N C13	13	230/240	1+N	786.091.249	203	6	60
RI71N C16	16	230/240	1+N	786.091.250	203	6	60
RI71N C20	20	230/240	1+N	786.091.251	204	6	60
RI71N C25	25	230/240	1+N	786.091.252	204	6	60
RI71N C32	32	230/240	1+N	786.091.253	204	6	60
RI71N C40	40	230/240	1+N	786.091.254	209	6	60
RI71N C50	50	230/240	1+N	786.091.255	216	6	60
RI71N C63	63	230/240	1+N	786.091.256	222	6	60



<b>RI73N</b>							
RI73N C0.5	0.5	415	3+N	786.091.502	400	3	30
RI73N C1	1	415	3+N	786.091.257	414	3	30
RI73N C2	2	415	3+N	786.091.258	405	3	30
RI73N C3	3	415	3+N	786.091.259	411	3	30
RI73N C4	4	415	3+N	786.091.260	411	3	30
RI73N C6	6	415	3+N	786.091.261	411	3	30
RI73N C8	8	415	3+N	786.091.262	411	3	30
RI73N C10	10	415	3+N	786.091.263	411	3	30
RI73N C13	13	415	3+N	786.091.264	411	3	30
RI73N C16	16	415	3+N	786.091.265	411	3	30
RI73N C20	20	415	3+N	786.091.266	414	3	30
RI73N C25	25	415	3+N	786.091.267	414	3	30
RI73N C32	32	415	3+N	786.091.268	414	3	30
RI73N C40	40	415	3+N	786.091.269	429	3	30
RI73N C50	50	415	3+N	786.091.270	466	3	30
RI73N C63	63	415	3+N	786.091.271	466	3	30





### RI70 — D characteristics

Type	Rated Current I <sub>n</sub> (A)	Rated Voltage U <sub>n</sub> (V)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RI71</b>							
RI71 D0.5	0.5	230/240	1	786.091.482	100	12	120
RI71 D1	1	230/240	1	786.091.362	105	12	120
RI71 D2	2	230/240	1	786.091.363	102	12	120
RI71 D3	3	230/240	1	786.091.364	104	12	120
RI71 D4	4	230/240	1	786.091.365	104	12	120
RI71 D6	6	230/240	1	786.091.366	104	12	120
RI71 D8	8	230/240	1	786.091.367	105	12	120
RI71 D10	10	230/240	1	786.091.368	105	12	120
RI71 D13	13	230/240	1	786.091.369	104	12	120
RI71 D16	16	230/240	1	786.091.370	104	12	120
RI71 D20	20	230/240	1	786.091.371	105	12	120
RI71 D25	25	230/240	1	786.091.372	105	12	120
RI71 D32	32	230/240	1	786.091.373	105	12	120
RI71 D40	40	230/240	1	786.091.374	110	12	120
RI71 D50	50	230/240	1	786.091.375	117	12	120
RI71 D63	63	230/240	1	786.091.376	123	12	120



<b>RI72</b>							
RI72 D0.5	0.5	415	2	786.091.484	200	6	60
RI72 D1	1	415	2	786.091.377	210	6	60
RI72 D2	2	415	2	786.091.378	220	6	60
RI72 D3	3	415	2	786.091.379	220	6	60
RI72 D4	4	415	2	786.091.380	220	6	60
RI72 D6	6	415	2	786.091.381	225	6	60
RI72 D8	8	415	2	786.091.382	226	6	60
RI72 D10	10	415	2	786.091.383	226	6	60
RI72 D13	13	415	2	786.091.384	226	6	60
RI72 D16	16	415	2	786.091.385	225	6	60
RI72 D20	20	415	2	786.091.386	226	6	60
RI72 D25	25	415	2	786.091.387	226	6	60
RI72 D32	32	415	2	786.091.388	226	6	60
RI72 D40	40	415	2	786.091.389	235	6	60
RI72 D50	50	415	2	786.091.390	235	6	60
RI72 D63	63	415	2	786.091.391	246	6	60



<b>RI73</b>							
RI73 D0.5	0.5	415	3	786.091.498	300	4	40
RI73 D1	1	415	3	786.091.392	315	4	40
RI73 D2	2	415	3	786.091.393	306	4	40
RI73 D3	3	415	3	786.091.394	312	4	40
RI73 D4	4	415	3	786.091.395	312	4	40
RI73 D6	6	415	3	786.091.396	312	4	40
RI73 D8	8	415	3	786.091.397	312	4	40
RI73 D10	10	415	3	786.091.398	312	4	40
RI73 D13	13	415	3	786.091.399	312	4	40
RI73 D16	16	415	3	786.091.400	312	4	40
RI73 D20	20	415	3	786.091.401	315	4	40
RI73 D25	25	415	3	786.091.402	315	4	40
RI73 D32	32	415	3	786.091.403	315	4	40
RI73 D40	40	415	3	786.091.404	330	4	40
RI73 D50	50	415	3	786.091.405	351	4	40
RI73 D63	63	415	3	786.091.406	367	4	40



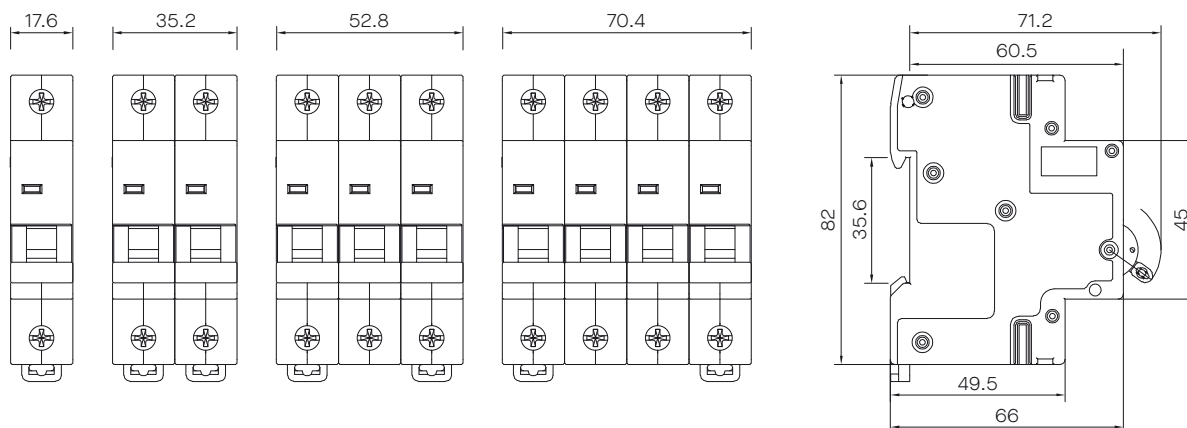
## RI70 – D characteristics

Type	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RI74</b>							
RI74 D0.5	0.5	415	4	786.091.499	400	3	30
RI74 D1	1	415	4	786.091.407	420	3	30
RI74 D2	2	415	4	786.091.408	424	3	30
RI74 D3	3	415	4	786.091.409	432	3	30
RI74 D4	4	415	4	786.091.410	432	3	30
RI74 D6	6	415	4	786.091.411	432	3	30
RI74 D8	8	415	4	786.091.412	432	3	30
RI74 D10	10	415	4	786.091.413	432	3	30
RI74 D13	13	415	4	786.091.414	432	3	30
RI74 D16	16	415	4	786.091.415	448	3	30
RI74 D20	20	415	4	786.091.416	448	3	30
RI74 D25	25	415	4	786.091.417	448	3	30
RI74 D32	32	415	4	786.091.418	447	3	30
RI74 D40	40	415	4	786.091.419	448	3	30
RI74 D50	50	415	4	786.091.420	468	3	30
RI74 D63	63	415	4	786.091.421	489	3	30

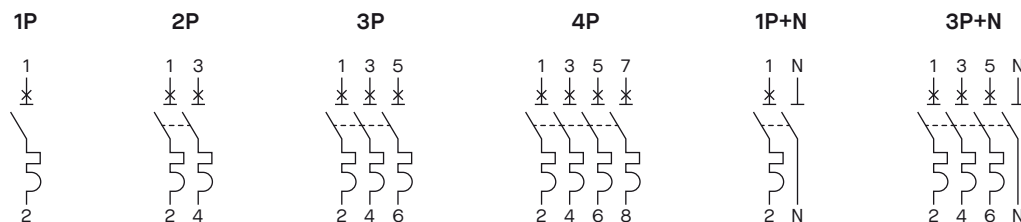


## Dimensions

(mm)



## Wiring diagram



# RI70J 10 kA DC

## Miniature Circuit Breakers



### Types

- RI71J single-pole
- RI72J two-pole
- RI73J three-pole
- RI74J four-pole

### Benefits

- ▶ Used as DC protection for switchboards in PV systems
- ▶ Supports maximum system voltage up to 1200 VDC
- ▶ Short circuit, overload and surge protection



Technical data	Symbol	Unit	RI70J			
Standards			IEC/EN 60947-2			
Rated current	$I_n$	A	1, 2, 3, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63			
Number of poles			1P	2P	3P	4P
Voltage	$U_i$	V	220/250	440/500	660/750	880/1000
Rated short-time making capacity (I <sub>cm</sub> ) – 6 kA		VDC	500	600	1500	1500
Rated short-time making capacity (I <sub>cm</sub> ) – 10 kA		VDC	300	600	1200	1200
Tripping characteristics			C			
Tripping type			thermal magnetic			
Rated impulse withstand voltage	$U_{imp}$	kV	6			
Electrical endurance			3000 cycles			
Mechanical endurance			10000 cycles			
Ambient temperature		°C	-20 ... +70			
IP degree			IP20			

RI70J – C characteristics

Type	Rated Current $I_n$ (A)	Voltage $U_i$ (V)	Number of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RI71J</b>							
RI71J C1	1	220/250	1	786.091.422	121	12	120
RI71J C2	2	220/250	1	786.091.423	121	12	120
RI71J C3	3	220/250	1	786.091.424	121	12	120
RI71J C4	4	220/250	1	786.091.425	121	12	120
RI71J C6	6	220/250	1	786.091.426	118	12	120
RI71J C10	10	220/250	1	786.091.428	118	12	120
RI71J C16	16	220/250	1	786.091.430	118	12	120
RI71J C20	20	220/250	1	786.091.431	118	12	120
RI71J C25	25	220/250	1	786.091.432	118	12	120
RI71J C32	32	220/250	1	786.091.433	118	12	120
RI71J C40	40	220/250	1	786.091.434	118	12	120
RI71J C50	50	220/250	1	786.091.435	121	12	120
RI71J C63	63	220/250	1	786.091.436	121	12	120



<b>RI72J</b>							
RI72J C1	1	440/500	2	786.091.437	242	6	60
RI72J C2	2	440/500	2	786.091.438	242	6	60
RI72J C3	3	440/500	2	786.091.439	242	6	60
RI72J C4	4	440/500	2	786.091.440	242	6	60
RI72J C6	6	440/500	2	786.091.441	236	6	60
RI72J C10	10	440/500	2	786.091.443	236	6	60
RI72J C16	16	440/500	2	786.091.445	236	6	60
RI72J C20	20	440/500	2	786.091.446	236	6	60
RI72J C25	25	440/500	2	786.091.447	236	6	60
RI72J C32	32	440/500	2	786.091.448	236	6	60
RI72J C40	40	440/500	2	786.091.449	236	6	60
RI72J C50	50	440/500	2	786.091.450	242	6	60
RI72J C63	63	440/500	2	786.091.451	242	6	60



<b>RI73J</b>							
RI73J C1	1	660/750	3	786.091.452	362	4	40
RI73J C2	2	660/750	3	786.091.453	362	4	40
RI73J C3	3	660/750	3	786.091.454	362	4	40
RI73J C4	4	660/750	3	786.091.455	362	4	40
RI73J C6	6	660/750	3	786.091.456	354	4	40
RI73J C10	10	660/750	3	786.091.458	354	4	40
RI73J C16	16	660/750	3	786.091.460	354	4	40
RI73J C20	20	660/750	3	786.091.461	354	4	40
RI73J C25	25	660/750	3	786.091.462	354	4	40
RI73J C32	32	660/750	3	786.091.463	354	4	40
RI73J C40	40	660/750	3	786.091.464	354	4	40
RI73J C50	50	660/750	3	786.091.465	484	4	40
RI73J C63	63	660/750	3	786.091.466	484	4	40

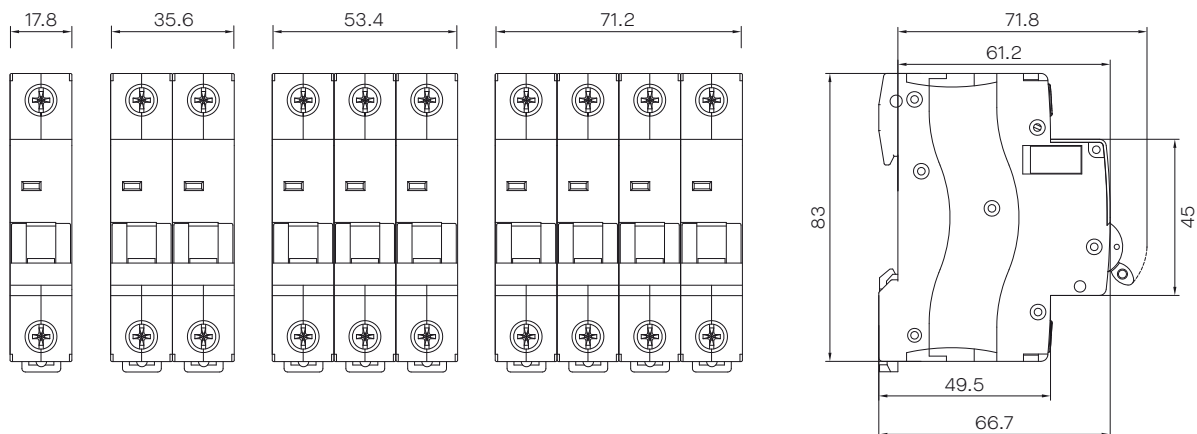


<b>RI74J</b>							
RI74J C1	1	880/1000	4	786.091.467	482	3	30
RI74J C2	2	880/1000	4	786.091.468	482	3	30
RI74J C3	3	880/1000	4	786.091.469	482	3	30
RI74J C4	4	880/1000	4	786.091.470	482	3	30
RI74J C6	6	880/1000	4	786.091.471	468	3	30
RI74J C10	10	880/1000	4	786.091.473	468	3	30
RI74J C16	16	880/1000	4	786.091.475	468	3	30
RI74J C20	20	880/1000	4	786.091.476	468	3	30
RI74J C25	25	880/1000	4	786.091.477	468	3	30
RI74J C32	32	880/1000	4	786.091.478	468	3	30
RI74J C40	40	880/1000	4	786.091.479	468	3	30
RI74J C50	50	880/1000	4	786.091.480	482	3	30
RI74J C63	63	880/1000	4	786.091.481	482	3	30

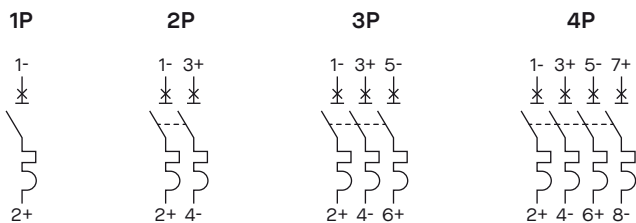


**Dimensions**

(mm)



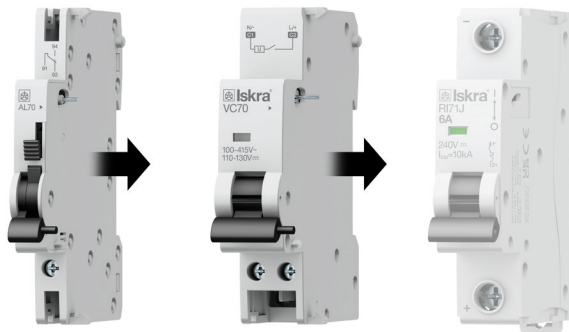
**Wiring diagram**



**Accessories for RI70**

**Types**

- PS70-11 auxiliary contact
- AL70 alarm switch
- VC70 shunt release
- PC70 overvoltage and under-voltage release





**PS70-11**

Auxiliary Contact



**AL70**

Alarm Switch

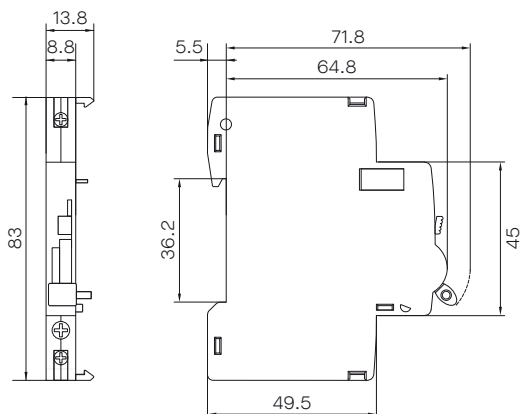


Model	Symbol	Unit	Data
Rated current	$I_n$	A	3 A (400 VAC) 6 A (240 VAC) 1 A (110 VDC)
Terminal		mm <sup>2</sup>	0.5 - 4
Dielectric strength		V/1 min	2000
Electro-mechanical endurance			≥ 5000 times
Ordering No.			786.091.488
Quantity / Box			10/100

Model	Symbol	Unit	Data
Contact capacity	$I_n$	A	3 A (400 VAC) 6 A (230 VAC) 9 A (125 VDC)
Rated power voltage	$U_s$	V	400, 230, 125
Operating voltage range	$U_s$		70 - 100 %
Dielectric strength		V/1 min	2000
Rated insulating voltage	$U_i$	V	500
Electro-mechanical endurance			≥ 4000 times
Ordering No.			786.091.489
Quantity / Box			10/100

**Dimensions**

(mm)



**VC70**

Shunt Release



**PC70**

Overvoltage and undervoltage release

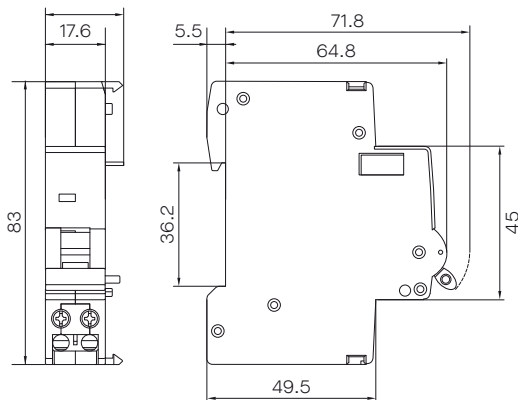


Model	Symbol	Unit	Data
Nominal voltage	$U_s$	VAC	110 ~ 415
Max inrush current	$I_n$		3 A (415 VAC) 6 A (230 VAC) 9 A (110 VAC)
Dielectric strength		V/1 min	2000
Release range		VAC	110 ~ 415
Electro-mechanical endurance			≥ 4000 times
Ordering No.			786.091.490
Quantity / Box			10/100

Model	Symbol	Unit	Data
Rated voltage	$U_e$	VAC	230
Max tripping voltage		V	280
Min tripping voltage		VAC	170
Electro-mechanical endurance			≥ 4000 times
Ordering No.			786.091.491
Quantity / Box			10/100

**Dimensions**

(mm)



# RI100 10 kA

## Miniature Circuit Breakers



### Types

- RI 101 single-pole
- RI 101N single pole + neutral pole
- RI 102 two-pole
- RI 103 three-pole
- RI 103N three-pole + neutral pole
- RI 104 four pole

### Applications

Miniature circuit breakers of RI100 series are used for switching, conducting and switching-off the current not only in normal operating conditions but also in special conditions in a circuit such as short circuit. They are used for overcurrent protection of house installations, industrial electric distributions and devices.

### Benefits

- ▶ High rated short-circuit breaking capacity up to 10 kA on IEC 60947-2/ IEC 60898-1 standard
- ▶ Service life of product has been greatly enhanced through special designed tripping mechanism
- ▶ Long-time and reliable operation
- ▶ Enclosure and functional parts made from imported plastics with flame-retardant, heat-resistant, and impulse-proof properties
- ▶ Compact and modularized design
- ▶ Convenient mounting

### Standards

- ▶ IEC/EN 60947-2



## RI100 characteristics

Technical data	Symbol	Unit	RI100
Area of use			AC systems
Standards			IEC/EN 60947-2
Approvals			SEMKO, CE
Number of poles			1,1+N, 2, 3, 3+N, 4
Tripping characteristics			C
Rated currents	$I_n$	A	80, 100, 125
Rated voltage	$U_n$	V	230, 230/400, 400
Rated DC voltage	$U_n$	V	max. 60
Max. time constant for DC voltage	t	ms	3
Rated impulse withstand voltage	$U_{imp}$	kV	4
Rated insulation voltage	$U_i$	V	690
Rated frequency	f	Hz	50/60
Rated short-circuit breaking capacity	$I_{cu} I_{cn}$	kA	10
Service short-circuit breaking capacity	$I_{cs}$	kA	7.5
Selectivity class			3
Electrical endurance		op. c.	4 000
Mechanical endurance		op. c.	10 000
Terminal capacity			1 ... 50
Screw type			M5
Screw head			PZ2
Tightening torque		Nm	3.5
Mounting			35 mm DIN rail acc. to 60715, with clip on panel
Degree of protection	front panel		IP40
	housing		IP20
Ambient temperature		°C	-10 ... +50
Altitude*		m	up to 2000
Mounting position			any
Resistance against vibrations			3 g (8 ... 50 Hz)

\* Above max. altitude the voltages U and U are reduced by 1.2%, i.e. nominal rating I is reduced by 0.4% for every additional 100 m

## RI100 – B characteristics

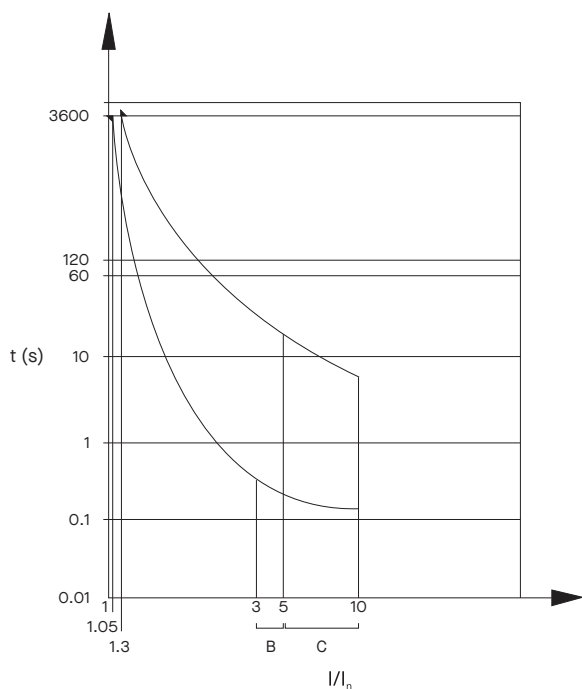
Type	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	Number of Poles	Ordering No.	Weight (g)	Packaging (pcs)
<b>RI101</b>						
RI101 B80	80	230	1	786.101.220	160	8
RI101 B100	100	230	1	786.101.221	160	8
RI101 B125	125	230	1	786.101.222	160	8
<b>RI101N</b>						
RI101N B80	6	230/400	1+N	786.101.223	320	4
RI101N B100	10	230/400	1+N	786.101.224	320	4
RI101N B125	16	230/400	1+N	786.101.225	320	4
<b>RI102</b>						
RI102 B80	80	230/400	2	786.101.226	320	4
RI102 B100	100	230/400	2	786.101.227	320	4
RI102 B125	125	230/400	2	786.101.228	320	4
<b>RI103</b>						
RI103 B80	80	400	3	786.101.229	490	2
RI103 B100	100	400	3	786.101.230	490	2
RI103 B125	125	400	3	786.101.231	490	2
<b>RI103N</b>						
RI103N B80	80	230/400	3+N	786.101.232	640	2
RI103N B100	100	230/400	3+N	786.101.233	640	2
RI103N B125	125	230/400	3+N	786.101.234	640	2
<b>RI104</b>						
RI104 B80	80	400	4	786.101.235	640	2
RI104 B100	100	400	4	786.101.236	640	2
RI104 B125	125	400	4	786.101.237	640	2



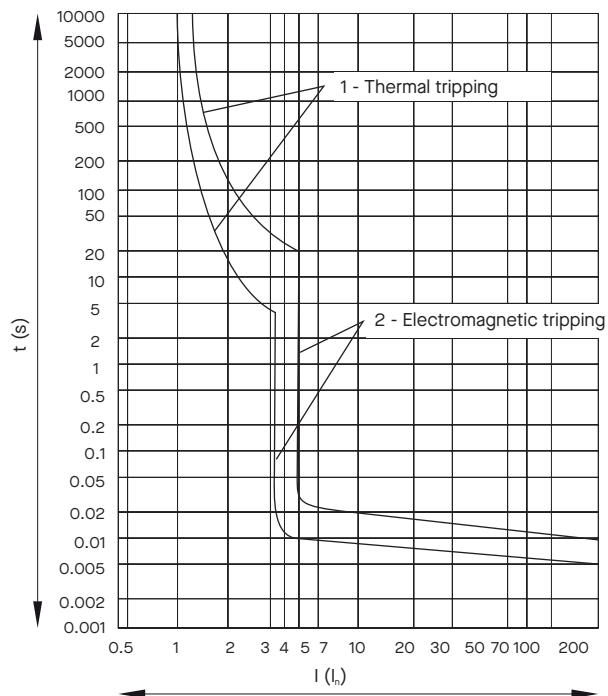
## RI100 – C characteristics

Type	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	Number of Poles	Ordering No.	Weight (g)	Packaging (pcs)
<b>RI101</b>						
RI101 C80	80	230	1	786.101.250	160	8
RI101 C100	100	230	1	786.101.251	160	8
RI101 C125	125	230	1	786.101.252	160	8
<b>RI101N</b>						
RI101N C80	80	230/400	1+N	786.101.253	320	4
RI101N C100	100	230/400	1+N	786.101.254	320	4
RI101N C125	125	230/400	1+N	786.101.255	320	4
<b>RI102</b>						
RI102 C80	80	230/400	2	786.101.256	320	4
RI102 C100	100	230/400	2	786.101.257	320	4
RI102 C125	125	230/400	2	786.101.258	320	4
<b>RI103</b>						
RI103 C80	80	400	3	786.101.259	490	2
RI103 C100	100	400	3	786.101.260	490	2
RI103 C125	125	400	3	786.101.261	490	2
<b>RI103N</b>						
RI103N C80	80	230/400	3+N	786.101.998	640	2
RI103N C100	100	230/400	3+N	786.101.999	640	2
<b>RI104</b>						
RI104 C80	80	400	4	786.101.265	640	2
RI104 C100	100	400	4	786.101.266	640	2
RI104 C125	125	400	4	786.101.267	640	2

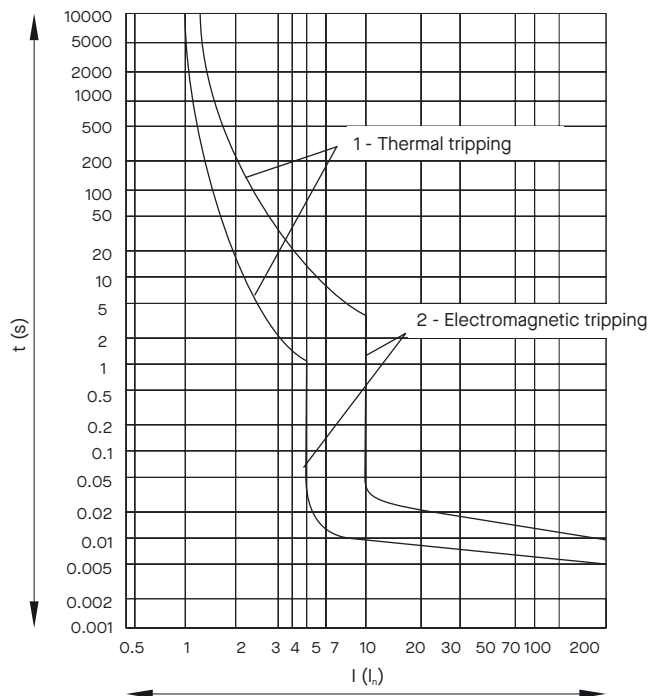
Tripping characteristics



B type



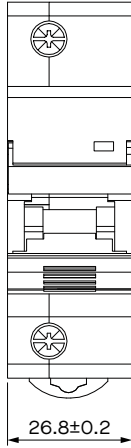
C type



Dimensions

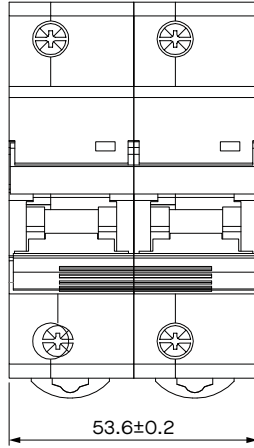
(mm)

R1101



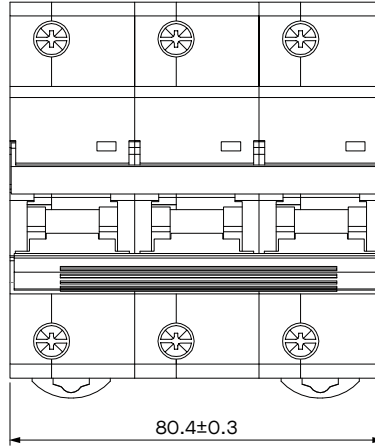
26.8±0.2

R1102  
R1102+N



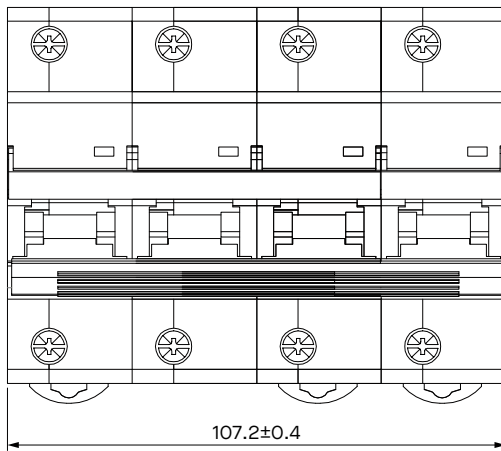
53.6±0.2

R1103

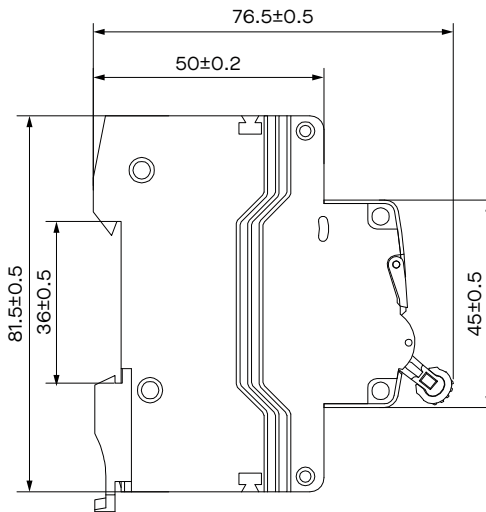


80.4±0.3

R1103 +N  
R1104



107.2±0.4



76.5±0.5

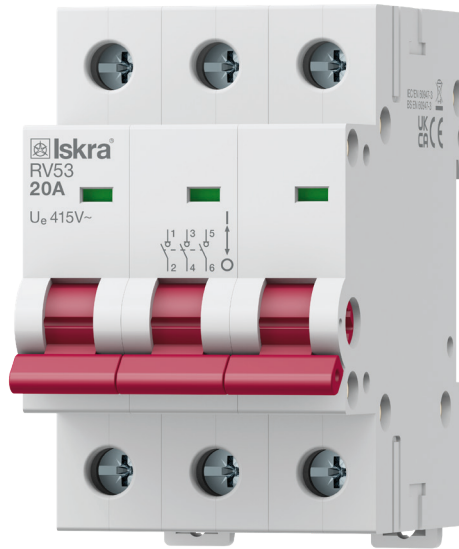
50±0.2

81.5±0.5

36±0.5

45±0.5

# RV50 Isolator Switch



## Applications



## Features

- ▶ Capable of switch electric circuit with load adaptable to padlock device
- ▶ Contact position indication
- ▶ Capable of quickly releasing stored energy operation highlighted of high making and breaking capacity
- ▶ Used as main switch for household and similar installation



Technical data	RV50
Standards	IEC/EN 60947-3
Rated current (I <sub>n</sub> )	20, 32, 40, 80, 100 A
Rated voltage(U <sub>N</sub> )	230/240VAC, 400/415 VAC
Number of poles	1P, 2P, 3P, 4P
Rated frequency	50/60 Hz
Electrical endurance	10000 cycles
Mechanical endurance	20000 cycles
Rated impulse withstand voltage (U <sub>imp</sub> )	6 kV
Terminals	pillar type
Cable termination	25 mm <sup>2</sup>
Torque of screw	2.5 Nm
IP degree	IP20

Isolator Switch

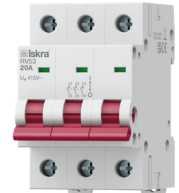
Type	Rated Current $I_n$ (A)	No. of Poles	Ordering No.	Quantity / Box	Quantity / CTN
<b>RV51</b>					
RV51 20A	20	1	786.100.671	12	120
RV51 32A	32	1	786.100.672	12	120
RV51 40A	40	1	786.100.673	12	120
RV51 63A	63	1	786.100.674	12	120
RV51 80A	80	1	786.100.675	12	120
RV51 100A	100	1	786.100.676	12	120



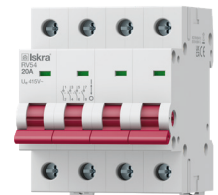
<b>RV52</b>					
RV52 20A	20	2	786.100.677	6	60
RV52 32A	32	2	786.100.678	6	60
RV52 40A	40	2	786.100.679	6	60
RV52 63A	63	2	786.100.680	6	60
RV52 80A	80	2	786.100.681	6	60
RV52 100A	100	2	786.100.682	6	60



<b>RV53</b>					
RV53 20A	20	3	786.100.683	4	40
RV53 32A	32	3	786.100.684	4	40
RV53 40A	40	3	786.100.685	4	40
RV53 63A	63	3	786.100.686	4	40
RV53 80A	80	3	786.100.687	4	40
RV53 100A	100	3	786.100.688	4	40



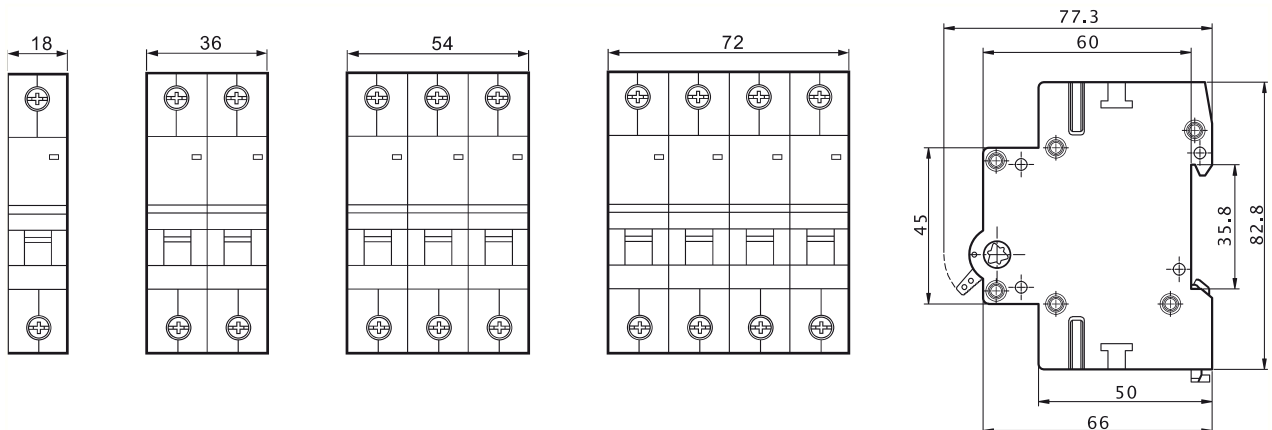
<b>RV54</b>					
RV54 20A	20	4	786.100.689	3	30
RV54 32A	32	4	786.100.690	3	30
RV54 40A	40	4	786.100.691	3	30
RV54 63A	63	4	786.100.692	3	30
RV54 80A	80	4	786.100.693	3	30
RV54 100A	100	4	786.100.694	3	30



Dimensions

(mm)

RV50



# RS Signal Lamps



## Features

- ▶ Assembly to a 35 mm wide mounting rail in accordance with EN 60715
- ▶ Optional operation position
- ▶ Degree of protection IP20, degree of protection IP40 after installation in a distribution box

Technical data	Symbol	Unit	RS, RSB
Standards			IEC/EN 60947-5-1
No. of poles			1
Rated voltage	AC	$U_n$	24, 48, 110, 230
	DC		24, 48, 110, 220
Light source			high capacity LED diode
Light source capacity		W	0.8
Colours			G - green, R - red, B - blue, T - transparent, Y - yellow
Illumination			RS - constant, RSB - blinking
Terminal capacity	S	mm <sup>2</sup>	0.75 ... 6
Ambient temperature		°C	-25 ... +55

## Signal lamps

Type	Ordering No.	Weight (g)	Quantity / CTN
RST230 Transparent	786.200.930	65	12
RSR230 Red	786.100.399	65	12
RSB230 Blue	786.100.397	65	12
RSG230 Green	786.100.398	65	12
RSY230 Yellow	786.201.060	65	12

# KAFI4 **10 kA**

## Residual current circuit breakers with overcurrent protection



### Types

Type A

### Applications

RCCBs are used in applications where there is the need to combine protection against overcurrents (overload and short-circuit) and protection against earth leakage currents.

They are used in circuits with an increased requirements regarding touch voltage (bathrooms, event halls, schools, hospitals, swimming pools, marinas, distribution cabinets, mobile houses, etc.)

### Features

- ▶ Trip free mechanisms
- ▶ Earth fault indication window
- ▶ Wide range of breaking capacities for application from residential to industrial field
- ▶ Connection capacity 25mm<sup>2</sup> rigid and 16mm<sup>2</sup> flexible wire
- ▶ Assembly to a 35 mm wide mounting rail in accordance with EN 61009
- ▶ Optional operation position
- ▶ Degree of protection IP20, degree of protection IP40 after installation in a distribution box

### Standards

- ▶ IEC 61009-1



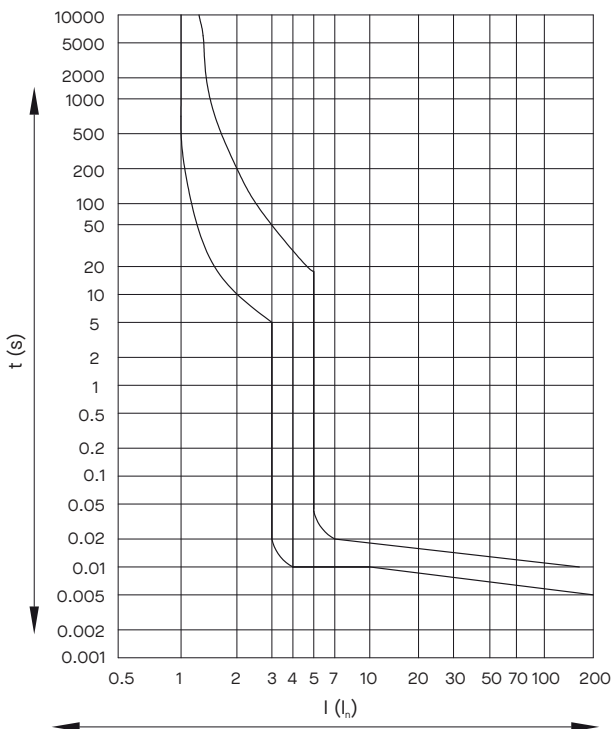


## KAFI4 Type A

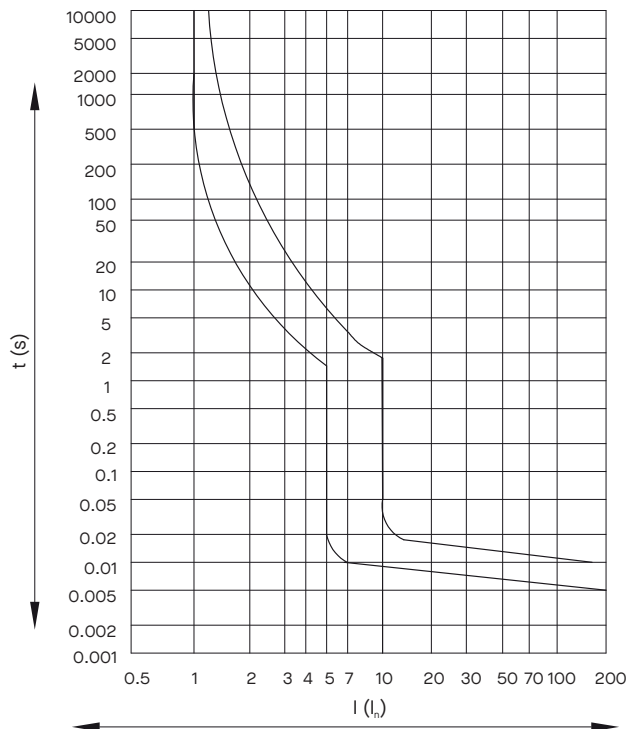
Technical data	Symbol	Unit	KAFI4
Standards			IEC 61009-1
Approvals			CE
Module width			4
Number of poles			4
Rated voltage	$U_n$	V	240
Rated insulation voltage	$U_i$	V	400
Rated impulse withstand voltage	$U_{imp}$	kV	4
Tripping characteristics			B, C
Rated frequency	f	Hz	50/60
Rated current	$I_n$	A	6, 10, 16, 20, 25, 32, 40
Rated residual current	$I_{\Delta n}$	mA	30, 100, 300
Type of residual current			A
Residual tripping time		ms	<100
Rated short circuit capacity	$I_{cn}$	kA	10
Rated residual making and breaking capacity	$I_{\Delta m}$	A	630
Electrical endurance		op. c.	4000
Back-up fuse gL/gG		A	40 (63)
Mechanical endurance		op. c.	10 000
Connecting clamps			lug type
Connecting wires		mm <sup>2</sup>	1 ... 25
Mounting			DIN rail acc. to EN 61009
Ambient temperature		°C	-25 ... +40
Storage temperature		°C	-35 ... +60
Tightening torque			2.5
Protection degree		Nm	IP20

## Tripping characteristics

Characteristics B acc. to EN 60 898



Characteristics C acc. to EN 60 898



## KAFI4 – Characteristics

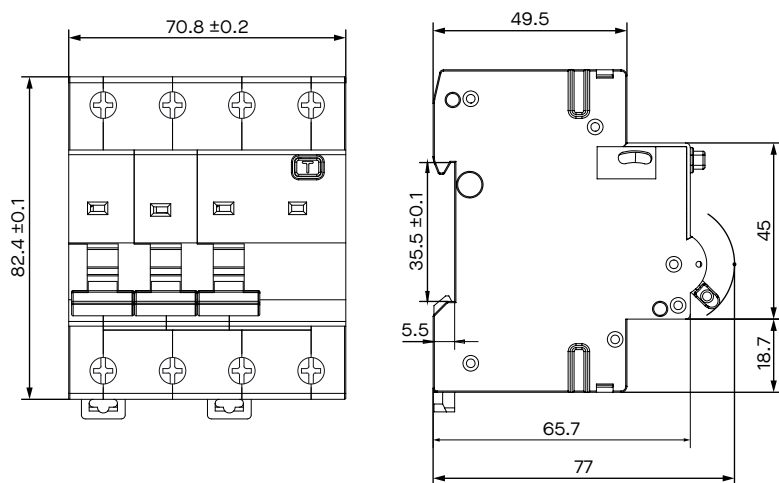
Type	Rated Current $I_n$ (A)	Rated Residual Current $I_{\Delta n}$ (A)	Number of Poles	Ordering No.	Weight (g)	Packaging (pcs)
<b>KAFI4 characteristic B</b>						
KAFI4 A B6/0.03	6	0.03	4	786.008.980	470	1
KAFI4 A B10/0.03	10	0.03	4	786.100.899	470	1
KAFI4 A B16/0.03	16	0.03	4	786.100.900	470	1
KAFI4 A B20/0.03	20	0.03	4	786.100.901	470	1
KAFI4 A B25/0.03	25	0.03	4	786.100.902	470	1
KAFI4 A B32/0.03	32	0.03	4	786.100.903	470	1
KAFI4 A B40/0.03	40	0.03	4	786.100.904	470	1
KAFI4 A B16/0.1	16	0.1	4	786.101.216	470	1
KAFI4 A B20/0.1	20	0.1	4	786.101.217	470	1
KAFI4 A B25/0.1	25	0.1	4	786.101.218	470	1
KAFI4 A B32/0.1	32	0.1	4	786.101.219	470	1
KAFI4 A B40/0.1	40	0.1	4	786.102.033	470	1
KAFI4 A B6/0.3	6	0.3	4	786.100.905	470	1
KAFI4 A B10/0.3	10	0.3	4	786.100.906	470	1
KAFI4 A B16/0.3	16	0.3	4	786.100.907	470	1
KAFI4 A B20/0.3	20	0.3	4	786.100.908	470	1
KAFI4 A B25/0.3	25	0.3	4	786.100.909	470	1
KAFI4 A B32/0.3	32	0.3	4	786.100.910	470	1
KAFI4 A B40/0.3	40	0.3	4	786.100.911	470	1
<b>KAFI4 characteristic C</b>						
KAFI4 A C6/0.03	6	0.03	4	786.100.929	470	1
KAFI4 A C10/0.03	10	0.03	4	786.100.930	470	1
KAFI4 A C13/0.03	13	0.03	4	786.102.029	470	1
KAFI4 A C16/0.03	16	0.03	4	786.100.931	470	1
KAFI4 A C20/0.03	20	0.03	4	786.100.932	470	1
KAFI4 A C25/0.03	25	0.03	4	786.100.933	470	1
KAFI4 A C32/0.03	32	0.03	4	786.100.934	470	1
KAFI4 A C40/0.03	40	0.03	4	786.100.935	470	1
KAFI4 A C20/0.1	20	0.1	4	786.102.031	470	1
KAFI4 A C6/0.3	6	0.3	4	786.100.936	470	1
KAFI4 A C10/0.3	10	0.3	4	786.100.937	470	1
KAFI4 A C16/0.3	16	0.3	4	786.100.938	470	1
KAFI4 A C20/0.3	20	0.3	4	786.100.939	470	1
KAFI4 A C25/0.3	25	0.3	4	786.100.955	470	1
KAFI4 A C32/0.3	32	0.3	4	786.100.956	470	1
KAFI4 A C40/0.3	40	0.3	4	786.100.957	470	1

## Ordering data

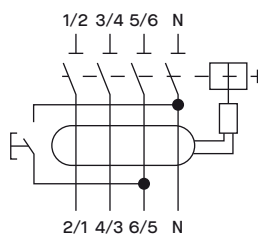
KAFI4	A	-	16	-	0.03	
						Rated residual operating current $I_{\Delta n}$ (A)
						Rated current $I_n$ (A)
						Tripping characteristics
						Type

**Dimensions**

(mm)



**Wiring diagram**



# AFI AC

## Residual current circuit breakers



**Rated current A**                      **25, 40, 63 A**  
**Rated residual current mA**    **30, 300, 500**

Residual current circuit breakers AFI are switches with Instantaneous tripping. They are used for protection against indirect contact, fire protection and additional protection against direct contact. AFI type ac is sensitive to residual sinusoidal alternating currents only.

### Features

- ▶ They are suitable for isolation (switch disconnector)
- ▶ Degree of protection IP20; after installation in a distribution box IP40
- ▶ Assembly to a 35 mm wide mounting rail in accordance with EN 60715
- ▶ Additional colour display of the main contact position (red - contacts closed, green - contacts open)



## Technical Data

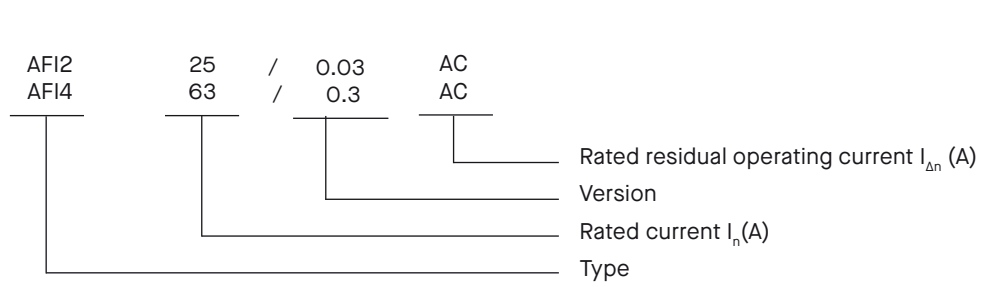
Type AC	Symbol	Unit	AFI2	AFI4
Standards	IEC/EN 61008			
Approvals	CE			
Module width			2	4
Number of poles			2	4
Rated voltage	$U_n$	V	230	400
Rated insulation voltage	$U_i$	V	400	
Rated impulse withstand voltage	$U_{imp}$	kV	4	
Rated frequency	$f$	Hz	50	
Rated current	$I_n$	A	25, 40, 63	
Rated residual current	$I_{\Delta n}$	mA	30, 300, 500	
Residual operating current (AC 50 Hz)				$0.5 - 1.0 I_{\Delta n}$
Rated conditional short-circuit current	$I_{nc}$	kA	6	
Rated making and breaking capacity	$I_m$	A	630 ( $I_n = 25 - 63$ A)	
Rated residual making and breaking capacity	$I_{\Delta m}$			
Max. back-up fuse for short-circuit current gL	$I_v$	A	63	
Maximum breaking times				$1 \times I_{\Delta n} : < 300$ ms; $5 \times I_{\Delta n} : < 40$ ms
Minimum response time delay				instantaneous
Mechanical endurance	op. c.		min. 5000	
Electrical endurance	op. c.		min. 2000	
Minimum distance of open contacts	mm		4	
Ambient temperature	°C		-25 ... +40	
Storage temperature	°C		-35 ... +60	
Resistance to climate	acc. to IEC 60068-2-30: 28 cycles (55 °C, 95 % relative humidity)			
Terminal capacity rigid (solid or stranded) or flexible	S	mm <sup>2</sup>	1 ... 35	
Screw	M5			
Screw head	PZ2			
Tightening torque	Nm		2.0	
Length of removed conductor insulation	mm		15	
Degree of protection	IP20 (IP40 after installation in a distribution box)			
Pollution degree	2			
Weight	g		215	360

## Type AC - Sensitive to AC residual currents

Type	Rated Current $I_n$ (A)	Rated residual current $I_{\Delta n}$ (A)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>AFI2 - type AC, without time delay</b>							
AFI2 25/0.03	25	0.03	2	30.105.058	215	1	
AFI2 25/0.3	25	0.3	2	30.105.059	215	1	
AFI2 40/0.03	40	0.03	2	30.105.061	215	1	
AFI2 63/0.03	63	0.03	2	30.105.063	215	1	
AFI2 40/0.3	40	0.3	2	30.105.062	215	1	
AFI2 63/0.3	63	0.3	2	30.105.064	215	1	
<b>AFI4 - type AC, without time delay</b>							
AFI4 25/0.03	25	0.03	4	30.105.067	360	1	
AFI4 40/0.03	40	0.03	4	30.105.070	360	1	
AFI4 63/0.03	63	0.03	4	30.105.073	360	1	
AFI4 25/0.3	25	0.3	4	30.105.068	360	1	
AFI4 40/0.3	40	0.3	4	30.105.071	360	1	
AFI4 63/0.3	63	0.3	4	30.105.074	360	1	
AFI4 25/0.5	25	0.5	4	30.105.069	360	1	
AFI4 40/0.5	40	0.5	4	30.105.072	360	1	
AFI4 63/0.5	63	0.5	4	30.105.075	360	1	



**Ordering Data**

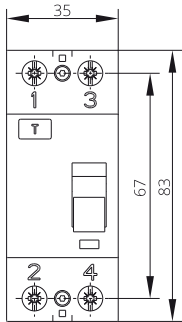


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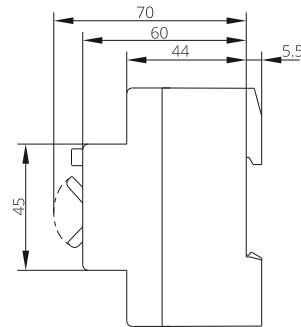
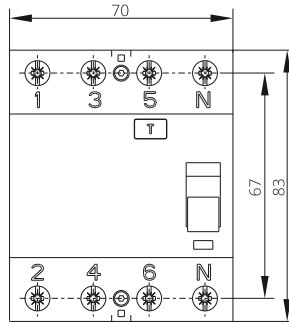
**Dimensions**

(mm)

**AFI2**

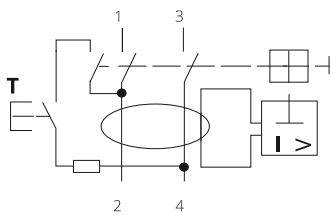


**AFI4**

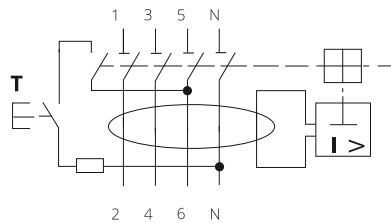


**Schematics**

**AFI2**



**AFI4**



# NFI, NFIK, NFIS, NFIF

## Residual current circuit breakers - Type A, F

Residual current circuit breakers (RCBB) are used for protection against indirect contact, fire protection and additional protection against direct contact.

They are sensitive to alternating and pulsating direct residual currents.

### Features

- ▶ They are suitable for isolation.
- ▶ No overload protection or short-circuit protection is built in RCCB.
- ▶ Assembly to a 35 mm wide mounting rail in accordance with EN 60715
- ▶ Optional operation position
- ▶ Degree of protection IP20, degree of protection IP40 after installation in a distribution box
- ▶ Additional colour display of the position of main contacts (red - contacts closed, green - contacts open)
- ▶ A terminal shape prevents connection of a conductor outside the connection area.



### Special Version

- ▶ **NFIK - SENSITIVE TO AC AND PULSATING DIRECT RESIDUAL CURRENTS**
  - Short-time delayed RCCBs with minimum non-actuating time 10 ms (type G acc. to ÖVE E 8601)
  - Surge current withstand capability with current waveform 8/20  $\mu$ s up to 3 kA
  - High immunity against unwanted tripping at current impulses (e.g. a high number of florescent lamps, transient effects) or when installed in special critical conditions (leakage currents of impulse shape at long cables, the influence of storms, computers, X-ray devices, etc.).
- ▶ **NFIS - SENSITIVE TO AC AND PULSATING DIRECT RESIDUAL CURRENTS**
  - Time delayed selective type with minimum non-actuating time 40 ms (type S)
  - Surge current withstand capability with current waveform 8/20  $\mu$ s up to 3 kA
  - Selectivity regarding a general type and a short-time delayed type is enabled
  - Particularily suitable as the main RCCB
- ▶ **NFIF - SENSITIVE TO RESIDUAL CURRENTS AS TYPE A AND IN ADDITION TO RESIDUAL CURRENTS WITH MIXED FREQUENCIES**
  - Sensitive to residual currents as type A and in addition to residual currents with mixed frequencies up to 1 kHz that can result from single-phase electrical loads with frequency inverters (acc. to IEC/EN 62423)
  - Surge current withstand capability with current waveform 8/20  $\mu$ s up to 3 kA
  - Intended for protection when using washing machines, vacuum cleaners, dishwashers, heating pumps, lighting system ...

# RESIDUAL CURRENT CIRCUIT BREAKERS Type A

NFI AC

## Type A - sensitive to AC and pulsating direct residual currents

Type	Rated Current $I_n$ (A)	Rated residual current $I_{Dn}$ (A)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>NFI2 - type A, instantaneous tripping</b>							
NFI2 16/0.01	16	0.01	2	30.104.260	184	1	
NFI2 25/0.01	25	0.01	2	30.104.264	184	1	
NFI2 16/0.03	16	0.03	2	30.104.238	184	1	
NFI2 25/0.03	25	0.03	2	30.104.239	184	1	
NFI2 40/0.03	40	0.03	2	30.104.240	184	1	
NFI2 63/0.03	63	0.03	2	30.104.241	184	1	
NFI2 80/0.03	80	0.03	2	30.104.357	184	1	
NFI2 100/0.03	100	0.03	2	30.104.553	184	1	
NFI2 16/0.1	16	0.1	2	30.104.261	184	1	
NFI2 25/0.1	25	0.1	2	30.104.265	184	1	
NFI2 40/0.1	40	0.1	2	30.104.268	184	1	
NFI2 63/0.1	63	0.1	2	30.104.271	184	1	
NFI2 80/0.1	80	0.1	2	30.104.644	184	1	
NFI2 100/0.1	100	0.1	2	30.104.554	184	1	
NFI2 16/0.3	16	0.3	2	30.104.262	184	1	
NFI2 25/0.3	25	0.3	2	30.104.266	184	1	
NFI2 40/0.3	40	0.3	2	30.104.269	184	1	
NFI2 63/0.3	63	0.3	2	30.104.272	184	1	
NFI2 80/0.3	80	0.3	2	30.104.450	184	1	
NFI2 100/0.3	100	0.3	2	30.104.555	184	1	
NFI2 16/0.5	16	0.5	2	30.104.263	184	1	
NFI2 25/0.5	25	0.5	2	30.104.267	184	1	
NFI2 40/0.5	40	0.5	2	30.104.270	184	1	
NFI2 63/0.5	63	0.5	2	30.104.273	184	1	
NFI2 80/0.5	80	0.5	2	30.104.645	184	1	
NFI2 100/0.5	100	0.5	2	30.104.556	184	1	



<b>NFI4 - type A, instantaneous tripping</b>							
NFI4 16/0.01	16	0.01	4	30.104.823	316	1	
NFI4 25/0.01	25	0.01	4	30.104.786	316	1	
NFI4 25/0.03	25	0.03	4	30.104.296	316	1	
NFI4 40/0.03	40	0.03	4	30.104.300	316	1	
NFI4 63/0.03	63	0.03	4	30.104.304	316	1	
NFI4 80/0.03	80	0.03	4	30.104.358	316	1	
NFI4 100/0.03	100	0.03	4	30.104.550	360	1	
NFI4 25/0.1	25	0.1	4	30.104.297	316	1	
NFI4 40/0.1	40	0.1	4	30.104.301	316	1	
NFI4 63/0.1	63	0.1	4	30.104.305	316	1	
NFI4 80/0.1	80	0.1	4	30.104.436	316	1	
NFI4 100/0.1	100	0.1	4	30.104.551	360	1	
NFI4 25/0.3	25	0.3	4	30.104.298	316	1	
NFI4 40/0.3	40	0.3	4	30.104.302	316	1	
NFI4 63/0.3	63	0.3	4	30.104.306	316	1	
NFI4 80/0.3	80	0.3	4	30.104.433	316	1	
NFI4 100/0.3	100	0.3	4	30.104.552	360	1	
NFI4 25/0.5	25	0.5	4	30.104.299	316	1	
NFI4 40/0.5	40	0.5	4	30.104.303	316	1	
NFI4 63/0.5	63	0.5	4	30.104.307	316	1	
NFI4 80/0.5	80	0.5	4	30.104.443	316	1	



**NOTE:** Rated current 32 A on request  
Rated voltage 110 V on request



## Type F - sensitive to residual currents as type a and in addition to residual currents with mixed frequencies

Type	Rated Current $I_n$ (A)	Rated residual current $I_{\Delta n}$ (A)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>NFI2F - type F, short-time delayed <span style="border: 1px solid black; padding: 0 2px;">G</span></b>							
NFI2F 16/0.03	16	0.03	2	30.104.850	184	1	
NFI2F 25/0.03	25	0.03	2	30.104.851	184	1	
NFI2F 40/0.03	40	0.03	2	30.104.852	184	1	
NFI2F 63/0.03	63	0.03	2	30.104.853	184	1	
NFI2F 80/0.03	80	0.03	2	30.104.854	184	1	
NFI2F 100/0.03	100	0.03	2	30.104.855	184	1	
NFI2F 16/0.1	16	0.1	2	30.104.856	184	1	
NFI2F 25/0.1	25	0.1	2	30.104.857	184	1	
NFI2F 40/0.1	40	0.1	2	30.104.858	184	1	
NFI2F 63/0.1	63	0.1	2	30.104.859	184	1	
NFI2F 80/0.1	80	0.1	2	30.104.860	184	1	
NFI2F 100/0.1	100	0.1	2	30.104.861	184	1	
NFI2F 16/0.3	16	0.3	2	30.104.862	184	1	
NFI2F 25/0.3	25	0.3	2	30.104.863	184	1	
NFI2F 40/0.3	40	0.3	2	30.104.864	184	1	
NFI2F 63/0.3	63	0.3	2	30.104.865	184	1	
NFI2F 80/0.3	80	0.3	2	30.104.866	184	1	
NFI2F 100/0.3	100	0.3	2	30.104.867	184	1	
NFI2F 16/0.5	16	0.5	2	30.104.868	184	1	
NFI2F 25/0.5	25	0.5	2	30.104.869	184	1	
NFI2F 40/0.5	40	0.5	2	30.104.870	184	1	
NFI2F 63/0.5	63	0.5	2	30.104.871	184	1	
NFI2F 80/0.5	80	0.5	2	30.104.872	184	1	
NFI2F 100/0.5	100	0.5	2	30.104.873	184	1	

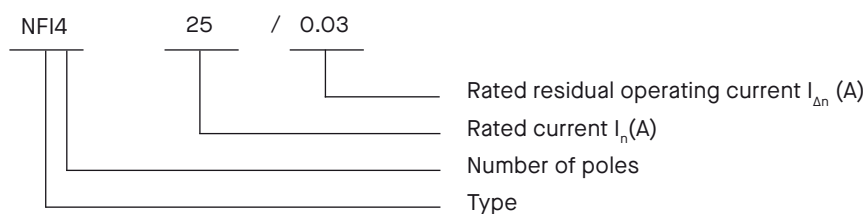


<b>NFI4F - type F, short-time delayed <span style="border: 1px solid black; padding: 0 2px;">S</span></b>							
NFI4F 25/0.03	25	0.03	4	30.104.875	316	1	
NFI4F 40/0.03	40	0.03	4	30.104.876	316	1	
NFI4F 63/0.03	63	0.03	4	30.104.877	316	1	
NFI4F 80/0.03	80	0.03	4	30.104.878	316	1	
NFI4F 100/0.03	100	0.03	4	30.104.879	360	1	
NFI4F 25/0.1	25	0.1	4	30.104.880	316	1	
NFI4F 40/0.1	40	0.1	4	30.104.881	316	1	
NFI4F 63/0.1	63	0.1	4	30.104.882	316	1	
NFI4F 80/0.1	80	0.1	4	30.104.883	316	1	
NFI4F 100/0.1	100	0.1	4	30.104.884	360	1	
NFI4F 25/0.3	25	0.3	4	30.104.885	316	1	
NFI4F 40/0.3	40	0.3	4	30.104.886	316	1	
NFI4F 63/0.3	63	0.3	4	30.104.887	316	1	
NFI4F 80/0.3	80	0.3	4	30.104.888	360	1	
NFI4F 100/0.3	100	0.3	4	30.104.889	360	1	
NFI4F 25/0.5	25	0.5	4	30.104.890	316	1	
NFI4F 40/0.5	40	0.5	4	30.104.891	316	1	
NFI4F 63/0.5	63	0.5	4	30.104.892	316	1	
NFI4F 80/0.5	80	0.5	4	30.104.893	360	1	
NFI4F 100/0.5	100	0.5	4	30.104.894	360	1	



**NOTE:** Rated current 32 A on request

## Ordering Data



## Technical Data

Type A G S	Symbol	Unit	NFI2 NFI2K NFI2S	NFI4 NFI4K NFI4S
Standards	IEC/EN 61008, type G acc. to ÖVE E 8601			
Approvals	VDE, EAC			
Module width			2	4
Number of poles			2	4
Rated voltage	$U_n$	V AC	230	400
Rated insulation voltage	$U_i$	V	400	
Rated impulse withstand voltage	$U_{imp}$	kV	4	
Rated frequency	$f$	Hz	50	
Rated current	$I_n$	A	16, 25, 32, 40, 63, 80, 100	25, 32, 40, 63, 80, 100
Rated residual current	$I_{\delta n}$	mA	10 ( $I_n = 16, 25, 32 A$ ), 30, 100, 300, 500	10 ( $I_n = 25, 32 A$ ), 30, 100, 300, 500
Residual operating current (AC 50 Hz)			0.5 - 1.0 $I_{\Delta n}$	
Rated conditional short-circuit current	$I_{nc}$	kA	10	
Rated making and breaking capacity	$I_m$	A	800 ( $I_n = 16 - 80 A$ ) 1000 ( $I_n = 100 A$ )	
Rated residual making and breaking capacity	$I_{\delta m}$	A	63 ( $I_n = 16 - 40 A$ ) 80 ( $I_n = 63, 80 A$ ) 100 ( $I_n = 100 A$ )	
Max. back-up fuse for short-circuit current gL	$I_v$	A	63 ( $I_n = 16 - 40 A$ ) 80 ( $I_n = 63, 80 A$ ) 100 ( $I_n = 100 A$ )	
Surge current withstand capability		A	NFI: 200 (0.5 $\mu$ s/100 kHz ring wave) NFIK, NFIS: 3000 (8/20 $\mu$ s surge current)	
Maximum breaking times			NFI, NFIK - 1 x $I_{\Delta n}$ : < 300 ms; 5 x $I_{\Delta n}$ : < 40 ms NFIS - 1 x $I_{\Delta n}$ : < 500 ms; 5 x $I_{\Delta n}$ : < 150 ms	
Minimum response time delay			FI, NFI: instantaneous NFIK: 10 ms NFIS: 40 ms	
Mechanical endurance		op. c.	min. 5000	
Electrical endurance		op. c.	min. 2000	
Ambient temperature		°C	-25 ... +40*	
Storage temperature		°C	-35 ... +60	
Resistance to climate			acc. to IEC 60068-2-30: 28 cycles (55 °C, 95 % relative humidity)	
Terminal capacity: rigid (solid or stranded) or flexible	S	mm <sup>2</sup>	1 ... 35	
Screw			M5	
Screw head			PZ2	
Tightening torque		Nm	2.0	
Length of removed conductor insulation		mm	15	
Degree of protection			IP20 (IP40 after installation in a distribution box)	
Pollution degree			2	
Weight		g	184	360

## Technical Data

Type F	Symbol	Unit	NFI2F	NFI4F
Standards			IEC/EN 61008, IEC/EN 62423	
Approvals			VDE	
Module width			2	4
Number of poles			2	4
Rated voltage	$U_n$	V AC	230	400
Rated insulation voltage	$U_i$	V	400	
Rated impulse withstand voltage	$U_{imp}$	kV	4	
Rated frequency	f	Hz	50	
Rated current	$I_n$	A	16, 25, 32, 40, 63, 80, 100	25, 32, 40, 63, 80, 100
Rated residual current	$I_{\Delta n}$	mA	30, 100, 300, 500	
Residual operating current (AC 50 Hz)			0.5 - 1.0 $I_{\Delta n}$	
Rated conditional short-circuit current	$I_{nc}$	kA	10	
Rated making and breaking capacity	$I_m$	A	800 ( $I_n = 16 - 80$ A) 1000 ( $I_n = 100$ A)	
Rated residual making and breaking capacity	$I_{\Delta m}$	A	63 ( $I_n = 16 - 40$ A) 80 ( $I_n = 63, 80$ A) 100 ( $I_n = 100$ A)	
Max. back-up fuse for short-circuit current gL	$I_v$	A	63 ( $I_n = 16 - 40$ A) 80 ( $I_n = 63, 80$ A) 100 ( $I_n = 100$ A)	
Surge current withstand capability		A	3 (8/20 $\mu$ s surge current)	
Maximum breaking times			1 x $I_{\Delta n}$ : < 300 ms; 5 x $I_{\Delta n}$ : < 40 ms	
Minimum response time delay			10 ms	
Mechanical endurance		op. c.	min. 5000	
Electrical endurance		op. c.	min. 2000	
Ambient temperature		$^{\circ}$ C	-25 ... +40	
Storage temperature		$^{\circ}$ C	-35 ... +60	
Resistance to climate			acc. to IEC 60068-2-30: 28 cycles (55 $^{\circ}$ C, 95 % relative humidity)	
Terminal capacity rigid (solid or stranded)				
rigid (solid or stranded)	S	mm <sup>2</sup>	1 ... 35	
flexible			1 ... 35	
Screw			M5	
Screw head			PZ2	
Tightening torque		Nm	2.0	
Length of removed conductor insulation		mm	15	
Degree of protection			IP20 (IP40 after installation in a distribution box)	
Pollution degree			2	
Weight		g	184	360

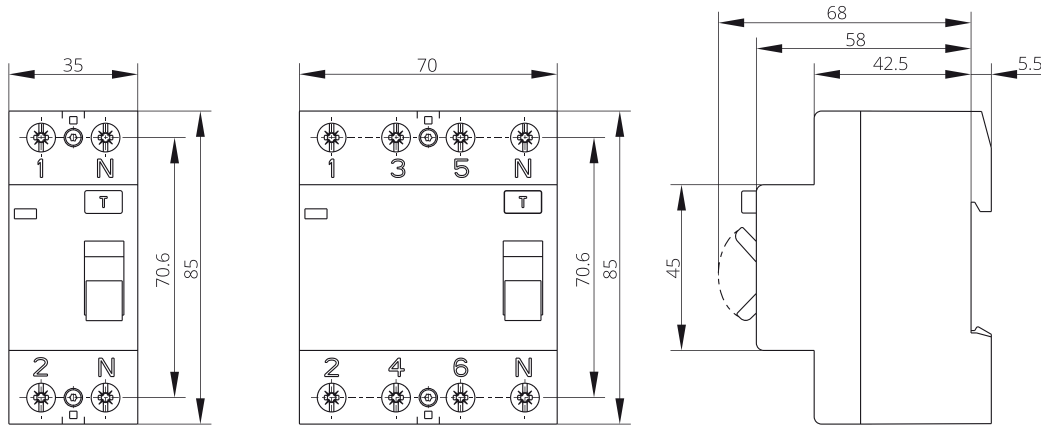
**Dimensions**

(mm)

**NFI2, NFI2K,  
NFI2S, NFI2F**

**NFI4, NFI4K,  
NFI4S, NFI4F**

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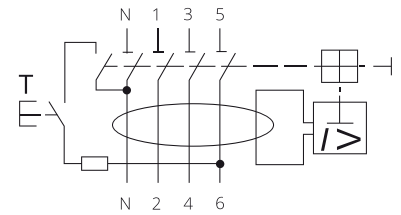
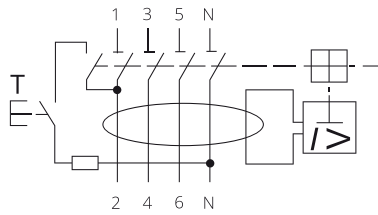
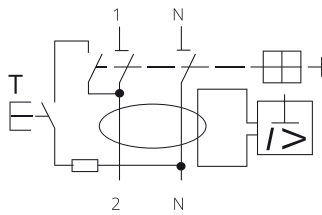


**Schematics**

**NFI, NFIK, NFIS, NFIF  
two-pole**

**Four-pole, N-pole right**

**Four-pole, N-pole left**



# NFIB

## Residual current circuit breakers Type B



NFIB are type B residual current circuit breakers (RCCBs) for which tripping is ensured as for type a and in addition for smooth DC residual currents, residual DC currents which may result from rectifying circuits, and high frequency AC residual currents.

### Features

- ▶ Intended for use in applications with frequency inverters, medical devices, UPS, mobile installations, elevators.
- ▶ The type B residual current circuit breakers are not intended for use in D.C. systems and networks with operating frequencies other than 50 or 60 Hz.
- ▶ For type B tripping conditions for frequencies up to 1 kHz are defined.
- ▶ Functions of detection, evaluation and interruption for type A residual currents do not depend on the line voltage.
- ▶ For evaluation of smooth d.c. residual currents supply voltage is required.
- ▶ Versions:
  - NFIBK: short-time delayed
  - NFIBS: selective type
- ▶ Surge current withstand capability with current waveform 8/20  $\mu$ s is 3 kA.
- ▶ When designing and installing electrical installations, electrical loads that can generate D.C. residual currents in the event of fault, must be assigned a separate electrical circuit.
- ▶ Optional operating position
- ▶ Degree of protection IP20; after installation in a distribution box IP40
- ▶ Assembly to a 35 mm wide mounting rail in accordance with EN 60715

# RESIDUAL CURRENT CIRCUIT BREAKERS Type B

NFIB

**Type b - sensitive to residual currents as type f and in addition to smooth DC residual currents, residual dc currents which may result from rectifying circuits, and high frequency ac residual currents**

Type	Rated Current $I_n$ (A)	Rated residual current $I_{\Delta n}$ (A)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>NFI2BK - type B, short-time delayed</b> <span style="border: 1px solid black; padding: 0 2px;">G</span>							
NFI2BK 25/0.03	25	0.03	2	30.105.110	310	1	
NFI2BK 40/0.03	40	0.03	2	30.105.046	310	1	
NFI2BK 63/0.03	63	0.03	2	30.105.035	310	1	
NFI2BK 80/0.03	80	0.03	2	30.105.175	310	1	
NFI2BK 25/0.1	25	0.1	2	30.105.176	310	1	
NFI2BK 40/0.1	40	0.1	2	30.105.177	310	1	
NFI2BK 63/0.1	63	0.1	2	30.105.178	310	1	
NFI2BK 80/0.1	80	0.1	2	30.105.179	310	1	
NFI2BK 25/0.3	25	0.3	2	30.105.180	310	1	
NFI2BK 40/0.3	40	0.3	2	30.105.148	310	1	
NFI2BK 63/0.3	63	0.3	2	30.105.181	310	1	
NFI2BK 80/0.3	80	0.3	2	30.105.182	310	1	
NFI2BK 25/0.5	25	0.5	2	30.105.183	310	1	
NFI2BK 40/0.5	40	0.5	2	30.105.184	310	1	
NFI2BK 63/0.5	63	0.5	2	30.105.185	310	1	
NFI2BK 80/0.5	80	0.5	2	30.105.186	310	1	



<b>NFI4BK - type B, short-time delayed</b> <span style="border: 1px solid black; padding: 0 2px;">G</span>							
NFI4BK 25/0.03	25	0.03	4	30.104.898	350	1	
NFI4BK 40/0.03	40	0.03	4	30.104.899	350	1	
NFI4BK 63/0.03	63	0.03	4	30.104.806	350	1	
NFI4BK 80/0.03	80	0.03	4	30.104.902	350	1	
NFI4BK 25/0.1	25	0.1	4	30.104.929	350	1	
NFI4BK 40/0.1	40	0.1	4	30.104.930	350	1	
NFI4BK 63/0.1	63	0.1	4	30.104.807	350	1	
NFI4BK 80/0.1	80	0.1	4	30.104.903	350	1	
NFI4BK 25/0.3	25	0.3	4	30.104.931	350	1	
NFI4BK 40/0.3	40	0.3	4	30.104.932	350	1	
NFI4BK 63/0.3	63	0.3	4	30.104.808	350	1	
NFI4BK 80/0.3	80	0.3	4	30.104.904	350	1	
NFI4BK 25/0.5	25	0.5	4	30.104.909	350	1	
NFI4BK 40/0.5	40	0.5	4	30.104.933	350	1	
NFI4BK 63/0.5	63	0.5	4	30.104.809	350	1	
NFI4BK 80/0.5	80	0.5	4	30.104.905	350	1	

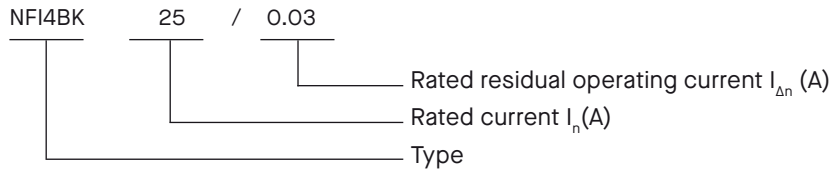


<b>NFI4BS - type B, selective</b> <span style="border: 1px solid black; padding: 0 2px;">S</span>							
NFI4BS 25/0.1	25	0.1	4	30.104.934	350	1	
NFI4BS 40/0.1	40	0.1	4	30.104.935	350	1	
NFI4BS 63/0.1	63	0.1	4	30.104.810	350	1	
NFI4BS 80/0.1	80	0.1	4	30.104.906	350	1	
NFI4BS 25/0.3	25	0.3	4	30.104.936	350	1	
NFI4BS 40/0.3	40	0.3	4	30.104.937	350	1	
NFI4BS 63/0.3	63	0.3	4	30.104.811	350	1	
NFI4BS 80/0.3	80	0.3	4	30.104.907	350	1	
NFI4BS 25/0.5	25	0.5	4	30.104.910	350	1	
NFI4BS 40/0.5	40	0.5	4	30.104.938	350	1	
NFI4BS 63/0.5	63	0.5	4	30.104.812	350	1	
NFI4BS 80/0.5	80	0.5	4	30.104.908	350	1	



**NOTE:** Rated current 32 A on request

**Ordering Data**



**Technical Data**

Type B	Symbol	Unit	NFI2BK	NFI4BK NFI4BS
Standards			IEC/EN 61008, IEC/EN 62423	
Approvals			VDE, EAC	
Module width			4	
Number of poles			2	4
Rated voltage	$U_n$	V AC	230	400
Min. required operating voltage			0 V (mains voltage independent)	
- for detecting type A residual currents			80 V AC	50 V AC
- for detecting type B residual currents				
Rated insulation voltage	$U_i$	V	400	
Rated impulse withstand voltage	$U_{imp}$	kV	4 (1.2/50 $\mu$ s)	
Rated frequency	f	Hz	50/60	
Rated current	$I_n$	A	25, 32, 40, 63, 80	
Rated residual current	$I_{\Delta n}$	mA	NFI2BK, NFI4BK: 30, 100, 300, 500 NFI4BS: 100, 300, 500	
Residual operating current			AC (50 Hz): 0.5 - 1.0 $I_{\Delta n}$ DC: 0.5 - 2.0 $I_{\Delta n}$	
Frequency response range		Hz	0 - 1000	
Rated conditional short-circuit current	$I_{nc}$	kA	10	
Rated making and breaking capacity	$I_m$	A	800	
Rated residual making and breaking capacity	$I_{\Delta m}$			
Max. back-up fuse for short-circuit current gL	$I_v$	A	63 ( $I_n = 16 - 40$ A) 80 ( $I_n = 63, 80$ A)	
Surge current withstand capability		kA	3 (8/20 $\mu$ s surge current)	
Maximum breaking times			NFI2BK, NFI4BK - 1 x $I_{\Delta n}$ : < 300 ms; 5 x $I_{\Delta n}$ : < 40 ms NFI4BS - 1 x $I_{\Delta n}$ : < 500 ms; 5 x $I_{\Delta n}$ : < 150 ms	
Minimum response time delay			NFI2BK, NFI4BK: 10 ms NFI4BS: 40 ms	
Mechanical endurance		op. c.	min. 5000	
Electrical endurance		op. c.	min. 2000	
Ambient temperature		$^{\circ}$ C	-25 ... +40	
Storage temperature		$^{\circ}$ C	-35 ... +60	
Resistance to climate			acc. to IEC 60068-2-30: 28 cycles (55 $^{\circ}$ C, 95 % relative humidity)	
Terminal capacity	rigid (solid or stranded)	S	mm <sup>2</sup>	1 ... 25
	flexible	S	mm <sup>2</sup>	1 ... 25
Screw				M5
Screw head				PZ2
Tightening torque		Nm		2.0
Length of removed conductor insulation		mm		15
Degree of protection			IP20 (IP40 after installation in a distribution box)	
Pollution degree			2	
Weight		g	310	350

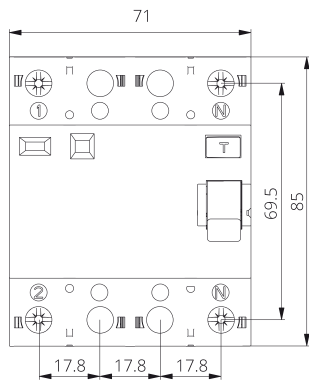
# RESIDUAL CURRENT CIRCUIT BREAKERS Type B

NFIBK, NFIBS

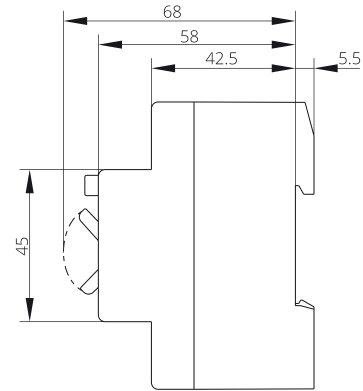
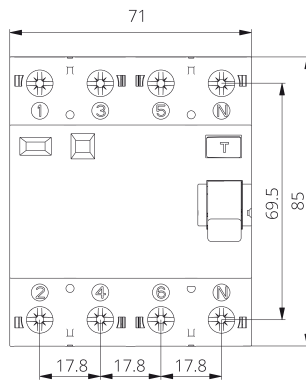
## Dimensions

(mm)

### NFI2BK

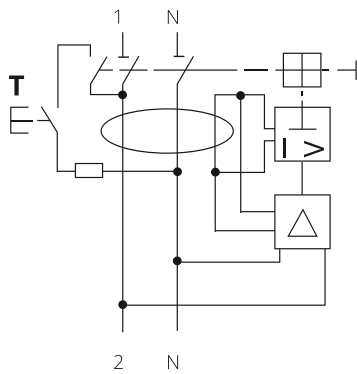


### NFI4BK, NFI4BS

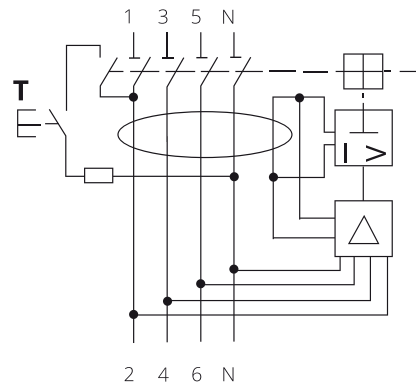


## Schematics

### NFI2BK



### NFI4BK, NFI4BS





# NFIK-HI

## Residual Current Circuit Breakers

### - Type A, G



### Benefits

- ▶ Transient resistant RCCB Type A for EV applications
- ▶ High immunity against unwanted tripping at current harmonic components (e.g. frequency converters)

### Features

- ▶ High immunity against unwanted tripping at current impulses (e.g. a large number of fluorescent lamps, transient switching effects) or in the case of mounting under extremely critical conditions (e.g. impulseshaped leakage currents at longer cables, storm damage, computers, X-ray devices, etc.)
- ▶ Short-time delayed RCCBs with minimum non-actuating time 10 (Type G acc. to ÖVE E 8601)
- ▶ High resistance against surge currents of shape 8/20 (up to 3); reliable operation is assured also in case of strong making currents
- ▶ Sensitive to residual sinusoidal alternating and residual pulsating direct currents – Type A
- ▶ Rated currents up to 100 A
- ▶ Rated residual current 30 A
- ▶ Two- and four-pole types available

## NFIK-HI characteristics

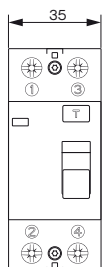
Technical data		Symbol	Unit	NFI2K-HI	NFI4K-HI
Standards		IEC/EN 61008, Type G acc. to ÖVE E 8601			
Module width				2	4
Number of poles				2	4
Rated voltage		$U_n$	V	230	400
Rated insulation voltage		$U_i$	V		400
Rated impulse withstand voltage		$U_{imp}$	kV		4
Rated frequency		$f$	Hz		50
Rated current		$I_n$	A	16, 25, 32, 40, 63, 80, 100	25, 32, 40, 63, 80, 100
Rated residual current		$I_{\Delta n}$	mA		30
Rated operating current (AC 50 Hz)		$I_{\Delta n}$			0.5 - 1.0
Rated conditional short-circuit current		$I_{nc}$	kA		10
Rated making and breaking capacity		$I_m$	A	800 ( $I_n = 16 - 80$ A)	
Rated residual making and breaking capacity		$I_{\Delta m}$	A	1000 ( $I_n = 100$ A)	
Max. back-up fuse for short-circuit current gL		$I_v$	A	63 ( $I_n = 16 - 40$ A)	
				80 ( $I_n = 63, 80$ A)	
				100 ( $I_n = 100$ A)	
Surge current withstand capability			A	200 (0.5 $\mu$ s / 100 kHz ring wave)	
				3000 (8 / 20 $\mu$ s surge current)	
Maximum breaking times			ms	1 x $I_{\Delta n} : < 300$ ms; 5 x $I_{\Delta n} : < 40$ ms	
Minimum response time delay			ms	10	
Mechanical endurance			op. c.	min. 5000	
Electrical endurance			op. c.	min. 2000	
Ambient temperature			°C	-25 ... +40	
Storage temperature			°C	-35 ... +60	
Resistance to climate		acc. to IEC 60068-2-30: 28 cycles (55 °C, 95 % relative humidity)			
Terminal capacity		rigid (solid or stranded)	S	mm <sup>2</sup>	1 ... 35
		flexible	S	mm <sup>2</sup>	1 ... 35
Screw		M5			
Screw head		PZ2			
Tightening torque			Nm	2.0	
Length of removed conductor insulation			mm	15	
Degree of protection		IP20 (IP40 after installation in a distribution box)			
Pollution degree		2			
Weight			g	184	360

## Ordering Data

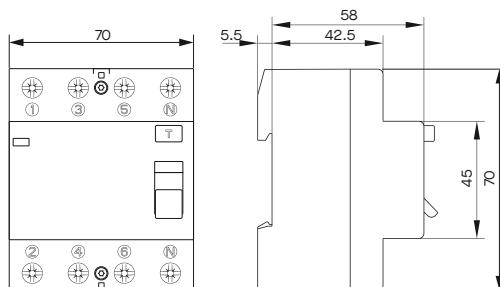
NFI4K	40	/	0.03-HI	
				Rated residual operating current $I_{\Delta n}$ (A)
				Rated current $I_n$ (A)
				Number of poles
				Type

**Dimensions**  
(mm)

**Two-pole**

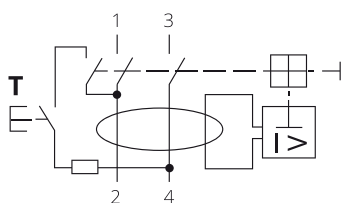


**Four-pole**

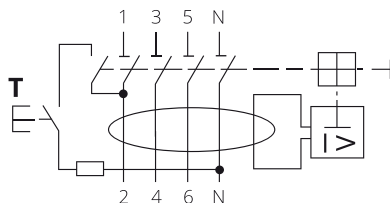


**Schematics**

**Two-pole**



**Four-pole**



# RF1E A

## Residual Current Circuit Breakers

**6 kA**
**40 A**


### Features

- ▶ Single module size with switched neutral line
- ▶ Protection against sinusoidal AC and pulsation DC leakage current
- ▶ 6 kA breaking capacity
- ▶ Simple replace MCB with RCBO in the same place
- ▶ Functionality on minimum supply voltage 90 V
- ▶ The terminals provide to use also time saving busbars
- ▶ Method of DIN rail mounting enables an easy removal of single RCBO without disconnecting units from busbars



Technical data	Symbol	Unit	RF1E A
Standards			IEC 61009-1
Approvals			SEMKO
Number of poles			2
Rated current	$I_n$	A	6, 10, 16, 20, 25, 32, 40
Tripping characteristic			B, C
Rated voltage	$U_n$	V	230
Rated frequency	f	Hz	50
Rated residual operating current	$I_{\Delta n}$	mA	30
Rated insulation voltage		V	500
Type of residual current			A, AC
Residual tripping time		ms	< 100
Short circuit breaking capacity		kA	6
Selection category		kA	3
Electrical endurance		op.c.	4000
Back-up fuse gL/gG		A	100
Mechanical endurance		op.c.	10.000
Connecting clamps			Lug type
Connecting wires		mm <sup>2</sup>	1 ... 10
Mounting			DIN rail EN 60715
Ambient air temperature		°C	-25 ... +40
Protection degree			IP20
Width		mm	18 (1-module)

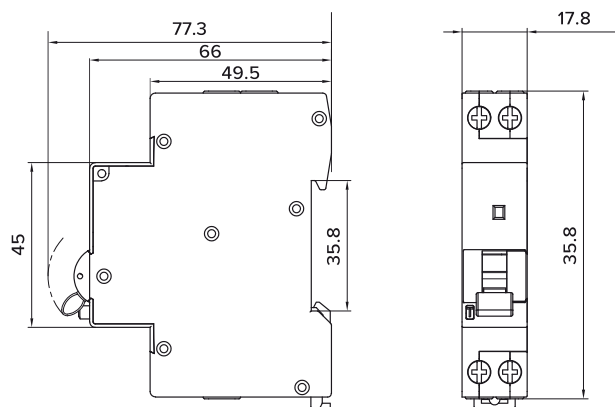
## RF1E A characteristics

Curve	Rated Current $I_n$ (A)	Rated Voltage $U_n$ (V)	UPC	Ordering No.	Weight (g)
<b>C curve</b>					
6 A	6	230	RF1E A C 6/0.03	786.101.988	0.122
10 A	10	230	RF1E A C10/0.03	786.101.989	0.122
16 A	16	230	RF1E A C16/0.03	786.101.990	0.122
20 A	20	230	RF1E A C20/0.03	786.101.991	0.122
25 A	25	230	RF1E A C25/0.03	786.101.992	0.122
32 A	32	230	RF1E A C32/0.03	786.101.993	0.122
40 A	40	230	RF1E A C40/0.03	786.101.014	0.122

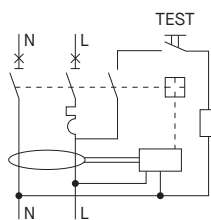


## Dimensions

(mm)

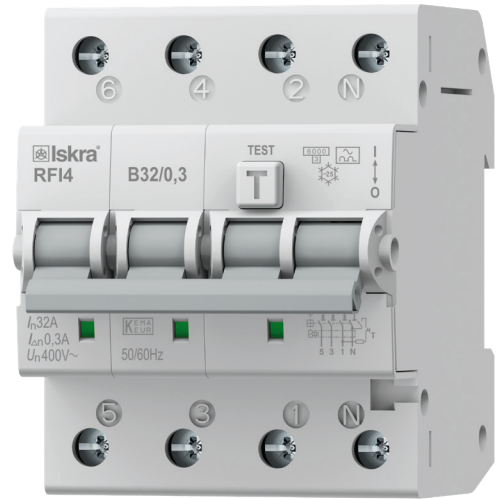


## Wiring diagram



# RFI4E

## Residual current circuit breakers with overcurrent protection



RCBOs are used in applications where there is the need to combine protection against overcurrents (overload and short-circuit) and protection against earth leakage currents. They are used in circuits with an increased requirements regarding touch voltage (bathrooms, event halls, schools, hospitals, swimming pools, marinas, distribution cabinets, mobile houses, etc.)

### Features

- ▶ A built-in protection against overload and short-circuit
- ▶ Used in house and similar installations
- ▶ Short circuit breaking capacity - 6 kA
- ▶ Simple assembly with spring clamps to the DIN rail
- ▶ Sealable in on and off position
- ▶ Optical status indicator on the front side indicating state of device (green - switched off, red - switched on)
- ▶ Working position optional
- ▶ Possibility to mount auxilliary contacts



# RESIDUAL CURRENT CIRCUIT BREAKERS WITH OVERCURRENT PROTECTION

RFI4E

## RFI4E - Type A

Type	Rated Current $I_n$ (A)	Rated residual current $I_{\Delta n}$ (A)	No. of Poles	Ordering No.	Weight (g)	Quantity / Box	Quantity / CTN
<b>RFI4E - characteristics C</b>							
RFI4E C 16/0.03	16	0.03	4	786.100.813	478	1	
RFI4E C 20/0.03	20	0.03	4	786.100.814	478	1	
RFI4E C 25/0.03	25	0.03	4	786.100.815	478	1	
RFI4E C 32/0.03	32	0.03	4	786.100.816	478	1	
RFI4E C 25/0.3	25	0.3	4	786.100.818	478	1	
RFI4E C 32/0.3	32	0.3	4	786.100.817	478	1	



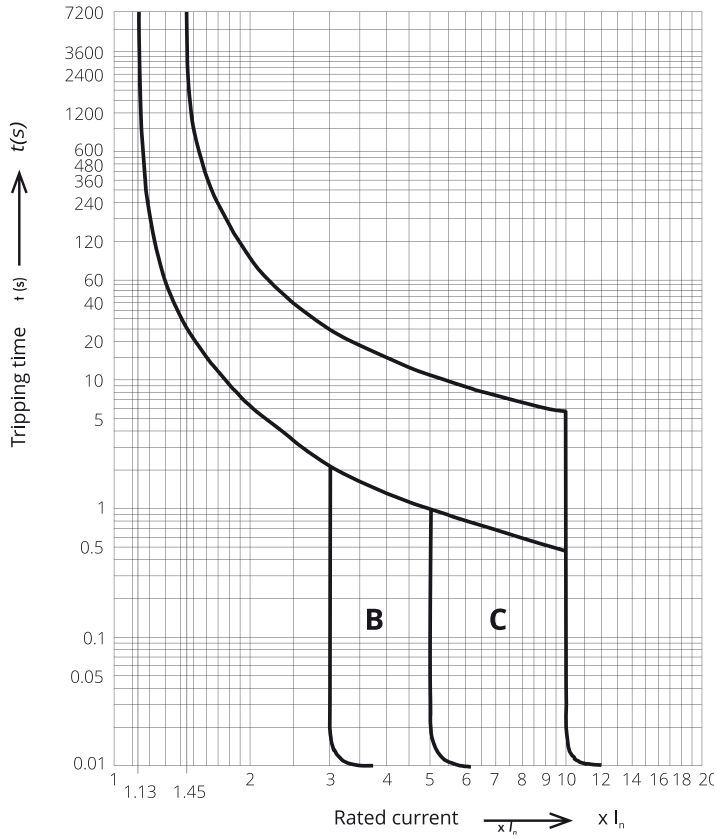
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Technical data	Symbol	Unit	RFI4E
Standards			IEC 61009-1
Approvals			CE
Module width			4
Number of poles			4
Rated voltage	$U_n$	V	400
Rated insulation voltage	$U_i$	V	500
Rated impulse withstand voltage	$U_{imp}$	kV	4
Tripping characteristics			B, C
Rated frequency	f	Hz	50
Rated current	$I_n$	A	6, 10, 13, 16, 20, 25, 32
Rated residual current	$I_{\Delta n}$	mA	30, 100, 300, 500
Type of residual current			Type A - for alternatig and pulsating DC residual
Residual tripping time		ms	<100
Short circuit breaking capacity		kA	6
Selectivity class		kA	3
Electrical endurance		op. c.	4000
Back-up fuse gL/gG		A	100
Mechanical endurance		op. c.	10 000
Connecting clamps			lug type
Terminal capacity		mm <sup>2</sup>	1 ... 25
Mounting			DIN rail acc. to EN 60715
Ambient temperature		°C	-25 ... +40
Storage temperature		°C	-35 ... +60
Tigtening torque		Nm	2.4
Protection degree			IP20, IP40 from the front panel
Accessories			Auxiliary and signal changeover contacts

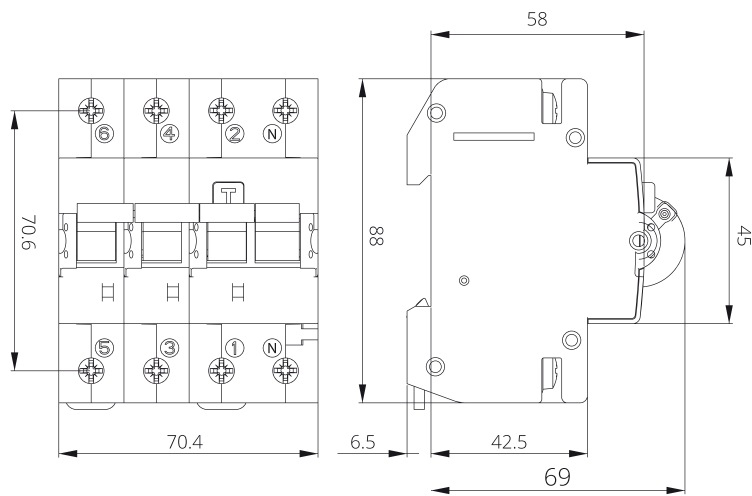
**Tripping characteristics**

Characteristics C

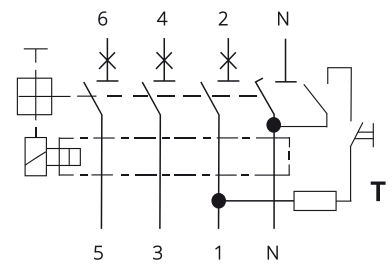


**Dimensions**

(mm)



**Schematics**





# Installation contactors

Installation contactors are the most flexible switching devices for use in all types of applications. In electronic system provide reliable, safe and efficient management of electrical equipment.

## For reliable switching

- ▶ All kind of motors
- ▶ Electric heating
- ▶ Lights and lighting
- ▶ Electrical and electronic equipment

## Features

- ▶ High current loads
- ▶ Remote control
- ▶ Manual control

## Other Benefits

- ▶ Silent hum-free AC/DC version with overvoltage protection
- ▶ Available also standard AC version
- ▶ Fast switching
- ▶ Wide application
- ▶ Mounting on 35 mm rail
- ▶ Sealing terminal covers
- ▶ Control voltages up to 400 V
- ▶ Auxiliary switch
- ▶ IE3 ready



AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 1 module)

AC

Type	Rated current I <sub>e</sub>	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKA225-20	25 A	230 V		30.046.714	130	6
IKA225-20	25 A	24 V		30.046.711	130	
IKA225-11	25 A	230 V		30.046.715	130	6
IKA225-11	25 A	24 V		30.046.712	130	
IKA225-02	25 A	230 V		30.046.845	130	6
IKA225-02	25 A	24 V		30.046.846	130	



AC-1 acc. to IEC/EN 60947-4-1 (1-pole, 1 module)

AC/DC

Type	Rated current I <sub>e</sub>	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKD140-1P	40 A	230 V AC		30.047.816	123	6
		220 V DC		30.047.817	123	
IKD140-1P	40 A	24 V AC/DC		30.047.817	123	6



AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

AC

Type	Rated current I <sub>e</sub>	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKA25-40	25 A	230 V		30.046.007	230	3
		24 V		30.046.027	230	
IKA25-22	25 A	230 V		30.046.014	230	3
		24 V		30.046.029	230	
IKA25-04	25 A	230 V		30.046.015	230	3
		24 V		30.046.030	230	



**NOTE:** Other control voltages are on request - define type and voltage

AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 2 modules)

AC/DC

Type	Rated current I <sub>e</sub>	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKD240-2P	40 A	230 V AC		30.047.812	220	3
		220 V DC		30.047.813	220	
IKD240-2P	40 A	24 V AC/DC		30.047.813	220	3



AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 3 modules)

AC

Type	Rated current I <sub>e</sub>	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKA40-40	40 A	230 V		30.045.518	350	5
IKA40-40	40 A	24 V		30.045.595	350	
IKA63-40	63 A	230 V		30.045.522	350	
IKA63-40	63 A	24 V		30.045.596	350	
IKA40-22	40 A	230 V		30.045.519	350	
IKA40-22	40 A	24 V		30.045.602	350	5
IKA63-22	63 A	230 V		30.045.523	350	
IKA63-22	63 A	24 V		30.045.603	350	
IKA40-04	40 A	230 V		30.045.511	350	5
IKA40-04	40 A	24 V		30.045.604	350	
IKA63-04	63 A	230 V		30.045.481	350	
IKA63-04	63 A	24 V		30.045.606	350	



AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

AC

Type	Rated current I <sub>e</sub>	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IK21-10	20 A	220-240 V		30.041.246	170	10
IK21-10	20 A	24 V		30.041.008	170	
IK21-01	20 A	220-240 V		30.041.245	170	10
IK21-01	20 A	24 V		30.041.249	170	





60

AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 1 module)

AC/DC

Type	Rated current I <sub>e</sub>	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKD225-20	25 A	230 V AC		30.046.860	130	6
		220 V DC				
IKD225-20	25 A	24 V AC/DC		30.046.861	130	
IKD225-11	25 A	230 V AC		30.046.864	130	6
		220 V DC				
IKD225-11	25 A	24 V AC/DC		30.046.865	130	
IKD225-02	25 A	230 V AC		30.046.879	130	6
		220 V DC				
IKD225-02	25 A	24 V AC/DC		30.046.880	130	



AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

AC/DC

Type	Rated current I <sub>e</sub>	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKD25-40	25 A	230 V AC		30.047.516	250	3
		220 V DC				
IKD25-40	25 A	24 V AC/DC		30.047.517	250	
IKD25-22	25 A	230 V AC		30.046.017	250	3
		220 V DC				
IKD25-22	25 A	24 V AC/DC		30.046.033	250	
IKD25-04	25 A	230 V AC		30.046.018	250	3
		220 V DC				
IKD25-04	25 A	24 V AC/DC		30.046.034	250	



**NOTE:** Other control voltages are on request - define type and voltage

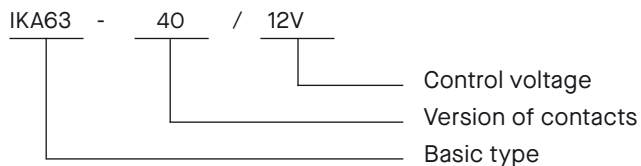
AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

AC

Type	Rated current I <sub>e</sub>	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IK40-40	40 A	230 V AC		30.045.010	420	5
		220 V DC				
IK40-40	40 A	24 V AC/DC		30.045.022	420	5
IK63-40	63 A	230 V AC		30.045.011	420	
		220 V DC				
IK63-40	63 A	24 V AC/DC		30.045.187	420	5
		230 V AC		30.045.150	420	
IK40-22	40 A	24 V AC/DC				30.045.172
IK40-22	40 A	230 V AC		30.045.235	420	
		220 V DC				
IK63-22	63 A	24 V AC/DC		30.045.233	420	5
		230 V AC		30.045.145	420	
IK40-04	40 A	24 V AC/DC				30.045.232
IK40-04	40 A	230 V AC		30.045.610	420	
		220 V DC				
IK63-04	50 A	24 V AC/DC		30.045.611	420	5
		230 V AC				



Ordering Data



# Installation contactors with manual control

Upgraded installation contactors with manual control function. Built-in toggle switch to select between three function modes. They allow functional test before installation start-up. It is very useful for maintenance operation, remote control disconnection for higher safety.



## Function Modes

- ▶ A: automatic, normal contactor function
- ▶ O: permanently switched off control voltage
- ▶ I: at manual shifting the handle from position A to I causes the contactor to close; when control voltage is applied, the handle is automatically set to position A

## Features

- ▶ Manual control
- ▶ Remote control
- ▶ Switching demanding on tariff (selection of the most convenient tariff. Switching when control voltage is not applied)
- ▶ Disconnection of control voltage for maintenance purposes

## Other Benefits

- ▶ AC/DC coil (hum-free)
- ▶ AC coil
- ▶ For switching all kind of loads
- ▶ Mounting on 35 mm rail
- ▶ Sealing terminal covers
- ▶ Control voltages up to 400 V
- ▶ Auxiliary switch
- ▶ IE3 ready

# INSTALLATION CONTACTORS WITH MANUAL CONTROL

## AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 1 module)

AC

Type	Rated current $I_e$	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKA225-20-R	25 A	230 V		30.046.895	130	6
IKA225-20-R	25 A	24 V		30.046.896	130	



## AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

AC

Type	Rated current $I_e$	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKA25-40-R	25 A	230 V		30.046.271	230	3
IKA25-40-R	25 A	24 V		30.046.275	230	



## AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 1 module)

AC

Type	Rated current $I_e$	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKA40-40-R	40 A	230 V		30.045.506	350	5
IKA40-40-R	40 A	24 V		30.045.741	350	
IKA63-40-R	63 A	230 V		30.045.508	350	
IKA63-40-R	63 A	24 V		30.045.742	350	



# INSTALLATION CONTACTORS WITH MANUAL CONTROL

## AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 1 module)

AC/DC

Type	Rated current I <sub>e</sub>	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKD225-20-R	25 A	230 V AC		30.046.930	130	6
		220 V DC				
IKD225-20-R	25 A	24 V AC/DC		30.046.931	130	
IKD232-20-R	32 A	230 V AC				
IKD232-20-R	32 A	220 V DC		30.046.933	130	
		24 V AC/DC				



## AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

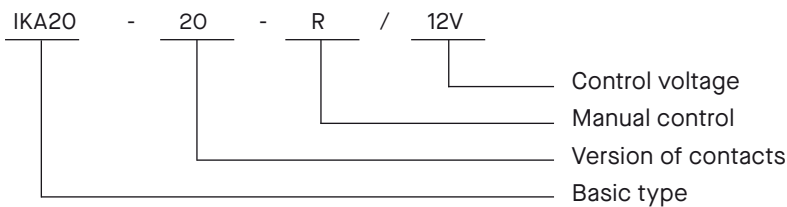
AC/DC

Type	Rated current I <sub>e</sub>	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKD25-40-R	25 A	230 V AC		30.046.509	250	3
		220 V DC				
IKD25-40-R	25 A	24 V AC/DC		30.046.510	250	
IKD432-40-R	32 A	230 V AC				
IKD432-40-R	32 A	220 V DC		30.046.957	250	
		24 V AC/DC				



**NOTE:** Other control voltages are on request - define type and voltage

## Ordering Data





# Installation contactors

## Up to 63A (2-pole)

Installation contactors are the most flexible switching devices for use in all types of applications. In electronic system provide reliable, safe and efficient management of electrical equipment.

### For reliable switching

- ▶ Single phase applications
- ▶ All kind of motors
- ▶ Electric heating
- ▶ Lights and lighting
- ▶ Electrical and electronic equipment

### Features

- ▶ High current loads
- ▶ Remote control
- ▶ Compact design

### Other Benefits

- ▶ Silent hum free AC/DC version overvoltage protection
- ▶ Available also standard AC version
- ▶ Fast switching
- ▶ Wide application
- ▶ Mounting on 35 mm rail
- ▶ Sealing terminal covers





### AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 2 module)

AC

Type	Rated current I <sub>e</sub>	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKA240-20	40 A	230 V		30.120.207	245	3
IKA240-20	40 A	24 V		30.120.204	245	
IKA263-20	63 A	230 V		30.120.257	245	3
IKA263-20	63 A	24 V		30.120.254	245	
IKA240-11	40 A	230 V		30.120.217	245	3
IKA240-11	40 A	24 V		30.120.214	245	
IKA263-11	63 A	230 V		30.120.267	245	3
IKA263-11	63 A	24 V		30.120.264	245	
IKA240-02	40 A	230 V		30.120.212	245	3
IKA240-02	40 A	24 V		30.120.209	245	
IKA263-02	63 A	230 V		30.120.262	245	3
IKA263-02	63 A	24 V		30.120.259	245	



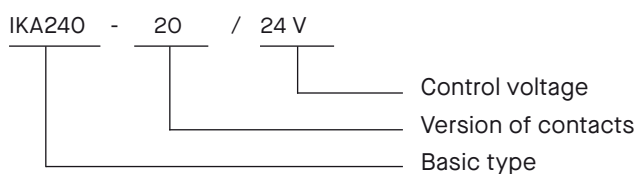
### AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 2 module)

AC/DC

Type	Rated current I <sub>e</sub>	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKD240-20	40 A	230 V AC		30.120.307	270	3
		220 V DC		30.120.304	270	
IKD263-20	63 A	230 V AC		30.120.357	270	3
		220 V DC		30.120.354	270	
IKD240-11	40 A	230 V AC		30.120.317	270	3
		220 V DC		30.120.314	270	
IKD263-11	63 A	230 V AC		30.120.367	270	3
		220 V DC		30.120.364	270	
IKD240-02	40 A	230 V AC		30.120.312	270	3
		220 V DC		30.120.309	270	
IKD263-02	63 A	230 V AC		30.120.362	270	3
		220 V DC		30.120.359	270	



## Ordering Data



# Installation contactors with manual control

## Up to 63A (2-pole)

Upgraded installation contactors with manual control function. Built-in toggle switch to select between three function modes. They allow functional test before installation start-up. It is very useful for maintenance operation, remote control disconnection for higher safety.

### Function Modes

- ▶ A: automatic, normal contactor function
- ▶ O: permanently switched off control voltage
- ▶ I: at manual shifting the handle from position A to I causes the contactor to close; when control voltage is applied, the handle is automatically set to position A



### Features

- ▶ Manual control
- ▶ Remote control
- ▶ Switching demanding on tariff (selection of the most convenient tariff)
- ▶ Switching when control voltage is not applied
- ▶ Disconnection of control voltage for maintenance purposes

### Other Benefits

- ▶ AC/DC coil (hum-free) AC coil
- ▶ For switching all kind of loads
- ▶ Mounting on 35 mm rail
- ▶ Sealing terminal covers



### AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 2 module)

AC

Type	Rated current I <sub>e</sub>	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKA240-20-R	40 A	230 V		30.120.232	245	3
IKA240-20-R	40 A	24 V		30.120.229	245	
IKA263-20-R	63 A	230 V		30.120.282	245	
IKA263-20-R	63 A	24 V		30.120.279	245	
IKA240-02-R	40 A	230 V		30.120.237	245	3
IKA240-02-R	40 A	24 V		30.120.234	245	
IKA263-02-R	63 A	230 V		30.120.287	245	
IKA263-02-R	63 A	24 V		30.120.284	245	



### AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 2 module)

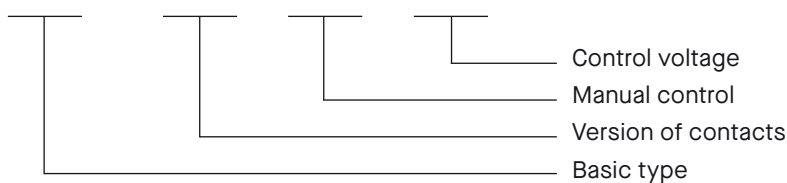
AC/DC

Type	Rated current I <sub>e</sub>	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
IKD240-20-R	40 A	230 V AC		30.120.332	270	3
IKD240-20-R		220 V DC		30.120.329	270	
IKD263-20-R	63 A	230 V AC		30.120.382	270	
IKD263-20-R		220 V DC	30.120.379	270		
IKD240-02-R	40 A	230 V AC		30.120.337	270	3
IKD240-02-R		220 V DC		30.120.334	270	
IKD263-02-R	63 A	230 V AC		30.120.387	270	
IKD263-02-R		220 V DC	30.120.384	270		



## Ordering Data

IKA240 - 20 - R / 230V

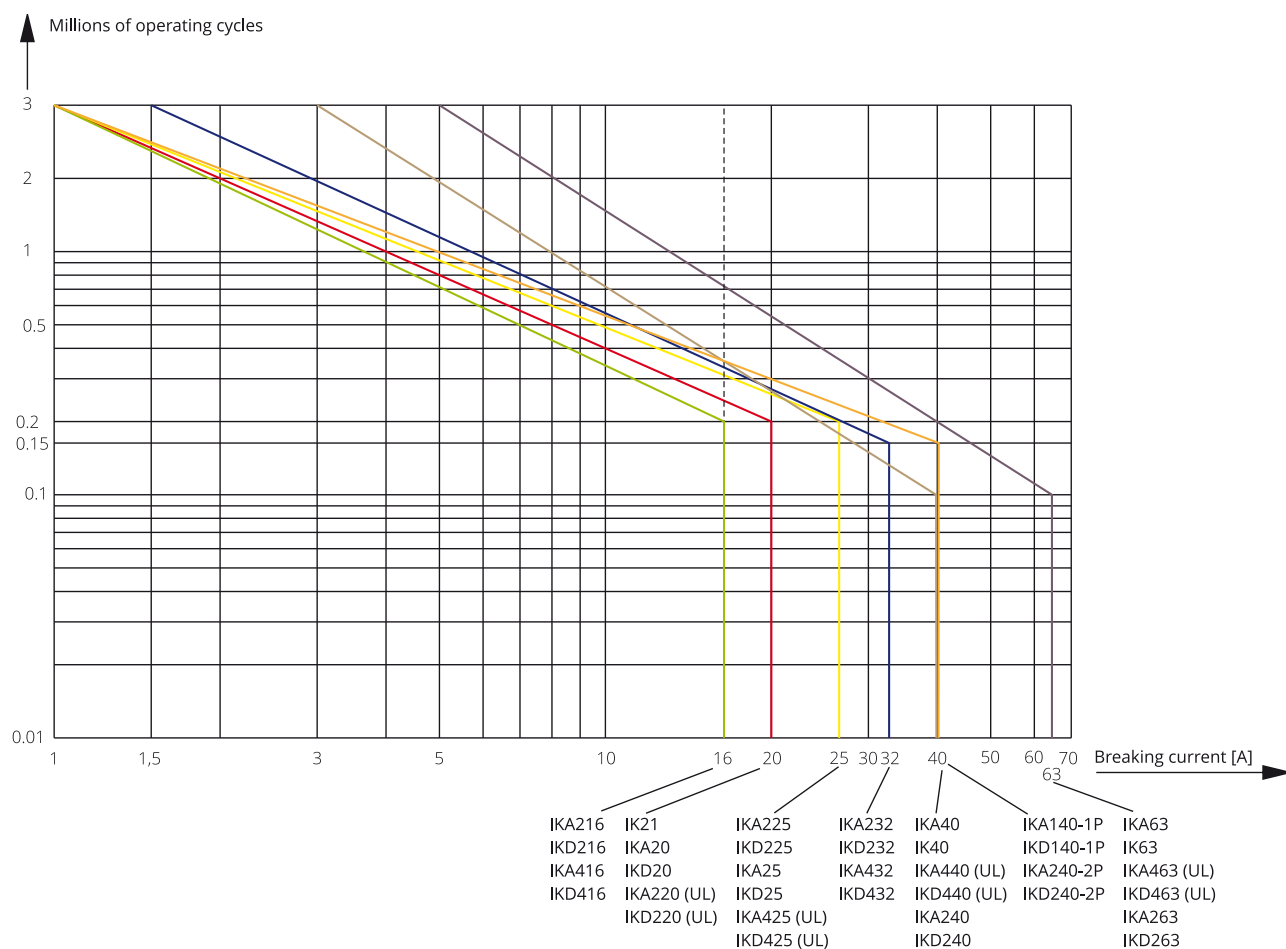


## Electrical endurance

**AC-1/230V/1-phase for** IKA20, IKD20, IKA216, IKD216, IKA220 (UL), IKD220 (UL), IKA225, IKD225, IKA232, IKD232, IKA440 (UL), IKD440 (UL), IKA463 (UL), IKD463 (UL), IKA140-1P, IKD140-1P, IKA240-2P, IKD240-2P, IKA240, IKD240, IKD263, IKD263

**AC-1/400V/3-phase for** IK21, IKA25, IKD25, IKA416, IKD416, IKA425 (UL), IKD425 (UL), IKA432, IKD432, IKA40, IK40, IKA63, IK63

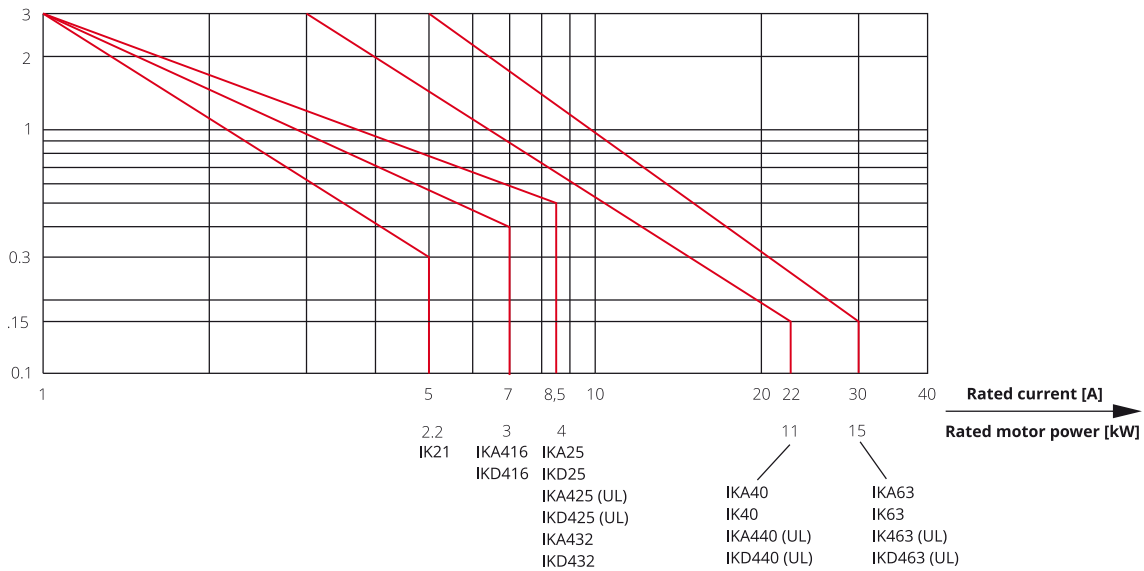
### Diagram 1



Electrical endurance

AC-3, AC-3e/400V/3-phase for IK21, IKA416, IKD416, IKA25, IKD25, IKA425 (UL), IKD425 (UL), IKA432, IKD432, IKA40, IKA63, Ik63, IKA440 (UL), IKD440 (UL), IKA463 (UL), IKD463 (UL)

Diagram 2

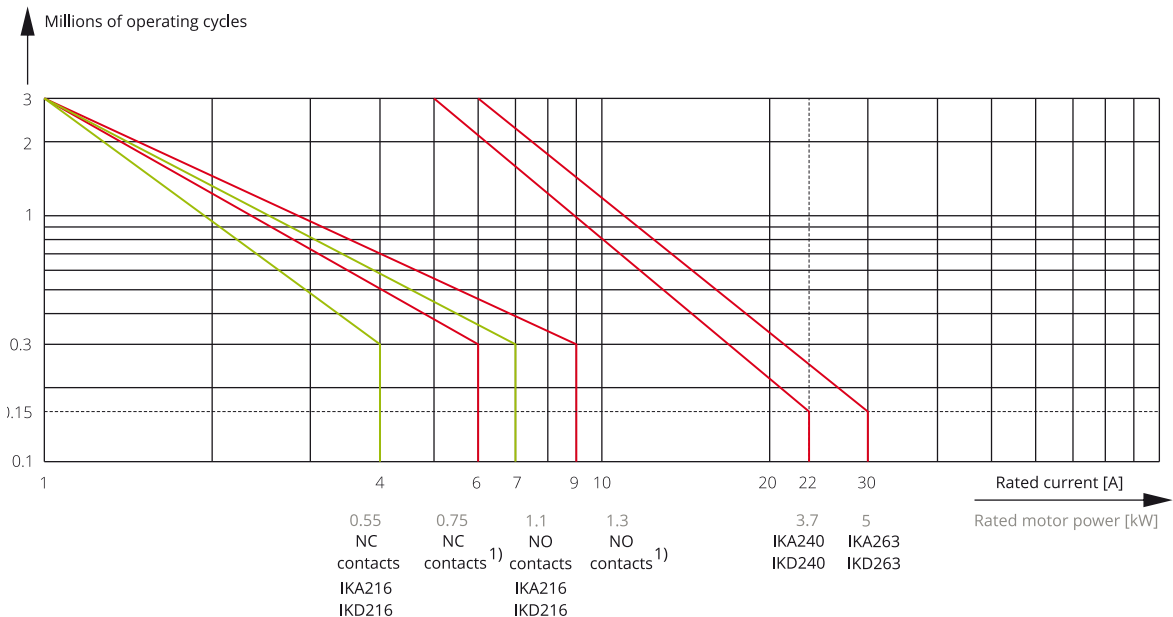


Electrical endurance

AC-3, AC-3e/230V/1-phase for IKA216, IKD216, IKA20, IKD20, IKA220 (UL), IKD220 (UL), IKA225, IKD225, IKA232, IKD232, IKA240, IKD240, IKA263, IKD263

Diagram 3

Diagram 3

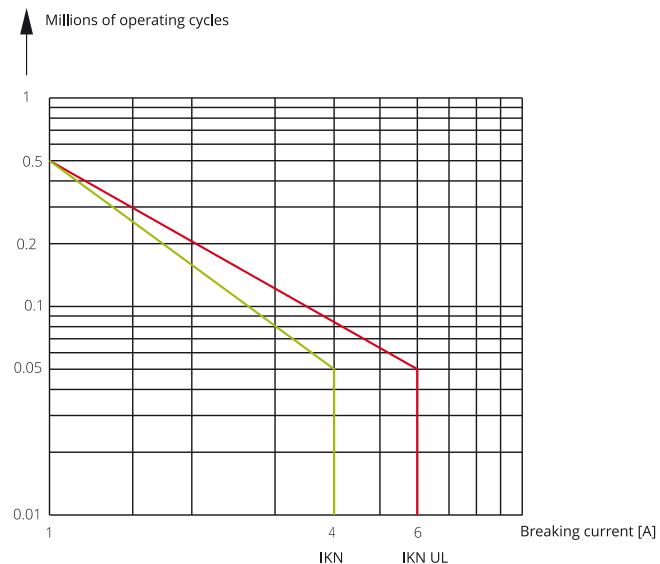


<sup>1)</sup> IKA20, IKD20, IKA220 (UL), IKD220 (UL), IKA225, IKD225, IKA232, IKD232

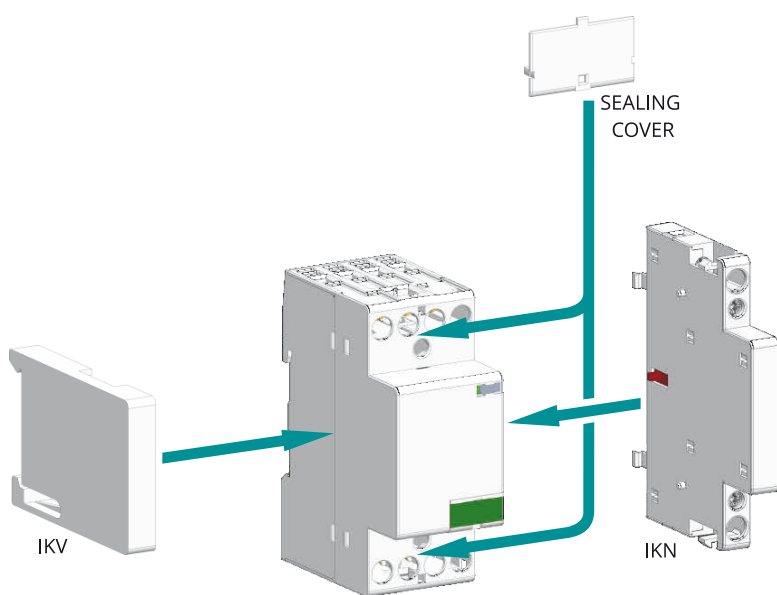
Electrical endurance

AC-15 for IKN, IKN-UL

Diagram 4



Mounting positions of accessories





# Accessories for installation contactors

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## Sealing cover for 2-pole, 1 module

Type	Ordering No.	Weight (g)	Quantity / Box
IK20-PP	37.425.061	1	2



## Sealing cover for 4-pole, 2 modules

Type	Ordering No.	Weight (g)	Quantity / Box
IK25-PP	37.425.062	2	2



## Sealing cover for 4-pole, 3 modules

Type	Ordering No.	Weight (g)	Quantity / Box
IK40/63-PP	37.423.463	3	2



## Ventilation module

Type	Ordering No.	Weight (g)	Quantity / Box
IKV	37.425.296	13	1





**Auxiliary switch - AC-15 acc. to IEC/EN 60947-5-1 (2-pole, module)**

Type	Rated current I <sub>e</sub>	Wiring diagram					Ordering No.	Weight (g)	Quantity / Box
		-20	-11	-01	-10	-02			
IKN20	6 A						38.046.002	30	
IKN11	6 A						38.046.004	30	
IKN10	6 A						38.046.036	25	1
IKN01	6 A						38.046.037	30	
IKN02	6 A						38.046.003	30	



**Single pin terminals for installation contactors up to 32 A - insulated**

Type	Pin length	Cross-section rigid/flexible (mm <sup>2</sup> )	Screw	Ordering No.	Weight (g)	Quantity / Box
S/32-1P	13.5/32 (total)	6-25/4-16	PZ2	786.015.060	12	25



**Double pin terminals for installation contactors 40 and 63 A - insulated terminals for parallel connection**

Type	Pin length	Cross-section rigid/flexible (mm <sup>2</sup> )	Screw	Ordering No.	Weight (g)	Quantity / Box
S/63-2P	15	6-50/4-35	PZ2	786.015.061	22	25



# Bistable switches

Bistable switches are switching devices without power consumption in operating switch-on position and very small power consumption per pole. On a very effective way helps to reduce greenhouse gas emissions of CO<sub>2</sub>.



## For remote switching

- ▶ Lights and lighting
- ▶ Electric heating
- ▶ Electric drives
- ▶ Intelligent installations

## Advanced operations

- ▶ Impulse control
- ▶ Manual control





## Other Benefits

- ▶ Wide application
- ▶ Sealing terminal covers
- ▶ All control voltages from 8 V till 240 are possible
- ▶ With thermal and magnetic release



**cos φ = 0.6 acc. to IEC/EN 60669-2-2 (2-pole, 1 module)**



AC

Type	Rated current I <sub>e</sub>	Control voltage at 50 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
BI216-20	16 A	230 V		30.070.278	135	8
BI216-20	16 A	24 V		30.070.279	135	8
BI216-11	16 A	230 V		30.070.276	135	8
BI216-11	16 A	24 V		30.070.277	135	8



**cos φ = 0.6 acc. to IEC/EN 60669-2-2 (2-pole, 1 module)**

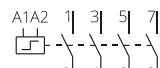

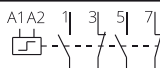
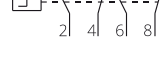
AC

Type	Rated current I <sub>e</sub>	Control voltage at 50 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
BI232-20	32 A	230 V		30.070.025	135	8
BI232-20	32 A	24 V		30.070.071	135	8



**cos φ = 0.6 acc. to IEC/EN 60669-2-2 (4-pole, 2 modules)**

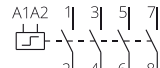
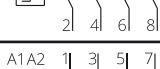
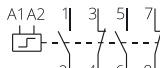

AC

Type	Rated current I <sub>e</sub>	Control voltage at 50 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
BI416-40	16 A	230 V		30.070.300	195	4
BI416-40	16 A	24 V		30.070.484	195	4
BI416-22	16 A	230 V		30.070.489	195	4
BI416-22	16 A	24 V		30.070.490	195	4



**cos φ = 0.6 acc. to IEC/EN 60669-2-2 (4-pole, 2 modules)**

AC

Type	Rated current I <sub>e</sub>	Control voltage at 50 Hz	Wiring diagram	Ordering No.	Weight (g)	Quantity / Box
BI432-40	32 A	230 V		30.070.027	195	4
BI432-40	32 A	24 V		30.070.072	195	4
BI432-22	32 A	230 V		30.070.032	195	4
BI432-22	32 A	24 V		30.070.055	195	4



# Accessories for bistable switches

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## Sealing cover for 2-pole, 1 module

Type	Ordering No.	Weight (g)	Quantity / Box
BI32-PP	37.425.439	4	2



## Sealing cover for bistable switches up to 80 A

Type	Ordering No.	Weight (g)	Quantity / Box
BI80-PP	37.425.484	4	2

## Auxiliary switch - AC-15 acc. to IEC/EN 60947-5-1 (2-pole, module)

Type	Rated current I <sub>e</sub>	Rated voltage U <sub>e</sub>	Wiring diagram			Ordering No.	Weight (g)	Quantity / Box
			-20	-11	-1C			
BIN20	4 A	250 V				38.070.012	30	1
BIN11	4 A	250 V				38.070.013	30	1
BIN1C	4 A	250 V				38.070.014	30	1



### Auxiliary device for centralised control (1/2 module)

Type	Ordering No.	Weight (g)	Quantity / Box
BIC	38.070.010	30	1



### Auxiliary device for group control (1/2 module)

Type	Ordering No.	Weight (g)	Quantity / Box
BIG	38.070.011	30	1



### Compensation capacitor

Type	Ordering No.	Weight (g)	Quantity / Box
KNB1562	38.070.009	17	1



### Single-pin terminals for bistable switches up to 32 A - insulated

Type	Pin length	Cross-section rigid/flexible (mm <sup>2</sup> )	Screw	Ordering No.	Weight (g)	Quantity / Box
S/32-1P	13.5/32 (total)	6-25/4-16	PZ2	38.046.066	12	25



# INO, IPO

## Distribution boards

IP40



### Features

▶ Degree of protection	IP40
▶ Protection class	II
▶ Mounting type	Surface or flush
▶ Rated voltage (V)	400
▶ Rated current (A)	63
▶ No. of modules	From 4 to 36
▶ Double insulation	□
▶ Installation temperature	-25 ... +60 °C
▶ Glow wire test	650° C
▶ Door material, type	Plastic, transparent
▶ Enclosure base material, color	Plastic, white
▶ Standards	IEC 62208, IEC 60670-1, IEC 60670-24

### Number of N - PE terminals

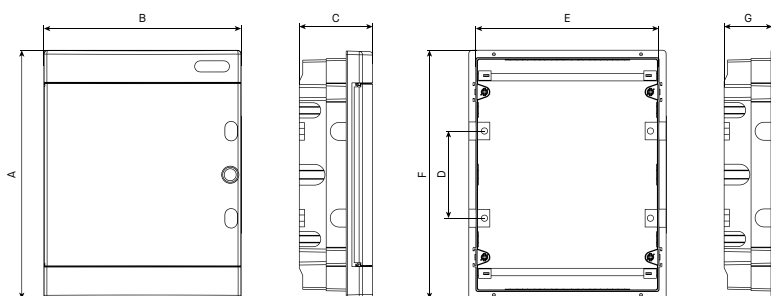
▶ 4PT/PO	2×4	4 PE / 4 N
▶ 8PT/PO	2×8	8 PE / 8 N
▶ 12PT/PO	2×10	10 PE / 10 N
▶ 18PT/PO	2×13	13 PE / 13 N
▶ 24PT/PO	2×13	13 PE / 13 N
▶ 36PT/PO	2×15	15 PE / 15 N
▶ 48PT/PO	2×20	20 PE / 20 N
▶ 2×18PT/PO	2×15	15 PE / 15 N
▶ 3×18PT/PO	2×25	25 PE / 25 N
▶ 4×18PT/PO	2×30	30 PE / 30 N
▶ 1×24PT/PO	2×13	13 PE / 13 N
▶ G14	2×10	10 PE / 10 N
▶ G28	2×13	13 PE / 13 N
▶ G42	2×15	15 PE / 15 N
▶ G56	2×20	20 PE / 20 N
▶ G70	2×30	30 PE / 30 N

### Flush mounted distribution board

Dimensions (mm)

Type	No. of modules	A	B	C	D	E	F	G	Pde*	Static load (g)	Ordering No.
M4PT/PO	4	232	139	99	-	123	216	69	> 10 W	520	
M8PT/PO	8	232	211	99	-	201	212	68	> 16 W	1040	
M12PT/PO	2 × 10	232	283	106	-	273	212	68	> 25 W	1560	
M18PT/PO	2 × 13	232	392	106	-	382	212	68	> 25 W	2340	
M24PT/PO	2 × 13	357	238	106	125	273	336	68	> 30 W	1560	
M36PT/PO	2 × 15	482	238	106	125	273	462	68	> 30 W	1560	
M2×18PT/PO	2 × 15	357	392	106	125	382	336	68	> 30 W	2340	
M3×18PT/PO	2 X 25	522	392	106	125	382	502	68	> 35 W	2340	

\* Max. allowed power losses when max. number of devices are installed

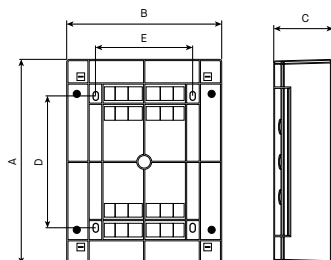


### Surface mounted distribution board

Dimensions (mm)

Type	No. of modules	A	B	C	D	E	Pde*	Static load (g)	Ordering No.
T4PT/PO	4	235	143	98	127	46	10 W	520	
T8PT/PO	8	236	215	102	107	120	16 W	1040	
T12PT/PO	2 × 10	236	287	112	107	180	25 W	1560	
T18PT/PO	2 × 13	236	396	112	107	289	25 W	2340	
T24PT/PO	2 × 13	361	287	112	232	180	30 W	1560	
T36PT/PO	2 × 15	485	287	112	357	180	30 W	1560	
T48PT/PO	2 × 20	652	287	112	482	180	35 W	1560	
T2×18PT/PO	2 × 15	361	396	112	232	289	30 W	2340	
T3×18PT/PO	2 X 25	526	396	112	357	289	35 W	2340	
T4×18PT/PO	2 X 30	651	396	112	357	289	40 W	2340	
T1×24PT/PO	2 X 13	236	503	112	107	396	30 W	2340	

\* Max. allowed power losses when max. number of devices are installed



# INO IP65 Distribution boards



## Features

▶ Degree of protection	IP65
▶ Insulation class	II
▶ Mounting type:	Surface mounted
▶ Rated current (A):	63
▶ Rated voltage (V):	400
▶ Rated DC voltage (V):	1500
▶ Additional terminals	PE- and N-conductors
▶ No. of modules	From 4 to 36
▶ Double insulation	<input checked="" type="checkbox"/>
▶ Standard	IEC 60670-1, IEC 60670-24
▶ Installation temperature	20° ... +60° C
▶ Glow wire test	650° C
▶ Color	Plastic, grey
▶ Door color	Plastic, transparent

## Number of PE / N terminals

▶ <b>INO 4-IP65</b>	1×4	4 / 4
▶ <b>INO 8-IP65</b>	1×8	8 / 8
▶ <b>INO 12-IP65</b>	1×12	10 / 10
▶ <b>INO 24-IP65</b>	2×12	15 / 15
▶ <b>INO 36-IP65</b>	3×12	15 / 15
▶ <b>INO 48-IP65</b>	4×12	20 / 20

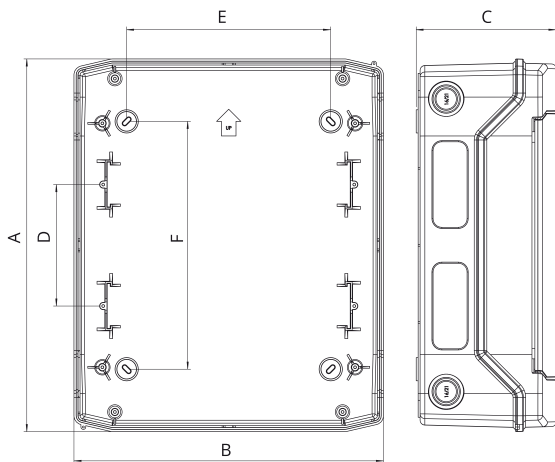


Technical data	Symbol	Unit	INO-4 IPO-4	INO-12 IPO-12	v INO-18	INO-24 IPO-24	INO-36 IPO-36
Standards			IEC 60670-24				
Rated voltage	$U_n$	V	400				
Max. power dissipation	INO	W	12	22	22	24	26
	IPO		14	22		24	26
No. of modules			4 (+4)	12	18	24	36
PE- and N-conductor terminals		W	2 x 8	2 x 10	2 x 13	2 x 13	2 x 15
Ambient temperature		°C	-20 ... +70				
Dimensions	INO	mm	215 x 263 x 112	287 x 236 x 112	396 x 236 x 112	287 x 361 x 112	283 x 357 x 70
	IPO		211 x 232 x 70	283 x 232 x 70		283 x 357 x 70	283 x 482 x 70

Dimensions

Type	No. of modules	A	B	C	D	E	F	Pde*	Ordering No.
INO 4-IP65	4	201	128	120	-	78	111	10	786.201.274
INO 8-IP65	8	201	202	120	-	100	140	13	786.200.781
INO 12-IP65	12	259	319	144	-	210	130	16	786.201.017
INO 24-IP65	2 x 12	384	319	144	125	210	255	24	786.201.276
INO 36-IP65	3 x 12	508	319	144	125	210	380	26	786.201.510
INO 48-IP65	4 x 12	664	319	144	125	210	505	35	786.201.609

\* Max. allowed power losses when max. number of devices are installed



# PO, NO Metal Distribution boards



## Application of use

Metal distribution cabinets are used in residential buildings as well as in industry. Due to their size, they are particularly suitable for more advanced or demanding installations where it is necessary to install more control and protection elements than in classic installations. Due to the metal housing, they are resistant to mechanical and external influences, are compact and have a longer service life.

## Installation method

Flush or surface installation.

## Cabinet description

Material: 1 mm thick steel, with a protective coating of RAL 9003.

The cabinet doors are adapted for right- or left-side opening and are grounded (Pe).  
Removable modular covers of individual types in the cabinet.

Electrical parameters:

- ▶ Rated DC current:  $\leq 100$  A
- ▶ Nominal voltage:  $U_n = 400$  V
- ▶ Nominal insulation voltage:  $U_i = 500$  V
- ▶ Protection class: I
- ▶ Degree of protection: IP 30

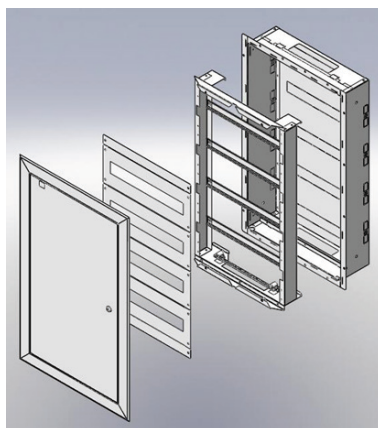
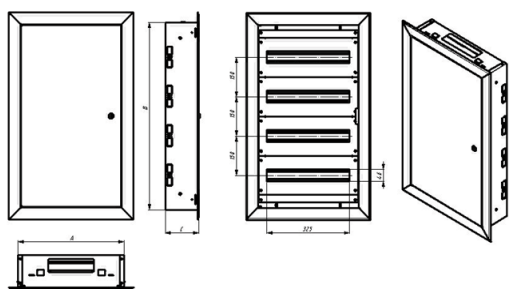
## Accessories

All cabinets are already equipped with:

- ▶ N and Pe terminals for connecting neutral and earth conductors
- ▶ DIN rails for mounting control/protection elements
- ▶ Accessories for mounting the cabinet in/on the wall

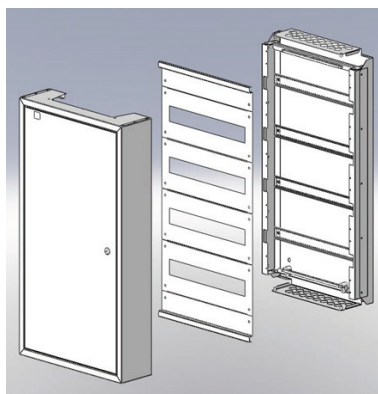
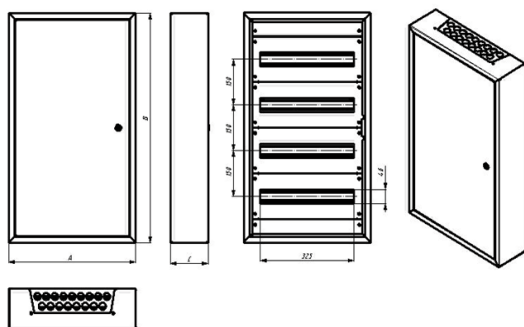
Metal flush distribution boards PO-K 18

Type	No. of modules	No. of rows	Height mm	Width mm	Depth mm	Ordering No.	Weight (kg)
PO-K 18/36(2×18)	36	2	435	415	130	786.200.437	7
PO-K 18/54(3×18)	54	3	585	415	130	786.200.411	9
PO-K 18/72(4×18)	72	4	735	415	130	786.200.438	11
PO-K 18/90(5×18)	90	5	885	415	130	786.200.439	13
PO-K 18/108(6×18)	108	6	1035	415	130	786.200.440	16
PO-K 18/126(7×18)	126	7	1185	415	130	786.200.441	17
PO-K 18/144(8×18)	144	8	1335	415	130	786.200.442	19



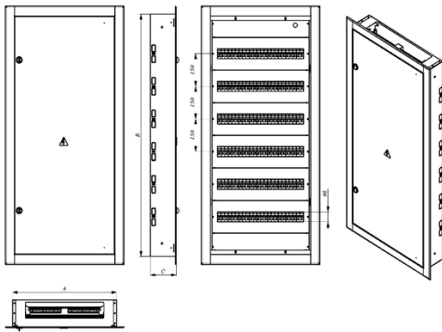
Metal surface distribution boards NO-K 18

Type	No. of modules	No. of rows	Height mm	Width mm	Depth mm	Ordering No.	Weight (kg)
NO-K 18/36(2×18)	36	2	455	440	130	786.200.443	8
NO-K 18/54(3×18)	54	3	605	440	130	786.200.412	9
NO-K 18/72(4×18)	72	4	755	440	130	786.200.444	12
NO-K 18/90(5×18)	90	5	905	440	130	786.200.445	13
NO-K 18/108(6×18)	108	6	1055	440	130	786.200.446	14
NO-K 18/126(7×18)	126	7	1205	440	130	786.200.447	17
NO-K 18/144(8×18)	144	8	1355	440	130	786.200.448	19



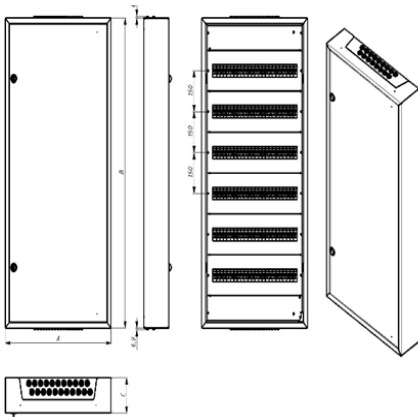
**Metal flush distribution boards PO-K 24**

Type	No. of modules	No. of rows	Height mm	Width mm	Depth mm	Ordering No.	Weight (kg)
PO-K 24/96(4×24)	96	4	815	523	130	786.200.413	13
PO-K 24/120(5×24)	120	5	965	523	130	786.200.449	15
PO-K 24/144(6×24)	144	6	1115	523	130	786.200.450	17



**Metal surface distribution boards NO-K 24**

Type	No. of modules	No. of rows	Height mm	Width mm	Depth mm	Ordering No.	Weight (kg)
NO-K 24/96(4×24)	96	4	836	544	130	786.200.451	13
NO-K 24/120(5×24)	120	5	986	544	130	786.200.462	15
NO-K 24/144(6×24)	144	6	1136	544	130	786.200.463	17



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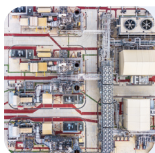
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