

TYPE AC - up to 63 A

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- Module width: 2-, 4-pole
- Rated current: 25, 40, 63 A
- Rated residual operating current $I_{\Delta n}$: 30, 100, 300 mA
- CE

TYPE A - up to 100 A

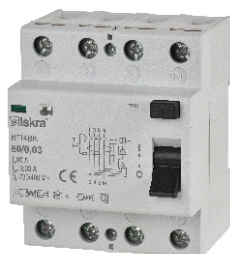
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- Module width: 2-, 4-pole
- Rated current: 16, 25, 40, 63, 80, 100
- Rated residual operating current $I_{\Delta n}$: 10, 30, 100, 300, 500 mA
- VDE, EAC, CE

TYPE B - up to 80 A

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- Module width: 4-pole
- Rated current: 25, 40, 63, 80
- Rated residual operating current $I_{\Delta n}$: 30, 100, 300, 500 mA
- VDE, EAC, CE

WITH A RESIDUAL CURRENT CIRCUIT BREAKER (RCCB) THE FOLLOWING PROTECTIVE MEASURES ARE AVAILABLE: FAULT PROTECTION, PROTECTION AGAINST FIRE AND ADDITIONAL PROTECTION IN CASE OF DIRECT CONTACT. THEY ARE ALSO SUITABLE FOR ISOLATION AND HAVE OPTIONAL OPERATION POSITION.

AFI



RESIDUAL CURRENT CIRCUIT BREAKERS ARE SWITCH WITH INSTANTANEOUS TRIPPING. TYPE AC IS SENSITIVE TO RESIDUAL SINUSOIDAL ALTERNATING CURRENTS ONLY.



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FEATURES

- They are used for protection against indirect contact and fire protection
- They are suitable for isolation (switch disconnecter)
- Surge current withstand capability with current waveform 8/20 μ s up to 3 kA
- 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)

ORDERING DATA

Residual current circuit breakers up to 63 Apage 5-2

Connections page 5-5

Example - Ordering datapage 5-3

Technical characteristics page 5-4

Dimensions page 5-5

RESIDUAL CURRENT CIRCUIT BREAKERS - AFI

TYPE AC - SENSITIVE TO A.C. RESIDUAL CURRENTS

AFI2 - type AC, without time delay

Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
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 25/0.5	25	0.5	2	30.105.060	215	1
AFI2 40/0.03	40	0.03	2	30.105.061	215	1
AFI2 40/0.3	40	0.3	2	30.105.062	215	1
AFI2 63/0.03	63	0.03	2	30.105.063	215	1
AFI2 63/0.3	63	0.3	2	30.105.064	215	1



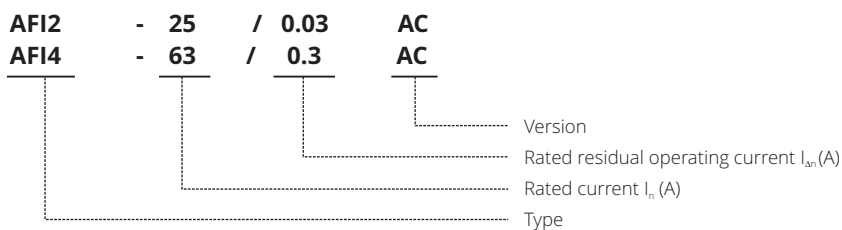
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AFI4 - type AC, without time delay

Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
AFI4 25/0.03	25	0.03	4	30.105.067	360	1
AFI4 25/0.3	25	0.3	4	30.105.068	360	1
AFI4 25/0.5	25	0.5	4	30.105.069	360	1
AFI4 40/0.03	40	0.03	4	30.105.070	360	1
AFI4 40/0.3	40	0.3	4	30.105.071	360	1
AFI4 40/0.5	40	0.5	4	30.105.072	360	1
AFI4 63/0.03	63	0.03	4	30.105.073	360	1
AFI4 63/0.3	63	0.3	4	30.105.074	360	1
AFI4 63/0.5	63	0.5	4	30.105.075	360	1



ORDERING DATA



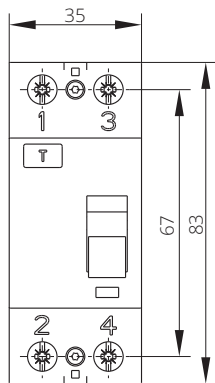
ORDERING DATA

RESIDUAL CURRENT CIRCUIT BREAKERS -AFI

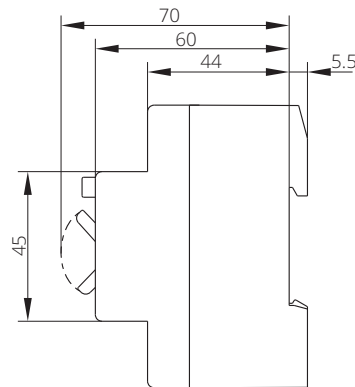
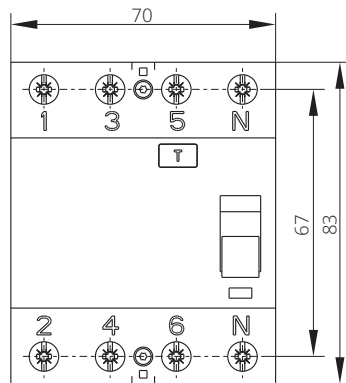
Type	AC	Symbol	Unit	AFI2	AFI4
Standards				IEC/EN 61008	
Approvals				CE	
Module width				2	4
Number of poles				2	4
Rated voltage		U_n	V	230	400
Rated insulation voltage		U_i	V	400	
Rated impulse withstand voltage		U_{imp}	kV	4	
Rated frequency		f	Hz	50	
Rated current		I_n	A	25, 40, 63	
Rated residual current		$I_{\Delta n}$	mA	30, 300, 500	
Operational residual current		I_{Δ}		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		$I_{\Delta m}$	A	63	
Max. back-up fuse for short-circuit current g_L		I_v	A	63	
Surge current withstand capability			kA	3 (8/20 μ s surge current)	
Maximum breaking times				1 x $I_{\Delta n} : < 300$ ms; 5 x $I_{\Delta n} : < 40$ 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			$^{\circ}$ 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 ²	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	215	360

RESIDUAL CURRENT CIRCUIT BREAKERS - AFI

AFI2



AFI4

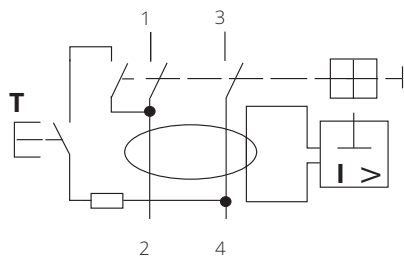


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Schematics

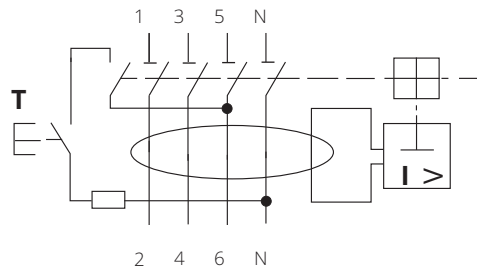
AFI2

Two-pole



AFI4

Four-pole, N-pole right



DIMENSIONS

RESIDUAL CURRENT CIRCUIT BREAKERS - TYPE A

NFI, NFIK, NFIS, NFIF



RESIDUAL CURRENT CIRCUIT BREAKERS (RCCB) ARE USED FOR PROTECTION AGAINST INDIRECT CONTACT, FIRE PROTECTION AND ADDITIONAL PROTECTION AGAINST DIRECT CONTACT. THEY ARE SENSITIVE TO ALTERNATING AND PULSATING D.C. RESIDUAL CURRENTS



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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 VERSIONS

• NFIK - SENSITIVE TO A.C. 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 μ s up to 3 kA
- High immunity against unwanted tripping at current impulses (e.g. a high number of fluorescent 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 A.C. 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 μ s up to 3 kA
- Selectivity regarding a general type and a short-time delayed type is enabled
- Particularly 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)
- Time delayed selective RCCBs with minimum non-actuating time 40 ms
- Surge current withstand capability with current waveform 8/20 μ s up to 3 kA
- Intended for protection when using washing machines, vacuum cleaners, dishwashers, heating pumps, lighting system ...

ORDERING DATA

Residual current circuit breakers up to 100 A page 5-6
Connections page 5-13

Example - Ordering data page 5-7, 8, 9, 10
Technical characteristics page 5-11
Dimensions page 5-13

RESIDUAL CURRENT CIRCUIT BREAKERS - NFI

TYPE A - SENSITIVE TO A.C. AND PULSATING DIRECT RESIDUAL CURRENTS

NFI2 - type A, without time delay

Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
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



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NFI4 - type A, without time delay

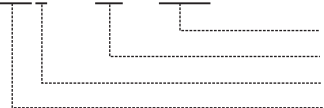
Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
NFI4 16/0.01	16	0.01	4	30.104.823	316	1
NFI4 25/0.01	25	0.01	4	30.104.786	316	1
NFI4 25/0.03	25	0.03	4	30.104.296	316	1
NFI4 40/0.03	40	0.03	4	30.104.300	316	1
NFI4 63/0.03	63	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
NFI4 100/0.5	100	0.5	4	30.104.619	360	1



NOTE: Rated current 32 A on request

ORDERING DATA

NFI4 - 25 / 0.03



Rated residual operating current $I_{\Delta n}$ (A)
 Rated current I_n (A)
 Number of poles
 Type

RESIDUAL CURRENT CIRCUIT BREAKERS - NFIK

TYPE A - SENSITIVE TO A.C. AND PULSATING DIRECT RESIDUAL CURRENTS

NFI2K - type A, short-time delay **G**

Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
NFI2K 16/0.03	16	0.03	2	30.104.824	184	1
NFI2K 25/0.03	25	0.03	2	30.104.767	184	1
NFI2K 40/0.03	40	0.03	2	30.104.791	184	1
NFI2K 63/0.03	63	0.03	2	30.104.668	184	1
NFI2K 80/0.03	80	0.03	2	30.104.670	184	1
NFI2K 100/0.03	100	0.03	2	30.104.672	184	1
NFI2K 16/0.1	16	0.1	2	30.104.825	184	1
NFI2K 25/0.1	25	0.1	2	30.104.665	184	1
NFI2K 40/0.1	40	0.1	2	30.104.667	184	1
NFI2K 63/0.1	63	0.1	2	30.104.669	184	1
NFI2K 80/0.1	80	0.1	2	30.104.671	184	1
NFI2K 100/0.1	100	0.1	2	30.104.673	184	1
NFI2K 16/0.3	16	0.3	2	30.104.826	184	1
NFI2K 25/0.3	25	0.3	2	30.104.827	184	1
NFI2K 40/0.3	40	0.3	2	30.104.798	184	1
NFI2K 63/0.3	63	0.3	2	30.104.828	184	1
NFI2K 80/0.3	80	0.3	2	30.104.829	184	1
NFI2K 100/0.3	100	0.3	2	30.104.830	184	1
NFI2K 16/0.5	16	0.5	2	30.104.831	184	1
NFI2K 25/0.5	25	0.5	2	30.104.832	184	1
NFI2K 40/0.5	40	0.5	2	30.104.833	184	1
NFI2K 63/0.5	63	0.5	2	30.104.834	184	1
NFI2K 80/0.5	80	0.5	2	30.104.835	184	1
NFI2K 100/0.5	100	0.5	2	30.104.836	184	1



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NFI4K - type A, short-time delay **G**

Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
NFI4K 25/0.03	25	0.03	4	30.104.787	316	1
NFI4K 40/0.03	40	0.03	4	30.104.542	316	1
NFI4K 63/0.03	63	0.03	4	30.104.543	316	1
NFI4K 80/0.03	80	0.03	4	30.104.582	316	1
NFI4K 100/0.03	100	0.03	4	30.104.694	360	1
NFI4K 25/0.1	25	0.1	4	30.104.687	316	1
NFI4K 40/0.1	40	0.1	4	30.104.540	316	1
NFI4K 63/0.1	63	0.1	4	30.104.541	316	1
NFI4K 80/0.1	80	0.1	4	30.104.691	316	1
NFI4K 100/0.1	100	0.1	4	30.104.695	360	1
NFI4K 25/0.3	25	0.3	4	30.104.792	316	1
NFI4K 40/0.3	40	0.3	4	30.104.538	316	1
NFI4K 63/0.3	63	0.3	4	30.104.539	316	1
NFI4K 80/0.3	80	0.3	4	30.104.692	360	1
NFI4K 100/0.3	100	0.3	4	30.104.696	360	1
NFI4K 25/0.5	25	0.5	4	30.104.689	316	1
NFI4K 40/0.5	40	0.5	4	30.104.536	316	1
NFI4K 63/0.5	63	0.5	4	30.104.537	316	1
NFI4K 80/0.5	80	0.5	4	30.104.693	360	1
NFI4K 100/0.5	100	0.5	4	30.104.697	360	1



NOTE: Rated current 32 A on request

ORDERING DATA

NFI4K - 25 / 0.03



Rated residual operating current $I_{\Delta n}$ (A)
 Rated current I_n (A)
 Number of poles
 Type

ORDERING DATA

RESIDUAL CURRENT CIRCUIT BREAKERS - NFIS

TYPE A - SENSITIVE TO A.C. AND PULSATING DIRECT RESIDUAL CURRENTS

NFI2S - type A, selective **S**

Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
NFI2S 16/0.1	16	0.1	2	30.104.837	184	1
NFI2S 25/0.1	25	0.1	2	30.104.654	184	1
NFI2S 40/0.1	40	0.1	2	30.104.656	184	1
NFI2S 63/0.1	63	0.1	2	30.104.658	184	1
NFI2S 80/0.1	80	0.1	2	30.104.660	184	1
NFI2S 100/0.1	100	0.1	2	30.104.662	184	1
NFI2S 16/0.3	16	0.3	2	30.104.838	184	1
NFI2S 25/0.3	25	0.3	2	30.104.655	184	1
NFI2S 40/0.3	40	0.3	2	30.104.657	184	1
NFI2S 63/0.3	63	0.3	2	30.104.659	184	1
NFI2S 80/0.3	80	0.3	2	30.104.661	184	1
NFI2S 100/0.3	100	0.3	2	30.104.663	184	1
NFI2S 16/0.5	16	0.5	2	30.104.839	184	1
NFI2S 25/0.5	25	0.5	2	30.104.840	184	1
NFI2S 40/0.5	40	0.5	2	30.104.841	184	1
NFI2S 63/0.5	63	0.5	2	30.104.842	184	1
NFI2S 80/0.5	80	0.5	2	30.104.843	184	1
NFI2S 100/0.5	100	0.5	2	30.104.844	184	1



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NFI4S - type A, selective **S**

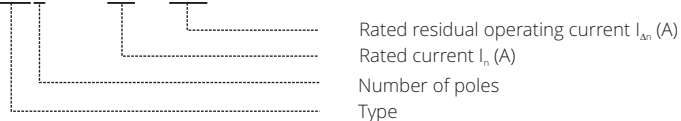
Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
NFI4S 25/0.1	25	0.1	4	30.104.533	316	1
NFI4S 40/0.1	40	0.1	4	30.104.534	316	1
NFI4S 63/0.1	63	0.1	4	30.104.535	316	1
NFI4S 80/0.1	80	0.1	4	30.104.682	316	1
NFI4S 100/0.1	100	0.1	4	30.104.684	360	1
NFI4S 25/0.3	25	0.3	4	30.104.529	316	1
NFI4S 40/0.3	40	0.3	4	30.104.352	316	1
NFI4S 63/0.3	63	0.3	4	30.104.353	316	1
NFI4S 80/0.3	80	0.3	4	30.104.683	360	1
NFI4S 100/0.3	100	0.3	4	30.104.799	360	1
NFI4S 25/0.5	25	0.5	4	30.104.845	316	1
NFI4S 40/0.5	40	0.5	4	30.104.846	316	1
NFI4S 63/0.5	63	0.5	4	30.104.756	316	1
NFI4S 80/0.5	80	0.5	4	30.104.847	360	1
NFI4S 100/0.5	100	0.5	4	30.104.848	360	1



NOTE: Rated current 32 A on request

ORDERING DATA

NFI4S - 25 / 0.3



ORDERING DATA

RESIDUAL CURRENT CIRCUIT BREAKERS - NFIF

TYPE F - SENSITIVE TO RESIDUAL CURRENTS AS TYPE A AND IN ADDITIONAL TO RESIDUAL CURRENTS WITH MIXED FREQUENCIES

NFI2F - type A, short-time delayed G

Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
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



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NFI4F - type A, short-time delayed G

Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
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

NFI4F - 25 / 0.03



Rated residual operating current $I_{\Delta n}$ (A)
 Rated current I_n (A)
 Number of poles
 Type

ORDERING DATA

RESIDUAL CURRENT CIRCUIT BREAKERS - NFI, NFIK, NFIS

Type	A G S	Symbol	Unit	NFI2 NFI2K NFI2S	NFI4 NFI4K NFI4S
Standards				IEC/EN 61008, type G acc. to ÖVE E 8601	
Approvals				CE, VDE, EAC	
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	10 ($I_n = 16, 25, 32$ A), 30, 100, 300, 500	10 ($I_n = 25, 32$ A), 30, 100, 300, 500
Operational residual current		$I_{\Delta a}$		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)	
Rated residual making and breaking capacity		I_{bm}		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	FI, NFI: 200 (0.5 μ s/100 kHz ring wave) NFIK, NFIS: 3000 (8/20 μ s surge current)	
Maximum breaking times				FI, 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	
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)		S	mm ²	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

* -35°C on request

RESIDUAL CURRENT CIRCUIT BREAKERS - NFIF

Type	F	Symbol	Unit	NF12F	NF14F
Standards				IEC/EN 61008, IEC/EN 62423	
Approvals				VDE (NFIF)	
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, 100, 300, 500	
Operational residual current		I_{Δ}		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)	
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			kA	3 (8/20 μ s surge current)	
Maximum breaking times				NF12F, NF14F - 1 x $I_{\Delta n}$: < 300 ms; 5 x $I_{\Delta n}$: < 40 ms NF12FS, NF14FS - 1 x $I_{\Delta n}$: < 500 ms; 5 x $I_{\Delta n}$: < 150 ms	
Minimum response time delay				NF12F, NF14F: 10 ms NF12FS, NF14FS: 40 ms	
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)		S	mm ²	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

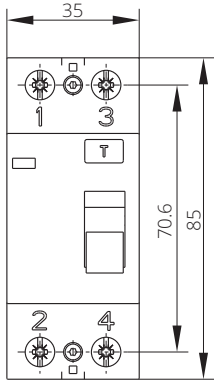
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TECHNICAL DATA

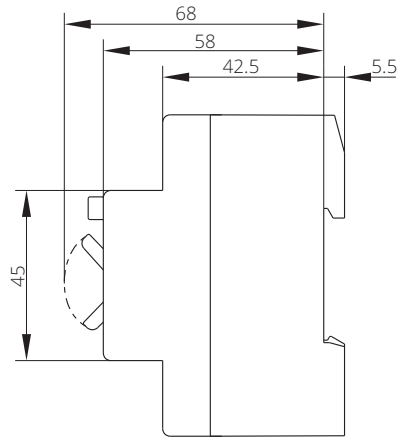
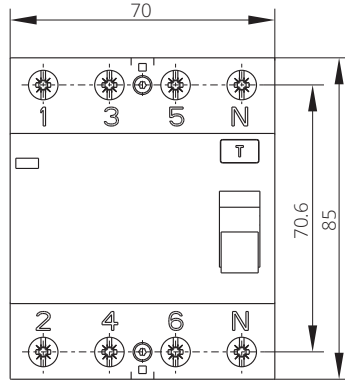
RESIDUAL CURRENT CIRCUIT BREAKERS - TYPE A

NFI, NFIK, NFIS, NFIF

**NFI2, NFI2K
NFI2S, NFI2F**



**NFI4, NFI4K
NFI4S, NFI4F**

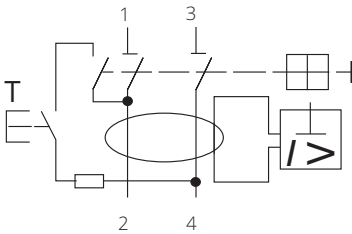


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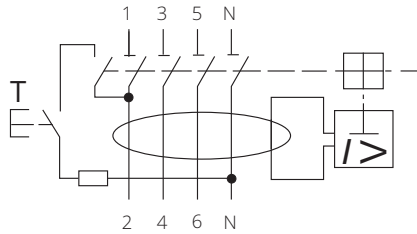
Schematics

NFI, NFIK, NFIS, NFIF

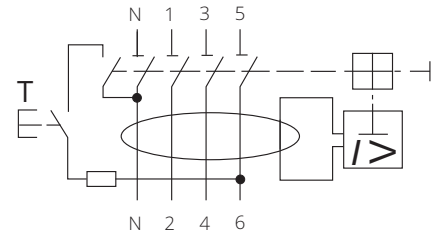
Two-pole



Four-pole, N-pole right



Four-pole, N-pole left



DIMENSIONS

RESIDUAL CURRENT CIRCUIT BREAKERS - TYPE B

NFIB



NFIB ARE TYPE B RESIDUAL CURRENT CIRCUIT BREAKERS (RCCB) FOR WHICH TRIPPING IS ENSURED AS FOR TYPE A AND IN ADDITION FOR SMOOTH D.C. RESIDUAL CURRENTS, RESIDUAL D.C. CURRENTS WHICH MAY RESULT FROM RECTIFYING CIRCUITS AND HIGH FREQUENCY A.C. RESIDUAL CURRENTS.



5

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 greater than 50 v is required which can be applied to any two poles only.
- Versions:
 - NFIBK: short-time delay tripping
 - NFIBS: selective type
- Surge current withstand capability with current waveform 8/20 μ 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

ORDERING DATA

Residual current circuit breakers up to 100 A page 5-14

Connections page 5-13

Example - Ordering datapage 5-15

Technical characteristics page 5-16

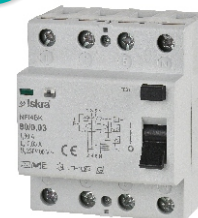
Dimensions page 5-13

RESIDUAL CURRENT CIRCUIT BREAKERS - NFIB

TYPE B - SENSITIVE TO RESIDUAL CURRENTS AS TYPE A AND IN ADDITIONAL FOR SMOOTH D.C. RESIDUAL CURRENTS, RESIDUAL D.C. CURRENTS WHICH MAY RESULT FROM RECTIFYING CIRCUITS, AND HIGH FREQUENCY A.C. RESIDUAL CURRENTS

NFI4BK - type B, short-time delayed **G**

Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
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



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NFI4BS - type B, selective **S**

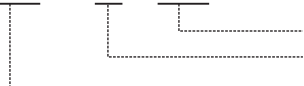
Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
NFI4BS 25/0.1	25	0.1	4	30.104.934	350	1
NFI4BS 40/0.1	40	0.1	4	30.104.935	350	1
NFI4BS 63/0.1	63	0.1	4	30.104.810	350	1
NFI4BS 80/0.1	80	0.1	4	30.104.906	350	1
NFI4BS 25/0.3	25	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

NFI4B - 25 / 0.03



Rated residual operating current $I_{\Delta n}$ (A)
Rated current I_n (A)
Type

ORDERING DATA

RESIDUAL CURRENT CIRCUIT BREAKERS - NFIBK, NFIBS

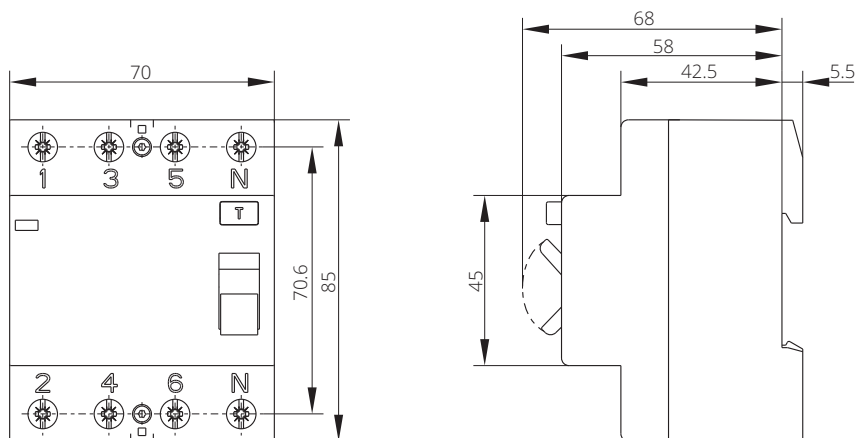
Type	B	Symbol	Unit	NFI4BK NFI4BS
Standards				IEC/EN 61008, IEC/EN 62423
Approvals				VDE, EAC, CE
Module width				4
Number of poles				4
Rated voltage		U_n	V	400
Rated insulation voltage		U_i	V	400
Rated impulse withstand voltage		U_{imp}	kV	4 (1.2/50 μ s)
Rated frequency		f	Hz	50/60
Rated current		I_n	A	25, 32, 40, 63, 80
Rated residual current		$I_{\Delta n}$	mA	NFI4BK: 30, 100, 300, 500 NFI4BS: 100, 300, 500
Operational residual current		I_{Δ}		0.5 - 1.0 $I_{\Delta n}$
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 μ s surge current)
Maximum breaking times				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				NFI4BK: 10 ms NFI4BS: 40 ms
Mechanical endurance			op. c.	min. 5000
Electrical endurance			op. c.	min. 2000
Minimum distance of open contacts			mm	4
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 ²	1 ... 25
flexible				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	350

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TECHNICAL DATA

RESIDUAL CURRENT CIRCUIT BREAKERS - NFIBK, NFIBS

NFI4B, NFI4BS



Schematics

