

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



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 ...

Example - Ordering data	page 2
Technical characteristics	page 3
Dimensions	page 4

RESIDUAL CURRENT CIRCUIT BREAKERS - NFIK

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

NFI2K - type A, short-time delay 

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



NFI4K - type A, short-time delay 

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 - NFI, NFIK, NFIS

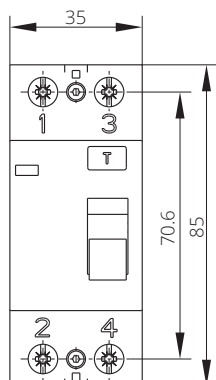
Type	A G S	Symbol	Unit	NFI2 NFI2K NFI2S	NFI4 NFI4K NFI4S
Standards				IEC/EN 61008, type G acc. to ÖVE E 8601	
Approvals				CE, VDE, EAC	
Module width				2	4
Number of poles				2	4
Rated voltage		U_n	V	230	400
Rated insulation voltage		U_i	V	400	
Rated impulse withstand voltage		U_{imp}	kV	4	
Rated frequency		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_{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		$I_{\Delta m}$		1000 ($I_n = 100$ A)	
Max. back-up fuse for short-circuit current g_L		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

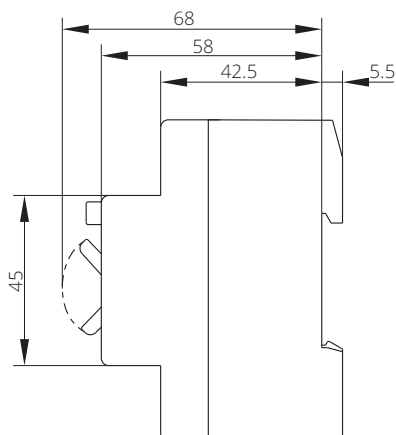
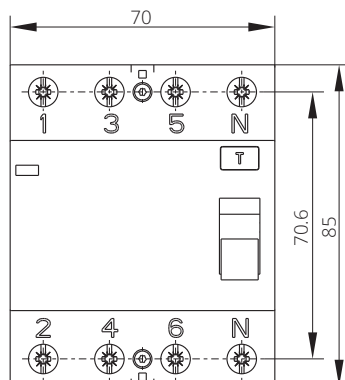
RESIDUAL CURRENT CIRCUIT BREAKERS - TYPE A

NFI, NFIK, NFIS, NFIF

NFI2, NFI2K
NFI2S, NFI2F



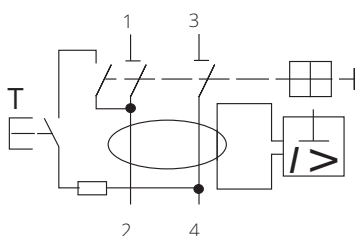
NFI4, NFI4K
NFI4S, NFI4F



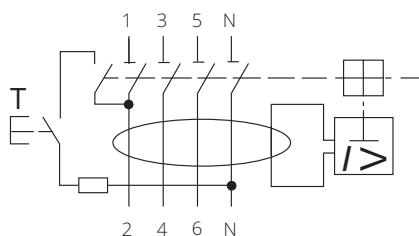
Schematics

NFI, NFIK, NFIS, NFIF

Two-pole



Four-pole, N-pole right



Four-pole, N-pole left

