

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 ...

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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



NFI4S - type A, selective **S**

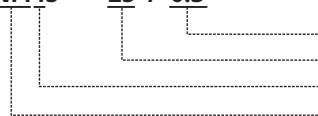
Type	Rated current I_n (A)	Rated residual current $I_{\Delta n}$ (A)	Number of poles	Ordering No.	Weight (g)	Packaging (pcs)
NFI4S 25/0.1	25	0.1	4	30.104.533	316	1
NFI4S 40/0.1	40	0.1	4	30.104.534	316	1
NFI4S 63/0.1	63	0.1	4	30.104.535	316	1
NFI4S 80/0.1	80	0.1	4	30.104.682	316	1
NFI4S 100/0.1	100	0.1	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



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

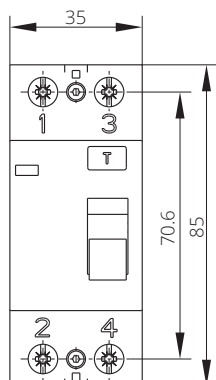
Type	A G S	Symbol	Unit	NFI2 NFI2K NFI2S	NFI4 NFI4K NFI4S
Standards				IEC/EN 61008, type G acc. to ÖVE E 8601	
Approvals				CE, VDE, EAC	
Module width				2	4
Number of poles				2	4
Rated voltage		U_n	V	230	400
Rated insulation voltage		U_i	V	400	
Rated impulse withstand voltage		U_{imp}	kV	4	
Rated frequency		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 ($I_n = 16, 25, 32 \text{ A}$), 30, 100, 300, 500	10 ($I_n = 25, 32 \text{ A}$), 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 ($I_n = 16 - 80 \text{ A}$)	
Rated residual making and breaking capacity		$I_{\Delta m}$		1000 ($I_n = 100 \text{ A}$)	
Max. back-up fuse for short-circuit current g_L		I_v	A	63 ($I_n = 16 - 40 \text{ A}$) 80 ($I_n = 63, 80 \text{ A}$) 100 ($I_n = 100 \text{ A}$)	
Surge current withstand capability			A	FI, NFI: 200 (0.5 μs /100 kHz ring wave) NFIK, NFIS: 3000 (8/20 μs 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

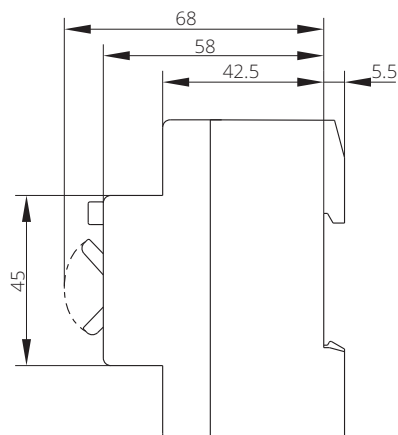
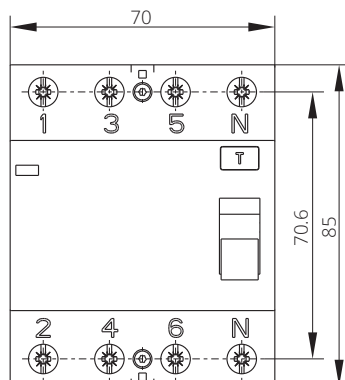
RESIDUAL CURRENT CIRCUIT BREAKERS - TYPE A

NFI, NFIK, NFIS, NFIF

NFI2, NFI2K
NFI2S, NFI2F



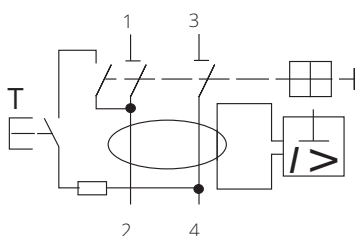
NFI4, NFI4K
NFI4S, NFI4F



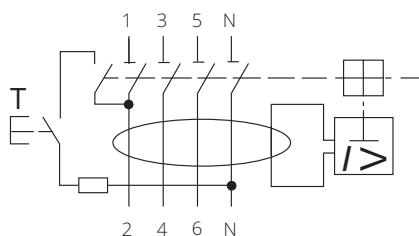
Schematics

NFI, NFIK, NFIS, NFIF

Two-pole



Four-pole, N-pole right



Four-pole, N-pole left

