



# RESIDUAL CURRENT CIRCUIT BREAKERS TYPE B - NFIB

- **RELEVANT FOR** APPLICATIONS WITH FREQUENCY INVERTERS, MEDICAL DEVICES, UPS, MOBILE INSTALLATIONS, ELEVATORS
- **NOT RELEVANT FOR** D.C. SYSTEMS AND NETWORKS WITH OPERATING FREQUENCIES OTHER THAN 50 OR 60 Hz.

# RESIDUAL CURRENT CIRCUIT BREAKERS

## NFIB

### FEATURES

- ISKRA **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.
- **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  $\mu$ 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

**INTENDED FOR**  
**PROTECTION**  
**PROTECTION**  
**PROTECTION**



### OTHER TYPES AVAILABLE

**TYPE AC, A: SWITCH WITH INSTANTANEOUS TRIPPING.** TYPE AC IS SENSITIVE TO RESIDUAL SINUSOIDAL ALTERNATING CURRENTS ONLY AND TYPE A IS SENSITIVE TO RESIDUAL SINUSOIDAL ALTERNATING CURRENTS AND RESIDUAL PULSATING DIRECT CURRENTS.

**TYPE S: A SWITCH WITH DELAYED BREAK ENABLING SELECTIVITY REGARDING A GENERAL TYPE AND A SHORT-TIME DELAYED TYPE (TYPE G) CONNECTED ON THE LOAD SIDE.** BREAK TIME IS LONGER THAN 40 ms. SWITCHES EXCEL IN HIGH RESISTANCE TO SURGE CURRENTS (UP TO 3 kA), WHICH PREVENT UNWANTED TRIPPINGS. THEIR RATED CURRENTS ARE FROM 25 TO 100 A, AND RATED RESIDUAL CURRENTS ARE 100, 300 AND 500 mA. THIS IS TYPE A, AND CUSTOMER CAN CHOOSE BETWEEN NF12S TWO-POLE AND NF14S FOUR-POLE SWITCHES.

**TYPE G: A SHORT-TIME DELAYED BREAKING CHARACTERISTIC (MINIMUM NON-ACTUATING PERIOD IS 10 Ms).** THE SWITCHES ARE RESISTANT TO UNWANTED TRIPPING AT CURRENT IMPULSES AND HAVE SURGE CURRENT WITHSTAND CAPABILITY UP TO 3 kA. THEIR RATED CURRENTS ARE FROM 25 TO 100 A, AND RATED RESIDUAL CURRENTS ARE 30, 100, 300 AND 500 mA. THIS IS TYPE A, AND CUSTOMER CAN CHOOSE BETWEEN NF12K TWO-POLE AND NF14K FOUR-POLE SWITCHES.

**ALL TYPES ARE VDE APPROVED.**

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## NFIB

TECHNICAL DATA			NFI2BK	NFI4BK NFI4BS
GENERAL				
STANDARD			IEC/EN 61008, IEC/EN 62423	
NO. OF POLES			2	4
RATED VOLTAGE	$U_n$	V	230	400
RATED IMPULSE VOLTAGE	$U_{imp}$	kV	4	
RATED FREQUENCY	$f$	Hz	50	
RATED CURRENT	$I_n$	A	25, 40, 63, 80	
RATED RESIDUAL OPERATING CURRENT	$I_{\Delta n}$	mA	<b>NFIBK:</b> 30, 100, 300, 500	<b>NFIBS:</b> 100, 300, 500
FREQUENCY RESPONSE RANGE	$f$	Hz	0 - 1000	
RATED MAKING AND BREAKING CAPACITY = RATED RESIDUAL MAKING AND BREAKING CAPACITY	$I_m = I_{Am}$	A	800	
MAX. BACK-UP FUSE SHORT-CIRCUIT CURRENT	$I_v$	A	63 ( $I_n = 25 - 40$ A) 80 ( $I_n = 63, 80$ A)	
RATED CONDITIONAL SHORT-CIRCUIT CURRENT	$I_{rc}$	kA	10	
TERMINAL CAPACITY	$S$	mm <sup>2</sup>	1 ... 35	
MAX. BREAK TIMES		ms	NFIBK: $1 \times I_{\Delta n} \leq 300$ ms; $5 \times I_{\Delta n} \leq 40$ ms NFIBS: $1 \times I_{\Delta n} \leq 500$ ms; $5 \times I_{\Delta n} \leq 150$ ms	
MIN. NON-OPERATING TIMES		ms	NFIBK: 10 ms NFIBS: $1 \times I_{\Delta n} \leq 130$ ms; $5 \times I_{\Delta n} \leq 50$ ms	
MAINS CONNECTION			EITHER TOP OR BOTTOM	
AMBIENT TEMPERATURE		°C	-25 ... +55 (80 A TO +40 °C)	
STORAGE TEMPERATURE		°C	-30 ... +60	
TIGHTENING TORQUE		Nm	2.0	

Note: Rated frequency 60 Hz on request.



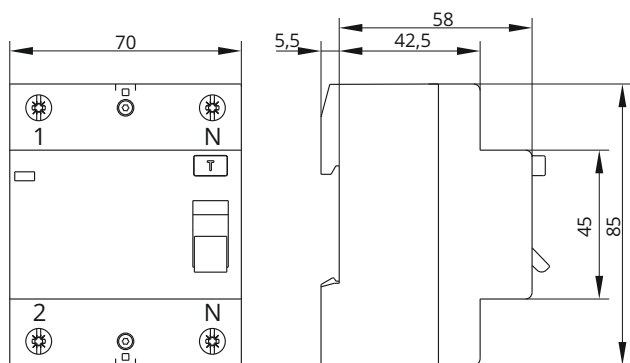
**FOR FREQUENCIES**  
**UP TO 1 kHz**  
**UP TO 1 kHz**  
**UP TO 1 kHz**

# RESIDUAL CURRENT CIRCUIT BREAKERS

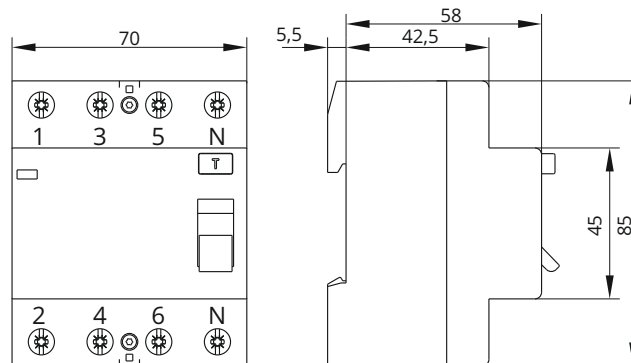
## NFIB

### DIMENSIONS

#### TWO-POLE

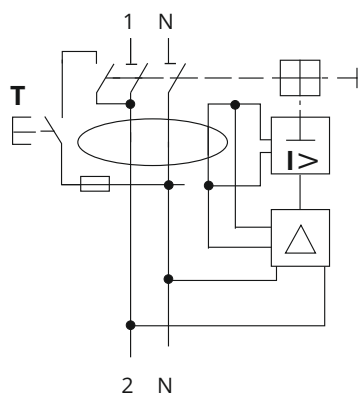


#### FOUR-POLE

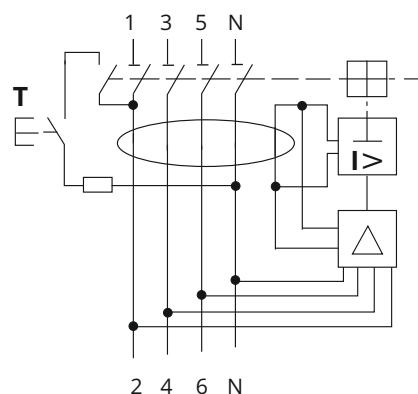


### SHEMATICS

#### TWO-POLE



#### FOUR-POLE



### ORDERING DATA

**NF12BK - 25 / 0.03**  
**NF14BS - 63 / 0.3**

..... RATED RESIDUAL OPERATING CURRENT  $I_{\Delta n}$  (A)  
 ..... RATED CURRENT  $I_n$  (A)  
 ..... TYPE



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