




Earth-fault release, 30mA, 4p, bottom

Part no. **NZM1-4-XFI30U**  
 Catalog No. **104612**  
 Alternate Catalog No. **NZM1-4-XFI30U**

## Delivery program

Description			Earth-fault release to IEC/EN 60947-2 not UL/CSA approved Suitable for use in three- and single-phase systems Pulse-current sensitive type A according to core-balance principle For 4 pole NZM1-4 circuit-breakers and N1-4 switch-disconnectors Supply voltage-dependent $U_e = 200 - 415 \text{ V } 50/60 \text{ Hz}$ Control knobs, sealable. Bottom mounting up to 100 A
Contact sequence			
<b>For use with</b>			
For use with			NZM1-4 N1-4
Pole			4 pole
<b>Notes</b>			
<p>With <math>I_{\Delta n} = 0.03 \text{ A}</math>: delay time <math>t_v</math> always fixed setting at 10 ms.</p> <p>Alarm message &gt; 30 % <math>I_{\Delta n}</math> by yellow LED.</p> <p>Trip indication max. 2 auxiliary contacts (HIAFI) can be fitted by user: N/O = M22-K01, N/C = M22-K10 are reset via the reset toggle lever.</p> <p>If the trip-indicating auxiliary contact in the fault current block is used, the N/C contacts operates as a N/O contact and the N/C contact operates as an N/O contact.</p> <p>Double contact not permissible.</p> <p>Not in combination with insulated enclosure or main switch assembly kit for side panel mounting with mounting bracket</p> <p>NZM1-XFI...R can not be used in combination with lower cover NZM1-XUSA.</p> <p>NZM1-XFI...U not in combination with shunt or undervoltage release, early-make auxiliary contacts.</p> <p>Rated ultimate short-circuit breaking capacity is determined by the fitted NZM1, NS1.</p> <p>If a switch-disconnector N1 is applied by the back-up fuse to be used → Technical data.</p>			

## Technical data

### Electrical

Standards			IEC/EN 60947-2 IEC/EN 60947-2 annex B
Sensitivity			Pulse-current sensitive as per core-balance principle (type A)
Min. operating voltage	$U_e$	V	
or detection of fault currents type A/AC			80 V (dependent on mains voltage)
Suitability for the application			in three-phase systems
Rated operational voltage	$U_e$	V AC	200...415 (3~)
Rated frequency	f	Hz	50/60
Number of poles			4-pole
Rated current range	$I_n$	A	15...100
Rated fault currents	$I_{\Delta n}$	A	0.03
Detection range of the fault current			50/60 Hz
Rated ultimate short-circuit making capacity and rated ultimate short-circuit breaking capacity	$I_{\Delta m}$	A	= $I_{CU}$
Mechanical shock resistance (IEC 60068-2-27)			20 (half-sinusoidal shock 20 ms)
Lifespan, mechanical (50 % with fault current)	Operations		20000

### Mechanical

Standard front dimension		mm	45
Mounting			Bottom
Mounting position			Vertical and 90° in all directions

Supply			NZM1 from above
Degree of protection			IP20 in the operating component area
Ambient temperature			-5 - +40
Terminal capacity			
Flexible without ferrule		mm <sup>2</sup>	wie NZM1 Standardklemme
flexible with ferrules		mm <sup>2</sup>	such as NZM1 standard terminal

## Design verification as per IEC/EN 61439

Technical data for design verification			
Operating ambient temperature min.		°C	-5
Operating ambient temperature max.		°C	40
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## Technical data ETIM 7.0

Low-voltage industrial components (EG000017) / Residual current release for power circuit breaker (EC001021)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Fault current switch for circuit breakers (ecl@ss10.0.1-27-37-04-11 [AKF009013])			
Rated control supply voltage Us at AC 50HZ		V	200 - 415
Rated control supply voltage Us at AC 60HZ		V	200 - 415
Rated control supply voltage Us at DC		V	0 - 0
Rated fault current		A	0.03 - 0.03
Max. power on-delay time		ms	30
Delay adjustable			No
Max. rated operation voltage Ue		V	415

## Dimensions

