



Description



- Residual Current Devices
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Universal tripping signal switch, can be mounted subsequently
- Auxiliary switch Z-HK can be mounted subsequently
- Contact position indicator red - green
- Tripping indicator white - blue
- Additional safety
 - possibility to seal
 - possibility to lock in ON and OFF position
- Suitable for being used with standard fluorescent tubes with or without electronical ballast (30mA-RCD: 30 units per phase conductor).
Notes: Depending of the fluorescent lamp ballast manufacturer partly more possible. Symmetrical allocation of the fluorescent lamp ballasts on all phases favourably. Shifting references of the fluorescent lamp ballast manufacturer consider.
- The device functions irrespective of the position of installation
- Tripping is line voltage-independent. Consequently, the RCD is suitable for "fault current/residual current protection" and "additional protection" within the meaning of the applicable installation rules
- Mains connection at either side
- The 4-pole device can also be used for 3- and 2-pole connection. See connection possibilities.
- The test key "T" must be pressed every year. The system operator must be informed of this obligation and his responsibility in a way that can be proven. The yearly test interval is only valid for residential and similar applications. Under all other conditions (e.g.

damply or dusty environment), it's precommended to test in shorter intervals (e.g. monthly). A test is further needed if red and yellow LED are on together.

- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement (RE), or proper checking of the earth conductor condition redundant, which must be performed separately.
- Functioning
 - The green LED becomes active at 0-30% $I_{\Delta n}$
 - The yellow LED becomes active at 30-50% $I_{\Delta n}$
 - The red LED becomes active at >50% $I_{\Delta n}$
- Potential-free relay (NO contact, in parallel with the yellow LED, up to 1 A ohmic load / 230 V~) for external prewarning function. Bistabile, means the warning stays on also when the breaker trips, until reset.
- Type -GA: Protects against special forms of residual pulsating DC which have not been smoothed. High reliability against unwanted tripping. Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping
- Type -SA: Selective residual current device sensitive to AC. Compulsory for systems with surge arresters downstream of the RCD. Additionally protects against special forms of residual pulsating DC which have not been smoothed
- Type -U: Suitable for speed-controlled drives with frequency converters in household, trade, and industry. Unwanted tripping is avoided thanks to a tripping characteristic designed particularly for frequency converters.

Accessories:

Auxiliary switch for subsequent installation to the left	Z7HK	248432
Tripping signal contact for subsequent installation to the right	ZP9NHNK	156906
Remote control and automatic switching device	FW7LP	248296

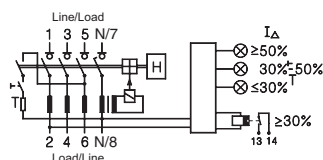
Residual Current Devices F9 Digital - Technical Data

Technical data

Electrical

Design according to		IEC/EN 61008 Type G and GA acc. to ÖVE E 8601
Current test marks as printed onto the device		
Tripping		instantaneous
Type GA		10 ms delay
Type SA		40 ms delay - selective disconnecting function
Type U (only 30 mA)		10 ms delay
Type U (without 30 mA)		40 ms delay - selective disconnecting function
Rated voltage	U _n	230/400 V AC, 50 Hz
Minimum operational voltage electronic		50 - 254 V AC
Minimum operational voltage test circuit		196 - 264 V AC
Rated tripping current	I _{Δn}	30, 300 mA
Sensitivity		AC and pulsating DC
Rated insulation voltage	U _i	440 V
Rated impulse withstand voltage	U _{imp}	4 kV (1.2/50 μs)
Rated short circuit strength	I _{cn}	10 kA
Peak withstand current		
Type G, G/A, R, U (30mA)		3 kA (8/20 μs) surge current proof
Type S/A, U (without 30mA)		typ. 5 kA (8/20 μs) selective + surge current proof
Electrical isolation		> 4 mm contact space
Maximum back-up fuse		Short circuit and overload protection
I _n = 16-63 A		63 A gG/gL
I _n = 80 A		80 A gG/gL
In the case that the maximal possible operating current of the electrical installation don´t exceed the rated current of the RCD only short circuit protec- tion must be implemented.		
Overload protection must be implemented in the case if the maximal possible operating current of the electrical installation can exceed the rated cur- rent of the RCD.		
Endurance		
electrical components		≥ 4,000 switching operations
mechanical components		≥ 20,000 switching operations
Mechanical		
Frame size		45 mm
Device height		80 mm
Device width		70 mm (4MU)
Mounting		quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in		IP40
Degree of protection in moisture-proof enclosure		IP54
Upper and lower terminals		open mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1.5 - 35 mm² single wire 2 x 16 mm² multi wire
Terminal screw		M5 (Pozidriv PZ2)
Terminal torque		2 - 2.4 Nm
Terminal capacity warning contact(s)		0.25 - 1.5 mm2 (plug in terminals)
Busbar thickness		0.8 - 2 mm
Tripping temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		25-55°C/90-95% relative humidity according to IEC 60068-2
Real contact position indicator		red / green
Tripping indicator		white / blue

Connection diagram



Local Indication RCCB

Status indication LED

Permanent light green



red / yellow / green

Normal operation

Permanent light yellow



The measured residual current is bigger than 30% of the nominal tripping value.

Permanent light red

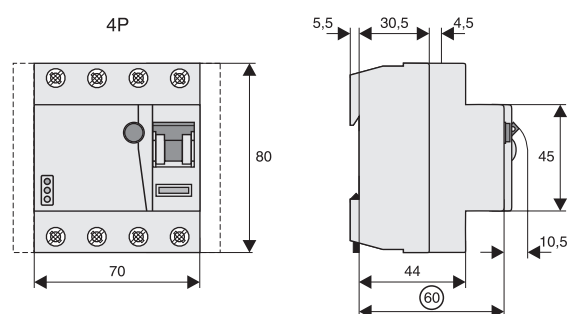


The measured residual current is bigger than 50% of the nominal tripping value.

Remote Indication

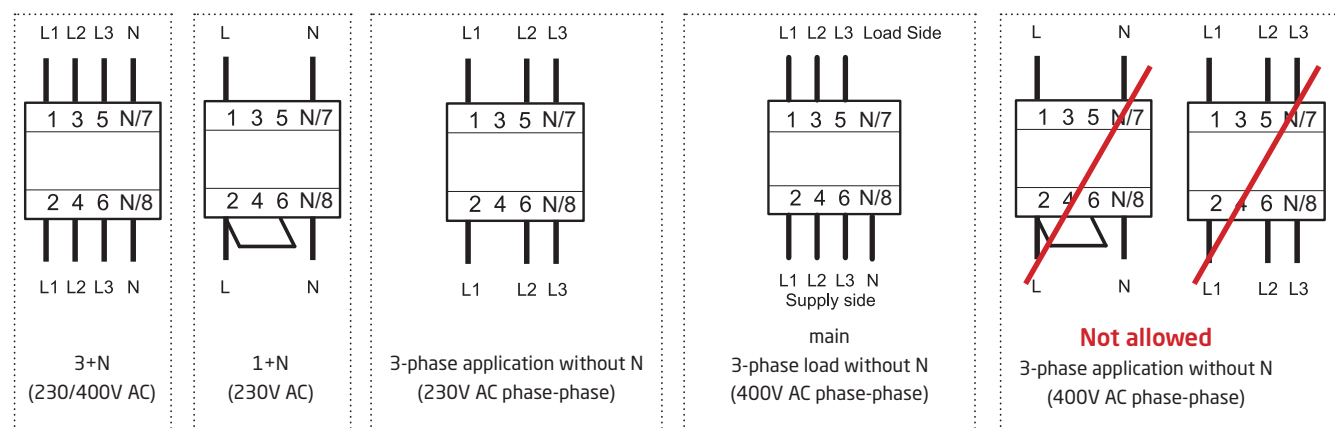
Standard Version	1 contact NO up to 230V AC, 2 terminals, 1 A ohmic load
Terminal capacity of contacts	0.25 - 1.5 mm ²

Dimensions (mm)



Correct connection

30, 300mA types:



Electronic works within 50-254 V AC !

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Product range

I_n (A)	$I_{\Delta n}$ (mA)	Code	Article	Remark
25	30	120834	F9254003DGA	Standard model
25	300	120835	F925403DGA	Standard model
40	30	120836	F9404003DGA	Standard model
40	300	120837	F940403DGA	Standard model
63	30	120838	F9634003DGA	Standard model
63	300	120839	F963403DGA	Standard model
80	30	120840	F9804003DGA	Standard model
80	300	120841	F980403DGA	Standard model
40	300	120843	F940403DSA	Selective
63	300	120844	F963403DSA	Selective
80	300	120845	F980403DSA	Selective
40	30	120850	F9404003DU	For environments with speed controllers
40	300	120851	F940403DU	For environments with speed controllers
63	30	120846	F9634003DU	For environments with speed controllers
63	300	120847	F963403DU	For environments with speed controllers
80	300	120848	F980403DU	For environments with speed controllers