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**FLUSH-MOUNT VERSION**

R1D type

- 1 operation threshold
- External toroidal transformer
- Adjustable tripping  $I\Delta n$  and delay time.



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**FLUSH-MOUNT VERSION**

R2D type

- 2 operation thresholds
- External toroidal transformer
- Configurable fail safe operation
- Adjustable tripping  $I\Delta n$  and delay time.

R3D type

- 2 operation thresholds
- External toroidal transformer
- Configurable fail safe operation
- Flag indicator
- Adjustable tripping  $I\Delta n$  and delay time.



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**FLUSH-MOUNT VERSION**

R4D type

- 2 operation thresholds
- External toroidal transformer
- Configurable fail safe operation
- Fault current measurement
- Digital display
- Flag indicator
- Shunt tripping circuit
- Adjustable tripping  $I\Delta n$  and delay time.



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**MODULAR VERSION**

RM1 type

- 1 operation threshold
- External toroidal transformer
- Fixed tripping  $I\Delta n$  and delay time.

RM type

- 1 operation threshold
- External toroidal transformer
- Adjustable tripping  $I\Delta n$  and delay time.



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**MODULAR VERSION**

RMT type

- 1 operation threshold
- Incorporated toroidal transformer
- Adjustable tripping  $I\Delta n$  and delay time.



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**COMPACT INTERNAL PANEL VERSION**

RC type

- 1 operation threshold
- Incorporated toroidal transformer
- Adjustable tripping  $I\Delta n$  and delay time
- 35mm to 110mm diameter.



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**TOROIDAL CURRENT TRANSFORMERS**

RT type

- Solid core
- 35mm to 210mm diameter.

RTA type

- Split core
- 110mm and 210mm diameter.



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**EXTERNAL MULTIPLIER**

RX10 type

- 10-fold multiplier.



## Relays with 2 operation thresholds



R2D...



R3D...



R4D...

Ordering code	Rated auxiliary supply voltage	Output contacts	Qty per pkg	Wt
	[V]	2 SPDT	n°	[kg]

**2 OPERATION THRESHOLDS.**  
Flush mount. External CT. Fail safe.

<b>R2D 415</b>	110-240-415V <sup>①</sup>	2	1	0.395
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**2 OPERATION THRESHOLDS.**  
Flush mount. External CT.  
Fail safe. Flag Indicator.

<b>R3D 415</b>	110-240-415V <sup>①</sup>	2	1	0.405
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**2 OPERATION THRESHOLDS.**  
Flush mount. External CT.  
Fault current measurement. Digital display.  
Fail safe. Flag indicator.

<b>R4D 415</b>	110-240-415V <sup>①</sup>	2	1	0.570
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<sup>①</sup> Supply voltage:  
110...125VAC (50/60Hz)  
220...240VAC (50/60Hz)  
380...415VAC (50/60Hz).

### General characteristics

- Earth leakage relay type A
- 2 output relays each with changeover contact, configurable 2 tripping or 1 tripping and 1 alarm
- Configurable fail safe prealarm and operation
- Automatic toroid connection control
- Green power LED indicator (ON)
- Red relay tripped LED indicator (TRIP)
- Red tripping prealarm LED indicator (ALARM)
- Front TEST button
- Manual resetting by front RESET button or remote contact closing
- Automatic resetting by remote contact closing or rear jumper connection
- Constant toroid-relay circuit control
- Flag indicator (TRIP MEMORY) (R3D-R4D only)
- Digital fault current measurement and display with configurable tripping value memory (R4D only)
- Shunt tripping circuit operating test (TCS) (R4D only)
- Flush mount 96x96mm/3.78"x3.78" housing with transparent cover
- IEC degree of protection: IP20 terminals, IP40 on front with cover.

### ADJUSTMENTS FOR R2D and R3D

- Configurable tripping set-point (IΔn): 0.025...0.25A  
0.25...2.5A  
2.5...25A  
25...250A (with external multiplier RX10)
- Prealarm set-point: fixed 70%
- Configurable tripping delay time (t): 0.02...0.5s  
0.2...5s.

### ADJUSTMENTS FOR R4D

- Configurable tripping set-point (IΔn): 0.03...0.3A  
0.3...3A  
3...30A  
30...300A (with external multiplier RX10)
- Prealarm set-point: fixed 70%
- Configurable tripping delay time (t): 0.03...0.5s  
0.3...5s.

### Certification and compliance

Certification obtained: EAC.  
Compliant with standards: IEC/EN 60947-2.

## Toroidal current transformers



31 RT...



31 RT...

Order code	Diameter	Openable	Qty per pkg	Wt.
	[mm/in]		n°	[kg]
<b>31 RT 35</b>	35/1.38"	No	1	0.200
<b>31 RT 60</b>	60/2.36"	No	1	0.245
<b>31 RT 80</b>	80/3.15"	No	1	0.410
<b>31 RT 110</b>	110/4.33"	No	1	0.400
<b>31 RT 210</b>	210/8.27"	No	1	1.200
<b>31 RTA 110</b>	110/4.33"	Yes	1	0.540
<b>31 RTA 210</b>	210/8.27"	Yes	1	1.820

### Certification and compliance

Certification obtained: EAC.  
Compliant with standards: IEC/EN 60947-2.

## External multiplier



31 RX 10

Order code	Description	Qty per pkg	Wt
		n°	[kg]
<b>31 RX 10</b>	10-fold multiplier suitable for R1D, RM, R2D, R3D and R4D types only	1	0.300

### General characteristics

- To connect between toroid and relay.

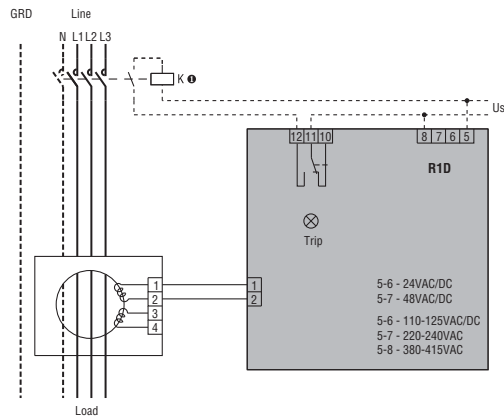
### Certification and compliance

Certification obtained: EAC.  
Compliant with standards: IEC/EN 60947-2.

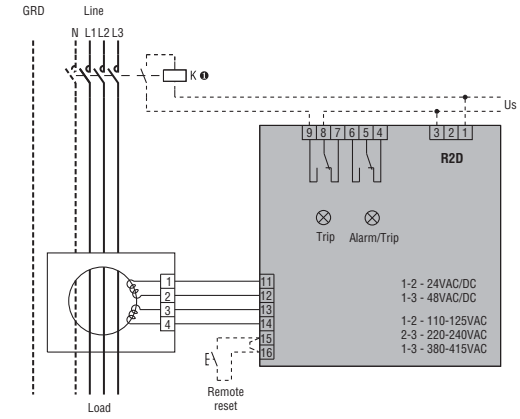


### EARTH LEAKAGE RELAYS

#### R1D

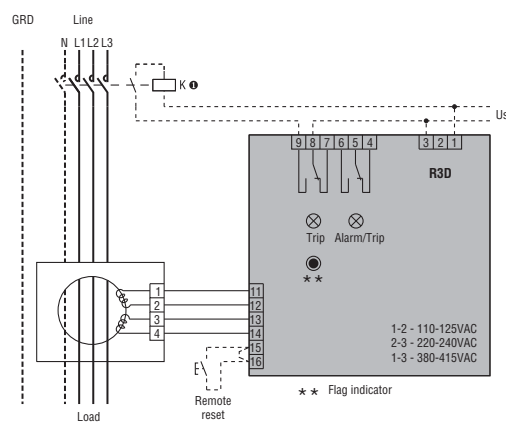


#### R2D



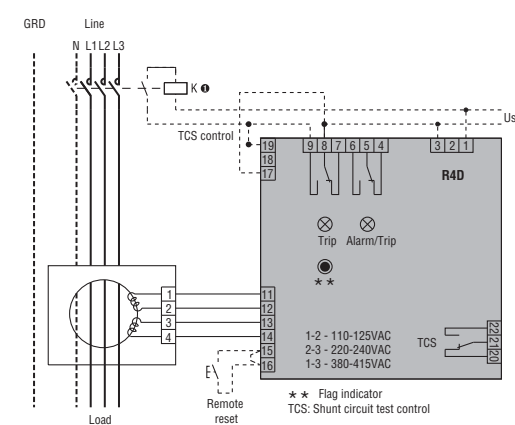
❶ The coil connection can vary depending on the connected type of device (contactor, breaker with shunt trip release or breaker with undervoltage trip release).

#### R3D



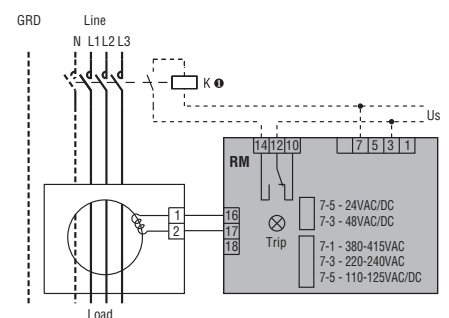
❶ The coil connection can vary depending on the connected type of device (contactor, breaker with shunt trip release or breaker with undervoltage trip release).

#### R4D



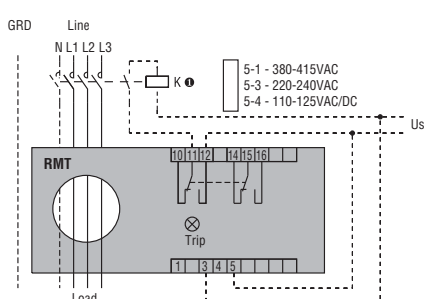
Type	Us	Us Wiring	TCS Wiring
R4D 415	110-125VAC	1-2	17-18
	220-240VAC	2-3	17-18
	380-415VAC	1-3	17-19

#### RM - RM1

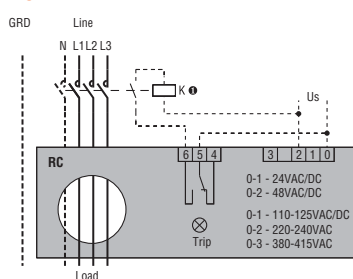


❶ The coil connection can vary depending on the connected type of device (contactor, breaker with shunt trip release or breaker with undervoltage trip release).

#### RMT



#### RC



❶ The coil connection can vary depending on the connected type of device (contactor, breaker with shunt trip release or breaker with undervoltage trip release).

## 16 Earth leakage relays

## Technical characteristics

TYPE	R1D <sup>①</sup>	R2D <sup>①</sup>	R3D <sup>①</sup>	R4D <sup>①②③</sup>
DESCRIPTION	Flush mount with transparent cover, 1 operating threshold	Flush mount with transparent cover, 2 operating thresholds constant toroid-relay circuit control	Flush mount with transparent cover, 2 operating thresholds constant toroid-relay circuit control	Flush mount with display and cover, 2 operating thresholds - constant toroid-relay circuit control
CONTROL CIRCUIT	External (see types given on page 16-3)			
Toroidal transformer				
Adjustments	0.025...0.25A (x0.1) 0.25...2.5A (x1) 2.5...25A (x10) 25...250A (external multiplier)			0.03...0.3A (x0.1) 0.3...3A (x1) 3...30A (x10) 30...300A (external multiplier)
Tripping set-point (I $\Delta$ n)				
Prealarm set-point	—	70% I $\Delta$ n (fixed)	70% I $\Delta$ n (fixed)	70% I $\Delta$ n (fixed)
Tripping delay time (t)		0.02...0.5s (tx1) 0.2...5s (tx10)		0.03...0.5s (tx1) 0.3...5s (tx10)
Selection of multiplier for I $\Delta$ n and t	By dip switches			
Resetting	Configurable automatic or manual by button on front <sup>②</sup>	Automatic by remote contact closing or rear jumper connection Manual by button on front or remote contact closing		
Shunt circuit control	—	—	—	Yes
AUXILIARY SUPPLY				
Auxiliary voltage U <sub>s</sub> (0.85 - 1.1 U <sub>s</sub> limit)	24-48VAC/DC 110...125VAC/DC 220...240/380...415VAC	— 110...125/220...240/380...415VAC		
Rated frequency	50...60Hz			
Power consumption (maximum)	4VA			
RELAY OUTPUTS				
State	Normally de-energised	Configurable normally de-energised or energised	Configurable normally de-energised or energised	Configurable normally de-energised or energised
Contact arrangement	1 changeover SPDT (trip)	2 changeover SPDT each (configurable: 2 trip or 1 trip and 1 alarm)		
Rated contact capacity IEC I <sub>th</sub>	5A - 250VAC			
Electrical life	3 x 10 <sup>6</sup> cycles			
Mechanical life	50 x 10 <sup>6</sup> cycles			
INSULATION				
Power frequency withstand voltage	2.5kV for 60s			
INDICATIONS				
Auxiliary voltage available (ON)	Green LED			
Relay tripping (TRIP)	Red LED			
Trip prealarm (ALARM)	—	Red LED	Red LED	Red LED
Mechanical (TRIP MEMORY)	—	—	Flag indicator	Flag indicator
Shunt circuit tripping (TCS)	—	—	—	Red LED
CONNECTIONS				
Type of terminals	Fixed		Removable, plug-in	
Tightening torque maximum	0.5Nm (4.5lbin)			
Conductor section min...max	0.2...2.5mm <sup>2</sup> (24...12AWG)			
AMBIENT CONDITIONS				
Operating temperature	-10...+60°C			
Storage temperature	-20...+80°C			
Relative humidity	≤90%			
HOUSING				
Material	Self-extinguishing polycarbonate			

① Type A, sensitive to residual sinusoidal AC and pulsating DC currents.

② Remote resetting by removing power for more than 1 second.

③ Digital display of fault current measurement and tripping value memory.

# 16 Earth leakage relays

## Technical characteristics

	RM1... <sup>①</sup>	RM... <sup>①</sup>	RMT... <sup>①</sup>	RC... <sup>①</sup>
	Modular with transparent cover, 1 operating threshold	Modular with transparent cover, 1 operating threshold	Modular with transparent cover, 1 operating threshold	Compact, 1 operating threshold
	External (see types given on page 16-3)	External (see types given on page 16-3)	Incorporated Ø28mm/1.1"	Incorporated 35-60-80-110mm/ 1.38-2.36-3.15-4.33" standard diameter
	0.3A or 0.5A only	0.025...0.25A (x0.1) 0.25...2.5A (x1) 2.5...25A (x10) 25...250A (external multiplier)	0.025...0.25A (x0.1) 0.25...2.5A (x1) 2.5...25A (x10)	0.025...0.25A (x0.1) 0.25...2.5A (x1) 2.5...25A (x10)
	—	—	—	—
	0.02s or 0.5s only	0.02...0.5s (tx1) 0.2...5s (tx10)	0.02...0.5s (tx1) 0.2...5s (tx10)	0.02...0.5s (tx1) 0.2...5s (tx10)
	By dip switches			
	Configurable A: Automatic or M: Manual by button on front			
	—			
	24-48VAC/DC		—	24-48VAC/DC
	110...125VAC/DC 220...240/380...415VAC			
	50...60Hz			
	3VA			
	Normally de-energised	Normally de-energised	Configurable normally de-energised or energised	Normally de-energised
	1 changeover SPDT (trip)	1 changeover SPDT (trip)	2 changeover SPDT each (both trip)	1 changeover SPDT (trip)
	5A - 250VAC			
	3x10 <sup>5</sup> cycles			
	50x10 <sup>6</sup> cycles			
	2.5kV for 60s			
	Green LED			
	Red LED			
	—			
	—			
	—			
	Fixed			
	0.5Nm (4.5lbin)			
	0.2...2.5mm <sup>2</sup> (24...12AWG)			
	-10...+60°C			
	-20...+80°C			
	≤90%			
	Self-extinguishing polycarbonate			

<sup>①</sup> Type A, sensitive to residual sinusoidal AC and pulsating DC currents.