RP - Series
RCCB Earth Leakage Circuit Breakers

RCCB Series compact Earth Leakage Circuit Breakers detect and interrupt earth (ground) faults. They are VDE approved for the European system of protecting people, animals, equipment and property from dangerous line-to-ground and shock hazard currents.

US applications include ground-fault protection of equipment (GFPE) using the 10mA and 30mA fault current ratings, especially when high distributed capacitance or other leakages cause excessive nuisance trips at lower fault currents. Applications for the 300mA and 500mA ratings are equipment protection and fire prevention, limiting the energy of a fault to less than the minimum ignition energy for many materials.

Type Designation

RP **(a)** **(b)** **(c)**

(a) = 2-2 pole; 4-4 pole
(b) = 1-16A; 2-25A; 3-40A; 4-63A; 5-80A; 6-100A; 7-125A
(c) = 01 - 10mA
= 03 - 30mA
= 30 - 300mA
= 50 - 500mA

RP2

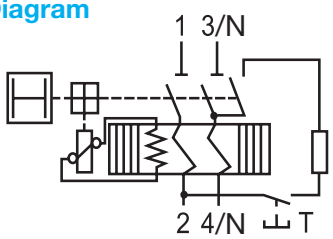
RP4

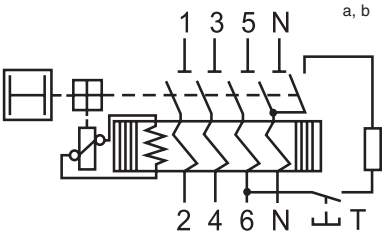
Maximum Rated Line Current	Fault Trip Current	Cat. No.	Fault Trip Current	Cat. No.
16A	10mA	**RP2101**		
25A	30mA	**RP2203**	30mA	**RP4203**
25A	300mA	**RP2230**	300mA	**RP4230**
25A			500mA	RP4250
40A	30mA	**RP2303**	30mA	**RP4303**
40A	300mA	**RP2330**	300mA	**RP4330**
40A			500mA	RP4350
63A	30mA	RP2403	30mA	**RP4403**
63A	300mA	RP2430	300mA	**RP4430**
63A	500mA	RP2450	500mA	RP4450
80A			30mA	RP4503
80A			300mA	RP4530
80A			500mA	RP4550
100A			30mA	RP4603
100A			300mA	RP4630
100A			500mA	RP4650
125A			30mA	RP4703
125A			300mA	RP4730
125A			500mA	RP4750

Stock items are shown in BOLD.

Voltage Rating (maximum)	230V AC, 50Hz	400Y/230V AC, 50Hz
Short Circuit Withstand Rating	No back-up fuse: Rated current (RC) 16/25/40A: 500A; RC 63/80A: 800A; RC 100A: 1000A; RC 125A-1250A. With back-up fuse: 10kA; Size of fuse: (2 pole version): RC 25/40/63: 100A; (4 pole version): RC 25/40/63A: 100A; RC 80/100/125A: 125A	
Fault Trip Current Calibration	FI trips are calibrated at less than fault trip current for ensured safety (Typical trip range between 66.6-83.3% fault trip current, e.g., typical trip at 20-25mA for fault RC of 30mA)	
Typical Life	Fully functional after 5,000 operations to DIN/VDE 0664T10, IEC 61008-1 and 2000 additional fault current trips.	
Standard Pack and Weight	1/230g (0.6 lb.)	1/420-460g (0.9 lb.-1.0 lb.)
Terminal Size Acceptability	1.5-50mm^2 (16-1 AWG)	1.5-50mm^2 (16-1 AWG)
Terminal Torque	3Nm (26.5 lb.in.)	3Nm (26.5 lb.in.)

Circuit Diagram



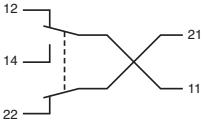


[a] For 2-Phase applications, terminal 5 and 6 (next to Neutral terminals) must be connected to one phase for the test circuit to be operable.

[b] For voltage systems without a neutral conductor. Please use jumper from "1" or "3" to top "N" terminal. This will assure proper functioning of the "test" circuit.

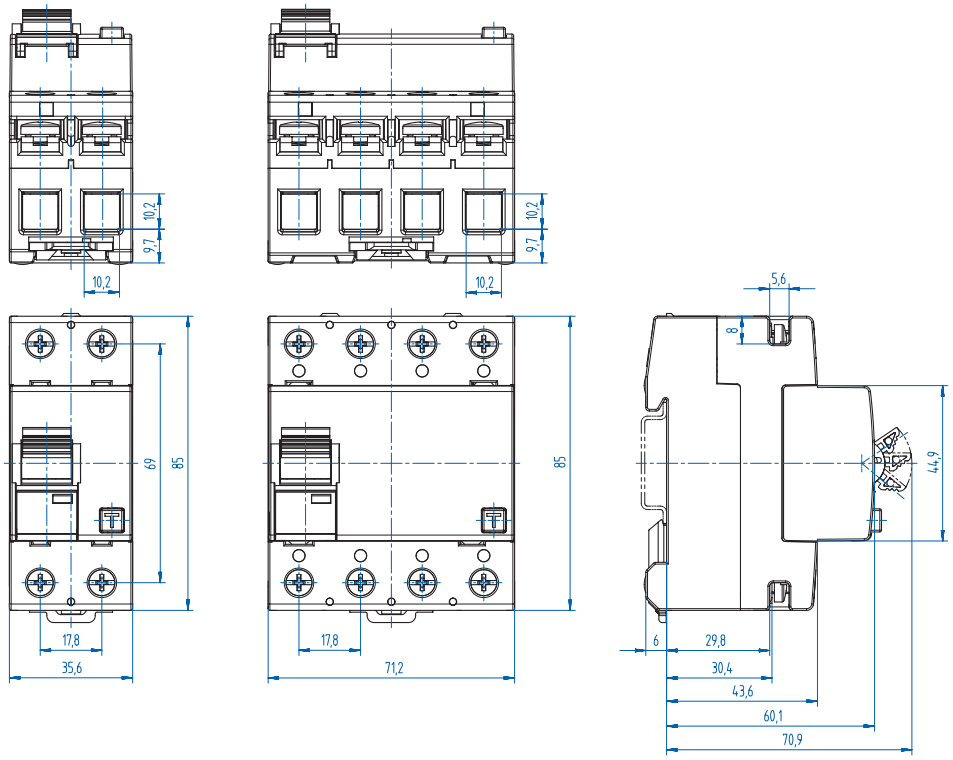
Note: If the power system has a marked conductor, it must connect through the FI and not be grounded at any point downstream.

RH11 - Auxiliary Contact and Signal Switch (switchable) (C.O./N.C.)

Contact Rating	Wire Size	Torque	Cat. No.	Circuit Diagram
6A / 230V AC 1A / 110V DC	1-1.5mm^2 (16 AWG)	max. 0.8Nm (7lb.in.)	**RH11**	

Std. Pk.: 1
Unit Weight: 45 grams (0.12 lb.)
Width: 9mm (.354in.)

Dimensions in mm



RP2 **RP4** **RP2 and RP4**

Temperature Range	Environmental Information marked with “Snowflake” approval for -25°C to 40°C (-13°F to 104°F) ambient temperature. (Temperature effect on RC: for every 10°C temperature rise above 40°C decrease RC by 7%.)
Fluctuating Climate Conditions	According to IEC 60068-2-30: heat (25°C~55°C), relative humidity (93%~95%)
Electrical Shock Protection	Uninsulated electrically live parts within 30mm of the operating handle are “finger safe” (terminal screw heads) and uninsulated live parts within 100mm of the operating handle are “back-of-hand safe” (terminals).
Impact/Shock Protection	20g with impact force half-cycle sinusoidal and 20ms duration, 18 impacts total with 6 on each principal axis (3 impacts each face). FI is DIN Rail mounted during the test, and electrically loaded with 25% of Fault RC. Successful testing required no trip during the test, no damage and no loosened parts.
Vibration/Seismic Resistance	5g, at frequency of ≤80Hz, applied for 30 minutes along each of the three principal axes, plus 5 minutes of application at every established critical resonant frequency. FI is DIN Rail mounted during the test, and loaded with 25% Fault RC. To pass, the FI did not trip at 25% Fault RC, but did trip between each of the principal axis tests when the fault current was raised to 125% Fault RC, and there was no damage and no loosened parts. Suitable for machinery and mobile vehicle applications.
Protection Class	IP20; higher protection Class is dependent on housing.
Non-Sinusoidal Fault	The FI is tested and approval stamped for tripping sensitivity to non-sinusoidal fault currents, which become zero or almost zero within one cycle of the line frequency. Waveforms and allowed trip-current ranges are as follows: 1. AC Sinusoidal Fault - 0.5-1.0 times Fault RC 2a. Pulsating DC Fault; Positive and Negative Half-Waves - 0.35-1.4 times Fault RC 2b. Phased Half-Wave, 90° - 0.25-1.4 times Fault RC Phased Half-Wave, 135° - 0.11-1.4 times Fault RC 3. Pulsating DC on 6mA DC (continuous) Base - Max. 1.4 times Fault RC + 6mA
Insulation Category	At VDE rated voltage, suitable for Class C environments with relatively high dust and moisture levels and little HVAC control, e.g., industrial, commercial, agricultural; on machine tools, hoists, warehouse equipment, etc.; in boiler rooms, unheated storage, covered shipping/receiving, open workshops, etc.