



Models Available

- RN-0.03** Fixed Instantaneous 30mA trip point
- RN-0.3** Fixed Instantaneous 300mA trip point
- RN-R** Selectable 30mA to 5A trip point and 20ms to 5 second delay

Core Balance Transformers

- VN35** 35mm hole
- VN70** 70mm hole
- VN105** 105mm hole
- VN140** 140mm hole
- VN210** 210mm hole

Product Features

- 3 phase earth leakage protection
- 30mA to 5A trip current
- Instantaneous or up to 5 second delay
- Test and reset functions
- DIN rail mounting enclosure

Earth Leakage Relays

Earth leakage relays monitor the leakage of current to earth on 3 phase electrical systems. The earth leakage relay is used in conjunction with a core balance transformer which are available in five different sizes to cover all sizes of three phase installations.

The relays are available with either a fixed 30mA or 300mA instantaneous trip point or with a user adjustable trip point and time delay both adjustable through rotary switches on the front of the relay. The relays are available auxiliary powered from either 110Vac or 230Vac.

All relays have reset and test functions and two LED's to indicate both power and trip status. The relays are DIN rail mounting and the RN-R has a clear front cover enabling a tamper-proof seal to be fitted if required.

For protection against the leakage of current to earth in 3 phase systems

Specification (Relay)

Trip Point, I_n :

- 30mA (RN-0.03), 300mA (RN-0.3)
- 30mA to 5A (RN-R) - see table
- Reset value $< 50\%I_n$

Relay Type:

- Type A relay with high frequency current filtering and high immunity
- Monitors true root mean square (TRMS)

Time Delay:

- RN-0.03 & RN-0.3 Instant ($< 40\text{ms}$)
- RN-R 0.02 to 5 seconds - see table

LED Indication:

- Green: 'On', Red: 'Trip'

Test Circuit:

- Manual push button

Relay Output:

- Single pole changeover contact
- 5A at 250Vac ($\cos\phi=1$) or 30Vdc
- 3A at 250Vac ($\cos\phi=0.4$)

Isolation:

- 2.5kV rms 50Hz for 1 minute between input / output / auxiliary

Power Supply:

- 110 or 230Vac $\pm 20\%$ (4VA)

Operating Temperature:

- -5°C to 50°C

Enclosure:

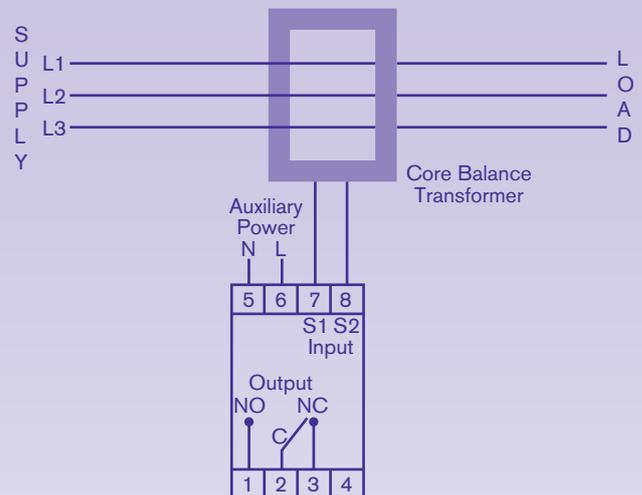
- Mount: 35mm DIN rail (DIN-EN 50022)
- Screw type terminals (4mm² entry)

Weight:

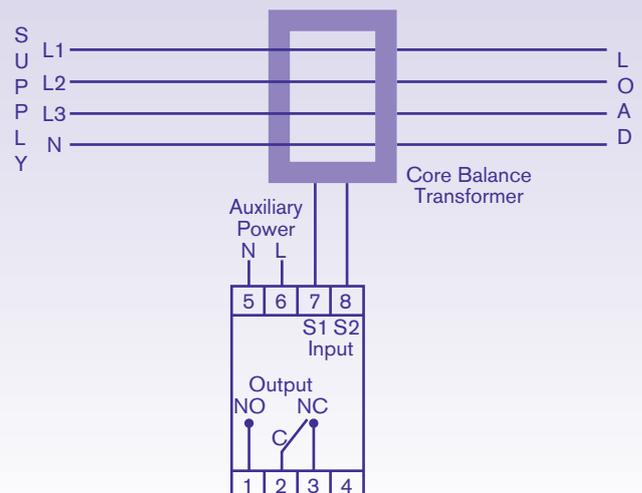
- 200g

Connections

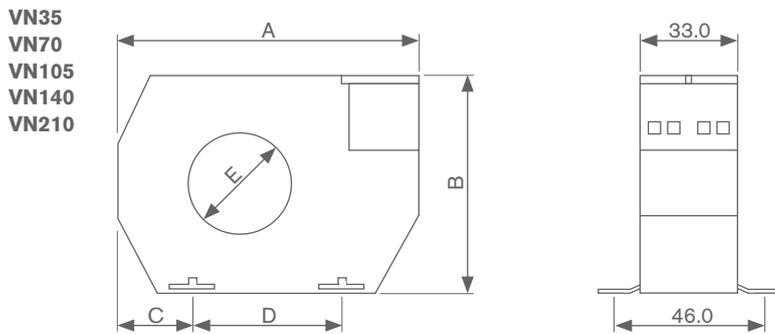
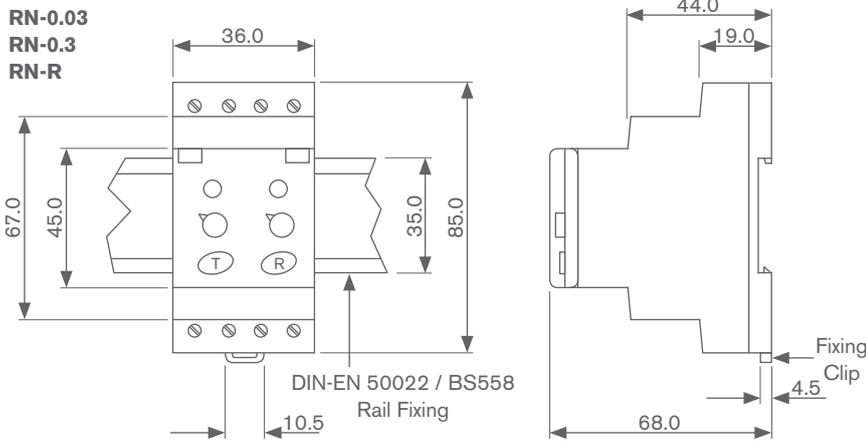
3 Phase 3 Wire



3 Phase 4 Wire



Dimensions



	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Weight (grams)
VN35	100	79	26	48.5	35	150
VN70	130	110	32	66	70	240
VN105	170	146	38	94	105	500
VN140	220	196	48.5	123	140	1200
VN210	299	284	69	161	210	2500

All dimensions in mm

Ordering information

Code	Relay	Auxiliary	Core Bal Trans.
RN-0.03	30mA Trip, Instantaneous	-	-
RN-0.3	300mA Trip, Instantaneous	-	-
RN-R	30mA to 5A Trip, 0.02 to 5 second Delay	-	-
110V	-	110Vac	-
230V	-	230Vac	-
VN35	-	-	35mm Internal Hole
VN70	-	-	70mm Internal Hole
VN105	-	-	105mm Internal Hole
VN140	-	-	140mm Internal Hole
VN210	-	-	210mm Internal Hole
Example	RN-R	110Vac	VN105

RN-R Switch Settings

Trip Point, In (Amps)	Time Delay (seconds)
0.03 (30mA)	0.02 (20ms)
0.1 (100mA)	0.1 (100ms)
0.3 (300mA)	0.3 (300ms)
0.5 (500mA)	0.5 (500ms)
1	1
3	3
5	5

LED Indication

Power LED	Trip LED	Indication
On	Off	System OK
Blinking	On	Transformer continuity failure
On	On	Relay tripped - earth fault
On	Blinking every 2 sec	Current 25-50% of trip level (RN-R only)
On	Blinking every 1 sec	Current 50-75% of trip level (RN-R only)
On	Blinking every 0.5 sec	Current 75-100% of trip level (RN-R only)

Specification (Relay) Continued

Markings:

- CE marked

Specification (Core Balance Trans.)

Maximum Operating Voltage:

- 720Vac

Test Voltage:

- 3kV rms 50Hz for 1 minute

Transformer Ratio:

- 1000:1

Calibration Temperature:

- 20°C ± 5°C

Operating Temperature:

- -5 to 50°C

Weight:

- See table

Markings:

- CE marked

Specification subject to change without notice.