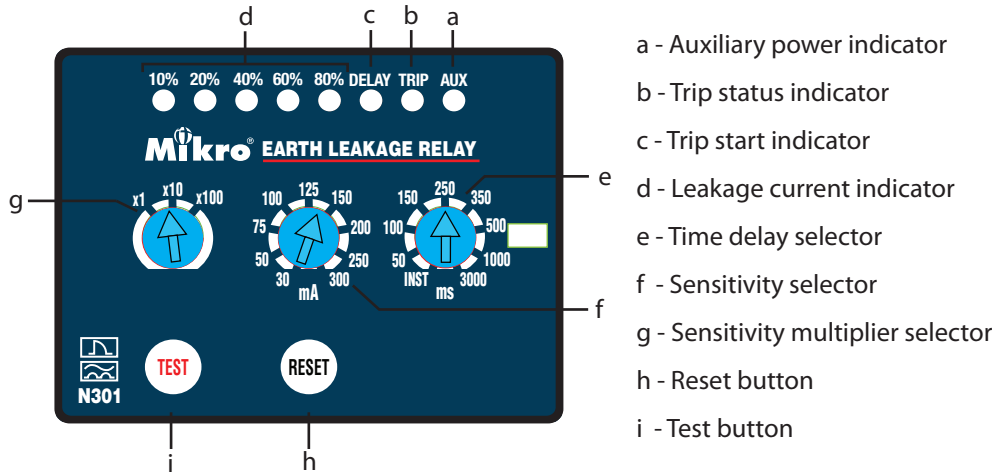


N301 Earth Leakage Relay User's Guide



- a - Auxiliary power indicator
- b - Trip status indicator
- c - Trip start indicator
- d - Leakage current indicator
- e - Time delay selector
- f - Sensitivity selector
- g - Sensitivity multiplier selector
- h - Reset button
- i - Test button

1. Light Indicator

(i) Status Indicators

Indicator			Status
Aux (a)	Trip (b)	Delay (c)	
Off	Off	Off	No auxiliary power
On	Off	Off	System normal, no tripping
On	Off	On	Trip start, time delay countdown started
On	On	Off	Earth leakage tripped

(ii) Leakage Indicators

a) The earth leakage indicators indicate the amount of leakage current detected and are expressed as percentage of the set current.

- 10% - leakage current \geq 10% of set current
- 20% - leakage current \geq 20% of set current
- 40% - leakage current \geq 40% of set current
- 60% - leakage current \geq 60% of set current
- 80% - leakage current $>$ 80% of set current

b) When the N301 detects absence of zero-phase current transformer (ZCT) connection, it will blink the leakage indicators.

2. Sensitivity Adjustment

The N301 features 2 rotary selector switches for sensitivity ($I_{\Delta n}$) setting:

- (i) 9- position sensitivity selector (f) offers setting range of 30mA, 50mA, 75mA, 100mA, 125mA, 150mA, 200mA, 250mA and 300mA.
- (ii) 3- position sensitivity multiplier selector (g) switch offers selection of 1x, 10x and 100x.

Example 1: To set $I_{\Delta n} = 100\text{mA}$

Step 1: Set sensitivity selector = 100mA

Step 2: Set sensitivity multiplier selector = 100x

$$I_{\Delta n} = 100\text{mA} \times 100 = 10\text{A}$$

3. Tripping Delay Time Adjustment

- The 9 position time delay selector (e) provides additional delay for fault discrimination.
- Selectable delay are: Instantaneous (no delay), 50ms, 100ms, 150ms, 250ms, 350ms, 500ms, 1s and 3s.

4. Push Button Operations

(i) Reset Button (h)

- The reset button is for resetting the light indicator and the trip contact after an earth leakage tripped.
- To reset, press the reset button once.

(ii) Test Button (i)

- Press and hold the test button for 3s to simulate an earth leakage trip condition.

5. Output Contact

(i) Trip Contacts

- These are a latching type contact. Both contacts operate when tripped.

6. Technical Data

Auxiliary Supply

N301-240AD..... 85 ~ 265 VAC or 110 ~ 370 VDC
 Supply frequency..... 50Hz or 60Hz
 VA rating..... Less than 3 VA typical

Setting Ranges

Sensitivity Setting.....30mA, 50mA, 75mA, 100mA, 125mA, 150mA,
 200mA, 250mA, 300mA, 500mA, 750mA, 1A,
 1.25A, 1.5A, 2A, 2.5A, 3A, 5A, 7.5A, 10A, 12.5A, 15A,
 20A, 25A and 30A.
 Time delay setting.....Instantaneous, 50ms, 100ms, 150ms, 250ms, 350ms,
 500ms, 1000ms and 3000ms.

Inputs

Sensor..... ZCT*

Output Contacts

Rated Voltage..... 250 VAC
 Continuous carry..... 5A (cos φ = 1.0)
 Contact material..... Silver alloy
 Operating time.....15ms max
 Expected electrical life.....100,000 operations
 Expected mechanical life..... 5 million operations

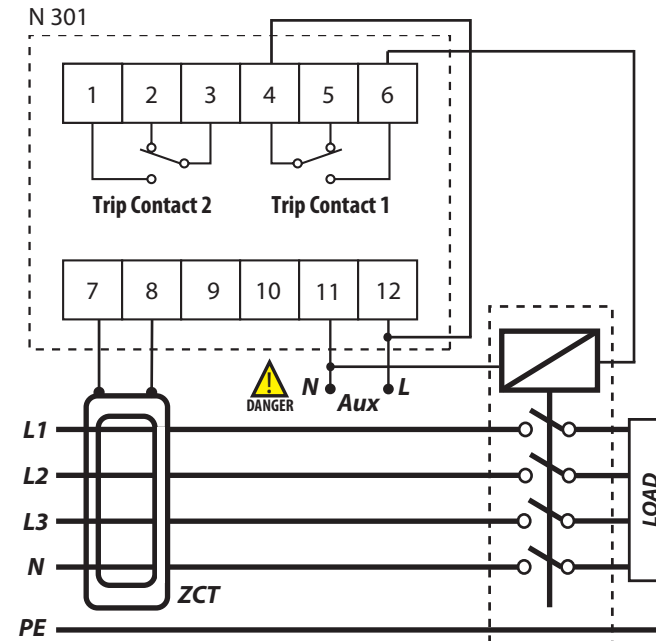
Indicators

Auxiliary supply..... Green LED indicator
 Time delay..... Red LED indicator
 Trip..... Red LED indicator
 Leakage current..... 5 red lights for leakage levels

Mechanical

Mounting..... Panel mounting
 Front panel..... 72x72 mm
 Approximate weight..... 0.5 kg

7. Connection Diagram



*The EARTH wire must not pass through the ZCT

8. Case Dimensions

