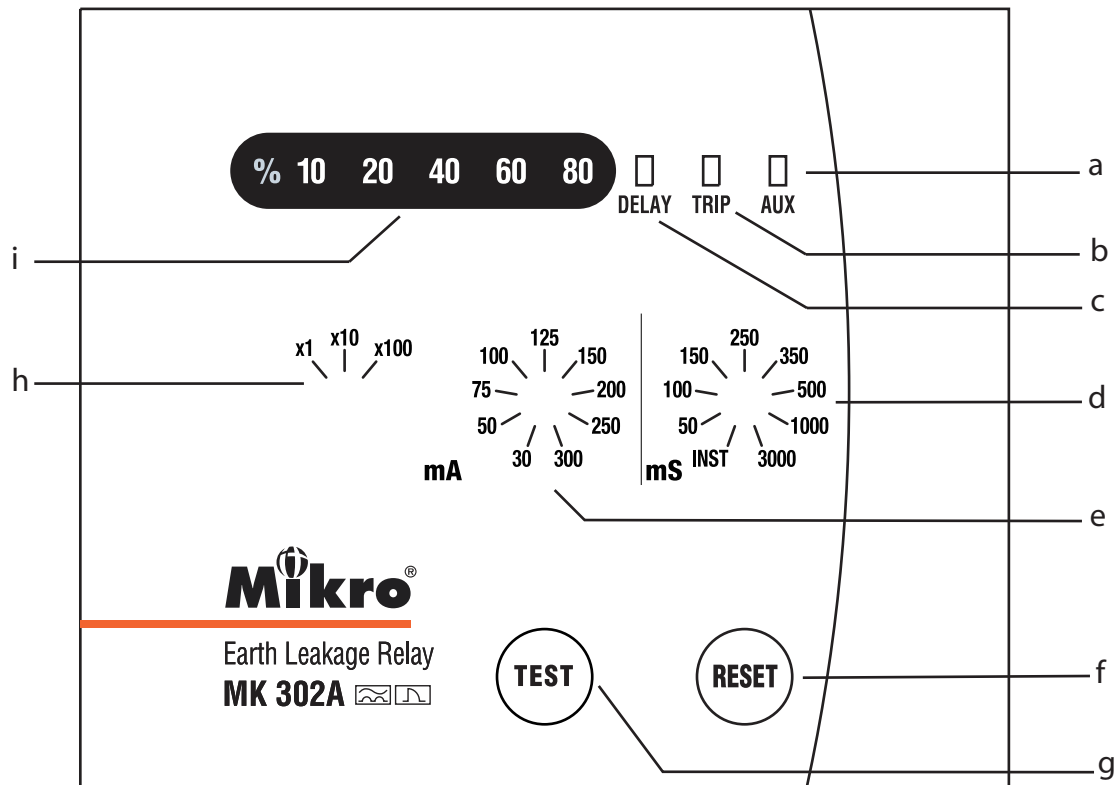


MK301A & MK302A Earth Leakage Relay User's Guide

A BRIEF OVERVIEW



a - Auxiliary power supply indicator

b - Trip status indicator

c - Trip start indicator

d - Time delay selector

e - Sensitivity selector

f - Reset button

g - Test button

h - Sensitivity multiplier switch

i - Leakage current indicator

TECHNICAL DATA

1. Light Indicators

The light indicators display the status of the system.

i) Status indicators

Indicator			Status
AUX	TRIP	DELAY	
Off	Off	Off	No auxiliary power supply
On	Off	Off	System normal, no tripping
On	Off	On	Trip start, time delay countdown started
On	On	Off	Earth leakage tripped
On	On	Blink	ZCT not connected

ii) Leakage indicators*

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 \geq 80% of set current

2. Sensitivity Adjustment

The MK301A/MK302A features 2 rotary selector switches for sensitivity ($I_{\Delta n}$) setting:

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

3. Tripping Delay Time Adjustment

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

* FOR MK302A MODEL ONLY

4. Push Button

Reset Button

- The reset button is for resetting the light indicator and the latching trip contact after a trip has occurred.
- To reset, press the reset button once.

Test Button

- Press the test button to simulate an earth leakage trip condition.

5. Remote Control Input*

Remote Test Input

- This digital input is similar to the TEST push-button. To remotely test the relay, make a connection between terminals 11 and 13 of the relay

Remote Reset Input

- This digital input is to remotely reset the relay when tripped. To reset the relay, make a connection between terminals 12 and 13 of the relay.

6. Output Contact

Trip Contact

- This is a latching type contact. It operates when tripped.

Safety Contact *

- Contact energized when supply is connected and the relay is functioning normally.

7. Settings

Sensitivity adjustment	: 0.03 A to 30 A
Delay time adjustment	: 0 sec to 3.0 sec

8. Contacts

Contact arrangement	: 1 x latching type with manual reset
	: 1 x safety contact*
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	: NC and NO contacts available
Contact rating	: 5A, 250VAC (cos ϕ = 1) contact rating
Contact material	: Silver alloy
Expected electrical life	: 100,000 operations at rated current
Expected mechanical life	: 5 million operations

9. Inputs

Remote Test/Reset Inputs*	: N.O. dry input
Auxiliary supply	
MK301A-240A	: 198~265 VAC
MK302A-240A	:
MK301A-110A	: 90~120 VAC
MK302A-110A	:
Rated frequency	: 50 or 60 Hz
VA rating	: 3VA typical
Setting accuracy	: -15% to +0%
Timing accuracy	: \pm 5%

* FOR MK302A MODEL ONLY

10. Indicators

- Auxiliary supply : Green colour LED indicator
- Time delay : Red colour LED indicator
- Trip : Red colour LED indicator
- Real time leakage current : Red colour LED indicator

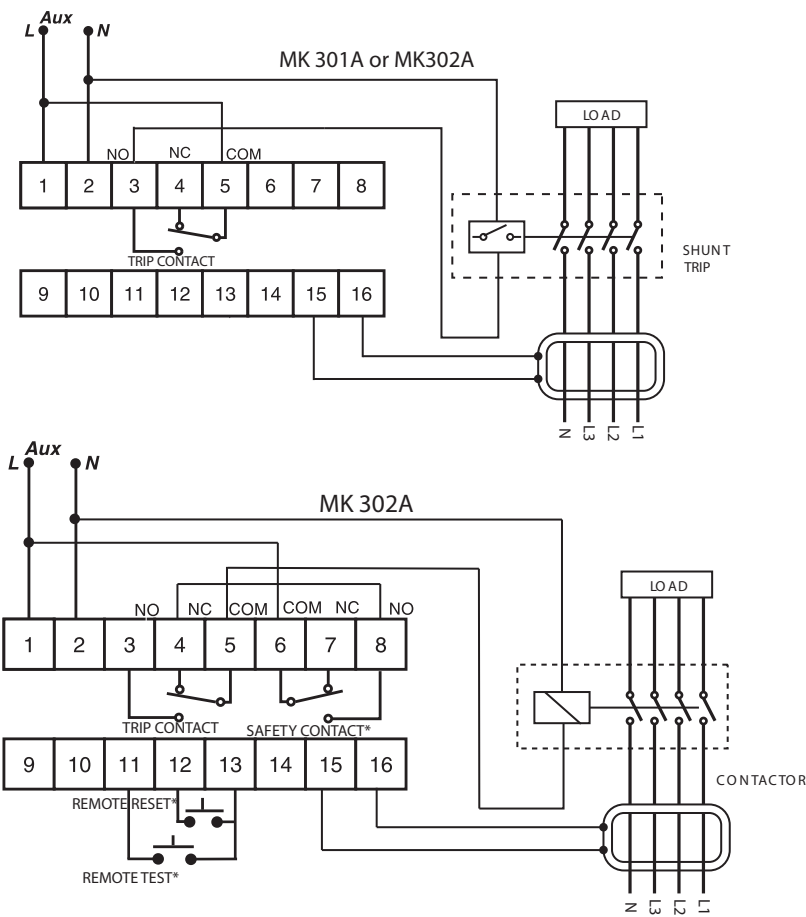
11. Zero-phase Current Transformer

To operate with ZCT series of current transformer

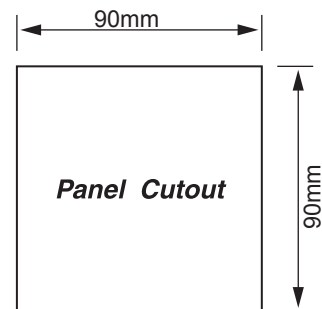
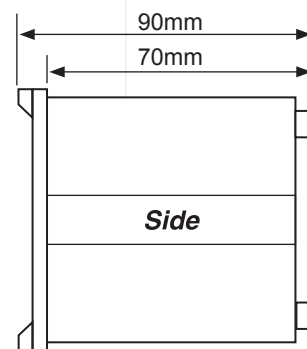
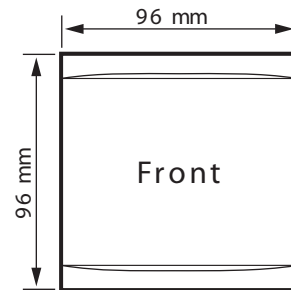
12. Mechanical

- Mounting method : Panel mounting
- Front panel : Standard DIN96mmx96mm
- Approximate weight : 0.6kg (exclude ZCT)

13. Connection Diagram



14. Case Dimensions



* FOR MK302A MODEL ONLY