RX300 Earth Leakage Relay
User Guide

MEASUREMENT
0 - I∆n I - FLT1 2 - FLT2
3 - FLT3

MENU
E. Earth-Leakage Setting
  I - I∆n Sensitivity (A)
  2 - ∆t (s)
  3 - Pre-Fault Alarm (A)
  4 - Reset Hysteresis (%)
F. Functions Setting
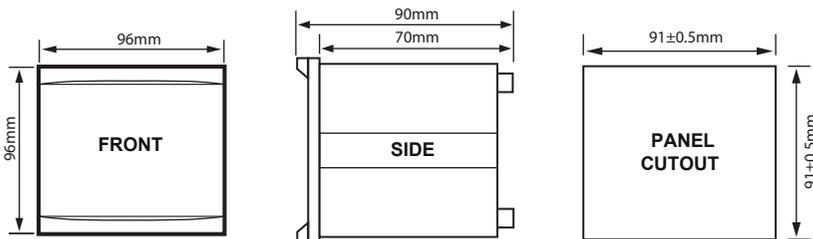d. Date and Time Setting
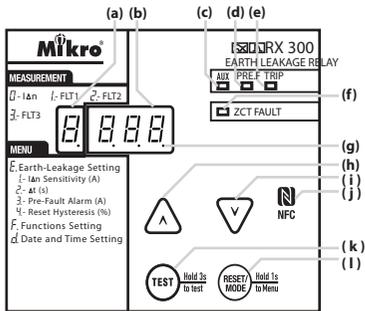
(a) Function indication
(b) Data indication
(c) Auxiliary power supply indicator
(d) Pre-fault indicator
(e) Trip status indicator
(f) ZCT fault indicator
(g) mA indicator
(h) Up button
(i) Down button
(j) NFC detection area
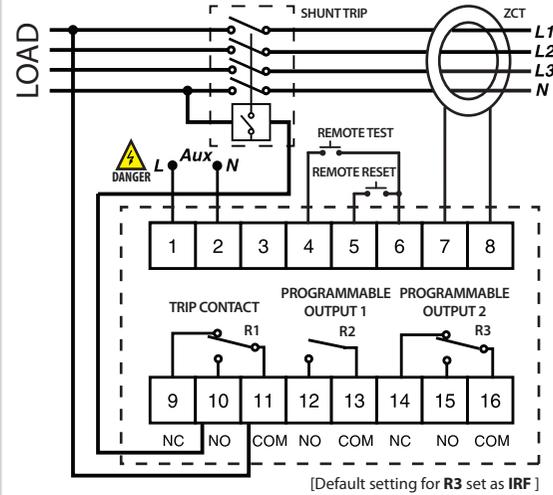(k) Test button
(l) Reset/Mode button

Features

- Built-in NFC for reading and setting parameters through mobile app
- Real-time monitoring of system condition
- Built-in self test and soft recovery watchdog
- Internal relay failure (IRF) alarm for system abnormalities
- Time stamp event record of power failure and setting changes up to 120 events
- Time-stamp record of up to 30 faults and 30 pickups

- Selectable 50 or 60 Hz frequency
- Selectable fundamental or true RMS measurement
- Programmable Output Contacts
- Detection of no connection to ZCT
- Protected against nuisance tripping
- Remote reset and test function
- Incorporated fail-safe feature into trip contact

Case Dimensions

FRONT — 96mm x 96mm
SIDE — 90mm / 70mm
PANEL CUTOUT — 91±0.5mm x 91±0.5mm

Typical Application Diagram

LOAD — L1 L2 L3 N — SHUNT TRIP — ZCT

DANGER — L Aux N

REMOTE TEST
REMOTE RESET

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

TRIP CONTACT — R1
PROGRAMMABLE OUTPUT 1 — R2
PROGRAMMABLE OUTPUT 2 — R3

| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| NC | NO | COM | NO | COM | NC | NO | COM |

[Default setting for **R3** set as **IRF**]

NFC Communication

Relay provides NFC communication convenient for user to read parameter values or to change setting through Android phone with NFC feature. The Mikro RX app can be downloaded in the mobile with one of following Methods:

{Make sure phone NFC function is turned on}

- Scan the QR code or align the mobile phone NFC antenna on the NFC logo at relay front panel. This will take you directly to App store.

Available on the App Store — GET IT ON Google Play

Technical Data

Auxiliary Supply
Supply Voltage.................................... 198 ~ 265VAC
Supply Frequency............................. 50 or 60Hz
VA Rating.. 3VA max

Accuracy
Protection Thresholds...................... -15% to 0%
Time Delay... ±3% or 40ms whichever is greater

Setting Ranges
(i)Earth-leakage Setting
I∆n Sensitivity..................................... 20mA - 30.0A
Time ∆t... INST - 10.0s
Pre-fault... 10mA - 24.0A
Reset Hysteresis................................. 2% - 10%

Output Contacts
Rated Voltage...................................... 250VAC
Continuous Carry................................ 5A(Cosφ = 1.0)
Expected Electrical Life...................... 10^5 operations
Expected Mechanical Life.................. 5×10^6 operations

Enviromental Conditions
Temperature... -10℃ to 55℃
Humidity.. 5% to 95% non-condensing

Mechanical
Mounting... Panel mounting
Dimension (mm) .... 96(w) x 96(h) x 90(d)
Enclosure Protection........................... IP54 at the panel
                                                             IP20 at the body
Approximate Weight............................ 0.5kg

Earth Leakage Protection Class
Type A ⊠

Zero-Phase Current Transformer
To operate with Mikro's ZCT series of current transformer

Measurement

Function / Data

Earth Leakage Measurement

Press "Mode"

Earth Leakage previous tripped current

Menu

Press and hold "Mode" for 1s to enter the menu

Press "Mode"
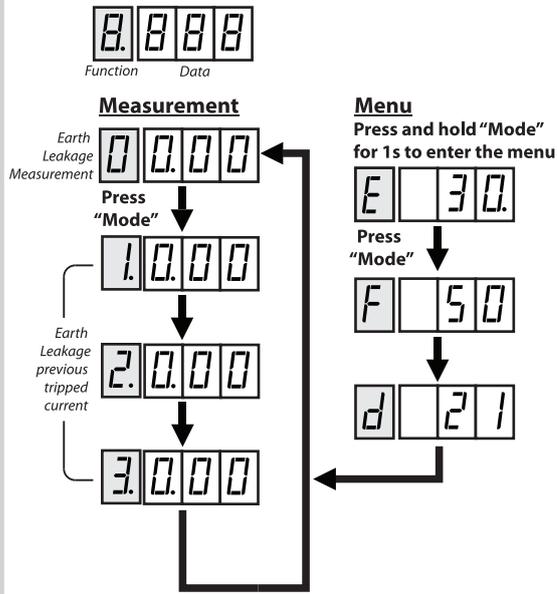
Parameter Settings

E	**Earth Leakage Setting**
1	IΔn Sentivity [DEF=0.30]
2	Time Δt [DEF=0.50]
3	Pre-fault [DEF=0.15]
4	Reset Hysteresis [DEF=5]

d	**Date and Time Setting**
1	Year
2	Month
3	Day
4	Hour
5	Minute
6	Second

[DEF=Default setting]

F	**Functions Setting**
1	Frequency [50Hz/60Hz] [DEF=50]
2	Measurement display [Fn=Fundametal, RnS=RMS][DEF=rnS]
3	Output R1 reset type [n-A=Manual, AUt=Auto][DEF=AUt]
4	Output R2 reset type [n-A=Manual, AUt=Auto][DEF=n-A]
5	Output R3 reset type [n-A=Manual, AUt=Auto] [DEF=n-A]
6	Fail-safe into trip contact [Yes/No] [DEF=No]
7	Output R2 function [DEF=Alr] [Stc= Safety Contact, Alr= Alarm] *Stc contact function Relay healthy : R2 energized Relay fault : R2 de-energized
8	Output R3 function [DEF=IrF] [IrF= Internal relay failure, Alr=Alarm] *IRF contact function Relay healthy : R3 energized Relay fault : R3 de-energized
9	Output R2 link element [Refer figure 1][DEF=07]
A	Output R3 link element [Refer figure 1][DEF=07]
b	NFC remote set [Yes/No] [DEF=No]

Push Button Operation

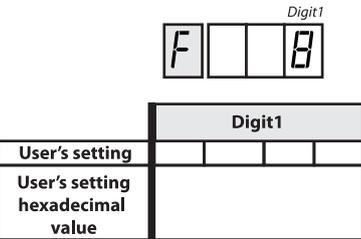| Trip Test	Press and hold "TEST" button for 3 seconds
Trip Reset	Press "RESET" button
Scroll Display	Press "MODE" button
Enter Menu Mode	Press and hold "MODE" button for 1second
Set/Save Setting	Press "UP" and "DOWN" buttons simultaneously
Adjust Setting	Press "UP" or "DOWN" button
Display Off Mode	Press "RESET" button for 10 seconds to toggle the display off mode. The display will switch off after 6 minutes if no key is pressed.

Enter NFC Setting = Press and hold "DOWN" button for 3 second
Jump To Next Page = Press "DOWN" and "RESET"

Digit1

F 8

	Digit1		
User's setting			
User's setting hexadecimal value			

* Not applicable when output R2/R3 function set as Stc or IrF

	Digit1			
HEX	**CFA**	**PFA**	**LFA**	
00	0	0	0	
01	0	0	1	
02	0	1	0	
03	0	1	1	
04	1	0	0	
05	1	0	1	
06	1	1	0	
07	1	1	1	

Figure 1: Link element in Hexadecimal value

0= Off, 1= On

LFA - Leakage Fault alarm
PFA - Pre-fault alarm
CFA - ZCT connection fault alarm
PLO - Persistent fault lockout alarm/Transient fault lockout alarm *Only applicable for RX330

LED Indicator

LED Indicator					Status
AUX	**PRE.F**	**TRIP**	**ZCT**	**RECLOSE**	
0	0	0	0	0	No Auxilliary power supply / * IRF trigger
1	0	0	0	0	Normal condition, no tripping
1	X	1	X	X	Leakage pickup
1	X	B	X	X	Leakage tripped
1	X	X	B	X	ZCT connection fault alarm
1	B	X	X	X	Pre-fault alarm

1 = ON   0 = OFF   B = Blinking   X = don't care
* Refer to IRF Alert Message table

IRF Alert Message

Function & Data Display	Alert Description
EEP	EEPROM memory malfunction
LoU	Low auxiliary voltage supply
rtCE	Clock IC malfunction
nFCE	NFC IC malfunction
AdcE	Measurement voltage reference unstable

V1.02-141125