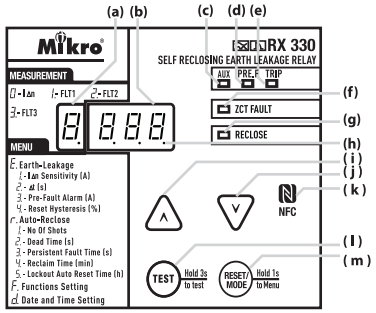
RX330 Earth Leakage Relay
User Guide

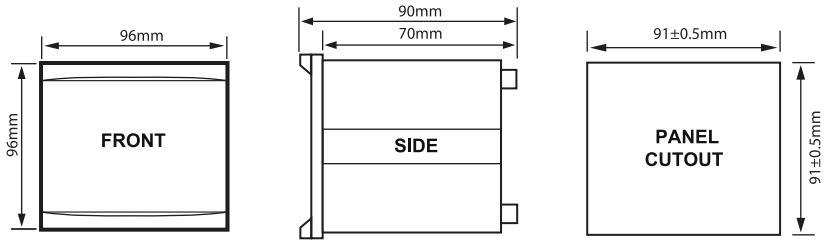


(a) Function indication
(b) Data indication
(c) Auxiliary power supply indicator
(d) Pre-fault indicator
(e) Trip status indicator
(f) ZCT fault indicator
(g) Reclose fault indicator
(h) mA indicator
(i) Up button
(j) Down button
(k) NFC detection area
(l) Test button
(m) Reset/Mode button

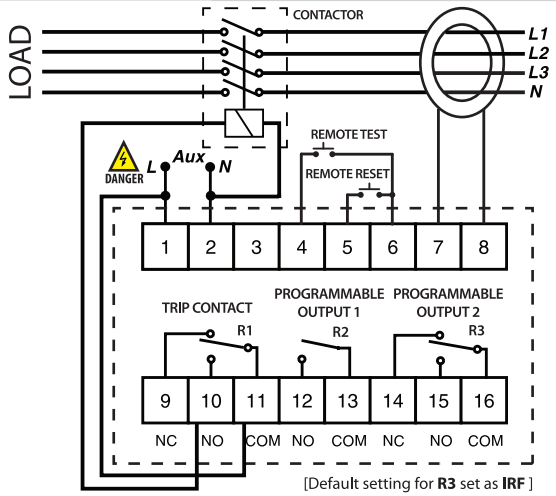
Features

- 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
- Self-reclosing feature

Case Dimensions



Typical Application Diagram



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

NFC Communication

NFC

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% with a minimum 40ms

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

(ii)Self Reclosing Setting
Number of Shots..... OFF/1 - 30
Dead Time..... 1s - 500s
Persistent fault time..... OFF/1s - 500s
Reclaim Time..... OFF/1min - 500min
Lockout Self Reset Time..... OFF/1h - 200h

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

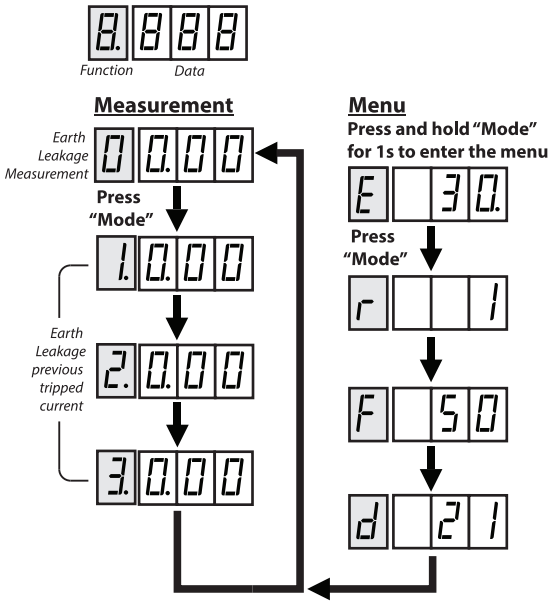
Enviromental Conditions
Temperature..... -10°C to 55°C
Humidity..... 5% to 95% non-condensing

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

System Operation



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]

r	Self Reclosing Setting
1	Number of Shots [DEF=OFF]
2	Dead Time [DEF=100]
3	Persistent fault time [DEF=OFF]
4	Reclaim Time [DEF=OFF]
5	Lockout Self Reset Time [DEF=OFF]

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

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=0F]
A	Output R3 link element [Refer figure 1][DEF=0F]
b	NFC remote set [Yes/No] [DEF=No]

[DEF=Default setting]

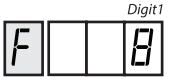
Push Button Operation

Trip Test	Press and hold "TEST" button for 3.5 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.

LED Indicator

LED Indicator					Status
AUX	PRE.F	TRIP	ZCT	RECLOSE	
0	0	0	0	0	No Auxilliary power supply
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	X	X	X	B	Persistent/ Transient fault lockout alarm

1 = ON 0 = OFF B = Blinking X = don't care



	Digit1			
User's setting				
User's setting hexadecimal value				

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

	Digit1			
HEX	PLO	CFA	PFA	LFA
00	0	0	0	0
01	0	0	0	1
02	0	0	1	0
03	0	0	1	1
04	0	1	0	0
05	0	1	0	1
06	0	1	1	0
07	0	1	1	1
08	1	0	0	0
09	1	0	0	1
0A	1	0	1	0
0B	1	0	1	1
0C	1	1	0	0
0D	1	1	0	1
0E	1	1	1	0
0F	1	1	1	1

Figure 1: Link element in Hexadecimal value

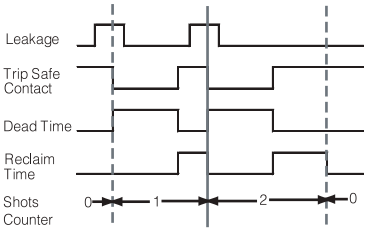
0= Off,
1= On

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

Self Reclosing

Terms	Description
Shots	Nos of self-reclosing operation before the lockout.
Dead time	Trip safe contact is activated by the recloser when the trip safe contact is de-activated due to a leakage fault.
Persistent fault time	Fault detected immediately after the trip safe contact is activated by recloser.
Reclaim time	Time required by the recloser to reset back to reset shot count.
Lockout self reset	Time required to unlock and reset the self-reclosing module during lockout state. The unlock operation is carried out when no operators attended the relay during the lockout state.
Transient fault lockout	When the number of self-reclosing operations matches the number of shots set, further fault trips will perform the lockout
Persistent fault lockout	Relay lockout when the tripping is initiated by the persistent fault.

a) Shots, Dead Time and Reclaim Time



b) Persistent fault monitoring time