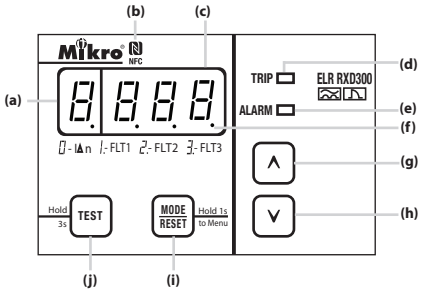
RXD300 Earth Leakage Relay
User Guide

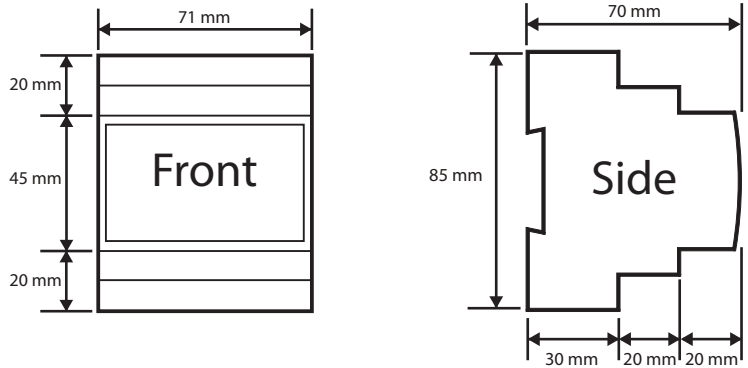


(a) Function indication
(b) NFC detection area
(c) Data indication
(d) Trip status indicator
(e) Alarm status indicator
(f) mA indicator
(g) Up button
(h) Down button
(i) Reset/Mode button
(j) Test button

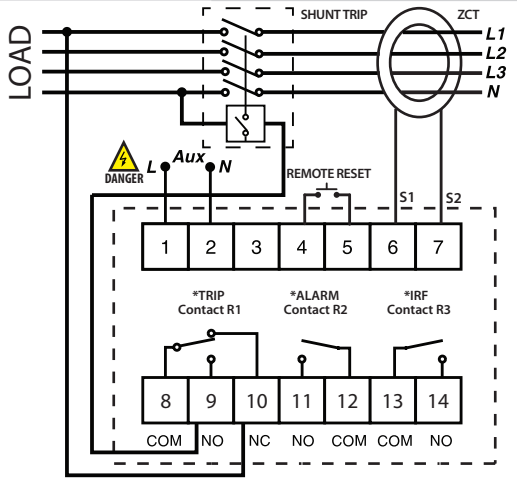
Features

- 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 detection
- Detection of no connection to ZCT
- Protected against nuisance tripping
- Remote reset function
- Incorporated fail-safe feature into trip contact

Case Dimensions



Typical Application Diagram



***All contacts are programmable. Default setting are R1 for trip, R2 for alarm and R3 for IRF.**

NFC Communication

NFC

Relay provides convenient NFC communication for users to read parameter values or change settings through an Android phone with NFC feature and Android OS version above 10. The Mikro RX app can be downloaded on the mobile device using one of the following methods:

{Make sure phone NFC function is turned on}

- Scan the QR code or align the mobile phone NFC antenna with the NFC logo on relay front panel. This will take you directly to the app 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
IΔn Sensitivity..... 20mA - 30.0A
Time Δt..... 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 x 10^6 operations

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

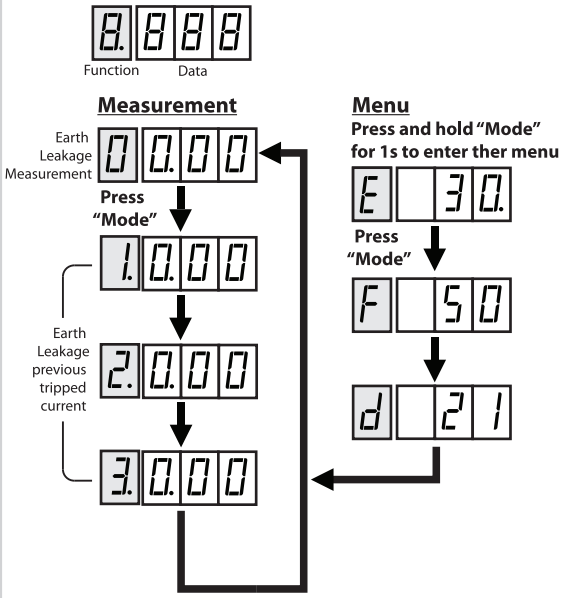
Mechanical
Mounting..... DIN rail mounting
Dimension (mm) ..... 71(w) x 85(h) x 70(d)
Enclosure Protection..... IP54 at the panel
IP20 at the body
Approximate Weight..... 0.4kg

NFC Communication
Operation System..... Android OS
Software Version ..... Version 10 and above

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]*1
2	Time Δt [DEF=0.50]*1
3	Pre-fault [DEF=0.15]
4	Reset Hysteresis [DEF=5]

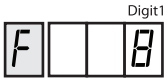
d	Date and Time Setting
1	Year
2	Month
3	Day
4	Hour
5	Minute
6	Second

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	*2Output R1 function [DEF=TrP]
8	*2Output R2 function [DEF=Alr]
9	*2Output R3 function [DEF=IrF]
A	Output R1 link element [Refer figure 1][DEF=07]
b	Output R2 link element [Refer figure 1][DEF=07]
c	Output R3 link element [Refer figure 1][DEF=07]
d	NFC remote set [Yes/No] [DEF=No]

[DEF=Default setting]
***1 When IΔn ≤ 30mA, time Δt is fixed to instantenous**
***2 Stc = Safety Contact**
Alr = Alarm
Trp = Trip
Irf = Internal Failure
Stc & IrF contact function :
R1, R2 and R3 healthy = energized, fault = de-energized

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.



	Digit1
User's setting	
User's setting hexadecimal value	

	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

Display Indicator

LED		Data Indication	Status
TRIP	ALARM		
0	0	0	No Auxilliary power supply / * IRF trigger
0	0	X	Normal condition, no tripping
1	X	X	Leakage pickup
B	X	Trip value	Leakage tripped
X	1	Ct	ZCT connection fault alarm
X	B	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

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 RXD300

Setting Ranges Step

(i)Earth-leakage Setting

IΔn Sensitivity ..... 20mA - 30.0A
(<1.00A step 1mA, <10.0A step 0.01A, <30.0A step 0.1A)

Time Δt ..... INST - 10.0s
(<10.0s step 0.01s)

Pre-fault ..... 10mA - 24.0A
(<1.00A step 1mA, <10.0A step 0.01A, <30.0A step 0.1A)

Reset Hysteresis ..... 2% - 10%
(<10% step 1%)