

# Earth Leakage Relay - Auto Self Reclosing



## PRODUCT OVERVIEW

Microprocessor based digital leakage relays measuring low-level leakage or unbalanced currents due to insulation loss in conductors or equipment to be protected. A zero phase current transformer (toroid) is used to sense the leakage current with all protected conductors passing through the toroid.

Pre-fault alarm contact and a positive safe contact to read fail safe trip contact provide better fault prevention control of the system or equipment. The pre-fault alarm contact is energised whenever the leakage current exceeds 50% of the sensitivity setting ( $I_{\Delta n}$ ).

The positive safe contact to read fail safe trip contact will become energised when the relay is powered up and healthy.

## FEATURES

- Fascia mount
- Digital auto-reclosing earth leakage relay
- Incorporated positive safety trip contact
- One programmable contact for flexibility
- Detection of missing ME-T
- Relay trip / alarm indicator
- Real-time leakage current display
- Leakage fault current recording
- Remote reset function
- Standard DIN 96 x 96mm panel mounting
- Protected against nuisance tripping

## ORDERING INFORMATION

PART NUMBER	DESCRIPTION
ME-ELR-DFSR-24D	For 50Hz system, auxiliary voltage 21~28V DC
ME-ELR-DFSR-110A	For 50Hz system, auxiliary voltage 94~127V AC

\*See Price List or Catalogue for Toroid to suit

## TECHNICAL DATA

### AUXILIARY SUPPLY

Model ME-ELR-DFSR-24D	: 21~28V DC
Model ME-ELR-DFSR-110A	: 94~127V AC
Rated frequency	: 50Hz
VA Rating	: 3 VA typical

### PERFORMANCE

Current accuracy	: -15% to +0%
Timing accuracy	: $\pm 5\%$

### RECORD

Fault record	: 3 latest tripped fault currents or "tSt" for manual test trip
Storage	: Non-volatile memory

### INPUT

Remote Test / Reset Inputs	: N.O. dry contact
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### INDICATORS

Pre-fault alarm	: Red indicator (Normal blink)
Time delay	: Red indicator (Fast blink)
Leakage trip	: 7-segment display and red indicator
ME-T connection error	: 7-segment display and red indicator
Real-time leakage current	: 7-segment display

### OUTPUTS

Trip contact	: Activated during leakage trip, manual test trip or ME-T connection error
Positive safety contact	: Activated when powerup and relay function correctly
Alarm contact	: Activated when measured leakage current exceeded 50% of $I_{\Delta n}$ .

### OUTPUT CONTACTS

Rated voltage	: 250 V AC
Contact rating	: 5 A (NO) 3 A (NC)
Expected electrical life	: 100,000 operations at rated current
Expected mechanical life	: $5 \times 10^6$ operations

### ZERO - PHASE CURRENT TRANSFORMER

To operate with MerCs' ME-T series of current transformers

### SETTING

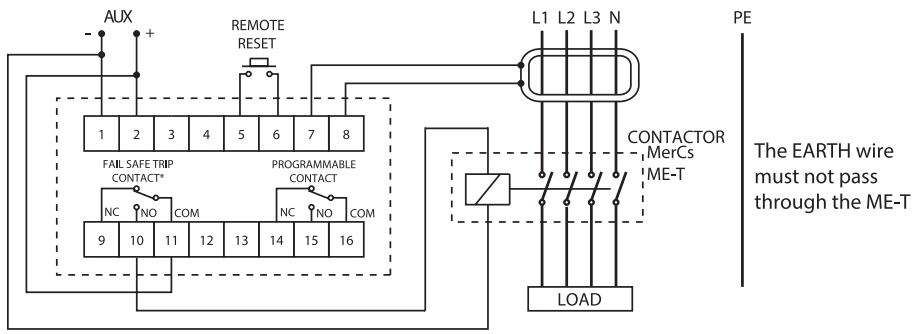
Sensitivity adjustment	: 30mA, 50mA, 0.10~1.00A (Step=50mA) 1.00~10.0A (Step=1.00A)
Time delay adjustment	: Instantaneous, 0.1~3.0sec (Step=0.1s)
Number of shots	: 0~30 (Step=1, 0=Disable auto re-close function)
Dead time	: 1~500sec (Step=1sec)
Persistent fault time	: 0~500sec (Step=1sec, 0=Disable function)
Reclaim time	: 0~500min (Step=1min, 0=Disable function)
Lockout auto reset time	: 0~200hour (Step=1Hr, 0=Disable function)

**Programmable contact:**  
 Option 0 = Disable  
 Option 1 = All (Option 2 to 6)  
 Option 2 = ME-T error  
 Option 3 = Leakage trip, test trip, re-close lockout  
 Option 4 = Re-close lockout  
 Option 5 = Pre-fault alarm, leakage trip, test trip, re-close lockout  
 Option 6 = Re-close lockout, ME-T error

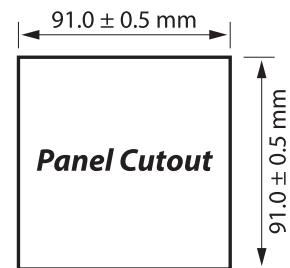
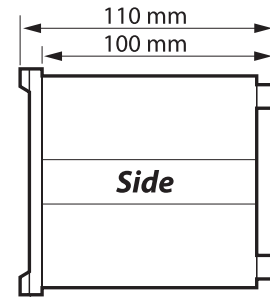
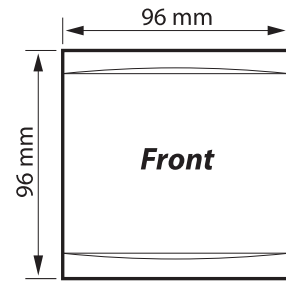
### MECHANICAL

Mounting	: Panel mounting
Dimension (mm)	: 96(w) x 96(h) x 110(d)
Enclosure protection	: IP54 at the panel
Approximate weight	: 0.4 kg (excluding ME-T)

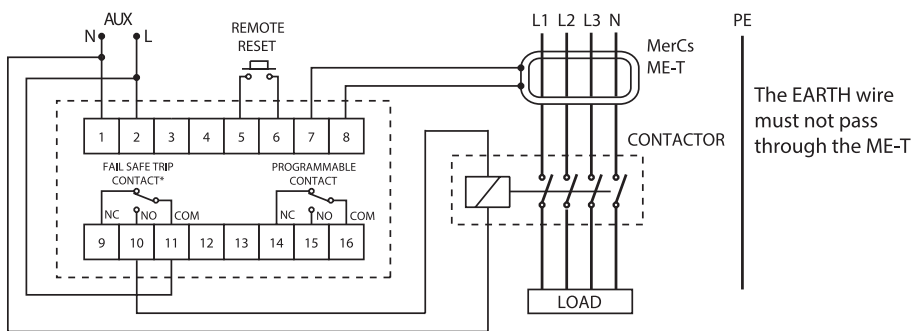
TYPICAL APPLICATIONS DIAGRAM ME-ELR-DFSR-24D



CASE DIMENSIONS



TYPICAL APPLICATIONS DIAGRAM ME-ELR-DFSR-110A



\* The trip safe contact is activated (terminal 10-11 closed) when the relay is in normal power-up condition with the measured leakage current less than  $0.85 I_{\Delta n}$ .