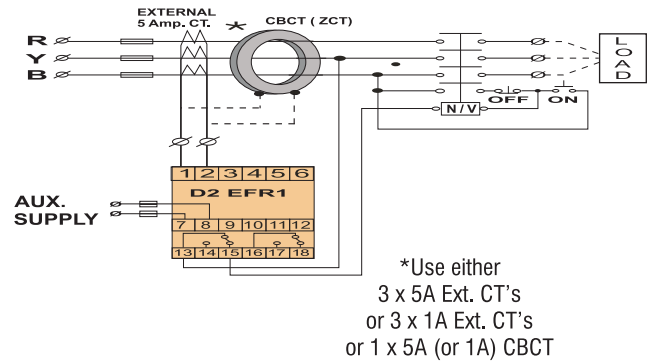


TECHNICAL DATA SHEET FOR D2 EFR1

minilec®



D2 EFR1 operates on current sensing principle and is used in electrical circuits & systems where Earth Fault protection is required. D2 EFR1 relay is accurate, easy to set, compact and easy to install with front terminal connection. This relay offers 1CO/ (2CO) relay contact of 5 Amps at 240 VAC rating.

TECHNICAL SPECIFICATIONS OF D2 EFR1

1. **Auxilliary Supply** : 24 / 30VDC/ 110-240 V AC / DC/380-415/440 VAC \pm 20 %
2. **Ext. Input** :
5A /1A (Selection Via. Terminals)
Terminal 1 & 2 :Current Input 5A
Terminal 1 & 3 : Current Input 1A
3. **Frequency** : 50 / 60 Hz, \pm 3%
4. **Power Consumption** : 3 VA max.
5. **Output Relay Contact** : 1CO / (2 CO)
6. **Output Contact Rating** :
5A, 240 VAC (Resistive)
7. **Life Expectancy** :
 0.5×10^6 operations at 100% rating
8. **EF Trip Setting** :
10% to 100% of rated Current Input (variable)
9. **Set Accuracy** : \pm 5% w.r.t. Current input of 100% (Full scale)
10. **Trip Time delay** :
0.1 Sec. To 1 Sec. (Adjustable)
11. **Time Accuracy** : \pm 10% of full scale.
12. **Reset** :Manual / Remote Reset
13. **Indication** :
ON (Green) - ON
EF (Red) - TRIP
14. **Current Sensor** :
Neutral CT/ CBCT/
Summation CT with secondary current Rating of 1A Or 5A (Protection class)
15. **Operating conditions** :
Temperature : -5°C to 60°C
Humidity : Upto 95% R.H.
16. **Enclosure** :- ABS
17. **Dimensions (mm)** :
Overall (L x W x D) : 76 x 56.5 x 117.5
Mounting(L x W): 35 mm Rail Mounting
18. **Weight (approx)** : 550 gms.

SETTING OF EARTHFAULT RELAY

Typical Earthfault Relay Setting for electrical low voltage system of 415 V AC , 3 phase , 50 Hz, maximum demand of 150 KW at lagging power factor of 0.85 are shown below

$$\text{Power} = \sqrt{3} \times V \times I \times \cos \phi$$

$$\text{Load Current} = \frac{150 \times 1000}{1.732 \times 415 \times 0.85}$$

$$\text{Load Current} = 245.50 \text{ Amps.}$$

Current Transformer Selected = 300/5A, 15 VA , Class 5P10

Minilec make D2 EFR 1 is Provided with Earthfault current setting between 10% - 90%

$$\text{Hence Earthfault at 10\% setting} = 10\% \times 300\text{A} = 30\text{Amps}$$

$$\text{Similarly Earthfault at 30\% setting} = 30\% \times 300\text{A} = 90\text{Amps}$$

These are typical earthfault current calculations and settings shown as an example. Individual user can make the earthfault settings as per their requirement.

Suitable for following application:

- Generator Panels
- Synchronizing Control Panels
- AMF Panels, MCC panels
- Air Circuit Breakers (With shunt Trip Coil)
- MCCB (With Shunt Trip Coil)
- Motor Control Panels

Our Other Products

Alarm Annunciator, Motor/Pump Protection Relays, EOCR, Phase Failure Relay + UV / OV Relays, Voltage/Current/ Frequency/Reverse Power Monitoring Relays, Earth Fault/ Leakage Relays, Pump Automation Management system & Controllers, Water Level Controller, Electronic Timers, Power Line Transducers (V/I/KW/Multi-function/DC-DC Isolators or Barrier/Temp/Resistance/Tap position etc.), Multi-function Meter, Twin Window/Split AC Controller, Bearing temp Monitoring relays(PT-100)