

PROTIME®



## N96 Digital DC Over Current cum Earth Fault Relay

**N96D-EFR/d**

### Special Features

- Only of its kind DIGITAL DC Over current & Earth Fault Relay.
- Suitable for DC System of any voltages from 12V to 1000V DC
- Separate LED Indications for +ve or -Ve Fault\* with Separate 1 C/O relay contacts.
- In-built TEST FUNCTION.
- Programmable Digital Power Protection Relays with LCD displays
- Designed using latest 12 bit Micro controllers
- Wide selectable tripping ranges and wide Aux. supply range from 90-270V AC/DC
- RS 232/485 output-(Optional)
- 0-5V Analog output-(Optional)

### INTRODUCTION

The PROTIME's DC over current cum Earth Fault Relay is an ideal solution for DC earth leakage / Fault protection for each feeders in DC distribution system. As it works on current sensing principal, also suitable for high voltage DC systems up to 1000VDC.

### Technical Data

Auxiliary supply: -	90-270V AC / DC
Output contact: -	1C/O for +ve Fault, 1 C/O for -Ve Fault & 1 C/O for O/L (potential free)*
Switching duty: -	6A resistive at 240V AC or 24V DC
Electrical life: -	10 operation at switching duty
System voltage: -	From 12V DC to 1000V DC
Current Sensor Capacity : -	A:25A, B:50A, C:100A, D: 200A, E: 300A, F:500A
Range: -	1-10% of rated Current Sensor (Settable), <i>for e.g. For Sensor A=250mA -2.5A</i>
Tme delay: -	1-10 sec (Separately Settable for Earth Fault & Over Load Faults)
Indications: -	CONTROL ON, HEALTHY, +ve FAULT, -Ve Fault
Mounting: -	Panel Mounting (Flush) CUTOUT=92 X 92mm
Dimension: -	RELAY = 96mm(W) X 96(H) X 90mm(D) Sensor = Varies with Current ratings, Refer Sensor Datasheet
Approx. weight: -	200gms
Enclosure: -	ABS-N96
Operating Temp & RH: -	-10°C, +55°C up to 80%
Storage Temp & RH: -	-25°C, +70°C up to 80%

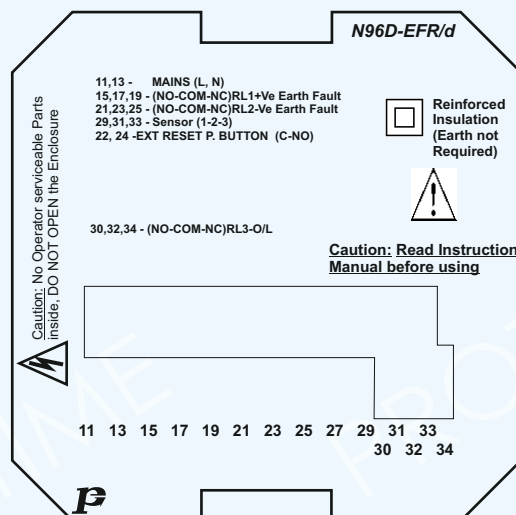
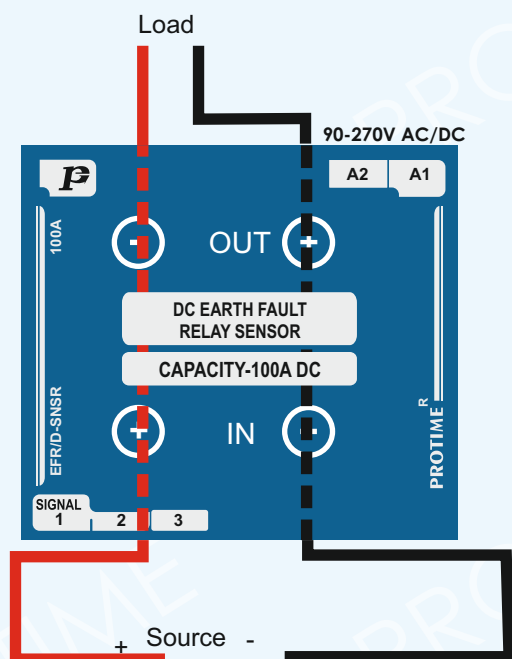
## Operation:

The Solution comprises of two modules:

- Current sensing module(25A-300A) &
- Digital DC Over Current cum Earth Fault Relay.

The N96D-EFR/d senses total current passing from the DC system on Positive or Negative BUS & calculate leakage current passing through earth. The relay operates either during Over Load or when the leakage current goes above the selected value . It has Over Current Range from 20-120% & Earth Fault level setting from 1% to 10% of rated current sensor, for e.g. for 25A Sensor it shall be 5A to 30A for Over Load & 250mA to 2.5A for Earth Fault. It also has time delay setting from 1 to 10 sec for delay in relay operation after fault occurs. The relay has 1 C/O set of contacts each for +ve Earth Fault, Negative Earth Fault & DC Over Load. To get the desired result relay should be connected as per connection details given as below-

## Connection Details:



## How To Order N96D-EFR/d ?

Ordering Pattern-

N96D-EFR/d - 3 - A - A - 10S

**Series**

N96D-EFR/d:  
Digital DC  
Over Current  
cum Earth  
Fault Relay

**Aux. Supply**

1 20-32V DC  
2 42-90V DC  
3 90-270V AC/DC  
4 100-425V DC  
S Specified

**\*system Current(DC)**

A-25A  
B-50A  
C-100A  
D-200A  
E-300A  
F-500A  
S-Specified

**Time Range**

10S: 0.1-1Sec / 1-10 Sec.

**Range**  
\*A=1-10%

\* Check Sensor dimensions in Sensor Data Sheet

Note:- Design & specification may change due to our continuous developmental efforts