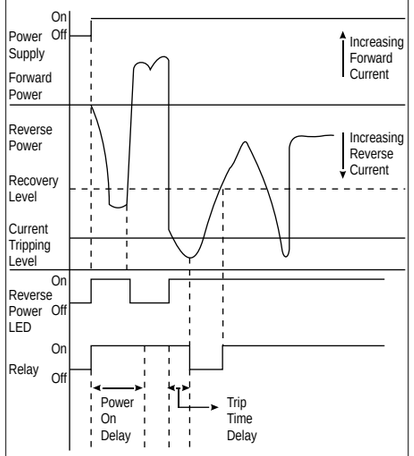
OPERATIONAL DIAGRAM FOR RPT D2 / RPF D2



ELECTRICAL CONNECTIONS IN POWER AND CONTROL WIRING

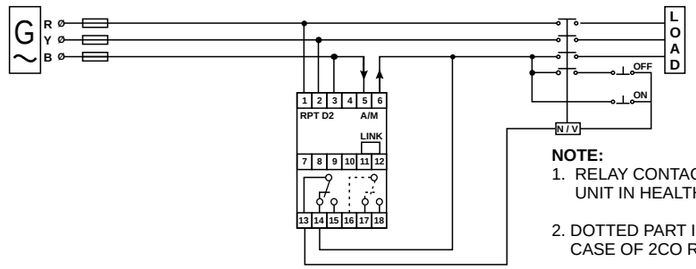


FIG 2A (RPT D2)

NOTE:
1. RELAY CONTACT SHOWN FOR UNIT IN HEALTHY CONDITION.
2. DOTTED PART IS ADDED IN CASE OF 2CO RELAY

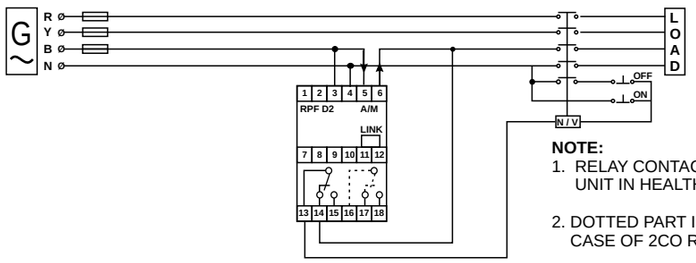
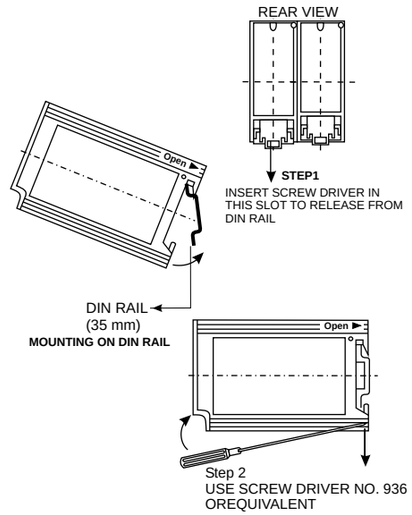


FIG 2B (RPF D2)

NOTE:
1. RELAY CONTACT SHOWN FOR UNIT IN HEALTHY CONDITION.
2. DOTTED PART IS ADDED IN CASE OF 2CO RELAY

MOUNTING AND RELEASING FROM DIN RAIL

FIG 4A **FIG 4B**

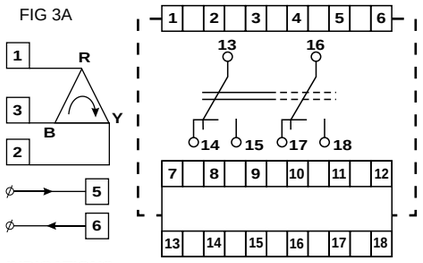


INSTALLATION INSTRUCTION MANUAL FOR REVERSE POWER RELAY

RPT D2 / RPF D2

CONNECTIONS DIAGRAM RPT D2

FIG 3A



INDICATIONS
RP : REVERSE POWER
ON : RELAY ON

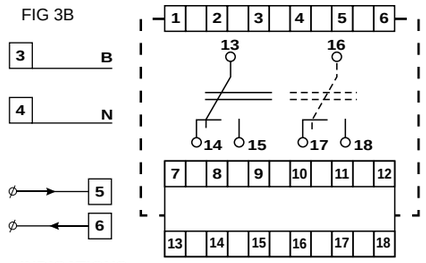
TERMINAL DETAILS:

1 - 2 - 3	: SYSTEM SUPPLY
4 - 7 to 10	: DUMMY
5 - 6	: CURRENT INPUT (5 Amp)
11 - 12	: AUTO / MANUAL SELECTION CONNECT LINK FOR MANUAL MODE
13 - 14 - 15	: C1 - NO1 - NC1 (FOR 1CO RELAY)
16 - 17 - 18	: C2 - NO2 - NC2(FOR 2CO RELAY DUMMY FOR 1CO RELAY

NOTE:
RELAY CONTACTS SHOWN FOR UNIT IN HEALTHY CONDITION.

CONNECTIONS DIAGRAM RPF D2

FIG 3B



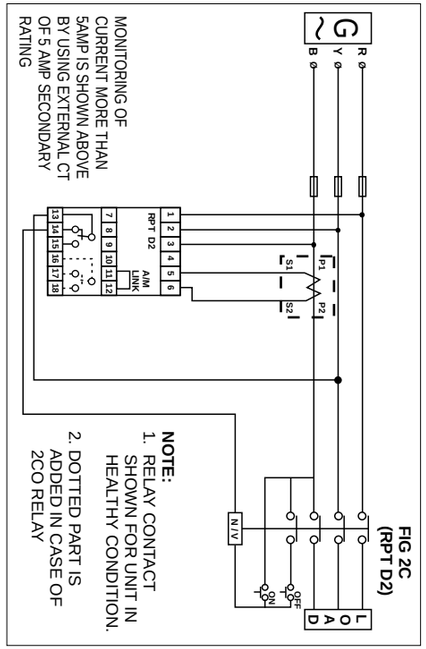
INDICATIONS
RP : REVERSE POWER
ON : RELAY ON

TERMINAL DETAILS:

1-2 & 7 TO 10	: DUMMY
3 - 4	: SYSTEM SUPPLY
5 - 6	: CURRENT INPUT
11 - 12	: AUTO/MANUAL SELECTION CONNECT LINK FOR MANUAL MODE
13 - 14 - 15	: C1 - NO1 - NC1 (FOR 1CO RELAY)
16 - 17 - 18	: C2 - NO2 - NC2(FOR 2CO RELAY DUMMY FOR 1CO RELAY

• CONNECT CURRENT INPUT / EXT. CT OF PHASE B (i.e. PHASE CONNECTED TO TERMINAL 3)

MONITORING OF CURRENT MORE THAN 5AMP IS SHOWN ABOVE BY USING EXTERNAL CT OF 5 AMP SECONDARY RATING

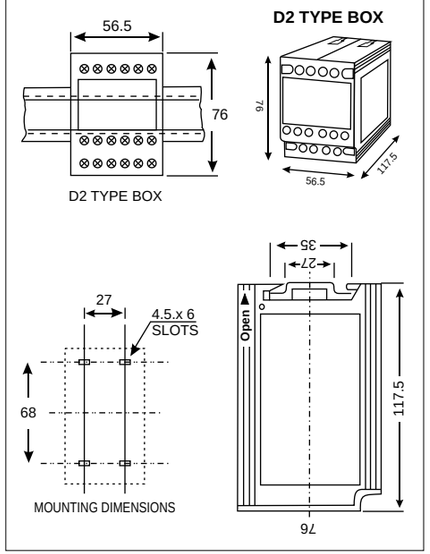


NOTE:
1. RELAY CONTACT SHOWN FOR UNIT IN HEALTHY CONDITION.
2. DOTTED PART IS ADDED IN CASE OF 2CO RELAY

FIG 2C (RPT D2)

MOUNTING DIMENSIONS

Fig 5



MOUNTING DIMENSIONS

WARRANTY

AGAINST
ALL MANUFACTURING DEFECTS
FOR 18 MONTHS
FROM DATE OF SUPPLY
OR 12 MONTHS FROM
INSTALLATION
WHICHEVER IS EARLIER

Manufactured by:

minilec®

S. No. 1073/1-2-3, Pirangoot,
Tal. Mulshi, Dist. Pune - 412 111 (India)

VERSION 03
(14/ 03 / 2002)

INSTALLATION INSTRUCTIONS FOR RPT D2 / RPF D2

INTRODUCTION

It`s Company`s pleasure to enlist you one of our esteemed user customers. Thanking you for selecting & purchasing MINILEC make REVERSE POWER REALY RPT D2 / RPF D2.

The following installation would guide you in installing your RPT D2 / RPF D2 and making the best use of it. RPT D2 / RPF D2 senses VOLTAGE, CURRENT & COS ϕ The Reverse Power Relay Provides continuous surveillance for A.C.Generators operating in parallel or for boosting supplies.

On site adjustment the trip point and the time delay ensures accurate protection against `MOTORING` in the event of engine failure and prevents tripping from surges during synchronizing.

MOUNTING

Your RPT D1/ RPF D2 can be RAIL mounted or Panel mounted (See fig 4A for mounting on and Fig 4B for releasing from DIN RAIL Also see Fig.5 for PANEL ,mounting & Drilling Details Dimensions).

CAUTION

Ensure that your RTP D2 / RPF D2 is

- Not installed near any heat sources like burner, sunlight, electric arc etc.
- Not subjected to abnormal vibrations
- Not subjected to direct rains, stormy wind and dust.
- Not connected to I/P or O/P side of frequency converter / inverter.
- Not connected to unbalanced load system.

ELECTRICAL CONNECTIONS FOR RPT D2 / RPF D2

See Fig.3 for electrical connection details of RPT D2 / RPF D2.See Fig.2A, 2B & 2C for power and control wiring . System supply must be as marked on front cover plate. The o/p relay contacts 13,14 and 16,17(for 2 CO) are to be connected in series with the no volt coil of the contactor.

FUNCTIONING

The Reverse Power Relay RPT D2 / RPF D2 is current monitor for AC applications detecting an overload when the current flows in the reverse direction (i.e. Reverse power). The unit interfaces with conventional current transformers (5Amp secondary rating). The internal CT permits the RPT D2 / RPF D2 to be connected directly to loads drawing less than 5 Amps.

Power on delay: When power is applied to the module, the relay energises immediately ignoring abnormal load conditions experienced during power on. The time delay is adjustable up to 10 seconds.

Forward Power: Under normal conditions (i.e. forward power) the relay remains energised and the 'ON' LED illuminates.

Forward Current: Forward current is the current that flows through the internal CT (in-built) during forward power flow.

Reverse Power: When the power flow changes direction (i.e. Reverse power) the RP' LED illuminates.

Reverse Current: Reverse current is the current that flows through the internal CT (in-built) during reverse power flow.

Overload sensing: The tripping level for reverse current is adjustable from 2% to 20% of maximum forward current (i.e. 100 mA to 1 Amp for 5 Amp forward current)

Hysteresis: Hysteresis represents the difference between the tripping level and the recovery level to the unit. the hysteresis is 4% ± 2% of Full scale.

Trip Time Delay: The relay de-energises when the reverse current exceeds the tripping level for longer than the trip delay time period. The trip time delay is adjustable up to 10 sec.
The 'ON LED off when the reverse current level exceeded until the time delay expires (at which time delay de-energises). If forward power is restored or the reverse current level drops below the hysteresis level before the trip delay expires the 'ON' LED constantly on and relay remains energised.

Latching: When the LINK between terminals 11 & 12 is connected, the relay will not recover from a tripped condition, but will remain de-energised until rest push button is pressed.

1. If nominal current is higher than permissible input current (5A) use external CT as shown in fig 2B.

2. Current I/P direction should be same as shown in fig. 2A / 2B and CT connected in the same phase.

TECHNICAL SPECIFICATIONS OF VST D1

1. **System Supply :** 110 / 220 / 230 / 240 / 380 / 415 VAC ±20% (3 phase, 3 wire for RPT D2 & 3 phase, 4 wire for RPF D2)
2. **Aux. Supply :** N.A.
3. **Rated Current I/P :**
   5 Amp (in-Built CT)
4. **Frequency :** 50 / (60) Hz ± 3%
5. **Output Relay Contact :**1 CO / (2 CO)
6. **Output Contact Rating :**
   5 Amp 240 VAC (Resistive)
7. **Trip Setting :**
   2 To 20% In step of 2% of max. forward current
   i.e. 5 Amp
8. **Trip Setting Accuracy :**
   ± 10% of Full scale
9. **Monitoring :**
   Phase to Phase voltage of three phase (For RPT D2)
   Phase to Neutral voltage of B phase (For RPF D2)
10. **Trip Time Delay :**
    1 to 10 Sec. in step of 1 Sec.
11. **Trip Time Delay Setting Accuracy :**
    ± 10% of Full scale
12. **Power On Delay :**
    1 to 10 Sec (variable)
13. **Reset Mode :** Auto / Manual
14. **Hysteresis :**
    4% ± 2% of Full scale
15. **Indications :**
    Relay ON - ON (Green)
    Reverse Power - RP (Red)
16. **Current Sensor :**
    Inbuilt (5 Amp), above 5 Amp Ext. CT of 5 Amp secondary to be used
17. **Enclosure :** ABS
18. **Dimensions (mm) :**
    Overall : 76 x 56.5 x 117.5
    Mounting : 68 x 27
19. **Mounting :**
    35 mm Rail Mounting / Panel Mounting
20. **Weight (gms) :** 460
21. **Operating Conditions :**
    a) Temperature : -5° C to + 60° C
    b) Humidity : upto 95% RH

TESTING PROCEDURE