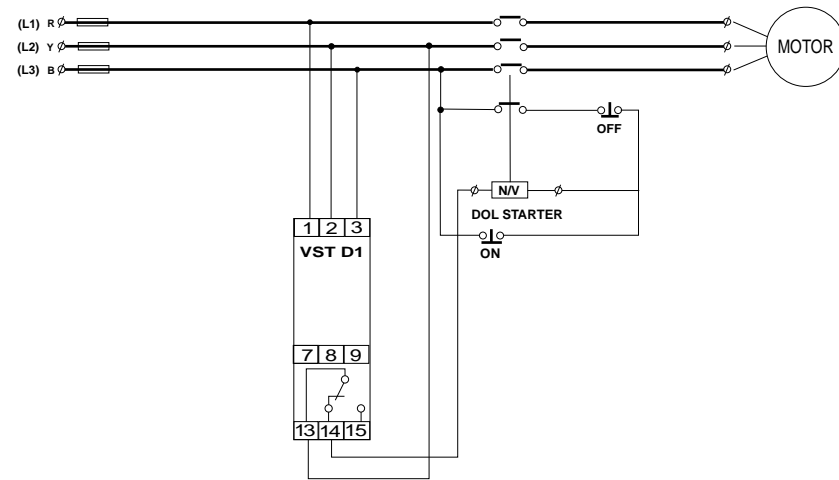


ELECTRICAL CONNECTIONS IN POWER AND CONTROL WIRING

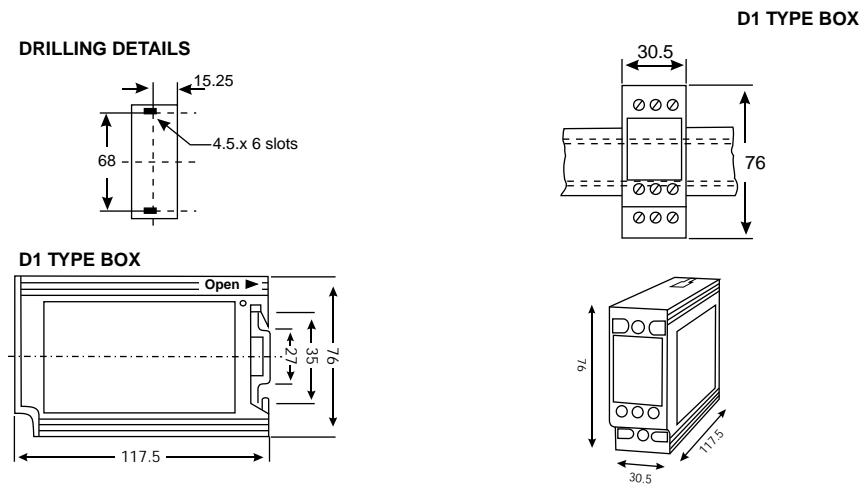
FIG 3



NOTE: RELAY CONTACT SHOWN FOR UNIT IN HEALTHY CONDITION.

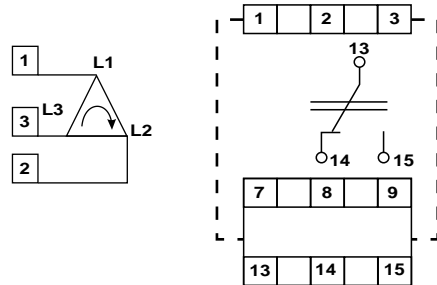
MOUNTING DIMENSIONS

FIG 2



CONNECTIONS DIAGRAM

FIG 1



INDICATIONS
ON : POWER ON
TR : TRIP

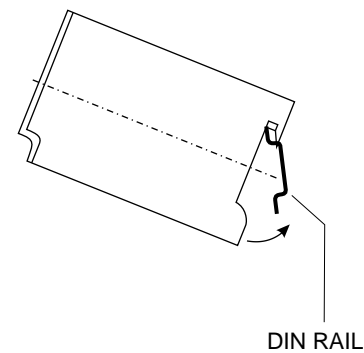
NOTES

- SYSTEM SUPPLY TO BE CONNECTED AS MENTIONED ON THE UNIT
- INTERCHANGE 1 & 3 IF STARTER DOES NOT HOLD
- IN CASE OF Y - STARTER CONNECT 13 & 14 TO MAIN CONTRACTOR COIL.
- RELAY CONTACTS SHOWN IN HEALTHY CONDITION
- 1-2-3 : SYSTEM SUPPLY
- 13-14-15 : C-NO-NC
- 7-8-9 : DUMMY

NOTE: RELAY CONTACT SHOWN FOR UNIT IN HEALTHY CONDITION.

MOUNTING ON DIN RAIL

Fig 4A

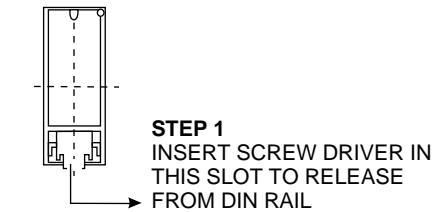


DIN RAIL

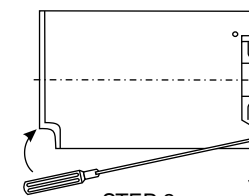
RELEASING FROM DIN RAIL

Fig 4B

REAR VIEW



STEP 1
INSERT SCREW DRIVER IN THIS SLOT TO RELEASE FROM DIN RAIL



STEP 2
USE SCREW DRIVER NO. 936 OR EQUIVALENT.

INSTALLATION INSTRUCTION MANUAL FOR PHASE FAILURE RELAY

VST D1



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 01
(18/ 07 / 2000)

INSTALLATION INSTRUCTIONS FOR VST D1

INTRODUCTION

Thank you for selecting and purchasing MINILEC make 3 phase sequence voltage monitoring relay VST D1

The following installation instructions would guide you installing your VST D1 and making the best use it.

VST D1 is a phase sequence voltage monitoring relay operating on positive sequence voltage sensing principle. It offers protection against.

- Phase failure condition.
- Phase sequence reversal condition.

Your VST D1 is an auxiliary relay and it should be used along with the motor starter only. Before installing your VST D1 check whether the motor starter is operating perfectly by starting the motor with "START" push button and switching it off by "OFF" push button. If the motor does not "START" or "STOP" on respective operations. The starter needs to be serviced. Do not install your VST D1 with faulty motor starter. The VST D1 measures on its own 3 phase power supply & relay energises when all three phases are present with correct phase sequence.

THE SETTING TRIP DELAY AND RESETTING

The unit monitors that all the three phases are present & have correct phase sequence. It also has a facility of settable monitoring voltage on the front plate within the tolerance of $\pm 15\%$, the relay de-energizes when one or more phase goes below 80% of the set voltage. The trip time delay is between 0.2 Sec. to 10 Sec. (variable). The VST D1 until resets automatically when the set voltage gets normalised. The hysteresis for this unit is $5\% \pm 1\%$ of set voltage.

MOUNTING

Your VST D1 can be Rail Mounted or panel mounted (See Fig.4A & 4B for mounting it on Rail & releasing it from RAIL respectively). It is suitable for 35 mm RAIL.(For panel mounting and drilling details, see fig.2).

CAUTION

- 1) Ensure that your VST D1 is-
 - not installed near any heat sources like burner, sunlight, electric arc etc.
 - not subjected to abnormal vibrations.
 - installed as near to starter as possible.
- 2) 3 phase sensing (R,Y,B) is normally taken from outgoing terminals of motor starter. But in following conditions, sensing should be taken from incoming side of motor starter.
 - Fully automatic reset starter.
 - Multi speed motor starter.
 - Reversible starter.
 - When any other auto resetting type control switch is used in series with no volt coil of the starter.

ELECTRICAL CONNECTIONS OF VST D1

See fig. 1 for Electrical connection details of VST D1.

See fig. 3 for installation of VST D1 in power and control wiring diagram.

System supply voltage should be as marked on front cover plate of VST D1. Connect the system supply wires i.e. R.Y & B phases at terminals 1,2 & 3 respectively. The R Y B sensing should be taken from incoming points of motor starter in case of Direct Online starter. In case of star delta starters, it should be taken from incoming terminals of main contractor. The output relay contacts 13 and 14 are to be connected in series with no volt coil of starter (of main contractor in case of star- delta starter).

TECHNICAL SPECIFICATIONS OF VST D1

1. **System Supply Voltage :**
230 / 415 / 575 VAC $\pm 15\%$, 3 Wires.
2. **Aux. Supply :** (builtin) self powered.
3. **Frequency :** 50Hz / (60)Hz $\pm 3\%$
4. **Output RELAY Contacts :** 1 CO
5. **Output Contact Rating :**
5Amp, 240VAC (Resistive)
6. **Measuring range :**
85% to 115% of System Supply (settable through potentiometer)
7. **Trip setting :**
below 80% of voltage setting (PPS VALUE)
8. **Set accuracy :** $\pm 2\%$ of set value
9. **Trip time delay :** 0.2 sec. to 10 sec. (Variable)
10. **Resetting :** auto
11. **Reset Gap (hysteresis) :**
 $5\% \pm 1\%$ of trip setting
12. **Indications :**
Power on-ON (green)
Trip - TR (red)
13. **Enclosure :** ABS
14. **Dimensions (mm) :**
76 x 30.5 x 117.5 (Overall)
68 center to center (mounting)
15. **Mounting :**
35 mm rail mounting / panel mounting.
16. **Weight (gms) :** 300 gms (approx)
17. **Temperature :** -5°C to 60°C
18. **Humidity :** upto 95% Rh

TESTING PROCEDURE

