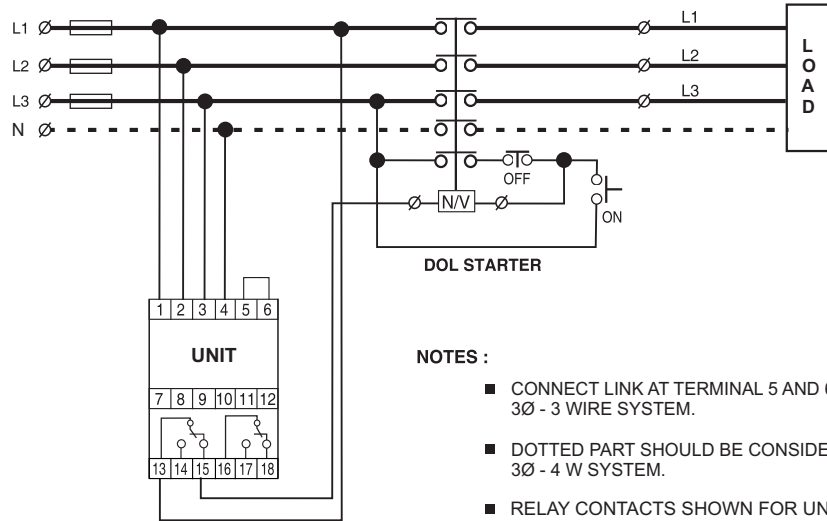


ELECTRICAL CONNECTION IN POWER AND CONTROL WIRING

Fig. 1



NOTES :

- CONNECT LINK AT TERMINAL 5 AND 6 FOR 3Ø - 3 WIRE SYSTEM.
- DOTTED PART SHOULD BE CONSIDERED FOR 3Ø - 4 W SYSTEM.
- RELAY CONTACTS SHOWN FOR UNIT IN POWER OFF / NON FAILSAFE CONDITION.

MOUNTING DIMENSIONS

Fig. 2A : D2 - 03 TYPE BOX

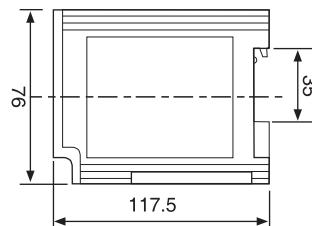
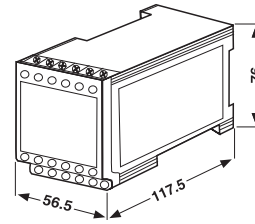


Fig. 2B : DIN RAIL MOUNTING

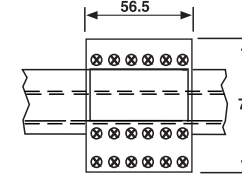
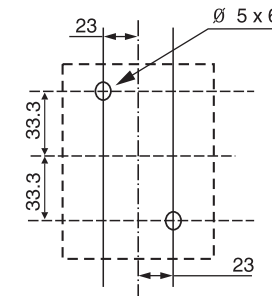


Fig. 2C : PANEL MOUNTING



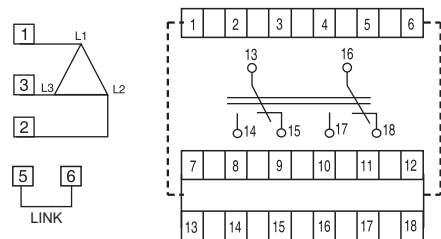
INSTALLATION INSTRUCTION MANUAL FOR UNDER / OVER VOLTAGE RELAY

D2 VCT1
(3Ø- 3 W / 3Ø- 4 W)



TERMINAL DETAILS OF 3Ø - 3 W

Fig. 3A



INDICATIONS

- 'ON' : Steady on : Power On
- 'NF' : Steady on : Neutral Fail
- 'UV' : Steady on : Under Voltage
- 'OV' : Steady on : Over Voltage

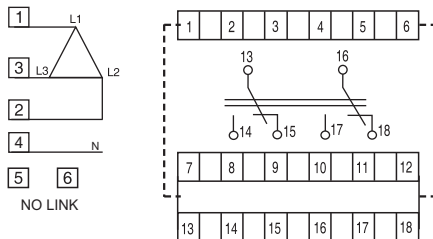
TERMINAL DETAILS

TERMINAL NO.	D2 VCT1
1 - 2 - 3	L1-L2-L3 PHASE VOLTAGE INPUT.
4	DUMMY
5, 6	LINK
7 - 12	DUMMY
13 - 14 - 15	C1 - NO1 - NC1
16 - 17 - 18	C2 - NO2 - NC2

- NOTE : RELAY CONTACTS SHOWN FOR UNIT IN POWER OFF/ NON FAILSAFE CONDITION.

TERMINAL DETAILS OF 3Ø - 4 W

Fig. 3B



INDICATIONS

- 'ON' : Steady on : Power On
- 'NF' : Steady on : Neutral Fail
- 'UV' : Steady on : Under Voltage
- 'OV' : Steady on : Over Voltage

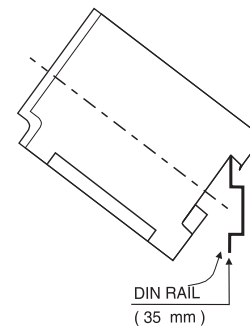
TERMINAL DETAILS

TERMINAL NO.	D2 VCT1
1 - 2 - 3	L1-L2-L3 PHASE VOLTAGE INPUT.
4	NEUTRAL POINT
5, 6	NO LINK
7 - 12	DUMMY
13 - 14 - 15	C1 - NO1 - NC1
16 - 17 - 18	C2 - NO2 - NC2

- NOTE : RELAY CONTACTS SHOWN FOR UNIT IN POWER OFF// NON FAILSAFE CONDITION.

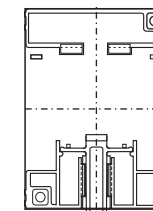
MOUNTING ON DIN RAIL

Fig. 4A



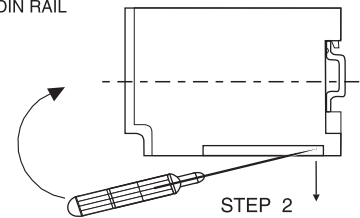
RELEASING FROM DIN RAIL

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



IF THE PRODUCT IS NOT INSTALLED AS PER GIVEN GUIDELINES, MINILEC WILL NOT BE RESPONSIBLE FOR ANY WRONG CONNECTION, DAMAGE, INJURY, ACCIDENT ETC.

WARRANTY

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

Manufactured by :

minilec[®]

www.minilecgroup.com

S. NO. 1073 / 1-2-3,

AT POST : PIRANGOOT,

TAL : MULSHI, DIST. : PUNE (INDIA)

PIN : 412 111

VERSION 08 (23/11/18)

INSTALLATION INSTRUCTIONS FOR D2 VCT1

INTRODUCTION

Thank you for selecting and purchasing MINILEC make Under / Over Voltage Relay. The following installation instructions would guide you in installing Under / Over Voltage Relay (i.e. D2 VCT1) and making the best use of it. The above models are used in 3Ø-3 W Or 3Ø- 4W system supply where under / over voltage protection is required. D2 VCT1 is a 3Ø - 3W / 3Ø - 4W (Selectable) Under/Over voltage Relay. It offers protection against :

- Under Voltage Condition
- Over Voltage Condition
- Neutral Fail Condition

D2 VCT1 is also having facility of test mode, Fail Safe / Non fail safe Relay operation & 2 CO Or 1 CO + 1 CO relay contact selection. (common/separate relay selection mode is not applicable for model with 2CO relay output.) D2 VCT1 is an auxiliary relay & is to be used along with the motor starter only. The effective working of D2 VCT1 will depend on efficient working of the electromagnetic motor starter. Before installing D2 VCT1 check whether the motor starter is operating perfectly by starting the motor with the "START" push button and switching it off by "STOP" push button. If the motor does not "START" or "STOP" on respective operations the starter needs to be serviced. **Do not install D2 VCT1 with faulty motor starter.**

TRIP SETTING, TRIP DELAY AND RESETTING

D2 VCT1 is factory set as per Table 1.

MOUNTING

D2 VCT1 can be RAIL mounted or PANEL mounted. (see Fig. 2B & 2C for DIN RAIL & Panel Mounting. Also see Fig. 4A & 4B for mounting on and releasing from DIN RAIL).

CAUTION

1. Ensure that D2 VCT1 is -

- Not installed near any heat sources like Burner, Sunlight, Electric arc etc.
- Not subjected to abnormal vibrations.
- Not subjected to direct heat, sunlight, rain, stormy wind and dust.
- Installed as near to the starter as possible.

ELECTRICAL CONNECTIONS OF D2 VCT1

See Fig. 3A & 3B for terminal details of D2 VCT1. See Fig. 1 for installation in power and Control wiring of D2 VCT1.

Do all connections in Power Off condition. Connect L1, L2, L3 phases at terminal no. 1, 2, and 3 (N at terminal no.4 in case of 3Ø - 4W). The output relay contacts 13, 15 & 16, 18 are to be connected in series with no-volt coil of the starter. For 3Ø - 3W, connect link at terminal no.5 & 6. For 3Ø - 4W, remove link at terminal no.5 & 6.

DEFAULT SETTING IN PROGRAM MODE

- Auto Reset.
- Non Fail Safe Relay Operation.
- 1 CO + 1CO For 1CO-UV,1CO-OV.

Note :

Refer Table 2 to change above default settings in program mode.

Table 2 : PROGRAM MODE SELECTION

Step No.	Press PRG./ RST SW1 for	L1 (UV)	L2 (OV)	L3 (NF)	MODE
1	≥ 8 sec	⚙	⚙	⚙	Program Mode
2	≤ 4 sec	●	●	●	Test Mode
3	Wait ≥ 3 sec	○	○	○	Exit Test Mode
4	≥ 4 sec	⚙	○	○	Auto/Manual selection
5	≤ 4 sec	●/○	○	○	● Auto reset ○ Manual reset
6	≥ 4 sec	○	⚙	○	Fail Safe selection
7	≤ 4 sec	○	●/○	○	● Fail Safe ○ Non Fail Safe
8	≥ 4 sec	○	○	⚙	Common/separate relay selection mode
9	≤ 4 sec	○	○	●/○	● 1CO+1CO for both ○ 1CO-UV,1CO-OV
10	≥ 4 sec	⚙	○	○	Cycle repeat
11	If Sw1 not pressed for ≥ 10 sec in step No.1, 4, 6 & 8	⚙	⚙	⚙	Saves all parameters & Exit from program mode.

Note:- ● If SW1 is pressed for ≥ 5 sec in step No.1, 4, 6 & 8, it will bypass particular mode & enters in next mode.
● Program mode-common/separate relay selection mode is not applicable for model with 2CO relay output.

⚙ Flashing ● LED ON ○ LED OFF

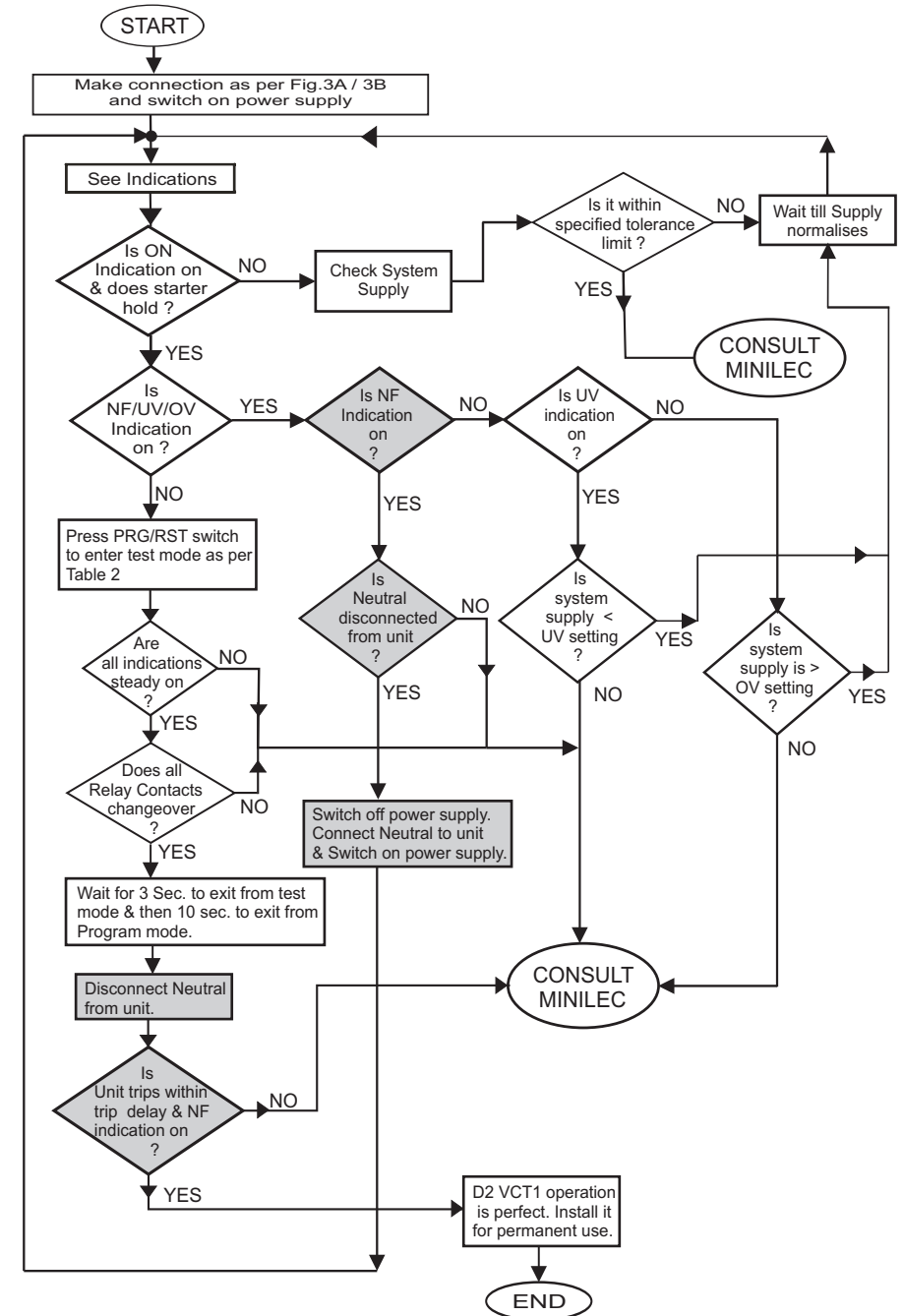
Table 1 : TRIP SETTINGS

Parameters	Under Voltage	Over Voltage
Cut off at (For 3Ø - 3 W)	285 - 425 VAC FOR 380 - 415 - 440 VAC 165 - 225 VAC FOR 220 - 230 - 240 VAC 75 - 115 VAC FOR 100 - 110 - 120 VAC [Variable]	400 - 550 VAC FOR 380 - 415 - 440 VAC 230 - 300 VAC FOR 220 - 230 - 240 VAC 105 - 150 VAC FOR 100 - 110 - 120 VAC [Variable]
Cut off at (For 3Ø - 4 W)	165 - 245 VAC FOR 380 - 415 - 440 VAC 95 - 135 VAC FOR 220 - 230 - 240 VAC 45 - 65 VAC FOR 100 - 110 - 120 VAC [Variable]	230 - 320 VAC FOR 380 - 415 - 440 VAC 130 - 170 VAC FOR 220 - 230 - 240 VAC 60 - 90 VAC FOR 100 - 110 - 120 VAC [Variable]
Power on delay	1 to 10 sec. ± 5 % Of Full Scale [Variable]	1 to 10 sec. ± 5 % Of Full Scale [Variable]
Trip time delay	1 to 10 sec. ± 5 % Of Full Scale [Variable]	1 to 10 sec. ± 5 % Of Full Scale [Variable]
Auto reset gap	3 % ± 1 % of set value	3 % ± 1 % of set value

TECHNICAL SPECIFICATIONS OF D2 VCT1

- System Supply :** 100 - 110 - 120 / 220 - 230 - 240 / 380 - 415 - 440 VAC ± 20 %
- Aux. Supply :** In - Built
- Frequency :** 50 / 60 Hz.
- Output Relay Contacts :** (1 CO + 1CO) / 2CO
- Output contact rating :** 5 Amp, 240VAC [Resistive]
- Power consumption :** 26 VA (max.)
- Test Facility :** Refer Table 2
- Under / Over Voltage Trip Setting :** Refer Table 1
- Power ON Delay :** 1 to 10 Sec. [Variable]
- Trip Time Delay :**
 - UV/OV : 1 to 10 Sec. [Variable]
 - Neutral Fail : 2 sec ± 1.5 sec [Fixed]
- Set Accuracy : UV & OV**
 - UV & OV : ± 2 % of set value (± 3 % of set value for 110VAC system)
 - Power ON : ± 5 % of full scale (± 10 % for 1st marking of P. ON Dly)
 - Trip delay : ± 5 % of full scale
- Resetting :** Auto / Manual Reset
- Reset Gap :** 3 % ± 1 % of set value
- Indications :**
 - ON : Steady On : Power ON
 - NF : Steady On : Neutral Fail
 - UV : Steady On : Under voltage
 - OV : Steady On : Over Voltage
- Additional Features :**
 - Fail Safe / Non Fail Safe Relay : Refer Table 2
 - 1CO + 1CO / 2CO : Refer Table 2
- Enclosure :** ABS
- Dimensions (mm) :**
 - Overall : 76 X 56.5 X 117.5
 - Mounting : 66.6 X 46
- Mounting :** 35mm Rail Mounting & Panel Mounting
- Weight (Approx.) :** 300 gms.
- Operating Conditions :**
 - Temperature : - 5 °C To + 60 °C
 - Humidity : Up To 95 % Rh
- Life Expectancy :** 0.5 x 10⁶ operations at 100% rating

TESTING PROCEDURE



■ For 3Ø - 4W Only