

## INSTALLATION INSTRUCTION MANUAL PHASE FAILURE RELAY

### USP D1



**USP D1** is a phase failure relay. It offers protection against

- \* Unbalanced voltage condition.
- \* Phase failure condition.
- \* Phase sequence reversal condition.

#### MOUNTING :

**USP D1** can be Rail Mounted or Panel Mounted. It is suitable for 35mm RAIL .

#### TRIP SETTING, TRIP DELAY AND RESETTING :

**USP D1** is factory set to trip the starter for unbalance voltage between any two phases of 60V ± 6V (fixed).

The trip time delay is between 2 to 5 secs.

**USP D1** relay resets automatically when the unbalance voltage is reduced to less than 20V between all phases.

#### TECHNICAL SPECIFICATIONS OF USP D1

1.	<b>SYSTEM SUPPLY VOLTAGE :</b>	415 VAC ± 20 %
2.	<b>AUX. SUPPLY VOLTAGE :</b>	IN BUILT
3.	<b>FREQUENCY :</b>	50 Hz, ± 3%
4.	<b>POWER CONSUMPTION :</b>	3 VA ( max.)
5.	<b>OUTPUT RELAY CONTACT :</b>	1 Changeover\
6.	<b>OUTPUT CONTACT RATING ( RESISTIVE ) :</b>	5Amp., 240 VAC
7.	<b>LIFE EXPECTANCY :</b>	0.5 x 10 <sup>6</sup> operations at 100% rating
8.	<b>UNBALANCE TRIP SETTING :</b>	60V ± 6V
9.	<b>TRIP TIME DELAY :</b>	3.5 Sec. ± 1.5 Sec.
10.	<b>RESETTING :</b>	Auto Reset
11.	<b>RESET GAP :</b>	10 - 18V
12.	<b>INDICATIONS :</b>	L1 : Green - Power ON L2 : Red - Trip
13.	<b>ENCLOSURE :</b>	ABS.
14.	<b>DIMENSIONS (mm) :</b>	Overall : 76 X 30.5 X 117.5 Mounting : 68 center to center
15.	<b>MOUNTING :</b>	35 mm Rail Mounting & Panel Mounting
16.	<b>WEIGHT (gms) :</b>	320 (approx.)
17.	<b>OPERATING CONDITIONS :</b>	TEMPERATURE : -5°C to + 60°C HUMIDITY : Upto 95% Rh

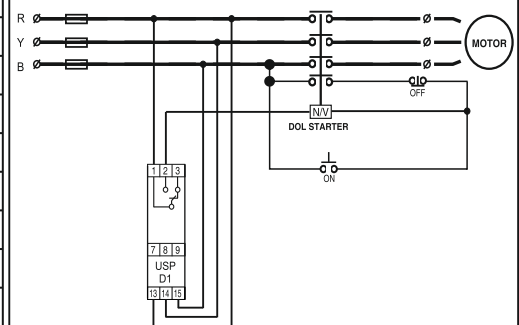
#### CAUTION :

- 1) Ensure that **USP D1** is -
  - \* Not installed near any heat sources like burner, sunlight, electric arc etc.
  - \* Not subjected to abnormal vibrations.
  - \* Installed as near to the starter as possible.
- 2) 3Ø sensing (L1,L2,L3) is normally taken from incoming side of motor starter.

#### COMPLIANCE TO STANDARDS

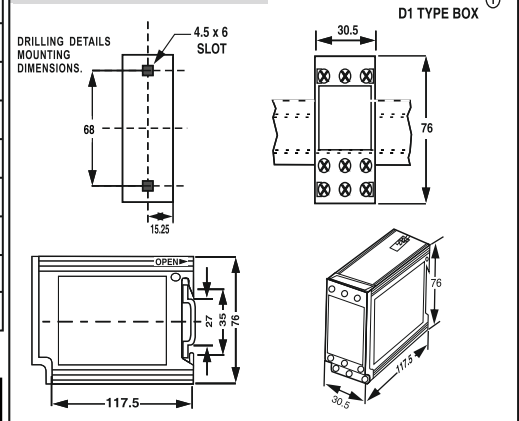
	TEST	IEC STD.
1.	EFT Test of Auxiliary Supply	61000-4-4
2.	EFT Test of System Supply	61000-4-4
3.	Surge Test of Auxiliary Supply	61000-4-5
4.	Surge Test of System Supply	61000-4-5
5.	ESD Test (Contact Discharge)	61000-4-2
	ESD Teast (Air Discharge)	61000-4-2
6.	H.V. Test (Dielectric Test)	60255-5
7.	Insulation Resistance Test	60255-5
8.	Dry Heat Test	60068-2-2
9.	Damp Heat test (Steady State)	60068-2-30
10.	Damp Heat test (cyclic test)	60068-2-78

#### ELECTRICAL CONNECTION IN POWER AND CONTROL WIRING

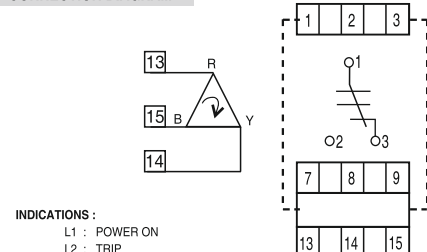


NOTE : RELAY CONTACT SHOWN FOR UNIT IN POWER OFF CONDITION

#### MOUNTING DIMENSIONS



#### CONNECTION DIAGRAM



#### INDICATIONS :

- L1 : POWER ON
- L2 : TRIP

#### TERMINAL DETAILS :

- 13-14-15 : R-Y- B PHASE VOLTAGE SENSING POINTS
- 7-8-9 : DUMMY CONTACTS
- 1-2-3 : 1 CHANGEOVER OUTPUT RELAY CONTACTS ( C - NO - NC )

NOTES : RELAY CONTACT SHOWN IN POWER OFF CONDITION.

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