

INSTALLATION INSTRUCTION MANUAL OVERLOAD AND DRY RUN PROTECTION RELAY



PGS D2



PGS D2 is an electronic overload relay which senses motor current to offer overload and dry run protection (for submersible pumps). PGS D2 offers protection against:

- Overloading condition.
- Dry running condition.

PGS D2 is an auxiliary relay. It should be used along with the motor starter only.

The effective working of PGS D2 will depend on efficient working of the electromagnetic motor starter. Before installing PGS D2 unit 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 PGS D2 with faulty motor starter.

MOUNTING

PGS D2 is RAIL mounted or panel mounted. It is suitable for 35 mm RAIL

CAUTION

Ensure that PGS 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 & Dust
- Installed as near to the starter as possible.

ELECTRICAL CONNECTIONS OF PGS D2:

See Fig.1 for electrical connection details of PGS D2.

See Fig. 2A & 2B, for installation of PGS D2 in the Power and control wiring diagram. Auxiliary Supply Voltage should be as marked on front cover plate of PGS D2. Connect the current inputs at terminal 1 & 2 (for 10A) or at terminal 1 & 3 (for 5A) of PGS D2 respectively. The output relay contacts 13 & 14 are to be connected in series with the No-volt coil of the contactor.

TRIP SETTING, TRIP DELAY & RESETTING

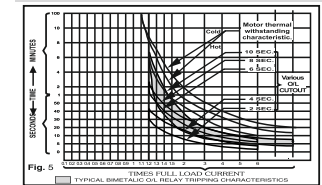
PGS D2 is factory set to trip the motor with inverse time current characteristics of 2 secs. Depending upon the percentage of excess load on the motor over and above 100% rated load, PGS D2 decides the trip time delay as per inverse time current characteristics (ref. Fig. 5 for typical inverse time current characteristics chart)

PGS D2 is factory set to trip the submersible pump motor at less than 75% of full load current in case of dry run. PGS D2 relay can be set in Auto reset mode or Manual reset mode by removing or connecting a short link at terminals 11 & 12 respectively. For Remote reset mode use terminals 10 & 11.

PGS D2 relay with AUTO RESET mode Should not be used with

- * Fully automatic reset starter.
- * When any other auto resetting type control switches are used in series with no-volt coil of the starter. For using with fully automatic reset starter if PGS D2 is to be set in Auto Reset mode, a reset time delay should be induced externally preferably with Minilec make Time Delay Relay.

INVERSE TIME CHARACTERISTICS (IDMT) GRAPH

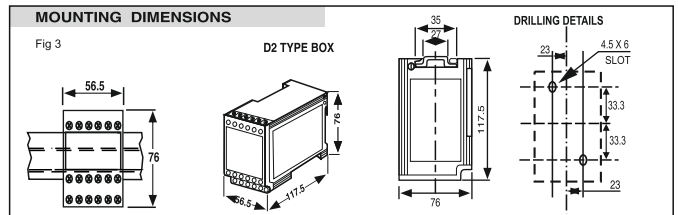
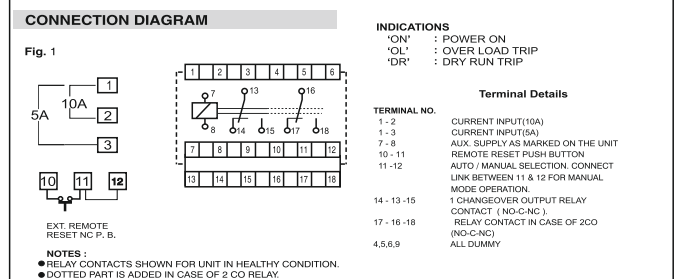
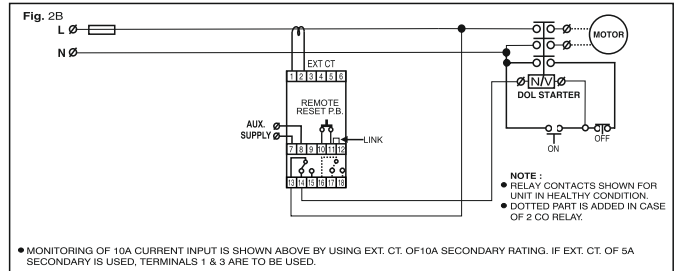
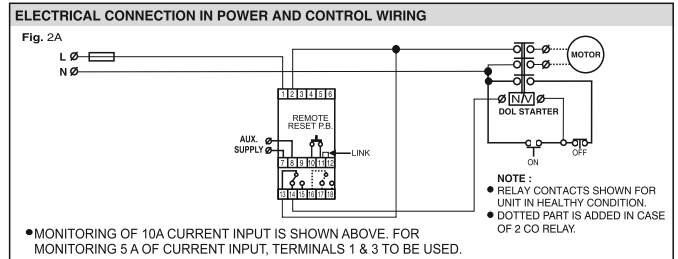


TECHNICAL SPECIFICATION OF PGS D2:		
1. Voltage System Supply:	240V AC ± 20 % 240V AC ± 20 %	
2. Aux. Supply (AC):	220-240 VAC ± 20 %	
3. CURRENT INPUT:	Terminal 1 & 2 : Current Input 10A Terminal 1 & 3 : Current Input 5A	
4. Frequency :	50 Hz / 60 Hz ± 3%.	
5. Power Consumption :	3 VA max	
6. Output Relay : Contacts rating :	1CO / 2CO 5A at 240V AC (resistive)	
7. Life Expectancy :	0.5 x 10 ⁸ operations at 100% rating.	
8. Operating Condition :	Temperature : -5°C to + 60°C Humidity : Up to 95% R. H.	
9. Trip Settings :	*Under Current : 75% of set (Dry Run) : current ± 10% (fixed) *Overload : Above 120% of set Current (fixed)	
10. Trip Time Delay :	*Under Current: Less than 2 secs. *Overload : As per 2 sec. Inverse Time current characteristics	
11. Resetting:	Auto / Remote / Manual	
12. Indications :	ON (Green) : Power On OL (Red) : Overload trip DR (Red) : Dry Run trip.	
13. Current Sensor:	Inbuilt (10Amp & 5Amp) Above 10A, EXT. CT of 5Amp or 10Amp Secondary is to be used	
14. Enclosure :	ABS	
15. DIMENSIONS(mm) : Overall: Mounting:	76X 56.5 X 117.5 66.6 X 46	
16. Unit Weight:	600 gms (approx)	

NOTE :- For motors upto 1.5 HP PGS D2 is used without external CT as shown in fig.2A. For motor above 1.5 HP PGS D2 is used along with external 5A or 10 A secondary CT. (Refer electrical connection fig.2B)

COMPLIANCE TO STANDARDS

TEST	IEC STD.
1. EFT Test of Auxiliary Supply	61000-4-4
2. Surge Test of Auxiliary Supply	61000-4-5
3. Voltage Interruption, Variation & Dip Test	61000-4-11
4. ESD Test (Contact Discharge)	61000-4-2
5. 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



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