



SWITCHGEAR

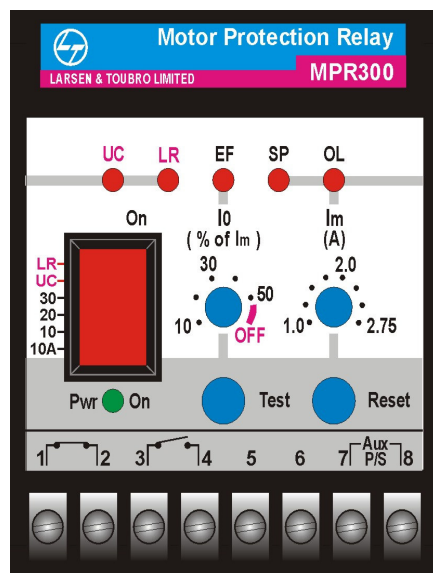
SAFE & SURE

MOTOR PROTECTION RELAY FOR SMALL MOTORS TYPE MPR300

Relay MPR300 is a three-phase LT motor protection relay for motor sizes up to 50KW (max. 88 A current). It is a low cost solution, offering five major protections for motors widely used in fans, pumps, crushers, mills, compressors, belt conveyors, centrifuges, mixers, ventilators, escalators, motorized valves etc. Major advantage is that it provides E/F co-ordination in contactor-started motors, thus offering greater security, operator safety and economy. The relay is micro controller based, highly user friendly and compact with inbuilt CTs. The relay can also be used for protection of larger motors by using external CTs. medium voltage and high voltage sub-stations.

49, 51LR, 32, 51N, 46

DIN rail / Back panel mounting
Integral CTs
Wide range of motor currents (1 A to 88A)
5 major protections
(Thermal O/L, Single phasing, E/F,
Locked rotor & under current)
4 trip time curves for O/L (selectable)
Trip Indications
Test facility



MPR300 has very few controls / settings on the front panel. There are two potentiometers – one for setting the **motor rated current** and the other for setting the **E/F pick up level**. A DIPswitch is provided for selection of thermal **overload trip class** and **enable / disable of Locked rotor protection** and **Under current protection**. Other settings are prefixed in the relay (some of them related to the trip class selected).

Six LEDs are provided – five to indicate the faults and one to indicate power on condition. There are two push buttons- one to reset the LEDs on clearance of fault and the other to test the relay. The test PB operation runs a small software routine, which performs check on all software & hardware blocks internal to relay.

SIDE LABELS: All data pertaining to pick up level and applicable time delays are indicated on a label on right hand side of the unit. The wiring diagram label is provided on the left hand side of the unit.

SETTINGS:

- | | |
|---|---|
| <ul style="list-style-type: none"> * Motor Full load current I_m * Trip time characteristic (Class 10A, 10, 20, 30) * Enable / Disable Under Current | <ul style="list-style-type: none"> * E/F pick up level I_o * Enable / Disable Locked Rotor |
|---|---|

The pick up levels and time delays for negative sequence, locked rotor and under current protections are preset in the relay.

RELAY CONNECTIONS:

- R-Y-B phase wires pass through relay.
- Trip contacts to be wired to starter

TECHNICAL SPECIFICATIONS

- | | | | | | | | | |
|--------------|-------------------------------------|---|--------------|--------------|------------|------------|-------------|-------------|
| 1.0 | Protections offered: | Thermal over load, Single Phasing, Earth fault, Locked rotor, Under current | | | | | | |
| 2.0 | Thermal Over Load Protection | <ul style="list-style-type: none"> a) Current setting 1 to 88 A in 6 different models <table border="0" style="margin-left: 20px;"> <tr> <td>1A to 2.75 A</td> <td>2A to 5.50 A</td> </tr> <tr> <td>4A to 11 A</td> <td>8A to 22 A</td> </tr> <tr> <td>16A to 44 A</td> <td>32A to 88 A</td> </tr> </table> Continuously adjustable b) Trip Time Characteristics Class 10A, 10, 20 and 30 as per IEC 947-4-1. Field selectable through front DIPswitches. c) Pre alarm - at 1.05 I_m – by flashing LED (I_m = Motor rated current) d) Thermal Memory - Provided. | 1A to 2.75 A | 2A to 5.50 A | 4A to 11 A | 8A to 22 A | 16A to 44 A | 32A to 88 A |
| 1A to 2.75 A | 2A to 5.50 A | | | | | | | |
| 4A to 11 A | 8A to 22 A | | | | | | | |
| 16A to 44 A | 32A to 88 A | | | | | | | |
| 3.0 | Earth fault Protection | <ul style="list-style-type: none"> a) Current setting 10 to 50% of I_m (Field selectable by front panel control) b) Trip time delay - 200 msec (Factory set) c) Disable feature - Available | | | | | | |

4.0	Phase Unbalance Protection	a) Unbalance current - 40% of I_m b) Trip time delay - 3 sec (Both factory set)
5.0	Locked rotor protection	a) Locked rotor current - 3 I_m b) Trip time delay - 1 sec (Both factory set) c) Disable feature - Available
6.0	Under Current protection	a) Under current threshold - 50% of I_m b) Trip time delay - 3 sec (Both factory set) c) Disable feature - Available
7.0	Operational Indicators	a) Indications for Power On LED b) Indications for trip on each of the 5 faults LED starts flashing when fault is detected. Become steady on when the relay trips after the preset time delay. LEDs are manual reset.
8.0	Contacts	1 N/O + 1 N/C – manual reset Rated Voltage 250 V AC / 30 V DC Rated Current 5A Rated breaking capacity 2000 VA / 240 W (Resistive)
9.0	Auxiliary power supply	240 V AC +/- 20% or 110V AC +/-20%
10.0	Operating Temperature	0 to 60 deg. C
11.0	Accuracy	As per IEC 947-4-1
12.0	Reference Standards	IEC 60255, IEC 61000 and IEC 60068 Please refer separate document “ General Electrical Characteristics”
13.0	Over all dimensions	70mm W x 85 mm H x 106 mm D
14.0	Weight	Less than 400 gms

CATALOG Nos.

MPR300BE010	Motor Protection Relay, 1 to 2.75A
MPR301BE020	Motor Protection Relay, 2 to 5.5A
MPR302BE040	Motor Protection Relay, 4 to 11A
MPR303BE080	Motor Protection Relay, 8 to 22A
MPR304BE160	Motor Protection Relay, 16 to 44A
MPR305BE320	Motor Protection Relay, 32 to 88A

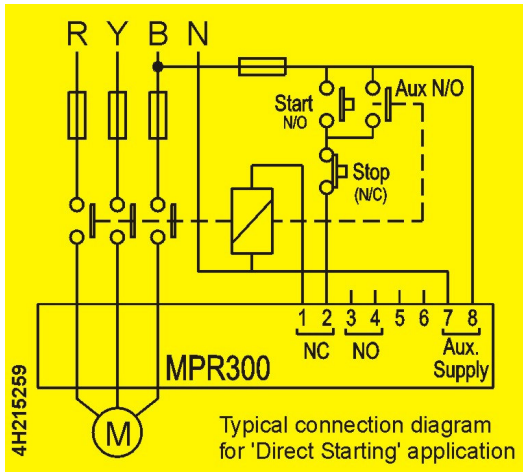


Fig-1a Wiring diagram for MPR300 (NORMAL MODE)

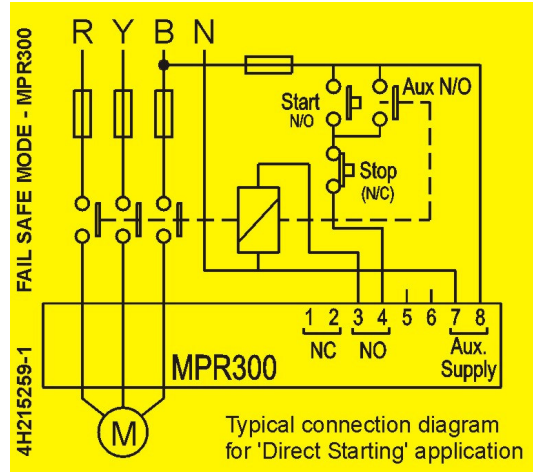


Fig-1b Wiring diagram for MPR300 (FAIL SAFE MODE)

