MP15PW- Part Winding Motor Protection Relay

Instructions

The MP15PW is a solid state motor protector for three phase part winding motors, with an adjustable start delay and an adjustable run delay, anti short cycle timer and fault memory. The MP15PW now incorporates advanced individual phase monitoring and adjustable sensitivity for superior motor protection and reliability. The MP15PW includes M5x20 Fuse holder and pluggable connectors for fast change-over.

The MP15PW protects against these common causes of part winding motor failure

• Supply voltage imbalances of more than 25%: 180V (nominal) adjustable between phases from 160~ 200VAC

• Run or start Windings only being active and motor burnout due to overload

• Poorly adjusted time delays between start and run causing overload-MP15PW only offers "safe" timing

• Blown fuses causing single phasing

• Chattering or poor making motor starting contacts

- Faulty 415V isolating switchgear
- Loose or poor connections simulating a phase loss

• Overloading. Motor starters which automatically reset can cause winding failure. The 15 min. delay prevents this

• Power trip\fail caused by multiple motors starting at the same time. The MP15PW Start Delay Prevents this as multi motors can be stage started.

• Adjustable Under Voltage to approximately 180 volts (160~200) to neutral on any phase, the MP15PW automatically trips

Normal Startup Operation

1. Power on Start Delay adjustable 1 \sim 60s set by Start delay Trimpot

Internal Start Relay switches on, Start Contactor closes.
LED turn s from red to green

4. MP15PW monitors for 240VAC present on start winding phases (Pins 8,9,10)

5. Run Delay 0.2 ~ 1sec set by Run Delay Trimpot

6. Internal Run Relay switches on, Run Contactor Switches on.

7. 240VAC is now present on run winding phases (Pins 11,12,13).

8. Full running operation of motor - MP15PW now constantly monitors Start AND Run phase winding voltages to tolerance.

Status Indications and Fault operation

Green: normal operation MP15PW has both start and run contactors

Green slow flash; Start contactor has made but MP15PW is not detecting voltages on start windings (P 8,9,10) **Red:** motor not running, MP15PW is in start delay mode

(1-60 sces) or has detected a phase fault on run or start winding and will retry start after 15 minute delay

Red/Amber : motor not running, MP15PW has detected an overload on either start (P2) or run (P5) inputs and will retry start after fault clears and then 15 minute delay

Green/Amber : Memory-motor running, MP15PW has previousley detected a fault memory on either start (P2) or run (P5) inputs. A power cycle will clear

Amber Memory indication.

Troubleshooting

Indication: The LED flashes green and the run winding doesn't switch on?

Fix: There is no voltage on the Start winding, check to see if you have Wired the start windings correctly

Indication: The LED flashes red and the start and run windings don't switch on?

Fix: Check if there is 240VAC on pin 6 Off Time if there is this is an Off Time Fault.

Indication: The LED flashes red and amber and start and run windings don't switch on?

Fix: This is either a Start or Run fault, if 240AVC is on pin 4 then it is a Start Fault, if 240VAC is on Pin 5 then it is a Run fault.

Indication: The LED turns green and the start contactor comes on but then the LED turns red and the start contactor turns off

Fix: It could be that the Start Phases and the Run Phases are wired back to front, or it could be that if there is no voltage on the Run winding the run winding could be wired incorrectly. It could also be an imbalance on the start or run windings.

Futher Information

Other Models: MP15P is a single winding model. Check the Phasefale website for other models.Interactive Online **Animation**; visit http://www.phasefale.com.au/product_mp15.html to see operation of the MP15P- its educational and fun! The MP15 range is proudly designed and Manufactured in Australia.



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Iss1 Q1 2013



MP15PW Wiring Diagram Please follow this diagram very carefully for correct operation of MP15PW

