



**evoqua**  
WATER TECHNOLOGIES



## **WATER CHAMP® CHEMICAL INDUCTION UNIT MOTOR PROTECTION DEVICE**

The MPD is a fully-programmable electronic overload relay. An alphanumeric LED display provides programming and diagnostic information. Seventeen parameters can be programmed in the MPD.

1. Low Voltage Set Point
2. High Voltage Set Point
3. Voltage Unbalance Set Point
4. CT Size/Loop Setting
5. Overcurrent Trip Point
6. Undercurrent Trip Point
7. Current Unbalance Trip Point
8. Trip Class (5,10,15,20,30)
9. Rapid Cycle Timer (RD1)
10. Overload Restart Delay (RD2)
11. Underload Restart Delay (RD3)
12. No. of restarts after an overload (Manual or Automatic)
13. RS485 Address
14. No. of restarts after an underload fault
15. Underload Trip Delay

16. Ground Fault Trip Point
17. Temperature Monitoring Sensor

### **Features**

- Recordable voltage, current, last 4 faults, KWh usage, and power factor is available when using communications package
- Digitally programmable for precise customizing.
- Seventeen set points can be programmed for maximum protection
- Last fault memory provides instant troubleshooting diagnostics
- UL® and CE listed as an overload relay
- RS-485 communication port for use with computerized systems using Modbus protocol

### **Key Benefits**

- Overload or underload motor protection
- Over or under voltage change protection
- Protects against single-phasing or unbalanced voltage/current
- Built-in time prevents rapid cycling

## SPECIFICATIONS

Electrical	
Input voltage	200-480 VAC, 3-ph (Standard) 500-600 VAC for model MPD-575
Frequency	50-60 Hz
Motor full load amp range	2-25A, 3 ph (loops required) 25-90A, 3 ph (direct) 80-800A, 3 ph (external CT's)
Power consumption	10W (maximum)
Output contact rating SPDT (Form C)	Pilot duty rating: 480 VA @ 240 VAC General purpose: 10 A @ 240 VAC
Expected Life	
Mechanical	1 x 10 <sup>6</sup> operations
Electrical	1 x 10 <sup>5</sup> operations at rated load
Accuracy at 77° F (25°C)	
Voltage	± 1%
Current	± 3% (< 100A direct)
GF Current	± 15%
Timing	5% ± 1% second
Repeatability	
Voltage	± 0.5% of nominal voltage
Current	± 1% (<100A direct)
Trip times (those not shown have user selectable trip times.)	
Ground Fault Trip Time	<u>Trip time</u>
101%-200% of Setpoint	8 seconds 41 second
201%-300% of Setpoint	4 seconds 41 second
301%-400% of Setpoint	3 seconds 41 second
401% or Greater	2 seconds 41 second
Current Unbalance Trip Times	
<u>% Over Setpoint</u>	<u>Trip time</u>
1%	30 seconds
2%	15 seconds
3%	10 seconds
4%	7.5 seconds
5%	6 seconds
6%	5 seconds
10%	3 seconds
15%	2 seconds

Safety Marks	
UL® Standards	UL508, UL1053
CE	IEC 60947-1, IEC 60947-5-1
Standards Passed	
Electrostatic Discharge (ESD)	IEC 1000-4-2, Level 3, 6kV contact, 8kV air
Radio Frequency Immunity (RFI), Conducted	IEC 1000-4-6, Level 3 10V/m
Radio Frequency Immunity (RFI), Radiated	IEC 1000-4-3, level 3 10V/m
Fast transient burst	IEC 1000-4-4, Level 3, 3.5 kV input power
Surge	
IEC	1000-4-5 Level 3, 2kV line-to-line; Level 4, 4kV line-to-ground
ANSI/IEEE	
Hi-potential test	Meets UL508 (2x rated V +1000V for 1 minute)
Mechanical	
Dimensions	3.0"H x 5.1"D x 3.6"W
Terminal torque	7 in lbs.
Enclosure material	Polycarbonate
Weight	1.2 lbs
Maximum conductor size through MPD	0.65" with insulation
Environmental	
Temperature range	Ambient Operating: -4° - 158°F (-20° -70° C)
Class of protection	IP20, NEMA 1
Relativity humidity	10-95%, non-condensing per IEC 68-2-3



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