RoHS

Compliant

Features

- Compact 17.5mm Wide
- Protects against Phase Loss, Phase Reversal & Phase Asymmetry
- Multi-Voltage: 3 × 208 to 3 × 480V
- Selectable Under Voltage / Over Voltage & Asymmetry
- · LED Indication for all Faults & for change in settings during run time for better security
- Adjustable Time Delay
- 1 C/O Configuration

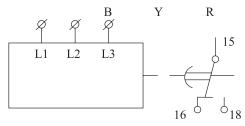
Specification

| Part Number | | MP008398 | | | | | |
|----------------------------------|-----------------------|--|--|--|--|--|--|
| Parameters | | | | | | | |
| Supply Voltage | | 208 - 480V AC, (3 Phase 3 Wire) | | | | | |
| Supply Variation | 1 | -12% to +10% | | | | | |
| Frequency | | 50/60 Hz | | | | | |
| Power Consum | ption | 3.5 VA Max. | | | | | |
| Trip | Phase Loss | Yes | | | | | |
| Levels | Phase Sequence | Yes | | | | | |
| | Phase Asymmetry | 30% Fixed | | | | | |
| Time | ON Delay | < 750 ms | | | | | |
| Delay | Trip Time (OFF Delay) | 100 ms | | | | | |
| Output | Relay Output | 1 C/O | | | | | |
| | Contact Rating | 5A @ 250V AC / 30V DC (Resistive) | | | | | |
| | Electrical Life | 1 × 10 ⁵ | | | | | |
| | Mechanical Life | 3 × 10 ⁶ | | | | | |
| Utilization | AC - 15 | Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3.0/1.5 A | | | | | |
| Category | DC - 13 | Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A | | | | | |
| LED Indication | Healthy | Relay LED Continuous ON | | | | | |
| | Phase Reverse | Relay LED Flashing | | | | | |
| | Asymmetry | Relay LED Off (Red Colour) | | | | | |
| Operating Temp Storage Temper | | -15°C to +60°C -20°C to +80°C | | | | | |
| Humidity (Non Condensing) | | 95% (Rh) | | | | | |
| Enclosure | | Flame Retardant UL94-VO | | | | | |
| Dimension (W x H x D) | | 17.5mm × 90mm × 58.5mm | | | | | |
| Weight (unpacked) | | 70 g | | | | | |
| Mounting | | Base / DIN rail | | | | | |
| Degree of Prote | ection | IP 20 for Terminal, IP 30 for Enclosure | | | | | |





Connection Diagram



MP008398 / MP008399

| Part Number | | MP008399 | | | | | | |
|---|-----------------------|--|--|--|--|--|--|--|
| Parameters | | | | | | | | |
| Supply Voltage | | 208 - 480V AC, (3 Phase 3 Wire) | | | | | | |
| Supply Variation | 1 | -12% to +10% | | | | | | |
| Frequency | | 50/60 Hz | | | | | | |
| Power Consump | ption | 3.5 VA Max. | | | | | | |
| Settable Nomina | al Voltage | 208 - 220 - 380 - 400 - 415 - 440 - 480V AC | | | | | | |
| Trip | Phase Loss | Yes | | | | | | |
| Levels | Phase Sequence | Yes | | | | | | |
| | Phase Asymmetry | 10% Fixed | | | | | | |
| | Under Voltage | 5% to -25% | | | | | | |
| | Over Voltage | +5% to +25% | | | | | | |
| Time | ON Delay | 0.5 to 100 s (Selectable) | | | | | | |
| Delay | Trip Time (OFF Delay) | 5 s | | | | | | |
| Output | Relay Output | 1 C/O | | | | | | |
| | Contact Rating | 5A @ 250V AC / 30V DC (Resistive) | | | | | | |
| | Electrical Life | 1 × 10 ⁵ | | | | | | |
| | Mechanical Life | 3 × 10 ⁶ | | | | | | |
| Utilization | AC - 15 | Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3.0/1.5 A | | | | | | |
| Category | DC - 13 | Rated Voltage (Ue): 24/125/250 V, Rated Current (le): 2.0/0.22/0.1 A | | | | | | |
| LED Indication | Healthy | Red LED: Supply Healthy Continuous ON, Phase Reverse Flashing | | | | | | |
| | UV | Red LED: Under Voltage Continuous ON | | | | | | |
| | OV | Red LED: Over Voltage Continuous ON | | | | | | |
| | Asymmetry All LED's | Red LED: Asymmetry Continuous ON Phase Fail or Higher Cut OFF(> 560V AC) or lower cut off (<175V AC), Blinking Pot changed during running conditions | | | | | | |
| Operating Temperature Storage Temperature | | -15°C to +60°C -20°C to +80°C | | | | | | |
| Humidity (Non Condensing) | | 95% (Rh) | | | | | | |
| Enclosure | | Flame Retardant UL94-VO | | | | | | |
| Dimension (W x H x D) | | 18mm × 59mm × 90mm | | | | | | |
| Weight (unpack | ed) | 70 g | | | | | | |
| Mounting | | Base / DIN rail | | | | | | |
| Degree of Prote | ction | IP 20 for Terminal, IP 30 for Enclosure | | | | | | |

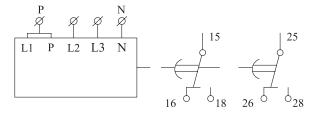


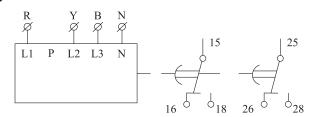


Connection Diagram Single Phase

MP008402 / MP008403

Three Phase





| Part Number | er | MP008402 | MP008403 | | | | |
|-----------------------------|-----------------------|---|--------------------------|--|--|--|--|
| Parameters | | | | | | | |
| Supply Volta | ige | 240V AC (1 Phase & 3 Phase, 4 Wire) | | | | | |
| Frequency | | 50/60 Hz | | | | | |
| Power Cons | umption | 5 VA | | | | | |
| Trip | Phase Loss | Yes | | | | | |
| Settings | Phase Sequence | Yes | | | | | |
| | Phase Asymmetry | 10% | | | | | |
| | Under Voltage | 55% to 95% | | | | | |
| | Over Voltage | 105% to 125% | | | | | |
| | Hysterisis | 7 V (±2 V) | | | | | |
| Time | ON Delay | 0.5 to 15 s (Selectable) | 5 s | | | | |
| Delay | Trip Time (OFF Delay) | 5 s | 0.5 to 15 s (Selectable) | | | | |
| Output | Relay Output | 2 C/O | | | | | |
| | Contact Rating | 5A @ 250V AC / 28V DC (Resistive) | | | | | |
| | Electrical Life | 1 × 10 ⁵ | | | | | |
| | Mechanical Life | 3 × 10 ⁶ | | | | | |
| Utilization | AC - 15 | Rated Voltage (Ue): 120/240 V, Rated Current (le): 3.0/1.5 A | | | | | |
| Category | DC - 13 | Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A | | | | | |
| LED Indicati | on | Separate indications for Power ON, UV and OV; ON: Phase Reverse; BLINK: Phase Asymmetry | | | | | |
| Operating Te Storage Tem | | -15°C to +55°C -25°C to +70°C | | | | | |
| Humidity (Non Condensing) | | 95% (Rh) | | | | | |
| Enclosure | | Flame Retardant UL94-VO | | | | | |
| Dimension (W x H x D) | | 36mm × 90mm × 60mm | | | | | |
| Weight (unpacked) | | 120 g | | | | | |
| Mounting | | Base / DIN rail | | | | | |
| Degree of P | rotection | IP 20 for Terminal, IP 40 for Enclosure | | | | | |





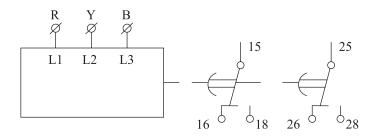
Features

- Protects against Phase Loss, Phase Reversal & Phase Asymmetry
- Suitable for 3 Phase 3 Wire system
- Selectable Under Voltage / Ovder Voltage Trip level
- Selectable Time Delay
- · Models for Selectable Phase Asymmetry
- · LED Indications for Power and Fault conditions
- · Voltage Sensing Principle
- 2 C/O Configuration

| Part Number | | MP008405 | MP008406 | | | | | |
|-----------------------------|-----------------------|---|--------------------------|--|--|--|--|--|
| Parameters | | • | • | | | | | |
| Supply Volta | nge | 415V AC (3 Phase, 3 Wire) | | | | | | |
| Frequency | | 50-60 Hz | | | | | | |
| Power Cons | umption | 10 VA Max. | | | | | | |
| Trip | Phase Loss | Yes | | | | | | |
| Settings | Phase Sequence | Yes | | | | | | |
| | Phase Asymmetry | 10% | | | | | | |
| | Under Voltage | 55% to 95% | | | | | | |
| | Over Voltage | 105% to 125% | | | | | | |
| | Hysterisis | 7 V (±2 V) | | | | | | |
| Time | ON Delay | 0.5 to 15 s (Selectable) | 5 s | | | | | |
| Delay | Trip Time (OFF Delay) | 5 s | 0.5 to 15 s (Selectable) | | | | | |
| Output | Relay Output | 2 C/O | | | | | | |
| | Contact Rating | 5A @ 250V AC / 28V DC (Resistive) | | | | | | |
| | Electrical Life | 1 × 10 ⁵ | | | | | | |
| | Mechanical Life | 3 × 10 ⁶ | | | | | | |
| Utilization | AC - 15 | Rated Voltage (Ue): 120/240 V, Rated Current (le): 3.0/1.5 A | | | | | | |
| Category | DC - 13 | Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A | | | | | | |
| LED Indicati | on | Separate indications for Power ON, UV and OV; ON: Phase Reverse; BLINK: Phase Asymmetry | | | | | | |
| Operating Te Storage Tem | | -15°C to +55°C -25°C to +70°C | | | | | | |
| Humidity (Non Condensing) | | 95% (Rh) | | | | | | |
| Enclosure | | Flame Retardant UL94-VO | | | | | | |
| Dimension (| W x H x D) | 36mm × 90mm × 60mm | | | | | | |
| Weight (unp | acked) | 120 g | | | | | | |
| Mounting | | Base / DIN rail | | | | | | |
| Degree of Protection | | IP 20 for Terminal, IP 40 for Enclosure | | | | | | |

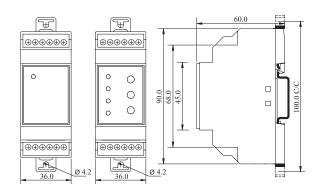


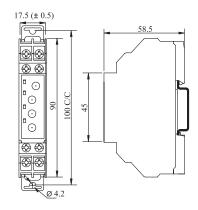




MP008405 / MP008406

Mounting Dimension





Dimensions: Millimetres

Terminal Torque & Capacity

| Ø 3.5 mm | Torque - 0.54 N.m (5 Lb.in) Terminal screw - M2.6 | | | | | |
|----------|---|--|--|--|--|--|
| | Solid Wire - 1 X 0.23.3 mm ² | | | | | |
| AWG | 1 X 24 to 12 | | | | | |

| Ø 3.55.0 mm | Torque - 1.1 N.m (10 Lb.in) Terminal screw - M3.5 | | | | | |
|-------------|---|--|--|--|--|--|
| | Solid Wire - 2 X 0.22.5 mm ² | | | | | |
| AWG | 1 X 24 to 10 | | | | | |



Product Selection Chart: Voltage Monitoring

| Part Number | 3-Phase 3-Wire | 3-Phase 4-Wire | 1 -Phase | Under Voltage Protection | Over Voltage Protection | Phase Loss Protection | Phase Sequence Protection | Phase Asymmetry Monitoring | Setta- blew ON Delay | Settable OFF Delay | 1 C/O Relay Output | 2 C/O Relay Output | Neutral Loss Protection | 115V AC | 208 to 480V AC | 240V AC | 415V AC |
|----------------|-------------------|-------------------|-------------|--------------------------------|-------------------------------|--------------------------|---------------------------------|----------------------------------|----------------------------|--------------------------|--------------------------|--------------------------|-------------------------------|------------|-------------------------|------------|------------|
| MP008398 | • | | | | | | | | | | | | | | | | |
| MP008399 | • | | | • | • | | | | | | | | | | • | | |
| MP008402 | | | • | • | • | • | • | • | • | | | • | | | | • | |
| MP008403 | | | • | • | • | • | • | | • | | | | | | | • | |
| MP008405 | | | | • | • | • | • | | | | | • | | | | | |
| MP008406 | • | | | • | • | • | • | • | | | | • | | | | | |

Part Number Table

| Description | Part Number | | |
|--|-------------|--|--|
| Phase Loss, Phase Sequence, Phase Asymmetry Monitoring (Fixed) | MP008398 | | |
| Single Phasing Preventor (SPP) with Selectable ON Delay | MP008399 | | |
| Single Phasing Preventor (SPP) with Selectable ON Delay | MP008402 | | |
| Single Phasing Preventor (SPP) with Selectable OFF Delay | MP008403 | | |
| Single Phasing Preventor (SPP) with Selectable ON Delay | MP008405 | | |
| Single Phasing Preventor (SPP) with Selectable OFF Delay | MP008406 | | |

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