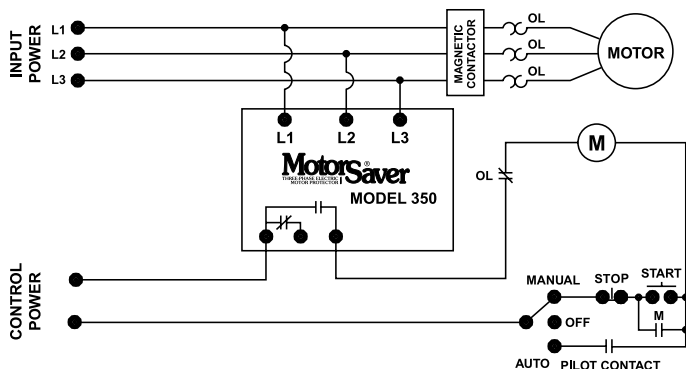


## 350 SERIES

### 3-phase voltage/phase monitor



### Wiring Diagram



### Description

The 350 series is a heavy-duty voltage monitor. This product should be used when high current relays or dual contacts are required, or 480 V controls are used. Since the 350 series uses heavy-duty relays, it comes in fixed voltage range models rather than a dual auto-ranging version like the model 250.

The 350200 has a 15 A general purpose contact. The 350400 provides a SPDT (Form C) relay rated to switch up to 600 V, allowing the use of 480 V controls, eliminating the need for a control power transformer to step the voltage down to 120–240 V. Several DPDT (two Form C contacts) relay models are also available.

The 350 microcontroller-based family of products are low cost yet highly advanced solutions to heavy-duty problems. The 350 includes advanced single LED diagnostics. Five different light patterns distinguish faults and normal operating conditions. Other options such as high voltage trip and adjustable restart delay are available.

### Features & Benefits

| FEATURES                                                   | BENEFITS                                                                                                         |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Proprietary microcontroller based circuitry</b>         | Constantly monitors 3 phase voltage to protect against harmful line conditions, even before the motor is started |
| <b>Advanced LED indication</b>                             | Provides diagnostics which can be used for troubleshooting and to determine relay status                         |
| <b>Adjustable restart delay (-2 models) settings</b>       | Allows staggered start up of multiple motors, after a fault, to prevent a low voltage condition                  |
| <b>600 V rated relay contacts available on some models</b> | Eliminates the need for a control transformer to step voltage down to 120–240 V for a control circuit            |

### Ordering Information

| MODEL      | LINE VOLTAGE | DESCRIPTION                                                                                | MODEL      | LINE VOLTAGE | DESCRIPTION                                                                                |
|------------|--------------|--------------------------------------------------------------------------------------------|------------|--------------|--------------------------------------------------------------------------------------------|
| 350200     | 190–240 V ac | SPDT, fixed trip and restart delay                                                         | 35040026   | 380–480 V ac | DPDT, 2 relays (1)10a. (1) 15 A; fixed trip and variable restart delay (manual, 2–300s)    |
| 3502002    | 190–240 V ac | SPDT, fixed trip and variable restart delay (manual, 2–300 s)                              | 35040028** | 380–480 V ac | DPDT, 2 relays 15 A; variable restart delay (no manual reset)                              |
| 35020026   | 190–240 V ac | DPDT, 2 relays (1)10a. (1) 15 A; fixed trip and variable restart delay (manual, 2–300 s)   | 35040029   | 380–480 V ac | SPDT, fixed trip and variable restart delay (manual, 2–300 s), plus high voltage detection |
| 35020028** | 190–240 V ac | DPDT, 2 relays 15 A; variable restart delay (no manual reset)                              | 350600     | 475–600 V ac | SPDT, fixed trip and restart delay                                                         |
| 35020029   | 190–240 V ac | SPDT, fixed trip and variable restart delay (manual, 2–300 s), plus high voltage detection | 3506002    | 475–600 V ac | SPDT, fixed trip and restart delay (manual, 2–300 s)                                       |
| 350400     | 380–480 V ac | SPDT, fixed trip and restart delay                                                         | 35060026   | 475–600 V ac | DPDT, 2 relays (1)10a. (1) 15 A; fixed trip and variable restart delay (manual, 2–300 s)   |
| 3504002    | 380–480 V ac | SPDT, fixed trip and variable restart delay (manual, 2–300 s)                              | 35060028** | 475–600 V ac | DPDT, 2 relays 15 A; variable restart delay (no manual reset)                              |
| 35040025   | 380–480 V ac | DPDT, fixed trip and variable restart delay (manual, 2–300 s)                              | 35060029   | 475–600 V ac | SPDT, fixed trip and variable restart delay (manual, 2–300 s), plus high voltage detection |

\*\* These units are not equipped with Manual Reset.

## 350 SERIES

### Specifications

#### Input Characteristics

##### Line Voltage

|                  |               |
|------------------|---------------|
| <b>350200</b>    | 190–240 V ac  |
| <b>350400</b>    | 380–480 V ac  |
| <b>350600</b>    | 475–600 V acC |
| <b>Frequency</b> | 50*/60 Hz     |

#### Functional Characteristics

##### Low Voltage (% of setpoint)

|              |      |
|--------------|------|
| <b>Trip</b>  | 90 % |
| <b>Reset</b> | 93 % |

##### Voltage Unbalance (NEMA)

|              |       |
|--------------|-------|
| <b>Trip</b>  | 6 %   |
| <b>Reset</b> | 4.5 % |

##### Trip Delay Time:

|                    |           |
|--------------------|-----------|
| <b>Low Voltage</b> | 4 seconds |
|--------------------|-----------|

|                                       |           |
|---------------------------------------|-----------|
| <b>Unbalance &amp; Phasing Faults</b> | 2 seconds |
|---------------------------------------|-----------|

##### Restart Delay Time

|                      |           |
|----------------------|-----------|
| <b>After a Fault</b> | 2 seconds |
|----------------------|-----------|

|                                    |           |
|------------------------------------|-----------|
| <b>After a Complete Power Loss</b> | 2 seconds |
|------------------------------------|-----------|

#### Output Characteristics

##### Output Contact Rating

##### SPDT (350200)

|                   |                   |
|-------------------|-------------------|
| <b>Pilot Duty</b> | 480 VA @ 240 V ac |
|-------------------|-------------------|

|                        |      |
|------------------------|------|
| <b>General Purpose</b> | 15 A |
|------------------------|------|

|                                |                   |
|--------------------------------|-------------------|
| <b>SPDT (350-400, 350-600)</b> | 470 VA @ 600 V ac |
|--------------------------------|-------------------|

|                         |                              |
|-------------------------|------------------------------|
| <b>DPDT (-6 Option)</b> | 1–10 A General Purpose       |
|                         | 480 VA @ 240 V ac Pilot Duty |
|                         | 1–15 A General Purpose       |
|                         | 480 VA @ 240 V ac Pilot Duty |
|                         | 1 hp @ 240 V ac              |
| <b>DPDT (-8 Option)</b> | 2–15 A General Purpose       |
|                         | 480 VA @ 240 V ac Pilot Duty |
|                         | 1 hp @ 240 V ac              |

#### General Characteristics

##### Ambient Temperature Range

|                  |                              |
|------------------|------------------------------|
| <b>Operating</b> | -40° to 70°C (-40° to 158°F) |
|------------------|------------------------------|

|                |                              |
|----------------|------------------------------|
| <b>Storage</b> | -40° to 80°C (-40° to 176°F) |
|----------------|------------------------------|

|                                  |      |
|----------------------------------|------|
| <b>Trip &amp; Reset Accuracy</b> | ±1 % |
|----------------------------------|------|

|                            |     |
|----------------------------|-----|
| <b>Maximum Input Power</b> | 5 W |
|----------------------------|-----|

##### Terminal

|               |            |
|---------------|------------|
| <b>Torque</b> | 7 in.-lbs. |
|---------------|------------|

|                  |           |
|------------------|-----------|
| <b>Wire Size</b> | 12–18 AWG |
|------------------|-----------|

##### Transient Protection

|                   |                           |
|-------------------|---------------------------|
| <b>(Internal)</b> | IEC 61000-4-5; 1995 ±6 kV |
|-------------------|---------------------------|

##### Safety Marks

|           |                       |
|-----------|-----------------------|
| <b>UL</b> | UL 508 (File #E68520) |
|-----------|-----------------------|

|            |                           |
|------------|---------------------------|
| <b>CSA</b> | 22.2 No. 14 (File #46510) |
|------------|---------------------------|

|                   |                                                        |
|-------------------|--------------------------------------------------------|
| <b>Dimensions</b> | <b>H</b> 74.42 mm (2.93"); <b>W</b> 133.86 mm (5.27"); |
|-------------------|--------------------------------------------------------|

|  |                           |
|--|---------------------------|
|  | <b>D</b> 74.93 mm (2.95") |
|--|---------------------------|

|               |                                |
|---------------|--------------------------------|
| <b>Weight</b> | 1.05 lbs. (16.8 oz., 476.27 g) |
|---------------|--------------------------------|

|                        |           |
|------------------------|-----------|
| <b>Mounting Method</b> | #8 screws |
|------------------------|-----------|

#### Special Options

|                                       |                            |
|---------------------------------------|----------------------------|
| <b>Opt. 2: Variable Restart Delay</b> | Manual, 2–300 seconds adj. |
|---------------------------------------|----------------------------|

##### Opt. 5: DPDT Relay

##### Opt. 6: 2 Relays (1) 10 A, (1) 15 A

##### Opt. 8: 2 Relays (2) 15 A

##### Opt. 9: High Voltage (% of setpoint)

|             |       |
|-------------|-------|
| <b>Trip</b> | 110 % |
|-------------|-------|

|              |       |
|--------------|-------|
| <b>Reset</b> | 107 % |
|--------------|-------|

\*Note: 50 Hz will increase all delay timers by 20 %.