

## 520CP / 520CS SERIES

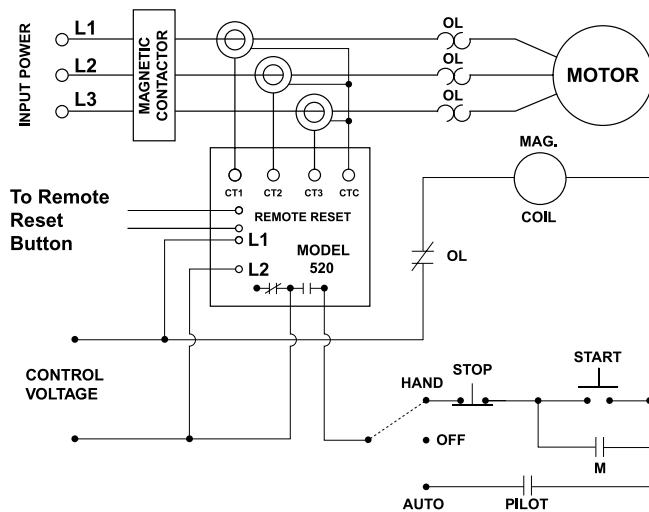
3-phase current monitor



**OBSOLETE**



### Wiring Diagram



### Ordering Information

MODEL	LINE VOLTAGE	DESCRIPTION
520CS115	100-130VAC	Programmable motor acceleration period
520CP115	100-130VAC	For motors with ramp up times of 4 seconds or less
520CP230	200-250VAC	For motors with ramp up times of 4 seconds or less
520CP460	400-500VAC	For motors with ramp up times of 4 seconds or less
520CP115RX30	100-130VAC	For motors with ramp up times of 4 seconds or less. Has two independent output relays: one energizes on start up, one energizes on fault after all restart attempts are exhausted (RD1 in minutes)
520CP115RX56	100-130VAC	For motors with ramp up times of 4 seconds or less. Has two output relays. Unit displays "NC" (no current) when the motor current equals "0" for more than 4 seconds (RD1 in minutes)

### Description

The 520CP/520CS Series are fully-programmable, microcontroller-based, current-sensing devices designed to monitor 3-phase pumps. The 520CP is designed for systems with ramp-up times of 4 seconds or less. The 520CS has a programmable motor acceleration time that can be set from 0-50 seconds. Applications include submersible pumps, booster pumps, reverse osmosis systems, centrifugal pumps, vertical turbine pumps, oil well pumps, chemical pumps or other similar systems.

Three external current transformers must be utilized in conjunction with both the 520CP and 520CS. The following seven setpoints, common across both relays, can be set and viewed from the 3-digit alphanumeric display: overcurrent trip point, undercurrent trip point, current unbalance trip point, trip delay, rapid-cycle timer (RD1), overload restart delay (RD2), and underload restart delay (RD3).

With the 520CP you can also set parameters for number of starts after an overload and number of restarts after an overload fault. With the 520CS you can set parameters for number of starts after a fault and motor acceleration time, number of starts after an overload and number of restarts after an underload fault. Last fault diagnostic is also viewable. When a harmful condition is detected, the MotorSaver's output relay is deactivated after the specified trip delay. The output relay reactivates after the appropriate RD2 or RD3 timer has expired. The 520CS will ignore overcurrent, undercurrent, and current unbalance during the motor acceleration period; however, if the motor or pump is started on a single-phase or a reverse phase condition, the 520CS and the 520CP will deactivate its output relay in 0.5 seconds.

For model selection, the voltage designation specified is based on the control circuit voltage of the application.

**520CP115RX-30** - The 520CP unit has two output relays that work independently of each other. The right relay energizes on start up and the left relay energizes on a fault after all restart attempts are exhausted. (RD1 in minutes)

**520CP115RX56** - This 520CP unit has two output relays that work in unison. Unit displays 'NC' (no current) when the current of the motor equals '0' for more than 4 seconds. (RD1 in minutes)

RD1 - restart delay on power-up and rapid-cycle timer

RD2 - restart delay after all faults except undercurrent

RD3 - restart delay after undercurrent

### Features

Protects three-phase motors from:

- Overcurrent
- Undercurrent
- Current unbalance
- Rapid cycling
- Single phasing
- Phase reversal

## 520CP / 520CS SERIES

### Specifications

#### Input Characteristics

**Control Voltage**

**520CP115, 520CS115** 100-130VAC

**520CP230** 200-250VAC

**520CP460** 400-500VAC

**Frequency** 50\*/60Hz

#### Functional Characteristics

**Maximum Full Scale Current** 5 Amps (max.)

**Fixed Operating Point****Reverse & Single-Phase**

**Trip Delay** 0.5 second

**Trip Point Accuracy** ±2%

**Timing Accuracy** ±25%, ±1 second

#### Output Characteristics

**Output Contact Rating (SPDT)**

**520CP115, 520CP230,**

**520CS115**

**Pilot Duty** 480VA @ 240VAC

**General Purpose** 10A

**520CP460**

**Pilot Duty** 470VA @ 600VAC

#### General Characteristics

**Temperature Range**

0° to 70°C (32° to 158°F)

**Maximum Input Power**

5 W

**Transient Protection****(Internal)**

2500V for 10 ms

**Safety Marks****UL**

UL508 (File #E68520)

**CSA**

C22.2 (File #46510)

**Dimensions**

**H** 209.55 mm (8.25"); **W** 133.35 mm (5.25");

**D** 82.55 mm (3.25")

**Weight**

2.2 lbs. (35.2 oz., 997.9 g)

**Mounting Method**

Four #10 or #12 screws (3/4"-1" in length)

**Options (additional cost)**

DPDT Relay Contacts

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

Requires external current transformers (sold separately).