



### Features:

- Protects motor from:
  - Overload or jammed impeller
  - Underload or dry well
  - Current unbalance
  - Current single phase
  - Reverse phase
  - Rapid cycling
- 3-digit LED diagnostic display
- Last fault diagnostics
- Automatic or manual reset
- Remote reset capability
- UL listed
- CSA approved
- 5-year warranty
- Made in USA

SymCom's Model 520CS is a fully programmable, microcontroller-based, current sensing device designed to monitor 3-phase pumps or systems with ramp up times of up to 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.

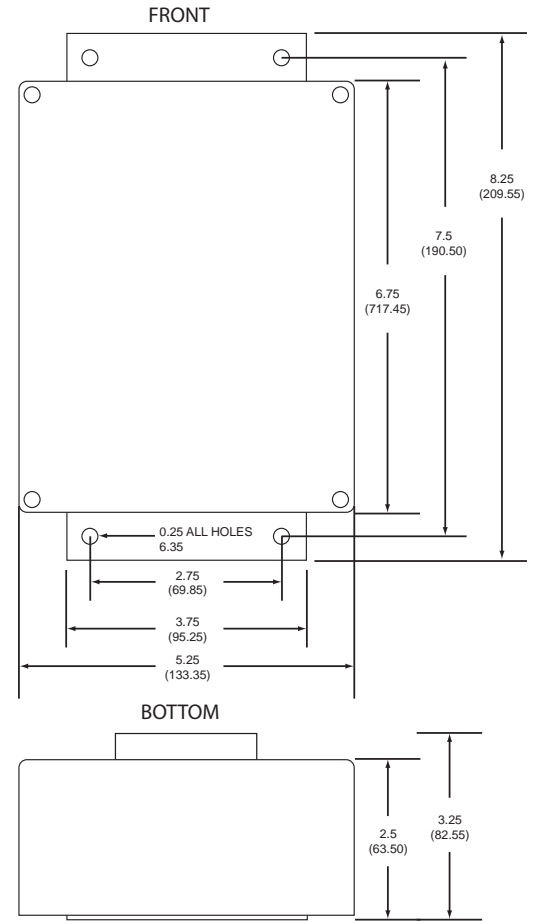
Three external current transformers must be utilized in conjunction with the Model 520CS. The following 9 set points can be set and viewed from the 3-digit alphanumeric LED: overcurrent trip point, undercurrent trip point, current unbalance trip point, trip delay, rapid cycle timer (RD1), overload restart delay (RD2), underload restart delay (RD3), number of restarts after a fault, and motor acceleration time. Last fault diagnostics is also viewable. When a harmful condition is detected, the 520CS's output relay is deactivated after the specified trip delay. The output relay reactivates after the appropriate RD2 or RD3 timer has expired. If the pump is started on a single-phase or a reverse-phase condition, the Model 520CS deactivates its output relay in 0.5 seconds.



# Specifications

Functional Specifications	
<b>Programmable Operating Points</b> Overcurrent Trip Point (jammed impeller) Undercurrent Trip Point (dry well) Current Unbalance Trip Point Trip Delay RD1 Restart Delay on Power Up & Rapid-cycle Timer RD2 Retart Delay after all faults except undercurrent (motor cool-down timer) RD3 Restart Delay after undercurrent (dry-well recovery timer) #RF Number of restarts after all faults (except undercurrent) MA Motor Acceleration Time Fixed Operating Point Reverse and single-phase trip delay	UC trip point to 5 Amps 0.00 to OC trip point 2-50% 2-50 sec. for all faults except phasing faults 0-500 seconds 2-500 minutes 2-500 minutes 0, 1, 2, 3, 4 or 999 for unlimited 0-50 seconds (OC, UC, UB ignored) 0.5 second from start up
Input Characteristics	
Supply Voltage Frequency Maximum Full Scale Current	100-130VAC 50/60Hz (Note: 50Hz will increase all delay timers by 20%) 5 Amps
Output Characteristics	
Output Contact Rating- SPDT	480VA @ 240VAC
General Characteristics	
Operating Temperature Maximum Input Power Trip Point Accuracy Timing Accuracy Standards Passed Electrostatic Discharge (ESD) Radio Frequency Immunity, Radiated Fast Transient Burst Surge IEC ANSI/IEEE Hi-potential Test Safety Marks UL/ULC Listed Dimensions Weight Mounting Methods	0° to 70° C (32° to 158° F) 5 W ±2% ±15% IEC 61000-4-2, Level 3, 6kV contact, 8kV air 150 MHz, 10V/m IEC 61000-4-4, Level 3, 3.5kV input power & controls IEC 61000-4-5, Level 3, 4kV line-to-line Level 4, 4kV line-to-ground C62.41 Surge and Ring Wave Compliance to a level of 6kV line-to-line Meets UL508 (2 x rated V + 1000V for 1 minute) UL508 (#E68520) 8.25" H x 5.25" W x 3.25" D 2 lbs. Surface mountable, #8 screws

# Enclosure Dimensions



230 Volt Motors		400 Volt Motors		575 Volt Motors	
Horsepower	CT Size	Horsepower	CT Size	Horsepower	CT Size
0.5 - 1	5:5	0.5 - 1	2.5:5	0.5 - 1	2.5:5
1.5 - 5	50:5	1.5 - 2	5:5	1.5 - 3	5:5
7.5 - 20	75:5	3 - 10, 25 - 30	50:5	5 - 15, 30	50:5
25 - 30	100:5	15 - 20, 40	75:5	20 - 25, 40 - 50	75:5
40	150:5	50 - 60	100:5	60 - 75	100:5
50 - 60	200:5	75	150:5	100	150:5
75 - 125	400:5	100 - 125	200:5	125 - 150	200:5
		150 - 260	400:5	200 - 325	400:5

Current Transformer Selection



## How to order:

Part Number: 520CS-115

(external current transformers required)