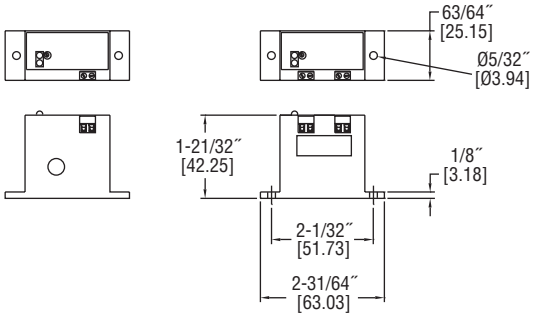
Series MCS Miniature Current Switches

Specifications - Installation and Operating Instructions

Solid Core No Core



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The Series MCS Miniature Current Switches are ideal for monitoring the current usage in fuse boxes and small control panels. Both models have adjustable set points and LED indication to show there is power to the unit and when the switch activates. Set points can be adjusted using the potentiometer next to the LED's.

Due to the size of the switch, it is only offered in solid core and no core versions. The no core version has terminal blocks which can accept currents up to 1A directly into the unit.

OPERATING INSTRUCTIONS

NOTICE The Series MCS Miniature Current Switches are intended to provide an input to equipment under normal operating conditions. Where failure or malfunction of the current switch could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the control systems. Incorporate and maintain other devices such as supervisory or alarm systems or safety or limit controls intended to warn of, or protect against, failure or malfunction of the MCS.

RISK OF SHOCK

⚠ WARNING Disconnect power supply before making electrical connections. Contact with components carrying hazardous voltage can cause electrical shock and may result in severe personal injury or death.

INSTALLATION

MOUNTING

1. Mount the switch in a suitable location using the two mounting holes in the base of the unit.
2. If using ties, make sure ties are securely fastened and that the unit is stable. If using screws, tightly screw in one screw at a time into each hole.

WIRING

1. Ensure that the power supply to the circuit is off.
2. **For solid core switch:** disconnect the circuit line, slide the power conductor cable through the sensing hole of the current switch, and reconnect the circuit line.
   For no core switch: disconnect the circuit line and connect it to the monitored current terminal block. The second terminal block is for the load (relays, fans, pumps, etc).
3. Connect the switch circuit to the terminal block for the load.
4. Turn circuit back on.

LED INDICATORS

• **Green LED:** indicates that current is passing through the core, but the set point has not been reached and the contacts are open.
• **Red LED:** indicates that the set point has been reached and the contacts are now closed.

INCREASING MEASURED CURRENT (Solid Core Model Only)

If measured current is too low to be detected:
Wrap the conductor (wire) through the sensing hole and around the MCS body to produce multiple turns to increase the measured current. Use the below equation to determine how many wraps are necessary:

Measured current = actual current x the number of turns.

NOTICE Failure to derate the current capacity could result in damage to the Series MCS when using multiple turns to increase the measured current. Use the following formula to determine the new maximum current:

New maximum current = MCS current rating / number of turns.

For example, with 2 turns and a maximum current rating of 50 A: New maximum current = 50 A / 2 = 25 A.

SPECIFICATIONS

Amperage Range: MCS-111050: 0.5 to 50 A AC continuous; MCS-111001: 0.01 to 1 A AC continuous.
Output Rating: Isolated, N.O. 0.3 A @ 130 V DC/AC.
Power Requirements: None, self-powered.
Hysteresis: 1%.
Response Time: <200 ms.
Temperature Limits: 32 to 122°F (0 to 50°C).
Humidity Limits: 10 to 95% RH (non-condensing).
Enclosure Rating: UL 94V-0 flammability rated ABS, insulation class 600 V.
Weight: 0.5 oz (14.5 g).
Agency Approvals: CE, RoHS, UL.

SET POINT CALIBRATION

The output switch of all devices is open. When the monitored current exceeds the trip value as set by the set point calibration, the switch will close. The red LED light will indicate that this change has occurred.

To increase the set point:
Use the potentiometer to adjust the setpoint:
• Confirm that the monitored load is on.
• Turn the adjustment counter-clockwise, until the output turns off as indicated by the red LED going out.
• Then turn the adjustment clockwise, until the red LED comes back on indicating that the output is now on.

NOTICE The adjustment should be turned slightly clockwise past a certain point to ensure normal line current variations do not cause false conditions.

TROUBLESHOOTING

Symptom	Solution
Series MCS output does not function.	• Verify that the maximum amperage range has not been exceeded. Voltages or currents above the rated levels may damage the Series MCS.
Set point potentiometer keeps turning.	• Turn the potentiometer counterclockwise, to return the unit to its original setting. Start the calibration procedure again.

MAINTENANCE/REPAIR

Upon final installation of the Series MCS, no routine maintenance is required. The Series MCS is not field serviceable and should be returned if repair is needed. Field repair should not be attempted and may void warranty.

WARRANTY/RETURN

Refer to "Terms and Conditions of Sale" in our catalog and on our website. Contact customer service to receive a Return Goods Authorization number before shipping the product back for repair. Be sure to include a brief description of the problem plus any additional application notes.

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