



OmniSite S-MI-420MAP

4-20 mA Amp Probe

Product Overview

The S-MI-420MAP is a current transducer that senses current (amperage) in any of three field-selectable ranges: 0-50, 0-100, or 0-200 amperes. These ranges represent the maximum current that can be applied to the monitored conductor. The S-MI-420MAP transforms the monitored current into a 4-20mA output suitable for connection to building controllers or other appropriate data acquisition equipment. The S-MI-420MAP requires 12-30 VDC external power to generate its output.

Specifications

Amperage Range	0 to 50/100/200 Amps (slide switch selectable)
Sensor Power	3.0mA (max)@12 to 30 VDC
Insulation Class	600 VAC RMS (UL), 300 VAC RMS (CE)
Frequency	50/60Hz
Temperature Range	-15° to 60°C (5° to 140°F)
Humidity Range	10-90% RH, non-condensing
Accuracy	±2% FS from 10% to 100% of selected range, but not less than ±0.4 A
Response Time	2 sec.
Terminal Block Maximum Wire Size	14 AWG
Terminal Block Torque (nominal)	4 in-lbs (0.45 N-m)
Agency Approvals	UL 508 open device listing CE: EN61010-1:2001-2, CAT III, Pollution Degree 2, basic insulation



⚠️ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Follow safe electrical work practices. See NFPA 70E in the USA, or applicable local codes.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Read, understand and follow the instructions before installing this product.
- Turn off all power supplying equipment before working on or inside the equipment.
- Use a properly rated voltage sensing device to confirm power is off.
- DO NOT DEPEND ON THIS PRODUCT FOR VOLTAGE INDICATION
- Only install this product on insulated conductors.

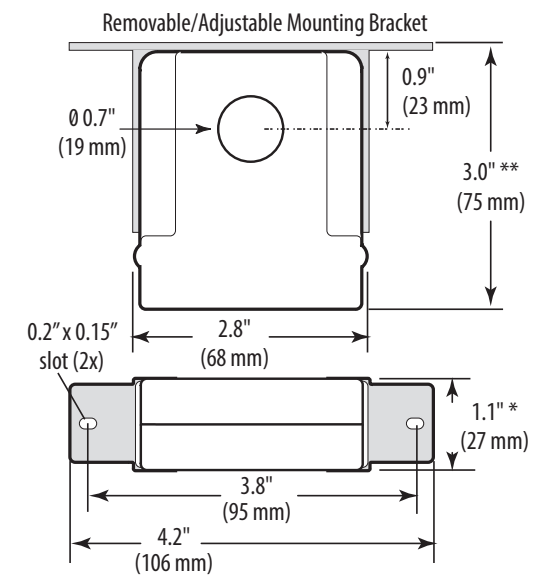
Failure to follow these instructions will result in death or serious injury.

A qualified person is one who has skills and knowledge related to the construction and operation of this electrical equipment and the installation, and has received safety training to recognize and avoid the hazards involved. NEC Article 100
No responsibility is assumed by Veris Industries for any consequences arising out of the use of this material.

NOTICE

- This product is not intended for life or safety applications.
- Do not install this product in hazardous or classified locations.
- The installer is responsible for conformance to all applicable codes.
- Mount this product inside a suitable fire and electrical enclosure.

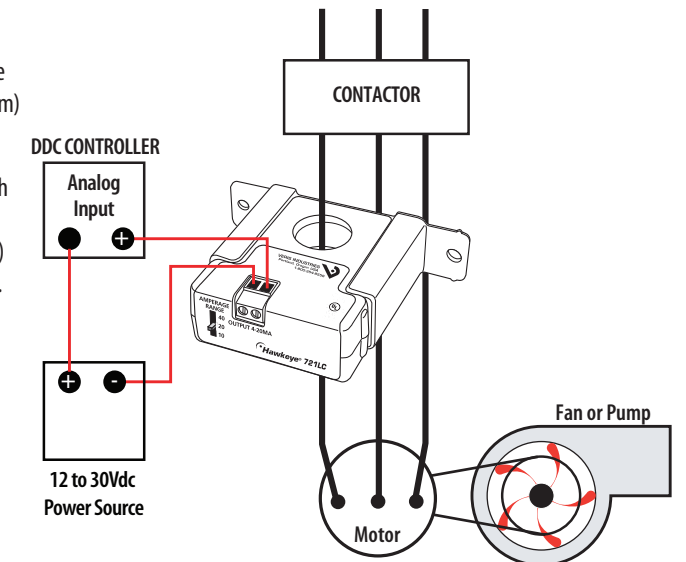
Dimensions



Installation

⚠️ Disconnect and lock out power to the enclosure containing the conductor to be monitored.

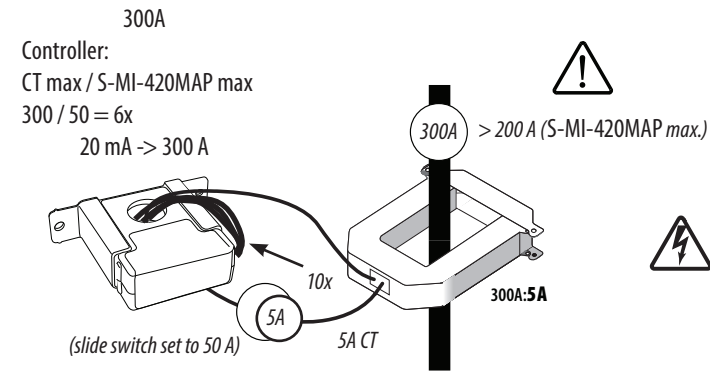
1. Disconnect and lock out power.
2. Install the mounting bracket to the back of the electrical enclosure- no closer than 1/2" (12mm) to an uninsulated conductor.
3. Slide the conductor to be monitored through the sensing hole of the current switch. Terminate the conductor. See Notes (page 3) for currents under 1 Amp or above 40 Amps.
4. Set the desired amperage range on the S-MI-420MAP (50, 100, or 200 Amps).
5. Wire the output connections between the S-MI-420MAP and the controller (4-20mA).
6. Reconnect power.
7. Scale the controller software to match the S-MI-420MAP's output.



Notes

For load currents greater than sensor maximum rating:

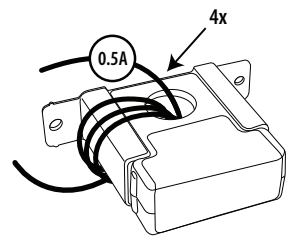
Use a 5 Amp Current Transformer (CT) as shown.



DANGER: 5A CTs can present hazardous voltages. Install CTs in accordance with manufacturer's instructions. Terminate the CT secondary before applying current.

For load currents less than sensor minimum rating:

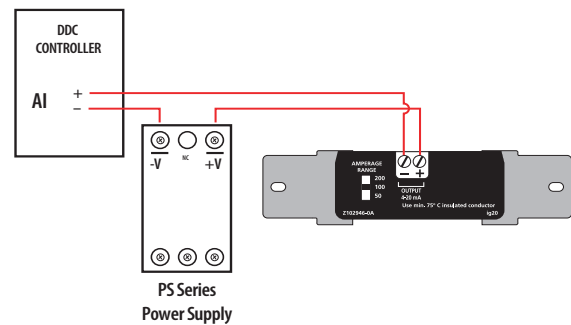
Wrap the monitored conductor through the center hole and around the sensor body to produce multiple turns through the "window." This increases the current measured by the transducer. Controller must be programmed to account for the extra turns e.g., if four turns pass through the sensor (as shown) the normal controller reading must be divided by 4.



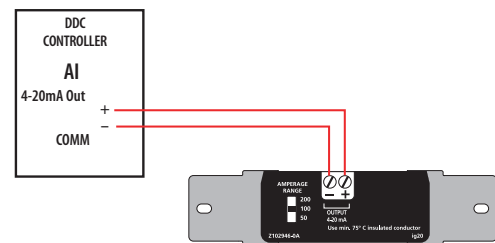
CAUTION
RISK OF EQUIPMENT DAMAGE
 • Derate the product's maximum current for the number of turns through the sensing window using the following formula.
 Rated Max. Amps ÷ Number of Turns = Max. monitored Amps
 e.g.: 100A ÷ 4 Turns = 25 Amps max. in monitored conductor
 • Failure to follow these instructions can result in overheating and permanent equipment damage.

Wiring Examples

External Power

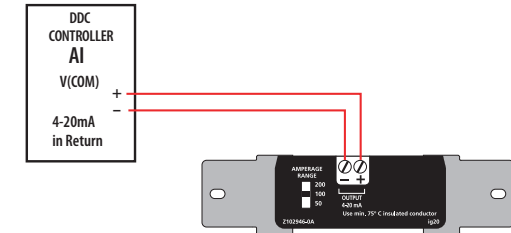


Sourcing Panel (-Common)



Wiring Examples (cont.)

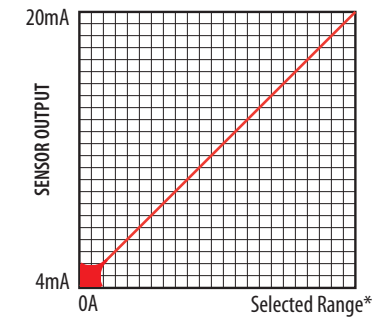
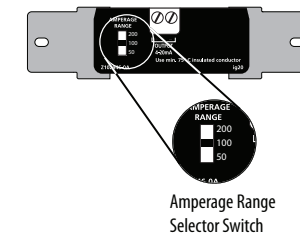
Sinking Panel (+Common)



*A resistor can be added in parallel to convert the 4-20 mA signal to a VDC signal (250 ohm = 1-5 VDC); (500 ohm = 2-10 VDC)

Calibration/Scaling

Set the amperage range selector switch to a level appropriate for your load. The S-MI-420MAP is available with three choices, 0-50, 0-100, or 0-200 Amps.



*Factory calibrated ranges selected with the amperage range switch

Troubleshooting

Problem	Solution
No reading at controller	<ul style="list-style-type: none"> • Confirm that you have 12-30VDC in series with the sensor output terminals and the control panel analog input. • Confirm measured current is within the selected range on the product. • Check polarity of sensor output connections.