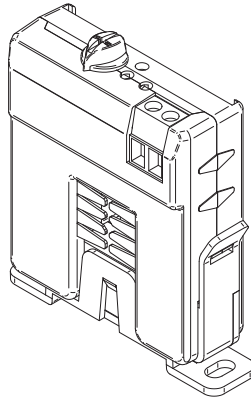


INSTALLATION INSTRUCTIONS

C-2320-L ECM, Adjustable Turn-On ECM Current Switch



DANGER

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



Hazard of electrical shock, explosion, and arc flash

- Follow ALL requirements in NFPA 70E for safe work practices and for Personal Protective Equipment (USA) and other applicable local codes when installing this product
- Only qualified electrical personnel should install this product.
- Read, understand, and follow all instructions thoroughly
- Install only on insulated conductors
- Lock out and tag out all power sources prior to installation. Use properly rated voltage sensing instrument to determine no voltage is present



WARNING

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



Automated equipment may start without warning

- Equipment monitored/operated by this device may start without warning. Keep clear of apparatus at all times

IMPORTANT WARNINGS

- Only qualified trade installers should install this product
- This product is not intended for life-safety applications
- Do not install in hazardous or classified locations
- The installer is responsible for all applicable codes
- This product must be installed in a suitable electrical enclosure

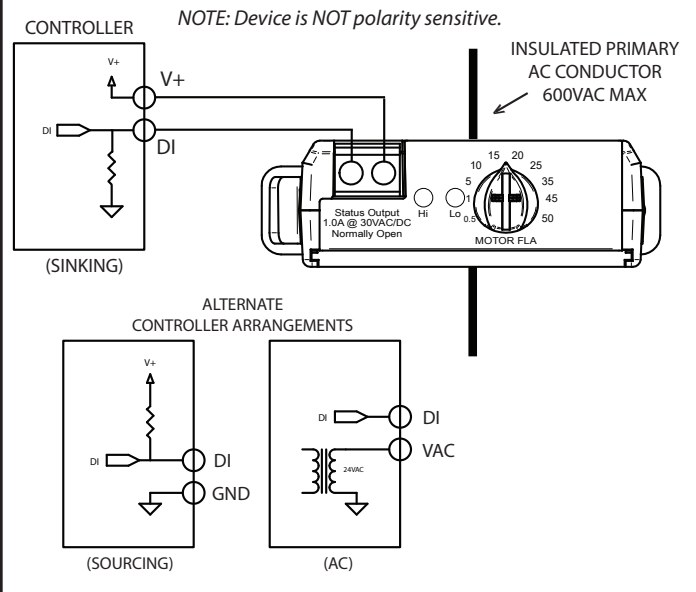
INSTALLATION



Disconnect, lock out, and tag out all power supplies during installation

1. Determine mounting location for the sensor near the conductor to be monitored. The sensor should be located AT LEAST 1/2" from any uninsulated conductor.
2. Sensor features a flexible iris which allows the sensor to hang on the conductor if local codes permit. A bracket is included for screw mounting or attaching to DIN rail. For screw mounting, drill two 3/32" pilot holes using the bracket as a template; ensure no drill shavings are present in enclosure. Attach bracket with screws provided.
3. Clamp sensor around INSULATED CONDUCTOR ONLY, 600VAC MAX to be monitored.
4. Snap the sensor into the mounting bracket.
5. Wire the output of the sensor to a control panel digital input loop not to exceed 30VAC/DC wetting voltage. Tighten terminals to 3.5 in-lb.

WIRING EXAMPLES



PRODUCT APPLICATION LIMITATION:

Senva products are not designed for life or safety applications. Senva products are not intended for use in critical applications such as nuclear facilities, human implantable device or life support. Senva is not liable, in whole or in part, for any claims or damages arising from such uses.

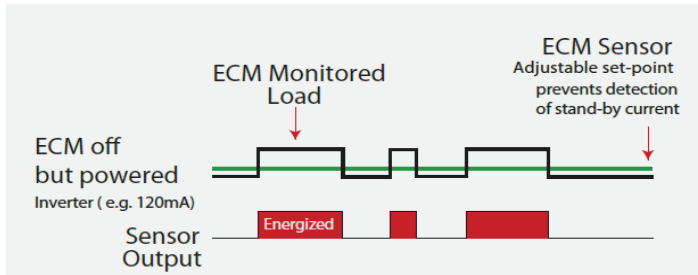
CALIBRATION AND OPERATION

ECM stands for Electrically Commutated Motor. These motors are gaining popularity due to their energy savings capability for applications that don't require the motor to always run at full speed by allowing the end-user to reduce the speed of the motor.

It is important to consider the quiescent or stand-by current draw of an ECM from the on-board electronics. This stand-by current draw typically ranges from 250mA to 500mA and varies by manufacturer.

This stand-by current can sometimes be enough to cause a sensitive current sensor to be in the ON state even when the motor is not actually running giving a false indication. In order to prevent this the current sensors turn-on current must be higher than the ECM stand-by current.

Senva's Adjustable Turn-On ECM Current Switch allows you to set/adjust your turn-on threshold appropriately for your application. Set the dial so that the turn-on amperage is slightly higher than your ECM stand-by current. This will typically be around 400mA.



On startup, the sensor output will close when monitored current exceeds dial setting, and open if monitored current is below the dial setting minus the fixed hysteresis value of the current switch.

SETUP (RECOMMENDED)

Follow all safety precautions outlined in this manual.

Follow all requirements in NFPA 70E for safe work practices and for Personal Protective Equipment (USA) and other applicable local codes when installing this product. **Read all warnings carefully.**

1. With ECM powered on but not running measure the ECM current draw with a meter capable of measuring current.
2. Turn power off to ECM and set dial on current sensor to a value slightly higher than what you measured in step 1. Example, measurement of 500mA from meter, set dial to about 600mA.
3. Power on ECM and verify OPEN LED is on.
4. Next, run ECM at minimum speed and verify CLOSED LED is on.
5. Stop ECM but leave powered on and verify OPEN LED is on.
6. Setup is now complete. You may need to repeat steps 1 through 5 above during initial setup to get correct setting. Once adjusted the Senva ECM current switch will provide a true status output as shown in the chart above.

SETUP (ALTERNATE)

Follow all safety precautions outlined in this manual.

Follow all requirements in NFPA 70E for safe work practices and for Personal Protective Equipment (USA) and other applicable local codes when installing this product. **Read all warnings carefully.**

1. Dial is set from the factory to a value of about 500mA.
2. Once installed on the ECM conductor with your motor STOPPED but powered on, verify the OPEN LED is on. If OPEN LED is off adjust dial clockwise until OPEN LED is on.
3. Turn dial counter clockwise until CLOSED LED is on. This is the turn-on amperage or approximate value of your ECM stand-by current.
4. Turn dial clockwise until CLOSED LED is off and continue clockwise slightly to give a margin of operation between the on and off states. Leave dial at this setting and you're done with the current sensor setup.

SPECIFICATIONS

Part Number	C-2320-L ECM
Amperage Range	Dial Setting 0.25 - 3A, (200A Max Operational)
Output Type	NO, solid-state FET
Output Rating	1.0A@30VAC/DC Max.
Temperature Rating	-15~60 °C
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 °C insulated conductor
Sensor Power	Induced
Frequency Range	50/60Hz
Dimensions (LxWxH)	2.94" x 2.23" x 0.82" (1.4" H with optional relay module)
Sensor Aperture	0.75"

Maximum surrounding air ambient, 60 °C.

For use in Pollution Degree 2 Environment.

TROUBLESHOOTING

Symptom	Causes	Remedy
Sensor output does not change state	Amperage is below sensor minimum threshold	Wrap monitored conductor turns through sensor. See Tech Tips
	Adjustment incorrect	See SETUP procedure
	Testing with ohm meter yields incorrect results	Solid state output may show approx. 1 ohm or less
	Incorrect control wiring	Ensure control loop voltage is present