

INSTALLATION INSTRUCTIONS

C-2220-L ECM, Adjustable Mini Split-Core Digital Output



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

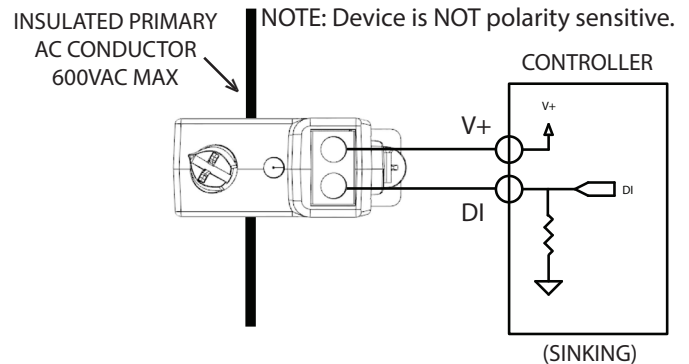
INSTALLATION



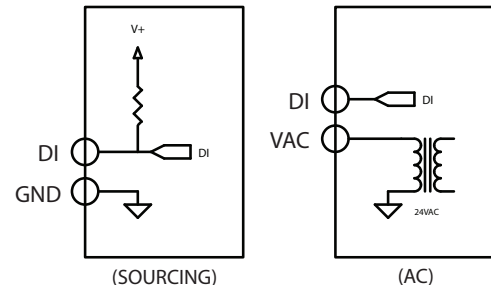
Disconnect, lock out and tag out all power supplies during installation

- 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.
- 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.
- Clamp sensor around INSULATED CONDUCTOR ONLY, 600VAC MAX to be monitored.
- Snap the sensor into the mounting bracket.
- 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 EXAMPLE



ALTERNATE CONTROLLER ARRANGEMENTS



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.

ECMSET CALIBRATION (Typical)

After installing CT on power wire and connecting the relay output, choose one of the following methods for calibrating the on/off point.

Pre-set Calibration - Avoid Live Calibration

Set knob to position 'A'. Test motor operation at minimum speed and off to ensure proper on/off status from current switch.

1. If CT status matches on/off state of the motor, you are done.



2. If CT does not open when motor is off, adjust the dial up (CW) one letter position and test again. Repeat until CT status matches on/off state of the motor
3. If CT does not close when motor is at low speed, adjust the dial down to the minimum setting 'A' and check whether the relay is closed while the motor is running.
 - If relay is not closed in 'A' position, the motor's minimum run current is not enough to power the device and a *wire wrap* is necessary.
 - If relay closes in 'A' position, set dial position to 'B' and test again. Increase dial by one letter position at a time until CT status matches on/off state of the motor

Conventional Calibration

Turn dial to Maximum setting 'K'.

1. Run motor at minimum speed.
2. Adjust dial down (CCW) until LED turns green or the relay closes. If knob is adjusted all the way to the 'A' setting and the relay state does not change, the motor's minimum run current is not enough to power the device and a *wire wrap* is necessary



3. Once LED changes to green or relay closes, adjust dial up (CW) to next labeled position.



4. Re-test motor operation at minimum speed and off to ensure proper on/off status from current switch.



5. Note the position of the knob. For similar motors and applications, the same dial position can be applied to save calibration time.

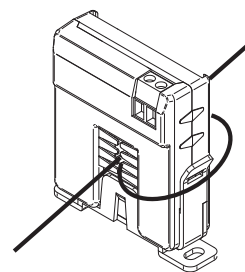
Cold Climate Adjustment

For installation environments expecting to see temperatures lower than 0°C, it is recommended to adjust the dial up (CW) an additional letter position.

Wire Wrap

On low current loads, wrap sensor multiple times to increase sensitivity

CAUTION: Do not exceed sensor maximum current. The current detected by the sensor will increase 1X with each wrap.



Maximum surrounding air ambient, 60 ° C. For use in Pollution Degree 2 Environment.

Part Number	C-2220-L ECM
Amperage Range	0 A - 50 A
Trip Adjustment	0.03 A - 0.50 A (varies by motor type)
Dial Adjustment	240 degrees, no tools required
Output Type	NO, solid-state FET
Contact "On" Resistance	<10Ω
Contact "Off" Resistance	>1MΩ
Response Time	<3s
Hysteresis	2-6%
Output Rating	1.0A@30VAC/DC Max.
Power/Status LED	Power (red), Contact closed (green)
Environmental Rating	5-140 °F (-15-60 °C), 10-90% RH Non-condensing
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)	1.9" x 1.35" x 0.6" (2.0" x 1.6" x 0.6" with bracket)
Sensor Aperture	0.375"
Compliance	cUL, UL, CE, RoHS

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 Conventional Calibration 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