

# INSTALLATION INSTRUCTIONS

## C-2350VFD, VFD/ Constant Volume Current Switch



**DANGER**

*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

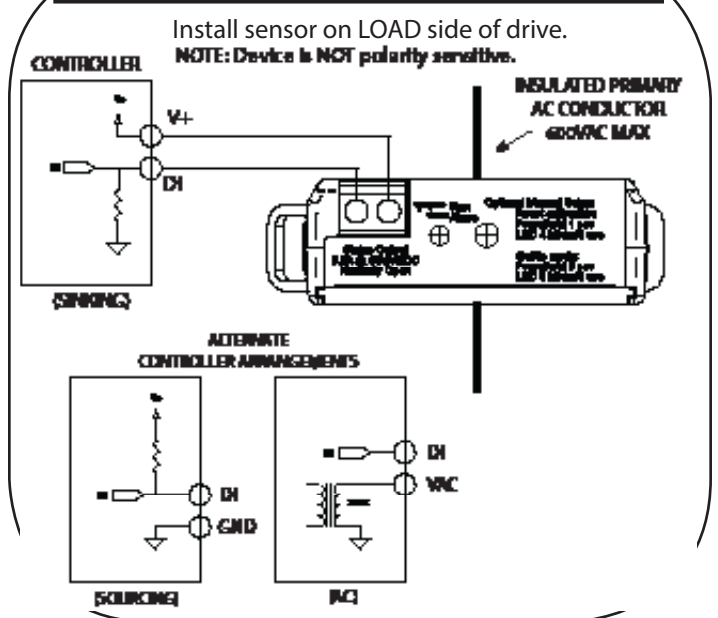
## INSTALLATION



**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.
3. Clamp sensor around INSULATED CONDUCTOR ONLY, 600VAC MAX to be monitored on LOAD side of drive.
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.

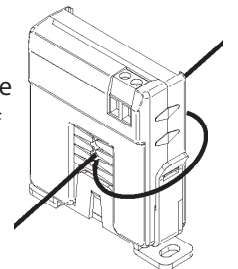
## WIRING EXAMPLES



## TECH TIPS

**On low current loads, wrap sensor multiple times to increase sensitivity (See Table Below)**

CAUTION: Do not exceed sensor maximum current. The current detected by the sensor will increase 1X with each wire turn through the sensor (# wire turns = # of wraps + 1, i.e. 3 wraps = 4 turns).

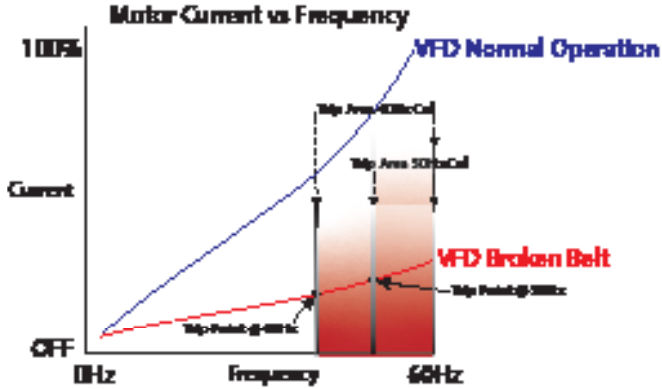


**To monitor loads greater than the current sensor maximum rating**

Table on next page is the recommended # of wraps needed in order to achieve proper turn on of the device status relay output.

Motor FLA	# of Wraps
≥2A	None
>0.5A and ≤1A	1 Wrap
≤0.5A	3 Wraps

## OPERATION



The C-2350 utilizes a proprietary sensing algorithm to detect belt loss on motors operated by variable frequency drives.

Reliable operation requires variable frequency drive to increase frequency to a minimum of 40Hz when load is lost.

Typical load status applications include:

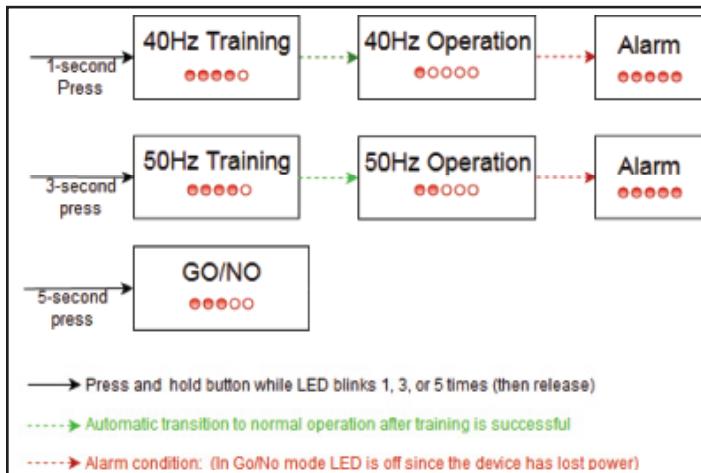
- Proof of flow
- Belt-loss detection
- Coupling shear

## CALIBRATION/TRAINING

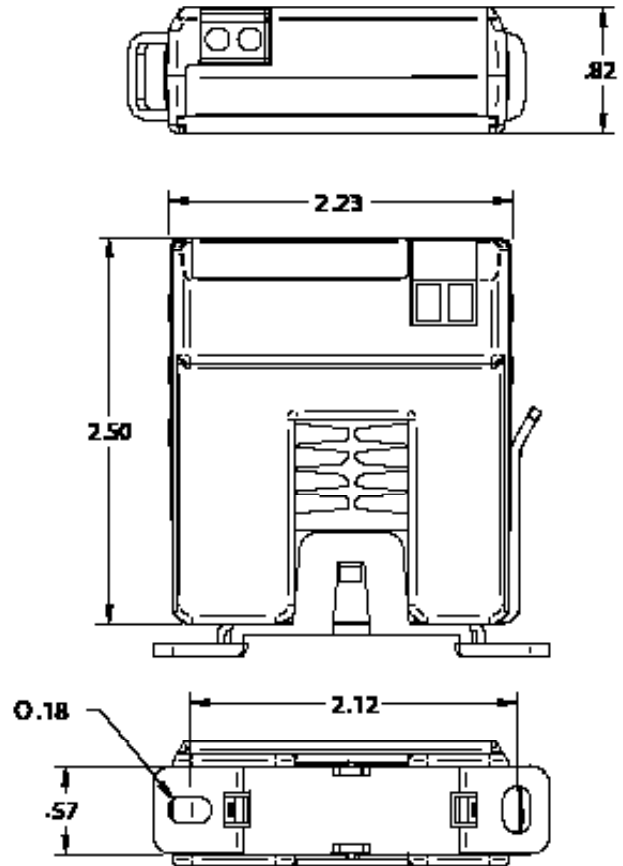
**No calibration is necessary.** Sensor will automatically detect belt loss on motors operated by variable speed drive after 10 seconds of operation above 40Hz. This is because the device leaves the factory in the 40Hz training mode.

### OPTIONAL MANUAL SETUP:

To reset and restart calibration/training, press/hold button for 1 second (40Hz mode) or 3 seconds (50Hz mode). LED will make 4 blinks in 5 seconds which indicates the device is in "Training" mode. Operate motor above 40Hz for 10 seconds (40Hz mode) or 50Hz for 10 seconds (50Hz mode), recommend 45Hz and 55Hz respectively.



## DIMENSIONS



Part Number	C-2350VFD
Amperage Range*	1A*~135A
Turn-On Amperage	1A(30Hz min), 1.5A(20Hz min), 2.5A(10Hz min)
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	10 -120Hz; proof of flow loss alarm at 40Hz+
Dimensions (LxWxH)	2.51" x 2.23" x 0.82" (1.4"H with optional relay module)
Sensor Aperture	0.75"

\*Amperage minimum is frequency dependent, see Turn-On Amperage For use in Pollution Degree 2 Environment.

## Troubleshooting

Symptom	Causes	Remedy
Sensor output does not change state	Minimum frequency too low.	Drive must ramp to 40Hz min. for sensor to alarm.
	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

### 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.