

SEnVA
C-2350VFD
Constant
Volume Current
Switch



Senvainc C-2350VFD Constant Volume Current Switch Instruction Manual

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Senvainc C-2350VFD Constant Volume Current Switch



Product Information

Specifications

- **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:** Insulation Class Sensor Power
- **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

Product Usage Instructions

Installation

1. Determine the mounting location for the sensor near the conductor to be monitored, ensuring it is at least 1/2 inch away from any uninsulated conductor.
2. Mount the sensor using the included bracket for screw mounting or attaching to a DIN rail.
3. Clamp the sensor around an insulated conductor only (600VAC MAX) on the load side of the drive.
4. Wire the output of the sensor to a control panel digital input loop not exceeding 30VAC/DC wetting voltage.

Operation

The C-2350 utilizes a proprietary sensing algorithm to detect belt loss on motors operated by variable frequency drives. Ensure that the variable frequency drive increases frequency to a minimum of 40Hz when load is lost.

Calibration/Training

No calibration is necessary as the sensor will automatically detect belt loss on motors operated by variable speed drive after 10 seconds of operation above 40Hz. To reset and restart calibration/training, press and hold the button for 1 second (40Hz mode) or 3 seconds (50Hz mode).

SAFETY WARNINGS

DANGER

- 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.

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

IMPORTANT WARNINGS

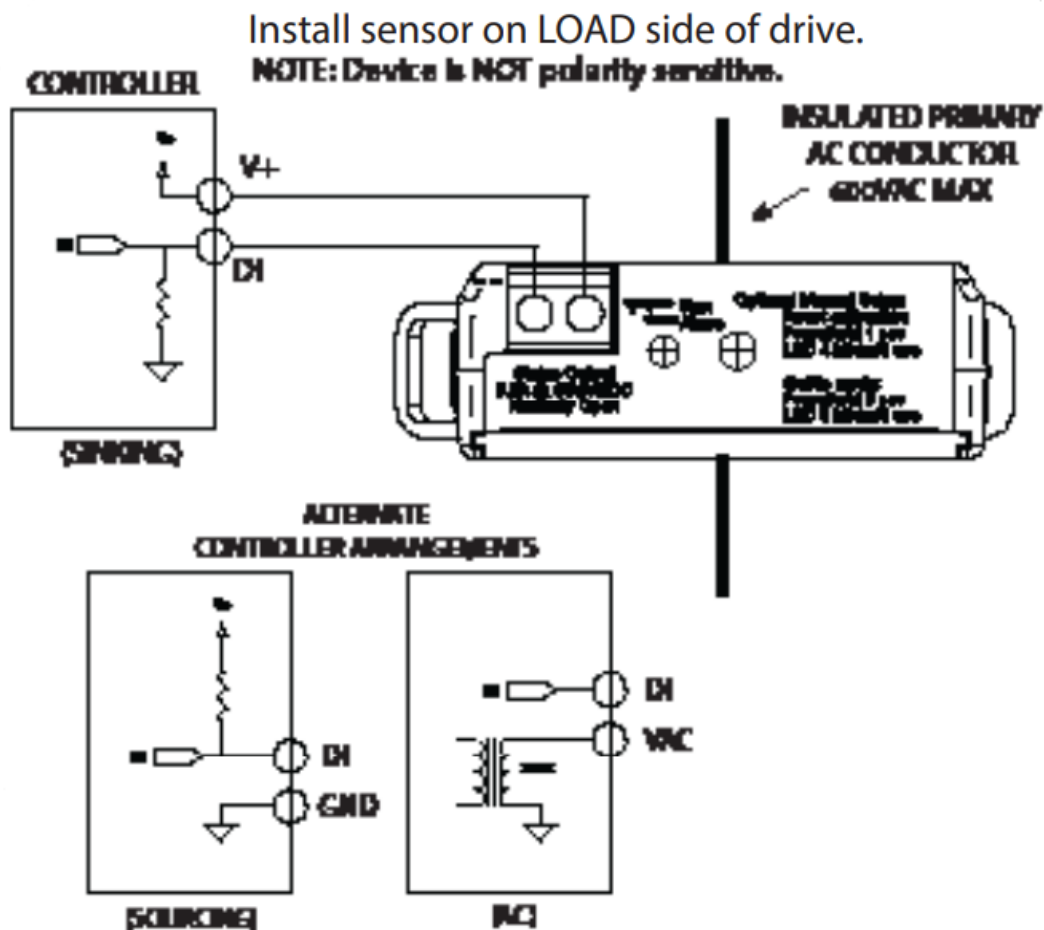
- Only qualified trade installers should install this product
- This product is not intended for life-safety applications
- Do not install in hazardous or classified locations
- The installer is responsible for all applicable codes
- This product must be installed in a suitable electrical enclosure

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.

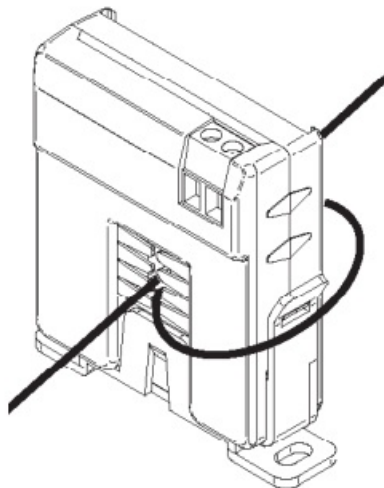
WIRING EXAMPLES



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).

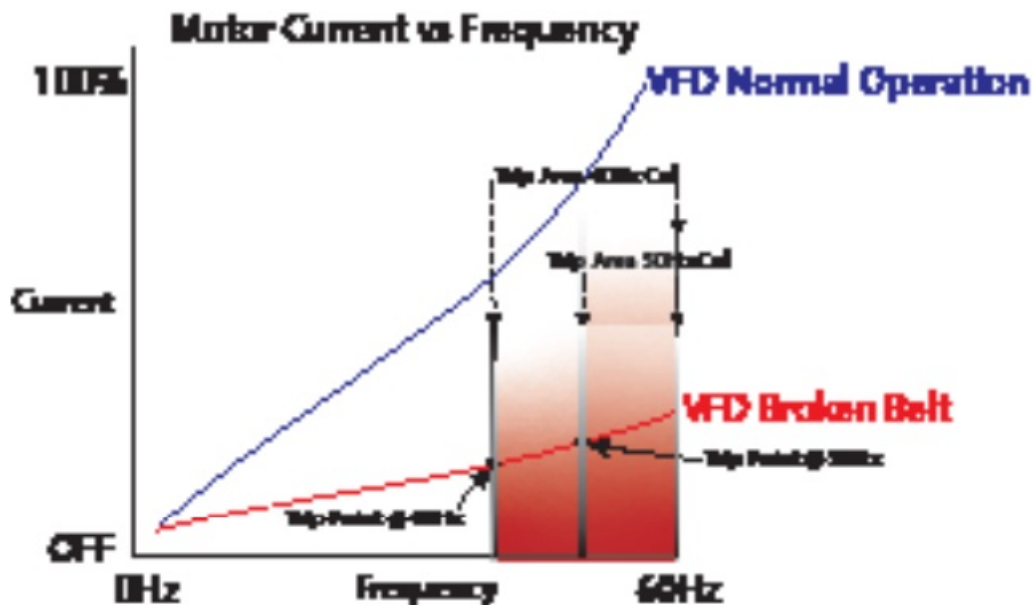


- To monitor loads greater than the current sensor maximum rating

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
$\geq 2A$	None
$>0.5A$ and $\leq 1A$	1 Wrap
$\leq 0.5A$	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:

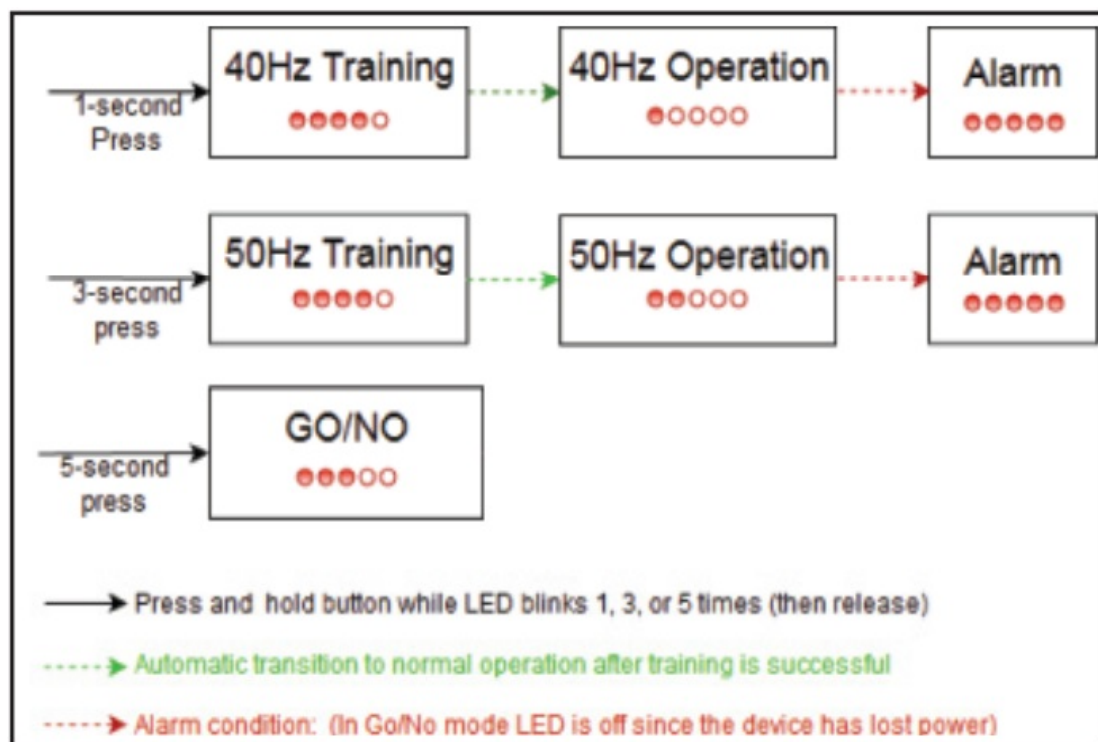
- Proof of flow
- Belt-loss detection
- Coupling shear

CALIBRATION/TRAINING

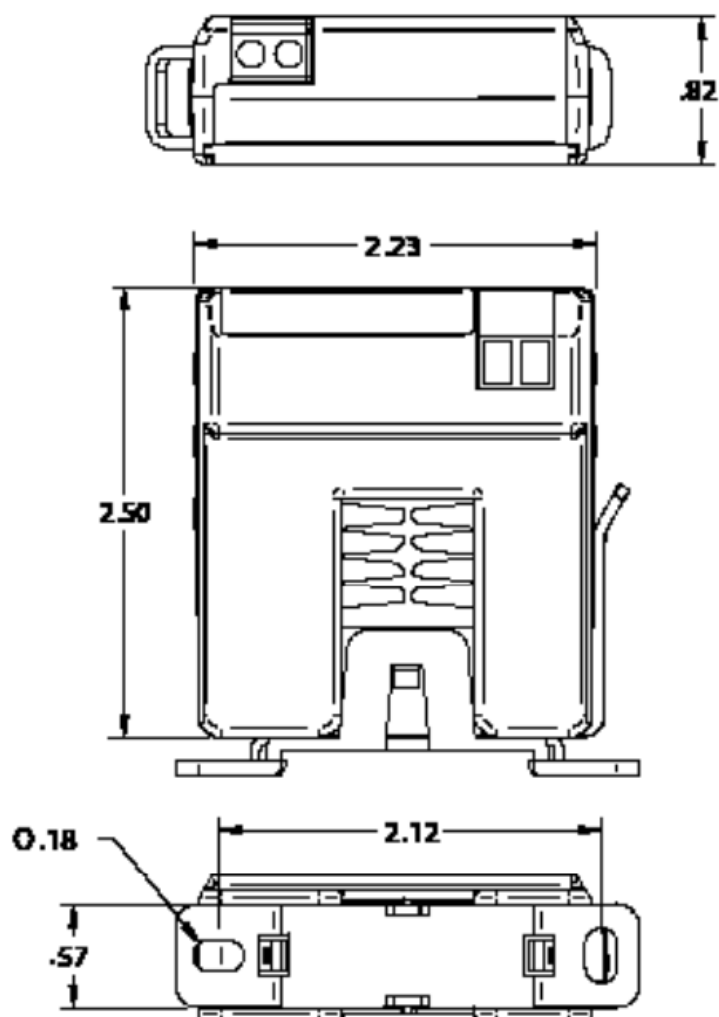
No calibration is necessary. Sensor will automatically detect belt loss on motors operated by variable speed drive after 10 seconds of operation above 40Hz. This is because the device leaves the factory in the 40Hz training mode.

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.

Documents / Resources



[Senva C-2350VFD Constant Volume Current Switch](#) [pdf] Instruction Manual
C-2350VFD, VFD, C-2350VFD Constant Volume Current Switch, C-2350VFD, Constant Volume Current Switch, Volume Current Switch, Current Switch, Switch

References

- [User Manual](#)

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