



SBV-3.14

STATOR BAR VIBRATION CAPACITIVE SENSOR

APPLICATIONS

- On-line in-slot measurements of stator bar vibration in:
 - turbogenerators
 - synchronous condensers
 - large motors

FEATURES

- Range: 500 μm pk-pk @ 15 to 25 mm
(19.7 mils pk-pk @ 0.59 to 0.98 in.)
- “See-through” measurement; glued on wedge, measures bar movement behind it.
- High Sensitivity: down to 3 μm pk-pk (0.12 mil pk-pk) depending on wedging system thickness and construction
- Matching LIN-231V Linearization Module provides 4 to 20 mA relative displacement/vibration raw output
- SBV-3.14 sensor + extension cable + LIN-231V Module are matched and calibrated to form an integral measuring chain
- Highly immune to deposits of carbon dust and dirt, and strong magnetic fields
- Noncontact measurement

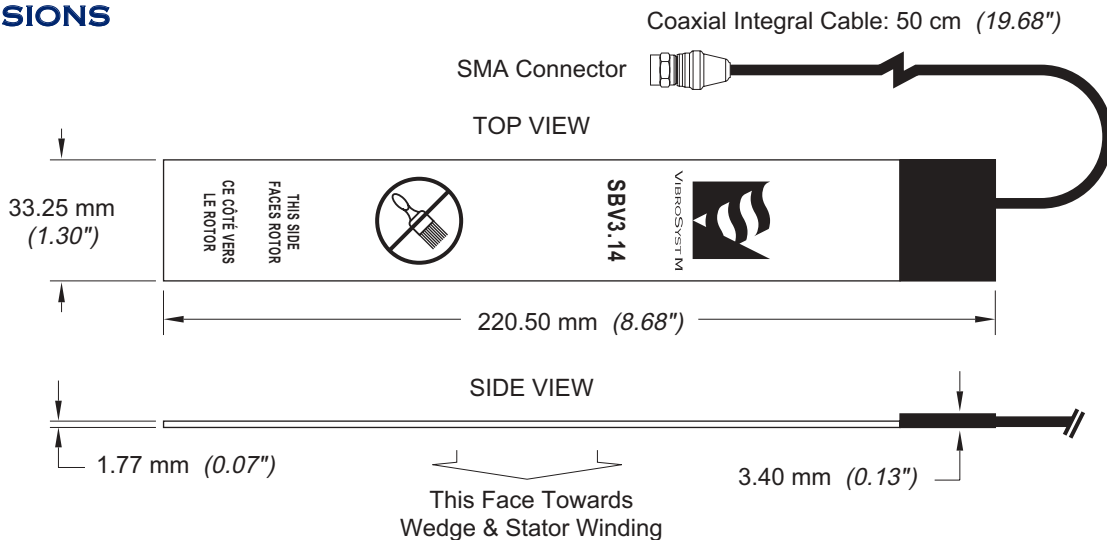
DESCRIPTION

The SBV-3.14 Capacitive Sensor is designed for non-contact in-slot measurements of stator winding vibration (i.e. bar relative to core). The sensor is glued on stator wedges. It measures the bar movement within the slot through the wedge, ripple spring and fillers (between 15 and 25 mm / 0.59 and 0.98 in. thick). The measured signal is sent through an extension cable to a LIN-231V Linearization module that provides a 4 to 20 mA analog raw output of bar displacement/vibration.

The SBV-3.14 measuring range, accuracy, and reliability is unaffected by: deposits of carbon dust and dirt; strong magnetic fields; high shock vibration; and EMI-RFI.

The SBV-3.14 is a passive sensor, with no moving parts or active electronic elements. Depending on wedging system thickness and construction of the slot, it can measure vibration as small as 3 μm pk-pk (0.12 mil pk-pk).

DIMENSIONS





SBV-3.14 GENERAL SPECIFICATIONS

Operation

- Measuring Range 500 μ m peak-to-peak @ 15 to 25 mm distance (19.7 mils peak-to-peak @ 0.59 to 0.98 in. distance)
- Power Source 455 kHz
- Frequency Response ¹ See LIN-231V datasheet
- Interchangeability <5% of Reading

Environmental

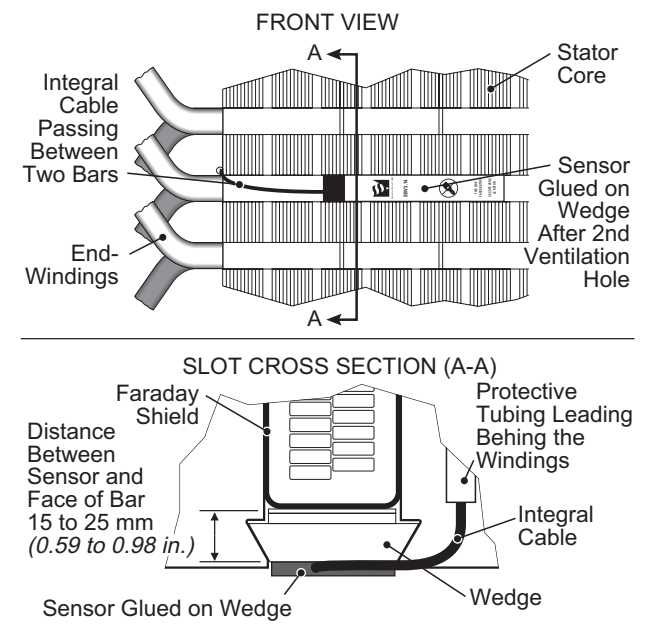
- Temperature Range 0° to 125°C (32° to 260°F)
- Magnetic Field Up to 1.5 tesla [50 Hz or 60 Hz]
- Dust Contamination No effect

Connection

- Integral Cable Type Teflon coaxial
 - Connector Male SMA
 - Length 50 cm (19.68 in.)
- Extension Cable Type Belden Triaxial
 - Connector Female SMA with ground lug on sensor end; Male BNC coaxial with ground lug at other end
 - Length Fixed, 10 m (32.8 ft) standard

NOTE: For hydrogen-cooled turbogenerators, the extension cable is divided into two sections totalling 10 m (32.8 ft) and interfaced with a sealed feedthrough connector through a flange mounted on stator casing.

INSTALLATION



Dimensions

- Height 220.50 mm (8.68 in.)
- Width 33.25 mm (1.30 in.)
- Thickness 1.77 mm (0.07 in.)
- Clearance 3.40 mm (0.13 in.)

¹ With standard LIN-231V Linearization Module

VibroSystM reserves the right to change specifications to improve products without notification. ZOOM® is a registered trademark and SBV™ is a trademark of VibroSystM Inc. Patented measuring technology

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