

DESCRIPTION

The BTV-100 (Bar Temperature and Vibration) Serial Line Sensor is a distributed sensing device measuring simultaneously temperature and vibration of stator windings. The BTV-100 is the most extensive method for evaluating the condition of the stator windings. The sensors are glued with epoxy on each stator bar, close to the stator core exit. Several serial lines of sensors may be required to cover all the bars (layout specific to each installation). The installation is transparent to the normal operation of the machine.

A typical serial line is comprised of a maximum of 50 sensors on a single cable, custom fitted to your installation. Each sensor operates independently with its own alarm level settings.

BTV-100 is compatible with ZOOM software for thermal mapping and correlation with other parameters.

BTV-100

TEMPERATURE AND ABSOLUTE VIBRATION SENSORS FOR STATOR WINDINGS

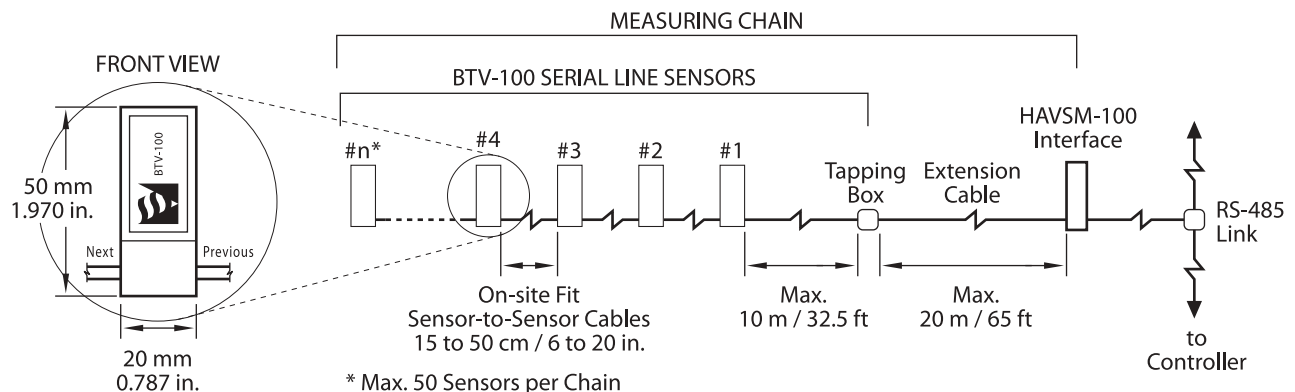
APPLICATIONS

- Distributed temperature and vibration monitoring of stator windings on:
 - hydrogenerators
 - turbogenerators
 - large electric motors
 - various other applications requiring multiple temperature or vibration monitoring points

FEATURES

- Combined temperature and vibration devices in a single sensor
- Real-time multipoint temperature and absolute vibration monitoring
- 50 sensors maximum per serial line; several lines can be installed per generator
- Measuring Ranges:
 - Temperature: -50 to 150 °C (-58 to 302 °F)
 - Vibration: 5 to 200 μm ($0,2$ to 8 mils)
- Accuracy:
 - Temperature: ± 2 °C (± 3.6 °F)
 - Vibration: ± 2 μm ($0,08$ mils)
- Individual measurement and alarms per sensor; each sensor operates independently
- Low profile sensor, only 12 mm (0.472 in.) thick
- Cable length between sensors is customized on-site
- Up to 55 m (180 ft) from the HAVSM interface to the furthest sensors

DIAGRAM





BTV-100 GENERAL SPECIFICATION

Operating

- Measuring Ranges
 - Temperature -50 to 150 °C
-58 to 302 °F
 - Vibr./Displacement¹
@ 120 Hz² 5 to 200 µm pk-pk
0.2 to 8 mils pk-pk
- Accuracy
 - Temperature ±2 °C [0 to 90 °C]
±3.6 °F [32 to 194 °C]
 - Vibr./Displacement ±2 µm pk-pk
0.08 mils pk-pk
- Sampling Rate 50 msec. per point
- Nbr of Sensors per Line Up to 50

Connection

- Sensor Cabling
 - Type Twisted 3-wire cable,
unshielded
 - Sensor-to-Sensor Dist. On-site custom fit between
15 and 50 cm (6 and 20 in.)
 - 1st Sensor to Tapping Box 10 m (32.5 ft) max.
- Extension Cable
 - Type 2 pairs shielded,
Belden 8723
 - Max. Length 20 m (65 ft)
- Power Input Supplied by HAVSM-100

Environmental

- Temperature Range
 - Operating -20° to 125°C (-4° to 257°F)
 - Storage -40° to 150°C (-40° to 302°F)
 - Destructive 200°C (392°F)

Physical Characteristics

- Probe Overall Dimension
 - Width 20 mm (0.787 in.)
 - Height 50 mm (1.970 in.)
 - Depth 12 mm (0.472 in.)
- Sensor Cable
 - Diameter 5.3 mm (0.210 in.)

¹ Mean value of 32 successive pk-pk displacements

² 120 or 100 Hz configurable in ThermaWatch Plug-In

VibroSystM reserves the right to change specifications to improve products without notification.
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**WARNING – Installation
on High Voltage Equipment**



Improper installation of BTV-100 Serial Line Sensors
can cause physical injuries and equipment damage.

BTV-100 can only be installed on stator bars at core exit, and only
where end-windings are covered with semi-conductive paint.

It MUST NOT enter the air gap.

BTV-100 should be installed by
VibroSystM authorized specialists only.