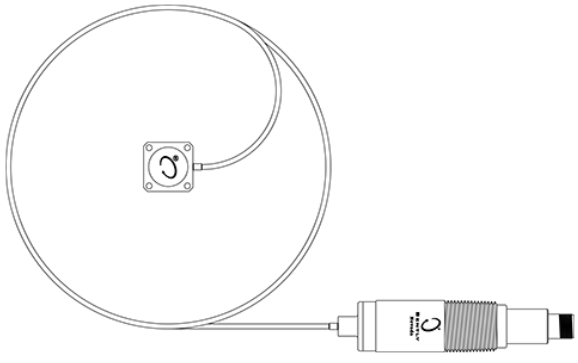
330750 and 330752 High Temperature Velomitor System

Datasheet

Cordant™

141639 Rev. V



Description

The 330750 and 330752 High Temperature Velomitor System sensor head and integral cable are designed for high temperature environments. This enables you to mount the sensing head on surfaces with temperatures up to +400°C (+752°F).

> Earlier versions of the 330750 and 330752 High Temperature Velomitor System were limited to environments with a maximum temperature of +300°C (+572°F). The serial number of current versions that measure up to +400°C (+752°F) are preceded by the letter "G".

To accomplish this, the transducer design segregates the sensing element from the signal conditioning electronics. The two are permanently connected using an integrated cable. The integrated cable eliminates connectors which are a significant source of transducer failures.

The cable enables you to position the signal conditioning electronics in a cooler location. The internal electronics withstands temperatures of 55°C to +121°C (-67°F to +250°F). The integrated design makes it possible to capture machinery performance data comparable to other Bently Nevada Velomitor transducers, but at significantly higher temperatures.

For lower temperature environments, use the standard 330500 Velomitor Piezo-velocity Sensor. You can install it in locations with a maximum operating temperature of +121°C (+250°F).

Baker Hughes

Specifications

Parameters are specified from +20°C to +30°C (+68°F to +86°F) and 100 Hz unless otherwise indicated.

> Operating the Velomitor transducer outside the specified limits may result in false readings, failure of the transducer or loss of machine monitoring.

Electrical

Sensitivity	5.7 mV/mm/s (145 mV/in/s) ±5%
Frequency Response	15 to 2000 Hz (900 to 120,000 cpm) ± 3.0 dB; 20 to 1000 Hz (1,200 to 60,000 cpm) ± 0.9 dB
Transient Temperature Sensitivity	0.0762 mm/s/°C (0.003 in/s/°C), typical, as defined in ISO 5347-18:1993(E)
Amplitude Range	635 mm/s (25 in/s) peak below 680 Hz. 2940 m/s2 (300 g) peak above 680 Hz. Vibration at frequencies above 2 kHz decreases this range.
Transverse Sensitivity	Less than 5% of Sensitivity
Amplitude Linearity	±2% to 152 mm/s (6 in/s) peak
Mounted Resonant Frequency	Greater than 5 kHz
Output Bias Voltage	-12 ±2.0 VDC
Broadband Noise Floor (15Hz to 2kHz)	0.127 mm/s (0.005 in/s) rms nominal
Grounding	Case Isolated
Maximum Cable Length	305 meters (1000 feet) with no degradation of signal.

Environmental Limits

Operating and Storage Temperature Range	
Sensing Head	Maximum mounted surface temperature -55°C to +400°C (-67°F to +752°F)
Integral Hardline Cable	-55°C to +400°C (-67°F to +752°F)
Electronics	-55°C to +121°C (-67°F to +250°F)
Shock Survivability	24,535 m/s2 (2500 g) peak
Relative Humidity	To 100% non-submerged; case is hermetically sealed.
Maximum Use Altitude	2000 meters (6561 ft) above sea level
Outdoor Use	Standard installation for these sensors is in a protected enclosure with wiring protected in conduit. Splash boots can be added for additional protection if needed by customer's requirements.

Physical

Weight (typical)	
2 meters	635 grams (1.40 lb)
4 meters	794 grams (1.75 lb)
6 meters	953 grams (2.10 lb)
8 meters	1,111 grams (2.45 lb)

Mounting	See 330750 System Dimensional Drawing on page 10. See 330752 System Dimensional Drawing on page 11.
Case	300 series stainless steel
Connector	2-pin Mil-C-5015 receptacle, hermetically-sealed, 304 stainless steel shell.
Polarity	When the applied velocity is from the base to the top of the transducer, Pin A becomes positive with respect to Pin B.
Bend Radius	Minimum bend radius of 51mm (2.0in)

Before installing this product, we recommend you read the 330750 and 330752 High Temperature Velomitor System User Guide (document 135090)

Recommended cable length (assuming max vibration of 25 in/s, frequency 2 kHz, and cable capacitance 200 pf/m). For longer lengths, contact Bently Nevada Tech Support.	219 m (720 ft)

Ordering Information

For the detailed listing of country and product specific approvals, refer to the *Approvals Quick Reference Guide* (108M1756) available from Bently.com.

330750-AA-BB

A: Length	
20	2 meters
40	4 meters
60	6 meters
80	8 meters
B: Approvals	
0 5	Multiple Approvals (CSA, ATEX, and IECEx)

330752-AA-BB

A: Length	
25	2.5 meters
40	4 meters
60	6 meters
80	8 meters
B: Approvals	
0 5	Multiple Approvals (CSA, ATEX, and IECEx)

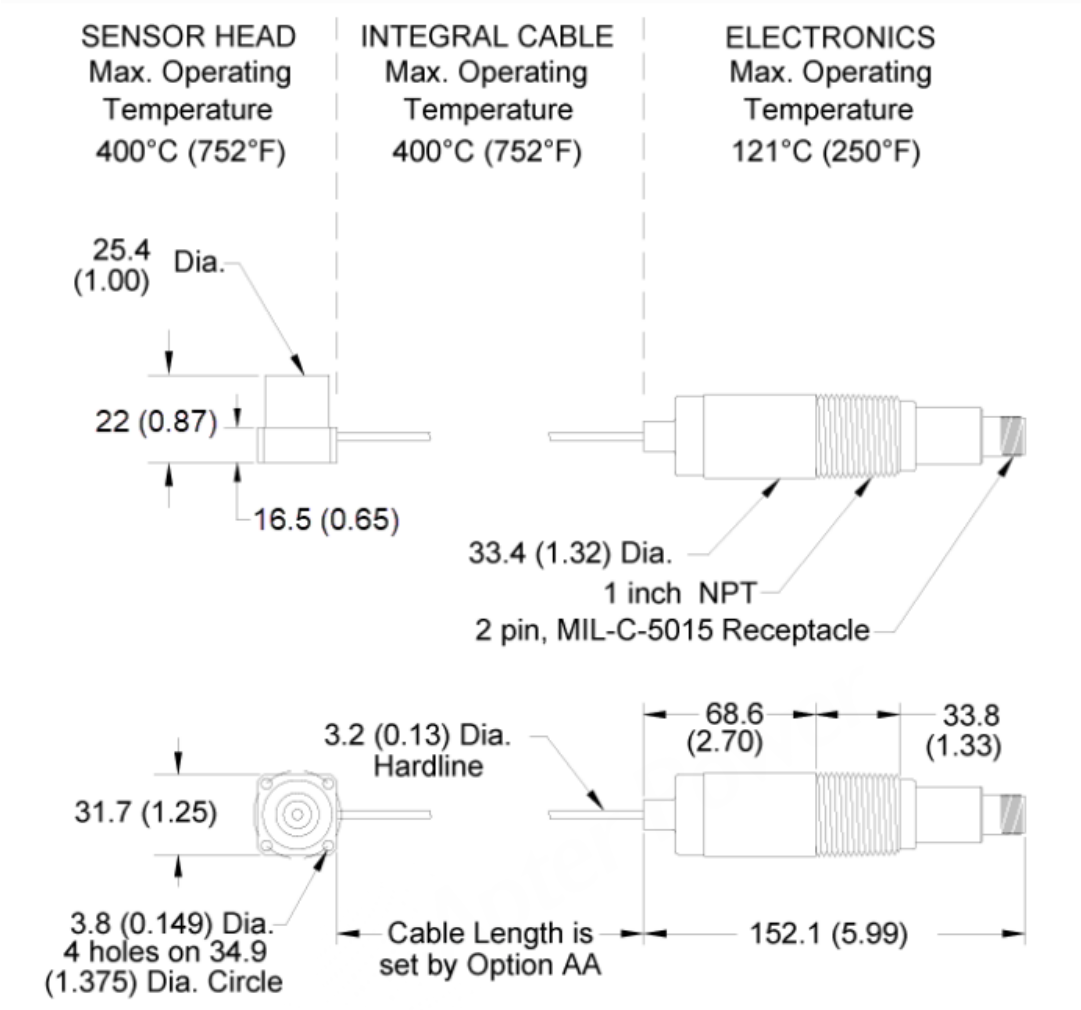
Interconnection Cables

The standard cable lengths below are available. You can order custom cable lengths in increments of one foot at additional cost. Some cables have a minimum and maximum length. For details, see each part description below.

Standard Cable Lengths

Feet	Meters (approximate)
6 ft	1.8 m
8 ft	2.4 m
10 ft	3.0 m
12 ft	3.6 m
15 ft	4.5 m
17 ft	5.0 m
20 ft	6.0 m
25 ft	7.6 m
30 ft	9.0 m
33 ft	10.0 m
50 ft	15.2 m
99 ft	30.0 m

Graphs and Figures



(All dimensions are in millimeters (inches))

Figure 1: 330750 System Dimensional Drawing