Bently Nevada 190501-07-00-04

Low-Frequency Casing Velocity Transducer

Engineering installation, diagnostic and acceptance guide

01 Low-frequency cooling-tower velocity measurement

Engineering review for low-frequency cooling-tower velocity measurement. Retain the approved bearing or casing point for the slow fan.

The following decisions apply to the selected assembly. Carry out work under the approved machine isolation and release procedure.

Selected engineering limits

Velocity sensitivity	3.94 mV/(mm/s) / 100 mV/(in/s), +/-5%
Frequency response	1.5 Hz to 1 kHz (+/-3 dB)
Tighter response band	3 to 900 Hz (+/-1 dB)
Peak velocity range	63.5 mm/s
Amplitude linearity	+/-2% to 63.5 mm/s peak
Transverse response	<5%
Mounted resonance	>=9 kHz (stud mount, excluding quick disconnect)
Output bias	10.1 +/-1 V DC (A relative to B)
Dynamic output impedance	<400 ohm typical
Operating temperature	-40 to +85 deg C
Shock limit	5000 g peak
Connector contacts	2
Mounting interface	3/8-24 to 3/8-24 plate stud
Mounting torque	4.5 +/-0.6 N m
Maximum cable length	305 m (02173006 cable)

Electrical values are specified at +20 to +30 deg C and 100 Hz unless otherwise stated. Cable performance also depends on capacitance, frequency and signal amplitude. CT velocity range can be reduced by high-frequency acceleration components.

02 Installation decisions / Low-frequency cooling-tower velocity measurement

Fan operating context	Record fan speed and load so low-frequency casing results can be compared at a repeatable operating point.
Plate-stud load path	Check rigid metal contact and both selected 3/8-24 interfaces; record the applied sensor mounting torque.
Bias reference	Compare Pin A to Pin B with the CT bias expectation under the documented measurement conditions.
Input filtering	Verify that the receiving channel retains the fan frequencies of interest instead of filtering them out before trending.

03 Low-frequency cooling-tower velocity measurement / fault distinctions

Low fan component is absent	Check mounting-point transmissibility and input high-pass filtering before condemning the sensor.
Clipping during high-frequency activity	Review the CT velocity limit and acceleration components above the useful band.
Unexpected bias	Check polarity, input wiring and the CT bias reference rather than applying 330500 expectations.

04 Low-frequency cooling-tower velocity measurement / acceptance evidence

Mounting evidence	Record plate-stud seating, surface and applied torque.
Electrical proof	Confirm bias and polarity with the actual receiving input.
Fan baseline	Retain speed, load and casing spectrum at an accepted operating condition.

Technical basis

Bently Nevada 190501 Velomitor CT Transducer Datasheet 141636 Rev. AF

Related product references

Separate supply references; listing does not establish interchangeability.

- Bently Nevada 330500-04-04
- Bently Nevada 330104-02-09-05-01-00

Discuss 190501-07-00-04 and the installed application with Apter Power. sales13@apterpower.com | +86 18030235313