CMSS 797T-1

Superior sensor, ring mode, side exit, acceleration and temperature

The CMSS 797T-1 is a higher precision accelerometer that also offers an in-built measurement of the temperature of the mounting point surface. The sensor is most applicable in the following industries:

 Power Generation (Fossil, Nuclear, Hydro) – pumps and fans, where regulatory expectations may require a higher vibration precision

The surface temperature measurement is good for rolling element (anti-friction) bearing housings and small journal bearing housings. Temperature measurements in large journal bearings should use established measurement locations.

Features

- Optimal for use with the SKF on-line system DMx, IMx-S, IMx-M and all portable data collection instruments
- Measures both temperature and acceleration
- · Rugged construction
- · Hermetically sealed
- Case isolated
- Meets stringent CE, EMC requirements
- ESD protection
- Reverse wiring protection

Recommended connector/cable assembly

• CMSS 933 series

Specifications

Dynamic

- Sensitivity: 100 mV/g
- Sensitivity precision: ±5% at 25 °C (75 °F)
- Acceleration range: 80 g peak
- Amplitude non-linearity: 1%
- Frequency range:
 - ±5%: 3,0 to 5 000 Hz
 - ±10%: 2,0 to 7 000 Hz
 - ±3 dB: 1,0 to 12 000 Hz
- Resonance frequency, mounted, nominal: 26 kHz
- Transverse sensitivity: ≤ 5% of axial
- Temperature response: See graph
- Temperature output sensitivity: ±5% of 10 mV/°K
- Temperature measurement range: -50 to +120 °C (-60 to +250 °F)



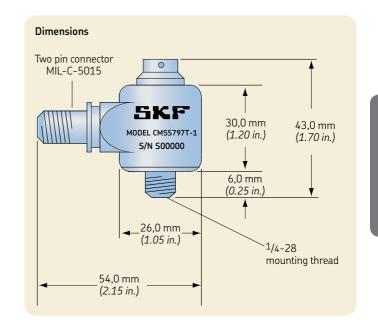


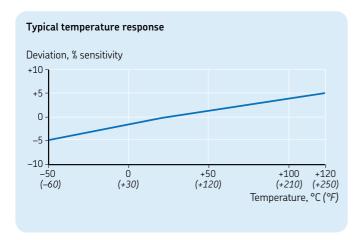


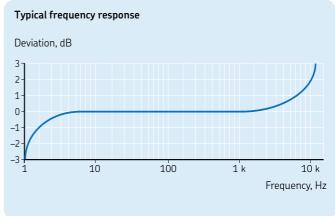
Electrical

Accelerometer

- Power requirements:
 - Voltage source: 18 to 30 V DC
 - Constant current diode: 2 to 10 mA
- Electrical noise:
 - Broadband:
 - · 2,5 Hz to 25 kHz: 600 μg
 - Spectral:
 - · 10 Hz: 8 µg/√Hz
 - · 100 Hz: 5 µg/√Hz
 - · 1 000 Hz: 5 µg/√Hz
- Output impedance: $< 100 \Omega$
- Bias output voltage: 12 V DC
- Grounding: Case isolated, internally shielded







Temperature sensor

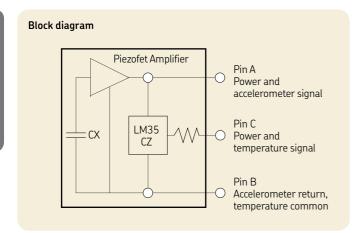
- Power requirements:
 - Voltage source¹⁾: 18 to 30 V DC
 - Constant current diode1), 2): 2 to 4 mA
- Grounding: Case isolated, internally shielded

Environmental

- Temperature range: -50 to +120 °C (-60 to +250 °F)
- Vibration limit: 500 g peak
- Shock limit: 5 000 g peak
- Electromagnetic sensitivity, equivalent g, maximum: 30 μg/gauss
- Sealing: Hermetic
- Base strain sensitivity: 0,002 g/ustrain
- CE: According to the generic immunity standard for Industrial Environment EN 50082-2
 - Acceptance criteria: The generated "false equivalent g level" under the above test conditions should be less than 2 mg measured peak to peak

Physical

- Dimensions: See drawing
- Weight: 135 g (4.8 oz.)
- Case material: 316L stainless steel
- Mounting: 1/4-28 captive socket head screw
- Mounting torque: 3,4 Nm (30 in. lbs.)
- Connections:
 - Shell: Ground
 - Pin A: Power and accelerometer signal
 - Pin B: Accelerometer, temperature common
 - Pin C: Power and temperature signal
- Mating connector: CMSS 933-68LC or CMSS 933-68TL, three pin, IP 68, locking collar or twist lock or three pin MIL-C-5015 style
- Recommended cable: CMSS 933-SY-XXM, three conductor, triad cable, single or shielded, yellow
- 1) To minimize the possibility of signal distortion when driving long cables with high vibration signals, 24 to 30 V DC powering is recommended. The higher level constant current source should be used when driving long cables (please consult SKF).
- ² A maximum current of 6 mA is recommended for operating temperatures in excess of 100 °C (210 °F).



Ordering information

CMSS 797T-1 Superior sensor, ring mode, side exit, acceleration and temperature, with MIL-C-5015 three pin connector.

• 1/4-28 captive socket head screw provided. A calibration data certificate with the actual sensitivity of the accelerometer is included in each package. The nominal sensitivity is etched on each unit.