

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

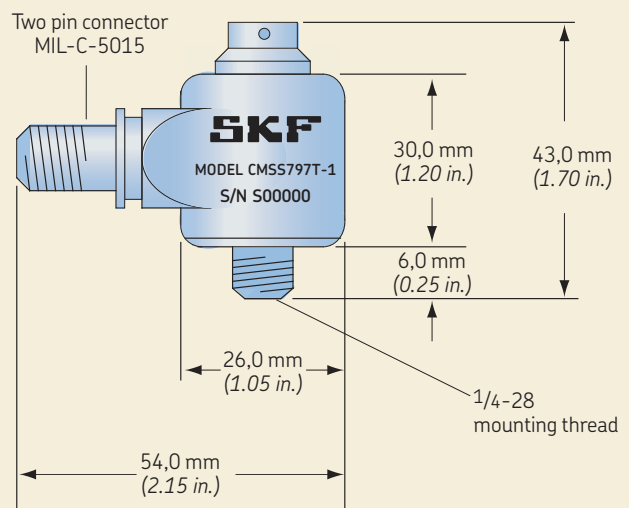


### Electrical

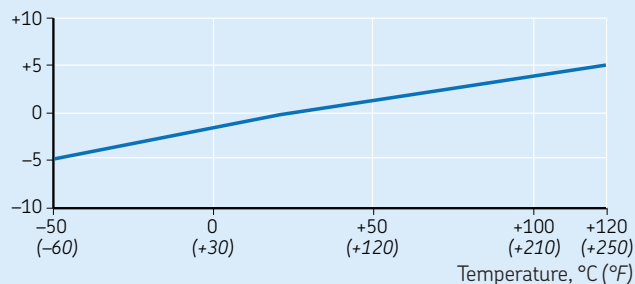
#### Accelerometer

- 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  $\mu$ g
  - Spectral:
    - 10 Hz: 8  $\mu$ g/ $\sqrt{\text{Hz}}$
    - 100 Hz: 5  $\mu$ g/ $\sqrt{\text{Hz}}$
    - 1 000 Hz: 5  $\mu$ g/ $\sqrt{\text{Hz}}$
- Output impedance:  $< 100 \Omega$
- Bias output voltage: 12 V DC
- Grounding: Case isolated, internally shielded

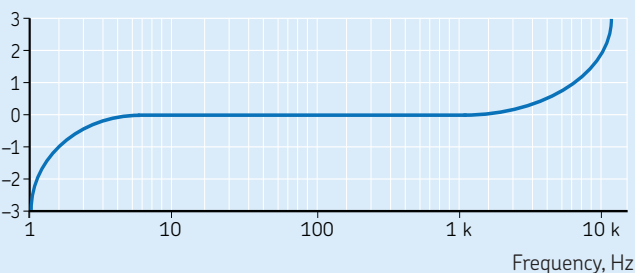
### Dimensions



## Deviation, % sensitivity



## Deviation, dB



- Power requirements:
  - Voltage source<sup>1)</sup>: 18 to 30 V DC
  - Constant current diode<sup>1), 2)</sup>: 2 to 4 mA
- Grounding: Case isolated, internally shielded

- 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  $\mu$ g/gauss
- Sealing: Hermetic
- Base strain sensitivity: 0,002 g/ $\mu$ strain
- 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

- 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

<sup>2)</sup> A maximum current of 6 mA is recommended for operating temperatures in excess of 100 °C (210 °F).

The diagram shows a circuit for a Piezofet Amplifier module. The module is represented by a black box containing a piezofet amplifier (triangle symbol) and an LM35 CZ precision centigrade centesimal (rectangle symbol). The piezofet amplifier is connected to a capacitor labeled 'CX'. The LM35 CZ is connected to a resistor. The module has three pins: Pin A (Power and accelerometer signal), Pin B (Accelerometer return, temperature common), and Pin C (Power and temperature signal).

- 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.