

CMPT 2310T

Sensor for mining industry, side exit, acceleration and temperature

The CMPT 2310T is a physically rugged accelerometer that also provides a surface temperature measurement. The sensor is optimized for use in heavy-duty environments in the following industries:

- Mining
- Mineral Processing
- Cement

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In these industries, dust, mud and flying debris are commonplace, together with low rotational speeds. When used on shakers and screens, the accelerometer must also withstand high levels of continuous and random vibration. The sensor uses an integral cable with stainless over-braid for mounting where protective conduit is not available.

Features

- For use with the SKF on-line system IMx-S, IMx-M, MCT and CTU
- 100 mV/g sensitivity
- Acceleration (mV/g) and temperature (mV/°C)
- Physically rugged
- Meets CE, EMC requirements
- Low profile, side exit industrial accelerometer with M6 × 1 and 1/4-28 UNF socket head cap screws provided
- 5 m (16.4 ft.) integral cable with stainless steel over-braid
- Corrosion resistant and hermetically sealed
- The internal sensor capsule is isolated from the machine ground
- Low noise, highly shock resistant
- Overload protected electronics



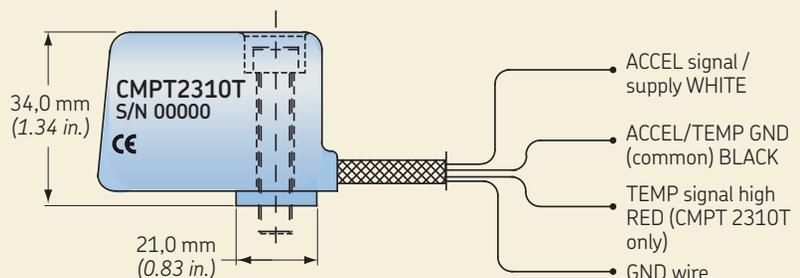
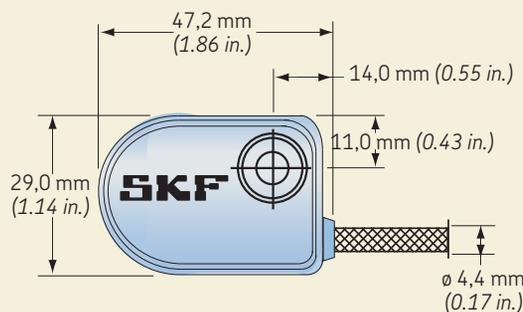
Specifications

Specifications conform to ISA-RP-37.2 (1-95) and are typical values referenced at 24 °C (75 °F), 24 V DC supply, 4 mA constant current and 80 Hz.

Dynamic

- Sensitivity: 100 mV/g
- Sensitivity precision: ±10%
- Sensitivity deviation over full temperature range: 10%, approximately -5% at -50 °C (-60 °F) and +5% at +120 °C (+250 °F)
- Acceleration range: 70 g
- Amplitude linearity: < 1%, up to full scale
- Frequency range: 1 Hz to 10 kHz
- Transverse sensitivity: ≤ 5% of axial
- Temperature sensitivity: 10 mV/°C
- Temperature sensor measurement range: 0 to 120 °C (30 to 250 °F)
- Temperature precision: ±1,5 °C (±2.7 °F)

Dimensions



Electrical

- Power requirements:
 - Voltage source: 24 V DC nominal, 18 to 30 V DC
 - Constant current diode: 4 mA at 24 V, 2 to 10 mA is permissible
- Electrical noise: < 1 mg RMS broadband 2,5 Hz to 25,0 kHz
- Bias output voltage: 11,5 V DC, $\pm 10\%$ for 24 V DC supply at 25 °C (75 °F)
- Grounding: Case isolated, internally shielded (Faraday cage)
 - Faraday cage connected to power supply return
- Over-voltage protection: Approximately 18 V DC
- Reverse polarity (wiring) protection installed

Environmental

- Temperature range:
 - Accelerometer measurement temperature range: –50 to +120 °C (–60 to +250 °F)
 - Maximum operating temperature: 120 °C (250 °F)
 - Storage temperature: –50 to +150 °C (–60 to +300 °F)
- Vibration limit: 70 g peak
- Shock limit: 5 000 g peak
- Electromagnetic sensitivity, equivalent g, maximum:
 - < 100 $\mu\text{g/gauss}$ at 50 to 60 Hz
- 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
- IEC: 529, IP 67

Physical

- Dimensions: See drawing
- Weight:
 - Sensor without cable: 210 g (7.4 oz.)
 - Sensor with cable: 410 g (14.5 oz.)
- Case material: 304 stainless steel
- Mounting: M6 \times 1 and $\frac{1}{4}$ -28 UNF socket head cap screws provided
- Mounting torque: 6 Nm (50 in. lbs.)
- Cable: Integral cable, 5 m (16.4 ft.) length
- Wire specification: 0,32 mm² (AWG 22) stranded tin copper (seven strands at 0,05 mm² each)
- Connections:
 - White: ACCEL signal/power
 - Black: ACCEL/TEMP signal ground (GND)
 - Red: TEMP signal high
 - Blank twisted wire: Screen connected to internal shield

Ordering information

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|----------------------|---|
| CMPT 2310T | Acceleration and temperature sensor for mining industry with 5 meter (16,4 ft) integral braided cable, side exit. |
| CMPT 2310Tx10 | Acceleration and temperature sensor for mining industry with 10 meter (33 ft) integral braided cable, side exit. |
| CMPT 2310Tx15 | Acceleration and temperature sensor for mining industry with 15 meter (50 ft) integral braided cable, side exit. |

- $\frac{1}{4}$ -28 and M6 \times 1 socket head cap screws provided. Calibration sensitivity is provided for each accelerometer package with nominal sensitivity etched on each unit.