

CMSS 2110

Accelerometer with integral, braided cable, straight exit

The CMSS 2110 is a rugged accelerometer designed for installation where cable protection is paramount without the luxury of cable trays or protective conduit. The CMSS 2110 is typically used in the following industries:

- Pulp and Paper
- Food and Beverage

Common applications include motors and bearings on conveyor systems.

Features

- For use with all SKF on-line systems, protection systems and the portable data collection instruments
- Economical, top exit design
- Rugged, corrosion resistant and hermetically sealed
- Case isolated
- Meets stringent CE, EMC requirements
- ESD protection
- Cable shield and braid connected to sensor housing
- Reverse wiring protection

Specifications

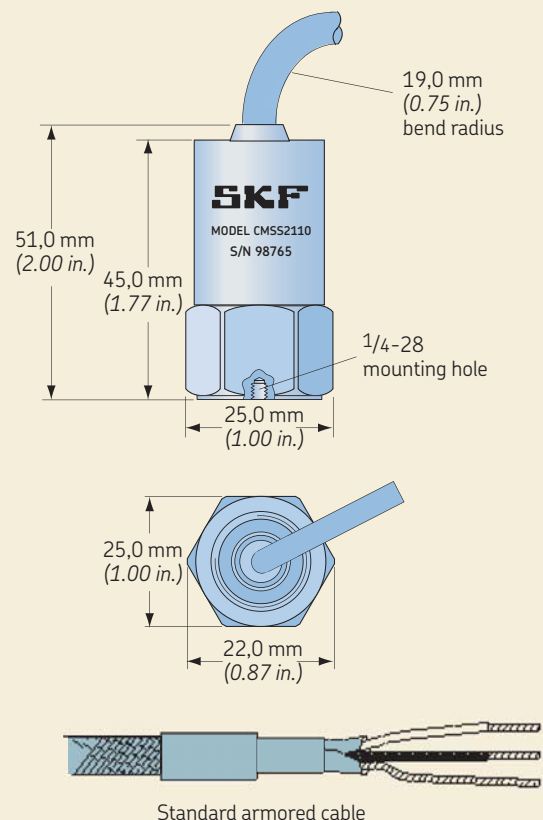
Specifications conform to ISA-RP-37.2 (1-64) and are typical values referenced at 24 °C (75 °F), 24 V DC supply, 4 mA constant current and 100 Hz.

Dynamic

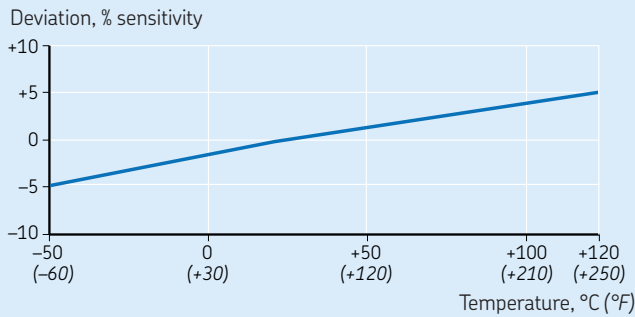
- Sensitivity: 100 mV/g
- Sensitivity precision: $\pm 10\%$
- Sensitivity deviation over full temperature range: $\leq \pm 10\%$
- Acceleration range: Minimum ± 8 V equivalent to 80 g peak; turn-on time to within 10% of final bias is $\leq 1,0$ s
- Amplitude linearity: $\leq 1\%$, up to full scale
- Frequency range:
 - ± 3 dB: 0,8 Hz to 10,0 kHz
- Resonance frequency:
 - Nominal 25 kHz or higher
 - Controlled resonance amplitude
 - +15 dB maximum at resonance
- Transverse sensitivity: $\leq 5\%$ of axial
- Temperature response: See graph



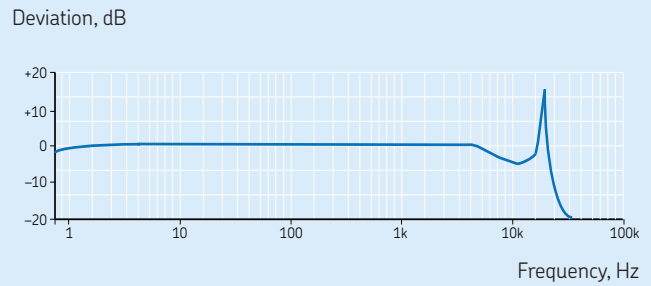
Dimensions



Typical temperature response



Typical frequency response



Electrical

- Power requirements:
 - Voltage source: 24 V DC nominal, $\pm 20\%$
 - Constant current diode: 2 to 10 mA, recommend 4 mA
- Electrical noise:
 - Broadband (2,5 Hz to 25,0 kHz): < 0,6 mg RMS
- Output impedance: < 50 Ω
- Bias output voltage:
 - 12,5 to 13,5 V DC for 24 V DC supply over temperature range -50 to +100 °C (-60 to +210 °F)
 - 11,0 to 14,0 V DC for 24 V DC supply over temperature range 100 to 120 °C (210 to 250 °F)
- Grounding:
 - Case isolated, internally shielded (Faraday cage)
 - The internal Faraday cage is connected to the signal return of the shielded twisted pair
 - The internal shield, as well as the stainless steel braid, is connected to the sensor housing
- Isolation to sensor housing: > 10 M Ω over full temperature range
- Over-voltage protection
- Reverse polarity (wiring) protection

Environmental

- Temperature range: -50 to +120 °C (-60 to +250 °F) operating temperature
- Vibration limit: 500 g peak
- Shock limit: 1 000 g peak
- Electromagnetic sensitivity, equivalent g, maximum: < 100 $\mu\text{g/gauss}$ at 50 to 60 Hz
- Base strain sensitivity: 200 $\mu\text{g}/\mu\text{strain}$
- 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

Physical

- Dimensions: See drawing
- Cable length: 5 m (16.4 ft.)
- Weight: 350 g (12.4 oz.), including cable
- Case material: 316L stainless steel
- Mounting:
 - Internal 1/4-28 thread
 - M8 $\times$ 1,25 and 1/4-28 to 1/4-28 mounting studs provided
- Mounting torque: 2,9 Nm (24 in. lbs.)
- Connections:
 - Power signal: White
 - Common: Black
 - Shielding: Drain
- Cable:
 - Integral cable, 5 m (16.4 ft.) long
 - Shielded twisted pair; two times AWG 20
 - Shield grounded to sensor housing
 - Cable armored with stainless steel braid
 - Braid also connected to sensor housing
 - High temperature cable
 - Cable diameter less than 5 mm (0.19 in.)
- Cable specifications: 2/C 20 AWG FEP/A/M/FEP 10-1254; recommend two wire, twisted, shielded

Ordering information

CMSS 2110 Accelerometer with integral, braided cable, straight exit.

- 1/4-28 and M8 mounting studs provided. Calibration sensitivity is provided for each accelerometer package with nominal sensitivity etched on each unit.