CMSS 786F-IS / CMSS 786F-D2

Agency approved accelerometer with integral cable

The CMSS 786F-IS / CMSS786F-D2 is a cost effective sensor for use in hazardous areas typically found in the following industries:

- Oil and Gas
- Refining
- Petrochemicals

Common applications include general purpose machines such as pumps, motors, fans and gearboxes. The CMSS 786F-IS is particularly suitable for the SKF Multilog On-line System DMx since, in this case, no additional barriers are required for use in hazardous areas.

Features

- Optimal for use with SKF on-line system DMx, WMx, IMx-S and IMx-M when used with the appropriate safety barriers, accessories and/or methods as required by the particular hazardous area classification
- Economical, top exit design
- Rugged, corrosion resistant and hermetically-sealed
- Case isolation
- Meets stringent CE, EMC requirements
- ESD protection
- Reverse wiring protection

Specifications

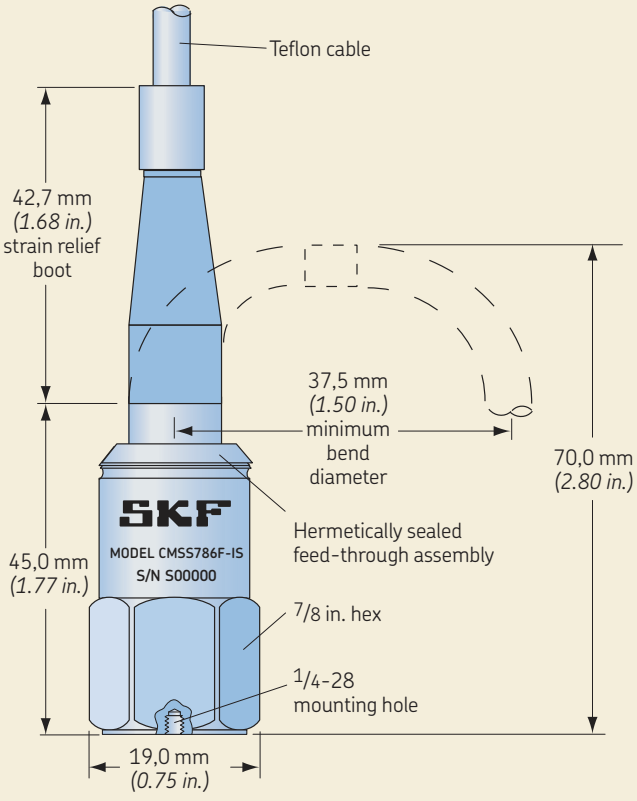
Dynamic

- Sensitivity: 100 mV/g
- Sensitivity precision: ±5% at 25 °C *(75 °F)*
- Acceleration range: 80 g peak
- Amplitude non-linearity: 1%
- Frequency range:
  - ±10%: 1,0 to 8 000 Hz
  - ±3 dB: 0,5 to 13 000 Hz
- Resonance frequency, mounted, nominal: 30 kHz
- Transverse sensitivity: ≤ 5% of axial
- Temperature response:See graph

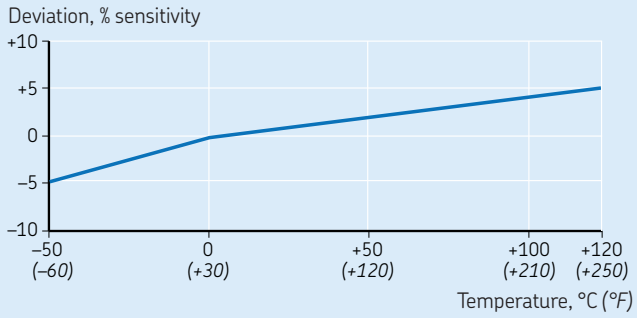
Electrical

- Power requirements:
  - Voltage source[1]: 18 to 30 V DC
  - Constant current diode[1), 2)]: 2 to 10 mA
- Electrical noise:
  - Broadband:
    - 2,5 Hz to 25 kHz: 700 µg

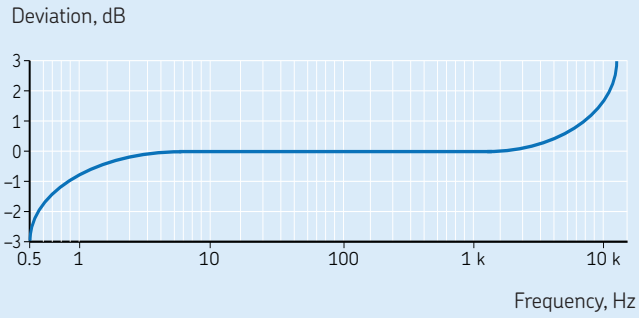
Dimensions



Typical temperature response



Typical frequency response



  - Spectral:
    - 10 Hz: 10 µg/√Hz
    - 100 Hz: 5 µg/√Hz
    - 1 000 Hz: 5 µg/√Hz
- Output impedance: < 100 Ω
- Bias output voltage: 12 V DC
- Grounding: Case isolated (> 108 Ω at 100 V), internally shielded

Environmental

- Temperature range: –50 to +120 °C *(–60 to +250 °F)* operating temperature
- Vibration limit: 500 g peak
- Shock limit: 5 000 g peak
- Electromagnetic sensitivity, equivalent g, maximum: 70 µg/gauss
- Sealing: Hermetic

Agency approvals for hazardous area

CMSS 786F-IS

CSA — Intrinsically Safe
Class I, Zone 0, AEx / Ex ia IIC; T4

CSA — Class I, Division 1, Groups A, B, C, D
Class II, Division 1, Groups E, F, G
Class III, Division 1

KEMA — ATEX Zone 0
II 1 G Ex ia IIC; T4

Must be installed per drawing 12881.

CMSS 786F-D2

CSA — Non-incendive
Class I, Division 2, Groups A, B, C, D
Class I, Zone 2, Ex nA II;T4

KEMA — ATEX Zone 2
II 3 G Ex nA II;T4

Must be installed per drawing 13031, rev. B.

- Base strain sensitivity: 0,0002 g/µstrain
- Certifications: CE, CSA and ATEX (see table)
- 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: 90 g *(3.2 oz.)*
- Case material: 316L stainless steel
- Mounting: 1/4-28 tapped hole
- Mounting torque: 2,9 Nm *(24 in. lbs.)*
- Connections:
  - Shell: Ground
  - Pin A: Power/Signal
  - Pin B: Common

[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 786F-IS Agency approved accelerometer with integral cable, intrinsically safe (IS) rated.
CMSS 786F-D2 Agency approved accelerometer with integral cable, non-incendive rated.

- Both models with 1/4-28 and M8 mounting studs 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.