

SKF Machine Condition Transmitter (MCT) systems

CMSS 5301 / CMSS 5302

One and two channel, complete MCT system

The CMSS 5301 (one channel) and CMSS 5302 (two channel) are vibration monitors that have been designed for use on typical rotating machinery such as motors, pumps, fans, turbines, compressors, chillers, etc.

Features

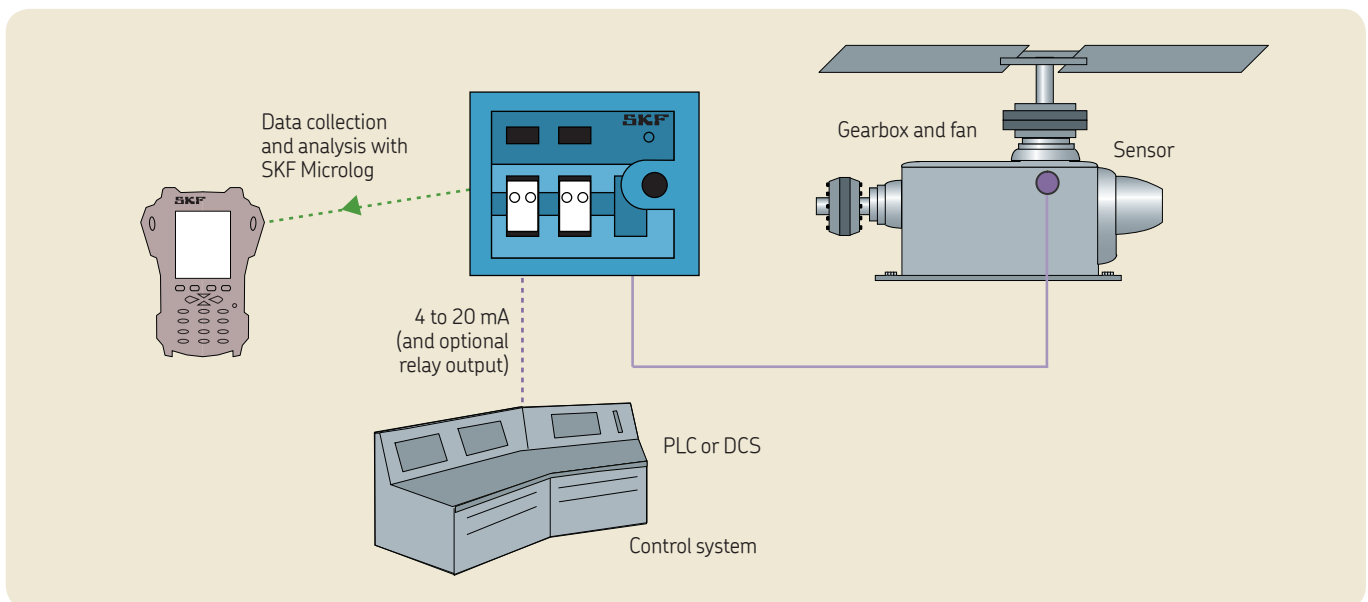
- Two levels of alarm with relays
- True "OK" circuitry with relay
- Adjustable time delays
- Trip multiply
- 4 to 20 mA output
- Buffered transducer output
- Reset button
- Bright LED digital readout
- Class I, Division 2 rated transmitters with monitors

Description

The CMSS 5301 and CMSS 5302 accept inputs from any industry standard 100 mV/g accelerometer, conditions the input signals and provides a digital display and alarm status indication.

Analog outputs (4 to 20 mA) are provided for each channel for interface to a PLC or DCS for trending, alarm and operator interface. The alarm contacts for the OK circuit and for Alert and Danger may be interfaced to machine control and shutdown systems for a complete vibration protection solution.

Example of SKF MCT system configuration.



The system is a pre-wired, turnkey package with power supply and bright LED displays. The power supply accepts 110 or 220 VAC, 50 or 60 Hz. They are available in either an Imperial or Metric configuration. The standard enclosure is NEMA 4X fiberglass; powder coated steel and stainless steel enclosures are available.

Specifications (both models)

Physical

- Dimensions:
 - Fiberglass (FG), single and dual channel: 28,5 × 15,5 × 23,4 cm (11.21 × 6.09 × 9.20 in.)
 - Powder-coated steel (PS) and stainless steel (SS), single channel: 25,0 × 15,0 × 20,3 cm (9.84 × 5.90 × 7.98 in.)
 - Powder-coated steel (PS) and stainless steel (SS), dual channel: 30,0 × 15,0 × 25,0 cm (11.81 × 5.91 × 9.85 in.)
- The steel enclosures (PS and SS) have a slightly different design with the door hinges on top.

Electrical

- Power: Accepts 110 or 220 VAC, 50 or 60 Hz
- Case: Isolated

Input

- Sensor: Accelerometer, 100 mV/g
- Sensor OK detection: Continuously monitors the transmitter bias and signal voltage; if this voltage exceeds preset limits, the 4 to 20 mA output current is reduced to less than 2 mA

Output

- Sensitivity: Depending on used sensor's input sensitivity, $\pm 10\%$
- 4 to 20 mA DC output: 4 to 20 mA proportional to full scale range
- Accuracy: $\pm 5\%$ with single pole filter; -3 dB points at 2 Hz and 2 kHz
- Buffered output: BNC connector 0 to 20 kHz
- Maximum load: 600 Ω resistive per channel

Environmental

- Operating temperature: -20 to $+80$ °C (-5 to $+175$ °F)
- Storage temperature: -55 to $+125$ °C (-65 to $+260$ °F)
- Relative humidity: 0 to 95% non-condensing
- Approvals: NEMA 4X

Ordering information

CMSS 5301: One channel complete Machine Condition Transmitter System with display and NEMA 4X fiberglass enclosure:

- CMSS 5301FG-E: CMSS 530A100A-ER-ISOLF, 0 to 1 in./s, RMS, universal power supply
- CMSS 5301FG-M: CMSS 530A100A-MR-ISOLF, 0 to 25 mm/s, RMS, universal power supply
- CMSS 5301FG-ENV: CMSS 590A100A, 0 to 10 gE, universal power supply

Enclosures are available in:

- Fiberglass NEMA 4X (standard)
- Powder coated steel NEMA 4 (CMSS 5301PS)
- Stainless steel NEMA 4X (CMSS 5301SS)
- Custom cast aluminum for explosion-proof application is available upon request

CMSS 5302: Two channel complete Machine Condition Transmitter System with displays and NEMA 4X fiberglass enclosure:

- CMSS 5302FG-E: Two CMSS 530A100A-ER-ISOLF, 0 to 1 in./s, RMS, universal power supply
- CMSS 5302FG-M: Two CMSS 530A100A-MR-ISOLF, 0 to 25 mm/s, RMS, universal power supply
- CMSS 5302FG-ENV: Two CMSS 590A100A, 0 to 10 gE, universal power supply
- CMSS 5302FG-E-ENV: One CMSS 530A100A-ER-ISOLF, one CMSS 590A100A, universal power supply
- CMSS 5302FG-M-ENV: One CMSS 530A100A-MR-ISOLF, one CMSS 590A100A, universal power supply
- CMSS 5302FG-E-ENV-MS: One CMSS 530A100A-ER-ISOLF, one CMSS 590A100A, universal power supply
- CMSS 5302FG-M-ENV-MS: One CMSS 530A100A-MR-ISOLF, one CMSS 590A100A, universal power supply

The CMSS 5301 and CMSS 5302 are also available with any other CMSS 500 series monitor.

Example: Part ID CMSS 5302SS-E-ENV-MS: Master-slave configuration, specifies one Velocity MCT with Imperial units and one Enveloped Acceleration MCT, configured to work with one sensor (for dual-parameter measurements).



Ordering information

CMSS 5301 Single channel monitoring system with display

CMSS 5302 Dual channel monitoring system with displays

Part number **CMSS 530VWW-X-YYY-ZZ**

V	Number of channels
1	Single channel
2	Dual channel
WW	Enclosure
FG	Fiberglass
PS	Powder-coated steel
SS	Stainless steel
X	Transmitter type
E	Velocity, Imperial, CMSS 530A100A-ER-ISOLF
M	Velocity, Metric, CMSS 530A100A-MR-ISOLF
ENV	Enveloped acceleration, CMSS 590A100A
YYY	Transmitter mix
ENV	One velocity and one enveloped acceleration
ZZ	Transmitter configuration
MS	Master and slave configuration, two transmitters, one sensor