SKF Loop-powered Vibration Transmitter

CMSS 420VT

Features

- Solid-state reliability
- Integral sensor
- 4-20 mA output
- Dynamic signal output

Description

The CMSS 420VT is a solid-state, loop-powered vibration transmitter. It provides a 4-20 mA output that is proportional to overall vibration in terms of velocity. The CMSS 420VT continuously monitors machinery health and transmits directly into a PLC or DCS for trending, alarm and machine shutdown. In addition, the CMSS 420VT provides access to the dynamic transducer output. The buffered output is available for temporary connection of portable analyzers for detailed machine fault analysis.

Simple installation

Simply mount the CMSS 420VT into a 1/4"-28 or M8 tapped hole in the bearing housing or machine case (NPT Mounting Adapters are available, part number CMSS 203), connect two wires into a 4-20 mA loop, and you are ready to interface with a PLC or DCS. Electrical conduit may be connected directly to the top 3/4" NPT fitting, (NPT Mounting Adapters are available, part number CMSS 203).

Specifications

DYNAMIC

Output: 4-20 mA proportional to full scale Velocity

Accuracy: ± 5% of full-scale

Frequency Response: 2-2,000 Hz

Frequency Response Accuracy:

-3 db: 2 Hz to 2 kHz

10%: 10 Hz to 1 kHz

5%: 15 Hz to 750 Hz

Buffered Output: Acceleration, 100 mV/g

ELECTRICAL

Power (*Two wire loop power*)**:** +22 Vdc to +36 Vdc

Maximum Load (*see note – Maximum Load Resistance calculations for specific requirements*)**:** Up to 600 Ohms resistive

Grounding: Case Isolated

ENVIRONMENTAL

Operating Temperature: -4 °F to +176 °F (-20 °C to +80 °C)

Sealed: Epoxy Encapsulated

Enclosure: SS, NEMA 4, 4X, 12

Mounting: Stud Mounted

Weight (*without display*)**:** 8 oz. (227 g)

REGULATORY APPROVAL

CE Mark: SKF Loop-Powered Vibration Transmitter CMSS 420VT and Displays CMSS 420LCD and CMSS 420LED

SKF Loop-powered Vibration Transmitter CMSS 420VT

Ordering information

CMSS 420VT-1 0-1 in/sec. (25.4 mm/sec.) RMS, includes 1/4"-28 and M8 Mounting Studs
CMSS 420VT-2 0-2 in/sec. (50.8 mm/sec.) RMS, includes 1/4"-28 and M8 Mounting Studs

Optional display

Light Emitting Diode Display (LED)	Liquid Crystal Display (LCD)
CMSS 420LED-01 0-1 in/sec.	**CMSS 420LCD-01** 0-1 in/sec.
CMSS 420LED-02 0-2 in/sec.	**CMSS 420LCD-02** 0-2 in/sec.
CMSS 420LED-51 25.4 mm/sec.	**CMSS 420LCD-51** 25.4 mm/sec.
CMSS 420LED-52 50.8 mm/sec.	**CMSS 420LCD-52** 50.8 mm/sec.

Accessories

CMSS 420LCD/CMSS 420LED Display Retrofit *(requires transmitter)*
LCD displays actual vibration levels in velocity on a Liquid Crystal display. LED displays actual vibration levels in velocity on a Light Emitting Diode display. The displays are shipped loose, and it is a simple installation. Includes a BNC connector that provides access to the raw acceleration signal.

CMSS 420BNC – BNC Adapter Retrofit
90 Degree 3/4" NPT conduit elbow with a BNC connector to access the raw acceleration signal. This is useful for connection to portable data collectors.

CMSS 420WF – 3/4" NPT Weatherproof Cable Fitting
When used with the CMSS 420EL, provides a simple weatherproof exit for the instrument wire.

CMSS 420EL – 90 Degree 3/4" by 3/4" NPT Elbow
Useful for connecting CMSS 420VT to hard or flexible conduit. When used with the CMSS 420WF, provides a simple weatherproof exit for the instrument wire.

CMSS 203 – Pipe Thread Accelerometer Mounting Adapter
They are provided in several NPT sizes to accommodate the most common plugs found on most machinery. The adapters have a 1/4"-28 threaded hole to mate with the CMSS 420VT and most common accelerometers and vibration transmitters.

Part Number	Pipe Thread Mounting Adapter
CMSS 203-01	1/2" (NPT) National Pipe Tapered Thread
CMSS 203-02	3/4" (NPT) National Pipe Tapered Thread
CMSS 203-03	3/8" (NPT) National Pipe Tapered Thread
CMSS 203-04	1/4" (NPT) National Pipe Tapered Thread

NOTE:
Maximum load resistance calculations:
RLoad = (Vs - 13.5 - Vd) / 0.032

Where:
RLoad = Load Resistance
Vs = DC Supply Voltage
Vd = Display Voltage (5.0 Vdc for LED, 2.0 Vdc for LCD, 0 Vdc if not using a display unit)

For Example:
Using a LED Display and a Supply Voltage of 24 Vdc
Supply Voltage Vs = 24 V; Display Voltage Vd = 5.0 Vdc for LED
RLoad = (Vs - 13.5 V - Vd) / 0.032
= (24 V - 13.5 V - 5 Vdc) / 0.032
= 172 Ohm

SKF Reliability Systems
5271 Viewridge Court • San Diego, California 92123 USA
Telephone: +1 858-496-3400 • FAX: +1 858-496-3531

Web Site: www.skf.com/cm

SKF Patents include: #US05854553, #US05845230, #US06489884, #US05679900, #US04768380, #US06199422, #US05992237, #US06202491, #US06513386, #US06275781, #US06633822, #US06006164, #US2003 0178515A1, #US6,789,025, #US6,789,360, #WO 03 048714A1