

SKF Copperhead Fault Detection System

Custom fault detection systems

The SKF Copperhead kit is a low channel fault detection system based on the SKF Copperhead Transmitter Module (CMPT CTU), the Alarm and Display Module (CMPT DCL), and SKF Copperhead sensors. The system is designed to endure harsh conditions such as mines, mineral processing, and the cement industry. The system has a unique ability to monitor both normal and low speed machinery.

The CMPT CTU is a vibration and temperature transmitter. From its front panel, the CMPT CTU allows the user to select vibration measurement type and range. Vibration measurement options include acceleration enveloping, acceleration, or velocity (ISO). Optional output averaging eliminates spikes in the output signals and makes it suitable for connection to an automation system.

- SKF acceleration enveloping vibration analysis is useful to identify repetitive impact type vibrations generated by rolling bearing damage, machinery faults due to loose components, gear faults, and lack of lubrication.
- Acceleration vibration analysis is useful to monitor overall machinery and structural vibration.
- Velocity vibration analysis is useful to identify most general machinery faults like looseness, misalignment, and unbalance.

The system's enclosure is made of painted steel with a window that provides a clear view of system components. All components are installed in the enclosure and tested. 110 to 240 V AC power supply, sensor input signals and processed output signals are connected to terminals at the bottom of the enclosure for easy access. The system's enclosure has finished cable entries.

SKF Copperhead kits can be customized by adding extra CMPT CTU, CMPT DCL or CMPT CAN modules.



Features

- Vibration and temperature monitoring
- Choice of vibration analysis
 - SKF acceleration enveloping – gE Filter band 3, 500 Hz to 10 kHz
 - Acceleration
- Velocity (ISO)
- CTU front panel configurable for:
 - Vibration analysis
 - Output range
 - Normal or low speed machinery
 - Optional output signal averaging
- BNC output signal, buffered vibration or temperature
- Front panel lamp indicates sensors and CTU faults
- 4 to 20 mA or 0 to 10 V DC output signals for connection to control system
- Optional display and alarm unit for stand alone system
 - Alarm on High, Low or High-Low signal
 - Front panel LED event lamp
 - Relay contacts
 - Normally Open or Normally Closed
 - Latching or Non-latching
 - Time delay (0 to 9 999 seconds)
- Easy access for SKF Microlog connection to BNC with buffer vibration and temperature output

Specifications

Environmental

- Enclosure: Painted steel with window door
- Dimensions: (CMPT CPHD 2EC, CMPT CPHD 2ECM, CMPT CPHD 4EC)
 - Height: 406 mm (16 in.)
 - Width: 305 mm (12 in.)
 - Depth: 152 mm (6 in.)
- Weight: 9 kg (20 lb.)
- Dimensions: (CMPT CPHD 6EC, CMPT CPHD 8EC)
 - Height: 500 mm (20 in.)
 - Width: 400 mm (16 in.)
 - Depth: 150 mm (6 in.)
- Weight: 12 kg (26.5 lb.)
- IP rating: IP 66
- Operating temperature: 0 to 50 °C (32 to 122 °F)

Power requirements

- Supply voltage: 100 to 250 V AC, 50 to 60 Hz

Individual data sheets are available for the SKF Copperhead Transmitter module (CMPT CTU), Alarm and display module (CMPT DCL), and compatible SKF sensors. Contact your local SKF sales Representative for additional information.

Ordering information

- CMPT CPHD 2EC
 - Two (2) CMPT CTU
 - Power supply installed in enclosure
- CMPT CPHD 2ECM
 - Two (2) CMPT CTU
 - Two (2) CMPT DCL (vibration)
 - Power supply installed in enclosure
- CMPT CPHD 4EC
 - Four (4) CMPT CTU
 - Power supply installed in enclosure
- CMPT CPHD 6EC
 - Six (6) CMPT CTU
 - Power supply installed in enclosure
- CMPT CPHD 8EC
 - Eight (8) CMPT CTU
 - Power supply installed in enclosure

Optional modules

- CMPT CTU
 - CTU Vibration and temperature transmitter monitoring module (not installed)
- CMPT DCL
 - Display – Copperhead display/Relay module (not installed)
- CMPT CAN
 - CTU USB-CAN module used for communications between computer and CTU (not installed)

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