



PRODUCT DATA SHEET

PCH 1420 Vibration Monitor

PCH 1420 Vibration Monitor is a protection device with 4 real-time vibration input channels, 1 tachometer input and 1 process input channel. This vibration monitor combines protection with condition monitoring of roller bearings by means of a variety of bearing failure detectors like Envelope, Kurtosis and Crest factor. PCH 1420 offers 4-20 mA outputs, safety and alarm relays, a RS-485 and USB port for communication and timewave form recording of RAW data. Several features support the ISO/EN 13849-1 standard.

6 Input channels:

- Up to 4 factory configured transducer inputs: 2 or 3-wire accelerometer, velocity sensor, proximity probe or process 0-10V (can also be combined)
- 1 Process input 4-20 mA, 0-20 mA or 0-22 V
- 1 Tacho input for NPN, PNP or AC speed sensor

Sensor types:

- Accelerometer, 10-500 mV/g, type IEPE:
 - Maximum input:..... ± 5.4 Vpk
 - Input overload:..... ± 5.4 Vpk
 - Transducer Bias Current:.....5 mA

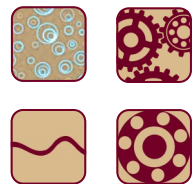
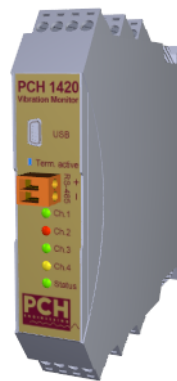
- Proximity probe, 0.8-8V/mm
 - Maximum voltage input:.....-2 to -22 V
 - Peak detector, attack time:.....1-1000 ms
 - Peak detector, decay time:.....0.1-100 s

Band 1 (per input channel):

- Detectors:.....True RMS, Pk-Pk or Pk
- Filter ranges:
 - Velocity:.....0.7 to 1200 Hz
 - Acceleration:.....0.7 Hz to 10 kHz
 - Displacement:.....0.7 to 1200 Hz
- Measuring parameter:.....mm/s, m/s², μm, mm, mils

Band 2 (per input channel, IEPE only):

- Detectors: True RMS, 2 Envelope detectors with user defined filters from 1 - 500 Hz, Kurtosis and Crest factor (top factor) according to VDI 3832:
- Filter ranges:
 - Velocity:.....0.7 to 1200 Hz
 - Acceleration:.....0.7 Hz to 10 kHz
 - Displacement:.....0.7 to 1200 Hz



Configurable measuring ranges:

From 0 up to 1-100 mm/s, 1-250 m/s² and 0.1-15 mm. The measuring ranges are user configurable.

Standard frequency ranges:

10 Hz - 1000 Hz, -1 dB, 24 dB/oct.
 Optional:..... 1-300/1000, 0.7-10.5, 5-10000 Hz
 High frequency band:.....2-10 kHz
 More filters bands are available.

Up to 4 configurable outputs:

The user can configure up to 4 outputs as DC outputs or alarm relay drivers. DC outputs can be configured as 4-20 mA, 0-20 mA, 2-10 V or 0-10 V. Each output can be assigned to any of the measuring parameters.

- Voltage load:.....min. 10 kΩ
- Current load:.....max. 400 Ω

Relay drivers for external coil: With break-function, can be user configured as Alert or Danger alarms with latch function or auto reset.

- Max voltage:.....30 V
- Max current:.....100 mA

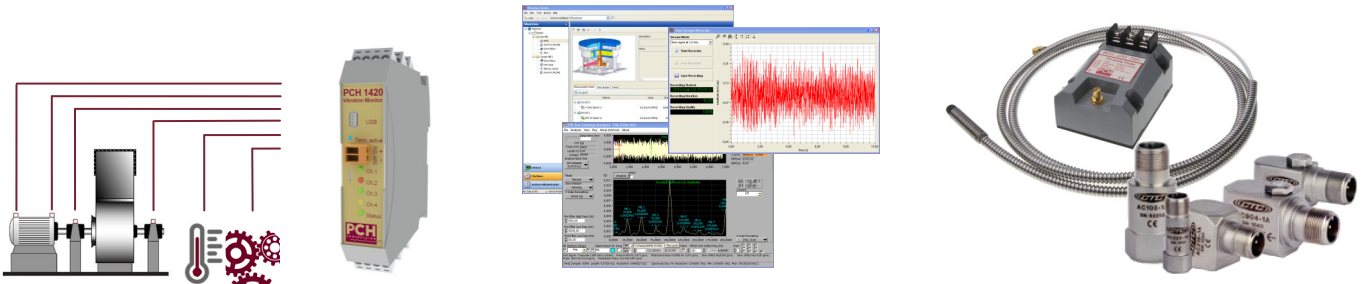
Alarm detectors:

Alert and Danger alarm per each detector with adjustable alarm limits. Alarm delay time:
 Alert delay time..... 0-100 s



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Danger delay time..... 0-100 s
 Hang time for Alert and Danger..... 0-100 s

Up to 24 additional relays (optional):

The user can connect up to 2 PCH Relay Boxes consisting of 12 galvanic isolated relays each. Alert and Danger alarms can be directed to these relays.
 Max voltage:.....30 V
 Max current:.....100 mA

Safety relay:

1 galv. isolated redundant relay with break-function (power fail-safe). Danger alarms can be forwarded to this relay, when the monitor is configured as a Safety Monitor according to ISO/EN 13849-1.

All system failures, like cable short, cable break and internal system failure, will automatically trip the safety relay.

Test function:

Can be activated digitally or by PC. As default the alarm relays activate and DC outputs increase to the specified test level of 102 %. The user can configure the full test function through PCH Vibration Studio®.

Timewave form recording:

Up to 4 input channels can record digital raw data (timewave form) simultaneously to a PC running PCH Vibration Studio®. The recording can be done through:
 RS-485/LAN (buffered).....Up to 10 kHz
 Mini USB (real-time).....Up to 10 kHz
 Timewave form recording is user activated.

Raw data (analogue signal):

Raw data could be obtained from a BNC connector to an external data collector through PCH Output Box. Frequency range depends on accelerometer.
 BNC through PCH Output Box.....Up to 25 kHz

Trending of measuring data:

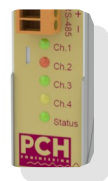
All input channels can be trended and alarms can be stored when connected to either PCH EtherBridge or directly to a PC running PCH Vibration Studio®.

Communication:

RS-485 interface.....2 screw terminals
 Daisy chain, up to 255 units
 USB interface:.....Mini USB/B
 Remote access through PCH EtherBridge is possible.

Modularity:

PCH 1420 Vibration Monitor, PCH EtherBridge, PCH Relay Box, Input and Output Boxes can be interconnected by means of DIN rail bus connectors.



Front panel:

5 light diodes indicate channel status (green, yellow, red) for each of the 4 vibration input channels, as well as for general system status.

Power supply:

+24 V DC, ±5 %, max. power consumption; 10 W

Operating temperature:

-10 °C to + 50 °C

Housing:

DIN rail enclosure IP20 with screw terminals
 Dimensions:.....H:110,W:23,D:114 mm

Compliance:

CE, GOST-R, ISO 13849-1, ISO 10816-3, VDI 3832, API 670, ETL listed

PCH Engineering A/S reserves the right to change all specifications and accessories listed in this sheet without notice.