PCH ENGINEERING

PRODUCT INFORMATION

PCH 1275/1277 COMPACT VIBRATION GUARD

The PCH 1275/1277 Compact Vibration Guard series is Ex certified and approved for mines and other hazardous areas. It is suitable for monitoring blowers, fans, cooling towers, pumps, decanters, separators, compressors and mills. The vibration guard continuously monitors the machine vibration level. Two adjustable alarms can be used to ensure that the machine vibrations do not exceed the acceptable level. The operator will gain an active protection of the machine, which limits the damages to the machine and consequently will reduce the maintenance costs.

Bearing damages

A bearing damage often occurs due to undetected unbalance or misalignment of a machine. Hence the machine runs for a very long time period with a much too high vibration level. This is the most common reason for serious machine crashes and down time.

Avoid unscheduled production stops

Deciding not to invest in vibration monitoring simply due to price can be a very unwise decision. Often this will lead to unexpected expenses to machine repairs, not to mentioned the further economic loss due to the production stop.

Price attractive alternative

For users who want a simple protection against damaging vibrations. PCH 1275/1277 is very price attractive and can easily be connected to a PLC or a SCADA system.

Functionality

The PCH 1275/1277 consists of a vibration sensor as well as conditioning-, alarm– and output circuitry, all embedded in a stainless steel housing. The PCH 1275/1277 monitors seismic mechanical vibrations according to DIN/ISO 10816 as default. PCH 1275/1277 can be configured to measure velocity (mm/s) or acceleration (m/s²). Low frequency versions are available. Individual measuring parameters can be customized. Measurement range, alarm limits and delay times can be adjusted directly in the PCH 1275/1277 according to the machine type and size, it has to monitor. For the PCH 1277 all settings can also be changed by using the PC user software incl. readout of vibration level, status and offline FFT analysis.

The present vibration level is continuously compared with the two alarm limits and if the alarm limits are exceeded the two alarm relays A1/D1 will trigger and thereby inform the user, e.g. via a connected rotor light, beeper, controller or by directly shutting down the machine. Both alert (A1) and danger (D1) have a build in delay time, which prevents false alarms due to momentary transients.

The PCH 1275/1277 has a built in latch function, ensuring the alarm relays stays triggered until it has been manually/remotely reset, even though the vibration level has decreased again. PCH 1275/1277 also provides a 4-20 mA signal, which always expresses the vibration level. The 4-20 mA output can also be used to verify the alarm limits of the vibration guard.

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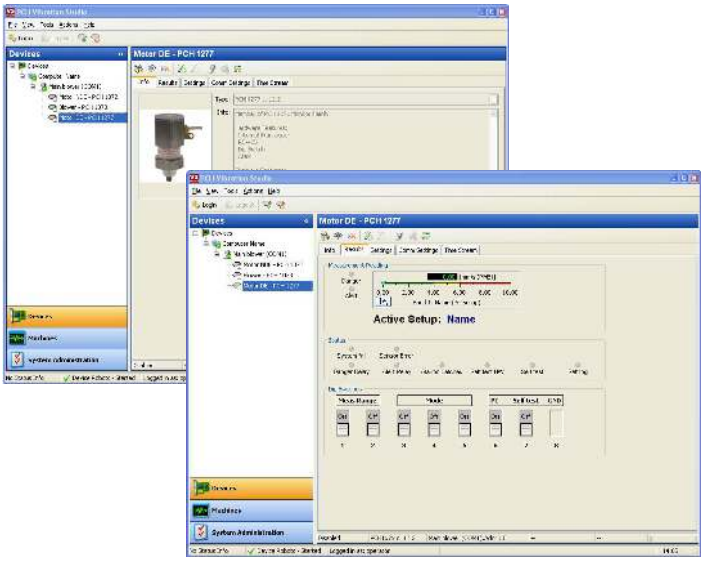
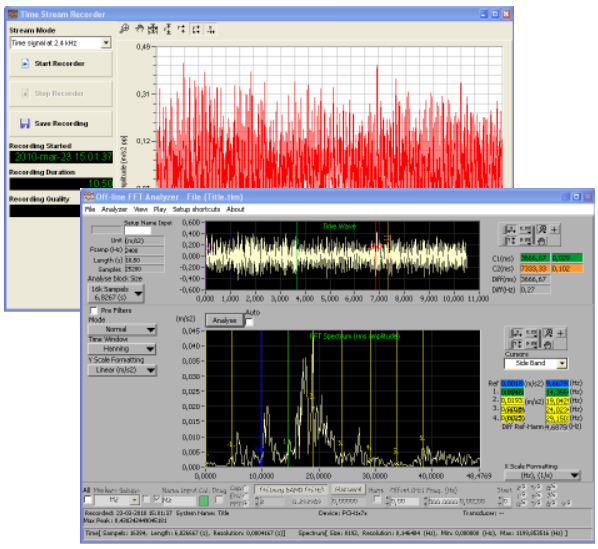
Technical data

PCH 1275/1277 COMPACT VIBRATION GUARD



PCH 1277 Monitor set up



Frequency analysis

Sensor: Capacitive accelerometer

Measuring parameter: Velocity (mm/s)
Optional: Acceleration (m/s^2), Displacement (µm, mm).

Measuring ranges (selectable):
10 or 20 or 50 or 100 mm/s
Optional: 10, 20, 50 or 100 m/s^2

Frequency range: 10 Hz - 1000 Hz, -1 dB, >18 dB/oct. (>60 dB/dec.)
Optional: 1 - 300 Hz - Low Freq Version (or to be agreed upon at ordering)

Detector: True RMS detector

DC output: 4 - 20 mA (Namur NE43), relative to 0 - 100 % of measuring range. Load: max. 400 Ω

Measuring accuracy: ± 1.5 %
Max. measuring range: ± 18 g or ± 6 g
Shock: 1000 g

Alarm detectors:
Alert alarm with adjustable alarm limit
Danger alarm with adjustable alarm limit

Alarm relays, break:
A1: Alert relay, break
D1: Danger relay, break

Alert and Danger with Latch or auto reset (selectable)
Max voltage:……..……..…..30 V
Max current:…….....……100 mA

Delay time:
A1: 10 s, D1: 5 s
The delay times are adjustable from 0 - 100 s. Hang time for both A1 and D1: 1 s.

Manual reset function:
If alarm relays are latched reset can be made, via a controller/PLC or a switch.

Test function:
Can be activated remotely or by switch. DC output level adjustable between 4-20.4 mA.

Grounding:
Common/ground (0V) and chassis can be disconnected via built-in switch.

Power supply:
+24 V DC, ±10 %, max. 60 mA/1.33W

Operating temperature:
- 20 °C to + 65 °C

Housing (IP68):
Stainless steel type 1.4305
Optional: 1.4404

Cable: 2 m PUR oil resistant, shielded. 5 and 10 m lengths can be ordered.

Mounting:
M12 internal thread with M12 threaded stud.

Dimensions:
Height:.....117 mm
Diameter, without cable gland:…....64 mm
Weight:.....1560 g
Weight of cable, approx.:.....110 gr/m

Compliance:
Rated according to EN 13849, PL-d
ATEX:
Ex II 2G Ex db IIC T6 Gb
Ex II 2D Ex tb IIIC T75 °C Db
Ex I M2 Ex db I Mb
Tamb: -20 °C ≤ Ta ≤ + 65 °C
ExVeritas 16ATEX0209
IECEx EXV 16.0021
GOST-R, ISO 10816-3
CE 2585

Option:
ETL listed version upon request (according to UL standards).

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

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