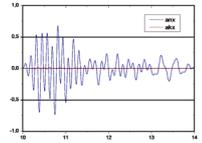




# PRODUCT DATA SHEET

## PCH 1026 Digital Wind Turbine Monitor



PCH 1026 is a self contained monitor in a sealed, rugged box. To function only a DC power supply and desired output connections are required. PCH 1026 is designed for low frequency structural vibration monitoring applications.

The design of PCH 1026 is based on a digital platform allowing multiple customer solutions, and easy rapid change of configuration and settings through PC software, also in the field.



### DC power supply

Voltage range.....20-30 V  
Max power consumption.....7 W

### Dimensions

Length, width, height.....254x130x66 mm  
Weight.....app. 2 kg  
Mounting slots.....5 x 6.5 mm

### Input sensors

Input channels.....up to 4  
Internal accelerometers.....up to 3  
Directions of internal accelerometers..... A, B and/or C  
External accelerometers.....up to 4  
Dynamic range..... $\pm 6$  g, peak  
All accelerometers have internal exciters for Self-Test function through the PCH 1026 monitor.

### Measuring parameter

PCH 1026 offers measurements from accelerometers in the following parameters and units:

**Acceleration:**  $m/s^2$ ,  $mm/s^2$ ,  $\mu m/s^2$ , g, mg,  $\mu g$ ,  $Inch/s^2$ ,  $mInch/s^2$ ,  $\mu InCh/s^2$

**Velocity:** mm/s

**Displacement (optionally for proximity probe):** m, mm,  $\mu m$ , Inch, Mills,  $\mu InCh$

**Overall Frequency range:** 0.1 - 200 Hz.  
Optional 0.1 - 1000 Hz (for 2 bands only).

### Signal conditioning

Performed digitally and settings can be configured and verified by the supplied PC software program.

Number of simultaneous conditioning bands .....12

The filters in each band include high and low pass filters like:

8<sup>th</sup> order Elliptic.....1.1 - 10 Hz

8<sup>th</sup> order Butterworth.....0.1 - 1.0 Hz  
and other 2<sup>nd</sup>, 4<sup>th</sup>, 6<sup>th</sup> order special filters

Optionally customized solution can easy be performed and uploaded to the monitor. E.g. Low Pass filter at 30Hz complying to ISO 4866.

**Zoom FFT:** optionally available for Tower Frequency Tracking and basic drive train monitoring.

1 channel: 400 lines / 2 channels: 200 lines

FFT zoom frequency ranges.....127

Average spectrums.....0 to 2000

Overlap.....50 %

Time windows: Rectangular, Hanning, Blackman, Flat top

### Signal detection

#### True RMS:

Averaging time.....0.01 - 100 s

#### Peak or Peak-Peak:

Attack time.....1 - 1000 ms

Decay time.....0.1 - 100 s

### Alarm & System Failure relays

**Alarm relays** for individual configuration.....up to 4

Offers selectable Alert/Danger, Latch/non-latch, Delay time and Make/Brake function.

#### Failsafe System Failure Relay:

Break function for failures detected by the internal watchdog. Relay reacts to: brownouts, power failure, overloads, processor halted and defective sensors.

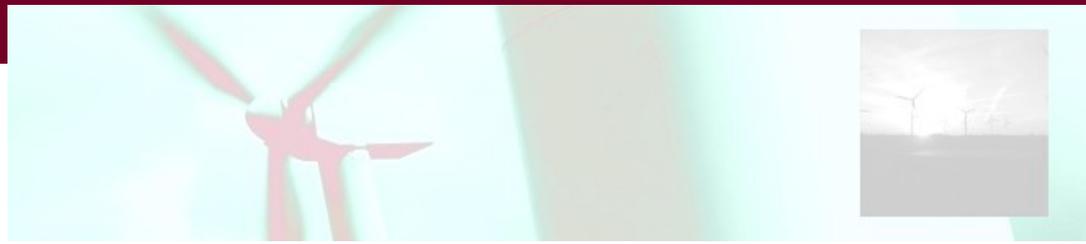
Type of relays.....Photomos (Solid State)

Max Current/Voltage.....100 mA / 30 V

### Analog outputs

**Up to 4 outputs**.....4-20 mA

Relative to measuring range, 0-100 %



# PRODUCT DATA SHEET

## PCH 1026 Digital Wind Turbine Monitor

Precision..... $\pm 0,1$  mA  
 Output impedance..... $> 10$  M Ohm  
 Load impedance..... $< 450$  Ohm

### RS-232 interface

Serial two wire asynchronous interface complies with IEA-232 standard.

**Connector on monitor**.....9 pin SUB-D male  
**Cable type**.....Lap-Link or Null modem 9 pin female

### RS-485 interface

Serial two wire asynchronous interface complies with IEA-485 standard. Half duplex.

**Connector on monitor**.....9 pin SUB-D female

**Cable type**.....120 ohm Screened twisted pair  
 120 ohm termination resistor can be selected by shorting two pins in the SUB-D connector, during installation.

### Bus communication

**Standard:** Modbus RTU both on RS-232 and RS-485

**Optional, OEM Fieldbus solutions:** E.g. CANopen, InterBUS, ProfiBUS DP, DeviceNET, EtherCAT, etc.

### Accessories included

Setup & Configuration PC software type CHT 1024 for Windows XP, Vista, Windows 7+8 and user manual.

### Standard compliance

**CE** mark indicates compliance with EMC directive and Low Voltage Directive.

### Safety:

EN61010-1 and IEC 61010-1: Safety requirements for electrical equipment for measurement, control and laboratory use.

### EMC Emission:

EN61000-6-3: Generic emission standard part 6-3: Residential, commercial and light-industry.

EN61000-6-4: Generic emission standard part 6-4: Industrial environments.

CISPR22 (1997): Limits and methods of Radio disturbance characteristic of information technology equipment. Class B limits. FCC class B limits.

### EMC Immunity:

EN61000-6-1: Generic emission standard part 6-1: Residential, commercial and light-industry

EN61000-6-2: Generic immunity standard part 6-2. Industrial environment .

### Temperature:

IEC60068-2-1 & IEC60068-2-30: Environmental testing. Cold and dry heat.

Operating temperature..... $-20$  °C to  $+50$  °C

Storage temperature..... $-35$  °C to  $+70$  °C

### Cold Environment temperature range (Optional)

Operating temperature..... $-30$  °C to  $+60$  °C

Storage temperature..... $-40$  °C to  $+85$  °C

### Humidity:

IEC60068-2-30, Operating.....95 % RH( $40$  °C)

IEC60068-2-30, Storage.....95 % RH( $40$  °C)

### Mechanical: Non operating:

IEC60068-2-6, Vibration.... $0.3$  mm,  $20$  m/s<sup>2</sup>,  $10$ - $500$  Hz

IEC60068-2-27, Shock..... $750$  m/s<sup>2</sup>

IEC60068-2-29, Bump..... $1000$  bumps at  $250$  m/s<sup>2</sup>

### Enclosure:

IEC60529+A1: Protection provided by enclosure IP54

### Optional features for PCH 1026

- **R&D Starter Kit**, Cables, breakout and power supply. Part number CHV 1012.
- **SSD** - Safety Shock Detection, according to Germanischer Lloyd Guidelines 2003 chapter 2.3.2.5 and 2.3.2.6. Data sheet CHF 1133.
- **TFD** - Tower Frequency Detection, tracks development in tower frequency. Data sheet CHF 1116.
- Basic drive train monitoring incl. **FFT analysis**. Data sheet CHF 1115.
- **External sensors**, one or two directions, CHB 1101 or CHB 1102/1115/1117. See data sheet CHF 1040 and CHF 1041.



PCH 1026 monitor with and without external sensor

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

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