



# PRODUCT DATA — TYPE PCH 1028S

## DIGITAL 4 CHANNEL SOUND MONITOR

### USES

- Permanent monitoring of noise and sound level
- Can be used with Microphones and Hydrophones

### APPLICATIONS

- Carpet cutting (as a production monitor)
- Factories
- Traffic
- Airport noise
- Underwater surveillance

### CONFIGURATION & SETUP

- Setup and configuration can be performed via serial RS-232 port using the supplied setup and monitoring PC program CHT 1018. Settings can be changed on site.
- Setup and Display can also be performed remote through RS-485 connection from external PC.
- PC program CHT 1018 offers detailed reports in case of a System Failure.

### FEATURES

- Available in 1, 2 and 4 channel versions
- 2 and 4 channel versions are multiplexed. In the supplied software CHT 1018 the user can select multiplexing mode or lock monitoring to just one channel.
- Provides ICP / CCLD or Voltage input, allowing use of a wide range of prepolarized microphones and ICP powered preamplifiers on today's market.
- Optionally charge input is offered for Hydrophone inputs.
- Filtering: Any kind of bandpass filter can be selected in the user software CHT 1018. Filtering is made on the basis of an FFT.
- LMS detector (Logarithmic RMS) built in.
- System Failure Relay for indication of overload, power failure, cable-break and cable-short. Cable-break and cable-short only with ICP / CCLD input.
- Designed for rough environments. Features IP67 enclosure and cable glands.
- Optionally Alarm detection can be provided.
- Optionally PCH 1028S can be equipped with loop powered displays in the lid for local readout directly in dB.



# SPECIFICATIONS PCH 1028S

## CONFIGURATION

PCH 1028S is a mains powered monitor in a sealed, rugged box. To function only a mains power supply of 85—250 V AC, 47-63 Hz is required. The PCH 1028S is available with either 2 or 4 input channels. This should be specified when ordering.

PCH 1028S offers use of both microphones and hydrophones. Input types like ICP, Voltage or charge must be specified when ordering. The design of PCH 1028S is based on a digital platform allowing multiple customer solutions, and easy rapid change of configuration and settings, also in the field.

## MAINS POWER SUPPLY

Mains voltage.....85 to 250 V AC  
Mains frequency.....47 to 63 Hz  
Power consumption.....12 VA

## MICROPHONE INPUT

All inputs of the PCH 1028S are independent. ICP / CCLD input can be chosen for taking input from prepolarized microphones with ICP powered preamplifiers.

Input impedance.....100 k ohm  
Transducer bias current.....10 mA DC  
Transducer voltage range.....8 to 19 V DC  
\* Optionally voltage input can be provided.

For each input the Transducer Sensitivity can be typed in. Also a Full Scale for each of the channels can be chosen using the supplied PC software CHT 1018.

## HYDROPHONE INPUT (Optional)

All inputs of the PCH 1028S are independent. PCH 1028S can provide a Charge input for interfacing with Hydrophones.

## SIGNAL CONDITIONING

All signal conditioning is performed digitally. This means that settings and configurations can be changed and verified by the supplied PC software program (CHT1018).

The Digital Signal Processing is performed by State-of-the-art DSP technology ensuring precise and valid monitoring.

Selective monitoring of interesting frequencies or frequency bands can be obtained by choosing the desired Lower Limit Frequency and the desired Upper Limit Frequency.

Monitoring in the PCH 1028S is based on an 800 line FFT. Therefore the user can type in the desired frequency area and will get a resolution equal to the chosen frequency band divided by 800.

On customer request special filtering can be made.

## SIGNAL DETECTION

PCH 1028S offers LMS (logarithmic RMS) detection of the chosen frequency band

### LMS (Logarithmic RMS):

Averaging time (determined by FFT).....1 sec.  
\* Optionally also Linear RMS and Max Peak detection can be provided.

## DC OUTPUTS

PCH 1028S offers 2 or 4 independent industrial standard 4-20 mA outputs for connection to PLC, controllers or computers. The 4-20 mA is a varying DC signal representing the amplitude of the frequency or frequency band being monitored.

An input of 102 dB will result in a output of 20mA. The output sensitivity is not accessible for the user. It must be specified when ordering.

The output of PCH 1028S has a dynamic range of 80 dB, meaning when an input of 102 dB result in 20 mA output, 22 dB input will result in a 4 mA output.

When PCH 1028S runs in multiplexing / scan mode, the DC outputs not in action are frozen until they come into action again.

DC current:.....4-20 mA  
Precision.....± 0,1 mA  
Output Impedance.....> 10 M ohm  
Load Impedance.....< 330 ohm

## LOCAL DISPLAYS (Optional)

The PCH 1028S can be delivered with loop powered displays in the lid, as can be seen on the front picture. These displays are connected to the 4-20 mA DC outputs.

A local readout can be quite convenient especially if there are no PLC's, PC's or dataloggers available.

## SYSTEM FAIL. & ALARM RELAYS

### System Failure Relay:

PCH 1028S offers a System Failure relay with Break function for optimal fail-safe configuration. Failures inside the PCH 1028S, detected by the internal watchdog, will cause the System Failure relay to trigger. The System Failure relay reacts to: Power Failure, Overloads, Processor halted, Cable-break and -short.

### Alarm Relays (Optional):

PCH 1028S can be equipped with 4 independent Alarm relays with Make and Break functions. All 4 relays can be assigned to the desired frequency band. E.g. either one relay pr. frequency of interest or up to 4 different frequencies on the same relay. Alarm threshold level, delay time and latch or non-latch function can be setup independently for each relay using the supplied PC software.

### For all 5 relays:

Max Switching Voltage.....240 V AC or DC  
Max Switching Current.....8 A AC or DC

## RS-232 INTERFACE

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

Connector in 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.

Spring loaded terminals inside monitor.

Cable type....120 ohm Screened twisted pair. 120 ohm termination resistor should be used in both ends of the multidrop.

## ACCESSORIES INCLUDED

Setup & Configuration PC software.....  
.....Type CHT 1018\*  
\* Runs on Windows 9x, and NT  
User manual.

## DIMENSIONS

Length (without cables).....378 mm  
Width.....164 mm  
Height.....102 mm  
Weight.....app. 2.5 kg

### 4 Mounting Holes:

Hole diameter.....6,5 mm  
Hole pattern.....148 x 363 mm

## STANDARD COMPLIANCE

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

### Safety:

EN61010-1 (1993) and IEC 1010-1 (1991): Safety requirements for electrical equipment for measurement, control and laboratory use.

### EMC Emission:

EN50081-1 (1992): Generic emission standard part 1: Residential, commercial and light industry.

CISPR22 (1993): Limits and methods of Radio disturbance characteristic of information technology equipment. Class B limits. FCC class B limits.

### EMC Immunity:

EN50082-2 (1995): Generic immunity standard part 2. Industrial environment (1995).

### Temperature:

IEC68-2-1 & IEC68-2-2: Environmental testing. Cold and dry heat.

Operating temperature.....-10°C to +50°C  
Storage temperature.....-20°C to +70°C

### Humidity:

IEC68-2-3, Operating:.....95 % RH(40°C)  
IEC68-2-3, Storage.....90-95 % RH(40°C)

### Mechanical: Non operating:

IEC68-2-6, Vibration:0,3mm,20m/s<sup>2</sup>, 10-500Hz  
IEC68-2-27, Shock:.....750 m/s<sup>2</sup>  
IEC68-2-29, Bump:.....1000 bumps at 250 m/s<sup>2</sup>

### Enclosure:

IEC5229: Protection provided by enclosure IP67.

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



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