



Pressure is a vital parameter in most measuring systems used in the sea. For pelagic moored instruments the pressure can be used for determining the actual depth of the instrument. For instrumentation on the seabed the pressure can be used for deriving water level. Pressure is also vital when deriving other parameters as density and speed of sound.

4646/4646R is a silicon piezoresistive pressure sensor. Pressure measurements are sampled and temperature compensated by an advanced Digital Signal Processor.

Two parameters are available; pressure and temperature. Since all calibration and temperature compensation data are stored inside the sensor, the pressure is by default presented directly in engineering units without any external calculation. Raw data can be selected as additional output.

Pressure Sensor 4646 is a compact yet intelligent sensor designed to be used with Aanderaa

PRESSURE SENSOR 4646/4646R

is a compact fully integrated sensor for measuring the pressure level and the water temperature. The 4646 sensor is designed to be mounted on the AADI SEAGUARD® or connected to SMARTGUARD using AiCap CANbus, or in other measurement systems using the RS-232 interface. The 4646R sensor is designed for use with long cables by means of an RS-422 full duplex interface.

Advantages:

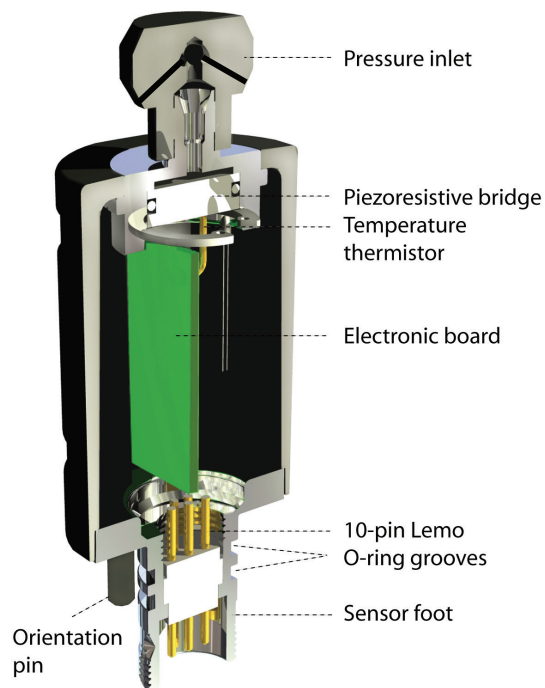
- Smart Sensor technology - plug and play
- Sensor calibration coefficients are stored in the sensor
- Low maintenance needs
- Low current drain
- Output formats 4646: AiCap CANbus, RS-232
- Output formats 4646R: RS-422
- Selectable interval from 1 second to 255 minutes
- Output parameters: Pressure, Temperature
- Real-Time XML output
- Measurement range: 400, 700 or 3100 kPa
- Maximum operating depth: 300m

SMARTGUARD or SEAGUARD® as well as in other measuring systems.

The SMARTGUARD/SEAGUARD® and the Smart sensors are interfaced by means of a reliable CANbus interface using an XML based protocol (AiCap). The Smart sensors can be mounted directly on the top-end plate of the Aanderaa SEAGUARD® and are automatically detected and recognized.

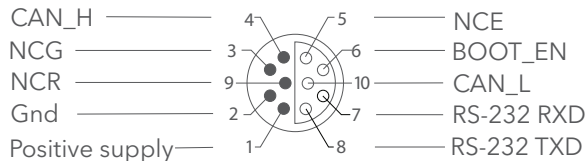
The output format of Pressure Sensor 4646 are AiCap CANbus and RS-232, while the output format of the 4646R version is RS-422. The sensor version must be specified when ordered as the two versions are not interchangeable. The R-version cannot be used in SEAGUARD® applications.

The pressure sensor can be used as stand-alone sensor with Aanderaa Real-Time Collector for real-time data.



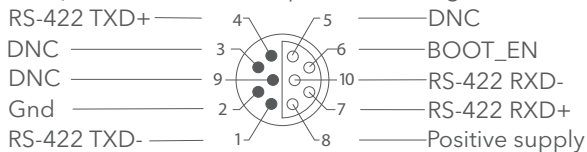
PIN CONFIGURATION FOR 4646

Receptacle, exterior view; pin = • bushing = °



PIN CONFIGURATION FOR 4646R

Receptacle, exterior view; pin = • bushing = °



Pressure:

4646A/4646AR Range: 0 – 400kPa (58 psia) ~30m depth
 4646B Range: 0 – 700kPa (101 psia) ~60m depth
 4646C Range: 0 – 3100kPa (449 psia) ~300m depth
 Resolution: <0.0001% FSO
 Accuracy: ±0.02% FSO
 Output parameters: Pressure in kPa, Pressure raw data in LSB

Temperature:

Range: 0 – 36°C (32 – 96.8°F)
 Resolution: <0.001°C (0.0018°F)
 Accuracy: ±0.2°C (0.36°F) ¹⁾
 Response Time (63%): 2 minutes
 Output parameters: Temperature in °C, Temperature raw data in LSB

Output format:

4646 version: AiCaP CANbus, RS-232²⁾

4646R-version: RS-422²⁾

Sampling Interval:

RS-232/RS-422: 1sec. – 255 min.
 AiCaP: Controlled by datalogger

Supply voltage:

5 to 14Vdc

Current drain(@ 9V):

Max. (RS-232/RS-422): 50 mA

Quiescent: 0.4 mA

Average:

AiCaP mode: 0.4mA+5.4mA/S

RS232 mode: 0.4mA +24mA/S

RS422 mode: 1.1mA +22mA/S

where S is sampling interval in seconds.

Operating temperature: -5 – +40°C (23 – 104°F)

Operating depth: Within pressure range

Electrical connection: 10-pin receptacle mating plug CSP

Pressure connection: Swagelok™ 1/8 inch

Dimensions: OD: 36 x 101mm (OD: 1.4"x3.9")

Weight: 138g (4.86oz)

Materials: Titanium, ABS/PC, pom, epoxy casting

ACCESSORIES

not included: RS-232 Sensor Cable 4762³⁾/4865⁴⁾
 RS-422 Sensor Cable 4763³⁾/4799⁴⁾

⁽¹⁾ Output interval ≥ 2 seconds

⁽²⁾ 9600 baud, 8 data bits, 1 stop bit, no parity, Xon/Xoff Flow control

⁽³⁾ CSP Cable with free end for Real-time data

⁽⁴⁾ CSP Cable to PC with 9pin D-sub for Real-time data

The above specifications are for the stand-alone sensor only, not the installation it is utilized with.

Specifications subject to change without prior notice.



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