Pressure Sensor 4117

is a compact fully integrated sensor for measuring the pressure level and the water temperature. The sensor is designed to be mounted on the Aanderaa SeaGuard platform or connected to SmartGuard using AiCaP CANbus or as stand alone sensor using RS-232. The sensor is easily integrated in other measurement systems with dataloggers.

Advantages:
- Smart Sensor technology - plug and play
- Calibration coefficients are stored in the sensor
- Low maintenance needs
- Low current drain
- Depth rating of 6000 meters
- Direct readout of engineering data
- Output parameters: Pressure, Temperature
- Selectable interval from 1 second to 255 minutes
- Use with Aanderaa loggers
- Use as stand-alone sensor
- Output formats: AiCaP CANbus, RS-232
- Up to 60MPa range

In most measuring systems used in the sea, pressure is a vital parameter. For 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. The pressure is also vital when deriving other parameters as density and speed of sound.

The Pressure Sensor 4117 is a compact yet intelligent sensor designed to be used on the AADI SEAGUARD® as well as in other measuring systems. The sensor is based on a silicon piezo-resistive bridge sampled and temperature compensated by an advanced Digital Signal Processor. The sensor is housed in a rugged titanium cylinder.

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. Two parameters are available; Pressure and Temperature.

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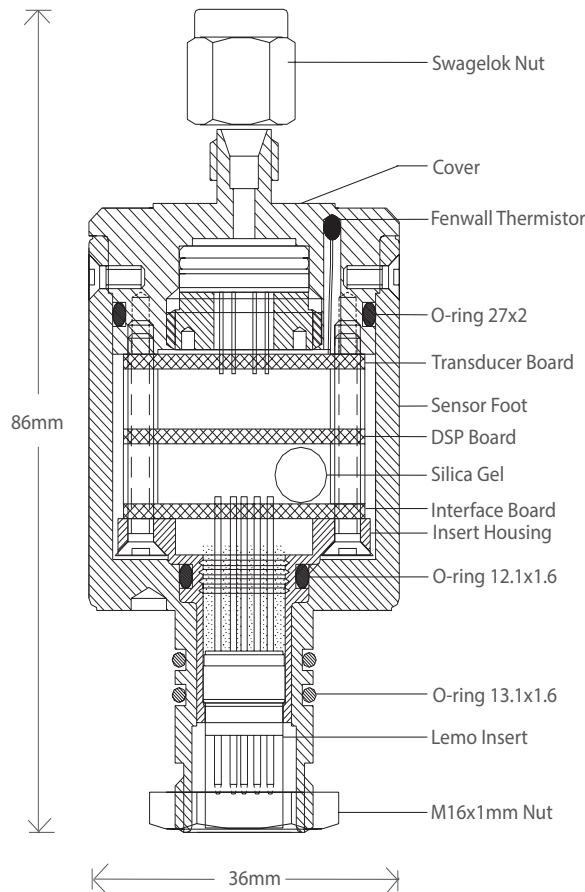
The Smart Sensors can be mounted directly on the top-end plate of the AADI SEAGUARD® and are automatically detected and recognized.

The output parameters from the SEAGUARD® applications are easily presented in SEAGUARD Studio.

The 10-pin receptacle in the sensor foot mates with AADI CSP (Cylindrical Sealing plug), giving access to RS-232 output. For connection to a PC the Sensor Cable 4865 can be used. It is furnished with RS-232 plug and a watertight 10-pin plug. An additional USB plug is used for providing power.

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

Specifications

Diagram labels

- Swagelok Nut
- Cover
- Fenwall Thermistor
- O-ring 27x2
- Transducer Board
- Sensor Foot
- DSP Board
- Silica Gel
- Interface Board
- Insert Housing
- O-ring 12.1x1.6
- O-ring 13.1x1.6
- Lemo Insert
- M16x1mm Nut

86mm

36mm

Pressure:

4117A Range:	0 – 1000kPa (0 – 145 psia)[1],[2]
4117B Range:	0 – 4000kPa (0 – 580 psia)[2]
4117C Range:	0 – 10000kPa (0 – 1450 psia)[1],[2]
4117D Range:	0 – 20000kPa (0 – 2900 psia)[2]
4117E Range:	0 – 40000kPa (0 – 5800 psia)[1],[2]
4117F Range:	0 – 60000kPa (0 –8700 psia)[2]
Resolution:	<0.0001% FSO
Accuracy:	±0.02% FSO

Temperature:

Range:	0 – 36°C (32 – 96.8°F)
Resolution:	<0.001°C (0.0018°F)
Accuracy:	±0.1°C (0.18°F)
Response Time (63%):	<10 seconds
Output format:	AiCaP CANbus, ASCII RS-232[3]
Sampling interval:	RS-232: 1s – 255 minutes
	AiCaP: Controlled by Seaguard
Supply voltage:	6 to 14VDC
Current drain(@ 9V):	
Average(RS-232):	14mA/S +0.25mA where S is sampling interval in seconds
Maximum(RS-232):	50 mA
Quiescent:	0.25 mA
Operating temperature:	-5 – +40°C (23 – 104°F)
Electrical connection:	10-pin receptacle mating plug CSP
Pressure connection:	Swagelok™ 1/8 inch
Dimensions:	OD: 36 x 86mm (OD:1.4"x3.4")
Weight:	160g (5.47oz)
Materials:	Titanium and Epoxy coating

PIN CONFIGURATION

Receptacle, exterior view;   pin = • bushing = ○

CAN_H	4		5	NCE
NCG	3		6	BOOT_EN
NCR	9		10	CAN_L
Gnd	2		7	RS-232 RXD
Positive supply	1		8	RS-232 TXD

Note! If deployed at higher pressure than the range of the pressure sensor, the pressure port must be closed by use of the Swagelok plug SS-200-P (stock no. 840017).

ACCESSORIES

included:	840017 Swagelok plug SS-200-P
not included:	RS-232 Sensor Cable 4762[4]/4865[5]

[1] Available on request
[2] Pressure conversion: 1000kPa = 100m depth
[3] 9600 baud, 8 data bits, 1 stop bit, no parity, Xon/Xoff Handshake
[4] CSP Cable with free end for real-time data
[5] 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.