

In most measuring system 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 4017 is a compact yet intelligent sensor designed to be used on our RCM 9, RCM 11, RDCP or Aanderaa Dataloggers as well as in other measuring systems. The sensor is based on a silicon piezoresistive 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 pressure can be presented directly in engineering units without any external calculation.

## Pressure Sensor 4017

*Pressure Sensor 4017 is a compact fully integrated sensor for measuring the pressure level and the water temperature. The sensor is designed to be mounted directly on the Top-end Plate of RCM 9/11, RDCP or via cable to Aanderaa Datalogger using SR10. The sensor can also be used as stand alone sensor using RS-232. The sensor is easily integrated in other measurement systems with third party Dataloggers.*

### Features Pressure Sensor 4017:

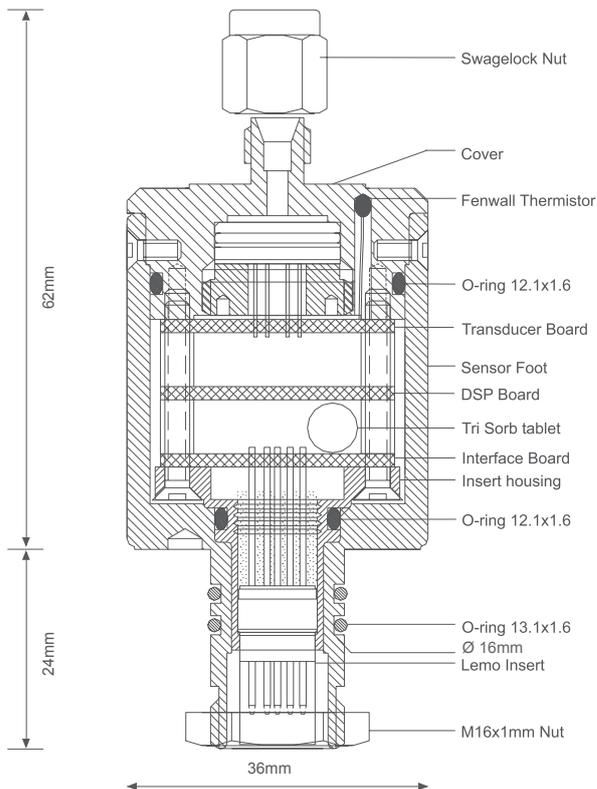
- Smart sensor technology - plug and play
- Calibration coefficients are stored in the sensor
- Low maintenance needs
- Low current drain
- Depth rating of 6000 meters
- Direct readout of engineering data
- Output parameters: Pressure, Temperature
- Selectable interval from 1 second to 255 minutes
- Rugged and robust with low maintenance needs
- Output formats: SR10, RS-232
- Up to 60MPa range
- Configured using Pressure setup program 4047 (or via Hyper Terminal)

Two SR10 channels are available; one for pressure and one for temperature. The user may configure the range on both outputs; best accuracy is achieved with a short measurement range.

The sensor can be mounted directly to the Top-end Plate of Aanderaa acoustic current meters and profilers and connected to the main control board (electronic board) with a short cable, Sensor Cable 3854.

The 10-pin receptacle in the sensor foot mates with Aanderaa CSP (Cylindrical Sealing Plug), giving access to RS-232 output. For connection to a PC the 1 meter Sensor Cable 4865L can be used. It is furnished with a watertight 10-pin CSP plug at the sensor end. An additional USB plug is used for providing power to the sensor.

The 4865 is also available in other cable lengths up to 20 meters.



#### PIN CONFIGURATION

Receptacle, exterior view; bushing = ○; pin = ●

SR10 (Temperature)	4	5	Bridge voltage (BV)
-9V <sup>2)</sup>	3	6	Reserved, DNC <sup>1)</sup>
Control voltage	9	10	SR10 (Pressure)
Ground <sup>5)</sup>	2	7	RXD (RS-232)
Positive supply <sup>3) 4)</sup>	1	8	TXD (RS-232)

<sup>1)</sup> DNC: Do Not Connect

<sup>2)</sup> Supply for SR10 Operation

<sup>3)</sup> Ground for SR10 Operation

<sup>4)</sup> Supply for RS-232 Operation

<sup>5)</sup> Ground for RS-232 Operation

**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).

**Pressure:**  
 4017A Range: 0 - 1000kPa (0 - 145 psia)<sup>1),(4),(5)</sup>  
 4017B Range: 0 - 4000kPa (0 - 580 psia)<sup>1),(5)</sup>  
 4017C Range: 0 - 10000kPa (0 - 1450 psia)<sup>1),(4),(5)</sup>  
 4017D Range: 0 - 20000kPa (0 - 2900 psia)<sup>1),(5)</sup>  
 4017E Range: 0 - 40000kPa (0 - 5800 a)  
 4017F Range: 0 - 60000kPa (0 - 8700 psia)<sup>1),(5)</sup>

**Resolution:** ±0.0001% FSO<sup>(2)</sup>  
**Accuracy:** ±0.04% FSO

**Temperature:**  
**Range:** 0 - 36°C (32 - 96.8°F)<sup>(1)</sup>  
**Resolution:** 0.01°C (0.018°F)<sup>(3)</sup>  
**Accuracy:** ±0.1°C (0.18°F)  
**Response Time (63%):** <10 sec

**Output format:** AADI SR10 and ASCII RS-232<sup>(6)</sup>

**Sampling interval:** 2 sec - 255 min (SR10 controlled by datalogger)

**Supply voltage:** 6 to 14Vdc (SR10 -6 to -14Vdc)  
**Current drain(@ 9V):**  
 Average: RS-232: 14mA/S +0.25mA where S is sampling interval in seconds  
 SR10: 3 mA/T where T is recording interval in minutes

**Maximum:** 50 mA  
**Quiescent:** 0.25 mA (SR10, 0mA)  
**Operating temperature:** -5 - +40°C (23 - 104°F)  
**Electrical connection:** 10-pin receptacle mating CSP Swagelok™ 1/8 inch  
**Pressure connection:** O.D.36 x 86mm (O.D.1.4"x3.4")  
**Dimension (DxH):**

**Weight:** 160g (5.47oz)  
**Materials:** Titanium and Epoxy coating  
**Accessories:**  
**included:** 840017 Swagelok plug SS-200-P  
 Pressure setup program 4047  
 Cable to RCM 9/11, RDCP 3854  
 RS-232 Sensor Cable 4762<sup>(7)</sup>/4865<sup>(8)</sup>  
 Cable to data logger 4139/4941/4946

**not included:**

<sup>(1)</sup> The range on both SR10 outputs is user-configurable

<sup>(2)</sup> for SR10, 0.1% of configured range or 0.0001% FSO, whichever is greater

<sup>(3)</sup> for SR10, 0.1% of configured range or 0.01°C, whichever is greater

<sup>(4)</sup> Available on request

<sup>(5)</sup> Pressure conversion: 1000kPa = 100m depth

<sup>(6)</sup> 9600 baud, 8 data bits, 1 stop bit, No parity, Xon/Xoff Handshake

<sup>(7)</sup> CSP Cable with free end for Real-time data

<sup>(8)</sup> 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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