



4647/4647R is based on a silicon piezoresistive pressure sensor. The pressure measurements are sampled and temperature compensated by an advanced Digital Signal Processor.

The sensor application areas are in fixed installations, either deployed in a seabed installation in shallow waters, or mounted onto a fixed structure in the upper water column.

The tide measurement is an average of the hydrostatic pressure measured over a time period of 10 seconds to 8 minutes (Integration time configurable by the user). The update interval is between 1 second and 255 minutes.

The Tide sensor output parameters are Tide pressure, Tide level, Pressure and Temperature. Tide levels are preliminary, internally calculated estimates, based on fixed, user selectable values of atmospheric pressure and water salinity. Compensation for actual atmospheric pressure and salinity can be postprocessed if such data is available. Tide pressure is an average of hydrostatic pressure over the integration time.

Since all calibration and temperature compensation data are stored inside the sensor, the parameters

TIDE SENSOR 4647/4647R

is a compact fully integrated sensor for measuring the tidal conditions. The 4647 sensor is designed to be mounted on the Aanderaa SeaGuard or connected to SmartGuard using AiCaP CANbus or in other measurement systems using the RS-232 interface. The 4647R sensor is designed for use with long cables by means of 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 4647: AiCaP CANbus, RS-232
- Output formats 4647R: RS-422
- Selectable interval from 1 sec. to 255 min.
- Tidal averaging period: 10 sec. to 8 min.
- 2Hz and 4 Hz sampling frequency
- Output parameters: Pressure, Tide pressure, Tide Level, Temperature.
- Real-time XML output
- Measurement range: 400, 700, or 3100 kPa
- Maximum operating depth: 300m

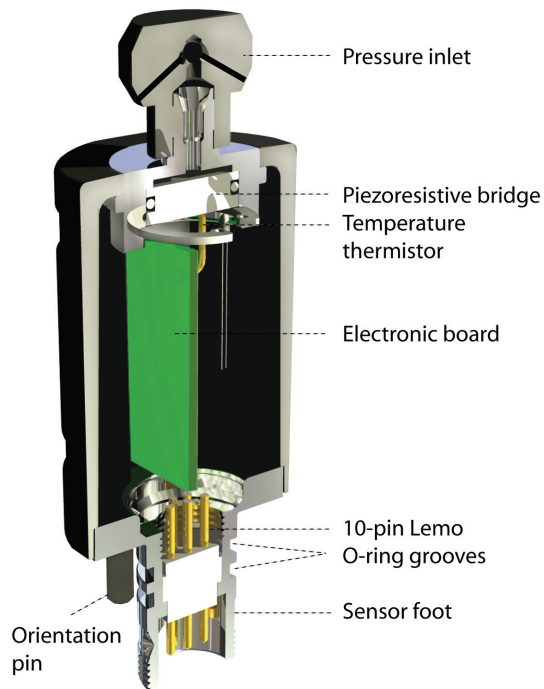
are by default presented directly in engineering units without any external calculation. The sensor also provides raw data of the pressure and the temperature measurements.

Tide Sensor 4647 is a compact yet intelligent sensor designed to be used with Aanderaa 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.

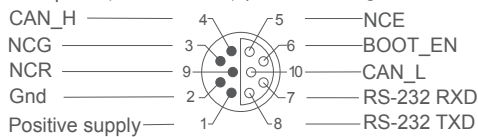
The output format of Tide Sensor 4647 are AiCaP CANbus and RS-232, while the output format of the 4647R version is RS-422. The sensor version must be specified when ordered as the two versions are not interchangeable. The R-version cannot be used in SeaGuard applications.

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



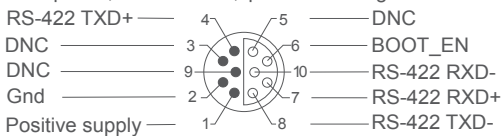
PIN CONFIGURATION FOR 4647

Receptacle, exterior view; pin = ● bushing = ○



PIN CONFIGURATION FOR 4647R

Receptacle, exterior view; pin = ● bushing = ○



Pressure:

4647A/4647AR Range: 0 - 400kPa (58 psia) ~30m depth
 4647B Range: 0 - 700kPa (101 psia) ~60m depth
 4647C 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

Tide:

Sampling rate: 2Hz, 4Hz
 Integration time: 10second - 8 minutes
 Tide Parameters: Tide pressure in kPa, Tide level in meter

Temperature:

Range: 0 - 36°C (32 - 96.8°F)
 Resolution: <0.001°C (0.0018°F)
 Accuracy: ±0.4°C/0.2°C¹⁾ (±0.72°F/0.36°F¹⁾)
 Response Time (63%): 2 minutes
 Temperature parameters: Temperature in °C, Temperature raw data in LSB

Output format:

4647 version: AiCaP CANbus, RS-232²⁾
 4647R-version: RS-422²⁾

Output interval:

RS232/RS422: 1sec.- 255 min.
 AiCaP: Controlled by data logger

Supply voltage:

5 to 14Vdc

Current drain(@ 9V)³⁾:

Max.(RS-232/RS-422): 50 mA
 Quiescent: 0.4 mA
 Average: See table 1

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 4762⁴⁾/4865⁵⁾
 RS-422 Sensor Cable 4763⁴⁾/4799⁵⁾

Output Interval	2 sec	1 min	10 min	30 min	
2 Hz:	AiCaP	5.4 mA	3.3 mA	0.7 mA	0.5 mA
	RS-232	12.0mA	3.7 mA	0.7 mA	0.5 mA
	RS-422	12.0mA	4.3 mA	1.4 mA	1.2 mA
4 Hz:	AiCaP	10.0mA	6.3 mA	1.0 mA	0.6 mA
	RS-232	16.5mA	7.1 mA	1.1 mA	0.6 mA
	RS-422	16.5mA	7.5 mA	1.7 mA	1.3 mA

Table 1: 40 seconds tidal average

¹⁾ Tide disabled and output interval ≥ 2 seconds

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

³⁾ With tide enabled. See D381 for Pressure current drain

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.



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