

# SEASTREAM<sup>™</sup>

## SST1510 DP Differential Pressure Transmitter for High Pressure, Deepwater Applications

Solartron ISA - High Performance Instruments for the Life of Your Reservoir

### Engineering Excellence for Long-Term Performance

Operating subsea to depths of 5000 ft (1500 m) and high process pressures up to 10,000 psi (690 bar), the SST1510 DP is one of the most accurate and stable deepwater differential pressure transmitters available within the market. Its unique silicon crystal sensor technology provides high accuracy and long-term measurement stability.

Solartron ISA's SST family sets the global performance standard for subsea measurement instrumentation in the oil and gas industry. Used by leading exploration companies, SST products have an unsurpassed service history in the field, even in the most demanding and hostile installation environments.

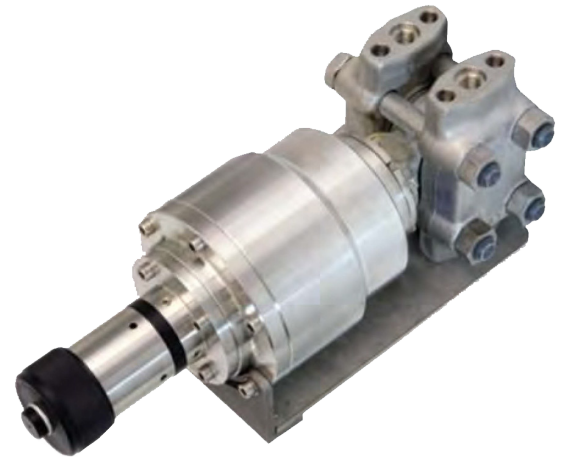
### Highly Stable, Accurate Measurement

Solartron's 50 years of flow measurement experience have made us the experts in pressure measurement technology. For Subsea applications, only the best pressure measurement technologies should be employed. This is especially critical if pressure measurement will be used for flow calculations, as long-term inaccuracy can lead to significant fiscal errors.

The SST1510 DP is equipped with Yokogawa innovative silicon crystal technology which has proven more accurate and stable than competitive technologies. In fact, the technology is four times more sensitive than traditional piezo-resistive sensor technology used in competitive products.

### Robust Construction

Small and light, yet built for long-term use in the hostile deep subsea environment, the SST1510 DP integrates a fully machined sensor body and pressure flanges with high strength bolts and nuts. The electronics enclosure can be fitted with a variety of subsea electrical connectors or penetrators to suit client/project requirements.



### Key Specifications

- ✓ Depth 5,000ft (1500m)
- ✓ Pressure 10,000psi (690 bar)
- ✓ Accurate to  $\pm 0.040\%$  of span
- ✓ Stability  $\pm 0.1\%$  per 15 years
- ✓ Optional close couple seals

### Features

- ✓ 4-20mA
- ✓ Hart
- ✓ CANOpen SIIS L.2
- ✓ Modbus (RS485)
- ✓ Seastream FloCalculator

### Qualifications

- ✓ API 6A / ISO 10423
- ✓ ASME IX
- ✓ ISO 13628-6
- ✓ IEC 61000-4

# SST 1510 DP Differential Pressure Transmitter for Deepwater Applications

## Standard Specifications

### PERFORMANCE SPECIFICATIONS

#### Transmitter Output

- 4-20 mA, Hart, Modbus, CANOpen SIIS L.2

#### Accuracy

- Reference accuracy of calibrated span (including the effects of zero-based linearity, hysteresis, and repeatability):  $\pm 0.040\%$  of span
- For spans below X:  $\pm (0.015\% + 0.05 X/\text{span}) \%$  of span  
Where X equals:

Capsule	mbar
M	1000 (400 in WG)
H	5000 (2000 in WG)

#### Temperature

- Total ambient temperature effects per 50°F (28°C) change
- Capsule Effect  
M:  $\pm [0.07\% \text{ span} + 0.02\% \text{ URL}]$   
H:  $\pm [0.07\% \text{ span} + 0.015\% \text{ URL}]$

#### Pressure

- Total static pressure effects per change  $\pm [0.1\% \text{ span} + 0.028\% \text{ URL}]$  per 1000 psi (69 bar)
- Effect on zero (can be corrected at line pressure)  $\pm 0.028\%$  of URL per 1000 psi (69 bar)

#### Stability

- $\pm 0.1\%$  of URL per 15 years
- Power supply effects  $\pm 0.005\%$  per volt (from 21.6 to 32 VDC, 350Ω)

#### Calibration

- High static line pressure calibration optional
- Operating temperature calibration optional

### FUNCTIONAL SPECIFICATIONS

#### Ambient Temperature Limits

- -22 to 176°F / -30 to 80°C

#### Process Temperature Limits

- -40 to 248°F / -40 to 120°C

#### Working Pressure Limits (silicone oil)

- Maximum working pressure limit 10000 psi / 690 bar
- Maximum test pressure limit 15000 psi / 1034 bar

### INSTALLATION

#### Supply Voltage

- 10.5 to 42 VDC for analog operation
- 16.4 to 32 VDC for digital communications

#### Load

- 0 to 1335Ω for analog operation
- 250 to 600Ω for HART
- 120Ω for Modbus
- 1500Ω for CANOpen

#### SPAN AND RANGE LIMITS

	mbar	in WG
M		
Span	10 to 1000	4 to 400
Range	-1000 to 1000	-400 to 400
H		
Span	50 to 5000	20 to 2000
Range	-5000 to 5000	-2000 to 2000

### PHYSICAL SPECIFICATIONS

#### Dimensions

- Unit height (excluding electrical connection): 9-5/8" / 245 mm
- Unit width 6" / 150 mm
- Unit weight 29.7 lbs (13.5 kg)
- Process connections: Traditional flanges.
- Physical Support: Direct mount using 7/16" UNF bolts

#### Wetted Parts Materials

- Diaphragm: Hastelloy C-276
- Cover flanges: 316 stainless steel
- Capsule gasket: Teflon coated stainless steel 316L
- Vent and plug: 316 stainless steel
- Process connector seal ring: PTFE cobalt spring

#### Non-Wetted Parts Materials

- Bolting: SUS630
- Housing: 316 stainless steel
- Seal: Viton o-rings complete with PTFE anti-extrusion rings



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