



SST3010 DP Differential Pressure Transmitter For Ultra-Deepwater Applications

Solartron ISA - High performance instruments for the life of your reservoir

Engineering Excellence for Long-term Performance

Operating subsea to ultra deepwater depths of 16,400 ft (5,000 m) and high process pressures up to 10,000 psi (690 bar), the SST3010 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 40 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 the pressure measurement will be used for flow calculations, as long-term inaccuracy can lead to significant fiscal errors.

The SST3010 DP is equipped with the Yokogawa innovative silicon crystal technology which has proven more accurate and more 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 SST3010 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. Every unit is hyperbarically tested to 1500 m water depth prior to dispatch, proving the integrity of the twin O-ring sealing arrangement.

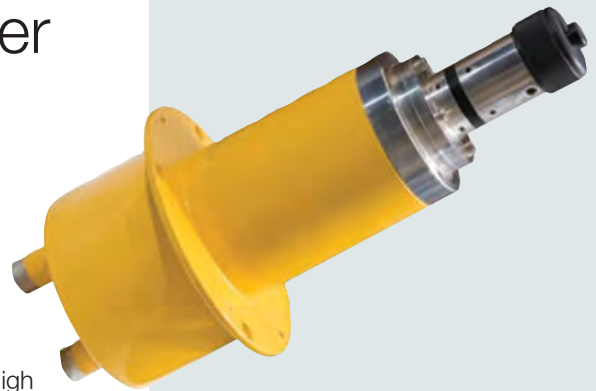
Comprehensive Qualification Testing

Every one of Solartron's subsea devices is fully tested to rigorous standards appropriate to the harsh subsea environment including: hyperbaric, electrical, EMC, shock/vibration, temperature soak and cycling. The Solartron name is your assurance that the instrument meets or exceeds the highest international standards.

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Key Specifications

- ✓ Depth 16,400ft (5000m)
- ✓ Pressure 10,000psi (690 bar)
- ✓ Accurate to $\pm 0.065\%$ of span
- ✓ Stability $\pm 0.1\%$ per 5 years
- ✓ Optional Close couple seals

Features

- ✓ 4-20mA
- ✓ Hart
- ✓ CANopen
- ✓ (Fault Tolerant - SIFS Level 2)
- ✓ CANopen (Hi-speed)
- ✓ Modbus (RS485)

Qualifications

- ✓ API 6A / ISO 10423
- ✓ ASME IX
- ✓ ISO 13628-6
- ✓ IEC 61000-4
- ✓ ISO 9001



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OIL & GAS

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Specifications

Performance Specifications

Transmitter output

4-20 mA, HART, Modbus, CANopen (High-Speed), CANopen (Fault Tolerant - SILS Level 2)

Accuracy

Reference accuracy of calibrated span (including the effects of zero-based linearity, hysteresis, and repeatability): $\pm 0.065\%$ of span

For spans below X: $\pm (0.015 + 0.05 X/\text{span})\%$ of span

Where X equals:

Capsule	mbar
M	100 (40 inWG)
H	1000 (400 inWG)

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 60 months

Power supply effects

$\pm 0.005\%$ per volt (from 21.6 to 32 VDC, 350 Ω)

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 5,000 psi (345 bar)

Maximum test pressure limit 7,500 psi (517 bar)

INSTALLATION

Supply voltage

10.5 to 42 VDC for analog operation

16.4 to 32 VDC for digital communications

Load

0 to 1335 Ω for analog operation

250 to 600 Ω for HART

120 Ω for Modbus

1500 for CANopen

SPAN AND RANGE LIMITS

Measurement span and range

	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):

13" / 330 mm

Unit width: 7-7/8" / 200 mm

Unit weight: 48.4 lbs (22 Kg)

Process connections: 3/4" Sch XXS butt weld stub pipes on 2.913" (74 mm) centers.

Physical support: Integral bracket, 4 off clearance holes to suit M12 bolts; also incorporates lifting and earthing points

Wetted parts materials

Diaphragm: Hastelloy C-276

Other process wetted parts: UNS S31803 duplex / Inconel 625

Non-wetted parts materials

Transmitter housing: UNS S31803 duplex

Transmitter capsule body: 316 stainless steel

Glass to metal seal: Glass / 316 stainless steel

Electrical connector interface: 316 stainless steel

Cable connection options: Most common subsea electrical connectors



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