# Seastream Cone

## *For Subsea Well Injection Metering*

### Engineering Excellence

The Seastream flowmeter has been specifically developed for subsea injection metering applications, including water injection, inhibitor injection and gas lift. Seastream meters play a key role in efficient well management, helping operators to optimize recovery from marginal fields.

### Subsea Experience

Since the early 90's Solartron ISA subsea meters have been deployed in hundreds of locations worldwide from the shallow diver depths of the North Sea to the deepwater depths of the Gulf of Mexico.

### Seastream Cone Meter

The Seastream Cone meters are designed to offer high accuracy and reliable operation, even in the harshest of subsea environments. These meters offer a compact flow measurement solution, ideal when space is limited. Each meter is designed for the unique project application, utilizing proven and robust engineering principles. The meter can be supplied in a variety of materials to suit individual Operator Specifications.

Incorporating a high specification transmitter from the Solartron ISA SST range, the Seastream can be designed with multiple sensor configurations including High/Low and High/Low Redundancy. Compatible with all Controls systems communications, including traditional 4-20mA, or digital communications in Modbus RS485 RTU, CANOpen Hi-Speed and Fault Tolerant (SIIS II compliant).

Close Coupled Diaphragm Seal Technology transferring the measurement closer to the process, is available for gas applications, reducing the possibilities of hydrate formation.

### Applications

The Seastream is designed particularly for Well Management and flow assurance Gas Lift and Water Injection applications but can be adapted for any single phase application.

### SST Flow Calculation

The introduction of the new in-head flow calculation removes uncertainty from integration into subsea systems, while reducing client software programming time. Mass Flow, Actual Volume Flow and Standard Volume Flow rates are now available in conjunction with the standard process variable outputs of DP and P, with the option of connecting an external temperature sensor into the same transmitter.

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### *Applications*

- ✓ *Gas Lift*
- ✓ *Water Injection*
- ✓ *MEG Injection*
- ✓ *Fiscal Measurement*

### *Key Specifications*

- ✓ *Depth down to 5000m*
- ✓ *Pressure up to 15000psi*
- ✓ *Accuracy ±1%*
- ✓ *SST Flow Calculation*

### *Qualifications*

- ✓ *ISO 5167*
- ✓ *ISO 5168*
- ✓ *API 6A – PSL3G*
- ✓ *API 17D*
- ✓ *ISO 10423*
- ✓ *ASME B31.3*
- ✓ *ASME IX*
- ✓ *ISO 13628-6*
- ✓ *IEC 61000-4*
- ✓ *ISO 9001*
- ✓ *PED – 97/23/EC*

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## *Specifications*

### Functional Specifications

**Line Size**
2 inch through to 8 inch

**Primary Device**
Cone Element

**Beta Ratio**
0.4 to 0.8

**Reynolds Number**
From 8,000 to an unlimited maximum

**Accuracy**
±1%

**Flow Turndown**
Typically >10:1, depending on Transmitter configuration

**Working Pressure Limits**
API 5K, 10K & 15K available

**Working Temperature Limits**
-20° to +80°C

**Water Depth**
Down to 5000mts

**Design Lifespan**
>25 years

### Physical Specifications

**Body Material**
UNS S31803 (Standard)
UNS S32760
Inconel 625

**Process Connection**
Flanged (API / ASME)
Hub
Butt Weld

**Transmitter Connection**
Bolted
Welded
Autoclave Fitting (Anti-vibration)

**Transmitter Types**
SST1500 DP Series
SST2000 DP Series
SST3000 DP Series

**Size** (Typical Length)
Gas Lift: 440 mm (2”NB)
Water Injection: 800mm (6”NB)

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