



## 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 (SIS 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.

#### Seastream Flow Calculator

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.



#### Applications

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

#### Key Specifications

- ✓ Depth down to 5000m
- ✓ Pressure up to 15000psi
- ✓ Accuracy  $\pm 1\%$
- ✓ Seastream Flow Calculator

#### Qualifications

- ✓ ISO 5167
- ✓ ISO 5168
- ✓ API 6A - PSL3G
- ✓ API 17D
- ✓ ASME B31.3
- ✓ ASME IX
- ✓ ISO 13628-6
- ✓ IEC 61000-4

## Seastream Cone

### 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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