



FLOWSTREAM Flow Nozzles

For Topside Flow Measurement

Flow Measurement Excellence

Widely recognized by the Oil, Gas & Petrochemical industries worldwide, Solartron ISA offers more than 45 years experience in the design and manufacture of primary Differential Pressure flow meter devices.

Solartron ISA: Engineering a solution for the metering community.

Flow Nozzles

Solartron ISA 1932 and ASME Flow Nozzles are accurate devices for measuring the flow of high velocity, non-viscous fluids e.g. Steam and other high velocity gases. Flow Nozzles are particularly suitable for erosive fluids where the sharp edge of an orifice plate could quickly deteriorate.

Solartron ISA offer a range of Flow Nozzle designs including flanged, butt-weld and insert types. All Flow Nozzle types are designed in accordance with ISO 5167 to suit various pipe-work configurations, overall length requirements, orientations and end connections. Lines sizes available range from 50mm up to 1000mm.

Flow Nozzle design can provide a key cost saving benefit, as the profile is virtually immune to any wear or erosion. Flow Nozzles are often regarded as "fit and forget" devices with very little maintenance and inspection required.

Solartron ISA offer Flow Nozzle designs to suit the needs of any pipe-work configuration, with different lengths, orientations and end connections available. We provide complete Engineering support from initial design and sizing concepts to manufactured final products.

Benefits

- Proven flow metering technology and robust design, supported by ISO 5167
- Accurate flow metering of high velocity steam and gas
- Flow Nozzle profile is inherently robust with no maintenance and inspection required



Applications

- ✓ Hydrocarbon, Liquid & Gas Process
- ✓ Steam Process
- ✓ Erosive Fluids
- ✓ High Velocity Process
- ✓ Process Measurement

Key Parameters

- ✓ Proven Technology
- ✓ Robust Design
- ✓ 'Fit and Forget' Flow Metering
- ✓ Suitability For Most Process Conditions

Standards

- ✓ ISO 5167-3
- ✓ ISA 1932
- ✓ ASME MFC-3M
- ✓ ISO 9001
- ✓ PED 97/23/ED

FLOWSTREAM Flow Nozzles

Specifications

Functional Specifications

Line Size

DN50 (1") to DN1000 (40")

Larger lines sizes available on request

Pressure Ratings

Ranging from ANSI 150# to API 15K PSI

Types of Flow Nozzles

Flanged, Butt-Weld, Hub, Insert

Further connections are available on request

Types of Tappings

Flanged / NPT / Socket Weld / Thread O'let /
Socket O'let

Further types are available on request

Beta Ratio

0.2 to 0.8 (Nozzle Type Dependant)

Reynolds Number

Ranging from $10^4 \leq 10^7$

Accuracy

Typically $\pm 3\%$ un-calibrated, $\pm 1\%$ calibrated

NDT Testing

Hydro-testing, Dye Penetrant, Radiography

Additional options:

Magnetic Particle, PMI, Gas and Water Calibrations

Further testing is available on request

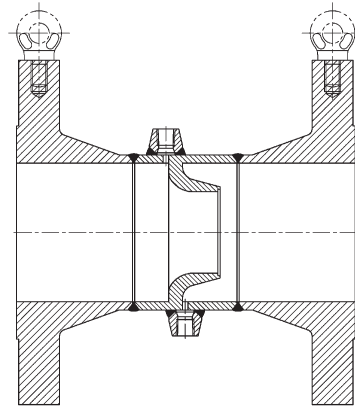
Flow Turndown

Typically $>10:1$, depending on Transmitter
configuration

Flow Nozzle Material

Carbon Steel, Low Temperature Carbon Steel,
Stainless Steel, Chrome Moly Steel, Duplex, Super
Duplex, 6 Mo, Aluminum

Further materials are available on request



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