

ETL/RN4/CSS Subsea Turbine Flow Meter

This flanged range of flowmeters will provide you with a highly accurate way of measuring liquids over the range of 1 to 18000 litres/min.

Application

The subsea turbine range of flowmeters are built with 316 stainless steel bodies as standard, but can be made from various alloys to suit application and pressures. Depths of up to 5,000m and pressures of 20,000psi are possible.

As these are machined from one piece, most connections are possible. ie: autoclave, NPT and BSP.

Each unit comes with a interchangeable 5,000m depth rated pick up, with a choice of subsea connections, typically Seacon, Subcon, Burton, and outputs of amplified pulse, 4-20ma, RS232.

As these are machined from one piece all standard flanges can be custom made to suit applications.

Instrumentation

The signal can be used for a local display, remote display or converted for transmission to a separate control system. We have a range of instruments to suit all your requirements.

Principle Of Operation

When liquid flows and the rotor turns, the sensor detects the movement of the blade tips and generates pulses. The pulse frequency is proportional to the flowrate.

Calibration

All ETL/RN4/CSS Subsea Turbine Flowmeters are individually calibrated with water or oil and are traceable to national standards.

We provide you with a test certificate for each meter showing the number of pulses per litre, which is used to set the instrumentation.



Features

- Highly accurate measurement of flow
Well proven
Improve product quality
Reduce costs and waste
- Robust stainless steel construction
Corrosion resistant
Very low maintenance and down time
Withstands high temperature and pressure
- High quality manufacture
ISO 9001 certified company
- Individual calibration certificates
- Low pressure drop
- Bi-directional flow capability

Installation

The flowmeter is installed directly into the pipeline. To reduce turbulence and get the best results from your flowmeter we recommend that you install it in a straight section of pipe with at least 10 pipe diameters upstream and 5 pipe diameters downstream.

ETL/RN4/CSS Subsea Turbine Flow Meter

Specification

| | |
|---------------------------|--|
| Linearity: | Better than +/- 0.5% of reading |
| Repeatability: | +/-0.1% of reading |
| Pressure drop: | 0.5 bar at maximum flow |
| Maximum over range: | Up to 120% of the maximum flow rate for short durations |
| Maximum working pressure: | Subject to flange rating |
| Temperature range: | Standard pickoff -30°C to 110°C IS pick-off -30°C to 110°C High temp. -30°C to 232°C |
| Flanged connections: | ANSI 150, ANSI 300 DIN PN16, PN40 or custom flanges |

Materials Of Construction

| | |
|------------------|--|
| Body: | 316 Stainless steel |
| Sleeve bearings: | Up to 50mm - carbon graphite filled PTFE (max temp. 180°C) Optional tungsten carbide 80mm and above tungsten carbide (max temp. 300°C) |
| Thrust balls: | Tungsten carbide or ceramic |
| Rotor: | 431 s/s or ferralium |
| Rotor shaft: | Tungsten carbide |
| Hangers: | 316 Stainless steel |
| Circlips: | 316 Stainless steel |

| Model No | Flow Range Ltr/min | K factor # pulses / litre |
|------------------|--------------------|---------------------------|
| ETLRN4/20/5/CSS | 5 - 50 | 1080 |
| ETLRN4/20/8/CSS | 8 - 80 | 1080 |
| ETLRN4/25/15/CSS | 15 - 150 | 620 |
| ETLRN4/25/CSS | 25 - 250 | 362 |
| ETLRN4/32/CSS | 45 - 450 | 250 |
| ETLRN4/40/CSS | 67 - 670 | 70 |
| ETLRN4/50/CSS | 110 - 1100 | 59 |
| ETLRN4/80/CSS | 225 - 2250 | 14 |
| ETLRN4/100/CSS | 450 - 4500 | 6.6 |
| ETLRN4/150/CSS | 900 - 9000 | 2.3 |
| ETLRN4/200/CSS | 1800 - 18000 | 1.7 |

Dimensions

| Model Number | Flanged Size (mm) | L (mm) | Weight kg |
|------------------|-------------------|--------|-----------|
| ETLRN4/20/5/CSS | 20 | 139.7 | 3.0 |
| ETLRN4/20/8/CSS | 20 | 139.7 | 3.0 |
| ETLRN4/25/15/CSS | 25 | 139.7 | 3.5 |
| ETLRN4/25/CSS | 25 | 139.7 | 3.5 |
| ETLRN4/32/CSS | 32 | 145.0 | 3.9 |
| ETLRN4/40/CSS | 40 | 152.4 | 8.0 |
| ETLRN4/50/CSS | 50 | 165.1 | 11.0 |
| ETLRN4/80/CSS | 80 | 250.0 | 21.0 |
| ETLRN4/100/CSS | 100 | 300.0 | 32.0 |
| ETLRN4/150/CSS | 150 | 360.0 | 51.0 |
| ETLRN4/200/CSS | 200 | 360.0 | 80.0 |

The nominal K factor is based on water at 20°C

Each flowmeter is individually calibrated on water and will have a unique K factor.



Complete range of Total and Rate displays available.