

ETLFlow

FOR SUBSEA APPLICATIONS



- Manufactured and designed to the highest quality in the UK
- 316 stainless steel or other materials to suit application
- 0.1 l/min up to 10,000 l/min
- Depths of up to 4000 Meters
- Working pressure up to 1000 bar
- Bespoke custom build design options available
- Various connections including Subcon, Burton, Seacon
- Various outputs including Pulse, 4-20ma, RS232, RS485
- Subsea display options





Subsea - Flow Meters

Environmental Technologies can supply and design a wide portfolio of standard and custom produced **Subsea Flow Meters**. They are suitable for use on **low to medium viscosity fluids** with a wide range of **threaded** or **flanged connections**.

Constructed from 316 stainless or other materials as designated by the customer such as **Duplex** or **Incoloy**, these flowmeters have been fitted extensively into the market place for many years.

Depths of up to **4000 metres** are possible with or without displays. 4-20 ma, pulse output and RS232/485 are all possible options.

Our bespoke design capability allows us to accommodate specific requirements such as size and mass to suit your application.

PPW
PULSE
OUTPUT

Subsea Display With Various Options

Subsea displays to 4000 metres, battery powered, up to 5 days continuous use, light sensitive and programmable.



Typical Applications

In the oil and gas industry, these include Hydraulic system monitoring, Fluid control diagnostic work, subsea network, Risers, Blow out preventions, water /chemical injection, ROV'S and pipe laying systems, dewatering systems.

Together with the subsea flowmeters we also manufacture offline filtration systems used extensively in the ROV type market, under the **CARDEV** branding.



For more information or
to speak to a friendly flow
meter expert call
01423 522911
or email
sales@env-t.com



Subsea - Flow Meters

PPW
PULSE
OUTPUT



FC7
4-20ma
OUTPUT



CUSTOM
OPTIONS / OUTPUTS



Stainless steel turbine, female threads, 4000 metre depth rated fitted with PPW pulse pick up.

Female thread, fitted with 4-20ma pick up (4000 - 6000 metre depth).

Bespoke systems available with various connections, options and materials of manufacture.

Subsea Displays

Subsea displays are available in various configurations. They can be battery or mains powered with a single or dual display. These displays can be configured to give a rate and volume measurement. Completely programmable through a windows interface.



ROV Filtration

Removes water contamination maintaining oil in "cleaner than new" condition.

Oil filtered whilst the ROV runs – clean the entire system, not just the oil in the reservoir.





Subsea - Flow Meters

Standard 400 bar standard in 316 stainless steel, PPW with pulse output, FC7 is a 4-20 ma output housed in a stainless steel pick up chamber. Special bespoke designs are possible, Seacon, Burton type connectors.

The screenshot displays the ETLFlow software interface with several panels:

- Ident Info:** Includes a 'Get Ident' button.
- Test EEPROM:** Features 'Offset' and 'Data' buttons.
- Configuration Data:** Contains 'Filter Constant' and 'Window' settings, a 'Calc' button, and a 'Units' section with radio buttons for Ltr/sec, Ltr/min, Ltr/hr, and Hz.
- Calibration Table:** A table with columns 'Flow' and 'P/stdUnit' containing 8 rows of data.
- Unit Contents:** Includes fields for 'K constant', 'High limit', 'High Pulse limit', 'Low Limit', 'KL constant', and 'B/W (norm)', along with 'Read' and 'Write' buttons.
- Normalised values:** A table with columns 'v/p Freq' and 'DAC o/p' containing 8 rows of data.
- Test DAC:** Includes a '4.00 mA' field, 'Send', 'Open', 'Save Data', 'Enquire', 'Reset', and 'Close' buttons.

Our latest software enables calibration without interference to flowmeter assembly. Calibration can be carried out at the customer's site.

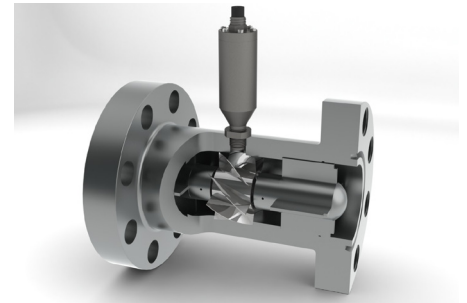
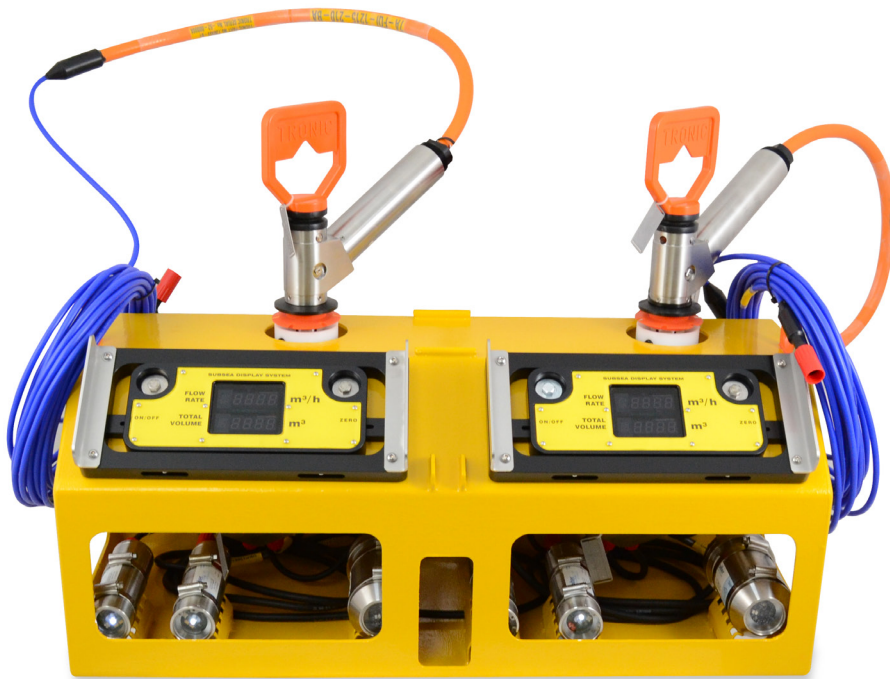
Part Number (Threaded)	Connection	Flow Range	4-20 ma Output	Pulse Output
ETL/RN3/15/1/CSS	1/2" BSP	1.2-10 l/min	+FC7(4-20 ma)	+ PPW-Pulse
ETL/RN3/15/2/CSS	1/2" bsp	2-20 l/min	+FC7(4-20 ma)	+ PPW-Pulse
ETL/RN3/20/5/CSS	3/4" bsp	5-50 l/min	+FC7(4-20 ma)	+ PPW-Pulse
ETL/RN3/25/15/CSS	1" bsp	15-150/250 l/min	+FC7(4-20 ma)	+ PPW-Pulse
ETL/RN3/32	1 1/4" bsp	45-450 l/min	+FC7(4-20 ma)	+ PPW-Pulse
ETL/RN3/40/CSS	1 1/2" bsp	67-670 l/min	+FC7(4-20 ma)	+ PPW-Pulse
ETL/RN3/50/CSS	2" bsp	110—1100 l/min	+FC7(4-20 ma)	+ PPW-Pulse
ETL/RN3/65/CSS	3" bsp	225-2250 l/min	+FC7(4-20 ma)	+ PPW-Pulse

Part Number (Flanged)	Connection (PN. Din)	Flow Range	4-20 ma Output	Pulse Output
ETL/RN4/15/1/CSS	1/2"	1.2-10 l/min	+FC7 (4-20 ma)	+ PPW-Pulse
ETL/RN4/15/2/CSS	1/2"	2-20 l/min	+FC7 (4-20 ma)	+ PPW-Pulse
ETL/RN4/20/5/CSS	3/4"	5-50 l/min	+FC7 (4-20 ma)	+ PPW-Pulse
ETL/RN4/25/15/CSS	1"	15-150 l/min	+FC7 (4-20 ma)	+ PPW-Pulse
ETL/RN4/32	1 1/4"	45-450 l/min	+FC7 (4-20 ma)	+ PPW-Pulse
ETL/RN4/40/CSS	1 1/2"	67-670 l/min	+FC7 (4-20 ma)	+ PPW-Pulse
ETL/RN4/100/CSS	4"	45-4500 l/min	+FC7 (4-20 ma)	+ PPW-Pulse
ETL/RN4/150/CSS	6"	900-9000 l/min	+FC7 (4-20 ma)	+ PPW-Pulse



Subsea - Bespoke Subsea Systems

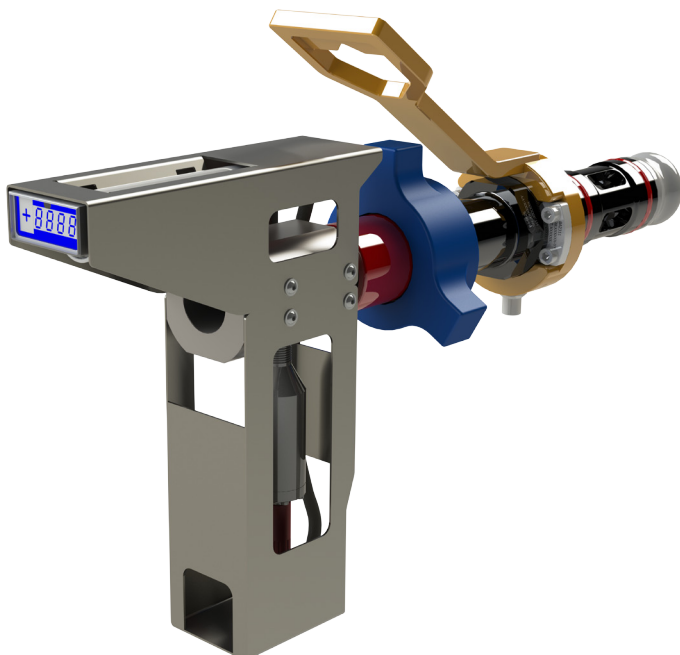
ETL has recently supplied a major oil company with important Subsea Flow Meter equipment. The equipment was designed for operational use up to 4000 Meters with flow range of 4000 litres/min. The design brief was for the system to be battery driven and able to work for up to 15 days before the system needed to be recharged. ETL designed a system with a low power flow transmitter, and the ability to meet and exceed the specifications required.



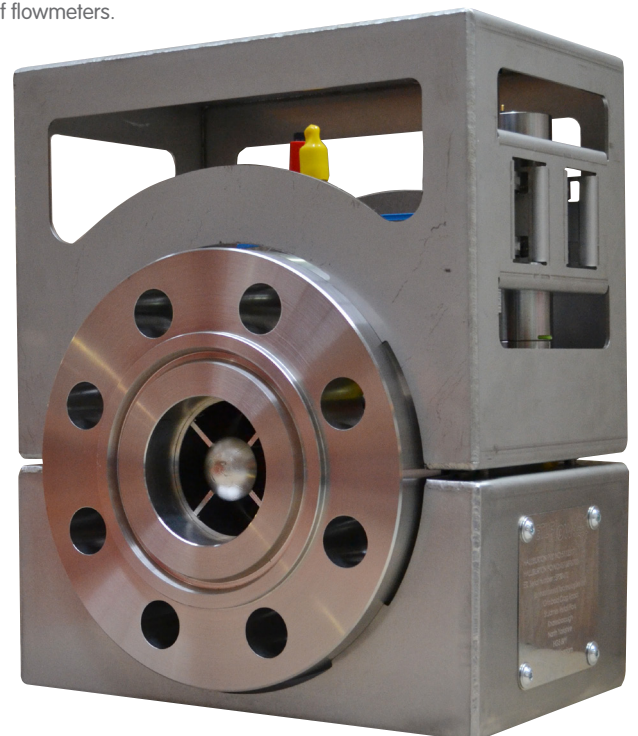
3D design and development enabling NORSOK flanges to be built and tested without the need for additional welding. Can be tested and approved to Lloyds registry requirements.



Bespoke Subsea display system, with integral data logging. This unit was connected to two separate flowmeter turbines and the display to be viewed by an ROV and the data recorded. The complete system was able to be retracted from Subsea independent of flowmeters.



Flowmeter Fitted To Hotstab



Subsea Dewatering Flowmeter Solution



Low Flow Subsea Flow Meters

These low flow (0.5 to 550 L/HR) positive displacement meters, provide excellent accuracy and repeatability, for a wide range of fluids.

Pulse and reed switch output via subsea connections to customer requirements such as Subconn Seacon, Burton.

These PD Subsea meters are designed for working pressures of up to 400 bar and depths of up to 4,000 meters - They provide a wide viscosity range.



Part Number	Connection	Flow range & pressure	Connector
ETL/N004/211/SB/127	1/8" BSP	0.5 - 36 L/HR 400 Bar Subsea	Seacon 3 Pin Standard
ETL/N006/211/SB/127	1/4" BSP	5 - 100 L/HR 400 Bar Subsea	Seacon 3 Pin Standard
ETL/N008/211/SB/127	3/8" BSP	15 - 550 L/HR 400 Bar Subsea	Seacon 3 Pin Standard

Subsea Displays

Compatible with ETL Subsea Flow Meters:

Features:

- Battery Life:
7 days (average display on continuously) 6 months standby (NiMH), 4 years (Primary)
- Wakened by ROV lighting
- 5 digit LED display displays up to +/- 9999
- User scaleable measurement value
- External zero (tare) capability
- Scaling & Input type displayed on power up
- Size: 200 x 80 x 40mm (L x W x Dia.)
- Weight: 1.6kg (in air), 1.1kg in water
- Environmental: -10 to 50°C
- Connectors:
Subconn MCDC8M (Sensor)
Subconn MCDC5M (Charge)



Dual Subsea Display



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