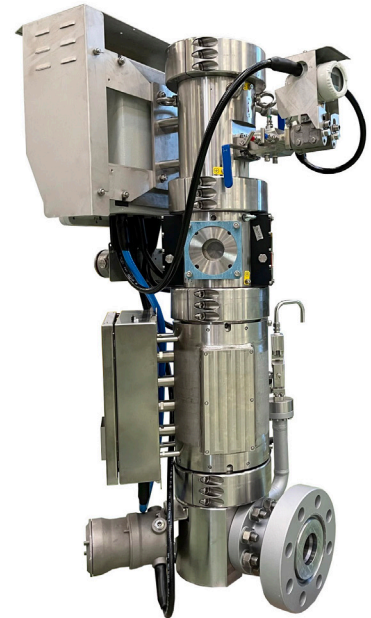


Totem

The **Totem** has been developed by Pietro Fiorentini to offer to the users a dedicated product to complete the range of metering solutions.

It is a modular, non-intrusive, non-radioactive, inline system, providing real-time measurements of oil, water, and gas flow rates in whole flow regimes (GVF range 0-100%) without any separation or moving parts. It implements the latest state-of-the-art technologies such as the Velocity meter and the Microwave WLR meter. It works in single-phase and in multiphase streams, accurately measuring in 0-100% GVF condition.

The flow rates of oil, water and gas are calculated combining the measurements of the differential pressure across the Venturi inlet and flow velocity to provide an even more reliable and robust measurement to our customers. The fluid velocity is measured by the Velocity meter and the mix density from the Venturi differential pressure. The Water-Cut is measured by the Microwave WLR meter.



Topside wellhead



Offshore wellhead



Floating units

Totem competitive advantages



Non-radioactive meter



Ultra-rugged design suitable for harsh field conditions



Easily upgradable to radioactive



High flexibility: both onshore and offshore application



High accuracy due to the flow Velocity module



Suitable for mobile applications (well testing on mobile units)



Advanced, Machine Learning based, auto diagnostic system



Data connectivity for remote operation



Reliability and long-term stability due to high quality components



No moving parts



Applicability in 0-100% GVF condition

Technical features

Features	Values
Operating Range	<ul style="list-style-type: none"> • 0-100% GVF • 0-100% WLR
Typical Uncertainty (90% CL)	<ul style="list-style-type: none"> • Gas flow rate: $\pm 7\%$ < 90% GVF; $\pm 4\%$ > 90% GVF, rel. • Liquid flow rate: $\pm 4\%$ < 90% GVF; $\pm 10\%$ > 90% GVF, rel. (> 10 m³/h) • Liquid flow rate: ± 1.5 m³/h absolute (< 10 m³/h) • WLR: $\pm 5\%$ < 98% GVF; $\pm 7,5\%$ < 99% GVF; $\pm 10\%$ > 99% GVF, abs.
Size	From 2" to 14"
Design Pressure & Temperature	Up to 5.000 psi (345 bar), up to 250 °F (121 °C)
Process Connection	ANSI/API flanges or clumped hubs
Data Connectivity	Serial RS-422/RS-485 single/redundant or Ethernet TCP/IP (Modbus)
Flow Electronic Transmitter	<ul style="list-style-type: none"> • Real Time controller, RTOS Linux- Real Time • Electronics temperature -40° C / + 85° C • Power supply: 24VDC, or 110÷240 V 50÷60Hz • Power consumption: 25W • Enclosure for safety area or for hazardous area • Weather protection: IP 66 • Stainless steel or aluminum enclosure • With local display (as optional) • ATEX/IECEX certification Ex d (or Ex ia) IIB T3-T6 Ga
HMI	HMI for Windows

Table 1 Features

Materials and approvals

Part	Material
Meter Body	UNS 31803 (Duplex), UNS 06625 (Inconel 625), SS316 or Inconel 825

REMARK: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Features



NACE
MR0175/ISO
15156



ATEX
2014/34/EU



IECEX



EMC EN
61000



PED-CE