Pietro Fiorentini

Flowatch HS

Multiphase flow meter Flowatch HS (High Speed) fulfills the essential requirements of well testing as a simple device to constantly monitor well output stream of each single phase.

The Flowatch HS multiphase flow meter in based on the 15+ years field proven technology platform of Pietro Fiorentini multiphase meters.

Installation and maintenance of the multiphase flow meters have been developed to allow operators manage themselves their well flow monitoring device.

Furthermore, the Flowatch HS has the essential advantage of eploying a radioactive source so it is possible to reach high performances in terms of accuracy.

Topside wellhead

Offshore wellhead

Floating units

Flowatch HS competitive advantages

- Radioactive meter
- High accuracy due to patented fast gamma densitometer
- Wide size range
- Cross correlation for reliable velocity measurement
- Onshore and offshore installation
- All flow patterns
- Skid mounted version available
- Smart calibration on factory
- Retrievable Venturi
- High repeatability and long term stability

Table 1 Features

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Technical features

Features	Values
Operating Range	0-100% water cut 0-98% gas volume fraction (GVF)
Typical Uncertainty (95% CL)	Liquid flow rate* ±3% (0-90% GVF) ±5% (90-98% GVF) Gas flow rate* ±5% (0-90% GVF) ±4% (90-98% GVF) Water cut ±2% (0-60% GVF) ±3% (60-90% GVF) ±5% (90-98% GVF) * if flow <10 (m3/h), uncertainty 1.5 (m3/h) abs
Size	Starting from 1.3”
Design Pressure & Temperature	Up to 5.000 psi (345 bar), up to 250 °F (121 °C)
Meter pressure drop	<1 bar
Density measurement	• Gamma Source: Cs-137, 5 mCi, Half-life 30.1 yrs • Dose level: 1.05 uSv/h @1 m • Detector: Pietro Fiorentini fast gamma • Counts per second: 0.1 millions • ATEX/IECEx certifications Ex d IIB T3-T6 Ga
Communication interface	Communication ports • RS-485 single or redundant • RS-422 single or redundant • Ethernet single or redundant Communication protocols • Modbus ASCII/RTU • TCP/IP
Flow Electronic Transmitter	• Real Time controller, Linux operating system • Ambient temperature -40 °C / +75 °C • Power supply: 24VDC or 110÷240 VAC, 50÷60Hz • Power consumption: 18W@24VDC • Enclosure for safe or hazardous area • Weather protection: IP66 • Stainless steel or aluminum enclosure • Field display (optional) • ATEX/IECEx certification Ex d (or Ex ia) IIB T3-T6 Ga
HMI	OS: minimum requirements Windows XP TCP/IP Wireless

Materials and approvals

Part	Material
Meter Body	AISI316, Duplex, Inconel 625, others on request

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

Flowatch HS multiphase flow meter is designed according to the European standard EN 14382.
The product is certified according to European Directive 2014/68/EU (PED).
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

EN 14382 PED-CE

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