

## TECHNOLOGY

MPFM Flowatch HS (High Speed) is a non intrusive, inline system providing real time measurement of oil, water and gas flow rates in the dispersed phase of the flow avoiding the use of large systems based on phase separation.

It is the third generation of Pietro Fiorentini Multiphase Flowmeter, obtained as an evolution of the top selling non radioactive Flowatch model, implementing the latest state of the art technologies in order to provide an even more reliable and robust measurement to our customers.



The flow rates of oil, water and gas are calculated based on the measurements of the fluid dielectric properties, of the differential pressure across the venturi inlet and of the density through the gamma ray detection. No separating devices, mixers or by-pass lines are needed.

The fluid velocity is measured with a new array cross-correlation of the high resolution time signals from three pairs of electrodes within the venturi insert resulting in a higher performance.

## KEY FEATURES

- **Highest speed available on the market for density measurement**
- **High accuracy due to the fast gamma detector**
- **Array cross correlation for a more reliable velocity measurement**
- Dose rate value at surface close to background level
- Widest size range on the market
- High repeatability and long term stability due to high quality components
- High flexibility: both onshore and offshore application
- Improved mathematical model (slip model) for all flow patterns
- Suitable for mobile applications (e.g. on trailer or truck)
- Easy Calibration.

## WHAT'S NEW

- New patented metering section
- Retrievable venturi inlet
- Patented quick detector specifically developed for multiphase metering

## SPECIFICATIONS

<b>Operating Range</b>	<ul style="list-style-type: none"> <li>• 0-100% water cut</li> <li>• 0-97% gas volume fraction (GVF)</li> </ul>
<b>Typical uncertainty (95% confidence int.)</b>	<ul style="list-style-type: none"> <li>• Liquid flow rate: +/-3% relative</li> <li>• Water cut: +/-2% absolute</li> <li>• Gas flow rate: +/-5% relative</li> </ul>
<b>Size</b>	From 0,5" up to 8"
<b>Design Pressure &amp; Temperature</b>	Up to 5.000 psi, up to 302°F (150°C)
<b>Body Material</b>	AISI316, Duplex, Inconel 625, others on request
<b>Venturi</b>	Insert field replaceable, std Beta 0.6, max pressure drop <1 Bar
<b>Density measument</b>	<ul style="list-style-type: none"> <li>• Gamma Source: Cs-137, 50 mCi, Half-life 30.1 yrs</li> <li>• Dose level 0,1μSv/h @0cm (natural background)</li> <li>• Detector: Pietro Fiorentini Fast Gamma</li> <li>• Counts per second: 2 millions</li> <li>• ATEX certification Ex d IIB T4</li> </ul>
<b>Communication Interface</b>	<p>Communication ports:</p> <ul style="list-style-type: none"> <li>• RS-485/422 single or redundant, Ethernet</li> </ul> <p>Communication protocols:</p> <ul style="list-style-type: none"> <li>• Modbus ASCII/RTU, TCP/IP</li> </ul>
<b>Electrical Specifications</b>	<ul style="list-style-type: none"> <li>• ATEX certification Ex ia IIB T4 Ga</li> <li>• Ambient temperature -40° C/ + 70° C</li> </ul>
<b>Flow Computer</b>	<ul style="list-style-type: none"> <li>• Real Time controller, Operating system VxWorks</li> <li>• Ambient temperature -40° C/ + 70° C</li> <li>• Power supply: 24VDC, or 110÷240 V 50÷60Hz</li> <li>• Power consumption: 15W</li> <li>• Enclosure for safety area or for hazardous area</li> <li>• Weather protection: IP 65</li> <li>• Stainless steel or aluminium enclosure</li> <li>• With local display (as optional)</li> </ul>
<b>HMI</b>	HMI for Windows XP, Vista, and 7 TCP/IP Wireless

For further information, please visit our website:  
<http://www.fiorentini.com>