

Roxar Multiphase meter

MPFM 1900VI®

Data Sheet



Continuous in-line measurement of multiphase fluid or gas flow

The Roxar Multiphase meter measures accurately the flow rates of oil, gas and water in oil wells without separation, mixing or moving parts. Field experience from a large number of installations worldwide shows excellent long-term stability, high accuracy and very good repeatability.

The non-intrusive design, together with the Dual Velocity method for handling of phase slip, means the MPFM 1900VI® does not require mixers to homogenize the flow, or separators to split the flow before measurement. This gives the meters a wide operating range, which is not limited by the efficiency of the upstream flow conditioner or splitter.

The Roxar Multiphase meter is also available as a non-gamma version. This version is identical, except for the fact that it does not employ a nucleonic source for density measurements. It is well suited for applications with low to moderate GVF. For the highest GVF range, the standard meter with gamma source is more accurate.

The two versions are interchangeable, so that a non-gamma version can later be updated to a gamma version and vice versa. See also separate data sheet for Roxar Multiphase meter, non-gamma.

Operating principle

Oil, gas and water fractions are determined by electrical impedance measurements and gamma-ray density measurements. Dual Velocity cross correlation of the signals is used to measure individual component flow rates. In addition, a venturi meter extends the range of the MPFM 1900VI® to cover single-phase liquid and gas. This provides extra redundancy for flowrate measurements.

Applications

- Production well testing
- Exploration well testing
- Production monitoring
- Allocation metering



INTERPRETATION



MODELING



SIMULATION



WELL & COMPLETION



PRODUCTION & PROCESS

Specifications

System performance and characteristics

Operating range:

- 0-100% water in liquid ratio (WLR)
- 0-98% gas void fraction (GVF)

Typical velocity range:

- Low GVF: 1.5-15 m/s
- High GVF: 3.5-35 m/s

Pipe dimensions:

- 2-12 in. (43-280 mm)

Typical uncertainty (95% confidence int.):

- Liquid rate: +4% relative
- Water cut: +3% abs.
- Gas rate: +8% relative

Design pressure:

- Up to 690 bar (10,000 psi)

Operating temperature:

- Up to 150°C (302°F)

Mechanical and electrical components

Measurement section

Wetted parts materials:

- Stainless steel 316, duplex or to customer specifications

Flange connections:

- ANSI, API or clamp flanges

Length:

- 1200 mm (typical for 3 in.)

Weight:

- 600 kg (typical for 3 in.)

Gamma ray densitometer

Gamma source:

- Caesium-137, <5mCi
- Half-life: 30.1 years

Container:

- Stainless steel

Detector:

- T205 detector
- Certification: EEx d

Sensor electronics

Type:

- Electrical impedance

Certification:

- EEx ia IIC T4

Secondary instruments:

- Pressure, differential pressure, temperature

Power supply

Voltage:

- 18-29 VDC, 100-240 VAC 50/60 Hz

Power consumption:

- 12 W (Low-power version, excluding service console)

Installation:

- Vertical upward flow

Flow computer

Com 1:

- For service console PC (RS232/RS485/TCP/IP)

Com 2:

- For client interface (RS232/RS485/TCP/IP)

Communication protocol:

- Modbus ASCII/RTU/TCP

Installation:

- Safe area (19-in. rack module)
- Hazardous area (EEx d enclosure)

Service console PC

Operating system:

- Windows 2000/XP

Software:

- RFM service console software
- Roxar Fieldwatch

Optional modules:

- Well test module
- PVT calculations
- Multilingual support
- Non-gamma

Add-on modules

- Integrated sand detection
- Roxar Fieldwatch/Fieldmanager
- Roxar's real-time well-data logging system

Roxar Multiphase meter



[WWW.ROXAR.COM](http://www.roxar.com)

For further information
please contact your
regional office or
email: info@roxar.com
or visit www.roxar.com.

Scandinavia
CIS
Europe/Africa
America

Tel: +47 51 81 88 00
Tel: +7 495 504 3405
Tel: +44 1224 411 200
Tel: +1 713 334 2222

Middle East
Asia Pacific
Australia

Tel: +973 17 517 111
Tel: +603 2162 4450
Tel: +61 8 9315 9500



INTERPRETATION



MODELING



SIMULATION



WELL & COMPLETION



PRODUCTION & PROCESS