

# Roxar Wetgas meter



## WGM

The Roxar Wetgas meter is a state-of-the-art meter for inline measurement of wet gas flow. The meter measures the water content in the wet gas stream and individual flow rate of hydrocarbons and water. The WGM is designed for installation in wells with GVF > 95%vol . The design allows for very compact solutions, simplifying installations and integration in onshore and offshore topside facilities.

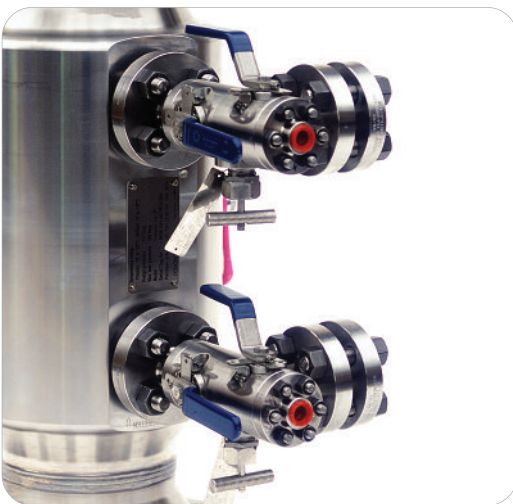
### Water measurement

Accurate measurement of wet gas flow including water and liquid detection is crucial for operators of wet gas producing fields for several reasons:

- Well testing
- Improved reservoir management
- Production allocation
- Optimized chemical injection to prevent hydrate formation
- Corrosion control
- Operational costs
- Flow assurance
- High regularity

### Proven technology

The Roxar WGM is based on proven technology, and utilized by operators all over the world. Meters are commercially available in both subsea and topside versions.



### Operating principle

#### Water Fraction Measurement

The Roxar WGM employs the same proven, unique and patented microwave technology as the Roxar Watercut meters. This technology has been applied in the Watercut meter for decades, and has a very high experience MTBF. The dielectric properties of the fluid are measured with an extremely high level of accuracy and sensitivity, and the fractions of hydrocarbon and water are subsequently calculated from these measurements.

#### Flow Measurement

Flow measurement is obtained by DP measurement over a V-Cone. Pressure and temperature are measured by dedicated transmitter.

#### User Interface Software

The Roxar Wetgas meter utilizes the Roxar Wetgas Instrument Console software for configuration, diagnostics, troubleshooting, maintenance and display of measurement data. The Roxar Wetgas Instrument Console is DACQUS® enabled, which allows the instrument console capabilities to be performed from the DACQUS FieldWatch desktop enabling the instrument console to be run either locally, or from a remote location.



INTERPRETATION



MODELING



SIMULATION



WELL & COMPLETION



PRODUCTION & PROCESS



## Specifications

### System performance and characteristics

Operating Range: 95-100% GVF  
0-100% WLR for GVF > 99%  
0-50% WLR for GVF < 99%

Typical Velocity Range: 5 to 40 m/s

Pipe dimensions: 2" - 12"

Typical uncertainty:  
(90% Confidence int.)

#### Water fraction measurement :

accuracy: GVF > 99:  $\pm 0.1$  abs. vol.%  
GVF < 99:  $\pm 0.2$  abs. vol.% (WLR < 50%)  
sensitivity: < 0.005 abs. vol. %

#### Hydrocarbon mass flow:

accuracy:  $\pm 5$  % rel.  
sensitivity: 0.5%

Design Pressure: Up to 10,000 psi

Operating Temperature: Up to 150°C (302°F)  
Higher as option

### Mechanical and electrical components

#### Sensor Spool Piece

Materials: Duplex (standard) or to customer specifications

Flange Connection: ANSI, API compact flange or weld neck

Mass flow device: V-Cone

Length: <1 meter

Weight: 2" - 8": 90 - 370kg

Installation: Vertical upward flow (recommended)

#### Electronic housing:

Materials: Stainless Steel

Weather protection: IP66 / NEMA 7

Mounting: Field mounted, 2 m from sensor

Temperature: Maximum ambient 60 °C (140 °F)

Weight: Approximately 75 kg

Voltage Supply: 100 – 240 VAC, 50 or 60 Hz or 20 – 28 VDC

Power Consumption: Maximum 35 W, nominal 25 W

Hazardous Area Approvals: ATEX, EExd

#### Input/Output

##### User Input

Hydrocarbon composition: Up to five different sets of hydro carbon compositions easily updated from the service console software

Serial port: RS485

Protocol: Modbus RTU

Examples of output variables are: water volume fraction, GOR, volume and mass flow rates of water, oil and gas at reference and actual conditions, densities of water, oil and gas at actual conditions, mixture density, differential pressure, temperature, pressure, velocities, alarm and warnings.

#### Add on modules

- Formation Water Detection
- Gamma Densitometer
- Instrument Console
- Dual redundant dp-measurement
- DACQUS Software

For further information please contact your regional office or email: [info@roxar.com](mailto:info@roxar.com) or visit [www.roxar.com](http://www.roxar.com)

#### CIS

Email: [metering.moscow@roxar.com](mailto:metering.moscow@roxar.com)  
Tel: +7 095 504 34 05

#### Europe/Africa

Email: [metering.aberdeen@roxar.com](mailto:metering.aberdeen@roxar.com)  
Tel: +44 1224 411 200

#### Americas

Email: [metering.houston@roxar.com](mailto:metering.houston@roxar.com)  
Tel: +1 713 482 6400

#### Middle East

Email: [metering.dubai@roxar.com](mailto:metering.dubai@roxar.com)  
Tel: +971 4 883 6606

#### Asia Pacific

Email: [metering.kl@roxar.com](mailto:metering.kl@roxar.com)  
Tel: +603 2162 4450

#### Scandinavia

Email: [metering.stavanger@roxar.com](mailto:metering.stavanger@roxar.com)  
Tel: +47 51 81 88 00

