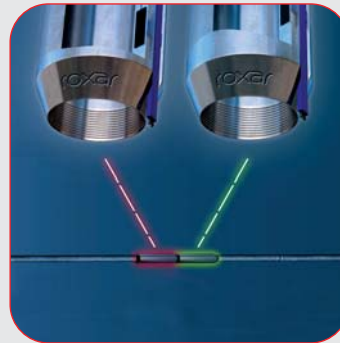
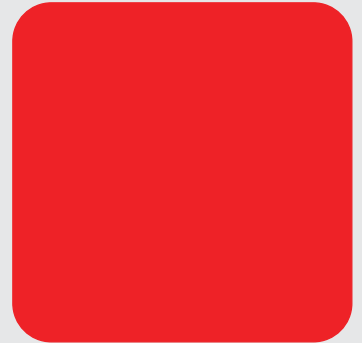
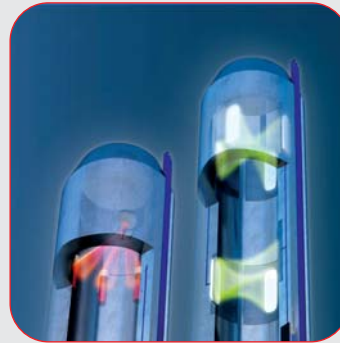


Roxar downhole Flow sensor system

Multiphase flow series

Data Sheet



Roxar downhole Flow sensor system

Roxar has developed a number of downhole instruments to monitor a wide variety of downhole parameters. This gives the operator valuable information to accurately describe the complex dynamics of flow in single bore as well as multilateral well configurations.

Several autonomous tools are available to enable the operator to custom pick the exact tool applicable to his particular needs. All tools in the series are connected to the same 1/4" IDN cable used for standard PT measurement for simple and reliable installation with a minimum of field mateable connections.

All downhole tools are (apart from single connection point with dual metal to metal seals) fully sealed units from Roxar, manufactured with extensive use of electron beam welding for maximum durability.

Roxar proven measurement principles from more than 25 years within the topside multiphase metering industry are employed in this state-of-the-art downhole multiphase metering system. Roxar uses the Dual Velocity™ and Zector® technology to assure best possible accuracy in the flow measurement.

Density Sensor



Permittivity Sensor



Roxar downhole Flow sensor system (nominal 3 1/2" tools)

The Roxar Density Sensor is mounted cross coupling and fully tested at a Roxar onshore facility. At the wellsite the electrical cable is installed and the tool is verified as part of the IDN network.

The Roxar Permittivity Sensor is installed in the vicinity of the Density Sensor and consist of an array of permittivity measure probes coupled to an IDN electronic section. All data is processed and sent via a single 1/4" cable to surface.

Permittivity Sensor Characteristics

Typical Measurement uncertainty:

- Watercut +/- 3% (+- 10% in water continuous mode)
- Resolution (watercut) 0.07% absolute

Length 2366 mm

Density Sensor Characteristics

Typical Measurement uncertainty:

- Calibrated range: 0-2 g/cc

Length 1270 mm

System Features*

Operating range:

- WLR 0-100 %
- GVF 0-90%
- Velocity 0.5 – 25 m/s

Typical Measurement uncertainty:

- Liquid flow rate +/- 7-10%
- Gas flow rate +/- 10%
- GVF +/- 5%
- Resolution (velocity/flow rate) 0.1% relative at 0.5 m/s
3.0% relative at 10 m/s

Maximum working pressure 690 bar / 10 000 psi

Design life at temperature Min 6 years @ 145 °C / 293 °F

Power consumption Approximately 1.6 watts per tool

ID/OD 74.2 mm / 150.0 mm

End connections Premium threads (box)

Designed and qualified in accordance with: DNV-RP-A203 Qualification Procedures for New Technology, NORSOK M-601 Welding and inspection of piping, NORSOK D-010 Well integrity in drilling and well operations.

* Performance is dependant upon installation and well performance.

Roxar downhole Flow sensor system



www.roxar.com

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

Head Office
CIS
Europe
North America
Middle East

Tel: +47 51 81 88 00
Tel: +7 495 504 3405
Tel: +47 51 81 88 00
Tel: +1 713 334 2222
Tel: +971 4 811 8100

Asia Pacific
Australia
Latin America
West Africa

Tel: +60 3 2177 4450
Tel: +61 8 9208 1680
Tel: +55 212 222 1941
Tel: +27 71 60 61 737

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