



Dualstream 1

The Smart Topside Solution For High GVF Wet Gas Wells

Each gas condensate development has its own unique challenges. These may include measuring gas rates to allocation standard, accurately detecting low levels of water for hydrate mitigation, or optimizing production recovery from marginal fields.

The Dualstream family of wet gas meters is uniquely positioned to provide the operator with the optimum "Life-of-Field" solution.

Solartron ISA's unrivalled global experience ensures user confidence in the data that Dualstream provide. Successfully installed and operated on over 300 gas condensate fields, Dualstream is considered the benchmark for wet gas metering.

Measurement Application

Dualstream 1 is a 3-phase measurement for allocation or monitoring gas condensate wells. It is typically used on a per well basis at the wellhead or in the flow line. Standard field instrumentation makes Dualstream 1 ideally suited to remote wellheads or unmanned platforms.

Common applications include tie-ins to existing infrastructure or new field development where real time high accuracy gas measurement is a fundamental operator requirement and water measurement accuracy is required for efficient well operation.

Dualstream 1 replaces the need for test separators or tracer dilution techniques.

Mode of Operation

The pressure loss across the differential pressure (DP) device in wet gas is a highly complex function of the properties of the fluid stream. By measuring the total differential pressure (DPT) across the Venturi and the standard Venturi differential pressure (DPv), the pressure loss ratio (PLR) can be calculated. Solartron ISA uses the PLR together with gas to condensate ratio (CGR) to measure multi-phase flow of rates of gas, condensate and water in real time.



Applications

- ✓ Royalty Allocation
- ✓ Hydrate Mitigation
- ✓ Flow Line Monitoring

Key Benefits

- ✓ Real Time 3-Phase Data
- ✓ High GVF Operation
- ✓ High Accuracy
- ✓ Uncomplicated & Robust
- ✓ Low OPEX
- ✓ Industry Standard Computer
- ✓ Large Installed Base
- ✓ Regulatory Body Approval

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Specifications

Measurement Technique

Dualstream wet gas Venturi
PLR measurement
Proprietary wet gas algorithms

Operating Range

Turndown	>8:1
Gas Mass Fraction	80-100%
Water Liquid Ratio	0-100%

Performance

Typical Uncertainty (95% confidence level):

- Gas mass flow rate $\pm 2\%$
- Condensate mass flow rate $\pm 10\%$
- Water volume flow rate $\pm 1 \text{ am}^3/\text{h}$

Repeatability

- Gas mass flow rate <0.40%
- Condensate mass flow rate <2.0%
- Water sensitivity $\pm 0.2 \text{ am}^3/\text{h}$

Permanent Pressure Loss

Pressure loss specific to application (<1 bar)

Instrumentation

Standard field instrumentation comprising:

- Differential pressure
- Gauge pressure
- Temperature

Installation Requirements

Horizontal or Vertical installation

Upstream straight length 3D (Typical)

Downstream straight length None

Compact flowmeter design options are available for applications where installation envelope is restricted, please contact Solartron ISA for details.

Data Acquisition

Options available include:

- Dualstream Flow Computer (safe area)
- Dualstream PC (safe area)
- Dualstream PC (hazardous area)

User required Inputs

- Hydrocarbon Composition



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