



Dualstream 2

The Smart Topside Solution For 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 2 is a 3-phase measurement for allocating or monitoring flow rates in gas condensate wells. Typically used on a per well basis at the wellhead or in the flow line on wells with high levels of liquids. Standard field instrumentation makes Dualstream 2 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 2 replaces the need for test separators or tracer dilution techniques.

Mode of Operation

When using a differential pressure (DP) device to measure wet gas flow rates, the presence of liquids will cause the gas rate to over-read. A Dual DP technique is used to measure high levels of liquids. The Pressure Loss ratio technique (PLR) is used to measure water at high GVF. Condensate is determined via a PVT calculation. A proprietary correction algorithm is used to correct the gas flow rate and output a real-time 3-phase measurement.



Applications

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

Key Benefits

- ✓ Real Time 3-Phase Data
- ✓ GVF >90%
- ✓ 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
Dual DP device
Proprietary wet gas algorithms

Operating Range

Turndown	>8:1
Gas mass fraction	50-100%
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 installation (vertical on request)

Upstream straight length	None
Downstream straight length	None

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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