



# Dualstream 3

## Wet Gas Combined With Water Fraction Measurement

The Dualstream 3 is the latest development in wet gas measurement for the upstream oil and gas market. Solartron ISA engineers have taken 25 years of experience and knowledge in wet gas flow behavior and added a water fraction measurement to the Dualstream family of meters. Dualstream meters have been successfully used around the world in over 300 gas fields for solutions in hydrocarbon allocation and reservoir optimization.

The water fraction measurement utilizes a new unique approach developed especially for wet gas applications. Using multipath sensors the water fraction meter can obtain an extremely accurate record of the liquid phase fractions for virtually any flow regime. There are no probes or dead volume traps to worry about. The measurement sensor is the only non-intrusive sensor available that can detect the water fraction across the entire pipe diameter for wet gas flow.

The water fraction measurement coupled with Dualstream Venturi offers the simplest, reliable method for wet gas. This makes it ideal for harsh or remote locations. There are no regulative concerns as with sensors with radioactive sources.

Whether needed for allocation, reservoir optimization or detecting water breakthrough, the Dualstream 3 is the new standard for a reliable solution to everyday problems in wet gas measurement.

### Water Fraction Measurement

The next generation of the Dualstream meter development incorporates the newest water fraction technology using multipath sensors to derive the phase fractions of the fluid. Its designed to maintain accuracy in both oil and water continuous fluids and to operate across the full liquid range of a gas condensate well.

By metering the multiphase fractions in real time the Dualstream 3 multi-path sensor technology provides the gas, water and condensate flow rates for use in allocation of hydrocarbon royalties and for economic optimisation of gas reserves through generation of real time production data including early measurement of water breakthrough for inhibitor management.



### Applications

- ✓ Water Breakthrough
- ✓ Production Optimization
- ✓ Hydrocarbon Allocation
- ✓ Salinity Detection

### Key Benefits

- ✓ Real Time Measurement of Phase Fractions
- ✓ No Radioactive Sources
- ✓ Non Intrusive, No Probes

## Dualstream 3

### Specifications

#### Measurement Technique

Enhanced dual-phase version: Dualstream Venturi, electromagnetic resonant cavity employing paired sensor combinations plus PVT model

#### Operating Range

Turndown	>8:1
Gas volume fraction	90-100%
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 fraction  $\pm 0.1\%$  abs

#### Repeatability

- Gas mass flow rate <0.40% relative
- Condensate mass flow rate <0.40% relative
- Water volume fraction 0.02% abs

#### Permanent Pressure Loss

Pressure loss specific to application (<1 bar)

#### Instrumentation

- Electromagnetic resonant cavity sensors
- Differential pressure
- Gauge pressure
- Temperature

#### Installation Requirements

Horizontal or vertical orientation	
Upstream straight length	3D
Downstream straight length	None

#### Data Acquisition

Max power requirements	50W
Power supply	24 V DC (16 V ~ 32 V)
Signal output	RS485 Modbus (Standard) Ethernet (Optional)

#### Additional Features

Salinity detection



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