



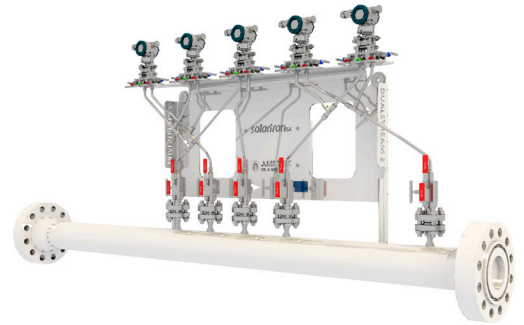
# Dualstream 2

## 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



### Plug and Play Compact Design

Our latest design benefits from Solartron ISA’s unrivalled experience developed over three decades in the engineering, installation and operation of wet gas flow meters. Recent enhancements have been implemented to reduce installation time, improve measurement performance and increase operational safety on wellheads and flow lines.

### 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

- ✓ Royal 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

# Dualstream 2

## Standard Specifications

### Measurement Technique

Dualstream wet gas Venturi  
 PLR measurement  
 Dual DP device  
 Proprietary wet gas algorithms

### Typical Operating Range

|                    |         |
|--------------------|---------|
| Turndown           | >8:1    |
| Gas mass fraction  | 50-100% |
| Water liquid ratio | 0-100%  |

### Typical Performance

Typical Uncertainty (95% Confidence Level):

- Gas mass flow rate                   ±2%
- Condensate mass flow rate         ±10%
- Water volume flow rate             ±1 am<sup>3</sup>/h

### Typical Repeatability

- Gas mass flow rate                   <0.40%
- Condensate mass flow rate         <2.0%
- Water sensitivity                     ±0.2 am<sup>3</sup>/h

### Permanent Pressure Loss

Pressure loss specific to application (<1 bar)

### Instrumentation

Standard field instrumentation comprising:

- Differential pressure – Class leading true digital sensor
- Gauge pressure – Secondary variable from DP sensor
- Temperature – non intrusive sensor

### Installation Requirements

Horizontal installation (vertical on request)

|                            |      |
|----------------------------|------|
| Upstream straight length   | None |
| Downstream straight length | None |

### Data Acquisition

- Dualstream Flow Computer Module – industrial 19” server (safe area)

Options available include:

- Industrial flow computer (safe area)
- Dualstream PC (hazardous area)
- Floor or wall mounted panel (safe area)

### User required Inputs

- Hydrocarbon Composition

#### FOLLOW US ON:



#### SOLARTRON ISA

Hackworth Industrial Park, Shildon, County Durham, DL4 1LH, UK  
 Tel: +44 (0)1388 773065 | Fax: +44 (0)1388 774888  
 e-mail: sales.solartronisa@ametek.com | www.solartronisa.com

#### AMETEK LLC Russia

Tel: +79035493325

#### AMETEK do Brasil Ltda.

Rodovia Engenheiro Ermênio de Oliveira Penteado, KM 57, SP-75 Bairro  
 Tombadouro, Indaiatuba – SP – Brasil CEP:13337-300 | Tel: +55 19 99721 0539

#### Houston Sales and Services

4903 W. Sam Houston Parkway, N., Suite A-400, Houston, TX 77041  
 Tel: +1 713-466-4900 | Fax: +1 713-849-1924

#### AMETEK Middle East

Office 2004, Cluster X2, Jumeirah Lakes Towers (JLT), Dubai, UAE  
 Tel: +971 52 645 3606

#### AMETEK Singapore Pte Ltd

20 Changi Business Park Central 2, #04-03/04 Singapore 486031  
 Tel: +65 6484 2388 | Tel: +65 6481 6588