oil & gas measurement solutions

Dualstream I Topside

Background

Wet gas measurement is now an integral part of most gas condensate field developments. Dualstream wet gas flow meters have been utilized in over 100 projects since the early 1990's and have been a key factor in enabling marginal field development providing wet gas allocation measurements and enhancing reservoir data.

Dualstream I (Topside)

Solartron ISA's topside Dualstream I meters, are designed to be used when additional facilities test separators or tracer dilution are available for periodic well testing. The Dualstream I system will correct the gas flow rate for a known gas Mass Fraction based on data generated during a well test. This is a particularly cost effective 'per wellhead' wet gas flow rate management system.

Topside Experience

Dualstream I meters have been implemented topside since the early 1990's and are now considered the benchmark system for wet gas measurement. Hundreds of topside Dualstream I meters are now operational for most operators around the globe. Meters are being used to allocate gas into third party flow lines or on a "per well' basis to optimize production.

Key Benefits

- Simple and robust flow spool
- Standard instrumentation
- Simple data acquisition system
- Significantly reduced operational costs
- Large installed base including allocation systems

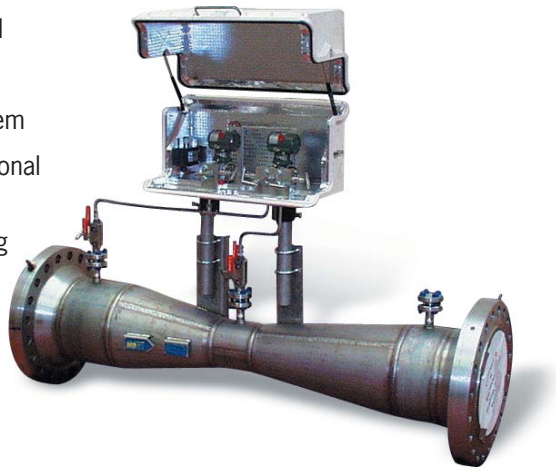
Applications

Reservoir management

- Optimise production
- Remote well monitoring

Production Allocation

- Royalty allocation
- Essential for economic development of marginal fields



Dualstream 1 Topside

Measurement Technique

- Dualstream Venturi and wet gas correction algorithm

Mechanical Specification

- Standard Line Sizes 2" NB to 24" NB (larger sizes on request)
- Pressure Class ANSI Class 150 lb – 2500 lb (API ratings on request)
- Process Temperature Range -20 to 120°C (-4 to 248°F) (higher ranges on request)
- Meter Body Material Duplex unsS31803 as standard
- Weight dependant on NB/Pressure rating
- Overall length 5D (typical)

Installation Requirements

- Upstream Straight lengths – 3D to 10D (typical) (calibrated spool supplied for allocation systems)
- Downstream Straight lengths – None (5D calibrated spool supplied with thermowell for allocation systems)
- Horizontal Orientation

Performance

- Uncertainty
  - Gas Mass Flow Rate 5% (typical)
  - Liquid Mass Flow Rate from well test
- Repeatability
  - Gas Mass Flow Rate <0.15%
- GVF Range 95 – 100%
- Turndown 3:1 or 8:1 (typical)
- Pressure Loss Specific to application (<1bar)

Instrumentation

- DP Transmitters – (1 off)
- GP Transmitter – (1 off)
- TT transmitter – (4 wire RTD/Solartron ISA TT)

Data Acquisition (Safe Area)

- Option A – Solartron 7955 Flow Computer – Power Supply 20-30 VDC, 40W
- Option B – Industrial PC – Power Supply 90-260 VAC, 50-60 HZ or 24 VAC
- Input Protocol – 4-20 mA, Hart or MODBUS
- Output Protocol – 4-20 mA or MODBUS
- Electrical Interface RS232C/RS485
- PVT Package – Optional
- Typical Output Data –
  Gas Mass Flow Rate
  Liquid Mass Flow Rate
  Condensate Mass Flow Rate
  Water Mass Flow Rate
  Gross & Nett Volume
  Line Pressure
  Line Temperature
  Gas Volume Fraction
  Gas Mass Fraction

Data Acquisition (Hazardous Area)

- Industrial PC
- Area Classification II 2G, EEx de(ib) IIB T6
- Power Supply 90-260 VAC, 50-60 HZ or 24 VAC
- Input Protocol 4-20 mA, Hart or MODBUS
- Output Protocol 4-20 mA or MODBUS
- Electrical Interface RS232C/RS485
- PVT Package (optional)
- Typical Output Data – As per Safe Area option

User Required Inputs

- Gas & Liquid Density
- GMF (from well test)
- Compositional Data

AMETEK®

Solartron ISA
Hackworth Industrial Park, Shildon,
County Durham, UK, DL4 1LH
Tel: +44 (0) 1388 773065
Fax: +44 (0) 1388 774888
Email: sales.solartronisa@ametek.co.uk

Houston Sales & Service
3727 Greenbriar, Suite 106-B
Stafford, TX 77477 U.S.A.
Tel: (281) 240-9054
Fax: (281) 240-3583

solartron ISA

www.solartronisa.com

Ref No. 0106