Panametrics
a Baker Hughes business

MISURA & AUTOMAZIONE

Application note

Flow Measurement on Test Separator Gas Leg

Ultrasonic gas flow meter successfully measures wet gas flow in test separator

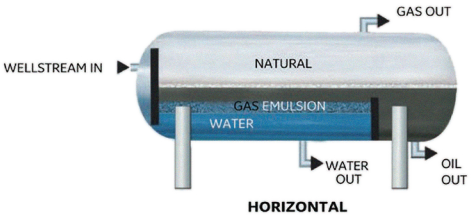
Benefits:

- No need to change the orifice plate to measure the flow rate
- Minimizes any potential safety hazard during a plate change out
- Reliable and robust signal

Summary

The test separator is used to separate gas, oil and water to a level that permits accurate measurement of each produced phase. Gas is typically measured using a differential pressure device (orifice), where accuracy and reliability of the measurement can be affected by changes in pressure and flow ranges.

Typical Test Separator



Pipe: 6" 150# RF CS
Temp: 35°C
Pressure: 250 kPag
Flow rate: 300–20,000 Sm3/d
Density = 2.096 kg/m³

Viscosity = 0.000014 Pa.s
Molecular weight = 20.38

Challenge

An international oil and gas company operating in South East Asia has three to four production wells connecting to a test separator, and traditionally used an orifice flow meter. Due to changes in process conditions from swapping wells, the customer identified a need to replace the orifice plate for one with a different beta ratio in order to measure the flow. Since a single orifice meter cannot handle the flow conditions from the various wells, the customer wanted a flow meter technology capable of measuring under all its process variations.

Solution

Panametrics PanaFlow Z1G ultrasonic gas flow meter was selected and installed based on its ability to measure relatively wet gas at low pressure. The PanaFlow Z1G does not create any pressure drop since the ultrasonic transducers do not restrict the fluid flow. Additionally, the meter offers a wide turndown ratio which can measure the required flow range regardless of which well is connected to the system.

Result

After eight months using the PanaFlow Z1G, the customer realized lower maintenance costs while maintaining an accurate and reliable flow measurement. The savings experienced using the Panametrics flow meter included:

- Four man-hours per operation
- Production down-time reduced by four hours
- Energy efficiency with no pressure drop

Per avere più informazioni
CONTATTACI

EP srl
41124 Modena
Via S. Faustino, 155/P

Tel. +39 059 35 76 00
www.epsas.it
ep.ma@epsas.it

Baker Hughes

Copyright 2023 Baker Hughes Company. All rights reserved.

BHCS38709 (04/2023)

Panametrics.com