



APPLICATION NOTE Oil & Gas

Nominal volume flow measurements in offshore operations on production platforms

- Volume flow, temperature and pressure measurements with a measuring device
- Simple installation with 2-wire connection technology
- Problem-free replacement for previously deployed measuring devices

1. Background

On production platforms, there are often different types of gases to be measured, in order to get exact definitions about production quantities and mixtures. The gases to be measured are Fuel gas and CH Mix gas. These measurements are done mainly in areas at risk from explosion.



Offshore production platforms

2. Measurement requirements

The deployed measuring devices must be able to measure gases with the following process parameters.

Process parameters

Media	Fuel gas and CH Mix gas
Nominal Volume flow	up to 25000 Nm ³ /h (subject to change)
Pressure	up to 5.2 Bar (subject to change)
Process density	Up to 6.9 kg/m ³ (subject to change, the nominal density is constant)
Viscosity	0,018 mPa•s
Product temperature	up to 93°C

The composition of the gases remains constant while pressure and temperature can change. All devices must be protected against sea water through the use of a special paint. The devices must be manufactured in compliance with NACE and are supplied with a material quality certificate as well as pressure and hardener tests.

3. KROHNE Solution

For these applications, KROHNE delivers six OPTISWIRL 4070 C vortex gas flowmeters in an ex-protected version Ex-d ia (intrinsically safe). All devices have flange connections. The installation sizes for Fuel gas are 2 × ½" and 2 × 1", each in 300 lb and for CH Mix, in 6" and 8" also in 300 lb. The devices are equipped with pressure and temperature compensation.



Fuel gas pipe

4. Customer benefits

As the customer has already deployed several measurement systems from KROHNE, the company was given the job of handling these measurement tasks. Because of the OPTISWIRL 4070 C wide measurement area range, the exact gas quantities can be recorded much more accurately. The flow volumes are shown directly on-site in the required units, thanks to the integrated pressure and temperature compensation. The measuring devices are maintenance-free. Apart from the low investment costs, the simple installation of the compact 2-wire measuring device was a decisive factor for the operating company.



CH Mix gas pipe

5. Product used

OPTISWIRL 4070 C

- 2-wire device with integrated pressure and temperature compensation
- Non-wearing, fully welded stainless steel construction with high corrosion, pressure and temperature resistance
- Optimal application reliability thanks to Intelligent Signal Processing (ISP) – stable readings, free of external perturbations
- Ready to use immediately thanks to plug & play
- Maintenance-free measuring sensor design
- PACTware available at no extra cost
- Pressure and temperature available via HART



Contact

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