

For Natural Gas Compressors, Micro Motion Coriolis Provides Best Indication of Throughput

BENEFITS

- Accurately determine throughput of compressed natural gas (CNG) compressor
- Reduced gas loss
- Only Coriolis technology can meet this need



APPLICATION

Natural gas compressor throughput is determined by measuring the gas at the inlet and outlet of the compressor (i.e., mass balance). In an ideal environment, the inlet and outlet measurements would be equal. However, in practical terms this is not achievable; for every 100 units of low-pressure gas (18 bar) at the inlet of a compressor there may be only 85–88 units of high-pressure gas (250 bar) at the outlet.

In the Indian natural gas industry, compressors are either directly owned (most common) or wet leased. Owners want to monitor compressor throughput to make sure they are not needlessly losing gas. Vendors who lease their compressors must monitor throughput because customers are discounted for the amount of gas lost to the compressor.

Since constant power is not necessarily assured in rural India, some compressors are engine-driven. These engines run on natural gas. The gas consumed by the compressor engine is an additional factor that must be accounted for when calculating compressor throughput.

CHALLENGE

The density variation is huge for natural gas at 17–18 bar (14.7 kg/m^3) versus 250 bar (64 kg/m^3). This makes compressor mass balance measurement difficult or impossible for non-Coriolis technologies.

SOLUTION

With Micro Motion Coriolis meters installed at both the inlet and outlet of a natural gas compressor, the mass balance (and therefore the throughput of the compressor) can be accurately determined. For engine-driven compressors, a third Coriolis meter can be installed to measure engine fuel consumption.

Coriolis technology allows the exact compressor throughput to be known.

www.micromotion.com



For more information:

www.EmersonProcess.com/solutions/oilgas

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Because Coriolis meters measure mass directly, there is no need for pressure or temperature compensation. There are no moving parts to wear out or break down, and Micro Motion produces Coriolis meters especially designed for CNG applications. This arrangement allows the exact throughput of a compressor to be known. The high flow accuracy of Micro Motion Coriolis meters helps operators improve process control and immediately identify where gas is being lost. Over time, gas loss data can become a predictive tool for compressor maintenance.

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