

DGF-I1 density sensor for gases



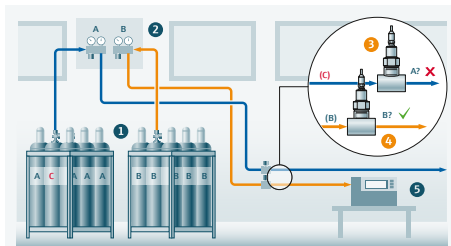
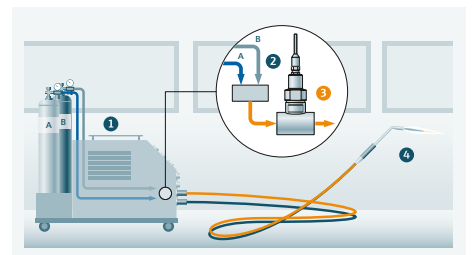
Monitor gases and gas mixtures during the process in the smallest of spaces and with minimal quantities of the medium. The sensor not only measures density, but also temperature and pressure – for precise monitoring of product quality and as a basis for determining the concentration of binary gas mixtures.

Application examples:

- Monitoring of welding gas mixtures: To ensure a reliable weld seam, the gases must be mixed in the correct ratio. Gas density data can be used to monitor the gas mixture.
- Monitoring of clean gases: Density data can be used to monitor the quality of clean gases.

Monitoring concentration of welding gas mixtures

For a strong weld seam, the gases used must be correctly mixed. However, mechanical valves can be inaccurate and leaks or mix-ups can lead to the mixing ratio no longer being correct. Up to now, it has only been possible to check the gas used by means of random sampling. With the TrueDyne sensor you can monitor the concentration of your welding gas directly in the process.



Monitoring quality of clean gases

Gases are often colorless and odorless, they can be rather expensive, and in case of mix-ups damages can occur – previously, it was only possible to check whether the right gas was being taken out of storage or introduced into a process by means of random sampling. With the density sensor from TrueDyne, you can determine the density of a gas and thus the quality directly during operation. This prevents mix-ups and rejects.

Measured variable:

- Density
- Temperature
- Pressure

Derived measured variables (customer-specific configuration):

- Concentration of binary gas mixtures
- Standard density
- Average molar mass
- Customer-specific measured variables

Permissible media:

- Hydrogen (H₂)
- Helium (He)
- Nitrogen (N₂)
- Oxygen (O₂)
- Carbon dioxide (CO₂)
- Neon (Ne)
- Argon (Ar)
- Krypton (Kr)
- Methane (CH₄)
- Propane (C₃H₈)
- Butane (C₄H₁₀)

Media that deviate from those listed above may be used after individual clarification if necessary.

Accuracy of measurement:

- Density: $\pm 0,1 \text{ kg/m}^3$
- Temperature: $\pm 0,8 \text{ }^\circ\text{C}$
- Pressure: $\pm 0,04 \text{ bar}$
- With field calibration density: $\pm 0,05 \text{ kg/m}^3$

Permitted density measurement range:

0,2...19 kg/m³

Permitted process pressure range:

0...10 bar (absolute)

Temperature conditions:

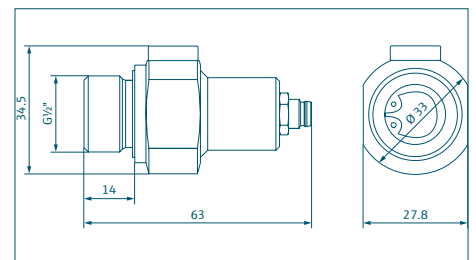
-20...+60 °C

Fluidic Interfaces:

G1/2"-thread

Electrical Interface:

Modbus RTU over RS485



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