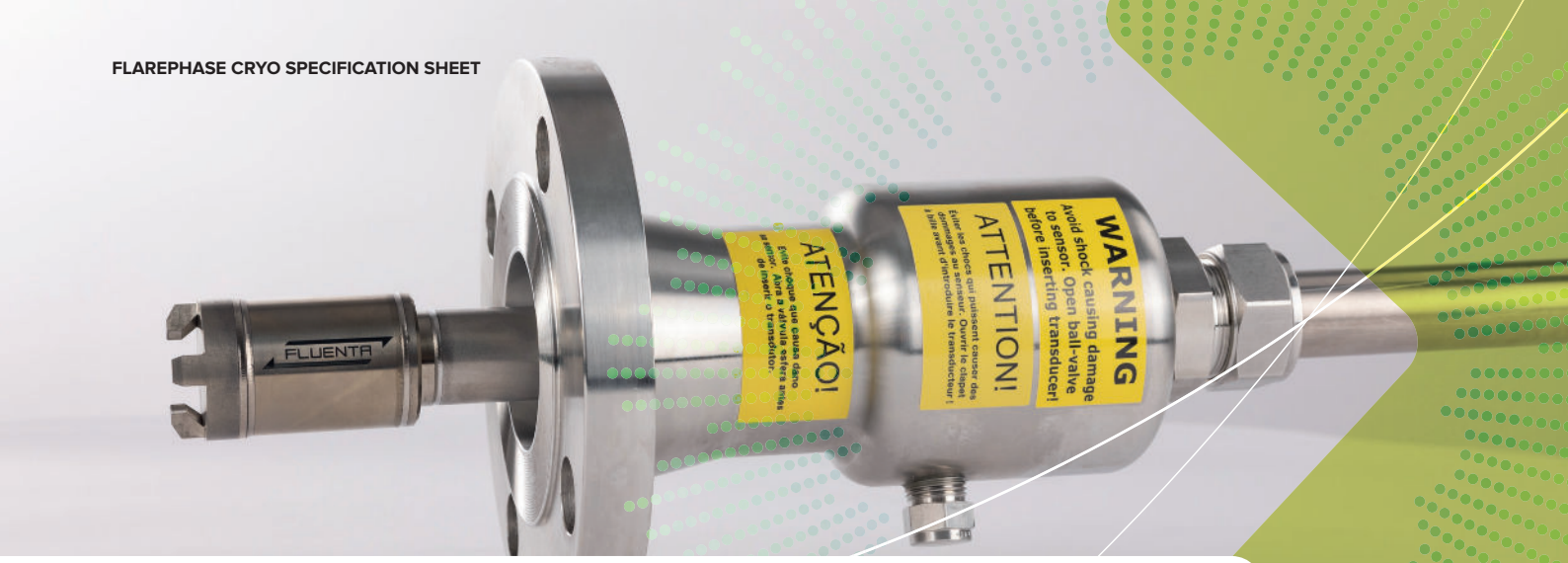


FLAREPHASE CRYO

NEXT GEN TRANSDUCERS FOR LPG APPLICATIONS

PRODUCT INFORMATION

Belonging to Fluenta's new generation of ultrasonic transducers, the FlarePhase Cryo transducer is designed to be a non-intrusive method of measurement to be used in difficult process conditions, with wildly fluctuating flow velocities and cryogenic temperatures. With an operating temperature range of -200°C to +250°C, this transducer is capable of handling extremely low temperatures as well as maintaining performance when faced with higher levels of CH_4 and CO_2, which makes it ideal for the LPG industries.

With regulation of flaring increasing along with reporting requirements becoming more demanding, the highly accurate readings provided by your FlarePhase system help to future-proof your installations and ensure that you remain compliant well into the future.

FlarePhase utilises novel techniques to monitor and adjust for the changes of transducer resonant frequency on the fly, enabling laboratory levels of accuracy in the field (up to ±0.75%).

FLAREPHASE CRYO OPERATING PRINCIPLES

How is flow measured?

The transducers work in pairs and act as both transmitters and receivers of ultrasonic signals alternatively. The time taken for the signals to reach the receiving transducer is measured in both directions, with and against the flow. The time taken for the signal to travel will be greater against the flow as compared to with the flow and while this difference in time-of-flight may only be in nano-seconds, it allows us to calculate the flow rates present in the pipe since the distance between the transducers is known.

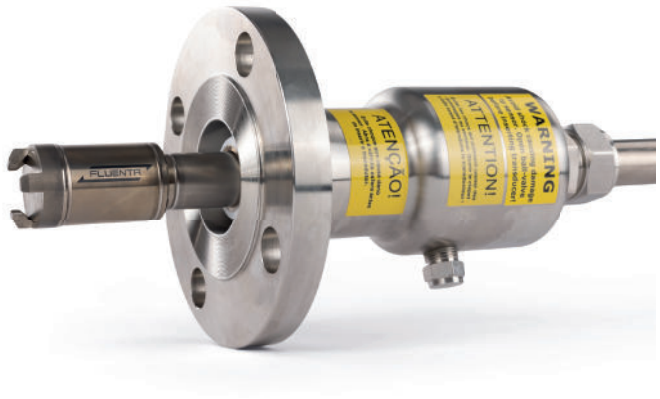
Why Ultrasonic?

Unlike other technologies, ultrasonic measurement is less impacted by the composition or cleanliness of the gas flow, which enables it to deliver good repeatability regardless of turndown ratio or temperature range. Fluenta transducers are also designed to be non-intrusive and without any moving parts which means less fouling and minimal maintenance required. With the FGM 160 flow computer being able to be installed up to 50 meters away, Fluenta transducers offer flexibility in installation in addition to being able to be removed from the line without expensive shutdowns.

What's new?

A new piezo-electric sensor made from advanced ceramics ensures that they not only have a wider temperature range, but are also able to operate at these temperature extremes for an extended period of time. New technology such as our novel "Active Phase Analysis Technology" and continuous measurement optimisation means FlarePhase can also handle difficult gas compositions, such as high levels of CO_2 and CH_4 or a combination of the two. FlarePhase transducers are also compatible with a wider range of pipe diameters from 6" to 100".

FLAREPHASE CRYO TRANSDUCER SPECIFICATIONS



Functional Characteristics

Transducer Type	Ultrasonic/time of flight/ wetted non-intrusive
Materials	Full Titanium execution (Nace compliant)
Certifications (temp range -200 to 260oC)	IECEx, ATEX, NRTL, TR-CU(pending), INMETRO
Measurement Generated	Volume and Mass flow, gas velocity, molecular weight, density, pressure, temperature
Service Requirements	Annual clean and calibration
Resolution	0.003ft/s (0.0008m/s)
Dimensions	In operation: 0.86m Retracted: 1.16m

Operating Conditions

Temperature	-200°C to +250°C (-328°F to +500°F)
Operating Pressure	11.6 to 145 psiA (0.8 to 10 barA)
Flow Velocity Range	0.03 to 120 m/s (0.1 to 394 ft/s)
Pipe Sizes	6” to 100” (above 72” needs to be discussed with Fluenta representative)
Process Connections	2” or 3”, 150# or 300# lateral flanges
Straight Pipe Needed	10 x ID Upstream 5 x ID Downstream
Transducer Installation	45° angle: centre line sensors/ run pipe
Gas Composition	Suitable for high levels of CO_2 and CH_4

For detailed addresses and worldwide presence, visit **Fluenta.com**

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Scan for more information on the Flarephase Cryo.