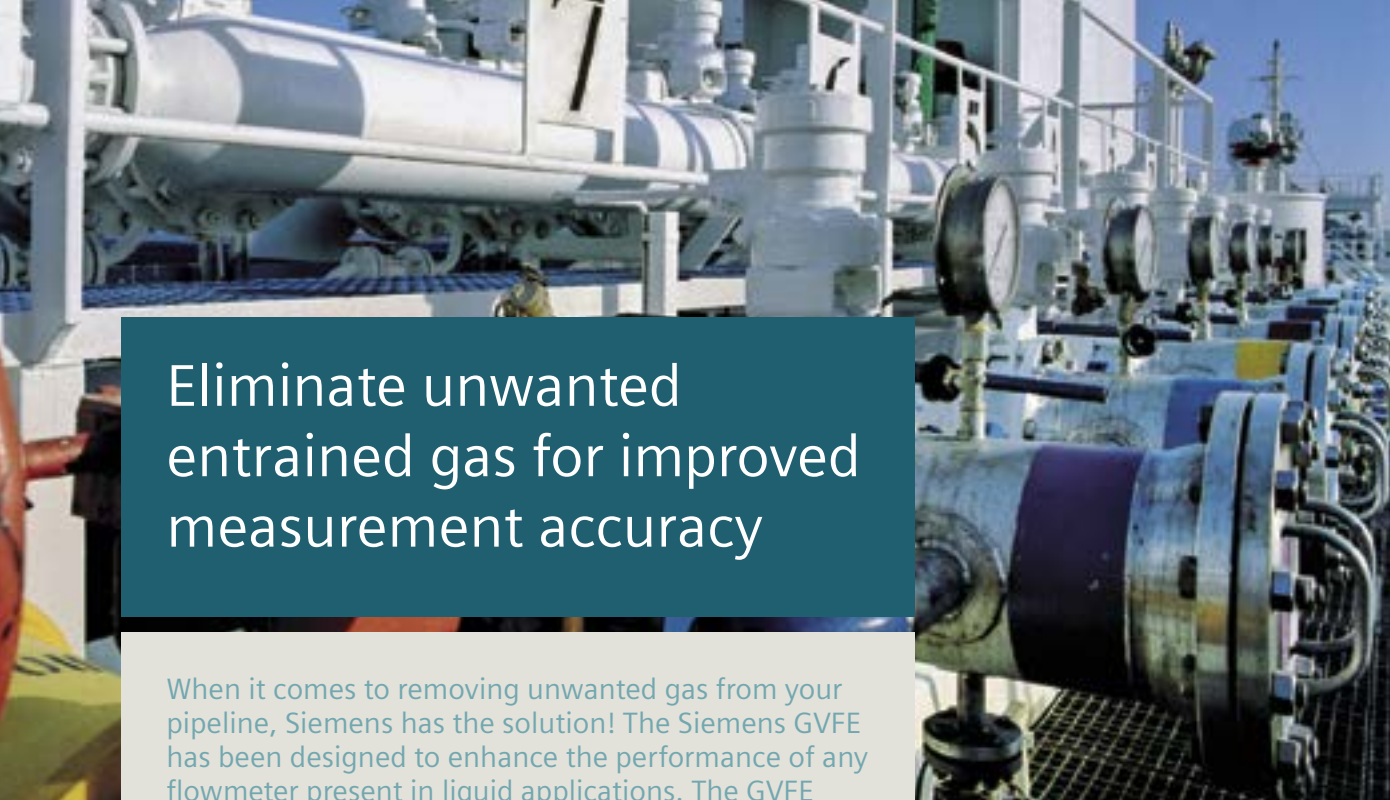**SIEMENS**

Ingenuity for life

Two-Phase Flow Gas Void Fraction Eliminator

The ideal solution for applications requiring the separation of gases from liquids for high-precision flow measurement.

siemens.com/GVFE

Eliminate unwanted entrained gas for improved measurement accuracy

When it comes to removing unwanted gas from your pipeline, Siemens has the solution! The Siemens GVFE has been designed to enhance the performance of any flowmeter present in liquid applications. The GVFE is capable of detecting and removing all types of undesirable entrained gas including bubbly, annular, slug and stratified flow.

Two-Phase Flow Gas Void Fraction Eliminator: What is it?

The Two-Phase Flow Gas Void Fraction Eliminator (GVFE) is an instrument that you can integrate into your existing pipeline set-up to remove unwanted air or gas volume to ensure that you are only measuring and paying for the liquid.

In applications where liquid flow contains unwanted entrained gas, the GVFE will remove and divert the gas under full-flow conditions.

The GVFE is designed for harsh environments encountered in the oil and gas and the chemical industries. While traditional methods may cause temporary shutdowns as a result of gas in the line, the GVFE provides single-phase flow to the meter so that it continues to stay online throughout the entire process.

Applications where you can apply the GVFE:

- Onshore/offshore
- Lease automatic custody transfer (LACT)
- Gas wells
- Refinery
- Oil wells
- Land use allocations
- Bunkering
- Wellhead and pipeline measurements
- Pipeline
- Custody transfer
- Onloading/offloading
- Barge loading
- Truck
- Railcar

How do they compare?

When compared to traditional gas eliminators, the GVFE displays significant advantages when eliminating entrained gas for precise measurements.

Traditional Gas Eliminators	Gas Void Fraction Eliminator
A reduction in velocity and a larger receiving/holding tank are required for retention time for products that have moderate to heavy concentrations of gas.	GVFE removes gas void fractions from 0–100% at full-flow without reducing product velocity or requiring large holding tanks.
A float operated valve opens to let the entrained gas out.	GVFE has no mechanical parts or float operated valves that are prone to failure.
A back pressure valve is used to increase retention time.	GVFE eliminates gas at full-flow and does not require a back pressure valve.
As the viscosity of the product increases, so does the retention time required to allow separation.	GVFE removes entrained gas and free gas at full-flow independent of viscosity.
Large gas eliminators are required to handle the surface retention involved in foaming products, such as fuel oil, diesel oil and kerosene.	GVFE eliminates foaming at full-flow with a much smaller footprint.
Fail-safe mode can stop production.	In fail-safe mode, GVFE continues production.

The ideal solution for simple to complex processes

Mechanical GVFE **Semi-Automated GVFE (DN25)** **Automated GVFE**

	Mechanical	Semi-Automated	Automated
Line Sizes	Available in line sizes DN25 to DN300 (1" to 12") to ensure a broad application fit. Additional sizes may be available upon request.		
Description	Manual control valve, manual gas release valve, no PLC or power required.	Mechanical solution with an automated control valve. Positioning control valve, positioning gas release valve, must be driven by a control value from meter; HMI option available.	Detects and removes gas content from most two-phase flow applications with up to 100% gas void fraction. Positioning control valve, positioning gas release valve, entrained gas detection and PLC required; HMI option available.
Applications	Consistent flow rates and known liquid/gas ratios (gas void fractions). Applications include: - Fuel consumption - Process applications with entrained gas due to off-gassing, flashing or cavitation	Detection of the gas void fraction is done downstream of the GVFE.	Detects and removes gas content from most two-phase flow applications with varying flow rates and gas compositions. Applications include: - Oil and gas wells - Custody transfer - Bunkering - Upstream, midstream, downstream

To determine what GVFE style would be best for your needs, please consult with one of our representatives.

How can your system benefit from the GVFE?
The GVFE offers a wide range of unique benefits not found in traditional gas eliminators:

- The only solution on the market capable of extracting entrained gas under full-flow and full-velocity conditions, making it possible to maintain system-designed flow rates and efficiency.
- Removal of entrained gas reduces corrosion and protects equipment from damage.
- Low pressure drop across the GVFE reduces pump loading and energy costs.
- Smaller footprint requiring minimal usage of space in skids or pads.
- Retrofits to existing piping systems, allowing you to leverage your previous investment in flow measurement devices.

Learn more:
siemens.com/GVFE

Siemens Process Instrumentation offers best-in-class measurement for your application.

We are your total solution provider for flow, level, pressure, temperature, weighing, positioners and more.

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