LFE pControl 2F

Backpressure Controller for process gas analyzers

Key Features

- ⇨ Eliminate pressure errors at the source
- ⇨ Quick and precise pressure control
- ⇨ Extremely wide range of gas flow
- ⇨ A single pControl-system is suitable for use with multiple gas analyzers.

Typical Applications

- ⇨ Precise measurement at constant pressure instead of insufficient or impossible pressure correction algorithms
- ⇨ Long-term stable pressure control also for gases with high corrosion potential
- ⇨ Sample gas return into process at defined higher pressure
- ⇨ Defined setpoint pressure to dispose of flammable and toxic sample gases into a flare or scrubber

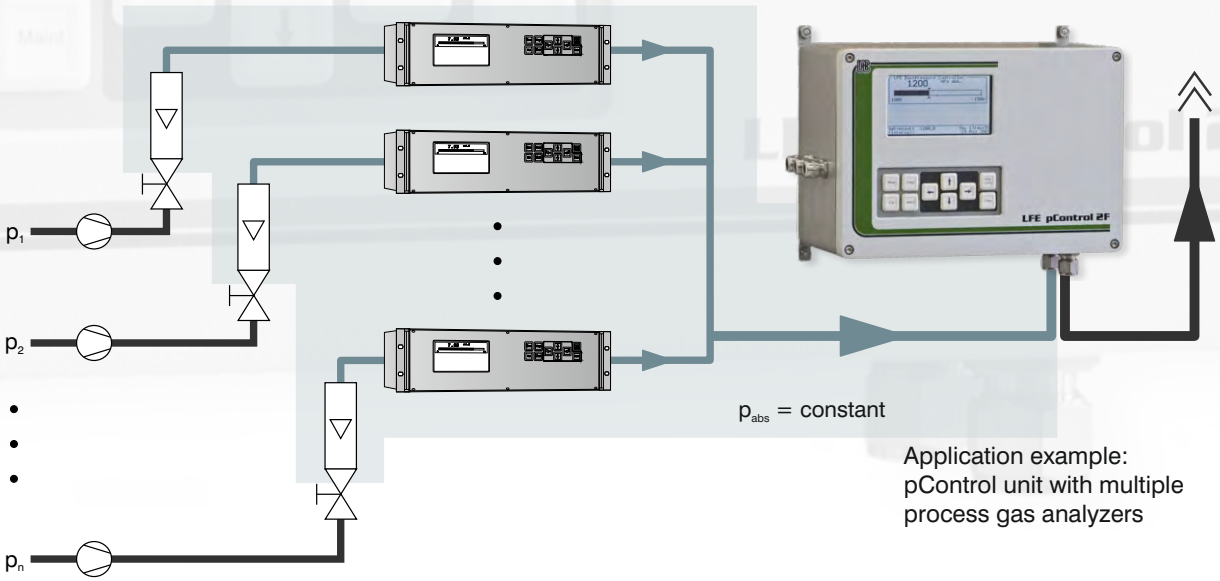
Description

In the field of gas analysis an analyzer's response is often dependent upon the sample gas pressure. Pressure dependency can occur through a number of different physical parameters simultaneously and can be difficult to impossible to correct for. The best and most accurate approach is therefore to control the absolute pressure itself. The use of an LFE pControl backpressure controller alleviates the need for complicated correction algorithms.

A further benefit of an LFE pControl backpressure controller is e.g. the return of the analyzed gases back into the process (being achieved by a defined higher pressure). Alternatively the sample gas can be fed to a flare or scrubber requiring a defined higher pressure. In this way unnecessary emissions into the environment or loss of gas can be avoided. Flammable or toxic gases can be handled appropriately. The LFE pControl backpressure controller typically operates at approximately 0.2 bars above ambient pressure (i.e. 1.2 bar absolute), but can be easily set to other operating pressures.

The specially designed control valve of the LFE backpressure controller provides for an extremely constant pressure over an extremely wide range of gas flow (e.g. from 5 ln/h up to 1000 ln/h). This allows for a single LFE pControl to be used in conjunction with a number of gas analyzers.

The piezo-resistive pressure transducer is temperature controlled to improve stability. An optional PTFE isolating diaphragm is available to improve corrosion resistance.



Application example:
pControl unit with multiple process gas analyzers

Features

- ⇨ Eliminate pressure errors at the source instead of calculated corrections
- ⇨ Adjustable, quick and precise pressure control
- ⇨ Extremely wide range of gas flow: 5 up to 1000 ln/h
- ⇨ A single pControl system for use with multiple gas analyzers
- ⇨ High corrosion resistant version for aggressive gases
- ⇨ Improved stability by temperature controlled transducer
- ⇨ Sample gas return into process instead of emissions
- ⇨ Flammable and toxic gases via flare or scrubber

Technical Data

Enclosure & electrical data

Enclosure	Purgeable cast aluminum housing for wall-mounting
Protection class	IP65
Dimensions	230 x 330 x 185 mm (HxWxD)
Weight	approx. 10 kg
Power supply	100 - 240 VAC / 50 - 60 Hz / 50 VA max.

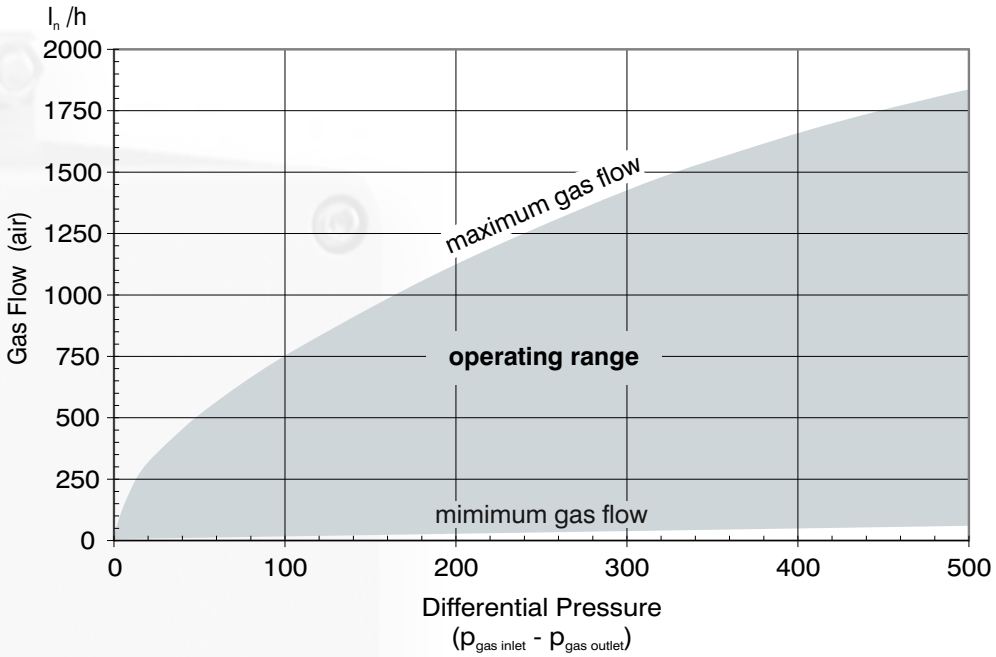
Materials in contact with sample gas

Internal gas lines	PTFE and PVDF
Control valve	PTFE and PVDF with FPM seals
Sample gas connectors	Standard: stainless steel (SS 316) Option: PVDF (in conjunction with optional PTFE isolating membrane)
Pressure transducer	Polyester, silicon and silicone compounds Note: enhanced corrosion resistance is attained with the optional PTFE isolating membrane

Operational characteristics

Measuring Range	standard: 1.0 - 1.5 bar absolute (other ranges on request)
Range of flow	Dependent upon setpoint pressure and pressure at gas outlet (see diagram below). Example: setpoint at 1.2 bar (abs.) and outlet at atmospheric pressure: Range of flow: 5 - 1000 l_n/h
Resolution	< 0.3% of range span
Reproducibility	better than ± 0.3% of range span

Technical specifications subject to change without notice



Technical Data (continued)

Data display, inputs and outputs

User Interface	LC display (40 characters x 16 lines) + bar graph Plaintext description of instrument status as well as digital status output Language: switchable between English & German
Instrument Status	Plaintext description on the LC display as well as categorization into one of the following states (NAMUR NE 107 compliant): FAILURE | MAINTENANCE REQUIRED | FUNCTION CHECK
Analog signal output	Galvanically isolated analog output Available output levels: • 0-20 mA or 4-20 mA • 0-20 mA limited (current limited from 0 to 20.5 mA) • 4-20 mA limited (current limited from 3.8 to 20.5 mA) • 4-20 mA with superimposed instrument status (NAMUR NE 43 compliant) • Test signal levels: 0 mA, 4 mA, 10 mA, 12 mA & 20 mA
Digital outputs	3 configurable, floating contacts for instrument status and/or threshold monitoring Default configuration: Instrument status (NAMUR NE 107 compliant): FAILURE | MAINTENANCE REQUIRED | FUNCTION CHECK
Analog input (optional)	0(4) - 20 mA input (galv. isolated) for optional external setpoint control

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Note:

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail.

LFE does not accept responsibility for potential errors or possible lack of information in this document.

LFE Process Analytical Instrumentation
Am Germanenring 54 D-63486 Bruchköbel / Germany
Tel. : +49 6181-495302 | Fax : +49 6181-493807 | www.LFE.de

pControl-2F_PDS_en_2018-11