LFE Gas Dosing Device LFC

As of 06-07-2017

The electronical gas dosing unit LFC injects analysis gas with a pressure controller through a laminar flow element LFE for tightness and function testing into the exhaust gas dilution air of a CVS test bench or shed chamber.

- Electronic gas module, completely paramterizable (e.g. mass flow, total volume, dosing time)
- Flow range 1:10
- Supply of a mass flow, e.g., for a CFO check in CVS systems.
- Metering of particular gas volumes (mass) in defined time periods, e.g., with Shed tests
- Local or remote operation with AK interface
- Selftest function
- Controller S320 for control, measurement and display
- Meets the requirements of accuracy of the EPA
- High-quality construction in aluminium case

Technical Description

The mass output of the analysis gas is calculated by the differential pressure of a Laminar Flow Element (LFE), the pressure and the temperature and it is controlled by a proportional valve. Due to the linear characteristic curve LFE allow for a dosing range of approx. 1:10. For comparison: a CFO has a dosing range of only 1:3 for each nozzle respectively.

With CVS applications a parameterizable mass flow of the analysis gas is adjusted. Gases are usually propane or carbon monoxide. Up to 10 flow set values can be saved and be retrieved optionally. The gas is feeded into the CVS volumetric air flow.

In shed applications the analysis gas (normally propane) is feeded into the shed by an optional purge and dose module up to a parameterizable total mass by a parameterizable dosing time. For this purpose 3 functional keys with 10 parameter sets each are available.

Specifications

Measuring range final values and accuracy

Gas dosing rate:	According to LFE up to 3000Nml / min propane	±0.6% v. M. (1:10 F.S.)
Diff. pressure:	0… 20 mbar	±0.1 %F.S.)
Abs. pressure:	0… 1200 mbar	±0.1 %F.S.)
Rel. pressure	0… 170 mbar	±0.1 %F.S.)
Temperature:	0… 50 °C	±0.2 °C

The information includes the effects of linearity, repeatability and hysteresis; temperature effect approx. 0.01%/C.

Temperature conditions

Storage:	0 .. +50 °C
Operation:	0 .. +40 °C

Media compatibility

Propane, carbon monoxide and other clean, dry, non-corrosive gases compatible with stainless steel.

Overload limits

Max. 16 bar rel. on the input
Max. 340mbar rel. on the output

Display

3 displays with 6 characters each. Height: 10 mm.
3 text displays with 4 characters each. Height: 6 mm.
The integrated function and control keys allow for a complete operation and parameterization.

Power supplies

90 .. 260 VAC, 50/60 Hz, max. 80 Watt

Interfaces

LINK	RS232 and Ethernet, system data
COMM	RS232 and Ethernet, ASCII / AK

Case

Dimensions	Total:	395 x 310 x 380 mm (WxHxD)
without fittings	Cover:	395 x 55 x 380 (WxHxD)
Material:		Aluminium
Total weight:		≈ 19 kg

Process connections

2 x AN4a, 316SS (1 x gas input, 1 x gas output)

Extent of supply

- Measuring system with gas connections in an aluminium case, completely designed and tubed
- Two hoses with stainless steel coat and QC4 adapters for the connection of gas input and output
- Optional: Purge and dose module
- Brief instruction incl. information for the start-up and description of relevant parameters
- Documentation AK operation and set of AK commands
- Spring-binder with calibration certificates and other device-specific data
- Reference manual of the basic LMF software
- CD-ROM with all documents, delivery status and terminal software with LMF-specific additional functions

Ordering Information

Order no. setup: LFC-*1-bbbb-cc-option*

bbbb	**Measuring range final value**
	Example: 0300 corresponds to 300 ml/min

cc	**Dosing gas type**
04	Carbon monoxide
10	Propane
	Other gases on inquiry

option	**(cannot be combined)**
Shed	Three additional functional keys and purge and dose module for timer-controlled injections.
Diff	Diffuser, causes a good mixing with CVS applications

The function „CFO emulation" is always available independent of an additional option.