



The electronic gas dosing unit CFO-Sx00 injects analysis gas with a pressure controller through a critical flow orifice CFO for tightness and function testing into the exhaust gas dilution air of a CVS test bench.

- CVS-Application with CFO Check
- Accuracy standards of EPA
- Electronical pressure control
- Stable dosing with critical orifices
- Practical integration in aluminium case
- Factory calibration certificate included

Technical Description

The gas is led into the air volume flow with a connection tube with distribution block at the end for mixing it homogeneously. The concentration of the mixed gas is measured by analysis devices and certifies the tightness of the CVS test bench.

Gases are usually propane and carbon monoxide. The gas mass outlet depends on the inlet pressure and temperature of the orifice. Through variation of the input pressure the dosing output flow can be changed. The minimum inlet pressure must be at least 1 bar gauge pressure above atmospheric pressure, with that there's a dosing turn down of approx. 1:3 possible. Higher dosing ranges are possible if a second orifice is integrated. A CFO device with a second orifice can realize a dosing turn down of up to 1:10.

Specifications

The gas flow is set with a gas tight pressure regulator by controlling the inlet pressure between 1 – 7 bar across the orifice manually with type 8601 or electronically type 5866 optionally. The CFO's orifices are fixed in a special orifice bracket, protected through a fine filter and were driven in critical operation. The sizing of the orifices can be chosen with a full scale flow range between 0,05 up to 10 Sl/min with a turn down of 1:3 per each orifice. The system is delivered with a factory calibration certificate, completely configured with gas connections and two stainless steel mantled tubes to connect gas inlet and outlet.

Media Compatibility

Propane, carbon monoxide and further clean, dry, non corrosive gases which are compatible with stainless steel.

Full Scale Measurement Range and Accuracy

Gas dosing volume	0 – 5 to 10000 Sml/min	±0.5 %F.S.
Diff. pressure	0 – 7 bar overpressure	±0.3 %F.S.
Absolute pressure	0 – 1,2 bar	±0.1 %F.S.
Temperature	0 – 50°C	±0.2°C

Linearity, repeating accuracy and hysteresis included
Temperature effect approx. 0,01%/°C

Temperature Conditions

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

Overpressure Limits

110 % of pressure full scale range max. 7,5 bar gauge.

Display

Controller S320 as front panel mounted Housing acc. DIN 43700 with six independent red LED display lines, 3 x 6 digits LED displays (10 mm) and 3 x 4 digits text-LED displays (6 mm). With the integrated five function keys the complete operation and setting of parameter is possible.

Supply

Power adapter 110-260VAC, 50/60Hz, 24VDC max. 100W

Interfaces

Ethernet, RS 232 and 2x RS 485

Housing

Dimensions: DxWxH: 373x358x300 mm
cover H: 50 mm

Material: Aluminium profile case

Weight: ≈11 kg

Process Connection

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

Necessary Sizing Data

For sizing the following information are needed:

CVS Flow Range

Maximum air flow of the CVS test bench dependent of the air volume flow of the integrated CVS venturi nozzles.

Gas dosing type

Used type of the analysis gas and expected concentration measurement range regarding the analysis devices.

Dosing gas volume flow and concentration

Maximum of the volume flow and concentration of the analysis gas correlating with the air flow as carrier gas.

Ordering Information

Part Number Structure: CFO-Sx00-MR-GT-PC

Sx00

S100

S200

-MR

-0300

-GT

-C3H8

-CO

-PC

-MC

-PC

CFO Dosing Unit-Model

CFO with one critical orifice

CFO with two critical orifices

Measuring range limit in Nml/min:

300 Nml/min for example

Dosing gas type:

Propane

Carbon monoxide

Option Pressure Control

Manual Pressure Controller type 8601

Electronical Pressure Controller type 5866

Part-No.

SS-TH4-AS4-
AS4-79"

Accessory

Flexible stainless steel mantled PTFE-tube, length: 79" (200cm), connections: 1/4" AN i x 1/4" AN i, pressure proofed up to 210 bar (3000 PSI)