

DB05

Thermal Mass Flowmeter and Controller for Gases

- measurement is independent of pressure and temperature
- measuring ranges from 0,5 Nml/min...450 Nl/min
- compact design, inlet sections not necessary
- high accuracy, low response time
- analogue inputs and outputs for setpoint and actual value, serial interface
- measuring span up to 1:100
- materials: aluminium or stainless steel



Description:

The DB05 thermal mass flow meter and controller is a modular measuring system for measuring and controlling the mass flow of gases. The device is optionally available as a pure flow meter or with integrated control valve with PI control behaviour.

As standard, the DB05 contains analogue current or voltage signals for the instantaneous flow rate and, in the controller version, an analogue input for setpoint specification. A measured value display is available as an option. A variety of non-aggressive gases with measuring ranges from 0...25 ml/min to 0...450 l/min can be measured.

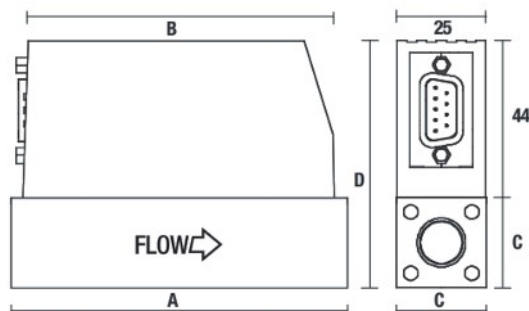
Typical applications:

Due to the modular design, the position-independent installation and the simplest cleaning without recalibration, the DB05 can be used for a wide variety of applications such as analytical instruments, in the semiconductor industry, for compressed air systems, lasers, welding systems or fuel cells. Depending on the application, the instrument can be supplied with an aluminium or stainless steel housing and with a standard accuracy of 1 % or as a precision instrument with 0.3 % accuracy.

Models:

- DB05.MS:** mass flowmeter
standard accuracy. 1 % of FS, dynamic 1:50
- DB05.CS:** mass flowmeter and -controller
standard accuracy. 1 % of FS, dynamic 1:50
- DB05.MH:** mass flowmeter
increased accuracy 0,3 % of FS + $\pm 0,5$ % of m.v.
dynamic: 1:100
- DB05.CH:** mass flowmeter and -controller
increased accuracy 0,3 % of FS + $\pm 0,5$ % of m.v.
dynamic: 1:100

Dimensions:



Version	Connection	A [mm]	B [mm]	C [mm]	D [mm]
DB05.M..	G 1/4 female	94	87	25	69
DB05.M..	G 1/2 female	145	87	35	79
DB05.C...	G 1/4 female	124	117	25	69
DB05.C...	G 1/2 female	170	117	35	79

Materials:

- DB05.x.x.A:** aluminium housing anodized,
PBT sensor,
FKM seal (EPDM on request)
- DB05.x.x.E:** stainless steel housing, electropolished,
PBT sensor,
FKM seal (EPDM on request)

Technical Data:

- Oper. pressure range:** 0,2...11 bar abs.
- Medium temperature:** 0...50 °C
- Response time:** < 50 ms
- Power supply:** 18...30 VDC
- Output signal analogue:** 4...20 mA, 0...10 V, 0...5 V
- Output signal digital:** optional: RS-485,
Modbus RTU (Slave), ProfiBus
- Electrical connection:** D-Sub-plug, 9-pins
- Mounting position:** up to 5 bar: any,
from 5 bar: horizontal
- Dynamic:** MS/CS 1:50, MH/CH 1:100
(measuring range span)
- Repeatability:** 0,2 % of FS
- Mounting position:** any, from 5 bar horizontal
- Protection class:** IP 50

Order Code:

Order number: DB05. MS. 01. A. L. 1. A4. 0

Thermal mass flowmeter and controller for gases

Models:

- MS = mass flowmeter, standard accuracy
1 % of FS
- CS = mass flowmeter and controller,
standard accuracy 1 % of FS
- MH = mass flowmeter, increased
accuracy $\pm 0,3$ % of FS
and $\pm 0,5$ % of m.v.
- CH = mass flowmeter and controller,
increased accuracy $\pm 0,3$ %
of FS & $\pm 0,5$ % of m.v.

Measuring range standard accuracy, dynamic 1:50 (air, 0 °C, 1013 mbar):

- 01 = 0,5...25 Nml/min, G 1/4 female thread
- 02 = 1...50 Nml/min, G 1/4 female thread
- 03 = 2...100 Nml/min, G 1/4 female thread
- 04 = 4...200 Nml/min, G 1/4 female thread
- 05 = 5...500 Nml/min, G 1/4 female thread
- 06 = 0,02...1 Nl/min, G 1/4 female thread
- 07 = 0,04...2 Nl/min, G 1/4 female thread
- 08 = 0,1...5 Nl/min, G 1/4 female thread
- 09 = 0,2...10 Nl/min, G 1/4 female thread
- 10 = 0,4...20 Nl/min, G 1/4 female thread
- 11 = 0,5...50 Nl/min, G 1/4 female thread
- 12 = 0,5...50 Nl/min, G 1/2 female thread
- 13 = 2...100 Nl/min, G 1/2 female thread
- 14 = 4...200 Nl/min, G 1/2 female thread
- 15 = 9...450 Nl/min, G 1/2 female thread

(„MS“ and „CS“ only)

S = special measuring range
at “increases accuracy”: measuring range
dynamik: 1:100
(example: range 03 = 1...100 Nml/min)

Materials:

- A = aluminium housing
E = stainless steel housing

Medium:

- L = standard medium: air
- N = standard medium: N₂
- O = standard medium: O₂
- H = helium He
- W = hydrogen H₂
- A = argon Ar
- C = carbon dioxide CO₂
- M = methane CH₄
- P = propane C₃H₈
- S = other media
(real gas calibration, please specify in plain text)

Display:

- 1 = without LCD on site display
- LCD = with LCD on site display

Output signals:

- A4 = 4...20 mA
- V10 = 0...10 V
- V5 = 0...5 V
- 9 = special signals

Options:

- 0 = without
- 9 = please specify in plain text

Options:

- ProfiBus
- calibration protocol