Modular, compact Inline Flowmeter

for compressed air and gases

measuring • monitoring • analysing

KME

- Measuring range: 0.2 - 76.3 … 0.6 - 212 Nm^3/h
- Accuracy: ±3 % of reading + 0,3 % of full scale
- p_{max}: 16 bar / PN16
- Temperature: -20 … +60 °C
- Connections: BSP and NPT Thread material: aluminium
- Pulse, analogue, swithing output
- Optional display
- Modular design

S5

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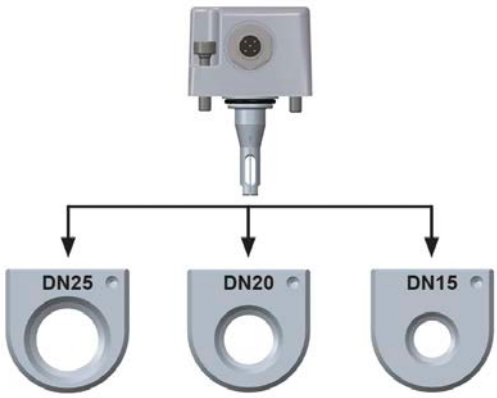
KOBOLD Messring GmbH
Nordring 22-24
D-65719 Hofheim/Ts.
Head Office:
+49(0)6192 299-0
+49(0)6192 23398
info.de@kobold.com
www.kobold.com



Description

The flowmeter KME is dedicated for accurate metering and monitoring of compressed air and technical gases.

With three different gauge mounting blocks, one and the same transmitter unit can be installed on DN 15, DN 20 and DN 25 pipes. The pipe size can easily be set using the display or the configuration software.

After installing the mounting block the flowmeter KME can be mounted and demounted without opening the pipe. Therefore the KME is suitable for short time measurements as well as for mobile use. The delivered plug allows an operating status even without mounted flowmeter.

The thermal measuring principle and the well-proven hot film sensor element lead to best long-term stability and fast response time.

Outstanding measuring accuracy, even in the lower measuring range is achieved by an application-specific multi-point factory adjustment, which is performed at 7 bar. This allows reliable leak detection and corresponding energy savings. The construction is optimized for easy installation and maintenance.

The KME is user configurable and can be easily adapted to any measuring task. The configuration can be set either using the optional display and push buttons or with the free configuration software.

Applications

- Compressed air consumption measurement
- Flow measurement of technical gases (N_2, Ar, CO_2, He)
- Nitrogen generators
- Leak detection

Techncal Details

Measuring values

Flow

Measuring units:	m^3/h, m^3/min, l/min, l/s, kg/h, kg/min, m/s, SCFM, ft/min, °C, °F
Standard contitions factory setting:	1013,25 mbar, 0°C (configurable)
Measuring range (in air):	DN 15: 0,2 ... 76,3 Nm^3/h DN 20: 0,4 ... 135,6 Nm^3/h DN 25: 0,6 ... 212 Nm^3/h
Accuracy (in air at 7 bar [abs.] and 23 °C):	± 3 % of reading + ± 0,3 % of full scale
Temperature coefficient:	± 0,25 % of reading / °C deviating from 23 °C
Pressure coefficient:	+ 0,5 % of reading / bar deviating from 7 bar
Response time t_{90}:	< 2 s
Measuring rate:	0,1 s

Temperature

Measuring range:	-20 ... 60 °C
Accuracy (at 20 °C and flow > 0,5 Nm/s):	± 0,7 °C

Outputs

Analogue output (scaleable):	0 - 20 mA or 4 - 20 mA R_L < 500 Ω
Switching output:	DC PNP, max. 100 mA, V_{drop} < 2,5 V Configurable: N / C or N / O, hysteresis, window
Pulse output:	Consumption meter, pulse length 0,02 ... 2 s
Consumption interface:	USB

General

Power supply:	18 - 30 V_{DC}
Current consumption (max.):	120 mA or 2.5 W (with display) 60 mA or 1.6 W (without display)
Operation pressure (max.):	16 bar / PN 16
Ambient temperature:	0 ... 50 °C (with display) -20 ... 60 °C (without display)
Medium and starage temperature:	-20 ... 60 °C
Humidity:	0 ... 100 % rH, non-condensing
Medium:	compressed air, nitrogen, helium, CO_2, argon
Electrical connection:	plug M12x1 4-pol.
Electromagnetic compatobility:	EN 61326-1 industrial environment, EN 61326-2-3

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Technical Details (continuation)

Material:

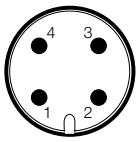
Housing:	polycarbonate
Sensor tube:	stainless steel 1.4404
Sensor head/ sensor element:	stainless steel 1.4404 / glass
Mounting block:	anodized aluminium
Protection housing:	IP 65
Display (optional):	currant value and consumption, 90° rotatable, intuitive operation

[1] Factory setting of the output see manual.

[2] The tolerance specifications include the uncertainty of the factory calibration with a coverage factor k=2 (2 x standard deviation). The tolerance was calculated in accordance with EA-4/02 following the GUM (Guide to the Expression of Uncertainty in Measurement).

[3] The flow meter is factory adjusted at 7 bar (abs). At operating pressure other than 7 bar (abs), the error can be corrected by entering the actual system pressure (via display menu or with configuration software).

Connection



M12 plug on device

Analogue / switching / pulse output
1 ... V+
2 ... Output 1
3 ... GND
4 ... Output 2

The output signal is freely selectable and scalable by the user:
Output 1: Analogue [mA] or switching output
Output 2: Pulse output or switching output

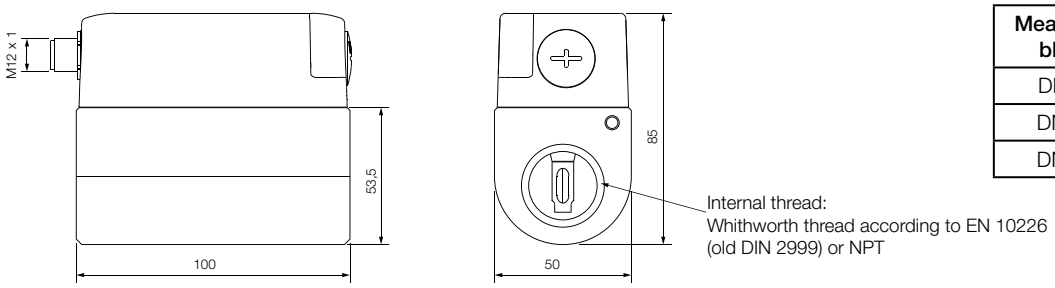
Order Details (Example: **KME-715R0L1NQ2**)

Model	Material mounting block	Measuring range / mounting block	Connection	Display	Gas type
KME-	**7** = aluminium	**15** = 0,2 ... 76,3 Nm³/h (air), DN 15 **20** = 0,4 ... 135,6 Nm³/h (air), DN 20 **25** = 0,6 ... 212 Nm³/h (air), DN 25	**R** = BSP thread **N** = NPT thread	**0** = without display **1** = with display	**L** = air **N** = nitrogen **C** = CO_2 **H** = helium **A** = argon

Order Details (continuation)

Unit	Physical size output 1	Physical size output 2	Output 1 / Output 2
1 = SI units **2** = US units	**N** = Standard volume flow (**standard**) **T** = Temperature (°C) **M** = Mass flow (kg/h) **V** = Standard flow	**Q** = consumption (**standard**)	**2** = switching /counting pulse output **3** = analogue output 0 - 20 mA / counting pulse output **4** = analogue output 4 - 20 mA / counting pulse output (**standard**)
		T = Temperature **M** = Mass flow (kg/h) **V** = Standard flow **N** = Standard volume flow	**1** = 2 x switching output **7** = analogue output 0 - 20 mA / switching output **8** = analogue output 4 - 20 mA / switching output

Dimensions [mm]



Measuring block	Thread Rp or NPT
DN 15	½"
DN 20	¾"
DN 25	1"

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