All-Metal Flow Meters, Switches and Counters

- Measuring range:
  2.5 - 25 to 10 000 - 100 000 L/h
  Water
  0.07 - 0.7 to 60 - 600 m^3/h
  Air (20 °C, 1.013 bar)
- Accuracy class: 1.6
- p_{max} PN 40,
  t_{max} -80 to +400 °C
- Connection:
  Flange DN 15 to DN 100
- Material:
  Stainless steel 1.4404,
  PTFE, hastelloy
- Option: Contacts,
  analogue output, totalizer

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Model:
KDM

01/0505/Ko/10

Description

The KOBOLD flow meter model KDM for liquids, gases and vapours is an all-metal flow meter based on the suspended float principle. Due to its very rugged design it is particularly suited for difficult applications. The elevation of the float, which depends on the flow rate, is transferred to the indicator scale by means of magnetic measured-value transfer. The instrument must be installed vertically and the direction of flow must be upwards.

Other advantages

- Rugged all-metal design
- Electrical teletransmission of measured data (option)
- Float damping (optional, can be retrofitted)
- Low pressure loss

Damping (optional, can be retrofitted)

Damping can be installed for nominal sizes DN 15 to DN 80. Damping should always be installed, where unstable flow conditions prevail; damping should always be installed for gas metering with an operating pressure less than 300 mbar. Material: Al_2O_3 (ceramics)

EX version (option)

The flow meter KDM is also suited for service in hazardous areas (EEx ia II C T6...T3 and
EEx ib II C T6...T3).

Limit contacts (option)

One or two contacts can be fitted. These contacts are slotted proximity switches. Both contacts can be slid across the entire measuring range; the set values are indicated.

An isolation and switch unit is required to operate one or both contacts (model REL-6000 Z2 Accessories brochure).

Nominal voltage:	8 V_{DC}
Current consumption:	≥ 3 mA or ≤ 1 mA (depending on the output state)
Electrical characteristic values:	Acc. to DIN 19234 (NAMUR)

An isolation and switch unit model REL-6000 is required for the ex area.

Analogue output 4 - 20 mA (optional)

Using state-of-the-art magnetic field sensors and reliable micro electronics a rugged module has been developed that is fitted in the indicator without mechanical transmission. The module is calibrated at the factory. A replaceable, electronic chip allows easy conversion to other measuring substances.

Counters (optional)

Auxiliary power:	16 - 30 V_{DC}
Current consumption:	4 - 22 mA
Environment:	-25 to +65 °C

Six-segment display (fitted in the indicator)

No data loss with power failure

Technical Details

Measuring tube:	Stainless steel, 1.4404
Float:	Stainless steel, 1.4404
Flange:	Stainless steel, 1.4404
Fittings:	Stainless steel, 1.4404
Medium temperature:	-80...+200 °C -80...+175 °C (DN 80 / DN 100 and analogue output) -80...+400 °C (with option: T)
Ambient temperature:	-25...+60 °C -25...+120 °C (without additional features)

Please specify medium temperatures > 150 °C, as a heat-resistant cable is required.

Nominal pressure:	PN 40 (DN 15 to DN 50) PN 16 (DN 80, DN 100) Option PN 40, (DN 80/DN 100)
Installation position:	Vertical, upward flow
Accuracy class:	1.6 according to VDI/VDE guideline; 3513, sheet 2
Protection:	IP 65
Mechanical connection:	Flange form B1 EN 1092-1 (standard) Hygienic thread according to DIN 11851 or internal thread
Flange sizes:	DN 15, DN 25, DN 50, DN 80, DN 100
Option:	Hastelloy C4 (2.4610), PTFE

Analogue output (optional)

Auxiliary power:	12.7 to 30 V_{DC}
Output:	4 - 20 mA, 2-wire
Repeatability:	< 0.1% f. s.
Load:	R=(U_B-12.7 V) /20 mA
Storage temperature:	-25 °C to 80 °C
Explosion protection:	EEx ia IIC T6 according to EN 50014 and EN 50020:

Intrinsically safe circuits with special maximum values (upon request).

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Order Details medium water (Example: **KDM-V15 W01 K0 0**)

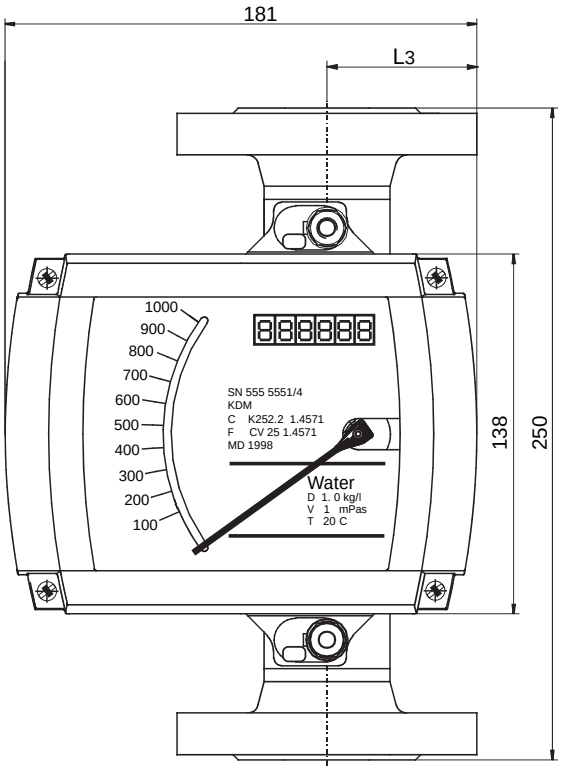
Measuring range water L/h	Flange	Max. pressure loss [mbar]	Order number stainless steel	Additional features	Option
2.5 - 25	DN 15	26	**KDM-VD15W01...**		
4 - 40	DN 15	26	**KDM-VD15W02...**		
6.3 - 63	DN 15	26	**KDM-VD15W03...**		
10 - 100	DN 15	26	**KDM-VD15W04...**		
16 - 160	DN 15	26	**KDM-VD15W05...**		
25 - 250	DN 15	26	**KDM-VD15W06...**		
40 - 400	DN 15	28	**KDM-VD15W07...**	**...A0...** = standard indicator	
63 - 630	DN 15	32	**KDM-VD15W08...**	**...AE...** = standard indicator with ATEX	
63 - 630	DN 25	32	**KDM-VD25W09...**	**...H0...** = 1 contact	**...0** = without option
100 - 1000	DN 25	33	**KDM-VD25W10...**	**...HE...** = 1 Ex contact	**...T** = displaced indicator for > 200 °C
160 - 1600	DN 25	34	**KDM-VD25W11...**	**...I0...** = 2 contacts	**...D** = damping to DN 80
250 - 2500	DN 25	38	**KDM-VD25W12...**	**...IE...** = 2 Ex contacts	**...P** = PN 40 for DN 80 and DN 100
400 - 4000	DN 25	45	**KDM-VD25W13...**	**...L0...** = 4/20 mA output	**...Y** = oil-free and nonfat
630 - 6300	DN 25	103	**KDM-VD25W14...**	**...LE...** = 4/20 mA Ex output	
630 - 6300	DN 50	74	**KDM-VD50W16...**	**...K0...** = 4/20 mA output and counter	
1 - 10 m³/h	DN 50	77	**KDM-VD50W17...**	for more options see pricelist	
1.6 - 16 m³/h	DN 50	84	**KDM-VD50W18...**		
2.5 - 25 m³/h	DN 50	104	**KDM-VD50W19...**		
2.5 - 25 m³/h	DN 80	68	**KDM-VD80W23...**		
4 - 40 m³/h	DN 80	89	**KDM-VD80W24...**		
6.3 - 63 m³/h	DN 100	120	**KDM-VD1HW25...**		
10 - 100 m³/h	DN 100	220	**KDM-VD1HW26...**		

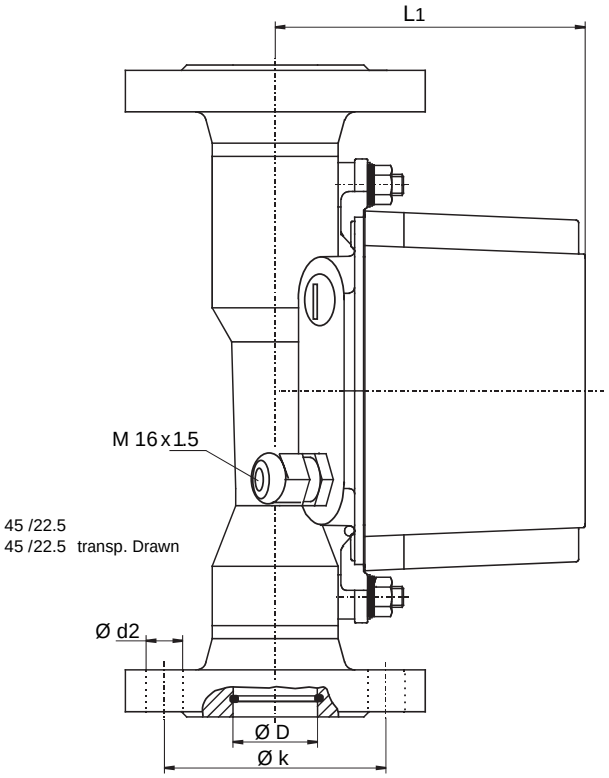
Order Details medium air (Example: **KDM-V15 L01 K0 0**)

Measuring range air m^3_N/h	Flange	Max. pressure loss [mbar]	Order number stainless steel	Additional features	Option
0.07 - 0.7	DN 15	21	**KDM-VD15L01...**		
0.1 - 1	DN 15	21	**KDM-VD15L02...**		
0.15 - 1.5	DN 15	21	**KDM-VD15L03...**		
0.22 - 2.2	DN 15	21	**KDM-VD15L04...**		
0.36 - 3.6	DN 15	21	**KDM-VD15L05...**		
0.55 - 5.5	DN 15	21	**KDM-VD15L06...**		
1 - 10	DN 15	21	**KDM-VD15L07...**		
1.4 - 14	DN 15	22	**KDM-VD15L08...**		
1.4 - 14	DN 25	24	**KDM-VD25L09...**	**...A0...** = standard indicator	
2.2 - 22	DN 25	24	**KDM-VD25L10...**	**...AE...** = standard indicator with ATEX	
3.5 - 35	DN 25	25	**KDM-VD25L11...**	**...H0...** = 1 contact	**...0** = without option
5.0 - 50	DN 25	25	**KDM-VD25L12...**	**...HE...** = 1 Ex contact	**...T** = displaced indicator for > 200 °C
8.0 - 80	DN 25	30	**KDM-VD25L13...**	**...I0...** = 2 contacts	**...D** = damping to DN 80
11 - 110	DN 25	78	**KDM-VD25L14...**	**...IE...** = 2 Ex contacts	**...P** = PN 40 for DN 80 and DN 100
17 - 170	DN 25	103*	**KDM-VD25L15...**	**...L0...** = 4/20 mA output	**...Y** = oil-free and nonfat
8 - 80	DN 50	13	**KDM-VD50L16...**	**...LE...** = 4/20 mA Ex output	
11 - 110	DN 50	13	**KDM-VD50L17...**	**...K0...** = 4/20 mA output and counter	
15 - 150	DN 50	13	**KDM-VD50L18...**	for more options see pricelist	
18 - 180	DN 50	14	**KDM-VD50L19...**		
23 - 230	DN 50	60	**KDM-VD50L20...**		
35 - 350	DN 50	69	**KDM-VD50L21...**		
60 - 600	DN 50	104	**KDM-VD50L22...**		
35 - 350	DN 80	16	**KDM-VD80L23...**		
40 - 400	DN 80	16	**KDM-VD80L24...**		

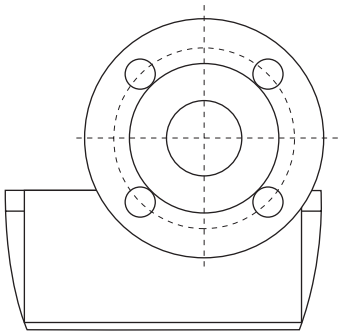
*300 mbar with damping

Dimensions





Hole diagram



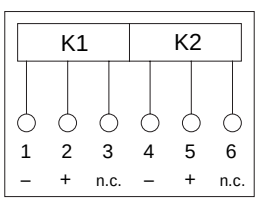
Other options

- Measuring range lining PTFE
- Measuring tube in hastelloy

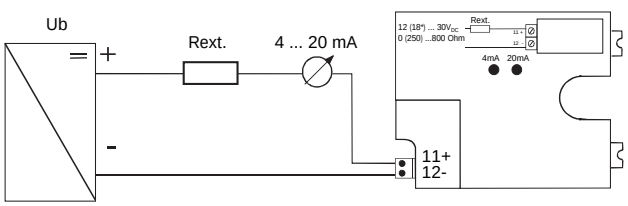
Flange	PN	L1 [mm]	Ø D [mm]	Ø k [mm]	Ø d2 [mm]	L3 [mm]
DN 15	40	107	20	65	4 x 14	70.5
DN 25	40	119	32	85	4 x 14	70.5
DN 50	40	132	65	125	4 x 14	70.5
DN 80	16	148	89	160	8 x 18	57.5
DN 100	16	158	114	180	8 x 18	57.5

Electrical connection

Contacts



Analogue output



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