

KDM - All-Metal Armored Flowmeters



Benefits and Features

- Short Installation Length
- SS, PTFE or Hastelloy Wetted Parts
- Analog Output Available
- - 110 °F to + 390 °F Temperature Range (Higher on Request)
- Pressures to 300 lb ANSI (Higher on Request)

General Description

The KDM variable area flow meter is ideal for difficult applications requiring high pressure operation or low pressure loss. Its all metal, armored design is available in stainless steel, PTFE clad stainless steel, or Hastelloy C4. In standard configuration, the KDM is a purely mechanical meter. However, electronic limit switches or an analog flow transmitter may be added if so desired. Switches and analog outputs are available which operate in an intrinsically safe mode and may be used with explosive gases in intrinsically safe installations. The indicator translates the linear motion of the float into an indication via a direct magnetic coupling.

Specifications

Accuracy

Metal Versions: ± 1.6% F.S.

PTFE Version: ± 2.5% F.S.

Fittings: ANSI Flanges 150 lb or 300 lb RF

Wetted Parts

Standard: 316-Ti SS (Viton seal in NPT versions)

Optional: PTFE clad SS or Hastelloy C4

Damping System: Sapphire

Operating Temperature

Ambient: - 10 to 140 °F

Medium

No Options: - 110 to 390 °F

With Options: - see table

PTFE Clad: - 110 to 160 °F

High temperature versions on request

Maximum Pressure

NPT Thread: 580 PSIG

Flanged: Per ANSI B16.5

High pressure units on request

Electrical Characteristics

Switches (optional)

Standard

Type: Proximity, 3-wire

Power: 10-30 VDC

Output: PNP, 100mA Max.

Intrinsically Safe

Type: Proximity

Output: NAMUR

Rating: EEx ia IIC T6

Analog Output (optional)

Type: 2-wire 4-20 mA

Input (Vcc): 12.7 to 30 VDC

Max. Load (Ω): Vcc-12 V/0.02 A

Resolution: + 0.5% F.S.

Repeatability: + 0.1% F.S.

Rating: EEx ia II C T6 EEx ib II C T6

(applies to intrinsically safe version only)

Housing: NEMA 4

Counter: 6-Digit LED resettable (M9 indicator only)

Optional Steam Jacket

Fittings:

ANSI Flange

NPT

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Meter Selection

The KDM flow meter series can be calibrated to provide direct reading scales for a variety of media. To do a custom calibration, We require information on media density, viscosity, the operating temperature and the operating pressure. It is required that option -D, the damping mechanism, be added for all gas applications whose downstream pressure is less than 7 PSIG. This is necessary to prevent unstable operation of the float. Addition of the damping mechanism increases the meter's pressure loss to 4.3 PSI. Once an appropriate range has been selected, refer to the Ordering Table on the next page and assemble a part number.

KDM Flow Ranges

Fitting Size ANSI Flange	Water Ranges		Air Ranges		Measuring Range Code
	Range (GPM)	Pressure Loss (PSI)	Range (SCFM)	Pressure Loss (PSI)	
½"	0.011– 0.11	0.37	0.041– 0.41	0.30	01
	0.018– 0.18	0.37	0.059– 0.59	0.30	02
	0.028– 0.28	0.37	0.088– 0.88	0.30	03
	0.044– 0.44	0.37	0.13 – 1.3	0.30	04
	0.070– 0.70	0.37	0.21 – 2.1	0.30	05
	0.11 – 1.1	0.37	0.32 – 3.2	0.30	06
	0.18 – 1.8	0.40	0.59 – 5.9	0.30	07
	0.28 – 2.8	0.46	0.82 – 8.2	0.31	08
1"	0.28 – 2.8	0.46	0.82 – 8.2	0.34	09
	0.44 – 4.4	0.47	1.3 – 13	0.34	10
	0.70 – 7.0	0.49	2.1 – 21	0.36	11
	1.1 – 11	0.54	2.9 – 29	0.54	12
	1.8 – 18	0.64	4.7 – 47	0.64	13
	2.8 – 28	1.47	6.5 – 65*	4.30	14
-	-	10 –100*	4.30	15	
2"	2.8 – 28	0.93	4.7 – 47	0.19	16
	4.4 – 44	1.00	6.5 – 65	0.19	17
	7.0 – 70	1.06	8.2 – 82	0.19	18
	11 –110	1.39	12 –120	0.64	19
	-	-	16 –160*	4.30	20
	-	-	24 –240*	4.30	21
	-	-	37 –370*	4.30	22
3"	11 –110	0.97	24 –240	0.23	23
	18 –180	1.27	29 –290	0.27	24
4"	28 –280	1.72	-	-	25
	44 –440	3.15	-	-	26

* Units whose range is marked with an asterisk come standard with damping mechanism.

Operating Temperature with Options, Non-Hazardous Location Service

Meter Size	Selected Options	Ambient Temperature	
		< 100 °F	< 140 °F
½"	H0, I0, L0 K0	390 °F 392 °F	350°F 176 °F
1", 2"	H0, I0, L0 K0	392 °F 356 °F	129 °F 167 °F
3", 4"	H0, I0, L0 K0	390 °F 302 °F	302 °F 158 °F

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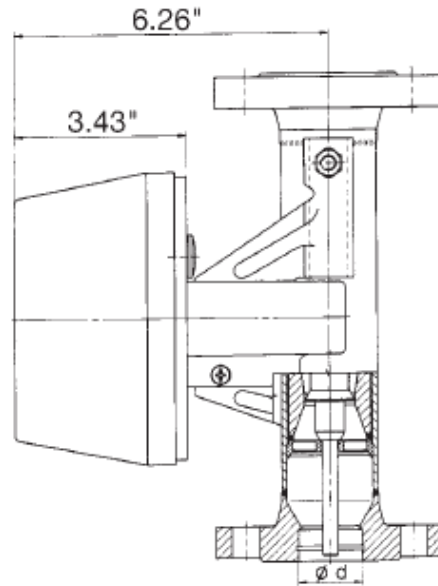
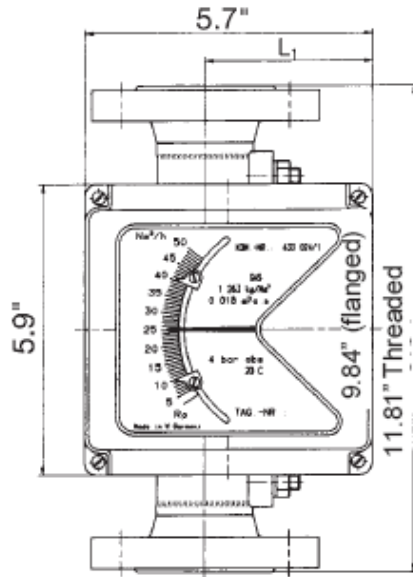
Ordering Information

KDM Options	
KDM	= Armored Flow Meter
-V -T -C	Construction and Wetted Parts = 316-Ti Stainless Steel Flow Meter = PTFE Clad 316-Ti Stainless Steel Flow Meter = Hastelloy C4 Flow Meter
-A15 -A25 -A50 -A80 -A1H	Instrument Fittings = 1/2" Raised Face ANSI Flange = 1" Raised Face ANSI Flange = 2" Raised Face ANSI Flange = 3" Raised Face ANSI Flange = 4" Raised Face ANSI Flange
-N15 -N25 -N50	= 1/2" NPT Thread = 1" NPT Thread = 2" NPT Thread
-1	Flange Ratings = 150 lb ANSI Flange Rating
-2	= No Flange (Threaded connections)
-3	= 300 lb ANSI Flange Rating
-W -L -A	Medium = Water = Air. Specify operating temperature and pressure with order. = Other. Specify density at STP, operating temperature, pressure and viscosity.
-(1-26)	Measuring Range Measuring Range Code as chosen from the KDM Flow Range Table.
-9	Indicator Type = Directly Coupled, Standard Display M9
-AO -HO -HE -IO -IE -LO -LE -KO	Output Options = Indicator Only = 1 Standard Switch = 1 Intrinsically Safe Switch = 2 Standard Switches = 2 Intrinsically Safe Switches = Standard Analog Output = Intrinsically Safe Analog Output = Standard Analog Output with Digital Counter (M9 Indicator Only)
-D -H -T	Other Options = Dampening Mechanism for gas flow less than 7 PSIG. = Steam Jacket = Temperature Isolation (-50°F to 600°F)
<div style="display: flex; justify-content: space-around; margin-top: 10px;"> ↓↓↓↓↓↓↓↓↓↓ </div>	Sample KDM Specification KDM -V -A025 -1 -W -17 -7 -F -H

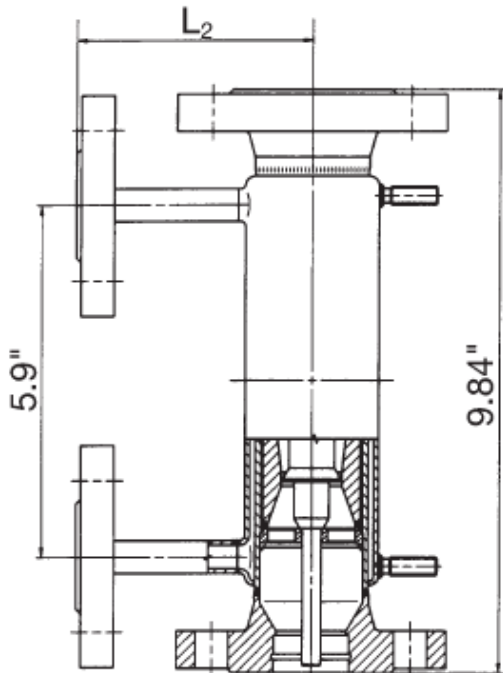
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← Dimensions

KDM-M9



KDM Meter Tube with Steam Jacket



KDM Dimensions

Nominal Fitting Size	Dimensions in inches	
	L ₁	L ₂
1/2"	2.81	3.94
1"	3.30	3.94
2"	3.90	4.72
3"	4.53	6.30
4"	5.16	5.91