

**KDV**  
**HIGH ACCURACY GLASS TUBE ROTAMETER**



Flow  
Pressure  
Level  
Temperature  
measurement  
monitoring  
control

**S2**



- **Industrial Design**
- **Body Sizes 1/2" Through 2"**
- **Reliable, Time Proven Glass Tube Design**
- **Flanged, Threaded or Tri-Clamp Fittings**
- **±1.0% of Full Scale Accuracy**
- **Optional Switches**
- **Special Calibrations for Compressed Gases and Viscous Media**



Order from: **C A Briggs Company**  
622 Mary Street; Suite 101; Warminster, PA 18974  
Phone: 267-673-8117 - 800-352-6265; Fax: 267-673-8118  
[Sales@cabriggs.com](mailto:Sales@cabriggs.com) - [www.cabriggs.com](http://www.cabriggs.com)

Model:  
KDV



### Features

- Industrial Design
- Body Sizes 1/2" Through 2"
- Reliable, Time Proven Glass Tube Design
- Flanged, Threaded or Tri-Clamp Fittings
- ±1.0% of Full Scale Accuracy
- Optional Switches
- Special Calibrations for Compressed Gases and Viscous Media

The KDV series are high quality glass tube variable-area flowmeters (rotameters). This classic design is still the most widely used flowmeter style in the world today. The simple variable-area design makes the flowmeter a perfect choice when ease of installation and operation is a must.

The KDV features a tempered glass measuring tube which is inert to most chemicals. This tube is suitable for measurement of both liquids and gases. Liquid flow ranges are available from 0.01 to 0.1 GPH through 265 to 2645 GPH water. Gas flow ranges are available from 0.025 to 0.25 SCFH through 670 to 6700 SCFH air.

### Custom Calibrations are Standard

Each KDV series is built specifically for the application. The KDV will arrive with a direct reading scale which is calibrated for your operating conditions. The KDV can be calibrated for viscous media, chemicals, and various compressed gases. The scale will be provided in any measuring units the user specifies when ordering. The application datasheet provided with the operating conditions will provide all the data required to properly factory calibrate the flowmeter.

### A KDV for Every Application

The KDV is ideal for industrial applications. The standard model is available with NPT threaded or flanged connections. Tri-clamp® fittings are available.



## KDV Series Glass Tube Rotameter

### Specifications

#### Flow Ranges

**Water:** 0.01 to 0.1 through 265 to 2645 GPH

**Air:** 0.025 to 0.25 through 670 to 6700 SCFH

**Body Size:** 1/2", 1", 1-1/2" and 2"

#### Maximum Operating Pressure:

1/2" through 1": 145 PSIG

1-1/2": 131 PSIG

2": 102 PSIG

#### Process Temperature Range:

**w/o Switch Contact:** -4°F to 212°F

#### Ambient Temp. Range:

**With Proximity**

**Switch:** -13°F to 212°F

**With Reed Switch:** -4°F to 185°F

#### Wetted Materials

**Measuring Tube:** Borosilicate Glass

**Float:** 316 SS, Hastelloy®, aluminum, PTFE or PP, based on model code

**Seals:** NBR, FKM, EPDM or FFKM

**Fittings:** 316 SS or PVDF based on model code

**Float Stops:** PVDF

### Body Materials (Non-Wetted)

**Tube Housing:** 316L SS

**Union Nut:** Painted aluminum or 316 SS based on model code

### Switch Specifications

The KDV can be fitted with up to two adjustable switches. Switch types available are bistable reed contacts and NAMUR proximity sensors.

**Reed Contact:** Bistable reed contact  
Max. 12 VA,  
30 VDC, 0.5 Amp  
IP44

**Proximity Sensor:** Intrinsically safe output, NAMUR per DIN 19234 (use the KFA-5... or KFD-2... series as a proximity sensor isolation relay/intrinsic safety barrier)  
IP67

**Electical Connection:** Terminal box



Ordering Information

KDV series model code key

(use tables 1 through 6 on the following pages to completely specify your model)

Example KDV Part Number

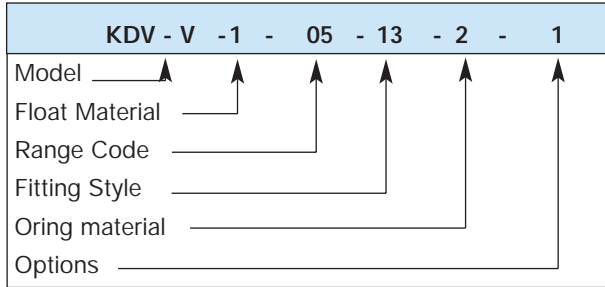


Table 1: Base Model

KDV-V	=	Flowmeter with threaded connection
KDV-F	=	Flowmeter with 150 LB ANSI flange
KDV-A	=	Tri-clamp® fitting, for range codes 11-27 only

Table 2: Float Materials

1	=	316 Stainless Steel	6	=	Hastelloy® B2
3	=	PTFE/TFM	7	=	Hastelloy® C4
4	=	Aluminum	8	=	Polypropylene

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Table 3: Meter Size/Range Code

Meter Size	Range Code	Cone Shape	Flow Range (GPH Water)		Flow Range (SCFH Air)				Max. Pressure drop (PSI)
			Float Material (reference Table 2 for material codes)						
			1,6 or 7	3	1,6 or 7	3	4	8	
1/2"	01	G13.11	0.01-0.10	-	0.06-0.56	0.025-0.25	0.025-0.25	-	0.03
	02	G14.06	0.017-0.17	-	0.09-0.9	0.042-0.42	0.042-0.42	-	0.04
	03	G14.08	0.026-0.26	-	0.14-1.4	0.07-0.7	0.07-0.7	-	0.06
	04	G15.07	0.040-0.40	-	0.21-2.1	0.1-1.0	0.1-1.0	-	0.06
	05	G15.09	0.066-0.66	-	0.31-3.1	0.14-1.4	0.14-1.4	-	0.07
	06	G15.12	0.1-1.0	-	0.49-4.9	0.2-2	0.2-2	-	0.09
	07	G16.08	0.16-1.6	-	0.7-7	0.35-3.5	0.35-3.5	-	0.09
	08	G16.12	0.26-2.6	-	1.5-10	0.6-5.6	0.6-5.6	-	0.10
	09	G17.08	0.42-4.2	-	1.7-17	0.88-8.8	0.88-8.8	-	0.10
	10	G17.12	0.66-6.6	-	2.8-28	1.0-10	1.0-10	-	0.12
1/2"	11	N18.07	1-10	0.34-3.4	5.3-53	2.1-21	2.8-28	1.7-17	0.13
	12	N18.09	1.6-16	0.6-5.8	7.7-77	3.3-33	4.2-42	2.4-24	0.13
	13	N18.13	2.6-26	0.92-9.2	11-105	5.3-53	6.3-63	4.2-42	0.13
	14	N19.09	4.2-42	1.4-14	17-175	7.7-77	9-90	6.3-95	0.19
	15	N19.13	6.6-66	2.2-22	28-280	11.5-115	15-155	9-95	0.23
	16	N19.19	11-105	3.7-37	-	-	-	-	0.30
	17	N19.26	17-165	6-60	-	-	-	-	0.40
1"	18	N21.09	17-165	6-60	63-630	31-310	39-390	25-245	0.32
	19	N21.13	26-260	9.3-93	99-990	49-490	63-630	42-420	0.33
	20	N21.18	45-420	16-150	-	-	-	-	0.38
	21	N21.25	66-660	25-250	-	-	-	-	0.48
1-1/2"	22	N41.09	45-420	16-150	160-1590	77-770	100-980	63-630	0.46
	23	N41.13	66-660	24-240	250-2470	130-1270	160-1590	100-980	0.55
	24	N41.19	105-1050	40-400	-	-	-	-	0.55
2"	25	N51.10	105-1050	40-400	425-4230	200-1975	250-2470	160-1590	0.62
	26	N51.15	160-1585	63-630	670-6700	320-3175	380-3880	250-2470	0.68
	27	N51.21	265-2645	93-930	-	-	-	-	0.80

Table 4: Fittings

<b>13</b> = Female NPT thread 316 stainless steel <b>33</b> = Female NPT thread, PVDF	<b>AB</b> = 150 LB ANSI flange, 316 stainless steel <b>LL</b> = Tri-clamp connection, 316 stainless steel (N/A for ranges 1-10)
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Table 5: O-ring Materials

<b>1</b> = NBR <b>2</b> = FKM <b>4</b> = FFKM (N/A for ranges 1-10) <b>A</b> = EPDM (std on Tri-Clamp® versions)
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Table 6: Options

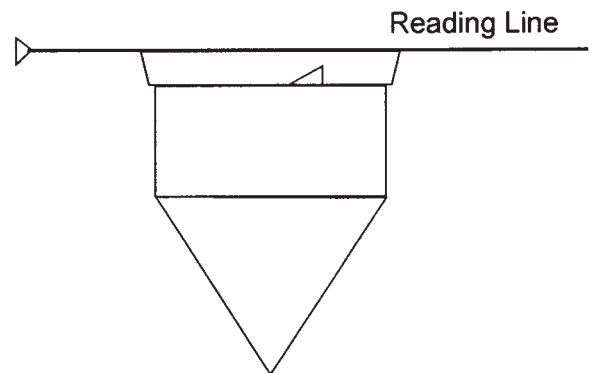
<b>0</b> = None <b>1</b> = 5 point calibration report <b>2</b> = 10 point calibration report <b>H</b> = Cleaned and tagged for oxygen service <b>S</b> = 316 Stainless steel union nut in place of painted aluminum (standard on Tri-Clamp® version)
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Accessories (ordered as separate line items)

Part Number	Description
KDV-TG21	Adjustable NAMUR Proximity Switch (2 Max. for range codes 18 through 27 only)
KDV-MS141	Adjustable Bistable Reed contact (2 Max. for range codes 11 through 27 only)

**KDV Series Floats and Measuring Tubes**

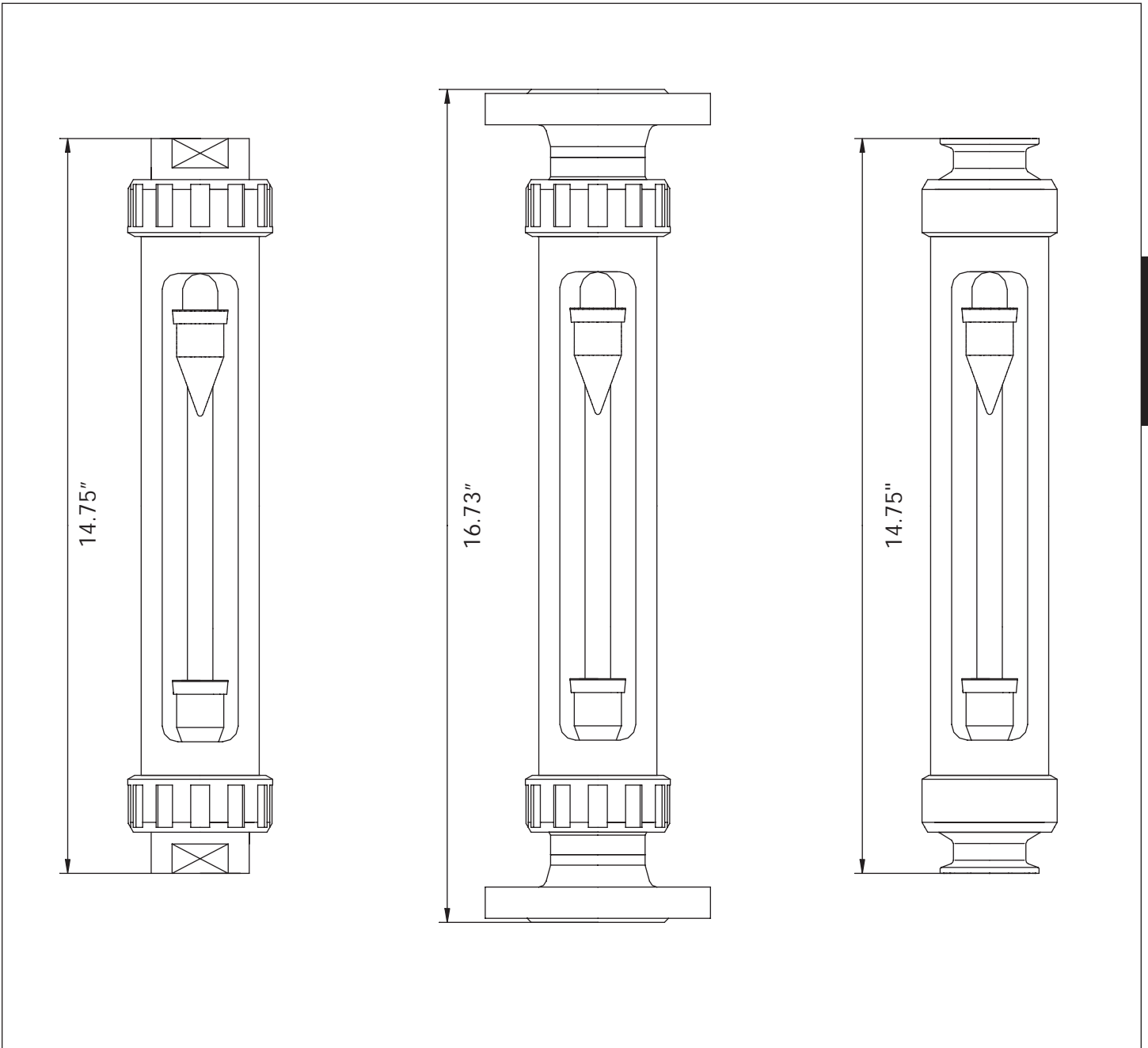
- The KDV Series measuring tubes are manufactured from heat tempered borosilicate glass to resist cracking and failure in rough environments
- The KDV measuring tubes are available with scales delivered with any measuring units desired. Calibration for compressed gas and viscous liquids is standard. This allows the user to take accurate measurements with no field correction of readings.
- Complete the KDV series application datasheet in order to completely specify your flowmeter.
- Floats are available in several materials including stainless steel, Hastelloy® and TFM to suit nearly any application. All floats are notched on the upper guide rim to provide a stable reading.



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Subject to change without prior notice.

Dimensions



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Approximate Weights

Meter Size	Threaded/ Tri-Clamp	ANSI Flange
1/2"	1.0 LB/0.5 KG	4.0 LB/1.8 KG
1"	2.9 LB/1.3 KG	8.4 LB/3.8 KG
1-1/2"	5.0 LB/2.3 KG	15.0 LB/6.8 KG
2"	8.0 LB/3.6 KG	20.2 LB/9.2 KG



<b>KDV Series Flowmeters Application Guide</b> Form # KDV-001 Rev. 1/17  FAX to: KOBOLD Instruments Inc. 412-788-4890 (USA) 514-428-8899 (Canada)	Customer Name: _____
	Company Name: _____
	Phone: _____
	Fax: _____

Quote #: \_\_\_\_\_ Date: \_\_\_\_\_ Price: \_\_\_\_\_ Each

Part Number: \_\_\_\_\_ \* To ensure fast order processing, please retain the completed quote form and send it along with your purchase order.

Calibrated Measuring Range: \_\_\_\_\_

**Design Conditions**

Accurate design pressure and temperature are essential to ensure the flowmeter will be built to operate without damage. Please fill out accurately and completely.

**List Design Conditions**

- 1. Pressure: Maximum \_\_\_\_\_ PSIG
- 2. Temperature: Maximum \_\_\_\_\_ °F

**Calibration Conditions:** Accurate calibration conditions are required to ensure that the flowmeter will be factory calibrated to give accurate readings at the user's **normal operating conditions**. Please fill out accurately and completely.

Calibration Conditions for Liquid Flow Applications

- 1. Type of Liquid: \_\_\_\_\_
- 2. Normal Operating Temperature: \_\_\_\_\_ °F
- 3. Viscosity at Normal Operating Temp: \_\_\_\_\_
- 4. Specific Gravity at Normal Operating Temp: \_\_\_\_\_
- 5. Desired Measuring Range and Units: \_\_\_\_\_

Note: Items 3 & 4 not required for water flow

Calibration Conditions for Gas Flow Applications

- 1. Type of Gas: \_\_\_\_\_
- 2. Normal Operating Temperature: \_\_\_\_\_ °F
- 3. Normal Pressure at Outlet Fitting: \_\_\_\_\_ PSIG
- 4. Specific Gravity (required for gas mixes only): \_\_\_\_\_
- 5. Desired Measuring Range and Units: \_\_\_\_\_

Note: The calibration pressure required is the pressure that the meter sees at its outlet fitting.

**Version:**     KDV-V (NPT Threaded)     KDV-F (Flanged)     KDV-A (Tri-Clamp)

**Float Materials:**     316 SS     PTFE/TFM   

Polypropylene     Hastelloy® B2     Hastelloy® C4

**O-ring Material:**     NBR     FKM

FFKM     EPDM

**Body Size:**     1/2"     1" NPT     1-1/2"     2"

**Fittings:**     NPT Thread 316 SS     NPT Thread PVDF

150LB ANSI 316 SS 5     Tri-Clamp

**Options:**     5 Point Cal. Cert.     10 Point Cal. Cert.

O2 Cleaning     316SS Union Nuts

**Switches:**     None     1     2     Reed Switch     NAMUR Switch