KDP SERIES
MINIATURE ARMORED FLOWMETER & SWITCH

KOBOLD

Flow
Pressure
Level
Temperature
measurement
monitoring
control

S1

- **Maximum Pressure 1885 PSIG**
- **Water Ranges 0.08-0.8 to 2.5-25 GPH**
- **Air Ranges 0.2-2.0 to 13-130 SCFH**
- **Accuracy ±4% of Full Scale**
- **Wetted Parts of Stainless Steel and PTFE**
- **Direct Reading Scale for Other Liquids and Gases Available**
- **Needle Valve Standard**

Model:
KDP

Features

- Maximum Pressure 1885 PSIG
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- Air Ranges 0.2-2.0 to 13-130 SCFH
- Accuracy ±4% of Full Scale
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- Direct Reading Scale for Other Liquids and Gases Available
- Needle Valve Standard

The KDP series armored flowmeter is an ideal choice for measuring and controlling low flows of liquids or gases in industrial applications where a rugged reliable design is required. The standard design has an all stainless steel body rated to 1885 PSIG and 300˚F. The mechanical indicator is actuated by a magnetic float so that no penetrations exist in the measuring tube, thus making the KDP series suitable for high pressure installations. The KDP series is available as a meter only or with up to two adjustable solid state proximity switches. An integral needle valve for precise flow control is standard. The KDP can be fitted with a flow regulator for precise automatic flow control under varying pressure conditions. The KDP is available with the standard air or water scales or a direct reading scale calibrated to the user's flow medium and operating conditions.

Specifications

Measuring Principle: Variable Area
Measuring Ranges
Water: 0.08-0.8 to 2.5-25 GPH
Air: 0.2-2.0 to 13-130 SCFH
Other liquids and gases: Based on operating conditions
Accuracy: ± 4% of Full Scale
Connection: 1/4" NPT
Maximum Pressure: 1885 PSIG

Process Temperature Range
Standard: -112 to 302˚F

Maximum Process Temperature for KDP with Switches
Ambient Temp. <100˚F: Max. Temp. = 293˚F
Ambient Temp. <120˚F: Max. Temp. = 275˚F
Ambient Temp. <140˚F: Max. Temp. = 257˚F

Wetted Materials
Fittings: 318 C Stainless Steel
Measuring Tube: 316 Stainless Steel
Valve: 316 Stainless Steel
Valve Seal: PTFE

Differential Pressure Regulators
Constant differential pressure regulators are available as accessories for the KDP series flowmeters. These regulators maintain a constant flow rate under varying upstream or downstream pressure conditions. Type RE and NRE are inlet pressure regulators which maintain a constant flowrate for gases and liquids with variable flowmeter inlet pressure and constant outlet pressure. Type RA and NRA are outlet pressure regulators which maintain a constant flow rate with variable flowmeter outlet pressure and constant inlet pressure.

Electrical Specifications

Switches: 1 or 2 with field adjustable setpoint
Switch Type: Solid state bistable proximity
Switch Output: NAMUR Per DIN19234, Intrinsically safe (use EX-3001 or EX-3002 relay sold separately)
Electrical Conditions: Cable gland PG 9
Electrical Protection: NEMA 4/IP 65

KDP Ordering Information

KDP = Armored Flowmeter

Options
- **-42** = Flowmeter Only
- **-52** = Flowmeter with 1 Switch
- **-62** = Flowmeter with 2 Switches

Range Codes

Liquids (GPH Water)		Gases (SCFH Air)		Max. Pressure Drop (PSI)
-01G	= 0.08-0.8 GPH	**-01S**	= 0.02-2.0 SCFH	0.96
-02G	= 0.13-1.3 GPH	**-02S**	= 0.55-5.5 SCFH	0.28
-03G	= 0.25-2.5 GPH	**-03S**	= 1.5-15 SCFH	0.39
-04G	= 0.65-6.5 GPH	**-04S**	= 3.0-30 SCFH	0.80
-05G	= 1.1-11 GPH	**-05S**	= 5.0-50 SCFH	0.61
-06G	= 1.6-16 GPH	**-06S**	= 8.0-80 SCFH	1.23
-07G	= 2.5-25 GPH	**-07S**	= 13-130 SCFH	2.41

Fitting Size
- **-N2** = 1/4" NPT

Options
- **-0** = No options
- **-H** = Cleaned for oxygen service
- **-Y** = Calibrated scale for other liquids or compressed gases

KDP -52 -03G -N2 -0 **Sample KDP Ordering Code**

Constant Flow Regulators

Model Number	Material	Max. flow rate Water** l/h	Max. flow rate Air** l/h	Min. required upstream pressure p_1 p_1 in PSI
Upstream pressure controller				
RE-1000-R	Stainless Steel	40	1000	0.5
RE-1000-N	brass	40	1000	0.5
RE-4000-R	Stainless Steel	100	3400	1
RE-4000-N	brass	100	3400	1
NRE-800-R	Stainless Steel		800	0.2
NRE-800-N	brass		800	0.2
Downstream pressure controller		**Air** l/h**	**Min. differential pressure * p in PSI**	
RA-1000-R	Stainless Steel	1000	0.4	
RA-1000-N	brass	1000	0.4	
RA-4000-R	Stainless Steel	3400	0.8	
RA-4000-N	brass	3400	0.8	
NRA-800-R	Stainless Steel	800	0.15	
NRA-800-N	brass	800	0.15	

*Pressure difference between upstream and downstream pressure

**Reference conditions 68°F, 14.7 PSIA

KDP Series Miniature Armored Flowmeter & Switch Application Guide

Form # KDP-001
Rev. 08/18/01

Customer Name: _____

Company Name: _____

Phone: _____

Fax: _____

Quote #: _____ Date: _____ **Price:** _____ **Each**

Part Number: _____

Calibrated Measuring Range: _____

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

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

Flowmeter Options

1. Measuring Tube Material: ☐ 316 SS ☐ Other: _____
2. Desired Fitting: ☐ 1/4" (standard) ☐ Other: _____
3. Fitting Type: ☐ NPT thread (standard) ☐ Other: _____

Other Options

1. ☐ 1 NAMUR Flow Switch
2. ☐ 2 NAMUR Flow Switches
☐ **3. Oxygen Cleaning**
☐ **4. Other Options:** _____

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Quoted By: _____ **Phone:** _____ **Fax:** _____