

KFF/KFG TURBINE FLOW SENSORS AND FLOWMETERS



Flow
Pressure
Level
Temperature
measurement
monitoring
control



Series 1000 Flow Sensors

- Linear 0–5 VDC Output Signal
- Highly Repeatable
- Very Stable
- No Zero Drift
- Standard 12 VDC Input Power
- Liquid or Gas Versions

Series 3000 Flowmeters

- All Features of the Series 1000 Flow Sensors
- Very Compact
- Power-Efficient LCD Display

S4

Contact:
Industrial Process Measurement, Inc.
3910 Park Avenue, Unit 7
Edison, NJ 08820
732-632-6400
support@instrumentation2000.com
<http://www.instrumentation2000.com>

Model:
KFF/KFG

Features

Series 1000 Flow Sensors

- Linear 0–5 VDC Output Signal
- Highly Repeatable
- Very Stable
- No Zero Drift
- Wide Variety of Wetted Materials
- Standard 12 VDC Input Power
- Liquid or Gas Versions

Series 3000 Flowmeters

- All Features of the Series 1000 Flow Sensors
- Very Compact
- Power-Efficient LCD Display

KOBOLD KFF/KFG Flow Sensors can measure very low flow rates. They are suitable for a wide variety of industrial, commercial and laboratory flow applications involving media transparent to the near-infrared spectrum. The flow sensor uses a Pelton-type turbine wheel and photodiodes to generate an electrical signal linearly proportional to flow rate. This output signal (accessible via the included cable) can be either a pulse or 0–5 VDC analog output usable with a variety of data acquisition equipment. These sensors are available in Ryton®, brass or PTFE (Teflon®) construction for applicability to a wide variety of process situations.

Our PTFE sensors come standard with both analog (0-5 VDC) and frequency outputs. The frequency output on other models is optional. If price is a sensitive issue, the standard PTFE/Kalrez® fittings on the KFF/KFG-1500 series can be replaced with PVDF (aka. Kynar®)/Viton® for a slight cost reduction ... just call your factory representative for details.



KOBOLD KFF-1003

Specifications

Accuracy:	± 3% of full scale
Linearity:	± 3% of full scale
Repeatability	
Liquid:	± 0.2% of full scale
Gas:	± 1% of full scale

Temperature Ratings

Range:	32°F to 120 °F
Drift:	±0.1%/°F

Maximum Pressure Ratings

Liquids (KFF)	
Ryton®:	100 PSIG
Brass:	500 PSIG
PTFE:	60 PSIG
Gases (KFG)	
All Materials:	40 PSIG

Fittings:	Compression
------------------	-------------

Installation: Horizontal

Wetted Parts

Ryton Units	
Housing:	60%Ryton/40%glass
Turbine:	60%Ryton/40%glass
Bearing:	Sapphire
Support:	316 Stainless Steel
Gaskets:	Viton®
Fittings:	Acetal

Brass Units

Housing:	Brass & glass
Turbine:	60%Ryton/40%glass
Bearing:	Sapphire
Support:	316 Stainless Steel
Gaskets:	Viton®
Fittings:	brass

PTFE Units

Housing:	PTFE
Turbine:	PTFE
Bearing:	Sapphire
Support:	PTFE
Gaskets:	Kalrez®
Fittings:	PFA

Output Signal:	0–5 VDC
Option T:	0–5 VDC & pulse
PTFE Units:	0–5 VDC & pulse
Max. Frequency:	500 Hz

Power Requirements

Voltage	
Standard Units:	12.5 VDC ± 2 VDC
PTFE Units:	12.5 VDC ± 1 VDC
Option B1:	4.5 VDC ± 1.5 VDC
Current:	50 mA (typical)

How to Order:

KFF/KFG model numbers consist of two portions. The first portion is found in the flow range tables above and to the right. This number specifies the medium (air or water), the range, and the materials of construction. The second portion comes from the "Options" table to the lower right and specifies modifications to the standard series of meters. To order, combine a model number with all appropriate option suffixes.

Example: A brass water flowmeter, range 50–500 ml/min, with frequency output is:

KFF-1105T



S4

Order Numbers

WATER					
Range ml/min	Pressure Drop PSI	Fittings (tube)	Model Number		
			Ryton®	Brass	PTFE
15– 100	15	1/8"	KFF-1003	KFF-1103	KFF-1503
50– 500	10	1/4"	KFF-1005	KFF-1105	KFF-1505
60–1000	7	1/4"	KFF-1006	KFF-1106	KFF-1506
100–2000	7	1/4"	KFF-1007	KFF-1107	KFF-1507
200–5000	10	3/8"	KFF-1008	KFF-1108	KFF-1508
1–10L	10	3/8"	KFF-1009	KFF-1109	KFF-1509

AIR			
Range ml/min	Pressure Drop Inches H ₂ O	Fittings (tube)	Model Number
			Ryton®
25– 100	20	1/8"	KFG-1003
40– 200	10	1/8"	KFG-1004
100– 500	3	1/8"	KFG-1005
200–1000	2	1/8"	KFG-1006
400–2000	2	1/4"	KFG-1007
1– 5L	2	1/4"	KFG-1008
2– 10L	2	1/4"	KFG-1009
4– 20L	2	3/8"	KFG-1010
10– 50L	2	3/8"	KFG-1011
20–100L	2	1/2"	KFG-1012
40–200L	2	1/2"	KFG-1013
100–500L	3	1/2"	KFG-1014

Model #	Options	Suffix
	5 VDC Input Power (Ryton® or brass sensors only)	B1
	Frequency Output (KFF liquid sensors only)	T
	Brass Compression Fittings	C1
	Stainless Steel Compression Fittings	C2



Features

- Low Volume Capable
- Digital Readout
- Low Cost
- Air or Liquids
- Ryton® or Brass

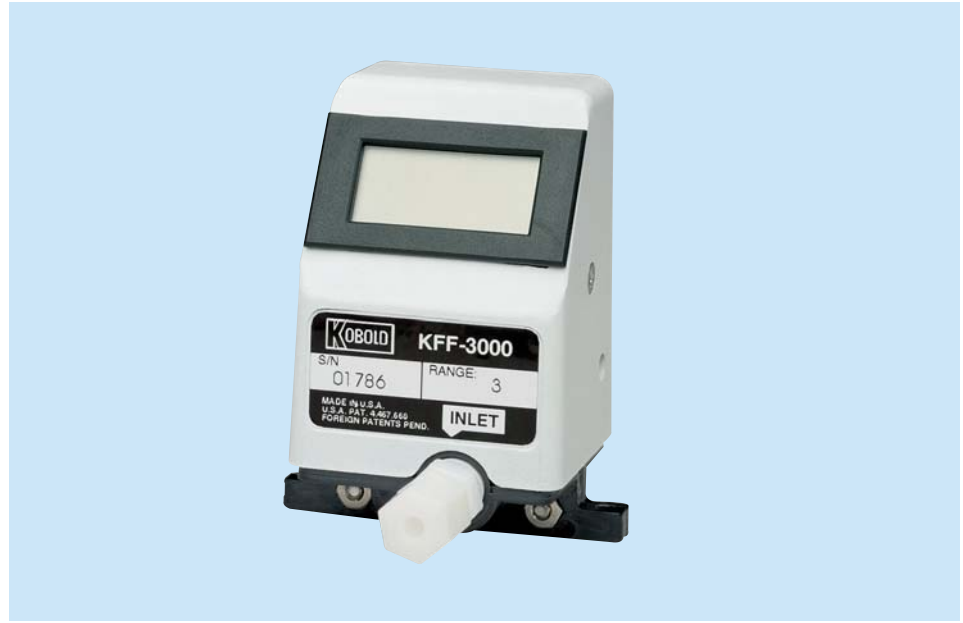
KOBOLD KFF/KFG Flowmeters combine the KFF/KFG Flow Sensor with a miniature display in an in-line configuration. The result is an economical electronic flow metering solution for gases and low viscosity liquids.

Available in either brass or Ryton®, the KFF/KFG-3000 line of flowmeters is compatible with a variety of common process fluids. Along with the 0.4" LCD display, the meters are delivered with an analog 0-5 VDC output as a standard feature.

Requiring only 35 mA at 12 VDC, this flowmeter is sufficiently power thrifty to allow operation off any appropriate battery. Your in-house 12 volt source may, of course, also be used ... just connect via the supplied cable.

Specifications

Accuracy: ± 3% of full scale
Linearity: ± 3% of full scale
Repeatability
Liquid: ± 0.2% of full scale
Gas: ± 0.5% of full scale
Temperature Ratings
Range: 32°F to 120 °F
Drift: ±0.1%/°F



KOBOLD KFF Flowmeter

Maximum Pressure Ratings

Liquids (KFF)
Ryton®: 100 PSIG
Brass: 500 PSIG
Gases (KFG)
All Materials: 40 PSIG
Fittings: Compression
Installation: Horizontal

Housing: Brass & glass
Turbine: 60%Ryton/40%glass
Bearing: Sapphire
Support: 316 Stainless Steel
Gaskets: Viton®
Fittings: brass

Display
Type: 3½ digit LCD
Character Height: 0.4"

Electrical Data
Output Signal: 0-5 VDC
Power Requirements
Voltage: 12.5 VDC ± 2 VDC
Current: 35 mA (typical)
Hook-Up: via supplied cable

Wetted Parts

Ryton Units
Housing: 60%Ryton/40%glass
Turbine: 60%Ryton/40%glass
Bearing: Sapphire
Support: 316 Stainless Steel
Gaskets: Viton®
Fittings: Acetal
Brass Units

Order Numbers				
WATER			AIR	
Range ml/min	Pressure Drop PSI	Fittings (tube)	Model Number	
			Ryton®	Brass
13-100	10	1/8"	KFF-3003	KFF-3103
20-200	10	1/8"	KFF-3004	KFF-3104
50-500	10	1/4"	KFF-3005	KFF-3105
60-1000	6	1/4"	KFF-3006	KFF-3106
100-2000	6	1/4"	KFF-3007	KFF-3107
200-5000	6	3/8"	KFF-3008	KFF-3108
Options			Model #/Suffix	
Brass Compression Fittings			C1	
Stainless Steel Compression Fittings			C2	

Range ml/min	Pressure Drop Inches H ₂ O	Fittings (tube)	Model Number	
			Ryton®	Brass
20-100	20	1/8"	KFG-3003	KFG-3103
40-200	10	1/8"	KFG-3004	KFG-3104
100-500	3	1/8"	KFG-3005	KFG-3105
200-1000	3	1/8"	KFG-3006	KFG-3106
400-2000	3	1/4"	KFG-3007	KFG-3107
1-5L	3	1/4"	KFG-3008	KFG-3108
2-10L	3	1/4"	KFG-3009	-