

- FLOW
- LEVEL
- PRESSURE
- TEMPERATURE



Who Are We?



For over 40 years, KOBOLD has been a value-driven leader in process measurement and control solutions. We offer one of the industry's broadest lines of sensors, switches, and transmitters to measure and control flow, pressure, level, and temperature.

We offer excellence in engineering, high value products, and exceptional customer partnerships that last beyond the sale. Because we design, manufacture, sell, and provide support for our products, we offer a uniquely streamlined sales experience that is centered around you.

Why Choose KOBOLD?

Our Approach: Partnership & a Streamlined, Guided, Consultative Sales Experience

We aren't just interested in selling you instrumentation. You are our priority. Trying to wade through the extensive technologies and options can be a bit intimidating. You don't have to figure it out on your own. We are here to partner with you, providing free advice from our in-house engineering experts who have decades of collective experience.

We are old-fashion in our beliefs about what doing business should look like. We still have someone answering our phone who will quickly direct you to the right person. We still believe in delivering true value and not subpar quick-fix products that become headaches down the road. We build our products like we build our relationships, for the "long haul".

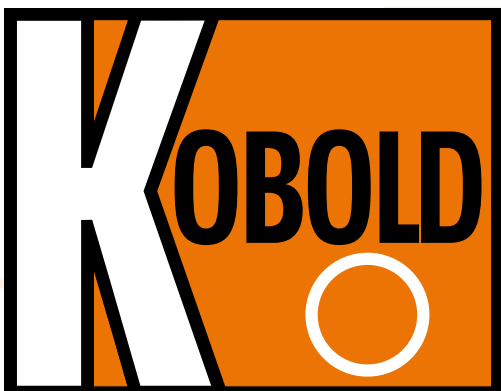


Engineering Consultations



Have an application that you would like some advice on? We offer free engineering consultations that will guide you through the process of finding an application solution within your budget.

Use the QR Code to the right to schedule a time that is convenient for you.



US Manufacturing Built on German Engineering

We believe that "Made In The USA" still means something. Our products are built with that in mind as we aim to exceed the standards and ideals of quality-focused US manufacturing. We offer the best of both worlds. German engineering is still known as being among the finest and we are proud to build some of the most innovative products in the world. We are also focused on sourcing practices that allow us to provide higher quality components, shorter lead times, and longer lasting products.



Comprehensive Product Line: We Don't Have to "Force a Fit"

We offer one of the industry's broadest lines of sensors, switches, and transmitters to measure and control flow, pressure, level, and temperature.

We have historically set the bar for innovation and excellence, helping to shape the field of industrial instrumentation into what it is today. Our technologies offer a solution-oriented way to control the most diverse and complex variables and can be easily integrated into a wide variety of systems in many industrial and commercial sectors.


We will not try to sell you any instrumentation that isn't ideally suited for your application. Because we are unique in the extensiveness of our product line, we don't have to try and "force a fit" just to make a sale like other companies with limited product lines. In the event we do not have the right solution, we will do our best to point you in the right direction.



Your industrial instrumentation partner of choice with comprehensive solutions for measuring what matters.



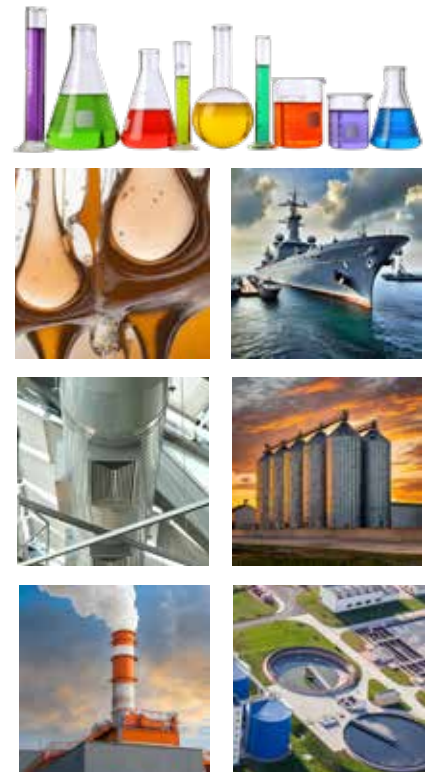
KOBOLD: Measuring What Matters

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Quick Reference Product Table

Model	PG	Model	PG	Model	PG	Model	PG	Model	PG	Model	PG	Model	PG	Model	PG		
ADI	43	DKF	33	DVZ	31	KFG	28	MIK	30	NDT	35	NST	34	PSD	39	TNF	40
AUF	39	DOG	31	DZF	38	KFR	23	MIM	31	NE	35	NTB	37	PSR	26	TNS	40
BGF	24	DON	28	EPS	31	KPA	39	MIS	31	NEC	34	NUS	37	RCD	30	TSK	26
BGK	24	DOT	28	FPS	26	KPG	39	MM	36	NEH	35	NV	34	RCM	30	TST	40
BGN	24	DPE	27	HPC	29	KPH	39	MMA	40	NEK	35	NVI	35	REG	42	TWR	40
BVB	25	DPL	27	KAL	29	KPH300	39	MPT	43	NEO	36	NVM	42	RL	42	URK	24
BVO	25	DPT	26	KAL-A	29	KPK	39	MPV	43	NGM	36	NVN	42	S	25	URM	24
DA	33	DPM	27	KAL-D	29	KPL	30	M	34	NGR	35	NWS	35	SEN	39	V31	24
DAA	32	DRB	27	KAL-K	29	KPW	37	MSR	42	NGS	35	OVZ	28	SWK	23	VKA	26
DAF	32	DRG	27	KAL-L	29	KSK	23	MWD	40	NIR	35	PAD	38	SM	25	VKG	25
DAG	43	DRH	27	KDF	23	KSM	23	NAB	34	NKP	34	PAS	39	SMN	25	VKM	25
DAI	33	DRM	39	KDG	23	KSR	23	NAS	34	NML	36	PDA	39	SV	24	VKP	25
DF	27	DRS	28	KDS	24	KSV	23	NBK	36	NRF	36	PDD	39	SVN	23	ZDM	28
DFT	27	DTK	27	KEC	29	LSP	26	NOG	34	NSD	35	PIT	31	TDA	40	ZED	43
DIG	32	DUC	32	KET	29	MAK	28	NCM	34	NSE	34	PMP	38	TDD	40	ZLS	43
DIH	32	DUK	32	KFD/A	42	MAN	38	NCP	34	NSM	34	PPS	26	TMA	40	ZOE	43
DKB	32	DVH	31	KFF	28	MFR	42	NCS	34	NSP	34	PS	26	TMU	30	ZOK	43

Brand Directory:

Tri-Clamp® is a registered trademark of Tri-Clover Inc. of the Alfa-Laval Group.
 Trogamid® is a registered trademark of Evonik Resource Efficiency GmbH.
 Hastelloy® is a registered trademark of Haynes International Inc.

Ryton® is a registered trademark of Chevron Phillips Chemical Company.
 Monel® is a registered trademark of Special Metals Corporation.

Feature Icons: Look for our "at a glance" icons in our product listings



Product QR Code



Sensor Supply



Configurable Outputs



Stainless Steel Design



Installation Under Process Conditions



Operational with Gloves



For Chemicals



Scalable Analog Output



Temperature and Pressure Measurement



Shock Resistant



Rotatable Display



Temperature and Flow Measurement



Heating Jacket



Configurable Display



Energy Measurement



Battery Powered/
External Power Supply



Bi-directional



Space Saver



Battery Powered



Resettable and Grand Total



NFC





Chemical & Caustic Media

Compatible Solutions: Flow/Level



Aggressive media such as chemicals, caustics, alkalines, and acids bring an element of difficulty to finding suitable long-lasting instrumentation for an application. Many flow and level products are not offered in materials that can handle challenging media. KOBOLD offers a wide variety of flow and level options that are either made entirely of compatible material or can be coated, clad, or lined to combat corrosion. We also specialize in many exotic material options. Below is a sample of our products that can be used with a wide variety of difficult media.

MIS MAGNETIC FLOW METER		METHOD • LINING MATERIAL • NBR • OTHERS ON REQUEST	
MIK MAGNETIC FLOW METER		METHOD • BODY MATERIAL MATERIAL • PPS • PVDF	
EPS MAGNETIC FLOW METER		METHOD • LINING MATERIAL • EPDM OR PTFE • RUBBER OR CERAMIC • OTHERS ON REQUEST	
PIT MAGNETIC FLOW METER		METHOD • CLADDING MATERIAL • PFA • OTHERS ON REQUEST	
BGN VARIABLE AREA FLOW METER		METHOD • LINING MATERIAL • PTFE • OTHERS ON REQUEST	
KSK ROTAMETER FLOW METER		METHOD • BODY MATERIAL MATERIAL • POLYAMIDE • POLYSULFONE	
KSM ROTAMETER FLOW METER		METHOD • BODY MATERIAL MATERIAL • POLYAMIDE • POLYSULFONE	
KSV ROTAMETER FLOW METER		METHOD • BODY MATERIAL MATERIAL • POLYSULFONE	
DFT PADDLEWHEEL FLOW METER		METHOD • BODY MATERIAL MATERIAL • PTFE	
DPL PADDLEWHEEL FLOW METER		METHOD • BODY MATERIAL MATERIAL • POLYPROPYLENE	
DRH PADDLEWHEEL FLOW METER		METHOD • BODY MATERIAL MATERIAL • PVDF • POM	
DIH PADDLEWHEEL FLOW INDICATOR		METHOD • BODY MATERIAL MATERIAL • POM	
TUR TURBINE FLOW METER		METHOD • BODY MATERIAL • LINING MATERIAL • PVDF • PVC	
DRS TURBINE FLOW METER		METHOD • BODY MATERIAL MATERIAL • PPO	
PPS PADDLE FLOW SWITCH		METHOD • PADDLE MATERIAL MATERIAL • POLYSULFONE	
NEC FLOAT LEVEL SWITCH		METHOD • BODY MATERIAL MATERIAL • POLYPROPYLENE • HYPALON®	
NAB FLOAT LEVEL SWITCH		METHOD • BODY MATERIAL MATERIAL • POLYPROPYLENE	
NCP FLOAT LEVEL SWITCH		METHOD • BODY MATERIAL MATERIAL • POLYPROPYLENE	

NST FLOAT LEVEL SWITCH		METHOD • BODY MATERIAL		NBK MAGNETIC LEVEL GAUGE		METHOD • BODY	
NSP FLOAT LEVEL SWITCH		METHOD • BODY MATERIAL		NUS ULTRASONIC LEVEL TRANSMITTER		METHOD • NON-CONTACT • SENSOR MATERIAL	
NSM FLOAT LEVEL SWITCH		METHOD • BODY MATERIAL		NML LIQUID LEVEL TRANSDUCER		METHOD • CLADDING	
NKP SIDE-MOUNT LEVEL SWITCH		METHOD • BODY MATERIAL		NRF CAPACITIVE LEVEL TRANSMITTER		METHOD • CLADDING	
NEK CONDUCTIVE LEVEL SWITCH		METHOD • BODY MATERIAL		NMC CAPACITIVE LEVEL TRANSMITTER		METHOD • CLADDING	
NE CONDUCTIVE LEVEL SWITCH		METHOD • CLADDING				MATERIAL • PFA	
		MATERIAL • POLYPROPYLENE • PVDF				MATERIAL • PFA	
		MATERIAL • POLYPROPYLENE				MATERIAL • PFA	
		MATERIAL • POLYPROPYLENE • PVDF				MATERIAL • PFA	
		MATERIAL • POLYPROPYLENE • PPS				MATERIAL • PVDF	
		MATERIAL • PTFE • POLYOLEFIN					

Sample Material & Chemical Compatibility (Liquids)	Acetic Acid	Acetone	Ammonia	Benzene	Bromine	Butyl Alcohol	Butane	Carbolic Acid	Chlorine	Citric Acid	Formaldehyde	Hydrochloric Acid	Methanol	Mineral Spirits	Nitric Acid	Phosphoric Acid	Propylene	Sea Water	Sodium Carbonate	Sodium Hydroxide	Sodium Hypochlorite	Sodium Silicate	Sulfuric Acid	Urea	Vinyl Chloride
EPDM	✓	✓	✓	✗	✗	✓	✗	✓	✓	✓	✓	✗	✓	✗	✗	✓	✗	✓	✓	✓	✓	✓	✓	✓	✗
FEP (Teflon®)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hypalon®	✗	✗	✗	✗	✗	✓	✓	✗	✗	✗	✗	✗	✓	✗	✗	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗
NBR - Nitrile (Buna®)	✗	✗	✗	✗	✗	✓	✓	✗	✗	✓	✗	✗	✓	✓	✗	✗	✗	✓	✓	✗	✗	✓	✗	✓	✗
PFA (Teflon®)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Polyamide (Nylon®)	✗	✓	✓	✓	✗	✓	✓	✗	✗	✓	✗	✗	✓	✓	✗	✓	✗	✓	✓	✗	✗	✓	✗	✓	✓
Polysulfone (Udel®)	✓	✗	✓	✗	✓	✓	✗	✗	✗	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓	✗	✗
POM - Acetal (Delrin®)	✗	✓	✗	✓	✗	✓	✓	✗	✗	✓	✓	✗	✓	✓	✗	✗	✗	✓	✓	✗	✗	✗	✗	✗	✗
PP (Polypropylene)	✓	✓	✓	✗	✗	✓	✓	✓	✗	✓	✗	✓	✓	✓	✗	✓	✗	✓	✓	✓	✓	✓	✗	✓	✗
PPO - PPE (Noryl®)	✓	✗	✗	✗	✓	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✗
PPS (Ryton®)	✓	✓	✓	✓	✗	✓	✓	✓	✗	✓	✓	✗	✓	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓	✓	✗
PTFE (Teflon®)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PVC	✗	✗	✓	✗	✗	✗	✗	✗	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗
PVDF (Kynar®)	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓

✓ = Possible ✗ = Not Suitable or Unknown

*This chart is intended to be used as a reference for KOBOLD products and common industrial chemicals. Any combination marked as "possible" requires further investigation and confirmation by the purchaser. Application variables, such as temperature, have a direct effect on actual media compatibility. Seals, connections, cables, and electrode materials that come into contact with the media must also be evaluated by the purchaser. Purchaser assumes all responsibility and accompanying liability in the final product selection.



Viscous Media has Met its Match

POSITIVE DISPLACEMENT



ULTRASONIC



Media characteristics are an important part of choosing the correct flow meter for your application. Not every flow meter is designed to handle viscous media.

Even with flow meters that are suitable in general for viscous media, they also have their individual limits. Some are only designed for light oils, while others can handle thicker media like pastes and resins.

VARIABLE AREA/ROTAMETER



DIFFERENTIAL PRESSURE



The best flow meter technology type for high viscosity liquids are positive displacement flow meters like our DON Oval Gear Flow Meter which can be built with special gears for media up to 1,000,000 cP!

KOBOLD also offer the unique DUK Inline Ultrasonic Flow Meter than can handle viscous media up to 68 cSt.

PADDLE



VORTEX

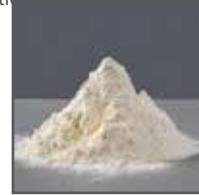


Level Monitoring for Bulk Materials



Monitoring the level of bulk material inside a vessel requires a level switch that is built for the job. Even though there are a few exceptions, liquid level switches are rarely suitable for bulk materials. KOBOLD has a wide variety of level monitoring technologies to help you monitor and control your bulk material application.

- Rotary Paddle
- Vibrating Rod
- Vibrating Fork
- Capacitive
- Pendulum
- Static Pressure
- Floats
- Ultrasonic



NUS-4
Ultrasonic Level Transmitter



NVI
Vibrating Rod Level Switch



NSC
Capacitive Level Switch



NSV
Vibrating Fork Level Switch



PLS
Pendulum Level Switch



NMF
Static Pressure Level Switch

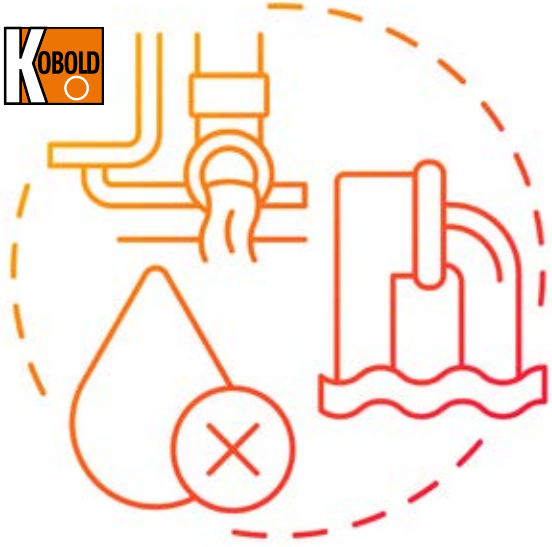


NAS
Float Level Switch



NIR-9 Rotary Paddle Switch





Water & Wastewater

KOBOLD has worked extensively with treatment facilities for municipal water, municipal sewage/wastewater, industrial wastewater, and medical facility wastewater. We are familiar with the various process requirements and operator needs. We offer first-in-class service and high quality products that are built to withstand the rigors of constant service. We have sensing and control solutions that are easily integrated into existing systems. Unlike many instrumentation companies, we offer an extremely broad line of products for flow, level, pressure, and temperature and can offer solutions that are more tailored to your exact needs.

Municipal Water

KOBOLD offers heavy-duty industrial solutions for pump control and protection, accurate chemical injection, basin monitoring, and water distribution. We offer inline magnetic flow meters for pipe diameters up to 24". We also offer insertion models up to 80" that have the additional capability of an integral extraction device for easy removal and maintenance. Our DUC clamp-on ultrasonic flow meter is an easy non-intrusive solution for pipe sizes up to 20 feet in diameter. For chemical injection, we have worked with both end-user operators and OEM companies to provide an ideal solution with our MIK magnetic flow meter. It provides the accuracy required for the reliable dosing of chemicals.



<p>EPS MAGNETIC FLOW METER</p> <ul style="list-style-type: none"> • INLINE • UP TO 24" 		<p>MIK MAGNETIC FLOW METER</p> <ul style="list-style-type: none"> • INLINE • 1/4" TO 2" 	
<p>PIT MAGNETIC FLOW METER</p> <ul style="list-style-type: none"> • INSERTION • UP TO 80" 		<p>DUC ULTRASONIC FLOW METER</p> <ul style="list-style-type: none"> • CLAMP-ON • UP TO 20 FEET 	

Industrial & Medical Wastewater

Wastewater from medical facilities, hospitals, industrial processes, and power generation sometimes requires preliminary on-site treatment before it can be released into the municipal systems or taken elsewhere. Our engineering staff is available for free to help walk you through product selection for your system requirements.



Municipal Sewage/Wastewater

Influent

DUC
CLAMP-ON
ULTRASONIC
FLOW METER
(UP TO 20 FEET)

NUS
ULTRASONIC
LEVEL
TRANSMITTER

EPS
INLINE
MAGNETIC
FLOW METER
(UP TO 24")

Mechanical/Chemical Treatments

MIK
MAGNETIC
FLOW METER

NAB
POLYPROPYLENE
FLOAT
SWITCH

NUS
ULTRASONIC
LEVEL
TRANSMITTER

PAD
DIFFERENTIAL
PRESSURE
TRANSMITTER

ANU
PITOT
TUBES

KPL
ORIFICE
PLATES

Effluent

MIS
INLINE
MAGNETIC
FLOW
METER

PIT
INSERTION
MAGNETIC
FLOW METER
(OPTIONAL
EASY
EXTRACTION
DEVICE)

NUS
ULTRASONIC
LEVEL
TRANSMITTER

DUC
CLAMP-ON ULTRASONIC
FLOW METER
(UP TO 20 FEET)







Many of our top products are used within municipal wastewater systems. While there are many KOBOLD options available, these are our top flow and level solutions for monitoring, measuring, and dosing for the various phases of treatment. They include magnetic, ultrasonic, and differential pressure models for flow, and ultrasonic and float technology for level. Please feel free to take advantage of the free advice offered by our engineering staff to help you find the best options for your exact needs.









Maritime

KOBOLD has extensive experience with construction, repair, and retrofitting for both commercial and government vessels. Whether it is fuel consumption monitoring, ballast water management, cooling water systems, bilge water treatment, liquid custody transfer, lubrication systems, hydraulic systems, seal flushing, or heat exchange, we can work with you to identify the optimum process solution for your maritime application.



 RCM DIFF. PRESSURE FLOW METER		Heat Exchangers
 KAL-D CALORIMETRIC FLOW METER		Engine Cooling
 DUK ULTRASONIC FLOW METER		Engine Cooling

 KAL-A CALORIMETRIC FLOW METER		Seal Flushing for Pumps
 DON OVAL GEAR FLOW METER		Fuel Monitoring
 REG FLOW RESTRICTOR		Flow Regulation



NBK
 MAGNETIC
 LEVEL GAUGE
 FOR TANK
 MONITORING



KSK
 ROTAMETER
 FLOW METER



SM
 ROTAMETER
 FLOW METER



MPV
 PROCESS
 PANEL DISPLAY



PSR/PS
 PADDLE
 FLOW SWITCH



SEN
 PRESSURE
 TRANSMITTER



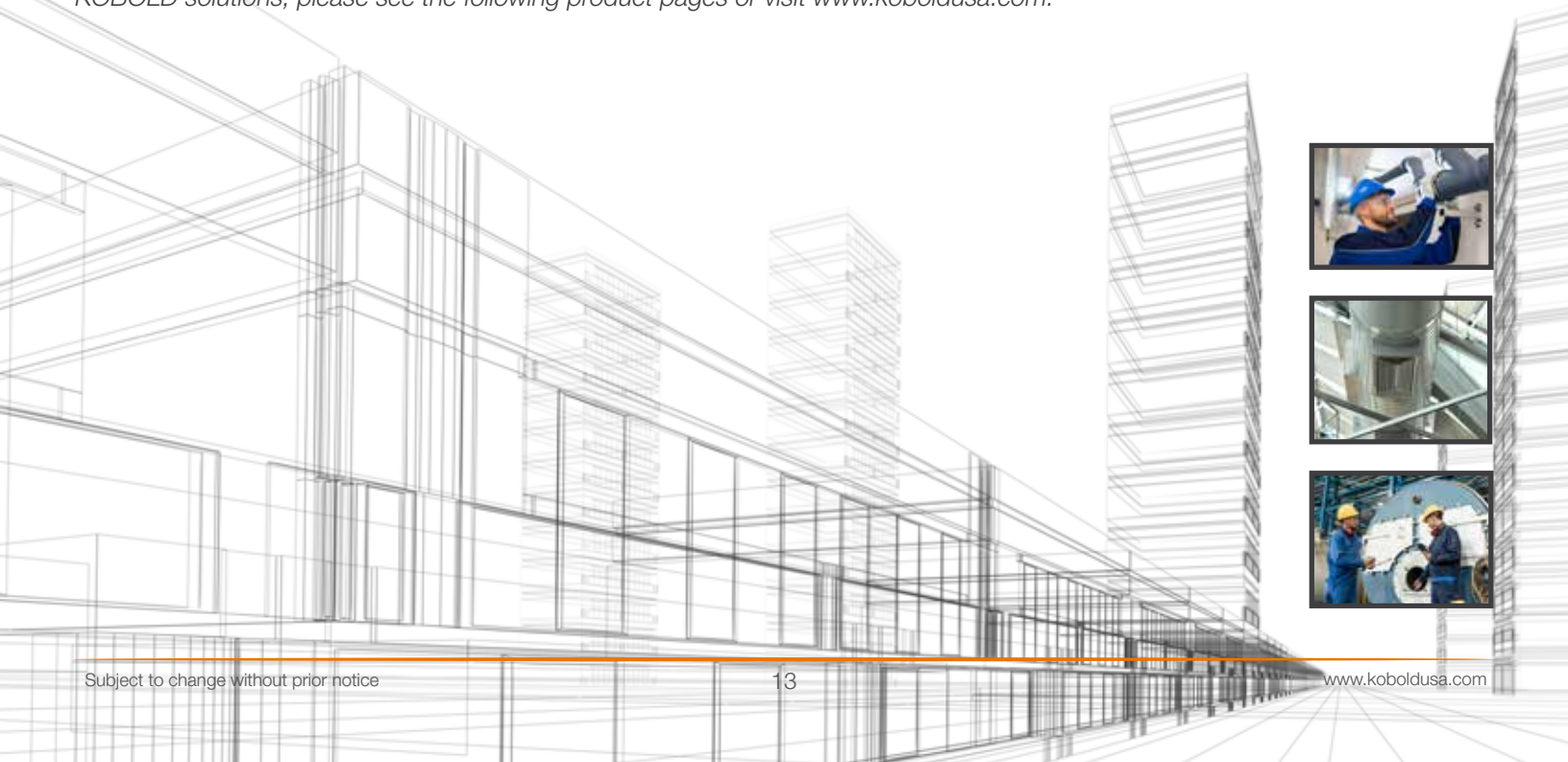
Instrumentation for Building Control

Measure & Monitor Water, Air, HVAC Elements, and More

KOBOLD offers a wide variety of flow, level, pressure, and temperature instrumentation to automate and control many different key building systems such as heating/cooling, water distribution, and fire suppression. Because our products are built from high quality components, they deliver a higher value by requiring less maintenance and lasting longer. We have worked with a wide variety of engineering firms, construction companies, HVAC providers, and end users to provide the ideal solutions for building control.

 MIS MAGNETIC FLOW METER		 KAL THERMAL FLOW METER		 PSR/ PS PADDLE FLOW SWITCH	
 MIK MAGNETIC FLOW METER		 KET THERMAL FLOW METER		 REG FLOW RESTRICTOR	
 DUK ULTRASONIC FLOW METER		 FPS PADDLE FLOW SWITCH		 PMP DIFF. PRESSURE SENSOR	
 DVE VORTEX MULTIVARIABLE FLOW METER		 LSP PADDLE FLOW SWITCH		 MAN PRESSURE GAUGE	

*The above products are just a sampling of KOBOLD products that have been used in building control applications. For more KOBOLD solutions, please see the following product pages or visit www.koboldusa.com.



Environmental & Social Governance

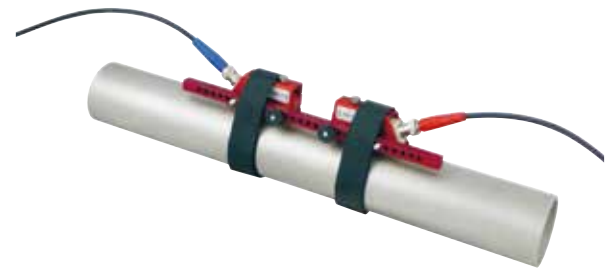
Flow meters are commonly used in industries such as wastewater treatment plants, oil and gas production, chemical manufacturing, and others to measure the flow of water, chemicals, or gases. Through accurate flow monitoring and control, companies can ensure they comply with environmental regulations like discharge limits, pollutant levels, and resource usage.

Efficient resource management is a key aspect of environmental sustainability. Flow meters help track consumption, such as water usage, fuel consumption, or raw material flow rates. This data can be used to identify areas for improvement, optimize processes, and minimize waste.

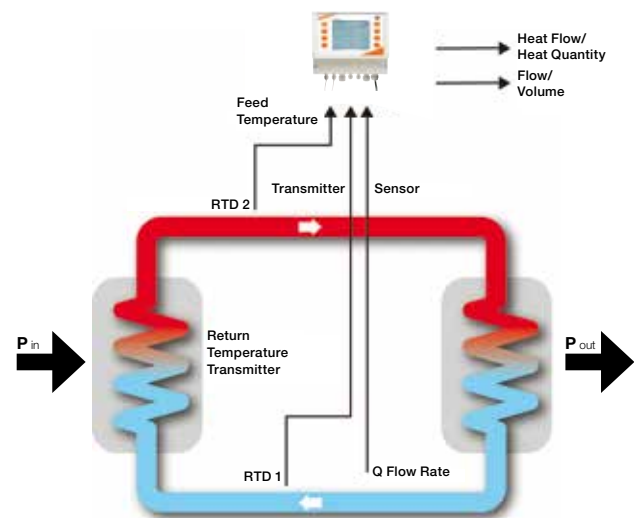
In industries with emissions regulations such as power plants, refineries, and manufacturing facilities, flow meters are used to monitor gases released into the atmosphere. This data is essential for calculating emissions levels and ensuring compliance with air quality standards and emission limits set by regulatory authorities.

ESG-focused companies often need to provide transparent and accurate data on their environmental performance to stakeholders, including investors, regulatory agencies, and the public. Flow meter data can be integrated into environmental reporting systems to provide real-time updates.

Failure to comply with ESG regulations can result in legal and financial risks, as well as damage to a company's reputation. By implementing reliable and accurate flow metering systems, like those from KOBOLD, companies can mitigate these risks by demonstrating proactive efforts to comply with regulations and minimize environmental impacts.



The DUC Ultrasonic Flow Meter is one of KOBOLD's many flow meters used in ESG, for flow and heat transfer measurement.





OEM Partner Program

Decades of Experience - Superior Solutions & Service



KOBOLD offers decades of expertise in partnering with OEM Manufacturers. We are one of the leading solution providers for industrial machinery applications. Because we offer such a broad line of instrumentation for flow, level, pressure, and temperature, we can provide the most budget-conscious options because we do not have to try and force a fit between your application and a limited product line.

Our engineers partner with our customers for no cost, helping as needed through the life of the project and the life of the product. Demos are available for testing and design purposes. Pricing is also commensurate with order quantities. When requesting pricing for an OEM project, please mention to our sales staff that you are an OEM manufacturer and would like to talk with someone about our OEM Partner Program.



Smart Home Water Leak Detection

To protect against unnecessary expenses, damage, and wasted water consumption, our DPL Paddle Wheel Flow Meter is the flow measuring element in a smart home system that monitors the entire home for leaks. If a leak is detected by the DPL, a shutoff valve is actuated and an alert is sent to the homeowner.



Fire Suppression

To ensure that the full length of a fire suppression system receives adequate liquid to fight fires, our REG Automatic Flow Regulator is used to regulate flow so there is no risk of the liquid being consumed within the first few feet of piping, rendering the parts of the system located farther away from the water source less effective. The REG ensures that the entire system receives the necessary flow.

Other Sample OEM Application Areas:

- Electricity Distribution and Hydrogen Production
- Semiconductors and Electroplating
- Industrial 3D Printing Machines
- Paper Mill Machinery
- Laboratory Analytical Equipment
- Industrial Clean Environment Equipment
- Electrical Control Panels
- Gas and Liquid Analyzers
- Fluid System Products and Assemblies
- Medical Equipment
- Water and Wastewater Treatment Systems
- Marine Water Treatment Systems
- Induction and Vacuum Furnaces
- Compressor Packages for Natural Gas
- Concrete Production Systems
- Automatic Lubrication Equipment
- Steam Boilers
- Counter Pressure Casting Machinery
- Mixers and Dispersion Equipment
- Burners and Combustion Systems
- Excavators/Asphalt Equipment for Highways and Construction
- Gas Processing Systems for Treatment and Custody Transfer
- Hydrogen Refueling Stations
- Dryers, Coolers, Chillers, Evaporators, and Cooling Towers
- Custom Gearing Solutions
- Industrial Cutting Equipment
- Ground Support Equipment and Vehicles
- Monofilament Extrusion Equipment
- High Pressure Water Fog Systems
- Environmental Remediation Equipment
- Painting and Finish Application Equipment
- Crushers and Conveyors for Mining
- Thin Film Coating Deposition Equipment
- Industrial Washing Machines
- Tunnel Boring Machinery
- Smart Irrigation Systems
- Air Pollution Control Scrubbers
- Food Processing Machinery





NBK Magnetic Level Gauges

KOBOLD NBK bypass magnetic level gauges are used in applications requiring visual indication, continuous measurement, and the control of liquid levels. Any free-flowing, compatible media with a viscosity less than 200 cPs is compatible. The NBK's design relies on the hydrostatic pressure principle to display tank level on a side-mounted measuring chamber. A float, which contains a ring magnet, rises and falls with the liquid level in the bypass tube. This approach allows the NBK to be built with an all-metal construction, eliminating the breakage and leakage problems frequently experienced with glass tube designs. Visual indication, signal transmission, and switching is possible by mounting magnetically-sensitive devices on the exterior of the bypass tube.

The KOBOLD NBK-M mini bypass magnetic level gauge provides many of the unique features of our standard NBK Series, but at a fraction of the cost. Similar to the full-sized NBK Series, the NBK-M uses KOBOLD's ring magnet float design, allowing the addition of roller indicators, switches, and other options almost anywhere on the periphery of the bypass tube. The use of lighter gauge materials and a streamlined manufacturing process make the KOBOLD NBK-M a very economical choice for lower pressure and shorter length level applications.

The NBK-04 top-of-the-tank mount magnetic level gauge combines the rugged simplicity of our NBK Series with above-the-tank liquid level indication.

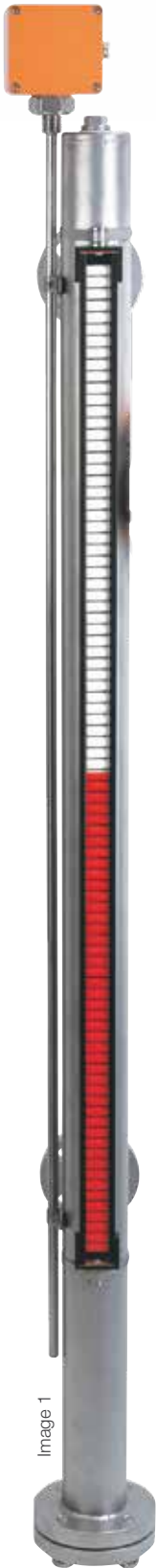


Image 1



Image 2

Image 3

Image 4



Image 1: Standard NBK (-03 to -33)

Image 2: NBK-M (Mini-NBK)

Image 3: NBK-04 (Top-Mount NBK)

Image 4: NBK combined with NGM Guided Wave Radar Level Transmitter



REGulation

KOBOLD REG: Flow Regulation Made Easy

- ✓ Made In The USA
- ✓ No Power Needed
- ✓ Unique Design



Superior Flow Regulation:

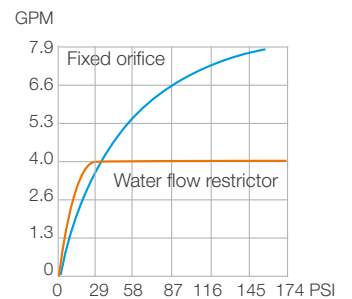
Unlike other designs, our REG does not utilize any rubber. Temperature, chemical influence, and aging affect the molecular structure of rubber and reduces its elasticity. Once the rubber is compromised, the flow can no longer be regulated. Our all-metal design provides a longer and more reliable service life. The REG excels in protecting pumps from water hammer, cavitation, and overheating. They are also maintenance free and provide tamper-proof allocation of flow for water circuits.

Features:

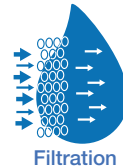
- Provides a Constant Flow Rate
- Long Service Life Provides Significant Cost Savings
- Ideal for Batching, Distribution, and Restriction
- Protects Against Water Hammer, Overheating, and Overload
- Simple and Effective
- Flow is Limited, Regardless of Pressure Fluctuations
- High Quality Stainless Steel Build
- Completely Maintenance-free
- No Auxiliary Power Needed to Operate
- Secure from Tampering or Manipulation
- Uniform Supply for Multiple Consumers



Differential Pressure Curve



Example of a flow rate of 4 GPM in relation to a fixed orifice





Innovations in Flow

The New DUK and the New U-Pace/C3T0 Electronics

- Flow and Temperature Measurement
- Switching & Transmitting Functions
- Batching Function with External Control Input
- Colored, Multi-Parameter, Configurable TFT-display
- Bi-directional Flow Measurement
- Measurement Independent of Changes in Density/Temperature
- Intuitive Setup Menu via 4 Optical Touch Keys
- 2 Configurable Outputs (Pulse/Frequency/Alarm/Analog Output)
- Grand and Resettable Totalizer
- IO-Link
- Small Pressure Loss
- Materials: Brass or 316 Stainless Steel
- High Turndown Ratio of 250:1
- Measuring Ranges: 0.02...5 to 0.6...160 GPM
- Max Pressure of 230 PSI
- Max Temperature of 194 °F
- Connections: 1/2"...3" NPT
- High Repeatability of $\pm 0.1\%$ of Full Scale
- Accuracy of $\pm 0.7\%$ of Reading & $\pm 0.7\%$ of FS



The new DUK Ultrasonic Flow Meter with C3T0 electronics offers temperature-compensated measurement, expanded media viscosity compatibility, IO-Link, bi-directional flow, and extensive capabilities for on-site programming.

Previously, the DUK was only compatible with water and water-like liquids. By incorporating additional intelligent electronics with customized parameters, it is now compatible with most homogeneous and Newtonian media under 68 cSt. The DUK is an excellent alternative to magnetic flow meters for non-conductive media.

The DUK is designed for smaller pipe sizes and covers a large measuring range by delivering an exceptional turndown ratio of 250:1. It has two individually configurable outputs, which can function as pulse, alarm, or analog outputs. This makes them easier to integrate into different processes or auxiliary circuits.

It features high visibility process cues such as the display color changing when a certain quantity has been dosed or when a limit value has been exceeded. Batching can be started and stopped locally or via an external control input. The DUK features response times of less than one second.

The new U-Pace/C3T0 electronics are also now available on other KOBOLD flow meters like the DON Positive Displacement Flow Meter, the MIK Magnetic Flow Meter, and the DVZ Vortex Flow Meter. The MIM and MIS Magnetic Flow Meters also offer the U-Pace electronics.



DUK



Display is rotatable in 90° Increments



MIK



DVZ



DON



MIS



MIM

Flow Meter Selection

What You Need to Know



Choosing a flow meter can be very overwhelming. When it comes to finding the best fit for your application, being thorough during the selection process can have big payoffs. Avoid equipment malfunction, damage, failure, and incorrect readings by asking the right questions at the beginning. But where should you start?

The Basic Process

- Who will be using it? What do they need to use it for? Where will it be placed?
- Does the process require totalizing or batching capabilities?
- Is visual rate indication needed only? Is a switch or transmitter needed? Is local or remote indication needed?

The Place of Installation

- What is the size of the pipe and what is it made out of?
- Is the environment around the area stable or variable? Is there danger of explosion? Is the area a harsh environment?
- What length of straight run of pipe is possible before and after the instrument placement?
- Will there be other types of instrumentation, valves, or pipe bends close to the flow meter either upstream or downstream?
- Are there space limitations at the installation point?
- Will the installation area require a certain angle that the instrument will be installed at?

The Media Characteristics

- Is it liquid, gas, vapor, steam, slurry, or multi-phase media?
- Is it clean or dirty?
- Is the nature of the media corrosive?
- What is the media density, viscosity, temperature, pressure? Do these remain constant?
- Is the media conductive and if so, to what extent?
- Is the media Newtonian or Non-newtonian in nature?
- Does the media have any coating or crystallizing properties?
- Is there any suspended particulate matter? If so, how large are the particles?
- Any ferrous material in the media?

Certifications

- What sort of regulatory compliance are you subject to?
- Do you have hygienic requirements for the application?
- Does the media have the potential to be explosive?

The Flow Profile

- Is it likely that the media may contain air bubbles?
- Will the pipe be totally full all the time?
- Will the flow rate remain relatively constant or will there be large fluctuations?
- Is there a chance of pulsating flow?
- Will the flow be largely laminar or turbulent?
- What sort of turndown is needed to accommodate the full range of flow?
- What is the minimum flow rate?
- What is the maximum flow rate?
- Will the media flow in one direction or will it be bi-directional?
- Is pressure loss in the line from the flow meter an important consideration?

Accuracy/Repeatability/Resolution

- Accuracy: How exact does the measurement need to be?
- Repeatability: How important is it for the meter to produce “grouped” results?
- Resolution: How incremental do the measuring units need to be?

Element to Consider	Essential Question to Answer
Price	What will the total cost of the meter be during its lifetime and how long will it last?
The Basic Requirements	What are the essential things that the meter needs to provide? Measurements, outputs, batching, etc?
Installation Considerations	Will it fit and function properly where it has to be installed?
The Process Media	Will the meter work with all the characteristics of the media?
Flow Profile	Is there something about how the media will move through the meter that will cause problems?
Precision	How precise does the meter need to be in relation to the cost of the meter?
Certifications	Does my application require any specific certifications for my instrumentation?
Communications	Where does the data produced by the meter need to go and how will it get there?

Does it still sound intimidating and a bit too much to tackle on your own? Don't worry. We have knowledgeable sales engineers with decades of experience who know how to guide you through this process. We would love to partner with you to find the best solution for your application.



KOBOLD Flow Instrumentation/Media Cross Reference Chart*

KOBOLD Technology Category	Specific Technology Type	Model	Product Description	Media*												Flow Range	Page
				Liquid								Gas					
				Clean	Dirty	Aggressive	Viscous	Abrasive	Oil-Based	Ultra-Pure H ₂ O	Slurries	Clean	Dirty	Aggressive	Steam		
Rotameter - Variable Area	Rotameter - Variable Area	BGF	All-Metal Armored Flow Meter	✓	✗	◆	◆	✗	◆	◆	✗	✓	✗	◆	◆	0.002...0.02 GPM to 60...570 GPM (0.008...0.08 SCFM to 140...1,400 SCFM)	24
		BGK	All-Metal, Low Volume Variable Area Flow Meter	✓	◆	◆	◆	✗	◆	◆	✗	✓	◆	◆	✗	0.026...0.26 GPH to 5...50 GPH (0.1...1 SCFH to 20...200 SCFH)	24
		BGN	All-Metal Armored Flow Meter	✓	✗	◆	◆	✗	◆	◆	✗	✓	✗	◆	◆	0.044...0.44 GPM to 26.4...264 GPM (0.17...1.7 SCFM to 100...1000 SCFM)	24
		BVO	OEM Flow Meter and Switch	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.1...1.0 GPM to 1...13 GPM	25
		KDF/ KDG	Micro Flow Meter and Switch	✓	✗	◆	✗	✗	✗	✓	✗	✓	✗	◆	✗	0.02...2.5 LPH to 16...160 LPH (0.5...5 NI/h to 500...5,000 NI/h)	23
		KDS	All Metal, Low Volume Variable Area Flow Meter	✓	✗	◆	◆	✗	◆	◆	✗	✓	✗	◆	✗	0.026...0.26 GPH to 5...50 GPH (0.1...1 SCFH to 20...200 SCFH)	24
		KFR	Acrylic Flow Meter	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.02...2 GPH to 2...20 GPM (0.1...1 SCFH to 10...100 SCFM)	23
		KSK	All-Plastic Low-Flow Flow Meter and Switch	✓	◆	✓	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.006...0.05 GPM to 11.8...60 GPM (0.06...0.27 SCFM to 3.5...18.3 SCFM)	23
		KSM	All-Plastic Flow Meter and Switch	✓	◆	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.06...0.66 GPM to 35...264 GPM (0.5...3 SCFM to 50...400 SCFM)	23
		KSR/ SVN	Low Volume Flow Switch	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.03...4 GPH (0.1...13 SCFH)	23
		KSV	Economical Micro Flow Meter	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.04...0.4 GPH to 2...20 GPH (0.3...3 SCFH to 10...100 SCFH)	23
		S-Series	All-Metal Flow Switch	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.075...0.25 GPM to 1...14 GPM (0.2...1.1 SCFM to 3...70 SCFM)	25
		SM	High Pressure All-Metal Flow Meter and Switch	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.04...0.6 GPM to 4...40 GPM (0.2...1 SCFM to 5...130 SCFM)	25
		SMN	Flow Switch	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.4...13 GPM	25
		SV	Float-Type Flow Meter and Switch	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.075...0.35 GPM to 2.5...40 GPM (0.25...1.25 SCFM to 10...150 SCFM)	24
		SWK	Compact Flow Meter and Switch	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.05...0.1 LPM to 13...24 LPM	23
		URK/ URM	Glass Variable Area Flow Meter	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.004...0.4 GPM to 66...220 GPM (0.011...0.11 SCFM to 30...300 SCFM)	24
		VKA	OEM Viscosity-Compensating Flow Meter	✓	✗	✗	✓	✗	✓	✗	✗	✗	✗	✗	✗	2...6.3 GPM to 8...26 GPM	25
VKG	Viscosity-Compensating Flow Meter and Switch	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.03...0.12 GPM to 2...21 GPM	25		
VKM	All-Metal Viscosity-Compensating Flow Meter and Switch	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.03...0.12 GPM to 2...20 GPM	25		
VKP	Plastic Flow Meter and Switch	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.5...5 GPM to 5...26 GPM	25		

✓ = Normally ◆ = Possibly (Consult Factory) ✗ = Not Suitable/Applicable

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				Liquid							Gas			Steam				
				Clean	Dirty	Aggressive	Viscous	Abrasive	Oil-Based	Ultra-Pure H ₂ O	Sturries	Clean	Dirty				Aggressive	
Paddle Type	Target-Type	DPT	Target Type Flow Meter	✓	◆	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	✗	1.5...8 GPM to 225...500 GPM	26
	Paddle-Type	FPS	Insertion Paddle Flow Switch	✓	◆	◆	◆	✗	◆	◆	✗	✗	✗	✗	✗	✗	0.9...4.4 GPM to 375...760 GPM	26
		LSP	Flow Switch for HVAC	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗	195...1,575 FPM	26
		PPS	Plastic Paddle Flow Switch	✓	✗	✗	✗	✗	✗	◆	✗	✗	✗	✗	✗	✗	5...9.5 GPM to 19...28.5 GPM	26
		PSR/PS	Paddle Flow Switch	✓	◆	◆	✗	✗	◆	◆	✗	✗	✗	✗	✗	✗	0.6...1.2 GPM to 101...140 GPM	26
Flap-Type	TSK	Flap-Style Flow Meter	✓	◆	◆	✗	✗	◆	◆	✗	✗	✗	✗	✗	✗	6.6...26.4 GPM to 880...6,600 GPM	26	
Pos. Displacement	Spherical Gear	ZDM	Positive Displacement Flow Meter	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.0005...0.5 GPM to 0.4...138 GPM	28	
	Oval Gear	DON	Positive Displacement Flow Meter	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.13...9.5 GPH to 40...660 GPM	28	
		DON-H	Oval Gear Flow Meter for High Pressures	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	0.13...9.5 GPH to 0.26...10.6 GPM	28
		OVZ	Oval-Gear Flow Meter	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	0.08...2.1 GPM to 0.42...10.6 GPM	28
Rotating Vane	Paddle-Wheel	DF-Series	Paddle-Wheel Flow Meters and Flow Sensors	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.02...0.14 GPM to 1.5...36 GPM	27	
		DFT	Paddle-Wheel Flow Sensor	✓	✗	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	0.05...0.5 GPM to 0.8...15 GPM	27
		DPE	Paddle-Wheel Flow Meter	✓	◆	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	✗	1.5...8 GPM to 15...200 GPM	27
		DPL	All-Plastic, Low Flow Sensor	✓	✗	✓	✗	✗	✗	◆	✗	✗	✗	✗	✗	✗	0.4...8 GPH to 16...400 GPH	27
		DRB	Paddle-Wheel Flow Meter	✓	◆	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	✗	1.5...8 GPM to 15...200 GPM	27
		DRG	Paddle-Wheel Flow Sensor	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	✗	0.15...3 GPM to 3...37 GPM	27
		DRH	Paddle-Wheel Flow Sensor	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	✗	0.05...0.2 GPM to 0.66...13.2 GPM	27
	Pelton Wheel	DPM	Pelton-Wheel Flow Sensor	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	✗	0.24...4.8 GPH to 0.8...80 GPH	27
		DTK	Pelton-Wheel Flow Sensor	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	✗	0.8...9.5 GPH to 16...190 GPH	27
		KFF/KFG	Low Volume Rotating Vane Flow Meter	✓	✗	◆	✗	✗	✗	✓	✗	◆	✗	◆	✗	13...100mL/min to 1...10 L/min (20...100 mL _v /min to 100...500 L _v /min)	28	
Turbine	DOT	Turbine Flow Meter/Monitor	✓	✗	◆	✗	✗	◆	◆	✗	✗	✗	✗	✗	✗	0.5...5 GPM to 240...2,400 GPM	28	
	DRS	OEM Turbine Flow Sensor	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	✗	0.6...10.5 GPM	28	

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				Clean	Dirty	Aggressive	Viscous	Abrasive	Oil-Based	Ultra-Pure H ₂ O	Slurries	Clean	Dirty				Aggressive	
Without Moving Parts	Coriolis	HPC	Mini Coriolis Mass Flow Meter	✓	◆	◆	◆	◆	◆	◆	◆	✗	✗	✗	✗	◆	2...20 kg/h to 5...50 kg/h	29
		TMU	High Performance Coriolis Flow Meter	✓	◆	✓	◆	◆	◆	◆	◆	✗	✗	✗	◆	0...1,320 lbs/hr to 0...2,200 tons/hr	30	
		TMU-W	High Pressure Coriolis Flow Meter	✓	◆	✓	◆	◆	◆	◆	◆	✗	✗	✗	◆	Max. 4 kg/min H ₂	30	
	Differential Pressure	RCD	Ultra-Rugged DP Flow Meter	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.2...0.88 GPM to 100...600 GPM	30	
		RCM	Orifice Flow Meter	✓	✗	✓	◆	✗	◆	◆	✗	✓	✗	◆	✓	0.3...2 GPM to 400...3,000 GPM (1.5...10 SCFM to 3,000...20,000 SCFM)	30	
	Magnetic	EPS	Magnetic Flow Meter	✓	✓	✓	✓	✓	✗	✗	✓	✗	✗	✗	✗	0.5...10 m/sec	31	
		MIK	Magnetic Flow Meter	✓	✓	✓	◆	✗	✗	✗	✗	✗	✗	✗	✗	0.18...7.8 GPH to 9.5...180 GPM	30	
		MIM	All-Metal Magnetic Flow Meter	✓	✓	✓	◆	✗	✗	✗	✗	✗	✗	✗	✗	0.16...16 GPH to 0.8...170 GPM	31	
		MIS	All-Metal Magnetic Flow Meter	✓	✓	✓	◆	✗	✗	✗	✗	✗	✗	✗	✗	3.3...33 ft/sec	31	
		PIT	Insertion Magnetic Flow Meter	✓	✓	✓	✓	✓	✗	✗	◆	✗	✗	✗	✗	3.3...33 ft/sec	31	
		PITe	Magnetic Flow Meter	✓	✓	✓	✓	✓	✗	✗	◆	✗	✗	✗	✗	3.3...33 ft/sec	31	
	Thermal	KAL	Temperature-Compensating Thermal Flow Switch	✓	✓	✓	✗	✓	✗	◆	✗	✗	✗	✗	✗	0.15...6.6 ft/sec	29	
		KAL-A	Thermal Flow Sensor	✓	✓	✓	✗	✓	✗	◆	✗	✗	✗	✗	✗	0.15...6.6 ft/sec	29	
		KAL-D	Compact Thermal Flow Switch	✓	✓	✓	✗	✓	✗	◆	✗	✗	✗	✗	✗	0.15...6.6 ft/sec	29	
		KAL-K	Thermal Flow Switch	✓	✓	✓	✗	✓	✗	◆	✗	✗	✗	✗	✗	0.15...6.6 ft/sec	29	
		KAL-L	Thermal Air Flow Switch	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	3.3...65 ft/sec	29	
		KET	Thermal Flow Sensor	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✓	✗	0.33...164 ft/sec to 0.33...730 ft/sec	29	
	Ultrasonic - Clamp-on	DUC	Clamp-on Ultrasonic Flow Meter	✓	◆	✓	✓	✓	✓	✓	◆	✗	✗	✗	✗	0...98 ft/sec	32	
	Ultrasonic - Inline	DUK	Compact Ultrasonic Flow Meter	✓	✗	◆	◆	✗	◆	◆	✗	✗	✗	✗	✗	0.02...5 GPM to 0.6...160 GPM	32	
	Vortex - Multivariable	DVH	Multivariable Flow Meter	✓	◆	◆	◆	✗	◆	◆	✗	✓	✗	✓	✓	0.89...22 GPM to 141...4,270 GPM (1.8...18 SCFM to 2,071...203,000 SCFM)	31	
	Vortex	DVZ	Vortex Flow Meter and Switch	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.13...1.2 GPM to 2.6...26.5 GPM	31	
	Oscillation	DOG	Oscillation Flow Meter	✗	✗	✗	✗	✗	✗	✗	✗	✓	◆	◆	✗	0.07...7 CFM to 35...3500 CFM	31	

✓ = Normally ◆ = Possibly (Consult Factory) ✗ = Not Suitable/Applicable

*This chart is a guide for a generalized overview of the flow instrumentation line. Each application is unique and all factors should be carefully considered when selecting the appropriate technology. For more in-depth assistance, contact our engineering staff at 412-788-2830. Purchaser assumes all responsibility and accompanying liability in the final product selection.





Flow - Rotameters (Variable Area)

KSR/SVN - FLOW SWITCH FOR WATER OR AIR



- Rotameter (Variable Area) Principle
- Materials: Stainless Steel, Glass, FKM
- Micro-flow Switches
- Control for Very Small Flow Rates
- Proximity Switch or Reed Contact
- Vertical Connection for Inline Mounting
- Anodized Aluminum Housing

Water: 0.03...4 GPH
 Air: 0.1...13 SCFH
 t_{max} 160 °F; p_{max} 230 PSIG
 Connection: 1/4" NPT



KSV - ECONOMICAL MICRO-FLOW METER



- Rotameter (Variable Area) Principle
- Polysulfone Body with Brass or SS Fittings
- Excellent Chemical Resistance
- Compact
- Easy to Read
- Easy Installation
- Panel Mount
- Highly Repeatable
- Optional Needle Valve

Water: 0.04...0.4 GPH to 2...20 GPH
 Air: 0.3...3 SCFH to 10...100 SCFH
 t_{max} 250 °F; p_{max} 87 PSIG
 Connection: 1/8" NPT
 Accuracy: \pm 6% of Full Scale



KFR - ACRYLIC FLOW METER FOR LIQUID OR GAS



- Rotameter (Variable Area) Principle
- Material: Clear Acrylic
- Easy to Read Scale
- Compact Size, Low Cost
- Durable Construction
- Metric Scales Available
- Inherently Stable Float Design
- With or Without Control Valves
- PVC or Metal Fittings for Durability

Water: 0.2...2 GPH to 2...20 GPM
 Air: 0.1...1 SCFH to 10...100 SCFM
 t_{max} 150 °F; p_{max} 100 PSIG
 Connection: 1/8" NPT, 1/4" NPT, 1" NPT
 Accuracy: \pm 2 - 5% of Full Scale



KSK - ALL-PLASTIC FLOW METER WITH OPTIONAL SWITCH



- Rotameter (Variable Area) Principle
- Materials: Polyamide or Polysulfone
- Compact Design
- Polysulfone Version Highly Resistant to Acidic and Alkaline Solutions
- Transistor or Reed Switch Contacts
- Monitor and Alarm for Flow Upset Conditions
- LED Switching Indication

Water: 0.006...0.05 GPM to 0.44...4.4 GPM
 Air: 0.06...0.27 SCFM to 3.5...18.3 SCFM
 t_{max} 140 °F; p_{max} 145 PSIG
 Connection: 3/8"...1" NPT or Socket Glue-in Connection
 Accuracy: \pm 4% of Full Scale



KSM - ALL-PLASTIC FLOW METER WITH OPTIONAL SWITCH



- Rotameter (Variable Area) Principle
- Materials: Polyamide or Polysulfone
- For Liquid or Gas
- Direct Reading Scales for Water or Air
- Excellent Choice for Aggressive Media
- Large, Easy to Read Scale
- Shock and Corrosion Resistant
- Optional Reed Switch Contact

Water: 0.06...0.66 GPM to 35...264 GPM
 Air: 0.5...3 SCFM to 50...400 SCFM
 t_{max} 140 °F; p_{max} 145 PSIG
 Connection: 1"...2-1/2" NPT or Socket Glue-in Connection
 Accuracy: \pm 4% of Full Scale



KDF-2/KDG-2 - MICRO FLOW METER AND SWITCH



- Rotameter (Variable Area) Principle
- Materials: Stainless Steel, Glass, FKM
- Integral Flow Control Valve
- Easy to Read Scale
- Compact Design
- Direct Reading Scales for Water or Air
- Low Flow Switching
- Precision Metering Valve
- Optional Adjustable Inductive Proximity Switches (NAMUR Relay Required)

Water: 0.025...2.5 l/h to 16...160 l/h
 Air: 0.5...5 NI/h to 500...5,000 NI/h
 t_{max} 100 °C; p_{max} 16 bar
 Connection: 1/4" NPT, G 1/4, 8 mm Hose
 Accuracy: \pm 2.5 % $q_{0.5}$ = 50 %



KDF-9/KDG-9 - MICRO FLOW METER AND SWITCH



- Rotameter (Variable Area) Principle
- Materials: Stainless Steel, Glass, FKM
- Integral Flow Control Valve
- Easy to Read Scale
- Compact Design
- Direct Reading Scales for Water or Air
- Low Flow Switching
- Precision Metering Valve
- Optional Adjustable Inductive Proximity Switches (NAMUR Relay Required)

Water: 0.02...0.25 l/h to 10...100 l/h
 Air: 2...20 NI/h to 300...3000 NI/h
 t_{max} 100 °C; p_{max} 16 bar
 Connection: 1/4" NPT, G 1/4, 8 mm Hose
 Accuracy: \pm 3 % $q_{0.5}$ = 50 %



SWK - VARIABLE AREA FLOW METER AND SWITCH



- Rotameter (Variable Area) Principle
- Materials: Brass, Stainless Steel, PVC
- Compact Size
- Low Cost
- High Reliability
- Universal Mounting
- Adjustable Switch or Switch with Indicator

Water: 0.05...0.1 L/min to 13...24 L/min
 t_{max} 210 °F; p_{max} 3,600 PSIG
 Connection: G 1/2
 Accuracy: \pm 4% of Full Scale





Flow - Rotameters (Variable Area)

URK - VARIABLE AREA FLOW METER



- Rotameter (Variable Area) Principle
- Fixed Flange
- Material: Cast Iron, Stainless Steel
- Designed for Low Operating Pressures
- Large Sight Glass for Direct Observation
- Optional Proximity Switches
- Common Applications: Cooling Circuits, Plant Engineering, Water Treatment, Machine Tools, Solar Heating, Welding, Glass Melting Pots, Extrusion Machines, and Induction Furnaces

Water: 0.004...0.04 GPM to 66...220 GPM
 Air: 0.011...0.11 SCFM to 30...300 SCFM
 t_{max} 210 °F; p_{max} 230 PSIG
 Connection: 1/2" ... 3" ANSI
 Accuracy: $\pm 2 - 2.5\%$, $q_G = 50\%$

URM - VARIABLE AREA FLOW METER



- Rotameter (Variable Area) Principle
- Material: Stainless Steel
- Designed for Low Operating Pressures
- Large Sight Glass for Direct Observation
- Optional Proximity Switches
- Common Applications: Cooling Circuits, Plant Engineering, Water Treatment, Machine Tools, Solar Heating, Welding, Glass Melting Pots, Extrusion Machines, and Induction Furnaces

Water: 0.06...0.6 GPH to 11...110 GPM
 Air: 0.11...1.1 SCFH to 30...300 SCFM
 t_{max} 210 °F; p_{max} 230 PSI
 Connection: 1/4" ... 3" NPT
 Accuracy: $\pm 2 - 2.5\%$, $q_G = 50\%$

V31 - HIGH ACCURACY VA FLOW METER/SWITCH



- Rotameter (Variable Area) Principle
- Materials: Stainless Steel, PVC, PVDF, PTFE
- For Liquids or Gas
- Scale Shows Flow Rate as Volume
- Borosilicate Glass Tube
- Up to 2 Optional Limit Switches
- Calibrated for Density and Viscosity

Water: 0.3...3.3 GPH to 4.4...44 GPM
 Air: 0.088...0.88 SCFM to 10.6...106 SCFM
 t_{max} 176 °F; p_{max} 210 PSIG
 Connection: 1/4" ... 2" NPT, 1/2" ... 1" ANSI
 Accuracy: $\pm 1.6\%$ Liquids, $\pm 2.5\%$ Gases (VDI)

KDS - ALL METAL, LOW VOLUME VA FLOW METER



- Rotameter (Variable Area) Principle
- All-Metal Design in Stainless Steel
- For Liquids or Gases
- For Low Flow Rates
- Compact Size
- Rugged Mechanical Design with a Low Rate of Wear
- Horizontal or Vertical Connections
- High Pressure Models

Water: 0.026...0.26 GPH to 5...50 GPH
 Air: 0.1...1 SCFH to 20...200 SCFH
 t_{max} 260 °F; p_{max} 580/910 PSIG
 Connection: 1/4" NPT
 Accuracy: $\pm 3\%$ $q_G = 50\%$
 Options: Analog Output, Inductive Contacts

BGK - ALL METAL, LOW VOLUME VA FLOW METER



- Rotameter (Variable Area) Principle
- Material: Stainless Steel
- For Low Flow Rates
- For Liquids or Gases
- Compact Size
- Provides Flow Rate in Volume or Mass per Unit of Time
- Rugged Mechanical Design
- Low Rate of Wear

Water: 0.026...0.26 GPH to 5...50 GPH
 Air: 0.1...1 SCFH to 20...200 SCFH
 t_{max} 260 °F; p_{max} 580 PSIG
 Connection: 1/2" ... 1" ANSI
 Accuracy: $\pm 3\%$ $q_G = 50\%$
 Options: Analog Output, Inductive Contacts

BGN - ALL METAL, ARMORED VA FLOW METER



- Rotameter (Variable Area) Principle
- Materials: SS, Special Materials on Request
- For Vertical Up Installations
- Ideal for Difficult Applications Requiring High Pressure or Temperature, or Low Pressure Loss
- Direct Reading Scales Calibrated for Viscosity, Density, Pressure, and Temperature
- Analog Output, HART®, Profibus-PA® Available
- 316 SS, PTFE-lined SS, Hastelloy® C-22 Tubes

Water: 0.002...0.02 GPM to 60...570 GPM
 Air: 0.008...0.08 SCFM to 140...1,400 SCFM
 t_{max} 660 °F; p_{max} 580 PSIG
 Connection: 1/2" ... 6" ANSI, 1/4" ... 2" NPT
 Options: Analog Output 4-20 mA, Contacts
 Accuracy: $\pm 1.6 - 2.2\%$ $q_G = 50\%$

BGF - ALL METAL, ARMORED VARIABLE AREA FLOW METER



- Rotameter (Variable Area) Principle
- Materials: SS, SS/PTFE, Others on Request
- For Horizontal or Vertical Installations
- Unique Guided Float with Spring Return
- Ideal for Difficult Applications Requiring High Pressure or Temperature, or Low Pressure Loss
- Direct Reading Scales Calibrated for Viscosity, Density, Pressure, and Temperature
- Analog Output, HART®, Profibus-PA® Available

Water: 0.044...0.44 GPM to 26.4...264 GPM
 Air: 0.17...1.7 SCFM to 100...1000 SCFM
 t_{max} 390 °F; p_{max} 580
 Connection: 1/2" ... 3" ANSI, 1/4" ... 2" NPT
 Options: Analog Output, BUS-Interface
 Accuracy: $\pm 2\%$ $q_G = 50\%$

SV - VARIABLE AREA FLOW METER AND SWITCH



- Rotameter (Variable Area) Principle
- Materials: Brass, Stainless Steel
- Small, Compact Design
- Direct Reading Scales for Water or Air
- Wide Selection of Measuring Ranges
- Vertical Connections for Easy Installation
- Cylindrical Control Tube for Float
- Borosilicate Glass Measuring Tube
- N/O or SPDT Reed Contacts as Options
- Variety of Sealing Materials

Water: 0.075...0.35 GPM to 2.5...40 GPM
 Air: 0.25...1.25 SCFM to 10...150 SCFM
 t_{max} 210 °F; p_{max} 145 PSIG
 Connection: 1/4" ... 1-1/4" NPT
 Accuracy: $\pm 5\%$ of Full Scale

Flow - Rotameters (Variable Area)



BVO - OEM FLOW METER WITH SWITCH



- Rotameter (Variable Area) Principle
- Materials: Brass, Stainless Steel
- Rugged Low Cost Design
- Repeatability of $\pm 2\%$ of Full Scale
- Adjustable SPST Switch

Water: 0.1...1.0 GPM to 1...13 GPM
 t_{max} 210 °F; p_{max} 145 PSIG
 Connection: 1/4"...1" NPT
 Accuracy: $\pm 10\%$ of Full Scale



S-SERIES - ALL METAL VARIABLE AREA FLOW SWITCH



- Rotameter (Variable Area) Principle
- Materials: Brass, Stainless Steel
- For Liquids or Gas
- Compact Design
- Cost Effective
- Reliable Operation
- Inline Connections for Easy Installation
- NBR or FKM Seals
- Up to 4 Switch Points

Water: 0.075...0.25 GPM to 1...14 GPM
 Air: 0.2...1.1 SCFM to 3...70 SCFM
 t_{max} 240 °F; p_{max} 5,000 PSIG
 Connection: 1/4"...3/4" NPT
 Accuracy: $\pm 5\%$ of Full Scale



SM - HIGH PRESSURE, ALL METAL FLOW METER AND SWITCH



- Rotameter (Variable Area) Principle
- Materials: Brass, Stainless Steel
- Direct Reading Scales for Water or Air
- Small, Compact Design
- Easy to Install
- Optional Set-point Switches
- Switches Mounted in a Protective Housing
- High Resistance to Pressure and Shock
- Can Handle 120% of Max. Flow

Water: 0.05...0.15 GPM to 4...40 GPM
 Air: 0.25...1.2 SCFM to 5...130 SCFM
 t_{max} 210 °F; p_{max} 5,000 PSIG
 Connection: 1/4"...1-1/4" NPT
 Accuracy: $\pm 5\%$ of Full Scale



SMN - ALL METAL FLOW SWITCH FOR LIQUIDS



- Rotameter (Variable Area) Principle
- Materials: Brass, Stainless Steel
- Horizontal or Vertical Flow
- Low Switch Point
- Low Pressure Drop at High Flows
- All Metal Wetted Parts
- N/O or SPDT Reed Switch
- Typical Applications: Cooling Circuits, High Pressure Cleaning Devices, and Heating Systems

Switching Range: 0.4...13 GPM
 t_{max} 210 °F; p_{max} 5,000 PSIG
 Connection: 1" NPT
 Accuracy: $\pm 5\%$ of Full Scale



VKP - ECONOMICAL PLASTIC FLOW METER AND SWITCH



- Rotameter (Variable Area) Principle
- Material: Polysulfone
- Compact Size
- Inexpensive Flow Measurement for Liquids
- Optional Reed Contacts
- Optional Union Fittings
- Dual GPM/LPM Scales
- Common Uses: Cooling Water, Lubrication Systems, Solar Heating

Water: 0.5...5 GPM to 5...26 GPM
 Oil: 0.5...4.5 GPM to 3...20 GPM
 t_{max} 250 °F; p_{max} 230 PSIG
 Connection: 1/2", 3/4", 1" NPT, Glue Connection
 Accuracy: $\pm 5\%$ of Full Scale



VKG - VISCOSITY COMPENSATED FLOW METER AND SWITCH



- Rotameter (Variable Area) Principle
- Materials: Brass, Stainless Steel, NBR, FKM
- For High or Low Viscosity Media
- Largely Insensitive to Viscosity and Density Changes During Operation
- Viscosity Compensated up to 540 cSt
- Density Compensated up to 30 lb/ft³
- Direct Reading Oil Scale
- Mounting Position Independent
- Extremely Versatile

Viscosity Range: 1...540 cSt
 Oil: 0.03...0.12 GPM to 2...21 GPM
 t_{max} 210 °F; p_{max} 175 PSIG
 Connection: 1/4"...1" NPT
 Accuracy: $\pm 5\%$ of Full Scale



VKM - ALL METAL, VISCOSITY COMPENSATED FLOW METER



- Rotameter (Variable Area) Principle
- Materials: Brass, Stainless Steel
- Direct Reading Scales
- Suitable for Oils and Compatible Liquids
- Install in any Position
- Inline Connections
- Viscosity Compensated up to 540 cSt
- Density Compensated up to 30 lb/ft³
- Optional: Reed Contacts, Analog Output, Compact Electronics

Viscosity Range: 1...540 cSt
 Oil: 0.03...0.12 GPM to 2...20 GPM
 t_{max} 210 °F; p_{max} 5,000 PSIG
 Connection: 1/4"...1" NPT
 Accuracy: $\pm 4\%$ of Full Scale



BVB - MANIFOLD VALVES FOR VA FLOW METERS



- Material: Aluminum
- For Use with VKG or VKM
- Join up to 8 Flow Meters
- Easy to Install
- Total Throughput up to 6.3 GPM
- Compact Solution for Centralized Flow Measurement and Distribution

Designed for Models VKG, VKM
 t_{max} 210 °F; p_{max} 930 PSIG
 Connection: 1/2" NPT





Flow - Rotameters/VA & Paddle/Flap

VKA - OEM VISCOSITY COMPENSATED FLOW METER



- Rotameter (Variable Area) Principle
- Material: Brass
- Reliable Construction
- Affordable Pricing
- Optional Switches
- Protection: IP54 for Side Indicator, IP65 for Electrical Switch

Viscosity Range: 30...540 cSt
 Oil: 2...6.3 GPM to 8...26 GPM
 t_{max} 210 °F; p_{max} 3,600 PSIG
 Connection: 1/2", 3/4" NPT
 Accuracy: \pm 4% of Full Scale



PSR - INLINE PADDLE FLOW SWITCH



- Materials: Brass, Stainless Steel
- Low Cost
- Easy to Install
- Simple, Reliable Design
- Adjustable Switch Point
- Contacts can be set N/O or N/C
- Standard SPST Switch
- Optional SPDT Switch

Switching Ranges for Water:
 0.6...1.2 GPM to 12.6...17.7 GPM
 t_{max} 230 °F; p_{max} 360/3,600 PSIG
 Connection: 1/4"...1-1/2" NPT



PS - INSERTION PADDLE FLOW SWITCH



- Materials: Brass, Stainless Steel
- Low Cost
- Easy to Install
- Simple, Reliable Design
- Adjustable Switch Point
- Contacts can be set N/O or N/C
- Standard SPST Switch
- Optional SPDT Switch

Switching Ranges for Water:
 18...24 GPM to 101...141 GPM
 t_{max} 230 °F; p_{max} 360/3,600 PSIG
 Connection: 1/2" NPT



PPS - PLASTIC PADDLE FLOW SWITCH



- Material: Polysulfone
- High Reliability
- Easy to Install
- Bi-directional
- Low Maintenance
- Low Pressure Drop
- For Pipes 1" and Larger
- Switch Status Visible through Housing
- N/O, N/C, or SPDT Contacts

Water: 5...9.5 GPM to 19... 28.5 GPM
 t_{max} 225 °F; p_{max} 145 PSIG
 Connection: 1" NPT
 Repeatability: \pm 3% of Switchpoint



FPS - INSERTION PADDLE SWITCH FOR LIQUIDS



- Material: Brass, Stainless Steel
- Suitable for Water and Compatible Low-viscosity Liquids
- High Capacity SPDT Mechanical Switch
- Position Independent Installation
- Externally Adjustable Switch Point
- Tolerates Dirty Media
- Used for Min/Max Flow Control, Pump Protection, and Monitoring Cooling Circuits

Water: 0.9...4.4 GPM to 375...760 GPM
 t_{max} 250 °F; p_{max} 435 PSIG
 Connection: 1" NPT



LSP - AIR FLOW SWITCH FOR HVAC DUCTS



- Material: Galvanized Steel, Brass, SS
- For Horizontal Square/Rectangular HVAC Ducts
- Dust-tight SPDT Micro-switch
- Adjustable Switch Point
- ABS and Polycarbonate Housing
- Common Uses: Air Ducts, Exhaust Gas Channels, Pneumatic Conveyors, Filters, Cooling and Drying Plants, Monitoring Ventilator Performance

Air: 195...1575 FPM
 t_{max} 185 °F; p_{max} Atmospheric
 Connection: Flange



DPT - TARGET TYPE FLOW METER



- Materials: Brass, Stainless Steel
- Unique, Patented Measurement System
- Simple, Reliable Design
- Virtually No Wear Components
- Low Pressure Loss
- Generally Immune to Problems Caused by Liquids with a High Solids Content
- Flow Rate Display, Adjustable Setpoint Switches, or an Analog Flow Signal

Water: 1.5...8 GPM to 225...500 GPM
 t_{max} 175 °F; p_{max} 580 PSIG
 Connection: 3/8"...3" NPT
 Accuracy: \pm 3% of Full Scale



TSK - FLAP STYLE FLOW METER



- Materials: SS, PTFE, Hastelloy®
- Unique Design for Low Head Loss
- For Horizontal or Vertical Piping Runs
- Tolerates Dirty Liquids and Suspended Solids
- Superior Damping System for Stability
- Calibrations for Density Available
- Optional Set-point Switches, 4-20 mA with HART®, or Profibus-PA®

Water: 6.6...26.4 GPM to 880...6,600 GPM
 t_{max} 570 °F; p_{max} 580 PSIG
 Connection: 1-1/2"...20" ANSI Wafer
 Accuracy: \pm 2.5% of Full Scale





Flow - Paddle Wheel & Pelton Wheel

DF - PADDLE WHEEL FLOW METERS



- Materials: Polysulfone, Brass, SS
- Totalizers and Transmitters
- Optional Switches
- Easy to Install
- Rugged and Reliable
- No Straight Run Required
- Multiple Material Combinations
- NPN Frequency Output or Analog Output
- Compatible with Water-based, Low Viscosity Liquids and Aggressive Water-based Chemicals

Water: 0.02...0.14 GPM to 1.5...36 GPM
 t_{max} 180 °F; p_{max} 1,450 PSIG
 Connection: 1/8"...1-1/2" NPT
 Accuracy: \pm 2.5% of Full Scale



DFT - COMPACT PADDLE WHEEL FLOW SENSOR



- Material: Brass or PTFE
- Compact, Economical Design
- No Straight Run Requirements
- Standard Frequency Output
- Two Different Material Combinations
- Optional Analog and Controller Outputs, LCD Displays, Analog Flow Transmitters, Programmable Relays, Totalizers or Batch Controllers

Water: 0.05...0.5 GPM to 0.8...15 GPM
 t_{max} 180 °F; p_{max} 230 PSIG
 Connection: 1/4"...3/4" NPT
 Accuracy: \pm 2.5% of Full Scale



DPL - ALL PLASTIC LOW FLOW PADDLE WHEEL SENSOR



- Material: Polypropylene
- Accuracy at a Low Cost
- Compact Design
- Resistant to Aggressive Media
- Sapphire Bearings
- Standard Pulse Frequency Output
- Optional Analog Output and/or Digital Indication

Water: 0.4...8 GPH to 16...400 GPH
 t_{max} 160 °F; p_{max} 145 PSIG
 Connection: G 1/2, Hose Barb
 Accuracy: \pm 2.5% - 5% of Full Scale



DRH - PADDLE WHEEL FLOW SENSOR



- Materials: POM, PVDF, Brass, SS
- Economical Pricing
- Industrial or OEM Applications
- For a Wide Range of Water-like, Low-viscosity Liquids or Aggressive Chemicals
- Seven Material Combinations
- Frequency, 4-20 mA Analog, Transistor Switches, Digital/Analog Display

Water: 0.05...0.2 GPM to 0.66...13.2 GPM
 t_{max} 175 °F; p_{max} 580 PSIG
 Connection: 3/8" NPT, 1" NPT
 Accuracy: \pm 2.5% of Full Scale



DRG - PADDLE WHEEL FLOW SENSOR



- Materials: Polypropylene, Brass, SS
- Perfect OEM Flow Sensor
- Compact, Versatile, Economical
- Five Material Combinations
- All-plastic Version Suitable for High Purity Water and Aggressive Water-based Chemicals
- Outputs: Pulse Frequency, 4-20 mA Analog, Transistor Switches, Digital/Analog Display

Water: 0.15...3 GPM to 3...37 GPM
 t_{max} 175 °F; p_{max} 580 PSIG
 Connection: 1/8"...1" NPT
 Accuracy: \pm 3% of Full Scale



DPE/DRB - PADDLE WHEEL FLOW METER



- Materials: Brass, Stainless Steel
- Unique Insertion Impeller Design
- Low Pressure Loss
- Outputs: Pulse Frequency, 4-20 mA Analog, Digital Display, and Switches
- Tolerates Dirty Liquids and Solids
- Common Uses: Cooling Water, Mechanical Engineering, and Waste Water Treatment

Water: 1.5...8 GPM to 15...200 GPM
 t_{max} 175 °F; p_{max} 580 PSIG
 Connection: 1/2"...3" NPT
 Accuracy: \pm 2.5% of Full Scale



DPM - PELTON WHEEL FLOW SENSOR



- Material: Brass, Stainless Steel
- For Water-based, Low Viscosity, Optically Transparent Liquids
- For Low Flow Rates
- Compact Design
- No Straight Piping Requirements
- Mount in any Orientation with Axle Remaining in the Horizontal Plane
- Long-life Sapphire Axle and Bearings
- Outputs: Pulse Frequency, 4-20 mA Analog, Transistor Switch Signal

Water: 0.24...4.8 GPH to 0.8...80 GPH
 t_{max} 175 °F; p_{max} 230 PSIG
 Connection: 1/8" NPT, 1/4" NPT
 Accuracy: \pm 1 - 2.5% of Full Scale



DTK - PELTON WHEEL FLOW SENSOR



- Material: Stainless Steel
- Designed for High Volume OEM Market
- Economical Measurement of Low Flows
- For Clear or Opaque Liquids
- For Low Viscosity Liquids
- No Straight Run Requirements
- Highly Repeatable, Linear Output
- Common Applications: Volume Dosing, Laundry Machines, PCB Manufacturing, and Agricultural Machinery

Water: 0.8...9.5 GPH to 16...190 GPH
 t_{max} 280 °F; p_{max} 430 PSIG
 Connection: 1/4" NPT
 Accuracy: \pm 2% of Full Scale





Flow - Turbine, PD, & Thermal

KFF/KFG - LOW VOLUME, ROTATING VANE FLOW METER



- Material: Brass, PPS
- Very Low Flow Rates
- Liquid or Gas
- For a Wide Variety of Industrial, Commercial, or Laboratory Applications
- Pulse or 0-5 V_{DC} Output
- Highly Repeatable
- 12.5 V_{DC} or 24 V_{DC} Input Power
- Local LCD Display for 3000 Series

Water: 13...100 mL/min to 1...10 L/min
 Air: 20...100 mL_N/min to 100...500 L_N/min
 t_{max} 120 °F; p_{max} 500 PSIG
 Connection: 1/8"...1/2" Compression
 Accuracy: ± 3% of Full Scale



DRS - OEM TURBINE FLOW SENSOR



- Materials: Brass, Stainless Steel, PPO
- Ideal for OEM Applications
- For Clear or Opaque Liquids
- Pulse Frequency, 4-20 mA, Digital Display
- Optional PT-100 RTD Output for Temperature Measurement

Water: 0.6...10.5 GPM
 t_{max} 300 °F; p_{max} 2,900 PSIG
 Connection: 1/2" NPT, 3/4" NPT
 Accuracy: ± 1.5% of Full Scale



DOT - TURBINE FLOW METER



- Material: Stainless Steel
- For Low Viscosity Liquids
- Rugged and Reliable
- Tungsten Carbide Bearings
- Long Service Life
- Low Pressure Drop
- Pulse and 4-20 mA Signal Outputs
- Optional LCD Display for Batching & Totalizing

Water: 0.5...5 GPM to 240...2,400 GPM
 t_{max} 250 °F; p_{max} 3,600 PSIG
 Connection: 1/2"...2" NPT, 1/2"...6" ANSI
 (Larger Sizes upon Request)
 Accuracy: ± 0.5% of Full Scale

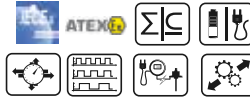


DON - POSITIVE DISPLACEMENT OVAL GEAR FLOW METER



- Materials: Aluminum, Stainless Steel
- For Clean, High and Low Viscosity Liquids Like: Lubricating/Hydraulic Oils, Diesel Fuels, Resins, Pastes
- Precision Measurement over a Wide Viscosity Range
- Output Options: Analog, Frequency, LCD Totalizers, and Batch Controllers
- Optional Quadrature Output

Viscosity Range: up to 1,000,000 cP
 Oil: 0.13...9.5 GPH to 40...660 GPM
 t_{max} 300 °F; p_{max} 1,450 PSIG
 Connection: 1/8"...4" NPT, ANSI 1"...4"
 Accuracy: ± 0.2 - 1% of Reading

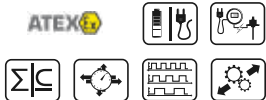


DON-H - HIGH PRESSURE FLOW METER



- Oval Gear Positive Displacement
- Material: Stainless Steel
- For High Pressures up to 5,800 PSIG
- For Clean Viscous Liquids
- Common Media: Hydraulic Oils, Diesel Fuel, Resins, and Pastes
- Pulse and 4-20 mA Signal Outputs
- Optional LCD Display for Batching & Totalizing

Viscosity Range: up to 1,000,000 cP
 Oil: 0.13...9.5 GPH to 0.26...10.6 GPM
 t_{max} 250 °F; p_{max} 5,800 PSIG
 Connection: 1/8"...1/2" NPT
 Accuracy: ± 0.2 - 1% of Reading



OVZ - OVAL-GEAR FLOW METER



- Positive Displacement Principle
- Materials: POM, Aluminum
- Maintains Precision with Viscosity Changes
- Five Material Combinations
- Minimal Wear Components
- Typical Applications: Lubrication Systems, Filling Transmission Fluids, Hydraulic Systems
- NPN, PNP, NAMUR Configurations
- 4-20 mA and Different Display Options

Viscosity Range: 10...800 cSt
 Oil: 0.03...0.53 GPM to 0.42...10.6 GPM
 t_{max} 175 °F; p_{max} 580 PSIG
 Connection: 1/4"...3/4" NPT
 Accuracy: ± 2.5% of Full Scale



ZDM - SPHERICAL GEAR FLOW METER



- Positive Displacement Principle
- Materials: Cast Iron, Stainless Steel
- High Pressure and High Media Viscosity
- Common Media: Paraffin, Kerosene, Diesel, Mineral Oil, Hydraulic Oils, Inks, Dyes, Paints, Grease, Polyurethane, Glues, Pastes, Creams, Resins, and Waxes
- Can Detect Flow Direction
- Pulse Frequency Output

Viscosity Range: 0.3...1,000,000 cSt
 Oil: 0.0005...0.5 GPM to 0.4...138 GPM
 t_{max} 410 °F; p_{max} 6,500 PSIG
 Connection: 3/8"...1-1/2" NPT
 Accuracy: ± 0.3% of Reading



MAK - THERMAL MASS FLOW METER



- Direct Mass Flow Measurement for Gas
- Material: Stainless Steel
- Menu-selectable Gas Types
- No Temp. or Pressure Correction Needed
- Large Measuring Range
- Negligible Pressure Loss
- High Repeatability
- Optional Needle Valve
- 4-20 mA, 0-5/1-5 V, or Modbus

Ranges: 0...10, 0...50 to 0...200,
 or 0...300 to 0...500 Nml/min
 t_{max} 50 °C; p_{max} 6 bar
 Connections: 1/4"...1/2" Comp. or 1/4" NPT
 Accuracy: ± 1...1-1/2% of FS





Flow - Thermal & Coriolis

KAL - THERMAL FLOW SWITCH



- Materials: Brass, Stainless Steel
- Temperature Compensation
- Minimal Pressure Loss
- High Reliability
- No Moving Parts
- Remote Probe Allows Installation with Minimal Clearance
- Easy to Operate
- Insensitive to Dirt
- Optional Temperature Switch



Water: 0.15...6.6 ft/sec
 t_{max} 250 °F; p_{max} 1,450 PSIG
 Connection: 1/4"...1-1/2" NPT

KAL-D - COMPACT THERMAL FLOW SWITCH



- Material: Stainless Steel
- Compact Design
- For Non-viscous, Water-based Liquids
- Insensitive to Dirt
- Minimal Pressure Loss
- Output: PNP/NPN, N/O, N/C
- Superior Compensation for Changes in Temperature
- LED Status Indicator



Water: 0.15...6.6 ft/sec
 t_{max} 175 °F; p_{max} 580 PSIG
 Connection: 1/4" or 1/2" NPT, M12 x 1

KAL-A - THERMAL FLOW TRANSMITTER



- Material: Stainless Steel
- Flow Sensor with 4-20 mA Output, 3-wire (Non-linear), Optional Switch
- Revolutionary Microprocessor-based Drift Stabilization
- Easy to Operate
- Extremely Low Pressure Loss
- Insensitive to Dirt



Water: 0.15...6.6 ft/sec
 t_{max} 175 °F; p_{max} 1,450 PSIG
 Connection: 1/2"...3/4" NPT, 1-1/2" Tri-Clamp®
 Linearity: ±10% of Full Scale

KAL-K - THERMAL FLOW SWITCH



- Material: Stainless Steel
- Flow Switch with LED Flow Trend and NPN/PNP Transistor, N/O Relay (Only with Optional 110 V_{AC} Version)
- Revolutionary Microprocessor-based Drift Stabilization
- Easy to Operate
- Extremely Low Pressure Loss
- Insensitive to Dirt



Water: 0.15...6.6 ft/sec
 t_{max} 250 °F; p_{max} 1,450 PSIG
 Connection: 1/2"...3/4" NPT, Tri-Clamp®

KAL-L - THERMAL FLOW SWITCH FOR AIR



- Material: Brass, Polyamide
- Rapid Detection of Flow Rate Changes in Non-hazardous Gases
- Compensates for Thermal Changes
- Design Minimizes Erroneous Switching
- Negligible Pressure Loss
- Adjustable Response Time
- Common Applications: Air Conditioning Systems, Ventilation Systems, Conveying Plants



Air: 3.3...65 ft/sec
 t_{max} 250 °F; p_{max} 120 PSIG
 Connection: 1/2" NPT, Duct Flange
 Accuracy: ±10% of Reading

KET - THERMAL FLOW SENSOR



- Material: Stainless Steel, Aluminum
- Direct Mass Flow Rates
- No Inlet Straight Pipe Requirements
- Fast Response Time
- Integral Flow Straightener
- Analog Output, Alarm Contact, Modbus®, Impulse Output
- Gases: Air, Nitrogen, Argon, CO₂, Oxygen



Ranges: 0.33...164 ft/sec to 0.33...730 ft/sec
 t_{max} 176 °F; p_{max} 230/580 PSIG
 Connection: 1/2"...2" NPT
 Accuracy: ± 1.5% of Reading ± 0.3% of FS (Optional: ± 1.0% of Reading ± 0.3% of FS)

KEC - THERMAL MASS FLOW METER



- Material: Stainless Steel
- Suitable for Demanding Industrial Use
- Calorimetric Measuring Principle
- Quick and Precise Measurements
- Standard Integrated Modbus® Output
- No Moving Parts
- 2x 4-20 mA Analog Outputs
- Common Applications: Chemicals, Gas, Breweries, Power Plants, Semiconductors, Automotive Industry



Air: 0.33...164 ft/sec to 0.33...735 ft/sec
 t_{max} 350 °F; p_{max} 1,450 PSIG
 Connection: 1/2"...2" NPT, 1/2"...3" ANSI
 Accuracy: ± 0.3% of FS ± 1.5% of Reading

HPC - MINI CORIOLIS FLOW METER



- Material: Stainless Steel
- Innovative Design
- Revolutionary Dual Bend Measuring Tube
- 4 Sensor Coils for High Resolution
- For Gases or Liquids
- High Accuracy
- Insensitive to Vibrations
- Modular Mounting Concept
- 316-Ti SS Measuring Pipes
- 316L SS Flow Body



Water: 2...20 kg/h to 5...50 kg/h
 t_{max} 350 °F; p_{max} 1,450/4,640/5,800 PSIG
 Connection: 1/2" NPT, Gyrolock/Swagelok®
 Accuracy: ± 0.1% of Reading, ± Zero-point Stability



Flow - Coriolis & DP & Magnetic

TMU-W - HIGH PRESSURE CORIOLIS FLOW METER



- Material: Stainless Steel
- Designed Specifically for Hydrogen Refueling Stations
- OIML R139 Accuracy Class 1.5
- Also for Other High Pressure Coriolis Application Areas
- 2 Current Output Signals
- Pulse, Frequency, Status Output

Mass Flow: 4 kg/min H₂
 t_{max} 100 °C; p_{max} 1,000 bar
 Connection: 1/2" NPT, Hofer, UNF
 Accuracy: ± 0.5% of Flow Rate,
 ± Zero-point Stability (for Gas)



TMU/UMC-4 - CORIOLIS FLOW METER



- Materials: Stainless Steel, Hastelloy®
- For Liquids or Gases
- Can Accomodate Very High Flow Rates
- Available in Large Line Sizes
- Simultaneous Measurement of Mass Flow, Density, and Temperature
- Produces an Accurate Volumetric Flow Rate
- For Demanding Applications

Water: 132...1,320 lbs/hr to 440...2,200 tons/hr
 t_{max} 500 °F; p_{max} 580 PSI
 Special: up to 10,800 PSI
 Connection: 1/2"...16" ANSI, 1/4"...1/2" NPT
 Accuracy: ± 0.1% of Reading



TMU-..AC - CORIOLIS FLOW METER WITH HEATING JACKET



- Materials: Stainless Steel, Hastelloy®
- For Liquids or Gases
- Accomodates Very High Flow Rates
- Available in Large Line Sizes
- Simultaneous Measurement of Mass Flow, Density, and Temperature
 Produces an Accurate Volumetric Flow Rate
- For Demanding Applications

Water: 132...1,320 lbs/hr to 440...2,400 tons/hr
 t_{max} 500 °F; p_{max} 580 PSIG
 Connection: 1/2"...16" ANSI
 Accuracy: ± 0.1% of Reading



RCM - DIFFERENTIAL PRESSURE ORIFICE FLOW METER



- Materials: Bronze, Monel®, Stainless Steel
- Liquid or Gas, Low to Medium Viscosity, Low Solids Content
- Easy to Install, Compact Design
- Optional Alarms and Signal Outputs
- Common Applications: Lube Oil and Cooling Water Monitoring, Blending Processes, Reverse Osmosis Systems, and Compressed Air Measurement

Water: 0.3...2 GPM to 400...3,000 GPM
 Air: 1.5...10 SCFM to 3,000...20,000 SCFM
 t_{max} 350 °F; p_{max} 400 PSIG
 Connection:
 1/4"...3" NPT, 1/2"...8" ANSI Wafer
 Accuracy: ± 3% of Full Scale



RCD - DIFFERENTIAL PRESSURE VENTURI FLOW METER



- Materials: Brass, Stainless Steel
- For Water
- High Reliability and Long Service Life
- Brass or 316-Ti Stainless Steel Bodies
- Mechanical Pointer Indicator, Analog Output, Digital Display, Switches
- Common Uses: Machinery Manufacturing and Process Equipment

Water: 0.2...0.88 GPM to 100...600 GPM
 t_{max} 210 °F; p_{max} 580 PSIG
 Connection: 1/2"...3" NPT
 Accuracy: ± 3% of Full Scale



KPL - DIFFERENTIAL PRESSURE ORIFICE PLATE



- For Use with KOBOLD PAD Differential Pressure Transmitter
- Materials: Steel, SS, Hastelloy-C®, Titanium, Monel®, Tantalum
- High Reliability
- Minimal Maintenance

For Liquids, Gas, or Steam
 t_{max} 500 °C; p_{max} PN 420/cl. 2500
 Connection: ANSI 2"...24", DN 50...600



PAD - DIFFERENTIAL PRESSURE TRANSMITTER



- Continuous Self-Diagnostic Function
- Standard 5-digit Local Display
- Zero Point Adjustment
- Automatic Ambient Temperature Compensation
- EEPROM Write Protection
- Fail Mode Process Function
- Sensor Inputs: Differential, Gauge, or Absolute Pressure

Material: Stainless Steel
 Media Temp: -40...248 °F
 Rangeability: 100 to 1
 Output: 4-20 mA, 2-wire with HART®
 CE EMC Conformity



MIK - ECONOMICAL MAGNETIC FLOW METER



- For a Wide Variety of Conductive Liquids, Acids, and Caustics
- Wetted Materials: PPS/SS/NBR, PPS/SS/FFKM, PVDF/Hastelloy®/FFKM, PVDF/Tantalum/FFKM, PPS/ Hastelloy®/NBR, PPS/ Hastelloy®/FFKM
- Frequency or Current Outputs, Adjustable Switches, Integral Totalizers or Batch Controllers
- Universal Mounting
- Versatile and Reliable

Water: 0.18...7.8 GPH to 9.5...180 GPM
 t_{max} 176 °F; p_{max} 145 PSIG
 Connection: 1/4"...2" NPT or Glue Socket
 Accuracy: ± 2% of Full Scale





EPS - MAGNETIC FLOW METER



- Lining Materials: Hard or Soft Rubber, EPDM, PTFE/PFA, or Ceramic
- Measures Volumetric Flow of Liquids, Slurries, and Pastes
- Electrodes in SS, Hastelloy®, Tantalum, Platinum-Iridium, or Titanium
- For Use in Harsh Environments
- Compact or Remote Versions
- No Pressure Drop
- Maintenance-free

Water: 3.3...33 ft/sec
 t_{max} 300 °F; p_{max} 580 PSIG
 Connection: 1/2"...24" ANSI, 1/2" NPT or 1/2"...4" Sanitary
 Accuracy: \pm 0.3% of Reading

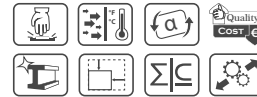


MIM - ALL-METAL MAGNETIC FLOW METER



- Material: Stainless Steel
- Flow and Temperature Measurement
- Switching, Transmitting, and Batching
- Grand and Resettable Totalizer
- 2 Configurable Outputs
- Bi-directional Flow Measurement
- Color, Multi-parameter TFT Display
- Display Rotates in 90° Increments
- Intuitive Set-up via Optical Touch Keys

Water: 0.16...16 GPH to 0.8...170 GPM
 Temp: -40...280 °F; p_{max} 230 PSIG
 Connection: 1/4"...2" NPT, 1" or 2" Tri-Clamp
 Accuracy: \pm (0.8% of Reading, + 0.5% of Full Scale)



MIS - MAGNETIC FLOW METER



- Switching, Transmitting, and Batching
- Grand and Resettable Totalizer
- 2 Configurable Outputs
- Bi-directional Flow Measurement
- Display Rotates in 90° Increments
- Common Applications: Water and Wastewater, Filtration Systems, Water Distribution, Industrial Applications

Water: 3.3...33 ft/sec
 t_{max} 158 °F; p_{max} 230 PSIG
 Connection: ANSI 2"...8"
 Accuracy: \pm (0.5% of Reading, + 0.5% of Full Scale)



PIT - INSERTION MAGNETIC FLOW METER

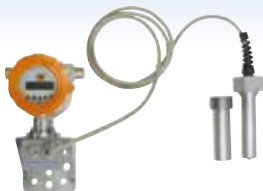


- Materials: SS - PTFE or PFA-Clad Probe
- SS, Hastelloy®, Platinum or Tantalum Electrodes
- For Flow Velocity in Large Diameter Pipes
- Cost-effective Insertion Design
- Optional Valve Assembly for Insertion/Extraction Under Pressure
- Remote or Integral Transmitter
- 4-20 mA/HART®, Pulse, Status
- For 6"...78" Pipelines

Water: 1.6...16 ft/sec or 3.3...33 ft/sec
 t_{max} 284 °F; p_{max} 580 PSIG
 Connection: Weld-on, 2" or 3" ANSI
 Accuracy: \pm 1.5% of Reading, \pm 0.5% of Full Scale



PITE - ECONOMICAL INSERTION MAGNETIC FLOW METER



- Materials: SS, PTFE, Hastelloy®
- Simple, Compact Design
- Maintenance-free
- Minimal Pressure Drop
- Not Affected by Pressure, Temperature Density, or Viscosity
- For Use with Conductive Media
- Not for Media with Particles or Bubbles

Water: 3.3...33 ft/sec
 t_{max} 212 °F; p_{max} 232 PSI
 Connection: Welding Stub and M52x2 Union Nut for Pipelines 3"...16"
 Accuracy: \pm 1.5% of Reading



DVH - MULTIVARIABLE VORTEX FLOW METER



- Material: Stainless Steel
- Cost-effective Volumetric Flow Measurement
- Fully Welded Sensor
- Field Configurable Ranges, Outputs, and Display
- Optional Integrated Temperature and Pressure Measurement

Water: 0.89...22 GPM to 141...4,270 GPM
 Air: 1.8...18 SCFM to 2,071...203,000 SCFM
 t_{range} -328...750 °F; p_{max} 1,450 PSIG
 Connection: 1/2"...8" ANSI
 Options: Integrated Temperature and Pressure Sensor, Wafer Type
 Accuracy: \pm 1% Reading for Gas & Steam, \pm 0.7% Reading for Liquids



DVZ - VORTEX FLOW METER



- Transmitter, Totalizer, Switch
- Materials: PPS/Brass, PPS/Stainless Steel
- Economical and Reliable
- For Low Viscosity Liquids and Aggressive, High-purity, or Salty Solutions
- Fixed or Rotatable Connections
- Outputs: Pulse Frequency, 4-20 mA, Adjustable Relay, Compact Electronics, Adjustable Transistor Switch

Water: 0.13...1.2 GPM to 2.6...26.5 GPM
 t_{max} 176 °F; p_{max} 290 PSIG
 Connection: 1/4"...1" NPT
 Accuracy: \pm 2.5% of Full Scale



DOG-4 - OSCILLATION FLOW METER FOR DRY GAS



- Material: Stainless Steel
- For Flow Measurement of Dry Gas
- Platinum Sensor
- No Moving Parts
- Long Term Stability
- 1:100 Max. Span
- Pulse Frequency, Digital Display for Flow Measurement and Totalization

Air: 0.07...7 to 35...3,500 SCFM
 t_{max} 248 °F; p_{max} 360 PSI
 Connection: ANSI 1"...8"
 Accuracy: \pm 1.5% of Reading





Flow - Oscillation & Ultrasonic & Indicators

DOG-6 - OSCILLATION FLOW METER FOR WET GAS



- Material: Stainless Steel
- Special Design for Wet Gas
- Platinum Sensor
- No Moving Parts
- Long Term Stability
- 1:75 Max. Span
- Pulse Frequency, Digital Display for Flow Measurement and Totalization

Air: 0.07...5 to 35...2,400 SCFM
 t_{max} 248 °F; p_{max} 360 PSI
 Connection: ANSI 1" ... 8"
 Accuracy: \pm 1.5% of Reading



DUK - COMPACT ULTRASONIC FLOW METER



- Materials: Brass, Stainless Steel
- Flow and Temperature Measurement
- Switching, Transmitting, and Batching
- High Turndown Ratio of 250 to 1
- Bi-directional Flow Measurement
- IO-Link Function
- Outputs: Analog, Frequency, Switching, Compact Electronics with Configurable Outputs

Water: 0.02...5 GPM to 0.6...160 GPM
 t_{max} 194 °F; p_{max} 230 PSIG
 Connection: 1/2" ... 3" NPT
 Accuracy: \pm 0.7% of Reading
 \pm 0.7% of Full Scale



DUC - CLAMP-ON ULTRASONIC FLOW METER



- Quick Mount System
- DSP Technology Reduces Signal Echoes and Dispersion Effects
- Easy to Read User Interface with LED Back-light, QVGA Display
- Common Application Areas: Power Plants, Water/Wastewater, Chemical Processing, Facility Management, Food and Beverage
- AFC and Reynolds Compensation

t_{range} -40...300 °F
 Flow Velocities: 0...98 ft/sec
 Pipe Sizes: 3/8" ... 20 ft
 For Common Pipe Materials with Ultrasonic Conductive Properties like Steel and Plastic
 Heat Quantity Measurement
 Accuracy: up to 1%



DAA/DAH - FLOW INDICATOR



- Materials: Brass, Stainless Steel
- Visual Flow Indicator with or without Rotor
- Self-cleaning Mechanism Ensures Visibility
- Simple Twist Motion for Integral Wipers
- Build-up is Removed by the Media Flow
- No Fuss, No Downtime

Water: 0.1...1.0 GPM to 2.12...26.4 GPM
 t_{max} 212 °F; p_{max} 232 PSIG
 Connection: 1/4" ... 1-1/2" NPT



DAF - PADDLE WHEEL FLOW INDICATOR FOR LIQUIDS



- Materials: Brass, SS, Polysulfone
- Clearly Visible Flow Indication
- Simple Design
- Low Minimum Indicated Flow
- For a Wide Variety of Media
- Can be Installed in Any Position
- Can be Rotated Along Long Axis During Operation (Except Material Comb. IV)

Water: 0.5...1.6 GPH to 80...2,380 GPH
 t_{max} 230 °F; p_{max} 235 PSIG
 Connection: 1/8" ... 1-1/2" NPT



DIH - PADDLE WHEEL FLOW INDICATOR



- Materials: Brass, SS, POM
- Compact Design
- High Visibility Orange Paddle Wheel
- Choice of Three Housing Materials

Water: 0.05...0.13 GPM to 0.26...13.2 GPM
 t_{max} 176 °F; p_{max} 230 PSIG
 Connection: 3/8" or 1" NPT



DIG - PADDLE WHEEL FLOW INDICATOR



- Materials: PP, Brass, Stainless Steel
- Clearly Visible Flow Indication
- Choice of Three Housing Materials
- All-plastic Version Available

Water: 0.13...3.2 GPM to 0.79...21 GPM
 t_{max} 176 °F; p_{max} 230 PSIG
 Connection: 1/8" ... 1" NPT



DKB - FLOW INDICATOR WITH BALL



- Material: Brass
- Economical
- Gas or Liquid Applications
- High Reliability
- High Visibility Float
- Domed Sight Glass
- For Horizontal Installations

Water: 0.014...4 GPM to 0.047...27 GPM
 Air: 0.11...14 SCFM to 0.32...88 SCFM
 t_{max} 250 °F; p_{max} 85 PSIG
 Connection: 1/8" ... 1" NPT





Flow - Indicators & Restrictors

DKF - PADDLE WHEEL FLOW INDICATOR



- Material: Brass
- Economical
- For Low Viscosity Liquids
- Easily Seen from an Elevated Position
- Domed Sight Glass
- 360° Visibility
- Bright Paddle Wheel
- Horizontal or Vertical Installations

Water: 0.04...0.5 GPM to 0.5...22 GPM
 t_{max} 250 °F; p_{max} 85 PSIG
 Connection: 1/8"...1" NPT



DA-SERIES - FLOW INDICATOR WITH FLAP/DRIP/OR ROTOR



- Materials: Grey Cast Iron, Cast Steel, Stainless Steel
- Rugged Build for Industrial Applications
- Soda-Lime or Borosilicate Glass Windows
- High Pressures & High Temperatures

t_{max} 530 °F; p_{max} 580 PSIG
 Connection: 1/4"...2" NPT, 1/2"...8" ANSI



DAI - HEAVY-DUTY FLOW INDICATOR

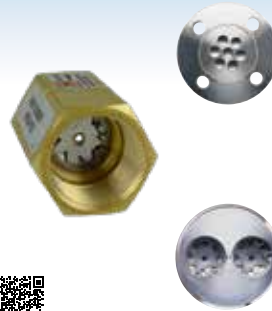


- Material: Carbon Steel, Stainless Steel, PVC, PVDF, PP
- Borosilicate or Soda Lime Glass
- For Liquids
- Rotor, Ball, Flap, Chain, or No Indicator
- Rugged Industrial Build
- High Pressures & High Temperatures

t_{max} 500 °F; p_{max} 580 PSI
 Connection: 1/2"...3" NPT, 1/2"...6" ANSI



REG - AUTOMATIC FLOW REGULATING VALVE



- Materials: Brass, Stainless Steel
- For Water or Compatible Water-like Liquids
- Self-actuating, Requires No Power
- Constant Flow Regardless of Pressure Fluctuations
- No Maintenance
- Universal Mounting
- Passively Activated
- Compact Design

Flow Rates: 0.13...10.56 GPM (147 for Wafer)
 t_{max} 572 °F; p_{max} 2,900 PSIG
 Connection: 3/4" NPT, 3/4"...4" ANSI Wafer



FIND MORE FLOW SOLUTIONS FROM KOBOLD AT WWW.KOBOLDUSA.COM & WWW.KOBOLD.COM

UTS - Variable Area Flow Meter for Gas



Brass, Stainless Steel
 Air: 0.35...3.5 SCFH to 10.6...105 SCFH
 t_{max} 150 °F; p_{max} 45 PSIG
 Connection: 1/4" NPT

TUR - Plastic Turbine Flow Meter



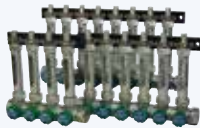
PVC, PVDF
 Water: 5...88 GPM or 11...440 GPM
 t_{max} 160 °F; p_{max} 145 PSIG
 Connection: 2" or 4" ANSI
 Accuracy: \pm 1% of Full Scale

KME - Inline Thermal Flow Meter



Aluminum, SS, Polycarbonate
 Air: 0.12...44.4 SCFM to 1.3...500 SCFM
 t_{max} 140 °F; p_{max} 230 PSIG
 Connection: 1/2"...2" NPT

USR - Variable Area Flow Meter Assembly



Brass, PTFE, SS, FKM
 Water: 0.01...0.1 GPM to 0.25...2.5 GPM
 t_{max} 210 °F; p_{max} 230 PSIG

DOE - OEM Oval Gear Flow Meter



Stainless Steel
 Viscosity Range: up to 1,000 cP
 Oil: 0.14...9.5 GPH to 16...634 GPH
 Connection: 1/8"...1/2" NPT
 Accuracy: \pm 1% of Reading

DVK - Calorimetric Flow Meter and Switch



Stainless Steel
 Air: 1...10 LPM to 50...500 LPM
 t_{max} 50 °C; p_{max} 15 bar
 Connection: G 1/4...G 1/2
 Accuracy: \pm 5% of Full Scale

DVE - Insertion Vortex Flow Meter



Stainless Steel
 Water: 5.2...157 m³/h to 284...8,537 m³/h
 Air: 889...1,463 Nm³/h to 26,915...2,467,081 Nm³/h

KAH - Air Velocity Transmitter



Polycarbonate
 Air: 0...2,000/3,000/4,000 ft/min
 Output Signal: 0-10 V_{DC} or 4-20 mA
 Supply Voltage: 24 V_{AC/DC}
 Accuracy: \pm (0.2 m/s + 3% of Reading)

UVR/UTR - Variable Area Flow Meter



Stainless Steel, POM-C
 10...100 to 200...2000 L/h
 t_{max} 100 °C; p_{max} 10 bar
 Connection: 3/8"...1/2" NPT



Level - Switches

NCS

Magnetic Float Switch
Stainless Steel



Specific Gravity_{min}: 0.65
t_{max} 300 °F; p_{max} 400 PSIG
Connection: 1/8" NPT,
1/4" NPT

NCP

Magnetic Float Switch
Polypropylene



Specific Gravity_{min}: 0.81
t_{max} 225 °F; p_{max} 100 PSIG
Connection: 1/8" NPT,
1/4" PF

NSP/NSM

Float Level Switch
Polypropylene



Specific Gravity_{min}: 0.6
t_{max} 185 °F; p_{max} 30 PSIG
Connection: Cable

NEC/NAB

Float Level Switch
Polypropylene, Hypalon®



Specific Gravity_{min}: 0.7
t_{max} 194 °F; p_{max} 58 PSIG
Connection: Cable

NST

Float Level Switch
PTFE



Specific Gravity_{min}: 0.79
t_{max} 302 °F; p_{max} 15 PSIG
Connection: Cable

NSE

Float Level Switch
Stainless Steel



Specific Gravity_{min}: 0.8
t_{max} 302 °F; p_{max} 220 PSIG
Connection: 1/2" NPT

NAS

Bulk Media Level Switch
Polypropylene



For Bulk Materials
Density_{min}: 0.3 kg/dm³
t_{max} 85 °C; p_{max} 3.5 bar
Max Grain Size: 30mm

M-SERIES

Custom Magnetic Float Switch
Brass, Stainless Steel, PVC, PP,
NBR, PVDF



Density: 0.55 kg/dm³
t_{max} 300 °F; p_{max} 1,450 PSIG
Connection: NPT,
DIN/ANSI Flange

NCM

Custom Mini Multipoint Switch
Brass, NBR, PP, Stainless Steel



Specific Gravity_{min}:
0.47...0.70
t_{max} 300 °F; p_{max} 400 PSIG
Connection: 1/8"...1" NPT,
5/16" Tube End

NCG

Custom Multipoint Level Switch
PVC, Stainless Steel, NBR, PP



Specific Gravity_{min}: 0.55...0.85
t_{max} 300 °F; p_{max} 400 PSIG
Connection: 1/2"...2" NPT,
3" ANSI Flange,
1/2" Tube End

NV

Side-Mount Level Switch
Brass, Stainless Steel



Specific Gravity_{min}: 0.63
t_{max} 230 °F; p_{max} 230 PSIG
Connection: 3/4" NPT

NKP

Side-Mount Plastic Level Switch
Polypropylene, PVDF



Specific Gravity_{min}: 0.6
t_{max} 212 °F; p_{max} 145 PSIG
Connection: 1/2" NPT,
Bulkhead

Level - Switches & Transmitters



NGS

Heavy Duty Level Switch Stainless Steel



Specific Gravity_{min}: 0.7
 t_{max} 480 °F; p_{max} 360 PSIG
 Connection: 2" NPT,
 Square Flange, DIN-Flange

NE

Conductive Level Switch

Fitting: SS, Polypropylene, PTFE
 Electrode: SS, Hastelloy®, Titanium
 Coating: Polyolefin, PTFE



t_{max} 300 °F; p_{max} 440 PSIG
 Connection: 1/2" NPT,
 1-1/2" NPT
 Up to Six Switch Points

NEH

Cable-Suspended Conductive Level Switch

Fitting: Polypropylene, PTFE
 Electrode: SS, Hastelloy®, Titanium
 Electrode Coating: Neoprene, PTFE



t_{max} 300 °F; p_{max} 90 PSIG
 Connection: 1/2" NPT,
 1-1/2" NPT
 Up to Six Switch Points

NE-104/-304

Power Supply Relays for Conductive Switches



1 or 2 Limit Contacts or
 1 or 2 Min/Max
 Control Switches
 Switch Cap.: Max. 250 V_{AC},
 5 A, 600 VA

NE-5048

Electrode Relay for Conductive Limit Switches Makrolon®



For KOBOLD NEK & NEH
 Limit Signal
 Max/Min Controller
 24-240 V_{AC/DC}
 Power Supply

NEK

Compact Conductive Level Switch Polypropylene, PPS



Conductivity_{min}: 100 µS/cm
 t_{max} 185 °F; p_{max} 290 PSIG
 Connection: 3/4" NPT
 Open-Collector or Relay

NSD

Optical Level Switch Stainless Steel



t_{range} 15...250 °F
 p_{max} 550 PSIG
 Connection: 3/8" NPT

NWS

Vibrating Level Switch Stainless Steel



t_{max} 265 °F; p_{max} 650 PSIG
 Viscosity_{max}: 5,000 cSt
 Conn: 3/4" NPT, 1" NPT,
 1-1/2" or 2" Tri-Clamp®,
 1" or 2" ANSI Flange

NVI

Vibrating Rod Level Switch for Bulk Media Stainless Steel



Switching Range: 8.15"
 and Special Lengths
 Min. Density: 3.1 lb/ft³
 t_{max} 320 °F; p_{max} 360 PSIG
 Connection: 1-1/2" NPT

NDT

Pressure Level Switch Polyamide, NBR



t_{range} 15...185 °F; p_{max} Atmospheric
 Switchpoint: 4" Above
 End of Pipe
 Connection: Hose Clamp for
 1" Sch 40 Pipe

NIR-9

Rotating Vane Level Switch for Bulk Media Stainless Steel



Switching Range: 2.5"...390"
 t_{max} 392 °F; p_{max} 7.25 PSI
 Connection: 1" NPT,
 1-1/2" NPT, Others
 SPDT Microswitch,
 250 V_{AC}/2A

NGR

Guided Wave Radar Level Transmitter Stainless Steel, PTFE



Measuring Range: 4"...78"
 t_{max} 212 °F; p_{max} 145 PSIG
 Connection: 3/4" NPT
 Analog Output,
 Switching Outputs
 Sensor Accuracy: ±0.2



Level - Sensors, Transmitters & Indicators

NGM

Guided Wave Radar Level Transmitter

Stainless Steel, PTFE



t_{max} 480 °F; p_{max} 580 PSIG
Connection: Thread, Flange
Rigid or Concentric Probe
or Cable
Analog and Switching
Accuracy: ± 3 mm of MV

MM

Reed Chain Resistive Level Sensor

Stainless Steel, PVC, PP, PVDF



Max. Measuring Length: 19.6 ft
Density: 0.4 kg/dm³
 t_{max} 265 °F; p_{max} 435 PSI
Connection: 3/8" ... 2" NPT,
1-1/2" ... 4" ANSI
Accuracy: $\pm 0.5\%$,
for L < 6.2 Feet

NML-308

Liquid Level Transmitter

Polyethylene, PVC, PP, PTFE



Specific Gravity_{min}: 0.9
Length_{max}: 6" ... 48"
 t_{max} 250 °F; p_{max} 25 PSIG
Connection: 1-1/4" NPT
or 1-1/2" NPT

NML-310

Liquid Level Transmitter

Polyethylene, PVC, PP, PTFE



Specific Gravity_{min}: 0.8
Length_{max}: 12" ... 108"
 t_{max} 250 °F; p_{max} 40 PSIG
Connection: 2" NPT
or 2" ... 4" ANSI

NRF

Capacitive Level Transmitter

Stainless Steel, PTFE



Rigid Probe and
Suspended Cable Designs
Length_{max}: 200 ft.
 t_{range} -100 ... 350 °F
 p_{max} 500 PSIG
Connection: 3/4" NPT,
1-1/2" NPT,
1-1/2" ... 2" Tri-Clamp®

NRF-1F

Capacitive Level Transmitter with Integrated Concentric Grounding Probe

Stainless Steel, PTFE



Max. Length: 10 ft
 t_{max} 350 °F
 p_{max} 14.5 ... 100 PSIG
Connection: 3/4" or
1-1/2" NPT
Output: 4-20 mA
Accuracy: $\pm 1\%$ of Span

NRF-2/-3

Capacitive Level and Temperature Transmitter

Stainless Steel, PTFE



Measuring Length_{max} 12 ft
 t_{range} -100 ... 350 °F
 p_{max} 100 PSIG
Connection: 3/4" NPT,
1-1/2" ... 3" Tri-Clamp®
Output: 4-20 mA, RTD

NBK-M

Economical Mini Magnetic Level Gauge

Stainless Steel



Meas. Length_{range}: 8" ... 9.8 ft
Specific Gravity: 1.0 or 0.8
Viscosity_{max}: 200 cP
 t_{max} 390 °F; p_{max} 580 PSIG
Connection: 1/2" ... 1" NPT,
1/2" ... 1" ANSI Flange

NBK-03 to -33

Magnetic Level Gauge

Stainless Steel



Measuring Length_{range}:
1 ft ... 18 ft (or longer)
Specific Gravity_{min}: 0.54
Viscosity_{max}: 200 cP
 t_{max} 750 °F; p_{max} Class 1500
Conn: 1/2" ... 1-1/4" NPT,
1/2" ... 2" ANSI Flange

NBK-04

Tank-Top Mounted Magnetic Level Gauge

Stainless Steel



Meas. Length_{range}: 1 ft ... 13 ft
Specific Gravity_{min}: 0.55
Viscosity_{max}: 200 cP
 t_{max} 250 °F; p_{max} 230 PSIG
Connection: 2" ... 4" ANSI

NBK-16

Plastic Magnetic Level Gauge

Polypropylene



Meas. Length_{range}: 8" ... 13 ft
Specific Gravity_{min}: 0.59
Viscosity_{max}: 200 cP
 t_{max} 176 °F; p_{max} 58 PSIG
Connection: 3/4" ... 2" ANSI

NEO

Ultrasonic Level Transmitter

PVDF



Meas. Length:
19.6' or 39.3'
 t_{range} -40 ... 176 °F
 p_{max} 30 PSIG
Connection: 2" or 3" NPT
Narrow 3" Beam Width
4-20 mA 2-wire

Level - Transmitters



NUS-4

Ultrasonic Level Transmitter PP, PVDF



Measuring Range:
up to 80 feet (Liquids)
 t_{max} 190 °F; p_{max} 40 PSIG
Connection: 1-1/2", 2" NPT;
3", 5", or 6" ANSI Flange
4-20 mA 2-wire



NUS-7

Ultrasonic Level Transmitter PP, PVDF



Measuring Range:
Liquids up to 20 ft
 t_{max} 194 °F; p_{max} 40 PSIG
Connection: 2" NPT
Analog Output
Accuracy: \pm 0.2% of Reading
 \pm 0.05% of Full Scale



KPW

Submersible Pressure Transducer Stainless Steel



Measuring Depth: t_{max} 50" WC
to 1,000 PSI
 t_{range} 14...122 °F
Proof Pressure:
2x Depth Range

NTB

Deep Well Level Probe Stainless Steel



Range: 0...200 m (WC)
 t_{range} 14...140 °F
Cable Length: Max. 300 m
Analog Output

FIND MORE LEVEL SOLUTIONS FROM KOBOLD AT WWW.KOBOLDUSA.COM & WWW.KOBOLD.COM

RFS - Side-Mount Level Switch



Stainless Steel
Specific Gravity $_{min}$: 0.8
 t_{max} 248 °F
 p_{max} 72 PSI/145 PSI (ATEX)
Connection: 1/2" NPT

NK-8000 - Ultrasonic Level Switch



Stainless Steel
 t_{max} 176/212 °F
 p_{max} 1,000 PSIG
Connection: 3/4" NPT

NCW - Capacitive Level Switch



Stainless Steel, PVDF
Dielectric Constant $_{min}$: 1.5
 t_{max} 392 °F; p_{max} 435 PSIG
Connection: NPT or Weld-in Sleeve
1 Relay SPDT

OPT - Optical Switch for Liquids



Stainless Steel, Polypropylene
Sensor: Polysulfone
 t_{max} 176 °F; p_{max} 145 PSIG
Connection: 1/2" NPT,
G 1/2, M14 Bulkhead
Open-Collector

NZJ - Micro Bypass Indicator with Switch



Aluminum, Stainless Steel
Installation Length: 4"...22"
 t_{max} 210 °F; p_{max} 230 PSIG
Connection: 1/4" NPT
Up to Two Limit Contacts

NSC - Capacitive Level Switch for Bulk Media



Stainless Steel, PTFE,
Polycarbonate, PP
Dielectric Constant $_{min}$: 1.5
Switching Range: 10"...49 ft
 t_{range} -4...176 °F; p_{max} 7 PSIG

NWP - Plastic Vibrating Fork Level Switch



Glass Filled PPS
 t_{range} -40...176 °F
 p_{max} 150 PSIG
Connection: 3/4" NPT
SPST Relay Output

NMF - Static Pressure Switch for Bulk Media



NBR, FKM, Stainless Steel
 t_{max} 390 °F
Min. Density: 3.2 lb/ft³
 p_{max} 14.5 PSI
(Over-pressure Protected)
Connection: Flange

NSV - Vibrating Fork Switch for Bulk Media



Stainless Steel
Switching Range: 9"...118"
Min. Density: 3.75 lb/ft³
 t_{max} 176 °F
Connection: 1-1/2" NPT
1 Relay SPDT

SZM - Bypass Level Indicator



Stainless Steel
Meas. Length $_{range}$ 15"...121"
 t_{max} 212 °F; p_{max} 145 PSIG
Connection: 1/2" NPT,
ANSI 1/2"...2"

PLS - Pendulum Switch for Bulk Media



Aluminum, NBR
Length $_{max}$: 78.7"
 t_{max} 176 °F; p_{max} 7 PSIG
Connection: Aluminum Flange
SPDT Microswitch, 250 V_{AC}/15A

BA - Displacer-Type Level Gauge



Stainless Steel
Meas. Length $_{range}$: 1...19.7 ft
Specific Gravity $_{min}$: 0.4 ...2.0
 t_{range} -40...480 °F; p_{max} 580 PSIG
Connection: 2...4" ANSI



Pressure - Gauges & Transmitters

MAN-R/Q

Bourdon Tube Pressure Gauges
Brass



Measuring Range:
-30"...0" Hg to 0...14,500 PSIG
Housing Ø: 63, 80, 100, 160 mm
Overload Protection:
1.15 - 1.3 Times
Conn: 1/4" NPT, 1/2" NPT
Accuracy: ±1.0% or
±1.6% of Full Scale



MAN-R

Bourdon Tube Pressure Gauges
Stainless Steel



Measuring Range:
-30"...0" Hg to 0...14,500 PSIG
Housing Ø: 63...160 mm
Overload Protection:
1.15 - 1.3 Times
Conn: 1/4" NPT, 1/2" NPT
Accuracy: ±1.0% or
±1.6% of Full Scale



MAN-ZF

Pressure Gauge with Transducer
Stainless Steel



Measuring Range:
-30"...0" Hg to 0...8,700 PSIG
Housing Ø: 100 mm
Overload Protection:
0.9 - 1.0 Times
Connection: 1/2" NPT
2-wire, 4-20 mA Output
Acc: ±1.0% of Full Scale



MAN-F

Test Pressure Gauge with Bourdon Tube
Aluminum, SS, Brass



Measuring Range:
-8.5"...0" Hg to 0...8,700 PSIG
Housing Ø: 160, 250 mm
Overload Protection:
0.9 - 1.3 Times
Connection: 1/2" NPT
Accuracy: ± 0.25% or
± 0.6% of Full Scale



MAN-SD/DSD

LCD Pressure Gauge with Ceramic Sensing Element
Battery Powered
Stainless Steel



Measuring Range:
-30"...0" Hg to
0...23,000 PSIG
Housing Ø: 74 mm
Overload Protection:
1.5 - 3 Times
Conn: 1/4" NPT, 1/2" NPT
Accuracy: ± 0.5% of FS



MAN-SC/LC

Digital Pressure Gauge
Battery or Externally Powered
Stainless Steel



IO-Link

Measuring Range:
-20...0 in Hg
to 0...20,000 PSI
Housing Ø: 80 mm
Overload Protection:
1.5 - 3 Times
Connection: 1/2" NPT
Analog Output, Alarm Output
Accuracy: ± 0.5% of FS



DZF26

Pressure Gauge with Analog Output
Stainless Steel



Measuring Range:
0...15 PSIG to
0...5,000 PSIG
 t_{max} 150 °F
Housing Dia: 4"
Conn: 1/2" NPT



PMP

Differential Pressure Sensor and Controller for Filters



Measuring Range: 0...20" H₂O
Power Supply: 24 V_{AC/DC},
110 V_{AC}, 230 V_{AC}
Display: 4-Digit LED
Connection: 1/4" NPT or
6x8 mm Tube
Accuracy: ±1.0% of FS



PAD - DIFFERENTIAL PRESSURE TRANSMITTER



Measuring Range:
0.3"...6" WC to 60...6,000 PSIG
Power Supply: 12-45 V_{DC}
Connection: 1/4" or 1/2" NPT
Accuracy: ± 0.075% of Full Scale
Material: Stainless Steel
Media Temp: -40...248 °F
Rangeability: 100 to 1
Output: 4-20 mA, 2-wire with HART®
CE EMC Conformity

- Continuous Self-Diagnostic Function
- Standard 5-digit Local Display
- Various Diaphragm Seals Available
- Zero Point Adjustment
- Automatic Ambient Temperature Compensation
- EEPROM Write Protection
- Fail Mode Process Function
- Sensor Inputs: Differential, Gauge, or Absolute Pressure



HART ATEX

Pressure - Transmitters



PAD-N

Differential Pressure Transmitter with Diaphragm Seal
Stainless Steel



Measuring Range:
0 ... 250 mbar to
0 ... 206.80 bar
 t_{max} 200 °C
Conn: Flange, Threaded,
Clamp-on, and
Inline Diaphragm Seal



DRM

Diaphragm, Capsule, and Inline Diaphragm Seals for Pressure Gauges and Transmitters
Stainless Steel, Special Materials upon Request



Measuring Range:
-30"...0" Hg to
0...23,000 PSIG
Fill Liquids: Glycerine,
Paraffin, or Silicone
Connection: NPT, BSP, ANSI,
Tri-Clamp®, or Other
Sanitary Connections



DRM

Flange Diaphragm Seals
Stainless Steel, Monel®,
Tantalum, PTFE



Standard Version up
to 350 °C/40 bar:
ANSI 1" ... 4",
Versions up to 400 bar:
ANSI 8",
Flanges According to BS,
JIS, and GOST Standards

PAS

High Accuracy Pressure Transmitter
Stainless Steel



Measuring Range:
-14.5...21.7 to
0...8,700 PSIG
Power Supply: 12-45 V_{DC}
Connection: 1/2" NPT
Accuracy: ± 0.075% of FS

PAS-N

Pressure Transmitter with Diaphragm Seal
Stainless Steel



Measuring Range:
0...250 mbar to 0...600 bar
 t_{max} 350 °C
Conn: Thread or Flange
(Nominal Size 15... 100)

PDA

Pressure Transmitter with Ceramic Sensing Element
Stainless Steel



Measuring Range:
-30"...0" Hg to 0...5,800 PSIG
Display: 3-Digit LED
Power Supply: 24 V_{DC}
Conn: 1/4" NPT, 1/2" NPT
Accuracy:
± 0.5% - 1.0% of Full Scale

KPG

Pressure Transmitter with Thin-Film Sensing Element
Stainless Steel



Measuring Range:
-30"...0" Hg to
0...145,000 PSIG
Overload Protection:
1.2 - 3 Times
Conn: 1/4" NPT, 1/2" NPT
Acc: ± 0.125% - 0.25%
of Full Scale

KPK

Pressure Transmitter with Thin-Film Sensing Element
Stainless Steel



Measuring Range:
-30"...0" Hg to
0...15,000 PSIG
Overload Protection:
1.5 - 2 Times
Connection: 1/4" NPT
Accuracy: ± 0.25% - 0.5%
of Full Scale

KPA

OEM Pressure Transmitter with Heat-Fused Sensing Element
Stainless Steel



Measuring Range:
0...50 PSIG to
0...10,000 PSIG
Protection: 2 Times
Connection: 1/4" NPT
Accuracy: ± 0.25% of FS

SEN-86/-87

Pressure Transmitter with Ceramic Element
Stainless Steel



Measuring Range:
-30"...0" Hg to
0...10,000 PSIG
Optional AUF Display: 4-Digit LED
Overload Protection:
1.5 - 2 Times
Conn: 1/2" NPT, 1/4" NPT
Accuracy:
± 0.5% - 1.0% of Full Scale

SEN-96

Pressure Sensor with Ceramic Element
Stainless Steel



Measuring Range:
-30"...0" Hg to
0...6,000 PSIG
Output: 4-20 mA,
0-5 V_{DC}, 0-10 V_{DC}
Conn: 1/4" NPT, 1/2" NPT,
Accuracy: ± 0.5 - 0.75%
of Full Scale

AUF

Compact Inline Display for Transmitters



For Transmitters with
DIN 43650A Plugs
Input: 4-20 mA, 2-wire or 3-wire
User Programmable
Optional Transistor Switch
Custom Housing Colors
for OEM Quantities



Pressure - Switches

PSD

Electronic Pressure Transmitter/Switch
Stainless Steel



Range: 0...30 to 0...7,500 PSI
Output: 4-20 mA or 0-10 V_{DC}
2x PNP Switches
Display: 4-Digit LED
Connection: 1/4" NPT
Accuracy: ± 0.5% of FS

PDD

Pressure Switch with Ceramic Sensing Element
Stainless Steel



Measuring Range: -30"...0" Hg to 0...5,800 PSIG
Display: 3-Digit LED
Power Supply: 24 V_{DC}
Conn: 1/4" NPT, 1/2" NPT
Accuracy: ± 0.5% - 1.0% of Full Scale

KPH

Pressure Switch Diaphragm/Piston Type
Aluminum



Switching Range: -14.5...0 PSIG to 580...6,100 PSIG
Overpressure: 1.4 - 5 Times
Connection: 1/4" NPT
Repeatability: ± 3 - 4% of Full Scale

KPH300

OEM Pressure Switch
Zinc-Plated Steel, NBR



Switching Range: -5...-28 Hg to 450...4,600 PSIG
Connection: 1/4" NPT
Diaphragm or Piston Sensing Element
Adjustable SPDT Switch

FIND MORE PRESSURE SOLUTIONS FROM KOBOLD AT WWW.KOBOLDUSA.COM & WWW.KOBOLD.COM

MAN-P - Diaphragm Pressure Gauge



Stainless Steel
Measuring Range: -16...0 to 0...40 bar
Overload Protection: 1.3 Times
Connection: 1/2" NPT
Accuracy: ±1.6% of Full Scale

SCH - Mechanical Pressure Switch



Brass, Stainless Steel, NBR
Ranges: -15...6 mbar to -1...0.1 bar
t_{max} 85°C
Connection: R Threaded
Micro-Switch, Optional Proximity Switch

SEN - 98/99 Pressure Sensor Ceramic Element



Stainless Steel
Measuring Range: -30"...0" Hg to 0...8,700 PSIG, 0...14.5 to 0...360 PSIA
Connection: 1/4" NPT, 1/2" NPT

MAN-K - Capsule Element Pressure Gauge



Stainless Steel, Brass
Measuring Range: -10...0 to 0...600 mbar
Housing Ø: 63...160 mm
Overload Protection: 1.3 - 10 Times
Accuracy: ±1.6% of Full Scale

SCH-PSB - Mechanical Pressure Switch



PA, PS, Silicone
For Overpressure, Vacuum Pressure, and Differential Pressure
Ranges: 20...300 Pa to 200...1000 Pa

MZB - Pressure Sensing Accessories



Brass, Steel, Stainless Steel
Block and Bleed Valves, Gauge Swivels, Snubbers, Cooling Elements, and Steam Siphons

MAN-U - Differential Pressure Gauge



Stainless Steel
Measuring Range: 0...100 mbar to 0...25 bar
Static Pressure: 200 bar
Conn: 1/4" NPT, 1/2" NPT
Accuracy: Cl. 1.6

MAN-C - Diaphragm Pressure Gauge



Stainless Steel, PTFE, ECTFE
Measuring Range: -25...0 mbar to 0...25 bar
Overload Protection: 1.3 Times
Accuracy: ±1.6% of Full Scale

PUM - U-Pipe Pressure Indicator



Glass, Aluminum
Indicating Ranges: -250 up to 250 mm WC or -1500 up to 1500 mm WC
Scale Division: 2 mm

Temperature



TWR

Temperature Switch
Brass, Stainless Steel



Switching Range: 86...248 °F
 t_{max} 250 °F; p_{max} 920 PSIG
Connection: 3/4" NPT

TDD

Digital Temperature Switch
Stainless Steel



Switching Range: -58...250 °F
 t_{max} 250 °F; p_{max} 1,150 PSIG
Connection: 1/2" NPT,
3/4" NPT,
2 Transistor Switches

TDA

Digital Temperature Transmitter
Stainless Steel



Measuring Range: -58...250 °F
 p_{max} 1,150 PSIG
Connection: 1/2" NPT,
3/4" NPT,
Output: 4-20 mA, 3-wire,
Transistor Switch

TNF

Gas Filled Capillary Thermometer
Stainless Steel



Meas. Range: -40...1,100 °F
Housings: 2.5"...10"
Protection: FS Value,
1.3x FS Optional
Accuracy: 1.0% or 1.6%

TNS

Gas-Filled Rigid Stem Thermometer
Stainless Steel



Meas. Range: -40...1,100 °F
Housings: 2.5"...10"
Protection: FS Value,
1.3x FS Optional
Accuracy: 1.0% or 1.6%

TST

Temperature Transmitter
Stainless Steel



Meas. Range: -58...1,100 °F
 p_{max} 1,500 PSIG
Conn: 1/4" or 1/2" NPT,
1-1/2"...3" Tri-Clamp®
Output: 4-20 mA, 2-wire

TMA/MMA

Temperature Transmitters
Stainless Steel



Meas. Range: -358...1,112 °F
 p_{max} 1,450 PSIG
Connection: 1/4" NPT,
1/2" NPT
Output: 4-20 mA, 2-wire
Shown with AUF Display

MWD

Heavy-Duty Resistance Thermometer
Stainless Steel



Measuring Ranges:
from -324 up to 1112 °F
 p_{max} 435 PSI
Accuracy: Cl. A or B

FIND MORE TEMPERATURE SOLUTIONS FROM KOBOLD AT WWW.KOBOLDUSA.COM & WWW.KOBOLD.COM

TWC - OEM Temperature Sensors

Industrial Applications
Medical Applications
Commercial Applications

Designed/Manufactured on Custom OEM Basis

NTC or PT Models
Metal or Plastic Construction
Chemically Resistant Models
High Accuracy and Repeatability
Fast Response Time

T_{max} 1,110 °F (PT)
 T_{min} -320 °F (PT)
Accuracy (R25): $\pm 0.2^{\circ}\text{C}$
Accuracy (Medical): $\pm 0.1^{\circ}\text{C}$
IP 68
Rated Current: <1 mA

TBS - Thermal Reed Temperature Switch

Brass, Stainless Steel
Switching Range: 14...212 °F
 t_{range} -40...250 °F
 p_{max} 360 PSIG
Connection: 1/4"...1-1/2" NPT

TSP - Temperature Transmitter for Pipes

Brass, Stainless Steel
Meas. Range: -40...300 °F
 p_{max} 750 PSIG
Connection: 1/4"...1-1/2" NPT
Output: 4-20 mA, Pt100 RTD

TSH - Thermowells for Thermometers

Stainless Steel
 p_{max} 360 PSIG
Connection: 1/2"...1" NPT,
Weld Stub

DTB - Battery Power Digital Thermometer

Stainless Steel
Measuring Range:
-50...400 °F
 p_{max} 500 PSIG
Fittings: 1/4"...3/4" NPT

Accessories



REG

Automatic Flow Regulating Valve Brass, Stainless Steel



t_{max} 572 °F; p_{max} 2,900 PSIG
Connection: 3/4" NPT, G 1/2, G 3/4

REG-8

Automatic Flow Regulating Valve Stainless Steel



t_{max} 570 °F; p_{max} 2,900 PSIG
Connection: 3/4"...4" ANSI Wafer,
DN 20...100, G 1/2...2-1/2

NVM

Needle Valve Stainless Steel



t_{max} 250 °F; p_{max} 3,600 PSIG
Connection: 1/8"...1-1/4" NPT,
G 1/8...G 1-1/4

NVN

Needle Valve Stainless Steel, Brass, Carbon Steel



Hard Seat, Soft Seat, and Mini Models
Easy to Adjust T-Handle
Designed for Strength
Smooth Operation
Secure Bonnet Pin Lock
Connections: 1/8"...1-1/2" NPT

MFR

Magnetic Filter Brass, SS, Bronze, Cast Iron



t_{max} 392 °F; p_{max} 580 PSIG
Connection: G 1/4...G 4

RL

Power Supply, Latching, and Isolation Relay



Power: 110 V_{AC}, 230 V_{AC}, 24 V_{DC}
Excitation: 24 V_{DC}, 120 mA Regulated
Input: Dry Contact or NPN/PNP,
15mA Max
Output: SPDT Relay,
10A@240V_{AC}, 8A@24V_{DC}

KFD-2/KFA-5

Intrinsically Safe Relay/Power Supply



For Dry Contacts or NAMUR-Type Switches
Single or Dual Channel
Standard Rail Mounting
24 V_{DC} or 110 V_{AC} Power
SPDT Relay Output

MSR

Contact Protection and Latching Relay



For Protection of Reed Contacts
8A Max. Switching Capability
1 or 2 SPDT Contacts

AUF

Compact Inline Display for Transmitters



For Transmitters with DIN 43650A Plugs
Input: 4-20 mA, 2-wire or 3-wire
User Programmable
Optional Transistor Switch
Custom Housing Colors
for OEM Quantities



MPT

Universal/Process Panel Display Ratemeter



Accepts Current, Voltage,
TC, and RTD Inputs
Max/Min Display
Relays and 4-20 mA Options
Modbus®



MPV

Dual-Line Process Panel Display



Pulse or Analog Outputs
Displays both Rate and Total
32 Point Linearization
Modbus®
Gate Function
Open Channel Flow



DAG-T4

Universal Digital Indicator/Controller



Input: Current, Voltage,
Pt 100, Thermocouples
Limit Contacts
Sensor Supply

DAG-Z2

Counter/Preset Counter



Input: Frequency
Limit Contacts
Sensor Supply

ZED

LCD Indicating Display and Controller



Input: Frequency
Output: Analog
2 Limit Contacts, Sensor Supply

ZOK

Totalizer, Batching, and Monitoring Electronics



Input: Frequency
Analog Output, Impulse Output,
Limit Contacts,
Sensor Supply, Battery Powered

ADI-1

Universal Input LED Display Controller



Display: 5-digit with 270° Bargraph
Input: Current, Voltage, Frequency
Analog Output
2 Limit Contacts
Sensor Supply

ZLS-2

Multi-Channel Datalogger Display



Input: 4-20 mA,
or Pt 100, Pt 500, Pt 1000
Interface: 1x USB, 1x RS485
Sensor Supply

ZOE

Rate and Totalizing Display



Frequency Input, Pulse Output
Sensor Supply or Battery Powered



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LIT-065: 2024 Edition

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