



KOBOLD INSTRUMENTS



For almost 40 years, **KOBOLD** has been a world 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. The **KOBOLD** brand is synonymous with quality, craftsmanship, technological advancement, and cost effectiveness.

KOBOLD instrumentation has historically set the bar for innovation and excellence, helping to shape the field of industrial instrumentation into what it is today. Always on the leading edge, we offer a comprehensive portfolio of reliable instrumentation that is found in a vast array of applications all over the world. Our technologies offer a solution-oriented way to control the most diverse variables.



The KOBOLD Group's production plants are located all over the world.

MEASURE, CONTROL, AUTOMATE

KOBOLD's technical solutions can be easily integrated into a wide variety of systems in many industrial sectors. Thanks to internationally recognized BUS interfaces, most of our models can be easily adapted into already established automated processes. Our innovative instrumentation delivers the highest standards of service and can handle complex processes. Because our solutions are both sophisticated and easy to use, they are very popular among end users.



YOU ARE OUR PRIORITY

Our years of experience and excellence in customer service and technical support have built our reputation as the partner of choice. Serving and supporting our customers and our products is our priority. Our expert engineers are ready to help you choose your KOBOLD solution, and their experience is an asset that we are proud of. We are here to help you select the best solution for your application, and eliminate the challenges in selecting equipment that is both optimal and economical.



ABOVE AND BEYOND THE STANDARD

While KOBOLD offers a wide variety of instrumentation that meets most standard application needs, we are also able to meet extraordinary application needs that can be hard to find solutions for. Our familiarity with exotic materials allows us to offer solutions for variables that are frequently hard to accommodate. Because we are the manufacturer, we also have the flexibility of being able to provide customized solutions in certain circumstances, based on the exact application needs.

THE KOBOLD PRODUCT LINE:



Flow..... 6 - 30



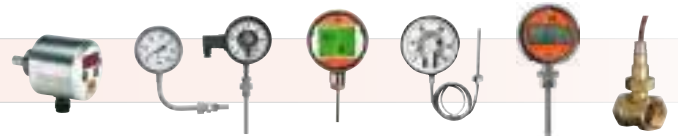
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Accessories..... 46 - 47



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



High Quality - Low Cost



Stainless Steel Design



For Chemicals



Shock Resistant



Heating Jacket



Battery Powered/ External Power Supply



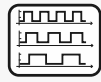
Battery Powered



Sensor Supply



Installation Under Process Conditions



Scalable Analog Output



Rotatable Display



Configurable Display



Bi-directional



Resettable and Grand Total



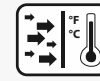
Configurable Outputs



Operational with Gloves



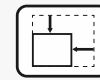
Temperature and Pressure Measurement



Temperature and Flow Measurement



Energy Measurement



Space Saver



NFC

Quick Reference Product Table

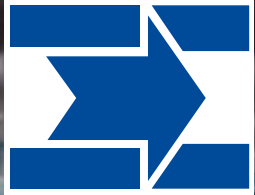
Model	PG	Model	PG	Model	PG	Model	PG	Model	PG	Model	PG	Model	PG	Model	PG
ADI	47	DPE	17	EPS	25	KPH	42	MAN-U	38	NEK	34	OME	20	SMO	15
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Brand Directory:

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.





FLOW

WE EXCEL IN FLOW SOLUTIONS

KOBOLD offers a wide variety of flowmeters, flow regulators, flow indicators, flow switches, flow monitors, and flow sensors. Our flow instrumentation line includes a wide variety of technologies such as: variable area, ultrasonic, mass flow, thermal dispersion, turbine, electromagnetic, vortex, oval gear, positive displacement, differential pressure, Coriolis, helical or screw gear, rotameter, rotary piston, baffle plate, calorimetric, paddle wheel, and multi-parameter meters. We also offer portable and clamp-on instrumentation for short term installations. There are also models for accommodating bi-directional measurement. **KOBOLD** has a wide variety of instrumentation that is compatible with common communication protocols, such as HART®, PROFIBUS®, Foundation Fieldbus®, and Modbus®.

KOBOLD is able to accommodate most common liquid application media, such as: oils, lubricants, water, wastewater, chemicals, corrosives, abrasives, coolant, paints, coatings, adhesives, sealants, and fuels. Our instrumentation can also handle most types of gaseous media, such as: steam, clean gas, dirty gas, ammonia gas, combustible gas, compressed air, natural gas, and nitrogen flow. **KOBOLD** flow instrumentation can be found providing dependable and lasting service in common application fields, such as: irrigation, oil and gas, automotive, power generation, general manufacturing, machining, cement/aggregates, chemicals, petrochemicals, test measurement, laboratories, research and development, aerospace, HVAC, water, wastewater, building automation, pulp and paper, metals, mining, surface treatment, semiconductors, pumping, agriculture, marine, aviation, boilers, brewing, refrigeration, turbines, utilities, and welding.



REGulation

- ✓ Flow Regulation
- ✓ No Power Needed
- ✓ Cost-efficient



Superior Flow Regulation:

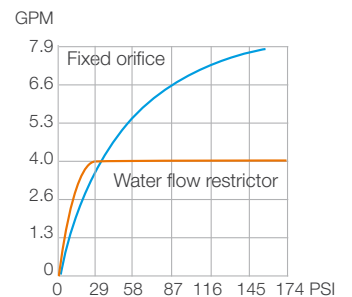
Unlike other models, our unique REG design does not use any rubber. Temperature, chemical influence, and aging affect the molecular structure of rubber and reduces its elasticity. Once the rubber is compromised the flow can no longer be regulated. Our all metal design provides reliable service. The REG excels in protecting pumps from water hammer, cavitation, and overheating from sudden lack of flow. They are also extremely useful in guaranteeing maintenance free and tamper proof allocation of flow for water circuits subject to uneven distribution.

Features:

- Provides a Constant Flow Rate
- Lifelong Service 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



Watering



Cooling circuit



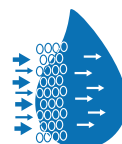
Humidification



Livestock



Heat exchange



Filtration



Batching



Eyewash



Building technology

MIS

NEW

IO-Link



All-Metal Magnetic Inductive Flowmeter

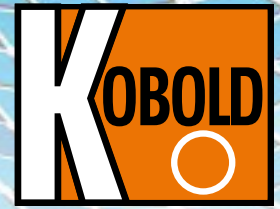
New for 2019 is the KOBOLD MIS, a full bore electromagnetic flowmeter featuring the unique and versatile electronics module from the new and popular MIM model. Like the MIM, the MIS can accommodate all flow directions due to the rotating digital TFT display screen. The rugged flow bodies, built off of our reliable EPS model, are made of cast steel.

With elements borrowed from the MIM and EPS models, the new MIS model is a unique, economical and competent full bore electromagnetic flowmeter, suitable for a wide range of standard applications.

Also for 2019, both the MIM and the MIS models will feature a convenient IO-Link, especially useful for Industry 4.0 compliance. Analog, frequency, and pulse outputs are standard along with alarm, batching, and totalizing features.

If a higher technical specification is required, such as HART® or ATEX, or larger pipe sizes up to 24", the KOBOLD EPS with the new UMF2 electronics covers all the bases. For applications requiring an insertion meter, the KOBOLD PIT is ideal.

[Learn More on Page 24](#)



IO-Link

MIM

All-Metal Magnetic Inductive Flowmeter

The new MIM magmeter delivers a revolutionary design for measuring and monitoring the flow and temperature of conductive liquids in pipes. The compact design offers exceptional features and functions, at an economical price.

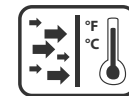
Engineered to exceed the competition, the MIM triumphs with: a superior measuring accuracy, four times the turndown ratio, easy onsite programming, batching functionality, and bi-directional flow measurement.

The MIM is built to last, with a rugged stainless steel body. The multiparameter, touch screen display is both configurable and rotatable.

The MIM is an ideal solution for a variety of applications; with ranges from 0.48...48 GPH to 0.8...200 GPM, temperatures up to 280 °F, and pressures up to 230 PSI.



Stainless Steel



Flow/Temperature Measurement



2 Configurable Outputs



Switching Function



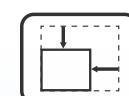
Resettable and Grand Total



Rotating Color Display



Bi-directional



Space Saver

[Learn More on Page 24](#)



Viscous Media has Met its Match

DON

Oval Gear Flowmeter

The economical DON and DON-H oval gear, positive displacement flowmeters are the preferred choice for measuring clean, low and high viscosity liquids. They deliver precision measurement over a very wide range of viscosities, up to 1,000,000 cPs. Media properties have a minimal effect on the performance.

Common Media: Oil, Grease, Paste, Petroleum, and Fuels

The DON and DON-H flowmeters are built with stainless steel or aluminum bodies and are easy to install in small spaces. They can be used with vertical or horizontal flows and no flow profile conditioning is required. They are available with: a pulse output, an LCD display, 4-20 mA, alarms, and mechanical totalizers. Optional features include: cooling fins, check valves, and bi-directional flow sensing with an optional quadrature output.

Line sizes are available from 1/8" to 4", in both NPT and ANSI flange fittings. Flow ranges are from 0.13 to 9.5 GPH up to 40 to 660 GPM. Models are available for temperatures up to 300 degrees Fahrenheit and pressures up to 1,450 PSIG. Higher pressure models are also available up to 5,800 PSIG. The DON delivers excellent accuracy at 0.5% to 1% of the reading.

Precision Machined Oval Gears

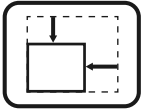


DON and DON-H oval gear flowmeters contain two oval gear rotors that measure a constant volume per rotation. The rotation is detected via magnets embedded within the rotors that transmit a high resolution pulse output.



HPC

A Worldwide-First: Unique Low-Flow Coriolis Technology



The new HPC breaks the barriers of low-flow measurement for Coriolis flow meters. Most low-flow options employ a single tube design where external interference increases dramatically, requiring costly decoupling. Another challenge most low-flow options face is that the weight influence of the sensor coils compared to the pipe diameter limits the potential design size. The patented, revolutionary design of the HPC employs lightweight magnets that are mounted onto the pipes themselves.

This provides the sensor with significantly noise-reduced and predictable dynamic behavior, capable of functioning at higher frequencies, further decoupling the sensor's measurement from any external vibrations. The HPC also integrates up to 4 sensor coils which increases the resolution accordingly.



HPC sensor coils are mounted between the pipes, not on them. This new concept delivers an extremely small meter with exceptional accuracy and resistance to external interference.



Using state of the art technology, KOBOLD is positioned to quickly overcome the barriers of challenging applications, delivering optimum customer-oriented solutions

[Learn More on Page 22](#)



Flow - Variable Area

KSR/SVN - FLOW SWITCH FOR WATER OR AIR



- 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-FLOWMETER



- Polysulfone Body; Brass or SS Fittings
- Excellent Resistance to Acids and Alkalines
- Compact
- Easy to Read
- Easy Installation
- Convenient 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 FLOWMETER FOR LIQUID OR GAS



- Material: Clear Acrylic
- Clear, Easy to Read Scales
- Compact Size, Low Cost
- Durable Construction
- Metric Scales Available
- Inherently Stable Float Design
- Bridges Micro-flow and Large Ranges
- 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 FLOWMETER WITH OPTIONAL SWITCH



- Materials: Polyamide, Polysulfone
- Compact Design
- Polysulfone Version Highly Resistant to Acidic and Alkaline Solutions
- Transistor or Reed Switch Contacts
- Can be used to Monitor and Alarm for Flow Upset Conditions
- LED Switching Indication Available
- Vertical, Flow Up Orientation

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: Cl. 4 According to VDI

KSM - ALL-PLASTIC FLOWMETER WITH OPTIONAL SWITCH



- Materials: Polyamide, 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
- Two Adjustable Markers
- 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: Cl. 4 According to VDI

URB - GLASS TUBE FLOWMETER



- Material: PVC
- Operates on the Suspended Float Principle
- Vertical Installation Position
- Flow from Bottom to Top
- Simple, Economical Solution

Water: 2.6...26 GPH to 26...260 GPH
Air: 11...110 SCFH to 110...1,100 SCFH
 t_{max} 150 °F; p_{max} 43 PSIG
Connection: 1/2"...1-1/4" NPT
Accuracy: \pm 2 - 2.5%, q_G = 50%

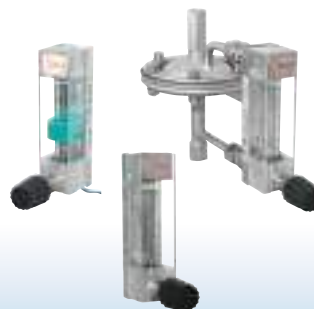
KDF-2/KDG-2 - MICRO-FLOWMETER AND SWITCH



- 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 Panel Mount Kit
- 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_G = 50 %

KDF-9/KDG-9 - MICRO-FLOWMETER AND SWITCH



- 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 Panel Mount Kit
- 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_G = 50 %





SWK - COMPACT VARIABLE AREA FLOWMETER AND SWITCHES



- Materials: Brass, Stainless Steel, PVC
- Compact Size
- Low Cost
- High Reliability
- Universal Mounting
- Adjustable Switch or Switch with Indicator
- Operates by the Suspended Float Principle

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

URM - GLASS TUBE FLOWMETER



- Material: Stainless Steel
- Measures Flow Rates in Closed Pipe Systems
- 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%

URK - VARIABLE AREA FLOWMETER WITH FIXED FLANGE



- Material: Cast Iron, Stainless Steel
- Measures Flow Rates in Closed Pipe Systems
- 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%

URL - GLASS TUBE FLOWMETER WITH FLANGE



- Materials: PVC, PTFE
- Plastic Version is Chemically Resistant
- 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: 0.26...2.6 GPH to 66...660 GPH
 Air: 0.35...3.5 SCFH to 350...3,500 SCFH
 t_{max} 212 °F; p_{max} 145 PSIG
 Connection: 1/2"...1-1/2" ANSI
 Accuracy: \pm 2 - 2.5%, q_G = 50%

V31 - HIGH ACCURACY VARIABLE AREA FLOWMETER/SWITCH



- 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 VARIABLE AREA FLOWMETER



- All-Metal Design in Stainless Steel
- For Liquids or Gases
- For Measurement of Low Flow Rates
- Compact Size
- Rugged Mechanical System with a Low Rate of Wear
- Horizontal or Vertical Connections
- Special Versions for High Pressures

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% of Full Scale
 Options: Analog Output, Inductive Contacts

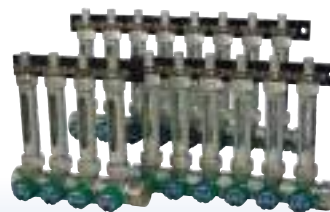
BGK - ALL METAL, LOW VOLUME VARIABLE AREA FLOWMETER



- Material: Stainless Steel
- Measures Low Flow Rates
- For Liquids or Gases
- Compact Size
- Provides Flow Rate in Volume or Mass per Unit of Time
- Rugged Mechanical System
- Low Rate of Wear

Water: 0.026...0.26 GPH to 5...50 GPM
 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% of Full Scale
 Options: Analog Output, Inductive Contacts

USR - GLASS TUBE FLOWMETERS WITH MANIFOLD VALVES



- Material: Brass, PTFE, SS, FKM
- For Water and Water-based Liquids
- For Centralized Flow Measurement, Such as Cooling Systems
- Up to 24 Flowmeters Pre-assembled in a Block
- Glass Tube Allows for Direct Flow Observation
- Independent Control Valves

Water: 0.01...0.1 GPM to 0.25...2.5 GPM
 t_{max} 210 °F; p_{max} 230 PSIG
 Inlet Connection: 1" NPT
 Outlet Connection: 1/4" or 3/8" NPT, or Hose Conn.
 Accuracy: \pm 2 - 2.5%, q_G = 50%



Flow - Variable Area

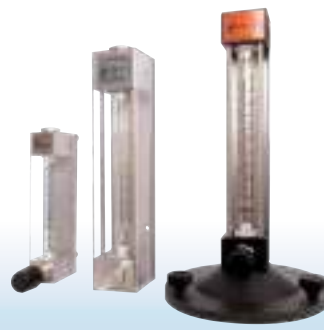
UVR/UTR - GLASS TUBE VARIABLE AREA FLOWMETER



- Materials: Stainless Steel, POM
- For Liquids or Air
- Simple, Economical
- With or Without Needle Valve
- Low Pressure Loss
- Glass Tube Allows for Direct Observation
- Common Applications: Cooling Water, Gas Monitoring for Burners, Inert Gas Cooling

Water: 2.6...26 GPM to 52.8...528 GPM
Air: 3.5...35 SCFH to 176...1,760 SCFH
 t_{max} 210 °F; p_{max} 145 PSI
Connection: 3/8" NPT, 1/2" NPT
Accuracy: $\pm 2 - 2.5\%$, $q_g = 50\%$

UMR/UXR/URA - VARIABLE AREA FLOWMETER



- Materials: Stainless Steel, POM
- For Liquids or Air
- Simple, Economical
- With or Without Needle Valve
- Low Pressure Loss
- Glass Tube Allows for Direct Observation
- Table-Top Mount Models Available

Water: 1...10 LPH to 13...130 LPH
Air: 0.01...0.1 Nm³/h to 0.25...2.5 Nm³/h
 t_{max} 100 °C; p_{max} 16 bar
Connection: 1/4" NPT
Accuracy: Cl. 4 Acc. to VDI/VDE

UTS - VARIABLE AREA FLOWMETER FOR GAS BURNERS



- Materials: Brass, Stainless Steel
- Ideal for Small Installation Spaces
- Easy to Change Measuring Tube
- Impact Resistant Polystyrene Protective Cover
- Vertical Installation Position, Flow From Bottom
- Protection: IP65

Air: 0.40...4.0 SCFH to 10...100 SCFH
 t_{max} 150 °F; p_{max} 45 PSIG
Connection: 1/4" NPT, G 1/4, M18x1.5
Accuracy: $\pm 2 - 2.5\%$, $q_g = 50\%$

BGN - ALL METAL, ARMORED VARIABLE AREA FLOWMETER



- 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: $\pm 1.6 - 2.2\%$ of Full Scale

BGN - HIGH PRESSURE ARMORED FLOWMETER



- 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} 8,700 PSIG
Connection: 1/2"...6" ANSI
Options: Analog Output, BUS-Interface
Accuracy: $\pm 1.6 - 2.2\%$ of Full Scale

BGF - ALL METAL, ARMORED FLOWMETER



- Materials: SS, Special Materials 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: $\pm 1.6\%$ of Full Scale

SV/DSV - FLOAT TYPE FLOWMETER AND SWITCH



- 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 Available

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

BVO - OEM FLOWMETER WITH SWITCH



- Materials: Brass, Stainless Steel
- Rugged Low Cost Design
- Repeatability of $\pm 2\%$ of Full Scale
- Adjustable SPST Switch Standard

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/DSS-SERIES - ALL METAL VARIABLE AREA FLOW SWITCH



- Materials: Brass, Stainless Steel
- For Liquids or Gas
- Compact Design
- Cost Effective
- Reliable Operation
- Vertical Connections for Easy Installation
- Excellent at Ensuring Appropriate Flow
- 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

SMV - HIGH PRESSURE, ALL METAL FLOWMETER AND SWITCH



- 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

SMO/SMW - HIGH PRESSURE FLOWMETER/SWITCH



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

Water: 0.04...0.6 GPM to 8...34 GPM
Air: 0.2...3.5 SCFM to 30...130 SCFM
 t_{max} 210 °F; p_{max} 5,000 PSIG
Connection: 1/4"...3/4" NPT
Accuracy: \pm 5% of Full Scale

SMN - ALL METAL FLOW SWITCH FOR LIQUIDS



- 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: Control of Water and Cooling Circuits, High Pressure Cleaning Devices, and Heating Systems

Water: 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 FLOWMETER AND SWITCH



- Material: Polysulfone
- Compact Size
- Inexpensive Flow Measurement for Liquids
- Common Uses: Cooling Water, Lubrication Systems, Solar Heating
- Ideal Choice for OEM Applications
- Optional Reed Contacts
- Optional Union Fittings

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 Available
Accuracy: \pm 5% of Full Scale

VKG - VISCOSITY COMPENSATED FLOWMETER AND SWITCH



- 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
- In-line Connections for Easy Installation
- 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 FLOWMETER



- Materials: Brass, Stainless Steel
- Direct Reading Scales
- Suitable for Oils and Compatible Liquids
- Install in any Position
- In-line 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 5% of Full Scale

VKA - OEM VISCOSITY COMPENSATED FLOWMETER



- Material: Brass
- Reliable Construction
- Affordable Pricing
- Viable Alternative to our VKG and VKM Flowmeters
- Optional Switches
- Protection: IP54 for Side Indication, IP65 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



Flow - Variable Area/Paddle

BVB - MANIFOLD VALVES FOR MULTIPLE INSTALLATIONS



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

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

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:
 0.9...1.3 GPM to 9.2...15 GPM
 t_{max} 230 °F; p_{max} 1,450 PSIG
 Connection: 1/4"...1-1/2" NPT

PS/PSE - 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:
 16...22 GPM to 101...141 GPM
 t_{max} 230 °F; p_{max} 1,450 PSIG
 Connection: 1/2" NPT

PPS - PLASTIC PADDLE FLOW SWITCH



- Material: Polysulfone
- Reliability at a Competitive Price
- 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
- Requires Straight Run of 3x Pipe Diameter

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
- Used for Min/Max Flow Control, Pump Protection, and Monitoring Cooling Circuits
- High Capacity SPDT Mechanical Switch
- Position Independent Installation
- Externally Adjustable Switch Point
- Tolerates Dirty Media

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

LPS - 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

DWN/DWS/DPU - PADDLE BELLOWS FLOW SWITCH



- Materials: Brass, Stainless Steel
- Ideal for Use in Applications where Dirt and Solid Grain Contaminants are a Concern
- Large Internal Clearances
- Orientation Independent
- High Current Switching Capability
- Insensitive to Magnetic Fields

Liquid: 0.26...1.3 GPM to 4,950...19,800 GPM
 t_{max} 210 °F; p_{max} 230 PSIG
 Connection: 1/2"...2" NPT, 1/2"...2" ANSI,
 Weld-on Flange for 1-1/2"...24" Pipe
 Accuracy: \pm 3 – 5% of Full Scale

DWU/DPU - PADDLE BELLOWS FLOWMETER AND SWITCH



- Materials: Brass, Stainless Steel
- Ideal for Use in Applications where Dirt and Solid Grain Contaminants are a Concern
- Large Internal Clearances
- Orientation Independent
- High Current Switching Capability
- Insensitive to Magnetic Fields

Liquid: 0.26...1.3 GPM to 4,950...19,800 GPM
 t_{max} 210 °F; p_{max} 230 PSIG
 Connection: 3/8"...2" NPT, 1/2"...2" ANSI,
 Weld-on Flange for 1-1/2"...24" Pipe
 Accuracy: \pm 3 – 5% of Full Scale

Flow - Paddle/Rotating Vane



DPT - TARGET TYPE FLOWMETER



- Materials: Brass, Stainless Steel
- Unique, Patented Target 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

DWD - PADDLE BELLOWS FLOWMETER AND SWITCH



- Materials: Brass, Stainless Steel, PVC
- Very Low Pressure Loss
- Linear Output Signal
- Resistant to Dirt and Small Debris in the Media
- Universal Mounting
- Factory Configured According to Customer Specifications
- Optional RS-232C Serial Interface

Water: 0.26...2.6 GPM to 1,580...15,800 GPM
 t_{max} 250 °F; p_{max} 360 PSIG
 Connection: 3/8"...2" NPT, 3/8"...2" ANSI,
 Weld-on Flange 1-1/2"...20" Pipe
 Accuracy: \pm 1.5% of Full Scale

TSK - FLAP STYLE FLOWMETER



- Materials: SS, PP, 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

HND-F - HAND-HELD MEASURING UNIT



- Measures Flow, Humidity, and Temperature
- Large Selection of Electrodes and Accessories
- Serial Interface, MIN/MAX Memory
- Hold Function, Clock, Log Function
- User-Friendly
- Common Applications: Air Conditioning, Exhaust Ventilation Systems, and General Humidity Measurement

Water: 0.16...16 ft/sec
 Air: 1.8...65 ft/sec
 Humidity: 0...100% rH
 Temperature: -40...250 °F, -110...480 °F
 Accuracy: from \pm 0.1% of Full Scale

DRS - OEM TURBINE FLOW SENSOR



- Materials: Brass, Stainless Steel, PPO
- Quality Solution at an Economical Price
- Ideal for OEM Applications
- For Clear or Opaque Liquids
- Pulse Frequency, 4-20 mA, Digital Display, Electronic Pointer Indicator
- 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: \pm 1.5% of Full Scale

TUR - ALL-PLASTIC TURBINE FLOWMETER



- Materials: PVC, PVDF
- For Water-like Liquids with Viscosities under 8 cSt
- High Resistance to Acids, Lyes, and Other Aggressive Media
- Installation in Any Orientation
- Pulse Outputs, Analog Outputs, Digital Totalizers and Batchers

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

DPE - PADDLE WHEEL FLOWMETER



- 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, Waste Water Treatment, and Chemical Industry

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

DRB - PADDLE WHEEL FLOWMETER



- 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, Waste Water Treatment, and Chemical Industry

Water: 1.5...8 GPM to 15...200 GPM
 t_{max} 175 °F; p_{max} 230 PSIG
 Connection: 1/2"...3" NPT
 Accuracy: \pm 3.0% of Full Scale



Flow - Rotating Vane

TUV - TURBINE FLOWMETER



- Material: Stainless Steel
- For Low Viscosity Liquids
- Media Examples: Fuel, Liquified Gas, Solvents, Light Heating Oil, Tap and Demineralized Water
- Pulse Output
- Viscosity Range: 1...30 mm²/s
- Calibrated by Factory for Viscosity

Water: 0.3...1.5 l/min to 35...400 l/min
 t_{max} 350 °C; p_{max} 630 bar
 Connection: G 1/4...1-1/2
 Accuracy: \pm 1% of Reading

SFL - HIGH PRECISION TURBINE FLOW SENSOR



- Materials: PVDF, Stainless Steel
- For Clean, Transparent Media
- Infrared Sensing
- Bearingless Design for Long Life
- Universal Mounting Position
- Linear, Square Wave Pulse Output
- Very High Turndown Over Entire Range
- Compact Size

Water: 0.5...20 l/min
 t_{max} 90 °C; p_{max} 250 bar
 Connection: G 3/8
 Accuracy: \pm 1% of Full Scale

DOT - TURBINE FLOWMETER



- Material: Stainless Steel
- For Low Viscosity Liquids
- Rugged and Reliable Turbine Meter
- 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: \pm 0.5% of Full Scale

PEL - LOW VOLUME TURBINE FLOWMETER



- Materials: Stainless Steel, Aluminum
- Pelton Wheel Principle
- For Liquids
- High Reliability
- Long Service Life
- Pulse Output
- Media Examples: Fuel, Distilled Water, Hot Grease

Water: 0.004...0.06 l/min to 0.1...28 l/min
 t_{max} 135 °C; p_{max} 345 bar
 Connection: R 1/4...R 1/2, Wafer Flange
 DN 40/50, 1/2" Glue-in Connection, Hose-
 Connection
 Accuracy: \pm 2% 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

DPL - ALL PLASTIC LOW FLOW PADDLE WHEEL SENSOR



- Material: Polypropylene
- Precision Water Flow Transmitter
- 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

KFF/KFG-1 - LOW VOLUME, ROTATING VANE FLOWMETER



- Material: Brass, PTFE, PPS
- Can Measure Very Low Flow Rates
- Models for 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: \pm 3% of Full Scale

KFF/KFG-3 - LOW VOLUME, ROTATING VANE FLOWMETER



- Materials: Brass, PPS
- Can Measure Very Low Flow Rates
- Models for 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: \pm 3% of Full Scale



DF - PADDLE WHEEL FLOWMETERS/TOTALIZERS/TRANSMITTERS



- Materials: Polysulfone, Brass, SS
- Available with 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

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

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

LFM - DUAL-RING PENDULUM FLOWMETER



- Material: Stainless Steel
- For Low Viscosity Liquids
- Suitable for Filling/Batching Processes
- Typical Media: Additives, Perfumes, Water and Demineralized Water, Liquefied Gas
- Repeatability of \pm 0.1%
- IP65 Protection

Water: 0.005...0.25 l/min
 t_{max} 80 °C; p_{max} 100 bar
 Connection: 1/8" NPT, G 1/8, Swagelok® 6 mm
 Accuracy: \pm 2.5 % of Reading

DRZ - ROTARY PISTON FLOWMETER



- Material: Brass
- Economy and High Performance
- For Clean, Lubricating Liquids
- For Viscosities from 5 to 100 cSt
- Low Pressure Drop
- Repeatability of \pm 0.2%
- Maximum Throughput of 160 GPH
- Can be Combined with AUF Display

Viscosity Range: 5...100 cSt
 Oil: 1.6...110 GPH
 t_{max} 175 °F; p_{max} 580 PSIG
 Connection: 1/8" NPT, 1/4" NPT
 Accuracy: \pm 1% of Reading

OVZ - ECONOMICAL OVAL-GEAR FLOWMETER



- Materials: POM, Aluminum
- Positive-Displacement Technology at a Rotameter Price
- 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: \pm 2.5% of Full Scale



Flow - Rotating Vane

DON - POSITIVE DISPLACEMENT FLOWMETER



- Materials: Aluminum, Stainless Steel
- For Clean, High and Low Viscosity Liquids Like: Lubricating/Hydraulic Oils, Diesel Fuels, Resins, Pastes
- Precise Measurement over a Wide Viscosity Range
- Output Options: Analog, Frequency, LCD Totalizers, 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: \pm 0.2 - 1% of Reading

DON-H - HIGH PRESSURE FLOWMETER



- 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: \pm 0.2 - 1% of Reading

DOC - POSITIVE DISPLACEMENT FLOWMETER



- Body/Gear Material: PPS
- For Clean, Corrosive Chemicals
- For Viscosities up to 1000 cP
- Reed Switch or Hall-effect Output
- Hastelloy-C® Axles
- Repeatability of \pm 0.03%
- IP67 Protection
- Filtration Recommended

Oil: 0.13...26 GPH to 0.8...21 GPM
Connection: 1/4" or 1" NPT or BSP
 t_{max} 176 °F; p_{max} 145 PSIG
Accuracy: \pm 0.5 % of Reading

DOE - OEM OVAL GEAR FLOWMETER



- Material: Stainless Steel
- Designed for OEM Use
- PEEK or PPS Rotors
- Media Viscosities from 2 to 1000 cP
- Hall Sensor or Hall/Reed Switch
- Pulse Frequency Signal Output
- Common Media: Petroleum, Grease, Oil, Pastes, Fuels, Chemicals, Ink
- Optional Temperature Measurement



Viscosity Range: up to 1,000 cP
Oil: 0.14...9.5 GPH to 0.27...10.56 GPM
Connection: 1/8"...1/2" NPT
Accuracy: \pm 1 % of Reading

OMG - HELICAL GEAR FLOWMETER



- Materials: Cast Iron, Stainless Steel
- Pulsation-free Principle of Measurement
- For Viscous, Non-abrasive Liquids
- Pulse Output
- High Reliability
- Self-cleaning Measuring Chambers
- Long Service Life
- Installation Position Independent

Viscosity Range: up to 5,000 cSt
Oil: 0.026...2.6 GPM to 13...1,300 GPM
 t_{max} 390 °F; p_{max} 6,000 PSIG
Connection: 1/2"...3" NPT, 1/2"...6" ANSI
Accuracy: \pm 0.3% of Reading



OME - HELICAL GEAR FLOWMETER



- Material: Aluminum
- Quiet, Non-pulsating Operation
- Low Pressure Loss
- For Non-abrasive, Lubricating Liquids
- Advanced Helical-gear Technology
- Bi-directional Measurement
- High Turndown Ratio of 150:1
- No Upstream or Downstream Flow Requirements



Viscosity Range: up to 5,000 cSt
Oil: 0.03...2.6 GPM to 0.92...92 GPM
 t_{max} 250 °F; p_{max} 600 PSIG
Connection: 1/2"...1-1/2" NPT
Accuracy: \pm 0.3% of Reading

DZR - SPHERICAL GEAR FLOWMETER



- Materials: Cast Iron, Stainless Steel
- For Viscous Liquids
- Seals of FKM, EPDM, or FEP
- Application Specific Models for Flow Measurement, Oil Batching, Consumption Measurement, Ratio Control, and Batch Control
- Protection of IP65

Viscosity Range: 20...5,000 cSt
Oil: 0.008...2 l/min to 3...700 l/min
 t_{max} 150 °C; p_{max} 400 bar
Connection: G 1/8...1
Accuracy: \pm 0.3 - 1% of Reading



KZA - SPHERICAL GEAR FLOWMETER



- Material: Aluminum
- For Viscous, Non-abrasive Liquids
- Easy to Maintain
- Low Pressure Loss
- Low Noise Level
- Commonly Used in Mixing, Batching, and Hydraulics

Viscosity Range: 20...4,000 cSt
Oil: 0.02...4 l/min to 1...200 l/min
 t_{max} 80 °C; p_{max} 160 bar
Connection: G 1/4...1
Accuracy: \pm 0.3 - 3% of Reading





ZDM - SPHERICAL GEAR FLOWMETER



- Materials: Cast Iron, Stainless Steel
- Rugged Build for Demanding Conditions
- 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: $\pm 0.3\%$ of Reading

KAL-D - COMPACT THERMAL FLOW SWITCH



- Material: Stainless Steel
- Extensive Features, Compact Design
- For Non-viscous, Water-based Liquids
- Reliable, 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-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-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: $\pm 10\%$ of Full Scale



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: $\pm 10\%$ of Reading

KAL/KAL-E - THERMAL FLOW SWITCH



- Materials: Brass, Stainless Steel
- Continuous Monitoring of Liquids
- For Low or High Flow Velocities
- 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



DVK - CALORIMETRIC SWITCH, FLOWMETER, AND TOTALIZER



- Material: Stainless Steel
- Designed for Air Flow in Pipes/Hoses
- Maintenance-Free Calorimetric Technology
- Minimal Pressure Loss
- Common Application Areas: Flow Monitoring of Air and Gases, Air Conditioning Systems, and Extraction Systems

Air: 1...10 LPM to 600...12,000 LPM
 t_{max} 50 °C; p_{max} 15 bar
Connection: G 1/4"...G 2
Accuracy: $\pm 5\%$ of Full Scale

KAH - AIR VELOCITY TRANSMITTER



- Material: Polycarbonate
- Ideal for Accurate Ventilation Control
- Hot-Film Anemometer Principle
- Accuracy at Low Air Velocity
- Insensitive to Dust and Dirt
- High Reliability, Low Maintenance
- Adjustable Sensing Range, Insertion Length, Damping Time
- Easy to Install

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}
Connection: Mounting Adapter
Accuracy: $\pm (0.2 \text{ m/s} + 3\% \text{ of Reading})$



Flow - Mass/Coriolis

MAS - MASS FLOWMETER FOR GASES



- Materials: Polyamide, SS, Aluminum
- For Clean, Dry Gas Measurement
- Outstanding Performance and Value
- No Pressure/Temp. Correction Necessary
- Exceptional Versatility
- Remote Display Capability
- Analog Output Standard
- Common Applications: General Process Control, Flow into Vacuum Systems, Leak Testing, and Flow Calibration

Air: 0...10 SCCM to 0...500 SLPM
 t_{max} 120 °F; p_{max} 500 PSIG
 Connection:
 1/4" NPT, 1/2" NPT; 1/4" or 1/2" Swagelok®
 Accuracy: $\pm 1.5\%$ of Full Scale

DMS - MASS FLOWMETER FOR GASES



- Material: Stainless Steel
- For Gas Measurement
- Accurate, Reliable, Rugged
- Easy to Use Display
- No Moving Parts
- Common Application Areas: Gas Monitoring, Paint Lines, Laminator Systems, Semiconductor Industry, Analytic Devices, Exhaust Measurement, Engineering, and Boiler Controls
- Optional Regulator

Air: 0.1...3.7 NL/min to 0...185 NL/min
 t_{max} 120 °F; p_{max} 500 PSIG
 Connection:
 1/4" or 1/2" NPT, 1/8"...1/2" Compression
 Accuracy: $\pm 1\%$ of Full Scale

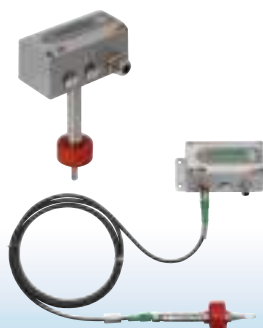
KME - COMPACT INLINE FLOWMETER



- Material: Aluminum, SS, Polycarbonate
- For Compressed Air and Technical Gases
- Hot Film Sensor Element
- Easy to Mount/Dismount without Opening any Pipes
- Long Term Stability, Fast Response Time
- Application-specific, Multi-point Factory Adjustment for Excellent Accuracy
- Optional Display

Air: 0.12...44.4 SCFM to 1.3...500 SCFM
 t_{max} 140 °F; p_{max} 230 PSIG
 Connection: 1/2"...2" NPT
 Accuracy: $\pm 3.0\%$ of Reading, $\pm 0.3\%$ of FS

KMT-1/-2/-3 - THERMAL MASS FLOWMETER



- Material: Stainless Steel, Brass
- For Compressed Air and Gases
- Application Specific Adjustments Completed During Production
- Excellent Long-Term Stability
- Fast Response Time
- Integrated Counter for Consumption
- Optional Display
- Compact or Remote Mount Probes

Air: 0.32...63 Nm/s to 3.5...1,400 Nm/s
 t_{max} 176 °F; p_{max} 230 PSIG
 Connection: 1/2"...2" NPT with Ball Valve
 Accuracy: $\pm 1.5\%$ of Reading, + (0.5 - 0.8 of Full Scale)

KMT-4 - THERMAL MASS FLOWMETER



- Material: Stainless Steel, Brass
- For Compressed Air and Gases
- Application Specific Adjustments Completed During Production
- Excellent Long-Term Stability
- Fast Response Time
- Integrated Counter for Consumption
- Optional Display
- Compact and Remote Mount Probes

Air: 2.8...1397 Nm³/s to 263...263,350 Nm³/s
 t_{max} 80 °C; p_{max} 16 bar
 Connection: R 1/2, Male for Insertion (DN65 ... DN700)
 Accuracy: $\pm 1.5\%$ of Reading, $\pm 0.8\%$ of Full Scale

KEC - THERMAL MASS FLOWMETER



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

Air: 0.33...300 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: $\pm 1.5\%$ of Reading, $\pm 0.3\%$ of FS

HPC - MINI CORIOLIS MASS FLOWMETER



- 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

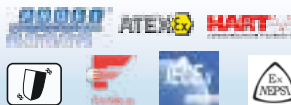
Water: 0...44 lbs/hr to 0...350 lbs/hr
 t_{max} 350 °F; p_{max} 1,450/4,640/5,800 PSIG
 Connection: 1/2" NPT, Grylock/Swagelok®
 Accuracy: $\pm 0.1\%$ of Reading, \pm Zero-point Stability

TME/UMC-3 - CORIOLIS MASS FLOWMETER



- Material: Stainless Steel Measuring Tubes
- Rugged Cast Iron Housing
- Designed for General Purpose Mass Flow Measurement of Liquids and Gases in Most Chemical, Petrochemical, Oil, and Gas Applications
- Mass Flow, Density, Temperature, and Volume Flow Measurements
- High Immunity to Piping-induced Measuring Errors Caused by Vibration

Water: 2.2...22 lbs/min to 220...2,200 lbs/min
 t_{max} 350 °F; p_{max} 580 PSIG
 Connection: 1/2"...3" ANSI
 Accuracy: $\pm 0.15\%$ of Reading, \pm Zero-point Stability



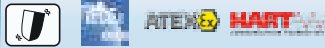


TME/UMC-4 - CORIOLIS MASS FLOWMETER

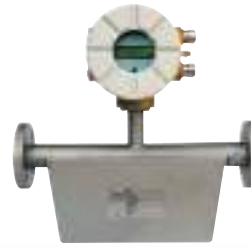


- Material: Stainless Steel Measuring Tubes
- Rugged Cast Iron Housing
- Designed for General Purpose Mass Flow Measurement of Liquids and Gases in Most Chemical, Petrochemical, Oil, and Gas Applications
- Mass Flow, Density, Temperature, and Volume Flow Measurements
- High Immunity to Piping-induced Measuring Errors Caused by Vibration

Water: 2.2...22 lbs/min to 220...2,200 lbs/min
 t_{max} 350 °F; p_{max} 580 PSIG
 Connection: 1/2"...3" ANSI
 Accuracy: $\pm 0.15\%$ of Reading,
 \pm Zero-point Stability



TMU/UMC-3 - CORIOLIS MASS FLOWMETER



- Materials: Stainless Steel, Hastelloy®
- For Liquids or Gases
- Accommodates 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: 0...1,320 lbs/hr to 0...2,200 tons/hr
 t_{max} 500 °F; p_{max} 580 PSIG
 Connection: 1/2"...16" ANSI
 Accuracy: $\pm 0.1\%$ of Reading,
 \pm Zero-point Stability



TMU/UMC-4 - CORIOLIS MASS FLOWMETER



- Materials: Stainless Steel, Hastelloy®
- For Liquids or Gases
- Can Accommodate 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: 0...1,320 lbs/hr to 0...2,200 tons/hr
 t_{max} 500 °F; p_{max} 580 PSIG
 Connection: 1/2"...16" ANSI,
 1/4" NPT, 1/2" NPT
 Accuracy: $\pm 0.1\%$ of Reading,
 \pm Zero-point Stability



TM/UMC-3 - CORIOLIS MASS FLOWMETER



- Materials: SS, Hastelloy®, Monel®, Titanium, Nickel, Titanium
- Widest Range of Wetted Materials Available in the Industry
- Liquid or Gas Measurement
- Extreme Temp/Pressure Ratings
- Heat Jacketing Available

Water: 0.003...0.3 lbs/min to 220...2,400 lbs/min
 t_{max} 500 °F; p_{max} 13,000 PSIG
 Connection: 1/4"...1/2" NPT,
 1/2"...4" ANSI
 Accuracy: $\pm 0.1\%$ of Reading,
 \pm Zero-point Stability



TMU-..AC - CORIOLIS FLOWMETER WITH HEATING JACKET



- Materials: Stainless Steel, Hastelloy®
- For Liquids or Gases
- Accommodates 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: 0...1,320 lbs/hr to 0...2,200 tons/hr
 t_{max} 500 °F; p_{max} 580 PSIG
 Connection: 1/2"...12" ANSI
 Accuracy: $\pm 0.1\%$ of Reading,
 \pm Zero-point Stability



KPL - DIFFERENTIAL PRESSURE ORIFICE PLATE



- Materials: Steel, SS, Hastelloy-C®, Titanium, Monel®, Tantalum
- Used to Measure Flow of Liquids, Gases, or Steam
- High Reliability, Minimal Maintenance

Shown with Model PAD
 Ranges: for Liquids, Gases, Steam
 According to ISO 5167-1
 Connection: ANSI 2"...24", DN 50...600
 t_{max} 500 °C; p_{max} PN 420/cl. 2500



KPL - DIFFERENTIAL PRESSURE ORIFICE PLATE



- Materials: Steel, SS, Hastelloy-C®, Titanium, Monel®, Tantalum
- Used to Measure Flow of Liquids, Gases, or Steam
- High Reliability, Minimal Maintenance

Shown with Model PAD
 Ranges: for Liquids, Gases, Steam
 According to ISO 5167-1
 Connection: ANSI 2"...24", DN 50...600
 t_{max} 500 °C; p_{max} PN 420/cl. 2500



ANU - DIFFERENTIAL PRESSURE PITOT TUBE



- Standard Material: Stainless Steel
- Used for Flow Measurement of Liquid, Gas, and Steam
- Measuring Principle Uses the Differences between the Dynamic Pressure on the Upstream Side and the Static Pressure on the Downstream Side
- Available in Many Special Materials
- Optional RTD or TC Temperature Sensor

Shown with Model PAD
 Connection: 1" ... 1-1/2" NPT, G 1 ... 1-1/2,
 ANSI 1"...3", DN 25...80
 Probe Length: 2"...315" (50...8000 mm)
 t_{max} 1175 °C; p_{max} 400 bar





Flow - DP/Electromagnetic

DUS - DIFFERENTIAL PRESSURE NOZZLE



- Materials: Steel, Stainless Steel

Shown with Model PAD
Nominal Diameter: 2" ... 24" (DN 50 ... 600)
 t_{max} 560 °C; p_{max} 420 bar

DVT - DIFFERENTIAL PRESSURE VENTURI TUBE



- Materials: Steel, Stainless Steel

Shown with Model PAD
Nominal Diameter: 2" ... 48" (DN 50 ... 1200)
 t_{max} 560 °C; p_{max} 420 bar

KEL - DIFFERENTIAL PRESSURE FLOWMETERS



- Materials: Brass, Cast Iron, SS
- Designed for Difficult Environments
- Rugged Metal Housings
- Insensitive to Magnetic Fields
- Withstands Pressure Surges
- For Horizontal or Vertical Pipes
- Easy to Use and Maintain
- Ranges can be Modified in the Field
- Optional Alarms and 4-20 mA Output

Water: 0.1 ... 0.5 GPM to 400 ... 2,000 GPM
 t_{max} 250 °F; p_{max} 230 PSIG
Connection: 1/2" ... 1-1/2" NPT,
1/2" ... 8" ANSI Wafer
Accuracy: $\pm 2 - 5\%$ of Full Scale

RCD - DIFFERENTIAL PRESSURE FLOWMETER



- Materials: Brass, Stainless Steel
- For Liquids or Compressed Gases with Low to Medium Viscosities, Minimal Solids
- High Reliability and Long Service Life
- Brass or 316-Ti Stainless Steel Bodies
- Custom Calibrations for Density/Viscosity
- Mechanical Pointer Indicator, Analog Output, Digital Display, Switches
- Common Uses: Machinery Manufacturing, Chemical Industry, 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: $\pm 3\%$ of Full Scale

RCM - DIRECT READING FLOWMETER



- Materials: Bronze, Monel®, Stainless Steel
- Liquid or Gas, Low to Medium Viscosity, Low Solids Content
- Easy to Install, Compact Design
- Low Pressure Drop
- 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: $\pm 3\%$ of Full Scale

MIK - ECONOMICAL MAGMETER



- For a Wide Variety of Conductive Liquids, Acids, and Caustics
- Wetted Materials: PPS/SS/NBR, PPS/SS/FKM, PVDF/Hastelloy®/FFKM, PVDF/Tantalum/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: $\pm 2\%$ of Full Scale

MIM - ALL-METAL ELECTROMAGNETIC FLOWMETER



- 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
- Display is Operable with Hand Gloves

Water: 0.48 ... 48 GPH to 0.8 ... 200 GPM
 t_{max} 280 °F; p_{max} 230 PSIG
Connection: 1/4" ... 2" NPT
Accuracy: $< \pm (0.8\% \text{ of Reading, } + 0.5\% \text{ of Full Scale})$

MIS - ELECTROMAGNETIC FLOWMETER



- 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 3" ... 4"
Accuracy: $< \pm (0.5\% \text{ of Reading, } + 0.3\% \text{ of Full Scale})$



PIT - INSERTION MAGNETIC FLOWMETER



- Materials: SS 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 Conductive Media > 20 µs/cm

Water: 3.3...33 ft/sec
 t_{max} 300 °F; p_{max} 580 PSIG
 Connection: Weld-on, 2" or 3" ANSI
 Accuracy: $\pm 1.5\%$ of Reading,
 $\pm 0.5\%$ of Full Scale

EPS - ELECTROMAGNETIC FLOWMETER



- Lining Materials: Hard or Soft Rubber, EPDM, PTFE, 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" NPT, ANSI 1/2"...24"
 Accuracy: $\pm 0.3\%$ of Reading

PITE - ECONOMICAL INSERTION MAGNETIC FLOWMETER



- Materials: SS, PTFE or PFA Clad
- 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} 100 °C; p_{max} PN 16
 Connection: ANSI 3"...16",
 Weld-on Nozzle \varnothing 40 mm,
 Sensor with Union Nut M52x2
 for Pipelines DN 80...400
 Accuracy: $\pm 1.5\%$ of Full Scale

DVH - MULTIVARIABLE VORTEX FLOWMETER



- 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

DVE - INSERTION VORTEX FLOWMETER



- Material: Stainless Steel
- Fully Welded Sensor
- Optional Integrated Temperature and Pressure Sensor
- Field Configurable Range, Output, Display

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
 t_{max} 400 °C; p_{max} 100 bar
 Connection: 2" NPT, ANSI 2"
 Suitable for Pipe Sizes 3"...24"
 Option: Integrated Temp. and Pressure Sensor,
 Installation/Removal Device
 Accuracy: $\pm 1.2\%$ of Reading (Water),
 $\pm 1.5\%$ of Reading (Gas/Steam)

DVZ - VORTEX FLOWMETER, SWITCH, TRANSMITTER, TOTALIZER



- 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

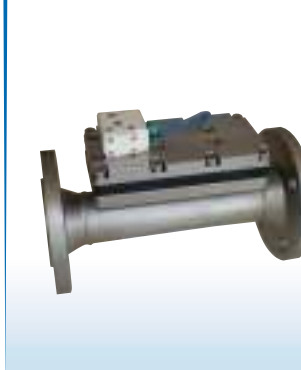
DOG-4 - OSCILLATION FLOWMETER FOR GASES



- Material: Stainless Steel
- For Flow Measurement of Gases
- Platinum Sensor
- No Moving Parts
- Low Pressure Loss
- Wide Sensing Range
- Pulse Frequency, Digital Display for Flow Measurement and Totalization

Air: 0.12...12 m³/h to 60...6,000 m³/h
 Pressure Drop Max: 50 mbar
 t_{max} 120 °C (for EX 60 °C); p_{max} PN 40
 Connection:
 ANSI 1"...8", Flange DN 25...200
 Accuracy: $\pm 1.5\%$ of Reading

DOG-5 - OSCILLATION FLOWMETER FOR LIQUIDS



- Material: Stainless Steel
- Non-contact Measurement of Low Viscosity Liquids
- Excellent Long-term Stability
- Design Resists Dirt
- Horizontal or Vertical Installation
- Not for Pulsating Flow
- Commonly Used in District Heat Supply

Water: 0.075...3.75 m³/h to 70...3,500 m³/h
 t_{max} 120 °C; p_{max} PN 40
 Connection:
 ANSI 1"...8", Flange DN 25...200
 Accuracy: $\pm 1\%$ of Measured Value



Flow - Ultrasonic/Indicators

DUK - COMPACT ULTRASONIC FLOWMETER



- Materials: Brass, Stainless Steel
- For Water and Low Viscosity, Water-based Liquids with Max. 1% Solids
- Measurement Independent of Density and Temperature Changes
- High Turndown Ratio of 250 to 1
- Very Small Pressure Loss
- Highly Repeatable
- Outputs: Analog, Frequency, Switching, Compact Electronics, Batching, Totalizing

Water: 0.02...5 GPM to 0.6...160 GPM
 t_{max} 248 °F; p_{max} 230 PSIG
 Connection: 1/2"...3" NPT
 Accuracy: $\pm 0.7\%$ of Reading
 $\pm 0.7\%$ of Full Scale

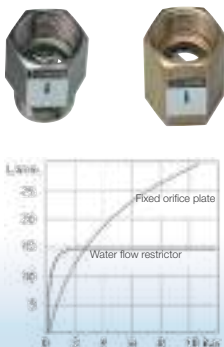
DUC - CLAMP-ON ULTRASONIC FLOWMETER



- Quick Mount System with Space Bar
- 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%

REG - AUTOMATIC FLOW REGULATING VALVE



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

Viscosity Range: 1...30 cSt
 Flow Rates: 0.13...10.56 GPM
 t_{max} 572 °F; p_{max} 2,900 PSIG
 Connection: 3/4" NPT, G 1/2, G 3/4

REG-8/-9 - AUTOMATIC FLOW REGULATING VALVE



- Material: Stainless Steel
- For Water or Compatible Water-like Liquids
- Self-actuating, Requires No Power
- Automatically Regulates Flow in System
- No Manually Operated Parts
- Constant Flow Regardless of Pressure Fluctuations
- No Maintenance
- Universal Mounting
- Passively Activated

Viscosity Range: 1...30 cSt
 Flow Rates: 0.13...147 GPM
 t_{max} 570 °F; p_{max} 2,900 PSIG
 Connection: 3/4"...4" ANSI Wafer, 1-1/2"...2-1/2" G, DN 20...100

DAA/DAH - FLOW INDICATOR



- Materials: Brass, Stainless Steel
- Visual Flow Indicator with or without Rotor
- Self-cleaning Mechanism Ensures Visibility for DAA Models
- 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: 0.16...1.6 GPH to 100...2,400 GPH
 t_{max} 230 °F; p_{max} 235 PSIG
 Connection: 1/8"...1-1/2" NPT

DIH - ROTATING VANE 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 - ROTATING VANE 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 Flow 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

DKF - PADDLE WHEEL FLOW INDICATOR FOR LIQUIDS



- 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

DAZ - REFERENCING FLAP FLOW INDICATOR



- Material: Red Brass
- Flap-style Flow Indicator
- Provides Flow Quantity on a Relative Scale
- For Horizontal or Vertical Installation
- Large Glass Windows on Both Sides
- Economical Pricing
- Durable Stainless Steel Flap

t_{max} 390 °F; p_{max} 230 PSIG
Connection: 1/2"...1" NPT

DAK - FLOW INDICATOR WITH FLAP



- Materials: Grey Cast Iron, Cast Steel, Stainless Steel
- Rugged Build for Industrial Applications
- Features a Flap for Indication
- Soda-Lime or Borosilicate Glass Windows

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

DAT - FLOW INDICATOR WITH DRIP TUBE



- Materials: Grey Cast Iron, Cast Steel, Stainless Steel
- Rugged Build for Industrial Applications
- Features a Drip Tube for Indication
- Soda-Lime or Borosilicate Glass Windows

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

DAR - FLOW INDICATOR WITH ROTOR



- Materials: Grey Cast Iron, Cast Steel, Stainless Steel
- Rugged Build for Industrial Applications
- Features a Rotor for Indication
- Soda-Lime or Borosilicate Glass Windows

t_{max} 500 °F; p_{max} 580 PSIG
Connection: 1/4"...2" NPT, 1/2"...8" ANSI

DAB - FLOW INDICATOR WITH BALL



- Material: Red Cast Iron
- Borosilicate Glass Tube
- PTFE Seals

t_{max} 100 °C; p_{max} 6 bar
Connection: G 3/4...G 3

UFJ - FLOW INDICATOR AND SIGHT GLASS



- Material: Stainless Steel, PVC, POM-C
- Borosilicate Glass Tube
- For Liquids or Gases
- Vertical Installation, Flow from Bottom
- Float Appears when Flow Meets Pre-set Custom Value
- Optional PNP Contact

t_{max} 120 °C; p_{max} 6 bar
Connection: G 1/4...G 1-1/2
Accuracy: \pm 4% of Set Value



KOBOLD Flow Instrumentation/Media Cross Reference Chart

KOBOLD Technology Category	Specific Technology Type	Model	Product Description	Media*											Flow Range	Page	
				Liquid								Gas		Steam			
				Clean	Dirty	Aggressive	Viscous	Abrasive	Oil-Based	Ultra-Pure H ₂ O	Slurries	Clean	Dirty				Aggressive
Variable Area - Low Volume	Variable Area - Low Volume	BGK	All-Metal, Low Volume Variable Area Flowmeter	✓	◆	◆	◆	✗	◆	◆	✗	✓	◆	◆	✗	0.026...0.26 GPH to 5...50 GPH (0.1...1 SCFH to 20...200 SCFH)	13
		KDF/KDG	Micro-Flowmeter and Switch	✓	✗	◆	✗	✗	✗	✓	✗	✓	✗	◆	✗	0.02...2.5 LPH to 16...160 LPH (0.5...5 NI/h to 500...5,000 NI/h)	12
		KDS	All Metal, Low Volume Variable Area Flowmeter	✓	✗	◆	◆	✗	◆	◆	✗	✓	✗	◆	✗	0.026...0.26 GPH to 5...50 GPH (0.1...1 SCFH to 20...200 SCFH)	13
		KFR	Acrylic Flowmeter	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.02...2 GPH to 2...20 GPM (0.1...1 SCFH to 10...100 SCFM)	12
		KSK	All-Plastic Low-Flow Flowmeter and Switch	✓	◆	✓	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.006...0.05 GPM to 11.8...60 GPM (0.06...0.27 SCFM to 3.5...18.3 SCFM)	12
		KSR/SVN	Low Volume Flow Switch	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.03...4 GPH (0.1...13 SCFH)	12
		KSV	Economical Micro-Flowmeter	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.04...0.4 GPH to 2...20 GPH (0.3...3 SCFH to 10...100 SCFH)	12
		SWK	Compact Flowmeter and Switch	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.05...0.1 LPM to 13...24 LPM	13
		UMR/UXR/URA	Glass Tube Variable Area Flowmeter	✓	✗	◆	✗	✗	◆	◆	✗	✓	✗	◆	✗	1...10 l/h to 13...130 l/h (0.01...0.1 Nm³/h to 0.25...2.5 Nm³/h)	14
		UTS	Variable Area Flowmeter for Gas Burners	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	◆	✗	0.40...4.0 SCFH to 10...100 SCFH	14
Variable Area	Variable Area	BGF	All-Metal Armored Flowmeter	✓	✗	◆	◆	✗	◆	◆	✗	✓	✗	◆	◆	0.002...0.02 GPM to 60...570 GPM (0.008...0.08 SCFM to 140...1,400 SCFM)	14
		BGN	All-Metal Armored Flowmeter	✓	✗	◆	◆	✗	◆	◆	✗	✓	✗	◆	◆	0.044...0.44 GPM to 26.4...264 GPM (0.17...1.7 SCFM to 100...1000 SCFM)	14
		BVO	OEM Flowmeter and Switch	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.1...1.0 GPM to 1...13 GPM	14
		KSM	All-Plastic Flowmeter and Switch	✓	◆	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.06...0.66 GPM to 35...264 GPM (0.5...3 SCFM to 50...400 SCFM)	12
		S-Series	All-Metal Flow Switch	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.075...0.25 GPM to 1...14 GPM (0.2...1.1 SCFM to 3...70 SCFM)	15
		SM	High Pressure All-Metal Flowmeter and Switch	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.04...0.6 GPM to 4...40 GPM (0.2...1 SCFM to 5...130 SCFM)	15
		SMN	Flow Switch	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.4...13 GPM	15
		SV	Float-Type Flowmeter and Switch	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.075...0.35 GPM to 2.5...40 GPM (0.25...1.25 SCFM to 10...150 SCFM)	14
		URK/URM	Glass Cone Variable Area Flowmeter	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.004...0.4 GPM to 66...220 GPM (0.011...0.11 SCFM to 30...300 SCFM)	13
		USR	Glass Tube Variable Area Flowmeters and Manifold Valves	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	0.01...0.1 GPM to 0.25...2.5 GPM	13
		UVR/UTR	Glass Tube Variable Area Flowmeter and Needle Valve	✓	✗	◆	✗	✗	✗	◆	✗	✓	✗	◆	✗	2.6...26 GPH to 52.8...528 GPH (3.5...35 SCFH to 176...1,760 SCFH)	14
		VKA	OEM Viscosity-Compensated Flowmeter	✓	✗	✗	✓	✗	✓	✗	✗	✗	✗	✗	✗	2...6.3 GPM to 8...26 GPM	15
		VKG	Viscosity-Compensating Flowmeter and Switch	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.03...0.12 GPM to 2...21 GPM	15
		VKM	All-Metal Viscosity-Compensating Flowmeter and Switch	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.03...0.12 GPM to 2...20 GPM	15
		VKP	Plastic Flowmeter and Switch	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.5...5 GPM to 5...26 GPM	15

✓ = 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.



KOBOLD Technology Category	Specific Technology Type	Model	Product Description	Media*												Flow Range	Page
				Liquid								Gas			Steam		
				Clean	Dirty	Aggressive	Viscous	Abrasive	Oil-Based	Ultra-Pure H ₂ O	Slurries	Clean	Dirty	Aggressive			
Paddle Type	Target-Type	DPT	Target Type Flowmeter	✓	◆	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	1.5...8 GPM to 225...500 GPM	17
	Paddle-Bellows	DW	Paddle-Bellows Flowmeter	✓	◆	◆	◆	✗	◆	◆	✗	✗	✗	✗	✗	0.26...6.6 GPM to 1,850...19,800 GPM	16
		DWD	Paddle-Bellows Flowmeter	✓	◆	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.26...2.6 GPM to 1,580...15,800 GPM	17
	Paddle-Type	FPS	Insertion Paddle Flow Switch	✓	◆	◆	◆	✗	◆	◆	✗	✗	✗	✗	✗	0.9...4.4 GPM to 375...760 GPM	16
		LPS	Flow Switch for HVAC	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	195...1,575 FPM	16
		PPS	Plastic Paddle Flow Switch	✓	✗	✗	✗	✗	✗	◆	✗	✗	✗	✗	✗	5...9.5 GPM to 19...28.5 GPM	16
		PSR/PS	Paddle Flow Switch	✓	◆	◆	✗	✗	◆	◆	✗	✗	✗	✗	✗	0.6...1.2 GPM to 101...140 GPM	16
Flap-Type	TSK	Flap-Style Flowmeter	✓	◆	◆	✗	✗	◆	◆	✗	✗	✗	✗	✗	6.6...26.4 GPM to 880...6,600 GPM	17	
Rotating Vane	Positive Displacement - Helical Gear	OME	Helical Gear Flowmeter	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.03...2.6 GPM to 0.92...92 GPM	20
	Positive Displacement - Spherical Gear	ZDM	Positive-Displacement Flowmeter	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.0005...0.5 GPM to 0.4...138 GPM	21
	Positive Displacement - Oval Gear	DOC	Oval Gear Flowmeter	✓	✗	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.13...26 GPH to 0.8...21 GPM	20
		DOE	Oval Gear Flowmeter	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.14...9.5 GPH to 0.27...10.56 GPM	20
		DON	Positive Displacement Flowmeter	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.13...9.5 GPH to 40...660 GPM	20
		DON-H	Oval Gear Flowmeter for High Pressures	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.13...9.5 GPH to 0.26...10.6 GPM	20
		OVZ	Oval-Gear Flowmeter	✓	✗	◆	✓	✗	✓	✗	✗	✗	✗	✗	✗	0.08...2.1 GPM to 0.42...10.6 GPM	19
	Paddle-Wheel	DF-Series	Flowmeters and Flow Sensors	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.02...0.14 GPM to 1.5...36 GPM	19
		DFT	Paddle-Wheel Flow Sensor	✓	✗	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗	0.05...0.5 GPM to 0.8...15 GPM	19
		DPE	Paddle-Wheel Flowmeter	✓	◆	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	1.5...8 GPM to 15...200 GPM	17
		DPL	All-Plastic, Low Flow Sensor	✓	✗	✓	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.4...8 GPH to 16...400 GPH	18
		DRB	Paddle-Wheel Flowmeter	✓	◆	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	1.5...8 GPM to 15...200 GPM	17
		DRG	Paddle-Wheel Flow Sensor	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.15...3 GPM to 3...37 GPM	19
		DRH	Paddle-Wheel Flow Sensor	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.05...0.2 GPM to 0.66...13.2 GPM	19
	Pelton Wheel	DPM	Pelton Wheel Flow Sensor	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.24...4.8 GPH to 0.8...80 GPH	18
		DTK	Pelton Wheel Flow Sensor	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.8...9.5 GPH to 16...190 GPH	19
		KFF/KFG	Low Volume Rotating Vane Flowmeter	✓	✗	◆	✗	✗	✗	✓	✗	◆	✗	◆	✗	13...100mL/min to 1...10 L/min (20...100 mL _N /min to 100...500 L _N /min)	18
	Turbine	DOT	Turbine Flowmeter/Monitor	✓	✗	◆	✗	✗	◆	◆	✗	✗	✗	✗	✗	0.5...5 GPM to 240...2,400 GPM	18
		DRS	OEM Turbine Flow Sensor	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.6...10.5 GPM	17
		SFL	Turbine Flow Sensor	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.5...20 l/min	18
TUR		All-Plastic Turbine Flowmeter	✓	◆	✓	✗	✗	◆	◆	✗	✗	✗	✗	✗	5...88 GPM to 11...440 GPM	17	
Rotary Piston	DRZ	Rotary Piston Flowmeter	✓	✗	✗	✓	✗	✓	✗	✗	✗	✗	✗	✗	1.6...110 GPH	19	

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KOBOLD Technology Category	Specific Technology Type	Model	Product Description	Media*											Flow Range	Page	
				Liquid								Gas					Steam
				Clean	Dirty	Aggressive	Viscous	Abrasive	Oil-Based	Ultra-Pure H ₂ O	Slurries	Clean	Dirty	Aggressive			
Without Moving Parts	Coriolis	TM	Universal, Special Purpose Coriolis Flowmeter	✓	◆	✓	◆	◆	◆	◆	◆	✗	✗	✗	◆	0.003...0.3 lbs/min to 220...2,400 lbs/min	23
		TME	General Purpose Coriolis Flowmeter	✓	◆	◆	◆	◆	◆	◆	✗	✗	✗	◆	2.2...22 lbs/min to 220...2,200 lbs/min	23	
		TMU	High Performance Coriolis Flowmeter	✓	◆	✓	◆	◆	◆	◆	✗	✗	✗	◆	0...1,320 lbs/hr to 0...2,200 tons/hr	23	
	Differential Pressure	KEL	Heavy Duty DP Flowmeters	✓	✗	✓	◆	✗	◆	◆	✗	✗	✗	✗	0.1...0.5 GPM to 400...2,000 GPM	24	
		RCD	Ultra-Rugged DP Flowmeter	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	0.2...0.88 GPM to 100...600 GPM	24	
		RCM	Direct-Reading Flowmeter	✓	✗	✓	◆	✗	◆	◆	✗	✓	✗	◆	✓	0.3...2 GPM to 400...3,000 GPM (1.5...10 SCFM to 3,000...20,000 SCFM)	24
	Hot-Film Anemometer	KAH	Air Velocity Sensor	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	0...2,000/3,000/4,000 ft/min	21
	Magnetic-Inductive (Electro-magnetic)	EPS	Magnetic-Inductive Flowmeter	✓	✓	✓	✓	✓	✗	✗	✓	✗	✗	✗	✗	0.5...10 m/sec	25
		MIK	Economical Magmeter	✓	✓	✓	◆	✗	✗	✗	✗	✗	✗	✗	✗	0.18...7.8 GPH to 9.5...180 GPM	24
		MIM	All-Metal Electromagnetic Flowmeter	✓	✓	✓	◆	✗	✗	✗	✗	✗	✗	✗	✗	0.48...48 GPH to 0.8...200 GPM	24
		MIS	All-Metal Electromagnetic Flowmeter	✓	✓	✓	◆	✗	✗	✗	✗	✗	✗	✗	✗	3.3...33 ft/sec	24
		PIT	Insertion Magnetic Flowmeter	✓	✓	✓	✓	✓	✗	✗	◆	✗	✗	✗	✗	3.3...33 ft/sec	25
		PITe	Magnetic Inductive Flowmeter	✓	✓	✓	✓	✓	✗	✗	◆	✗	✗	✗	✗	3.3...33 ft/sec	25
	Thermal	DOG	Oscillation Flowmeter	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	◆	✗	0.12...12 m³/h to 60...6,000 m³/h	25
		KAL	Temperature-Compensating Thermal Flow Switch	✓	✓	✓	✗	✓	✗	◆	✗	✗	✗	✗	✗	0.15...6.6 ft/sec	21
		KAL-A	Thermal Flow Sensor	✓	✓	✓	✗	✓	✗	◆	✗	✗	✗	✗	✗	0.15...6.6 ft/sec	21
		KAL-D	Compact Thermal Flow Switch	✓	✓	✓	✗	✓	✗	◆	✗	✗	✗	✗	✗	0.15...6.6 ft/sec	21
		KAL-K	Thermal Flow Switch with Flow Trend Indication	✓	✓	✓	✗	✓	✗	◆	✗	✗	✗	✗	✗	0.15...6.6 ft/sec	21
		KAL-L	Thermal Air Flow Switch	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	3.3...65 ft/sec	21
		KME	Compact Inline Flowmeter	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	◆	✗	0.12...44.4 SCFM to 1.3...500 SCFM	22
		KMT	Thermal Mass Flowmeter	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	◆	✗	0.32...63 Nm³/h to 263...263,350 Nm³/h	22
		MAS	Mass Flowmeter	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	◆	✗	0...10 SCCM to 0...500 SLPM	22
	Ultrasonic - Clamp-on	DUC	Clamp-on Ultrasonic Flowmeter	✓	◆	✓	✓	✓	✓	✓	◆	✗	✗	✗	✗	0...98 ft/sec	26
	Ultrasonic - Inline	DUK	Compact Ultrasonic Flowmeter	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.02...5 GPM to 0.6...160 GPM	26
	Vortex - Multivariable	DVE	Multi-Variable Insertion Design Flowmeter	✓	◆	◆	◆	✗	◆	◆	✗	✓	✗	✓	✓	5.2...157 m³/h to 284...8,537 m³/h (889...1,463 to 26,915...2,467,081 Nm³/h)	25
		DVH	Multivariable Flowmeter	✓	◆	◆	◆	✗	◆	◆	✗	✓	✗	✓	✓	0.89...22 GPM to 141...4,270 GPM (1.8...18 SCFM to 2,071...203,000 SCFM)	25
	Vortex	DVZ	Vortex Flowmeter and Switch	✓	✗	◆	✗	✗	✗	◆	✗	✗	✗	✗	✗	0.13...1.2 GPM to 2.6...26.5 GPM	25

✓ = 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.

LEVEL



NBK Industrial Bypass Level Indicators

KOBOLD NBK Series bypass level gauges are used in applications requiring visual indication, continuous measurement, and/or control of liquid levels. Any free-flowing, compatible media with a viscosity less than 200 cPs is a candidate. The NBK bypass level indicator's design relies on the hydrostatic pressure principle to display tank level in 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 bypass level indicators to be built with an all-metal construction, eliminating the breakage and leakage problems frequently experienced with glass tube designs. Visual indication, signal transmission, or switching may be achieved by mounting these magnetically-sensitive devices on the exterior of the bypass tube. These devices then track or are activated by the ring magnet located inside the float as it moves with changes in fluid level.

The KOBOLD NBK-M mini bypass level indicator provides many of the unique features of our standard NBK Series bypass level indicators but at a fraction of the cost. Similar to the full-sized NBK Series, the NBK-M level indicator uses KOBOLD's ring magnet float design, allowing the user full flexibility in adding 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 mini bypass level indicator a very economical choice for lower pressure and shorter length level measuring applications.

The KOBOLD NBK-04 top-of-the-tank mounted level indicator combines the rugged simplicity of our NBK series bypass level indicators 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

[Learn More on Page 37](#)



LEVEL

NIR-9

Reliable, Heavy-Duty Rotating Vane Level Switch for Bulk Media



The NIR-9 is an industrial workhorse, setting the standard for superior engineering in rotating vane bulk level switches. Unlike other models in the marketplace, the NIR-9 is designed with longevity and dependability in mind. It offers three distinct advantages over similar models. One, the heavy duty motor is built of metal and provides years of service, unlike others in the industry that are built of plastic. Two, once the rising media impedes the rotating paddle, a switch disengages the motor. Other models are not built with this feature and continue to strain the motor, significantly shortening the instrument's lifespan and increasing overall application costs because of the frequent need for replacements. Three, the switch within the NIR-9 offers easily adjustable sensitivity settings, to allow for even more customization for the exact demands of the application. With a modular design concept and a variety of vanes, the NIR-9 truly offers a superior solution for almost any bulk level application.

- For Bulk Media and Solids in Silos and Hoppers
- Superior Performance and Reliability
- Direct Replacement for Models Prone to Motor Burnout
- High Quality Motor
- Superior Switch Design Avoids Damage to Motor
- Switch Sensitivity is Field-Adjustable
- Aluminum Housing
- Unaffected by Humidity or Conductivity
- Easy to Install, Economical Pricing
- Different Mounting Options
- Modular Design Offers Flexibility
- Rod or Cable Versions
- Custom Temperatures up to 900 °F



Ideal for a wide variety of media like:

- Cereal
- Grain
- Flour
- Sand
- Sugar
- Animal Feed
- Cement
- Gravel

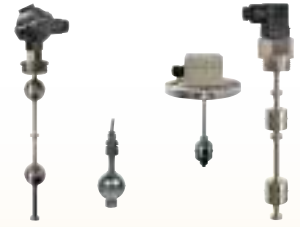
The NIR-9 operates via a motor that drives a rotating vane. As soon as the media reaches the vane, its rotation is stopped. The restoring force moves the pivoted motor away from its original position. A micro-switch is actuated, which gives out an alarm signal. A second microswitch turns off the motor. If the level is decreased, the vane is released and the force of a spring pulls the motor back to its original position, restarting the motor.

[Learn More on Page 35](#)



M-SERIES

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



Density: 0.5 kg/dm³
t_{max} 300 °F; p_{max} 1,450 PSIG
Connection: NPT, DIN/ANSI Flange

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

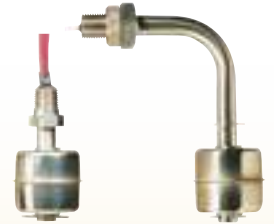
Magnetic Float Switch
Polypropylene



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

OEM

OEM Level Switches
Stainless Steel, Polypropylene,
NBR, PVDF



Specific Gravity_{min}: 0.55
t_{max} 250 °F; p_{max} 425 PSIG
Connection: 1/2" NPT, 1/8" PF

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

RFS

Side-Mount Level Switch
Stainless Steel



Specific Gravity_{min}: 0.7
t_{max} 248 °F; p_{max} 72 PSIG
Connection: 1/2" NPT

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

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

NBA/NBE

Bypass Level Switch
Aluminum, Stainless Steel



Density: 0.65 kg/dm³
t_{max} 150 °C; p_{max} 10 bar
Connection: G 3/8 Female, R 1/2 Male

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



Level

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

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

NEK/NEL/NES

Conductive Level Switch Fitting: SS, Polypropylene, PTFE Electrode: SS, Hastelloy®, Titanium Electrode 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 Capacity: Max. 250 V_{AC},
5 A, 600 VA

NEK

Compact Conductive Level Switch Polypropylene, PPS



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

LNK/LNR

Conductive Switch with Head Mounted Transmitter Stainless Steel, PEEK



Conductivity_{min}: 10 µS/cm
t_{max} 212/300 °F; p_{max} 145 PSIG
Connection: G 1/2, G 1, Tri-Clamp®
Open-Collector
Electrode Length: 1/8" to 59"

LNK-K

Compact Conductive Level Switch Stainless Steel, PEEK



Conductivity_{min}: 10 µS/cm
t_{max} 300 °F; p_{max} 145 PSIG
Connection: G 1/2, Tri-Clamp®

LNM

Microwave Level Switch Stainless Steel, PEEK



Dielectric Constant_{min}: 20
t_{max} 212 °F; p_{max} 145 PSIG
Connection: G 1/2, Tri-Clamp®
Open-Collector

LNZ

Capacitive Level Limit Switch Stainless Steel, PEEK



Dielectric Constant_{min}: 20
t_{max} 212 °F; p_{max} 145 PSIG
Connection: G 1/2, Tri-Clamp®
Open-Collector

NCW/NCW-H

Capacitive Level Switch Stainless Steel, PVDF, PTFE



Dielectric Constant_{min}: 1.5
t_{max} 194/257 °F; p_{max} 145/435 PSIG
Connection: 1" NPT, G 1, G 2
Adapter: 2" NPT, G 1-1/4,
G 1-1/2, Weld-in Sleeve
Relay



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

TED

Optical Level Switch for Liquids
Polysulfone, PFA



t_{max} 230 °F; p_{max} 200 PSIG
Connection: 3/8" NPT, 1/2" NPT

NSD

Economical Optical Level Switch
Stainless Steel, Polysulfone



t_{range} 15...250 °F
 p_{max} 140/550 PSIG
Connection: 3/8" NPT

NK-8000

Ultrasonic Level Switch
Stainless Steel



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

NWP

Plastic Vibrating Fork Level Switch for Liquids
Glass Filled PPS



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

NWS

Vibrating Level Switch
Stainless Steel



t_{max} 265 °F; p_{max} 650 PSIG
Viscosity $_{max}$: 5,000 cSt
Connection: 3/4" NPT, 1" NPT,
2" Tri-Clamp®, 1" or 2" ANSI Flanges

NDT

Static 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

NSV

Vibrating Fork Level Switch for Bulk Media
Stainless Steel



Switching Range: 9" ...118"
Minimum Media Density: 3.75 lb/ft³
 t_{max} 176 °F; p_{max} Atmospheric
Connection: 1-1/2" NPT, G 1-1/2
1 Relay SPDT

NVI

Vibrating Rod Level Switch for Bulk Media
Stainless Steel



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

NMF

Static Pressure Level Switch for Dry Bulk Media
NBR, FKM, Stainless Steel



t_{max} 390 °F
Minimum Media Density: 3.2 lb/ft³
 p_{max} 14.5 PSI (Over-pressure Protected)
Connection: Flange

PLS

Pendulum Level 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}/15 A

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}/2 A



Level

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
Connection: 1" NPT, 2" NPT, G 1
Adapter: G 1-1/4, G 1-1/2, Round Flange

NGM

Guided Wave Radar Level Transmitter

Stainless Steel, PTFE



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

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, G 3/4 Male
Analog Output, Switching Outputs
Sensor Accuracy: ± 0.2

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, 2"... 4" ANSI

NMT

Magnetostrictive Level Transmitter

Stainless Steel



Specific Gravity_{min}: 0.7...1.0
Measuring Range: 12"...157"
 t_{range} -4...158 °F; p_{max} 145 PSIG
Connection: 2" NPT, G 2
Output: Analog 4-20 mA, 4-wire

NMC

Capacitive Level Transmitter

Stainless Steel, PVDF, PTFE



Measuring Range: 11"...157"
Dielectric Constant_{min}: 1.5
 t_{max} 257 °F; p_{max} 435 PSIG
Connection: 1" NPT, 2" NPT, G 1, G 2
Adapter: G 1-1/4, G 1-1/2, Weld-in Sleeve
Output: Analog 4-20 mA, 2 Wire

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

PAD-N

Differential Pressure Transmitter with Diaphragm Seal

Stainless Steel



Level: 0...2,500 mmWC to 0...150 mWC
 t_{max} 200 °C
Connection: Flange via Neck Tube DN 50 or Bigger
Accuracy: $\pm 0.075\%$ of Calibrated Span + Influence of Diaphragm Seal



NBK-M

Economical Mini Bypass Level Indicator Stainless Steel



Measuring 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

Bypass Level Indicator 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} 4,600 PSIG
Connection: 1/2" ... 1-1/4" NPT,
1/2" ... 2" ANSI Flange

NBK-04

Tank-Top Mounted Level Indicator Stainless Steel



Measuring 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" or 2-1/2" ANSI Flange

NBK-16/-17

Plastic Bypass Level Indicator Polypropylene, PVDF



Measuring 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 Flange

SZM

Bypass Level Indicator Stainless Steel



Measuring Length_{range}: 15" ... 121"
t_{max} 212 °F; p_{max} 145 PSIG
Connection: 1/2" NPT,
ANSI 1/2" ... 2"

NZJ

Micro Bypass Level Indicator with Switch Options Aluminum, Stainless Steel



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

BA

Displacer-Type Level Gauge Stainless Steel



Measuring 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 Flange

NEO

Ultrasonic Level Transmitter PVDF



Measuring Length_{range}: 6" ... 24.5 ft
t_{range} -40 ... 140 °F; p_{max} 30 PSIG
Connection: 2" NPT
Optional Relay

NUS-4

Ultrasonic Level Transmitter PP, PVDF



Measuring Range: 7.87" ... 82" (Liquids)
7.87" ... 32" (Bulk Media)
t_{max} 190 °F; p_{max} 43.5 PSIG
Connection: 1-1/2", 2" NPT;
3", 5", or 6" ANSI Flange

NUS-7

Ultrasonic Level Transmitter PP, PVDF



Measuring Range: Liquids up to 20 ft
t_{max} 176 °F; p_{max} 40 PSIG
Connection: 2" NPT, G 2
Analog Output
Accuracy: ± 0.2% of Reading
± 0.05% of Full Scale

KPW

Submersible Pressure Transducer Stainless Steel



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

NTB

Deep Well Level Probe Stainless Steel



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



Pressure

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
Connection: 1/4" NPT, 1/2" NPT
Accuracy: $\pm 1.0\%$ or $\pm 1.6\%$ of Full Scale

MAN-R

**Bourdon Tube
Pressure Gauges**
Stainless Steel



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

MAN-N...S

**Bourdon Tube
Pressure Gauges**
Stainless Steel



Measuring Range:
-30"...0" Hg to 0...30,000 PSIG
Housing Ø: 63, 100, 150 mm
Overload Protection: 1.15 - 1.25 Times
Connection: 1/4" NPT, 1/2" NPT
Accuracy: $\pm 1.0\%$ or $\pm 1.6\%$ of Full Scale

MAN-T

**Bourdon Tube
Pressure Gauges
for Refrigeration**
Brass, Stainless Steel



Measuring Range: -1...9 to -1...40 bar
Housing Ø: 63, 100, 160 mm
Overload Protection: 1.3 Times
Connection: 7/16-20 UNF, G 1/4
Accuracy: $\pm 1.0\%$ or $\pm 1.6\%$ of Full Scale

MAN-K

**Capsule Element
Pressure Gauge**
Brass, Stainless Steel



Measuring Range: -10...0 to
0...600 mbar
Housing Ø: 63, 80, 100, 160 mm
Overload Protection: 1.3 - 10 Times
Connection: G 1/4, G 1/2
Accuracy: $\pm 1.6\%$ of Full Scale

MAN-P

**Diaphragm
Pressure Gauge**
Stainless Steel



Measuring Range: -16...0 to 0...40 bar
Housing Ø: 100, 160 mm
Overload Protection: 1.3 Times
Connection: 1/2" NPT
Optional: Contact
Accuracy: $\pm 1.6\%$ of Full Scale

MAN-C

**Diaphragm Pressure Gauge
for Chemicals**
Stainless Steel, ECTFE, PTFE



Measuring Range: -25...0 mbar to
0...25 bar
Housing Ø: 100, 160 mm
Overload Protection: 1.3 Times
Connection: ANSI Flange
Accuracy: $\pm 1.6\%$ 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
Accuracy: $\pm 1.0\%$ 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: $\pm 0.25\%$ or
 $\pm 0.6\%$ of Full Scale

MAN-U

**Differential Pressure Gauge
with Double Diaphragm**
Stainless Steel



Measuring Range:
0...100 mbar to 0...25 bar
Static Pressure on Both Sides: 200 bar
Housing Ø: 100 or 150 mm
Connection: 1/4" NPT, 1/2" NPT
Accuracy: Cl. 1.6

MAN-LD/DSD

**LCD Pressure Gauge with
Ceramic Sensing Element
Externally Powered**
Stainless Steel



Measuring Range:
-30"...0" Hg to 0...23,000 PSIG
Housing Ø: 74 mm
Overload Protection: 1.5 - 3 Times
Connection: 1/4" NPT, 1/2" NPT
Accuracy: $\pm 0.5\%$ 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
Connection: 1/4" NPT, 1/2" NPT
Accuracy: $\pm 0.5\%$ of Full Scale



MAN-SC/LC

Digital Pressure Gauge with Ceramic Sensor
Stainless Steel



Measuring Range:
-1...0 bar to 0...1600 bar
Housing Ø: 80 mm
Overload Protection: 1.3 - 3 Times
Connection: 1/2" NPT
Analog Output, Alarm Output
Accuracy: $\pm 0.2 - 0.5\%$ of Full Scale

DSF26

LED Pressure Gauge with Ceramic Sensing Element
Stainless Steel



Measuring Range:
-14.7...23,000 PSIG
Housing Ø: 100 mm
Overload Protection: 2 Times
Connection: 1/4"...3/4" NPT
4-20 mA and Relay Contacts
Accuracy: $\pm 0.5\%$ of Full Scale ± 1 Digit

MAN-BF20

LED Differential Pressure Gauge with Ceramic Sensing Element
Stainless Steel



Measuring Range:
-30"...0" Hg to 0...23,000 PSID
Housing Ø: 100 mm
Overload Protection: 2 Times
Connection: 1/2" NPT
4-20 mA and Relay Contacts
Accuracy: $\pm 0.5\%$ of Full Scale

MAN-BF26

LED Differential Pressure Gauge with Ceramic Sensing Element
Stainless Steel



Measuring Range:
-30"...0" Hg to 0...23,000 PSID
Housing Ø: 100 mm
Overload Protection: 2 Times
Connection: 1/4" NPT, 1/2" NPT
4-20 mA and Relay Contacts
Accuracy: $\pm 0.5\%$ of Full Scale

MAN-DG12R

Differential Pressure Gauge with Bourdon Tube
Aluminum, Steel



Measuring Range:
0...15 PSID to 0...870 PSID
Housing Ø: 160 mm
Optional: Contacts
Accuracy: $\pm 1.6\%$ of Full Scale

DRM

Diaphragm, Capsule, and In-Line 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", DN25 ... DN100
Special Version up to 400 bar:
ANSI 8", up to DN200
Flanges According to BS, JIS, and GOST Standards
Optional: Extended Diaphragm

DRM 626/627

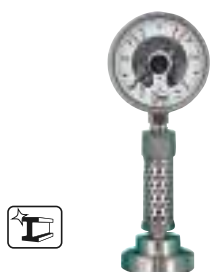
Membrane Diaphragm Seals
Stainless Steel, Tantalum, ECTFE



Measuring Range: 0...0.6 to 0...250 bar
Housing Ø: 90 mm
Filling: Glycerine, Paraffin, Silicone Oil
Membrane Option: Tantalum, ECTFE

MAN/MZB/DRM

Pressure Gauge with Sanitary Diaphragm Seal and Cooling Element
Stainless Steel



MAN-RF...MZB-711...DRM-602
Meas. Range: 0...15 to 0...580 PSIG
Housing Ø: 100 mm
Connection: Tri-Clamp®, DIN 11851, Hygienic Connection, IDF, SMS
Accuracy: $\pm 1.6\%$ of Full Scale

MAN/DRM

Pressure Gauge with Tri-Clamp® Diaphragm Seal
Stainless Steel



MAN-RF...DRM-613
Meas. Range: 0...15 to 0...145 PSIG
Housing Ø: 100 mm
Connection: 1"...3" Tri-Clamp®
Accuracy: $\pm 1.6\%$ of Full Scale

MAN/DRM

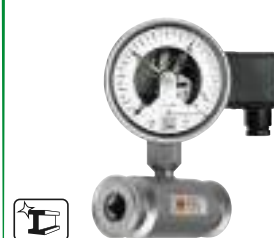
Pressure Gauge with Membrane Diaphragm
Stainless Steel



MAN-RF...M1...DRM-620
Meas. Range: 0...1 to 0...40 bar
Housing Ø: 100 mm, 160 mm
Connections: Threaded, Flange, Tri-Clamp®,
DIN 11851, SMS and IDF Norm
Accuracy: $\pm 1.6\%$ of Full Scale

MAN/DRM

Pressure Gauge with Inline Diaphragm
Stainless Steel



MAN-RF...DRM-502
Meas. Range: 1.6...40 to 2.5...40 bar
Housing Ø: 100 mm, 160 mm
Connection: 1/2"...2" Tri-Clamp®, Hygienic ISO DN 15...50
Accuracy: $\pm 1.6\%$ of Full Scale



Pressure

MAN/DRM

Pressure Gauge with Membrane Diaphragm Seal Stainless Steel



MAN-RF...DRM-603
Meas. Range: 0...1 to 0...40 bar
Housing Ø: 100 mm
Connection: DIN 11851, DN 25...100
Accuracy: $\pm 1.6\%$ of Full Scale

MAN/DRM

All Stainless Steel Bourdon Tube Pressure Gauge with Membrane Diaphragm Stainless Steel



MAN-RD...DRM-600
Meas. Range: 0...85 to 0...14,500 PSIG
Housing Ø: 63 mm
Connection: 1/2"...1-1/4" NPT
Accuracy: $\pm 1.6\%$ of Full Scale

MAN/DRM

Pressure Gauge with Membrane Diaphragm Seal - Plastic PVDF



MAN-RD...DRM-632
Meas. Range: 0...20 to 0...230 PSIG
Housing Ø: 63 mm
Connection: 1/2" NPT
Accuracy: $\pm 1.6\%$ of Full Scale

DSD/SEN/DRM

Pressure Gauge or Sensor with Membrane Diaphragm Seal PVC or Polypropylene



DSD...DRM-630 and SEN...DRM-631
Meas. Range: 0...20 to 0...145 PSIG
Housing Ø: 74 mm
Connection: 1/2" NPT
Accuracy: $\pm 1.0\%$ of Full Scale

SEN/DRM-600

Pressure Sensor with Diaphragm Seal Stainless Steel



Measuring Range: 0...6 to 0...600 bar
 t_{max} 70 °C
Connection: G 1/2"...G 1-1/2 (SS)
Optional AUF Plug-on Display
Accuracy: $\pm 1.0\%$ of Full Scale

PUM

U-Pipe Pressure Indicator Glass, Aluminum



Indicating Ranges:
250 up to 1500 mm WC or
10" up to 60" WC
Scale Division: 2 mm
Hose Connection Ø: 7 mm

MZB

Pressure Sensing Accessories Brass, Steel, Stainless Steel



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

MZB-712

Pressure Sensing Accessories Stainless Steel, Brass



Fittings: 1/4"...1/2" NPT;
G 1/4"...G1/2, 7/16-20 UNF DIN 3866,
G 1/2 DIN 3852-E, M 20x1.5

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: $\pm 1.0\%$ of Full Scale

PAD

Differential Pressure Transmitter Stainless Steel



Measuring Range:
0.3"...6" WC to 60...6,000 PSIG
Power Supply: 12-45 V_{DC}
Connection: 1/4" NPT
Accuracy: $\pm 0.075\%$ of Full Scale

PAD-N

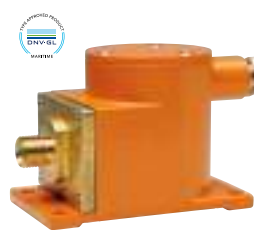
Differential Pressure Transmitter with Diaphragm Seal Stainless Steel



Measuring Range:
0 ... 250 mbar to 0 ... 206.80 bar
 t_{max} 200 °C
Connection: Flange, Threaded,
Clamp-on, and In-line Diaphragm Seal
(Nominal Size 15 ... 100)
Accuracy: $\pm 0.075\%$ of Calibrated
Span + Influence of Diaphragm Seal

PNK

Pressure Transmitter for High Vibration Brass, Aluminum



Measuring Range:
-30...0" Hg to 0...1,450 PSIG
Overload Protection: 1.6 Times
Connection: M16 x 1.5
(NPT with Adapter)
Accuracy: $\pm 1.0\%$ of Full Scale



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}
Connection: 1/4" NPT, 1/2" NPT
Accuracy: $\pm 0.5\%$ - 1.0% of Full Scale

HND-P105/-210

Hand-Held Pressure Indicator for External Sensors



Measuring Range:
-14.5...40 PSIG to 0...5,800 PSIG
(Dependent on Associated Sensor)
Optional: Data Log, Alarm,
Control Functions
Accuracy: $\pm 0.1\%$ of Full Scale

HND-P121/-123

Hand-Held Differential Pressure Indicator with 2 Integrated Sensors



Measuring Range: -0.0145...0.36 PSID
to -1.45...29 PSID
Optional: Data Log, Alarm, Control
Functions
Accuracy: $\pm 0.2\%$ - 0.4% of Full Scale

HND-P129/-239

Hand-Held Differential Pressure Indicator with 1 Integrated Sensor



Measuring Range: 0...15 PSIG
Optional: Data Log, Alarm,
Control Functions
Accuracy: $\pm 0.2\%$ 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
Connection: 1/4" NPT, 1/2" NPT
Accuracy: $\pm 0.125\%$ - 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: $\pm 0.25\%$ - 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
Overload Protection: 2 Times
Connection: 1/4" NPT
Accuracy: $\pm 0.25\%$ of Full Scale

KP46

Explosion Proof Pressure Transmitter CSA/US Approved Stainless Steel



Measuring Range:
0...50 PSIG to 0...20,000 PSIG
Overload Protection: 2 Times
Connection: 1/4" NPT, 1/2" NPT
Accuracy: $\pm 0.25\%$ BFSL

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
Connection: 1/2" NPT, 1/4" NPT
Accuracy: $\pm 0.5\%$ - 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}
Connection: 1/4" NPT, 1/2" NPT,
G 1/4, G 1/2
Accuracy: ± 0.5 - 0.75% of Full Scale

SEN-98/-99

Pressure Sensor with Ceramic Element Stainless Steel



Measuring Range:
-30...0" Hg to 0...8,700 PSIG,
0...14.5 to 0...360 PSIA
Overload Protection: 1.3 - 5 Times
Connection:
1/4" NPT, 1/2" NPT, G 1/4, G 1/2
Accuracy: $\pm 0.5\%$ of Measuring Range

AUF

Compact In-line 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

PAS

Pressure Transmitter High Accuracy Stainless Steel



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

PAS-N

Pressure Transmitter with Diaphragm Seal Stainless Steel



Measuring Range:
0...250 mbar to 0...600 bar
 t_{max} 350 °C
Connection: Thread or Flange
(Nominal Size 15...100)
Accuracy: $\pm 0.075\%$ of Calibrated Span
+ Influence of Diaphragm Seal

PAS-N

Pressure Transmitter with Diaphragm Seal Stainless Steel



Measuring Range:
0...250 mbar to 0...600 bar
 t_{max} 350 °C
Connection: Thread or Flange
(Nominal Size 15...100)
Accuracy: $\pm 0.075\%$ of Calibrated Span
+ Influence of Diaphragm Seal

PSD

Electronic Pressure Transmitter/Switch Stainless Steel



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

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}
Connection: 1/4" NPT, 1/2" NPT
Accuracy: $\pm 0.5\% - 1.0\%$ of Full Scale

KPH

Pressure Switch - Industrial 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: $\pm 3 - 4\%$ of Full Scale

KPH300

Pressure Switch - OEM Diaphragm Type Zinc-Plated Steel, NBR



Switching Range:
3...30 PSIG to 450...4,600 PSIG
Overpressure: 1.2 - 9 Times
Connection: 1/4" NPT
Repeatability: $\pm 2\%$ of Setpoint

KPF

Pressure Switch - OEM Diaphragm Type Brass, Stainless Steel



Switching Range:
4.3...13 PSIG to 725...1,450 PSIG
Overpressure: 1,450 PSIG
Connection: 1/4" NPT
Repeatability: $\pm 5\%$ 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
Connection: Hose Barb

SCH

Mechanical Pressure Switch Brass, SS, NBR



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

SCH-27

Mechanical Pressure Switch Stainless Steel



Switching Range:
0.7...6 mbar to 8...160 bar
Switching Function: Micro Switch
Connection: 1/2" NPT Female,
1/4" NPT Male, G 1/2 Male
Repeatability: $< 1\%$ of Full Setting Value

SCH-28

Mechanical Differential Pressure Switch Stainless Steel



Switching Range:
0.1...1 bar to 0.2...10 bar
Switching Function: Micro Switch
Connection: 1/2" NPT Female,
1/4" NPT Male, G 1/2 Male
Repeatability: $< 1\%$ of Full Setting Value

Temperature



TWR

Temperature Switch for Liquids
Brass, Stainless Steel



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

TRS

Thermal Reed Temperature Switch
Brass, Stainless Steel



Switching Range: 50...248 °F
 t_{range} -40...250 °F; p_{max} 360 PSIG
Connection: 1/4"...1" 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,
G 1/2, G 3/4
2 Transistor Switches

TDD-..D6

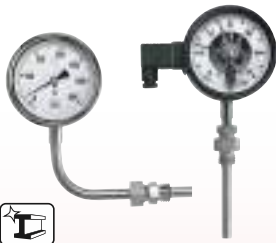
Digital Temperature Switch
Stainless Steel



Switching Range: -58...250 °F
 t_{max} 250 °F; p_{max} 1,150 PSIG
Connection: 6 mm dia. Smooth Probe
2 Transistor Switches

TNS

Gas Filled Rigid Stem Thermometer
Stainless Steel



Measuring Range: -40...1,100 °F
 p_{max} 350 PSIG
Connection: 1/2"...1" NPT, G 1/2...G 1
Switch Options: Magnetic, Sliding,
Inductive, or Pneumatic

TNF

Gas Filled Capillary Thermometer
Stainless Steel



Measuring Range: -40...1,100 °F
 p_{max} 350 PSIG
Connection: 1/2"...1" NPT, G 1/2...G 1
Switch Options: Magnetic, Sliding,
Inductive, or Pneumatic

DTM

Digital Temperature Indicator/Transmitter
Stainless Steel



Measuring Range: -30...750 °F
 p_{max} 350 PSIG
Connection: 1/2"...1" NPT, G 1/2...G 1
Analog Output, Limit Switches

TSH

Thermowells for Stem and Capillary Thermometers
Stainless Steel



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

TDA

Digital Temperature Transmitter
Stainless Steel



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

TDA-..D6

Digital Temperature Transmitter
Stainless Steel



Measuring Range: -58...250 °F
 p_{max} 1,150 PSIG
Connection: 6 mm dia. Smooth Probe
Output: 4-20 mA, 3-wire,
Transistor Switch

TNK

RTD Temperature Sensors
Brass, Bronze, Stainless Steel



Measuring Range: -112...302 °F
 t_{max} 302 °F; p_{max} 725 PSIG
Connection: 1/2" NPT, G 1/2, M18x1.5

TSP

Temperature Transmitter for Pipes
Brass, Stainless Steel



Measuring Range: -40...300 °F
 p_{max} 750 PSIG
Connection: 1/4"...1-1/2" NPT
Output: 4-20 mA, Pt 100 RTD



Temperature

TSR

RTD Temperature Probes Stainless Steel



Measuring Range: -320...400 °F
 p_{max} 1,450 PSIG
Connection: 1/2" or 3/4" NPT,
1-1/2" Tri-Clamp®
Output: 4-20 mA, Pt100 RTD

TST

Integrated Programmable Temperature Transmitter Stainless Steel



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

TSA

Resistive Temperature Sensor Brass, Stainless Steel



Measuring Range: -40...150 °C
 p_{max} 25 bar
Connections: 1/4"...1-1/2" NPT,
G 1/4"...1-1/2"

TGK/TGL

Glass Thermometer Aluminum or Plastic Casing, Brass



Measuring Range: -76...390 °F
Connection: 1/2" NPT, G 1/2
Accuracy: $\pm 1\%$ of Full Scale

DTB

Digital Thermometer - High Accuracy, Battery Powered Stainless Steel



Measuring Range: -50...400 °F
(-50...200 °C)
Display in Either °F or °C
Connection: 1/4" ...3/4" NPT
Battery Life: up to 5 years

TIR-FA

Stationary Infrared Thermometer Stainless Steel



Measuring Range:
0...120 °C to 100...500 °C
10 mV/K or Voltage Model J, K
Accuracy:
 $\pm 1.5\%$ of Measuring Range or 2.5 °C

TIR-SN/-FS/-FG

Stationary Infrared Thermometer Stainless Steel



Measuring Range:
-20...300 °C to 1100...2,500 °C
Analog Output
Accuracy: $\pm 0.8\%$ of Reading +
1 °C...1.5% of Temp. Range

HND-T120/-125

Precision Hand-Held Thermometer



Measuring Range: -65...1,150 °C
Sensor: Type K Thermocouple
Power Supply: Battery or External
Accuracy: 0.1% - 1.5% of Reading

HND-T105/-T205

Precision Hand-Held Thermometers



Measuring Range: -50...400 °C
Sensor: Type K Thermocouple
or Pt 100
Options: Logger, Alarm, and
Control Function
Accuracy: from 0.03 °C

TWL-ST

Room Thermometer Polycarbonate, Aluminum



Measuring Range: -40...85 °C
Wall Socket
Pt 100, 4-20 mA
Accuracy: Cl. A or B

TBE

Bi-Metal Thermometer Stainless Steel



Measuring Ranges: -50...50 °C
to 0...600 °C
 p_{max} 15 bar
Fittings: 1/2"...3/4" NPT, G 1/2"...G 3/4,
(Fixed, Rotatable, Slidable)
Accuracy: Cl. 1.0

TND

Shaft Thermometer for Diesel Engines Steel, Stainless Steel



Measuring Range: 0...800 °C
 p_{max} 25 bar
Fittings: G 1/2, G 3/4
Accuracy: Cl. 1.0 or 1.6

TMA/MMA (AUF)

Temperature Transmitters Stainless Steel



Measuring Range: -358...1,112 °F
 p_{\max} 1,450 PSIG
 Connection: 1/4" NPT, 1/2" NPT
 Output: 4-20 mA, 2-wire

MMA/AUF/KUG

Screw-in Resistance Thermometer Stainless Steel



Measuring Range: -200...400 °C
 p_{\max} 36 bar
 Accuracy: < 0.5% of Span

LTS

Resistance Temperature Probe



Measuring Range: -50...250 °C
 p_{\max} 145 PSIG
 Sensor: Pt100, 4-20 mA
 Connection: G 1/2, M12x1.5

KM

Temperature Transducer



Measuring Range: -200...250 °C to
 -50...1768 °C
 Input: RTD, TC Ω , mV
 Analog Output
 For Head, Rail, or Wall Mounting

MWD

Industrial Resistance Thermometer Stainless Steel



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

DTE

Digital Thermometer Stainless Steel



Measuring Ranges: -200...850 °C
 p_{\max} 34 bar
 Display: 6-Digit LCD
 Fittings: 1/4"...1/2" NPT,
 G 1/4...G 1/2, Compression Fitting
 Accuracy: $\pm 0.1\%$ of Reading + 0.2 °C

MWE

Screw-in Resistance Thermometer Stainless Steel



Measuring Range: -70...250 °C
 p_{\max} 30 bar
 Accuracy: Class A or B

TWL/TTL

Resistance Thermometers Stainless Steel



Measuring Range: -200...1,100 °C
 p_{\max} 3,625 PSIG
 Sensor: Pt100, 4-20 mA
 Connection: 1/2" ... 1" NPT,
 G 1/2...1, DIN 15...50 Flanges
 Output: Analog 4-20 mA

TTE

Screw-in Thermocouples with Compensating Lead Stainless Steel



Measuring Range: -200...600 °C
 Connection: G 1/2, M10x1
 Accuracy Class 1.0

TWM

Sheath Resistance Thermometer Stainless Steel



Measuring Range: -20...600 °C
 Sensor: Pt100, 2-, 3-, or 4-wire
 Connection: Cable, Connector,
 Connection Head

TWA

Contact Resistance Thermometer Brass, Stainless Steel



Measuring Range: -20...260 °C
 Accuracy: Pt 100, Class B

TWL

Thermowells for Thermometers Stainless Steel, Special Materials



t_{\max} 800 °C
 p_{\max} 250 bar
 Types: Thread, Flange, Welding Sleeve



Accessories

REG

Automatic Flow Regulating Valve Brass, Stainless Steel



Viscosity: Max. 30 cSt
 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



Viscosity: Max. 30 cSt
 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/NAD

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 and Smooth Operation
 Bonnet Pin Lock Prevents Loosening
 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

SCI

Frequency to Current Converter



Compact DIN Rail Mounting Option
 Explosion-proof Enclosure Available
 Magnetic or High-level Pulse Inputs
 4-20 mA Loop Powered

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 In-line 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

INT/MRT

Integrating Rate Meter, Totalizer and Batcher



Display Values: Rate, Total, Batch
Display Type: 0.55" Red LED
5 Digit Rate, 6 Digit Total, 6 Digit Batch
Power Input: 110 V_{AC}, 220 V_{AC}, 12 - 24 V_{DC}
Panel Mount: NEMA 4x Front Panel

MPT/MPV

Universal/Process Panel Displays Ratemeter or Dual Line Rate and Total



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

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

DAG-T4/-Z2

Universal Panel Meter or Counter Electronics/Batch Controller



DAG-T4 Input:
Current, Voltage, Pt 100, Thermocouples
DAG-Z2 Input: Frequency
Both: 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



8x 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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