

# VAREA-METER® FLOW METERS



SOLUTIONS THAT WORK



# Metering and Controlling Flows of Process Fluids



Armored Purge Meters are ideal for low-flow, higher pressure applications.

## A Long History of Reliability and Control

For over 60 years, our broad line of rotameter-type flow meters have provided reliable readout, transmission, and control of liquids or gases for most industrial process and water treatment applications. We offer a variety of flow meters to choose from:

- For low-capacity, low-pressure applications, we offer glass tube purge meters with stainless steel frames.
- For low-flow, higher pressure applications, armored purge meters are our recommendation.
- For high volume flows, glass-tube and metal tube meters are available in a variety of sizes and configurations for accurate metering of both air and liquids.
- Purge meters are designed for purging instruments, cases, and control lines and are readily adapted to liquid-level indication, sampling, liquid-specific gravity determination, and similar applications.

## Our Assortment of Meters Have the Highest Accuracy Rates in the Industry

Meter Type	Accuracy	Max Operating Pressure PSI (bar)	Max Operating Temperature Deg. F(C)	Max Capacity at STP (water/air)
Glass Tube Purge Meter	10%	250 (17)	250 (121)	40 GPH/2500 sccm
Arma-View® II	5%	1500 (100)	400 (204)	25 GPH/117 SCFH
Armored Purge Meter	10%	1500 (100)	800 (427)	10 GPM/53 SCFM
Armored Flow Meter Series 55-200	5%	1500 (100)	400 (204)	130 GPM/150 SCFM
Glass Tube Varea-Meter®	2%	300 (20)	200 (93)	69 GPM/281 SCFM
Metal Tube Varea-Meter®	2%		600 (315)	48.4 GPM/205.8 SCFM

## Flow Meters Ensure Water Treatment Facilities Operate Efficiently and Effectively

Flow meters are used in water treatment facilities to measure the flow rate of water as it moves through various stages of the treatment process. They are an essential tool for ensuring that the treatment process is functioning as intended, and that the water being treated is of sufficient quality. Some specific applications of flow meters in water treatment include:

- **Monitoring influent and effluent flow rates.** Flow meters can be used to measure the amount of water entering and leaving a treatment facility, helping to ensure that the treatment process is effectively removing contaminants.
- **Controlling chemical dosing.** Some types of flow meters can be used to control the rate at which chemicals are added to the water, such as coagulants or disinfectants. This ensures that the correct amount of chemicals are added, improving the efficacy of the treatment process.
- **Monitoring flow rates through treatment stages.** Flow meters can be installed at various points in the treatment process to monitor the flow rate of water through each stage. This allows operators to identify any blockages or issues that may be affecting treatment efficiency.
- **Billing and regulatory compliance.** Flow meters can be used to accurately measure the amount of water being processed by a treatment facility, which is important for billing customers or complying with regulatory requirements.

# Our Assortment of Purge Meters



## GLASS TUBE PURGE METER

Glass tube purge meters have a rugged stainless steel frame, are available in 1½-inch and 3-inch scale lengths and use a high-stability float for accurate, repeatable performance. Meters can be supplied with flow controllers and plastic bezels for flush mounting (not available with 1½-inch scale purge meter). An armored metal body version is available for higher pressures and higher temperature applications. Standard calibrations are in CCM, GPH, SCCM, SCFH and PERCENT.

All meters feature an optional built-in flow-control valve, horizontal inlet and outlet connections and an external threaded tube locking plug for easy tube removal. An optional purge type flow controller is available with the stainless steel flowmeters. It is available for inlet or outlet mounting.



## ARMA-VIEW®II PURGE METER

The Arma-View®II Low-Flow Armored Purge Meter is designed for the measurement of low volume flows of aggressive chemicals. The strong meter construction provides reliable metering of gases and liquids at high pressure and temperature ratings.

Low-flow, high-temperature and pressure applications are available with optional 4-20mA transmitter and flow controller. An optional FM-approved hazardous location 4-20mA transmitter provides remote indication of flow rate. An optional purge-type flow controller keeps flow constant regardless of pressure variations. It is offered in 316 stainless steel construction, for inlet and outlet configurations. It can be assembled to the meter or as a stand-alone in the process line.



## ARMORED PURGE METER

The Armored Purge Meter operates over a 10:1 range. Scales are 1¼ inches long. The ½-inch meter has a GPH or SCFH scale; the ¾-inch meter, a GPM or SCFM scale. Each also has a percent scale. The snubber on the float causes readings to steady out quickly. This gives true readings down to atmospheric pressures. The O-ring at the top of the float seals against the seat to prevent back flow through the meter. A port in the bottom of the meter body makes it easy to clean.

The stainless steel and welds in our Armored Purge Meters resist sulfides by conforming to NACE Standard MR-01-75 covering hydrogen sulfide-resistant surfaces. The 316 stainless steel body with Buna N or TFE O-rings gives corrosion resistance and reliable operation to 1500 psi (10 bar) and 800°F (427°C) (600°F (316°C) with flow switch). A heavy stainless sheath encloses the scale tube, which is sealed at both ends by O-rings. At no time is the glass scale tube exposed to the process fluid. A stainless steel sheath encloses the O-ring sealed glass tube. Flow switch available.

# Our Assortment of Flow Meters



## ARMORED FLOW METER

This inexpensive, 5% accuracy flowmeter gives reliable flow indication of aggressive fluids at high temperatures and pressures (see Capacity Chart for pressure and temperature limits). Available options include a 4-20mA output flow signal and high/low alarm switch. Meter sizes (pipe connections) are 1/2-, 1-, 1 1/2-, and 2- inches with capacities to 492 lpm (130 gpm) water and 250 sccm (150 scfm) air at STP. Operating range is 10:1. Mounting is vertical in line with NPT female connections. All wetted parts are stainless steel (except polypropylene float); Buna-N, Viton® or EPR O-rings. The float has an encapsulated alnico magnet.



## GLASS TUBE VAREA-METER® FLOW METER

These rotameters have a wide range of capacities and tube sizes. Metering accuracy is 2% of full scale over a 10:1 range (see Capacity Chart for pressure and temperature limits). Beaded-guide tubes are available with 5- or 10-inch scales. End fittings for vertical and horizontal connections come in NPT sizes. Choice of wetted parts materials such as 316 stainless, Kynar®, Buna-N, and Viton® give a good balance between cost and maximum corrosion resistance.









## METAL TUBE VAREA-METER® FLOW METER

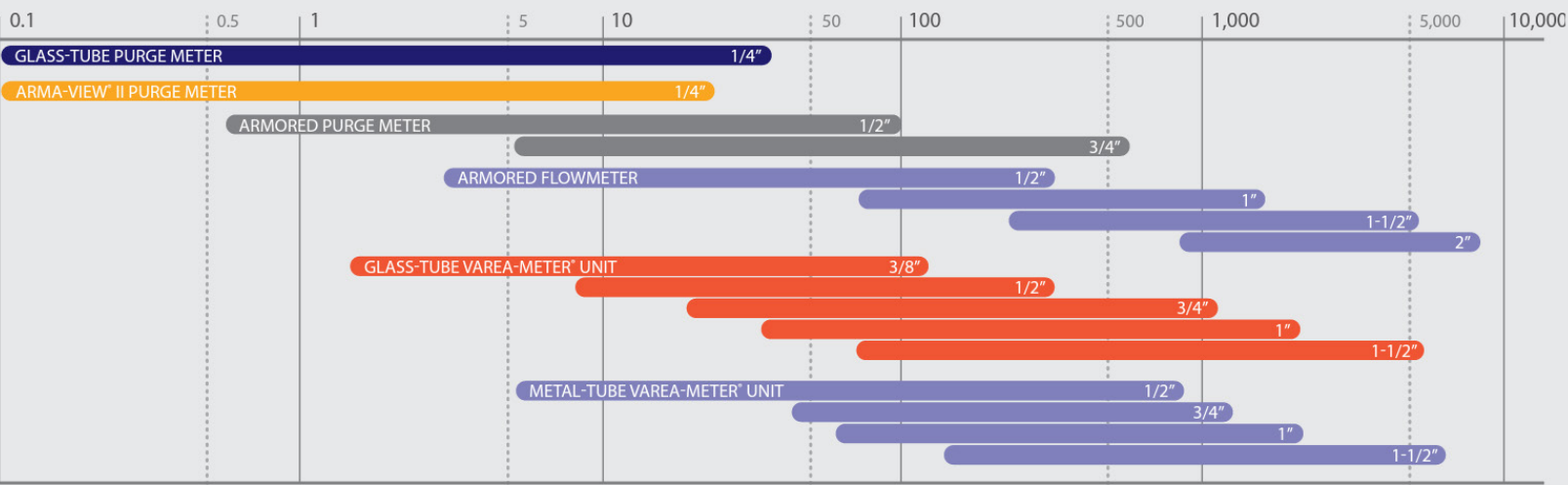
The metal tube Varea-Meter® flowmeter offers simple installation, calibration, and configuration while providing reliable long-term performance in gas or liquid service. Available in a variety of tube sizes (1/2-, 3/4-, 1-, and 1 1/2 inches) and flange facings and ratings, these flowmeters measure over a 10:1 range for aggressive fluids at high temperatures and pressures (see Capacity Chart for pressure and temperature limits). Metering accuracy is 2% of full scale. The standard tube-and-float material is 16 stainless steel; a Hastelloy® C float is also available. Options include a 4-20 mA FM- approved hazardous locations transmitter for remote indication of flow rate. External alarm switches are available for high/low alarm.

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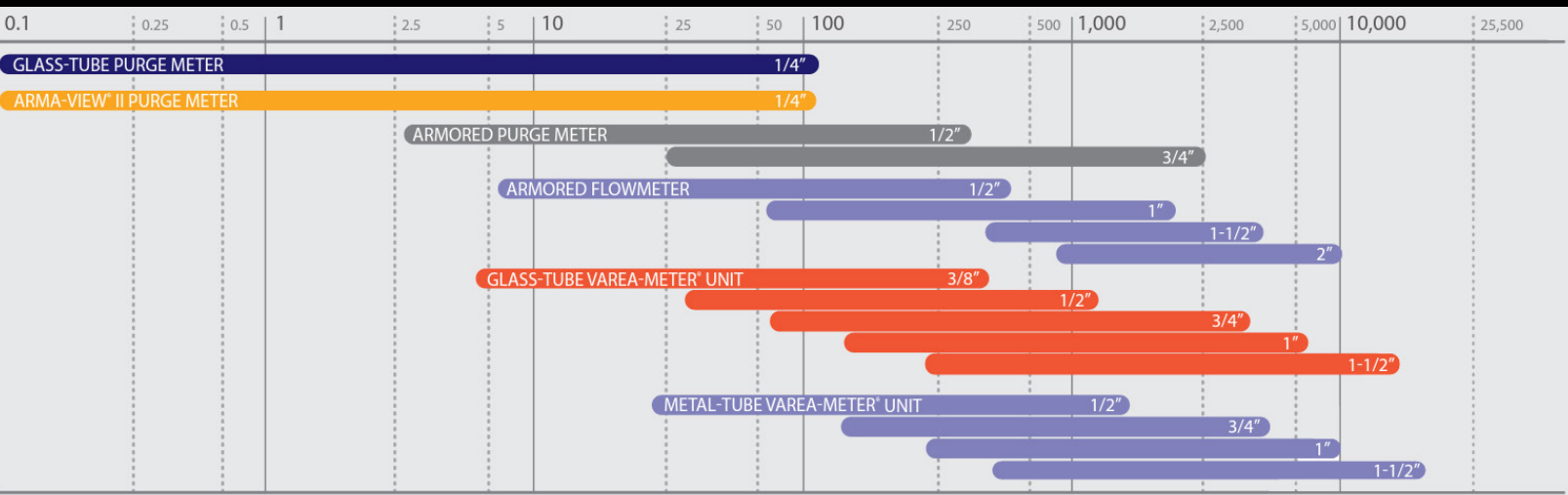
# Liquid and Gas Flow Meters

			Accuracy ±Full Scale (10:1 Range)	Connections	Maximum Operating Pressure	Maximum Operating Temperature
<b>Glass-Tube Purge Meters</b>		<b>Stainless-Frame</b> General purpose measurement of low-volume flows.	10%	Horizontal ¼-in. FNPT	17 bar (250 psi)	121° C (250° F)
<b>Armored Low-Flow Meters</b>		<b>Arma-View® II Purge Meters</b> Measures extra low-volume flows of aggressive fluids at high pressure.	5%	Horizontal ¼-in. FNPT	100 bar (1500 psi)	204° C (400° F)
		<b>Armored Purge Meter</b> Measures low-volume flows of aggressive fluids at high pressure and temperatures.	10%	Horizontal ½-, ¾-in. FNPT	100 bar (1500 psi)	204° C (400° F)
<b>Armored Flowmeters</b>		<b>Stainless-Body</b> Low-cost, all-metal meter for flow indication and flow switching of aggressive fluids at higher pressures and temperatures.	5%	Vertical ½-, 1-, 1½-, 2-in.	100 bar (1500 psi)	93° C (200° F) air 204° C (400° F) water
<b>Glass-Tube Varea-Meter® Flowmeters</b>		<b>Stainless-Frame</b> For accurate flow measurements of fluids in applications where a glass tube is acceptable.	2%	Vert. or Horiz. ½-, 1-, 1½-, 2-in. FNPT	20 bar (300 psi)	93° C (200° F)
<b>Metal-Tube Varea-Meter® Flowmeters</b>		<b>Metal-Tube</b> For metering aggressive fluids accurately at high pressures and temperatures.	2%	Vertical ½-, 1-, 1½-in. 150, 300 lb. Flange	82 bar (1200 psi)	316° C (600° F)

## Liquid Capacity Chart GPH Capacities - Meter Type and Size



## Gas Capacity Chart SCFH Capacities - Meter Type and Size



# Accessories



## Series 5700 General Purpose Flow Controller

Series 5700 General Purpose flow controllers are ideally suited for use on Armored Purge Meters, Armored Flow Meters, and Glass Tube Varea-Meter® units or as a stand-alone controller with other meter types.



## Series 5750 and 5800 Purge Flow Controllers - High Pressure and Low Flow

Series 5750 purge-type flow controller is designed for control of low-volume flows. It can be assembled to purge meters or Arma-View® II meters or as a stand-alone in the process line. The Series 5800 purge-type flow controller is engineered specifically for use with glass-tube purge meters.



## Electronic Transmitter

Our electronic transmitter provides linear 4-20 mA signal proportional to flow rate. The gasketed cast-aluminum case is compact, and rated NEMA® 4, and FM- approved for use in hazardous areas. The transmitter is a smart, microprocessor-based, 2-wire, low-power unit. Its patented sensor with micro-processor controlled gain is capable of filling flow correction needs at the meter, providing accurate flow information remotely to external support systems. The patented magnetic sensor with automatic gain control enables a high dynamic capture range without sacrificing accuracy.



## External Flow Switch

This optional compact switch gives reliable high- and/or low-flow switching. It contains a powerful, rotating magnet that responds linearly to float position. Its switches are long-life, hermetically-sealed reed types. Almost frictionless rotation of the switch magnet and its powerful bond with the float magnet give a dependable magnetic coupling. Even under sudden flow surges, switching remains reliable. Switches can be set to open or close on increasing or decreasing flow. The flow switch is available as Series 5600, general purpose unit in a NEMA® 4X enclosure and Series 5500, UL® listed for hazardous locations.

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