Rotameters – Variable Area Flowmeters

Simple, reliable, low-cost flow measurement solutions

- Excellent repeatability
- Versatile applications
- Effortless installation
- Fischer & Porter heritage
- Quick deliveries

instrumentation

understanding  measurement  analysis  control  integration  optimization
What is an ABB Rotameter?

Building on the heritage of Fischer & Porter

Following the acquisition of Fischer & Porter, ABB brings its considerable scope and power to offer a wide range of world-class rotameters. Today we have one of the highest global install rates, as well as one of the largest customer bases and broadest ranges of rotameters. Our network of distributors provide the user with fast delivery, widespread parts availability and solid service support.

Rotameters, also known as variable area flowmeters, are designed to measure the flow of liquids or gases via a tapered tube and float system. They are accurate, reliable and simple to install and maintain. The biggest benefit is their low cost, which has made them a popular choice for many flow applications since Fischer & Porter introduced the first mass-produced glass tube flowmeter in 1937.

This brochure is designed to help you select the right ABB rotameter for your application. If you have questions or are ready for a quote, simply contact your local ABB representative or visit www.abb.us/instrumentation. We'll be glad to help.
Where do I use an ABB Rotameter?

Hundreds of applications in your plant

Whether you need to measure flow as part of a manufacturing process, integrated into a larger piece of equipment or as standalone measurement, ABB rotameters offer a viable alternative to other more expensive flow measurement devices.

### ABB Rotameters Selection Guide

*G=Glass, M=Metal (316 Stainless Steel), A=Acrylic

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<th>PRESSURE (PSIG)</th>
<th>TEMPERATURE (°F)</th>
<th>FUNCTIONS</th>
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**Computer Chip Manufacturing**

**Pulp & Paper applications**

**Level measurement**

**Fuels Monitoring**

**High pressure applications**

**Chemical industry applications**

**Moisture Analysis**

**Water & Wastewater applications**

**Low & high flow measurement**

**Pump Seal Cooling Water**

**Vacuum Furnace**
Which ABB Rotameter do I use?

ABB Glass Rotameters—Visibly Better

VA MASTER FLOWRATOR® Meters (Series 10A4500)

Used for measuring a wide variety of liquids and gases in most industrial processing facilities. Monitors natural gas flows into ovens, furnaces, cooling fluids to protect equipment, sampling systems in laboratories and flow rates into and out of large tanks.
- Easy range change and cleaning—no removal from the line required
- Tube sizes ranging from ½-inch through 2-inch bore for liquid or gas service
- Visual indication of flow rate over a 12½ to 1 range on a linear scale
- Optional one or two bi-stable alarms for contact closure (or opening) on rising or falling flow

PURGEMASTER (Series 10A6100)

Ideal for many low flow rate applications, such as purging control lines and instrument enclosures. Excellent for fluid sampling, liquid specific gravity, level measurements and other low flow applications.
- Simple snap-in tube construction minimizes downtime for cleaning & replacement
- Interchangeable parts for all lengths simplifies maintenance and stocking of spares
- Internal backcheck to restrict backflow and draining when tube is removed
- Optional one or two bi-stable alarms for contact closure (or opening) on rising or falling flow

RATOSIGHT Flow Rate Indicator with Optional Ratolarm (Series 10A2235)

Used for automatic shut-down of heavy equipment when bearing lubricant flow becomes too low, shut-down of electrical equipment when cooling water flow falls below a preset limit, or the actuation of auxiliary equipment such as pump motor starters or solenoid valves.
- Resistance to mechanical and thermal stresses makes them virtually maintenance free
- Optional Ratolarm extension (Series 10A2235-OA) for alarm actuation
- “Fail-Safe” alarm construction ensuring reliability and uptime
- Unique glass & bronze body design offers flexible installation options along with corrosion resistar

Corrosive liquids
Mining applications
OEM
Film & X-ray Developing Equipment
Nitrogen Generators
Reverse Osmosis
Localized flow monitoring
Explosion-proof applications
Liquid specific gravity
Hazardous areas without power
Aggressive & opaque fluids
Fume Scrubbers
ABB’s Metal Rotameters
Rugged, Durable and Easy to Read

**ARMORED VA METER (Series AM54)**

The Armored VA Meter is ideal for the chemical, pharmaceutical and food industries. It is exceptionally successful metering aggressive or opaque fluids, or where glass tube variable area flowmeters are not appropriate for safety reasons.

- Measurement ranges from 0.1 to 530 GPH liquid; 0.5 to 2200 SCFM gas
- Short, straight-through design makes installation easier
- Optional Teflon® lining and a Teflon® float for maximum corrosion resistance
- HART® communications, transmitter output, totalized output or minimum ±/or maximum alarms available

**ARMORED PURGEMETER (Series 10A3200)**

Suitable for most low flow, high pressure and corrosive applications in municipal and industrial settings. Used for gas analyzer systems, various sampling systems, and situations where glass meter tubes are not appropriate for safety reasons.

- Measures even dirty and corrosive gases or liquids
- Measures ranges from 0.3 to 800 GPH water; 1.3 to 3300 SCFH air
- Optional minimum and/or maximum alarms
- Analog output 4-20 mA transmitter signal

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**Air Drying, Refrigeration & Temperature Control Equipment**

**Deionization Water Purification**

**Petrochemical, Oil & Gas Processing**

**Mining applications**

**Purging applications**

**Pulp & Paper**

**Swimming Pools**

**Remote areas without power**

**Troubleshooting**

**Leak Detection**

**Sampling systems**
Specialty Rotameters

Rotameters For Special Applications

**Ori-Flowrator™ Meters**  
**(Series 10B4500)**

Providing low-cost measurement of large liquid or gas flows in many industries such as oil, gas, petrochemical, water & wastewater. The ABB Ori-Flowrator meter is an all stainless steel variable-area flowmeter used in conjunction with a primary orifice plate. It is a special version of the 10A4500, with the following added benefits:

- Linear indication over 12½ to 1 flow range
- No external power required
- Easy range change and cleaning
- Suitable for hazardous areas

**Bulls Eye™ Sight Flow Indicator**  
**(Series 10E1400)**

Used in many industries to monitor and indicate flow through filter, cooling and intake/outlet pumping lines. Also widely used for troubleshooting or as back-up for meters, switches, process indicators and other control devices.

- Dual glass for see-through visibility
- High pressure and temperature version available (up to 400 PSI)
- Rugged construction maximizes reliability
- Unique sealing method guarantees leak-free operation

**Acrylic VA Flowmeter (Series FP)**

Very cost-effective gas and liquid flow measurement for many low temperature and pressure applications in all industries. With one-piece, clear acrylic construction, this meter is virtually unbreakable in most industrial process applications.

- Easy to read scales and float indicator
- Flow rates up to 20 GPM
- Air ranges up to 100 SCFM
- Easy installation and maintenance in-line or on panel

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**Deionization Water Purification**  
**Nitrogen Generators**  
**Cooling water**  
**Liquid specific gravity**  
**Corrosive liquids**  
**Food & Beverage applications**  
**Wastewater Treatment**  
**Power Utility applications**  
**Ground Water Remediation**
Why should I use an ABB Rotameter?

Low Cost, Simple, Reliable and Flexible

Cost Effectiveness
Many are discovering that ABB rotameters provide cost-effective flow measurement for many of their applications. Why?

• All ABB rotameters are low cost compared to other flow measurement devices
• In addition they have very low installation costs; no upstream/downstream straight piping requirements
• Plus their reliability combines for an extremely low cost of ownership
• Long life expectancy also brings low life-cycle cost

Reliability
There are many ABB rotameters still operating after 30, 40 and even 50 years or more. Why?

• ABB rotameters are renowned for being the highest quality available
• They last longer, with millions installed since 1937
• Our trouble-free operation ensures years of accurate flow measurement
• Excellent repeatability yields consistent products

Simplicity
Our rotameters are still popular for many flow applications after all these years. Why?

• They are pre-calibrated before they leave the factory
• Once delivered they are very easy to install
• Maintenance is very simple due to their excellent design
• ABB rotameters have common parts minimizing stocking requirements

Flexibility
ABB rotameters are found in almost every application and industry, with millions sold over the years. Why?

• Our rotameters can be used to measure a wide variety of liquids, gases & steam
• They require no power and can be used anywhere
• ABB rotameters are easily converted to measure different fluids & capacities
• They are available with alarms, transmitted output and even HART communications