

Flowmeter product portfolio

Magnetic flowmeters



IMT30A, IMT31A and IMT33A



9500A



9600A



8400A



8500A



9700A



6500W/IMT65W

Vortex flowmeters



84CN



84CF



84CW



84CS

Coriolis flowmeters



CFT34A



CFS300A, CFS400A, CS700A

Magnetic flowmeters

The flexible solution for most flows

Magnetic flowmeters are designed to fit a wide range of applications, including water, slurries, chemicals, pharmaceuticals, and foodstuffs, in a wide range of industries. Schneider Electric magnetic meters are a reliable flow measurement solution with a lower cost of ownership and maintenance, with field-proven stability to maximize the availability of flow measurement.

For most applications, a Schneider Electric magnetic flowmeter with DC excitation is the ideal solution.

This efficient system comprises a threaded body, wafer body, or sanitary magnetic flowtube coupled to an intelligent magnetic flow transmitter.

Our transmitters boast such desirable features as automatic/manual empty pipe detection, bidirectional measurement, contact inputs for remote operability, and relay outputs for alarm functionality. You also receive flexible configuration to fit your control scheme, easy programming, and durable, modular construction.

In addition, our flowmeters provide continuous diagnostic and self-tests, with the capability to identify coating and corrosion of the electrode, or change of flow profile. With the new, unique feature 'virtual reference grounding' grounding electrodes or rings can be left out, simplifying and reducing installation costs while eliminating the risk of the accuracy being affected by an unstable ground on-site.

Our flowtubes are available in a wide range of sizes (0.1" to 80", 3 mm to 2,000 mm) with an extensive variety of industrial and sanitary options.

These flowtubes can be used with most conductive fluids, including hard-to-handle liquids and slurries. Retained, reinforced PFA liners withstand even severe process temperature swings to 180°C (356°F) and process pressures from full vacuum to 40bar (580psi).

You also get a wide variety of mounting options, line sizes, and configurations.



IMT30A Transmitter

IMT31A Transmitter



IMT33A Transmitter



9700A Magnetic Flow Sensor

Our complete magnetic flowmeter family sets an industry standard for wide-ranging excellence.



The breakthrough technology for your toughest flow problems

Schneider Electric's flow expertise stretches from the process industry's first mag flow system in 1954 to DC pulsed mag transmitters in 1983. Today, we are developing even better answers for your flow future.

The IMT33A transmitter squelches noise and boosts performance on your worst flows such as slurries, cement, or Pulp & Paper applications.

The result is a clean, accurate, and reliable measurement where solids or additives generate unacceptably high process signal noise, including chemical additives, slurries, and high-consistency or pulsating flows.

Schneider Electric's flow solutions provide online, intelligent diagnostics and help, simple, menu-driven software configuration, compatibility with most of Schneider Electric's electromagnetic flow tubes, high accuracy and fast response, plus durability and ease of use.



IMT33A Transmitter



Need some help to select the right magnetic flowmeter for your process? Visit www.FlowExpertPro.com for easy sizing and selection.

Selection guide

Magflow flowmeters



Model	9500A IMT30A/IMT31A/IMT33A	9600A IMT30A/IMT31A/IMT33A	9700A IMT30A/IMT31A/IMT33A	8500A IMT30A/IMT31A/IMT33A
Applications	Water & Wastewater, Power	Sanitary flowmeter used for Food & Beverage, Pharmaceutical, Cosmetics	Slurries and pastes with high solids content, abrasive and aggressive products, clean liquids	Volumetric dosing of additives, chemical injection, acids, alkaline, abrasive slurries, aggressive media
Size	1" to 80"; DN25 to DN2000	1/10" to 6"; DN2.5 to DN150	3/8" to 80" (DN10 - DN2000)	1/10" to 4" (DN2.5 - DN100)
Accuracy	0.5% ±1 mm/s IMT30A down to 0.3% ±1 mm/s... IMT31A 0.2% ±1 mm/s... IMT33A	0.5% ±1 mm/s IMT30A down to 0.3% ±1 mm/s... IMT31A 0.2% ±1 mm/s... IMT33A	up to ±0.2% of mv +1 mm/s IMT33A up to ±0.3% of mv +1 mm/s IMT31A up to ±0.5% of mv +1 mm/s IMT30A	up to ±0.15% of mv +1 mm/s IMT33A up to ±0.3% of mv +1 mm/s IMT31A up to ±0.5% of mv +1 mm/s IMT30A
Liners	Hard rubber	Reinforced PFA	PFA, PTFE, ETFE, PU Hard/soft rubber	Ceramic
Electrode material	Hastelloy C, stainless steel, titanium	Hastelloy C and B2, stainless steel, titanium, tantalum, platinum, tantalum-tungsten	Hastelloy, stainless steel, titanium, tantalum, low-noise electrodes, platinum	Fused in-place Cermet electrode or platinum button with platinum wire
Fittings	EN 1092-1, JIS, ASME B16.5, AWWA	DIN 11850/11866, DIN 11851, DIN 11864-2A, DIN 32676, ISO 2037, ISO 2852, SMS 1145, Tri-Clamp	EN 1092-1, ASME B16.5, JIS	EN 1092-1, ASME B16.5, JIS
Temperature range	-5 °C to +80 °C/+23 °F to +176 °F	-40 °C to +140 °C/-40 °F to +284 °F	-40 °C to +180 °C/-40 °F to +356 °F	-40 °C to +180 °C/-40 °F to +356 °F
Minimum conductivity	5 µS/cm (water ≥ 20 µS/cm)	5 µS/cm	≥ 1 µS/cm	≥ 1 µS/cm
Communication protocols	4-20 mA, HART, FF ¹ , Modbus	4-20 mA, HART, FF ¹ , Modbus	4-20 mA, HART, FF ¹ , Modbus	4-20 mA, HART, FF ¹ , Modbus
Certifications and approvals	ATEX, IECEx, FM, CSA, NEPSI KTW, ACS, NSF 61 Drinking Water Approvals	CSA, 3-A Sanitary Approval, FDA, EHEDG	CE, ATEX, FM, CSA, IECEx, NEPSI	CE, ATEX, FM, CSA, IECEx, NEPSI, FDA
Specific features	Virtual Grounding option Continuous device and process diagnostics	Continuous device and process diagnostics	Virtual grounding option, continuous device and process diagnostics, low-noise electrode	FDA approved, vacuum resistant, continuous device and process diagnostics, virtual grounding option
Specifications	9500A PSS 1-6H4 A IMT30A PSS 1-6H3 A IMT31A PSS 1-6H2 A IMT33A PSS 1-6H1 A	9600A PSS 1-6H5 A IMT30A PSS 1-6H3 A IMT31A PSS 1-6H2 A IMT33A PSS 1-6H1 A	9700A PSS_1-6H6 A IMT30A PSS_1-6H3 A IMT31A PSS_1-6H2 A IMT33A PSS_1-6H1 A	8500A PSS_1-6H8 A IMT30A PSS_1-6H3 A IMT31A PSS_1-6H2 A IMT33A PSS_1-6H1 A

¹ FF = FOUNDATION Fieldbus

Selection guide

Magflow flowmeters
(continued)



Model	8400A IMT30A/IMT31A/IMT33A	6500W IMT65W
Applications	Mixing, batching, dosing, filtration, pump control; water flow monitoring, circulation and treatment	District metering of potable water and custody transfer measurement
Size	3/8" to 6" (DN10 - DN150)	1" to 24" (DN25 - DN600)
Accuracy	up to ±0.3% of mv +2 mm/s IMT33A up to ±0.4% of mv +1 mm/s IMT31A up to ±0.5% of mv +1 mm/s IMT30A	up to ±0.2% of mv + mm/s IMT65W
Liners	PFA	Rilsan® thermoplastic polyamide
Electrode material	Hastelloy	Hastelloy, Stainless Steel
Fittings	EN 1092-1, ASME B16.5, JIS	EN 1092-1, ASME B16.5, JIS, Gas Threaded Connection
Temperature range	-25 °C to +120 °C/-13 °F to +248 °F	-5 °C to +70 °C/+23 °F to +158 °F
Minimum conductivity	≥ 5 µS/cm	≥ 20 µS/cm
Communication protocols	4-20 mA, HART, FF, Modbus	Pulse, Modbus
Certifications and approvals	ATEX Zone 2 max.	Custody transfer: OIMLR49 and MID Annex III (MI-001); Drinking water approvals: ACS, DVGW, NSF, UBA and WRAS
Specific features	Vacuum resistant, continuous device and process diagnostics, virtual grounding option	Battery-powered water meter with optional data logger for wireless operation, multi-power unit for mains power connection and battery back up
Specifications*	8400A PSS_1-6H7 A IMT30A PSS_1-6H3 A IMT31A PSS_1-6H2 A IMT33A PSS_1-6H1 A	6500W/IMT65W PSS_1-610H A

*Please use this term in our search window on www.schneider-electric.com to access more product details



Vortex flowmeters

The industry's most popular vortex meter choice

Schneider Electric's 84C Series intelligent vortex flowmeters are proven to be the best choice for meeting many of the accuracy, dependability, and cost challenges your process can present.

Forget about specifying different models for liquid, gas, and steam measurements. With the Schneider Electric vortex flowmeter, a single sensor design handles the majority of your measurement needs. And, with the introduction of the 84C having the option of built-in temperature compensation for mass flow of saturated steam or custom liquids, the 84C family of vortex meters provides an even higher-value solution for your measurement needs. Therefore, you simplify ordering, reduce inventories, and cut overall costs. Even after years of hard use, you continue to receive predictable, long-term, accurate performance, with a minimum cost of ownership.

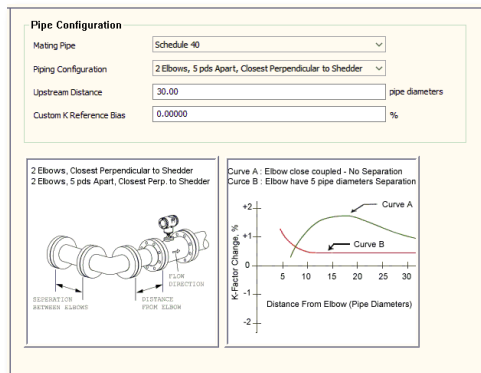
The 84C is available with Modbus RTU or HART 7 communication. The Modbus implementation is done over 2-wire RS-485 multidrop serial connection allowing you to free up cabinet space and to run faster compared to HART. It is available with explosion- and flame-proof electrical certifications making this meter an ideal device for the upstream Oil & Gas industry. The Modbus DTM with its easy 7-step configuration wizard will get you up and running in 2 minutes.

Smart, durable design

The unique shape of the shedding element has no moving parts to wear out and degrade accuracy. The 84C, with optional built-in Pt1000 RTD temperature sensor, provides best-in-class accuracy for compensated mass flow of saturated steam.

Patented "Direct Sense™" vortex sensing places the sensor in the process and at the correct location for the widest rangeability and best low-flow performance. The robust sensor (backed by a lifetime warranty) stands up to harsh processes, as does the rugged, epoxy-coated housing. An optional isolation manifold will allow you to replace the entire sensor assembly without shutting down your process and maintaining process pressure and temperature conditions.

The 84C vortex flowmeter with temperature compensation is the best solution for mass flow measurement of saturated steam or custom liquids, reducing the cost of ownership.



Built-in configuration tools for real-world applications



Trending you can customize



Intelligence in every model

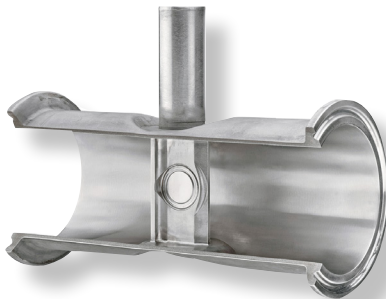
All Schneider Electric intelligent vortex flowmeters possess excellent low-flow rate characteristics, wide rangeability, and online diagnostics. They also include a K-factor correction for temperature effects and compensation for piping effects to provide the most accurate measurement possible.

Like many Schneider Electric instruments, they can be remotely interrogated or configured by your choice of PC software based on FDT/DTM standard or any hand-held terminal using DD files.

A choice of versions

Our flanged-body and wafer-body vortex flowmeters measure liquid, gas, or steam at process temperatures up to 430 °C (800 °F). Our sanitary intelligent vortex flowmeter is the only 3-A sanitary vortex meter in the market authorized for applications that require crevice-free design to enable inline cleaning.

The 84CS sanitary vortex flowmeter is suitable for hygienic applications and CIP cycles.



Searching for a great vortex meter? Look no further than Schneider Electric. Visit www.FlowExpertPro.com for help with sizing and selection of a vortex flowmeter that meets your liquid, gas, or steam flow measurement needs.

Selection guide

Vortex flowmeters



Model	84CF (Flanged)	84CN (Threaded/Male NPT)	84CW (Wafer)	84CS (Sanitary)
Applications	Gas, liquid, or steam applications (clean single-phase fluid). General purpose flowmeter for virtually any process industry. Chemical, Oil & Gas, Energy Industries, Utilities.	Gas, liquid, or steam applications (clean single-phase fluid). Direct replacement for turbine, magnetic flow, and orifice meters. Chemical, Oil & Gas, Energy Industries.	Liquid, gas, or steam applications (clean single-phase fluid). General purpose flowmeter for virtually any process industry. Chemical, Oil & Gas, Energy Industries, Utilities.	Liquid, gas, or steam applications (clean single-phase fluid). Hygienic design for Food & Beverage and Pharmaceutical sanitary applications. Wide range of temperature and pressure, ideal for CIP/SIP skid application.
Size	3/4" to 12"; DN15 to DN300	1" to 2"; DN25 to DN50	3/4" to 8"; DN15 to DN200	2" to 3"; DN50 to DN80
Accuracy	±0.5% of reading in liquids ±1.0% of reading in gas and steam ±1.4% of reading in saturated steam	±0.5% of reading in liquids ±1.0% of reading in gas and steam ±1.4% of reading in saturated steam	±0.5% of reading in liquids ±1.0% of reading in gas and steam ±1.4% of reading in saturated steam	±0.5% of reading in liquids ±1.0% of reading in gas and steam ±1.4% of reading in saturated steam
Flowtube material	316 or 304 Stainless Steel	316 or 304 Stainless Steel	316 Stainless Steel or Nickel alloy CW2M (equivalent to Hastelloy C-4C)	316 Stainless Steel tube and 316L Stainless Steel shedder bar
Fittings	Flange ANSI RF, ANSI RTJ, EN 1092-1 Pressure rating ranging from ANSI Class 150 to 1500, DIN PN16 to PN160	Male NPT threaded	Wafer (flangeless) Centering for ANSI Class 150, 300, 600 and Metric PN 63, PN 100; Centering for Metric PN 16 and PN 40; Centering for ANSI Class 600; Centering for Metric PN 16; Centering for Metric PN 40 Wafer (flangeless) Centering for ANSI Class 150, 300, 600 Centering for Metric PN 16, 40, 63, 100	3-A I-line coupling mates with Cherry Burrell 15 WI, SI (DIN 11851) coupling with external knuckle thread, per DIN 405, Part 1; RJT coupling per BS 1864, with external Whitworth thread, 6 TPI; 3-A Tri-clamp type quick -disconnect ferrule, mates with Tri-Clover 14 WMP or equivalent; ISS (ISO 2853) coupling with external Trapezoidal thread, 8 TPI
Temperature range	-20 °C to +200 °C/0 °F to +400 °F +150 °C to +430 °C/+300 °F to +800 °F Temp. comp. devices: +150 °C to +260 °C/+300 °F to +500 °F	-20 °C to +200 °C/-4 °F to +400 °F +150 °C to +430 °C/+300 °F to +800 °F Temp. comp. devices: +150 °C to +260 °C/+300 °F to +500 °F	-20°C to +200 °C/0°F to +400 °F +200°C to +430 °C/+400°F to +800 °F Temp. comp. devices: +150 °C to +260 °C/+300 °F to +500 °F	-18 °C to +177 °C/0 °F to +350 °F Temp. comp. devices: +150 °C to +260 °C/+300 °F to +500 °F
Communication protocols	4-20 mA, HART 7, Modbus RTU	4-20 mA, HART, Modbus	4-20 mA, HART	4-20 mA, HART
Certifications and approvals	ATEX, IECEx, FM, CSA, NEPSI, INMETRO, EAC, KOSHA	ATEX, IECEx, FM, CSA, NEPSI, INMETRO, EAC	ATEX, IECEx, FM, CSA, NEPSI, INMETRO, EAC, KOSHA	ATEX, IECEx, FM, CSA, NEPSI approved with no cracks or crevices wetted-parts
Specific features	Optional: temperature compensated vortex	Temperature compensated vortex	Temperature compensated vortex	Temperature compensated vortex
Specifications*	PSS 1-8A8 A	PSS 1-8A8 A	PSS 1-8A8 A	PSS 1-8A8 A

* Please use this term in our search window on www.schneider-electric.com to access more product details.

Coriolis mass flowmeters

When it comes to selecting a flowmeter for your application, Schneider Electric's mass flow meters cover all bases. Our family of Coriolis flow meters range from small to large, for high pressure, cryogenic temperatures, and high temperatures. The meter's diagnostics software monitors a series of process and auxiliary values in order to ultimately confirm the condition of the process medium. Our Coriolis mass flow meters can even generate intelligent warning messages when a certain proportion of gas bubbles or solids is exceeded, providing valuable information about the process itself.

When constant parameters such as medium, temperature, or pressure undergo sudden changes, a reliable and accurate mass flowmeter is needed. Schneider Electric offers superior mass flowmeters with a unique straight tube design for minimal pressure drop, highly viscous, corrosive, and slurry applications. Whatever your process requires, you can count on Schneider Electric's Coriolis mass flowmeters for design and quality.

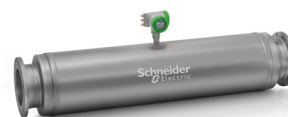
Typical applications

- Measurement of liquids, gases, and liquids with entrained gas
- Bulk loading
- Oil & Gas
- Food & Beverage
- Chemical
- Pharmaceutical
- Petrochemical
- Power plants
- Pulp & Paper

High overall pressure drop of a flowmeter installed results in higher investment costs in more powerful pumps, for energy consumption. Important for the offshore and marine markets, the greater the weight of these more powerful pumps, the more weight is added to the platform or vessel. To reduce overall system pressure drop the correct flowmeter can play a vital part in achieving this. Our CFS400A has a unique four straight tube design with an optimized flow splitter giving it a low pressure drop. It also has a very high flow rate at up to 4,600 t/h/169,000 lb/min.

A powerful transmitter for standard and challenging applications

The CFT34A is an electronic device ideal for all high-tech measuring tasks. It flaunts its technological strengths when entrained gas is present, providing continuous measurement with gas entrainment from 0% to 100% and back. It also offers excellent zero-level state-of-the-art density measurement. The CFT34A is compatible with the CFS300A, CFS400A, CFS600A, and CFS700A Coriolis flow tubes and features push button and optical keys in its standard configuration. The transmitter is approved according to cFMus, ATEX, IECEx, EAC, NEPSI, and INMETRO. The transmitter is available in compact and remote mount design and has state-of-the-art measurement capability, providing exceptional density measurement. Its high-level diagnostics providing condition-based monitoring and its robust design make it a valuable tool for measurements which are not affected by gas entrainment. In the unlikely event that the electronics develop a fault, the complete electronics module can be conveniently replaced on site. Due to redundant storage, the data is simply transferred from the backplane memory of the housing to the new transmitter resulting in only a short disruption of the process.



Repeatable 2-phase flow measurement

If your measurement of your mass flowmeter is interrupted because of gas entrainment in the medium, consider using Schneider Electric's Coriolis mass flowmeters instead. No matter if your process has unwanted entrained gas or if you need air inside your product, Schneider Electric's Coriolis mass flowmeters ensure stable and continued operation across a wide range of gas fractions and complex flow conditions.

Schneider Electric's 2-phase flow functionality offer a solution for flow conditions at a gas volume fraction (GVF) from 0 to 100%:

- Applications with entrained gas can simply be resolved
- Enhanced diagnostics with 2-phase signal
- Diagnostics in accordance with NAMUR NE 107 requirements
- Uninterrupted measurement with 0 to 100% gas entrainment

How it works

Regular oscillation of the tubes in the Coriolis mass flowmeter is desired. Air entrained in the liquid dampens this regular oscillation of the flow measuring tubes. As the air content rises, the oscillation can come to a complete stop. Powerful control algorithms overcome this challenge allowing the meter to maintain oscillation and continue to measure even during a complete transition from a 100% liquid phase to a 100% gas phase — Schneider Electric's Coriolis mass flow meter will continuously measure.

Coriolis flow meters can measure both the mass flow and density of any fluid, whether it has entrained air or not. Density temperature measurement of single-phase fluids (i.e. no entrained air is present) is common practice but for traditional mass flow meters it becomes challenging with entrained gas. In many applications where entrained gas is present, Schneider Electric's Coriolis mass flowmeters show excellent accuracy and repeatability for process control, batching, loading, offloading, and transfer measurement.



CFT34A Mass Flow Transmitter

Selection guide

Coriolis flowmeters



Model		CFS300A/CFT34A	CFS400A	CFS700A
Applications		For universal applications and process control	Dual or four straight tube design for bulk flows for custody transfer up to DN400/16"	For advanced applications, with single straight measuring tube
Accuracy	Liquid	±0.15%	≤0.1% (optional: ±0.05%)	±0.1%
	Gas	0.35%	≤0.35%	0.35%
	Density	±2 kg/m³	±1 kg/m³ (±2 kg/m³)	±2 kg/m³ (±0.5 kg/m³)
Outputs		Current, pulse/frequency, status	Current, pulse/frequency, status	Current, pulse/frequency, status
Inputs		Binary	Binary	Binary
Communication		HART®, FF, Profibus PA, Profibus DP, Modbus	HART®, FF, Profibus PA, Profibus DP, Modbus	HART®, FF, Profibus PA, Profibus DP, Modbus
Power supply		85 – 250 VAC; 11 – 31VDC; 20.5 – 26 VAC/DC	85 – 250 VAC; 11 – 31VDC; 20.5 – 26 VAC/DC	85 – 250 VAC; 11 – 31VDC; 20.5 – 26 VAC/DC
Protection category	Compact (C)	IP66, 67; NEMA4, 4X, 6	IP66, 67; NEMA4, 4X, 6	IP66, 67; NEMA4, 4X, 6
	Field (F)	IP66, 67; NEMA4, 4X, 6	IP66, 67; NEMA4, 4X, 6	IP66, 67; NEMA4, 4X, 6
	Wall (W)	IP65; NEMA4, 4X	IP65; NEMA4, 4X	IP65; NEMA4, 4X
Device, EN 1092-1		DN15 – 50	DN100 – 400	DN6 – 80
Connection, EN 1092-1		DN15 – 100	DN100 – 400	DN10 – 100
Device, ASME B16.5		1/2 – 2"	4 – 16"	1/4 – 3"
Connection ASME B16.5		1/2 – 4"	4 – 16"	1/2 – 4"
Pressure rating EN 1092-1		PN40, 63, 100	PN16, 40, 63, 100, 160	PN40, 63, 100
Pressure rating ASME B16.5		CL 150, 300, 600	CL 150, 300, 600, 900, 1500	CL 150, 300, 600
Secondary pressure containment		100 bar/1450 psi	40 bar/580 psi (opt. 150 bar/2175 psi)	100 bar/1450 psi
Measuring ranges		48 – 170000 kg/h	1560 – 4,600,000 kg/h	9.5 – 560,000 kg/h
Process temperature		-40 to +130 °C/-40 to +266 °F	-40 to +130 °C/-40 to +266 °F	-40 to +150 °C/-40 to +302 °F
Ambient temperature		-40 to +65 °C/-40 to +149 °F	-40 to +65 °C/-40 to +149 °F	-40 to +65 °C/-40 to +149 °F
Sensor materials		Stainless steel	Stainless steel, duplex, super duplex	Duplex steel, Hastelloy C22, titanium, tantalum
Protection category sensor		IP67, NEMA4X	IP67, NEMA4X	IP67, NEMA4X
Ex-approvals		ATEX, FM, CSA, NEPSI, IECEx, INMETRO, EAC	ATEX, FM, CSA, NEPSI, IECEx, INMETRO, EAC	ATEX, FM, CSA, NEPSI, IECEx, INMETRO, EAC
Sanitary and material approvals		3A, EHEDG	NACE	EHEDG, 3A, ASME Bioprocessing
Custody transfer		NTEP, Measurement Canada	OIML R117, INMETRO, NTEP, MI 005, MI 002, Measurement Canada	OIML R117, INMETRO, MI005

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Selection guide

Flow technologies



Model	Coriolis	Magnetic	Vortex	dP flow and Multivariable flow
Technology				
Type of measurement	Linear mass flow measurement Temperature measurement	Linear volumetric flow measurement	Linear volumetric flow measurement Mass flow measurement for steam and liquids	Square root volumetric flow measurement
Liquids				
Clean liquid	Good	Good	Good	Good
Dirty liquid	Good	Good	Limited	Limited
Corrosive liquid	Limited	Good	Limited	Limited
Low conductivity liquid <5 µS	Good	No	Good	Good
High viscosity	Good	Good	No	No
Gas				
Clean gas	Good	No	Good	Good
Dirty/corrosive gas	Limited	No	Limited	Limited
Steam	No	No	Good	Good
Special applications				
High temperature	Good	Limited	Good	Limited
Low temperature	Good	No	Limited	Limited
Low velocity	Good	Good	No	No
Abrasive slurries	Good	Good	No	No
Fibrous slurries	Good	Good	No	No
Dual-phase/emulsion	Good	Limited	No	No
Specifications				
Accuracy	0.1% to 2% optional 0.05%	0.15% to 2%	0.5% to 1% 1.4% for saturated steam mass flow	0.5% to 3%