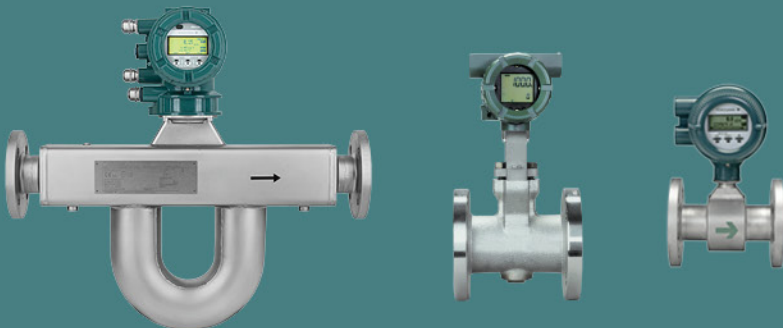


Flowmeter Selection Guide



Flowmeter Selection Guide

LIQUIDS

	Clean Liquid	Dirty Liquid	Abbrasive	Corrosive	Low Pressure	Low Velocity	Cryogenic	Hi Temp	Mass Flow	Low Flow Rates <0.1m ³ /hr (0.44gpm)	Non-Conductive Fluids
Coriolis Flow Meter	■	■	○	■	○	■	■	■	■	■	■
Magnetic Flow Meter (4-wire)	■	■	■	■	■	■		○	○	○	
Magnetic Flow Meter (2-wire)	■	■	○	■	■	■		○	○		
Capacitance Magnetic	■	■	■	■	■	■		○	○		
Vortex Flow Meter	■	○		■	○		■	■	■		■
Variable Area Flow Meter	■	○		■	■	■	■	■	○	■	■
Differential Pressure Flow Meter	■	○	○	○	○	■	○	○	■	■	■

Designed for this service
 Applicable for this service under certain conditions - consult manufacturer
 Not applicable for this service

GAS & STEAM

	Clean Gases	Dirty Gases	Corrosive	Low Pressure	Low Velocity	Saturated Steam	Superheated Steam	Cryogenic	Hi Temp	Mass Flow	Low Flow Rates
Coriolis Flow Meter	■	■	■	○	■	○	■	■	■	■	■
Vortex Flow Meter	■	○	■	○		■	■	■	■	■	
Variable Area Flow Meter	■	○	■	■	■	■	■	■	■	○	■
Differential Pressure Flow Meter	■	○	○	○	■	■	■	○	○	■	■

Designed for this service
 Applicable for this service under certain conditions - consult manufacturer
 Not applicable for this service

	Magnetic Flow Meter (4-Wire)	Magnetic Flow Meter (2-Wire)	Capacitance Magnetic	Coriolis Mass Flow Meter	Vortex Flow Meter	Variable Area Flow Meter	Differential Pressure Flow Meter
Yokogawa Family:	ADMAG	ADMAG	ADMAG	Rota	YEWFLOW	Rota	DPharp
Recommended Model:	ADMAG AXF™/AXW™	ADMAG AXR™	ADMAG CA	ROTAMASS	digital YEWFLOW	ROTAMETER	DPharp EJA™ / DPharp EIX™
Typical Applications:	- Conductive fluids - Slurries - Corrosive fluids - Water/Wastewater	- Conductive fluids - Light slurries - Corrosive fluids - Water/Wastewater	- Ultra low conductive fluids - Abrasive slurries - Corrosive fluids - Coating fluids	- Liquid - Gases - Superheated steam - Concentration measurements	- Liquid - Gases - Saturated steam - Superheated steam	- Liquid - Gas - Steam	- Liquid - Gas - Steam
Line Sizes:	2.5mm - 1800mm (0.1" - 72")	25mm - 200mm (1" - 8")	25mm - 200mm (1" - 8")	6mm - 200mm (1/4" to 8")	15mm - 400mm (0.5" - 16")	6mm - 150mm (1/4" to 6")	15mm-3000mm (1/2" to 120")
Max Pressure:	Up to 9.92 Mpa (1440 PSIG)	Up to 4 Mpa (580 PSIG)	Up to 4 Mpa (580 PSIG)	Up to 28.5 Mpa (4133 psi)	Up to 43 MPa (6250 psi) (ASME 2500)	Up to 16 Mpa (2320 psi)	Up to 32 Mpa (4500 psi)
Temperature Limits:	-40C to 180°C (-40 F to 356°F)	-40C to 130°C (-40F to 266°F)	-10C to 120°C (14F to 248°F)	-200 to 350°C (-328 to 662°F)	-196 to 450°C (-320 to 842°F)	-196 to 370°C (-320 to 698°F)	Transmitter: -40 to 120°C (-40 to 248°F) Primary Element: -196 to 870°C (-320 to 1600°F)
Flow Range:	Up to 91,608 m ³ /h (403,341 gpm)	Up to 1,131 m ³ /h (4,979 gpm)	Up to 1,131 m ³ /h (4,979 gpm)	Up to 600 t/h (1,322,773 lb/hr)	Up to 10m/s (33 ft/s) liquid Up to 80 m/s (262 ft/s) gas	0.0001 m ³ /h - 130 m ³ /h (0.0003gpm to 572gpm)	Dependent on Primary Element
Accuracy:	Up to 0.2% of rate	0.5% of rate	0.5% of rate	Up to 0.1% of rate	0.75%	Up to 1.6% of rate	Up to 1% of rate
Rangeability:	100:1	33:1	20:1	Up to 170:1	Up to 33:1	10:1	Up to 15:1 with single DP transmitter
Process Connections:	- Flanged - Wafer - Sanitary	- Flanged - Wafer	- Wafer	- Flanged - Threaded - Sanitary	- Flanged - Wafer	- Flanged - Threaded - Sanitary	- Flanged - Threaded - Sanitary - Wafer
Communication:	- Analog - Pulse - HART - BRAIN - FOUNDATION Fieldbus - PROFIBUS	- Analog - Pulse - HART - BRAIN	- Analog - Pulse - BRAIN	- Analog - Pulse - Status output - HART - FOUNDATION Fieldbus - MODBUS RTU	- Analog - Pulse - HART - BRAIN - FOUNDATION Fieldbus	- Visual Display - Limit switches - Analog - Pulse - HART - PROFIBUS PA	- Analog - HART - BRAIN - FOUNDATION Fieldbus - PROFIBUS PA - MODBUS RTU - Pulse
Approvals:	- FM - CSA - ATEX - IECEx - Others: consult factory	- FM - ATEX - IECEx - TIIS	- FM - CSA - TIIS	- FM - CSA - ATEX - IECEx - Others: consult factory	- FM - CSA - ATEX - IECEx - Others: consult factory	- FM - CSA - ATEX - IECEx - Others: consult factory	- FM - CSA - ATEX - IECEx - Others: consult factory
Power Supply:	Available with 24 VDC or 100-240 VAC, 12W - 20W (Dependent on configuration)	Loop-Power	Available with 24VDC or 100-240 VAC, 14W	Available with 24 VDC or 90V-264 VAC	Loop-Power	Visual indication or 24 VDC, 115 VAC or 230 VAC	24 VDC, low power option
Advantages of the Technology:	Full Bore; No pressure loss; No moving parts; Bi-directional; Linear accuracy; Flow not affected by change in pressure, viscosity, density or temperature. Variety of materials for chemical compatibility	Full Bore; No pressure loss; No moving parts; Bi-directional; Linear accuracy; Flow not affected by change in pressure, viscosity, density or temperature. 2 wire device for low power consumption. Variety of materials for chemical compatibility	No wetted electrodes; Ultra low conductivity; Full bore; No pressure loss; No moving parts; Bi-directional; Linear accuracy	Direct mass measurement and density measurement; Unaffected by process condition changes; Multi variable measurements. Handles entrained gases. No straight run requirements	No moving parts; minimal pressure drop; Suitable for a large variety of fluids; variety of materials for chemical compatibility; high pressure ratings	No power supply needed; Low pressure loss; All stainless steel design; Reasonable price; Robust and universal; Proven device	Able to pair with many different primary elements to meet requirements of application; experienced and reliable flow measuring method; universally accepted; generally lower cost; compensated/mass flow with multivariable transmitter
Challenges of Technology:	Conductive fluids only; Not recommended for entrained gas; Susceptible to coating	Conductive fluids only; Not recommended for entrained gas; Susceptible to coating	Application suitability dependent on conductivity; Viscosity and flow rate	Pressure loss	Limited by Reynolds number with increased viscosity	Vertical installation (from bottom to top), not for high viscous fluids	Primary element largely dictates performance and price; limited rangeability; Additional installation/integration issues

*This information is to be used for reference only. For detailed specifications and application suitability please reference the general specifications and/or contact your local Yokogawa representative



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