Life Is On | Foxboro by Schneider Electric

Foxboro® Magnetic Flowmeter for Chemical and Process Industries

9700A Flowtube and IMT30A, IMT31A, IMT33A Transmitters

MagPLUS

With a 100-year tradition of excellence and innovation in flow measurement, the Foxboro brand offers a complete breadth of accurate, reliable and worry-free flowmeter solutions.

Based on Faraday's law of induction, Foxboro magnetic meters are a reliable flow measurement solution with a lower cost of ownership and maintenance, as well as field-proven stability to maximize the availability of flow measurement.

With a wide range of liners and electrodes, the 9700A flowtube is ideal for the Chemical and Process industries. In combination with the IMT30A, IMT31A and IMT33A transmitters, Foxboro offers an innovative solution designed to meet the demands for all chemical applications such as:

- Clean liquids
- Mixing of chemicals
- Demanding applications including corrosive, abrasive liquids
- Rapid variation of the pH value
- For slurries and pastes with high solids content
- Drilling applications, mining slurries with large particles

9700A Electromagnetic Flowtube

With a wide range of sizes up to DN2000 / 80", the 9700A flowtube has been engineered and manufactured to successfully withstand the constraints of chemical applications.

Features

- Large variety of electrodes and liners, including ETFE, PTFE and PFA
- Suitable for high solids contents up to 70%
- Real solution for noisy applications with Low-noise electrodes, Spike filter and adjustable coil excitation frequency

Magnetic Flowmeter

Chemical and Process Industries

Magnetic Flow Transmitters - Features

IMT30A, IMT31A, IMT33A Transmitters

Freely interchangeable with standardized operating concept, the magneticflow transmitters IMT30A, IMT31A and IMT33A have been designed to provide the adjusted feature set to the application requirements.

Features

IMT30A – The basic feature set

- Integral or remote mounting with or without display
- 4-20mA, pulse, HART, Modbus
- Accuracy 0.5% of rate typical

IMT31A – The standard feature set

- Large and configurable graphic display
- 4-20mA, pulse, HART
- Resistance and noise measurement
- ATEX, IECEx, FM, CSA, EAC
- Accuracy 0.3% of rate typical

IMT33A – The extended feature set

- Large and configurable graphic display
- Explosion proof housing, Stainless Steel opt
- 4-20mA, pulse, HART, Modbus, FF, Profibus
- Suitable for fluid with up to 70% of solid content
- Complete suite of diagnostics
- Unique Virtual Grounding option
- ATEX, IECEx, FM, CSA, EAC, NEPSI
- Accuracy 0.2% of rate

IMT30A without and with display

IMT31A Compact 0°-version

IMT31A Compact 45°-version

IMT31A Wall

IMT33A Field

IMT33A Compact

FlowExpertPro

View our Flow Sizing Tool to help select and size your flowmeter.

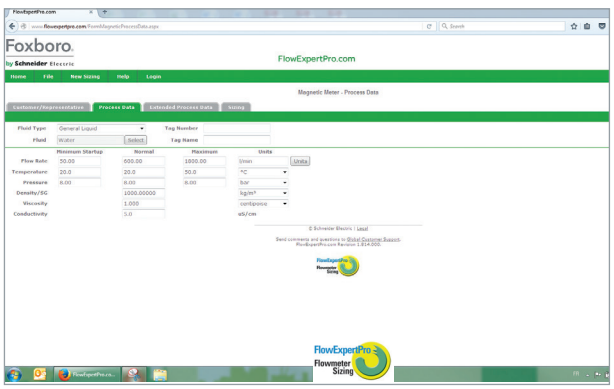
FlowExpertPro is a free, industry recognized, online sizing tool with a built-in library of 300 fluids.

www.flowexpertpro.com

FlowExpertPro Flowmeter Sizing

Apple

Android



Magnetic Flowmeter

Chemical and Process Industries

Magnetic Flowmeter for Chemical and Process industries - Business Value

Ease of Use

The unique construction and the user-friendly interface optimize the measure and simplify ordering, installation, and commissioning:

- Large visible display, for the operator's comfort and for an easy tracking of the process in the field
- 14 operating languages to avoid mis-interpretation during commissioning
- Compact transmitter with 2 angle mountings: 0° version, ideal for installation in vertical pipelines and 45° version for horizontal pipelines
- With their special coatings, the Low-Noise electrodes are designed to reduce the noise at the source of the measurement

Reliable

Robust and field-proven, the Foxboro magnetic flowmeter has been designed to "fit and forget".

- Tailored offer with three tiered transmitters and a wide range of sizes, electrodes and liners available to support the Chemical industry specifications
- Suitable for products with low conductivity, high solid content or entrained air
- New Virtual Grounding significantly increases process reliability by avoiding possible electrochemical reactions on the grounding electrodes, eliminating potential leak points, and isolating from unstable grounding on site
- Precise overview of the process and advanced reliability thanks to standard integrated diagnostics: testing of device functions, self-test on accuracy, linearity, flow-profile and application testing

Profitable

The flowmeter design delivers significant cost savings during planning, procurement, installation and training and improves profitability.

- Quick Startup configuration menu for standardized operating concept to save time during startup and commissioning
- Reduced losses thanks to a highly accurate measurement for blending, dosing or batching
- With the new Virtual Grounding, the grounding electrodes or rings can be left out, simplifying and reducing installation costs
- The full suite of diagnostics is a window into the process that provids great visibility to maintenance teams to build an accurate predictive maintenance

Specifications

Flowtube 9700A

Sizes:	3/8" - 80"/ DN10 - DN2000
Liners:	PFA, ETFE, PTFE, Polyurethane, Soft Rubber
Electrodes:	Hastelloy® C, Stainless Steel, Titanium
Flange material:	Carbon steel 37-c22/A105; stainless steel, DN 1.4404/316 L; stainless steel, DN 1.4571/316 Ti
Pressure class:	DIN EN 1092-1 PN6/PN10/PN16/PN25/PN40, JIS 10K/20K, ASME B16.5 150lbs/300lbs
Process temperature:	-40...+180°C / -40...+356°F for PFA and PTFE liners
Electrical certifications:	ATEX/IECEx II 2 GD Ex e ia mb IIC T6...T3 Gb II 2 (1) GD Ex db e [ia Ga] mb IIC T6…T3 Gb FM/CSA Class I Div. 2, Group A, B, C, D ; Class II Div. 2, Group F, G EAC, NEPSI
Protection Class:	IP66/67 - NEMA 4, 4X, 6; IP68 - NEMA 6P (option)
Accuracy:	0.5% ..... IMT30A (above 0.5 m/s) 0.3% ± 1 mm/s .. IMT31A 0.2% ± 1 mm/s ... IMT33A

Magnetic Flowmeter

Chemical and Process Industries

Transmitters IMT30A, IMT31A and IMT33A

	IMT30A	IMT31A	IMT33A
Ambient temperature	-40…+65°C / -40…+149°F	-40…+65°C / -40…+149°F	-40…+65°C / -40…+149°F
Electrical conductivity	≥ 5µS/cm (water ≥ 20µS/cm)	≥ 5µS/cm (water ≥ 20µS/cm)	≥ 1µS/cm (water ≥ 20µS/cm)
Repeatability	±0.1%	±0.1%	±0.1%
Outputs	Current output 4-20mA Pulse output (Active) Modbus RS485 Passive binary output	Current output 4-20mA Pulse output (Passive / NAMUR /Active) Binary output (passive / Active)	Current output 4-20mA Pulse output (Passive / NAMUR /Active) Modbus RS485 Binary output (Passive / Active)
Input connections	–	Binary / Control input (Passive)	Binary / Control input (Active / NAMUR / Passive) Current Input (Active / Passive)
Communication	HART, Modbus	HART	HART, Foundation Fieldbus, Modbus, Profibus PA
Power supply	100...230 VAC, 50/60 Hz 24 VDC	100...230 VAC, 50/60 Hz 24 VDC 24 VAC/DC	100...230 VAC, 50/60 Hz 12…24 VDC 24 VAC/DC
Power consumption	AC: 15 VA DC: 5.6 W	AC: 7 VA DC: 4 W	AC: 22 VA DC: 12 W
Electrical certifications	No certification	ATEX / IECEx Zone 1 “e” cFMus Class I Div 2 (US & Canada) cCSAus OL EAC	ATEX / IECEx Zone 1 “d” / “e” ATEX Zone 2 FM Class I Div 2 CSA Class I Div 2 cCSAus OL NEPSI Zone 1 “d” / “e” EAC
Virtual grounding	No	No	Yes
Protection category Compact Wall Field	 IP66, 67 - NEMA 4, 4X IP66, 67 - NEMA 4, 4X –	 IP66, 67 - NEMA 4, 4X IP66, 67 - NEMA 4, 4X –	 IP66, 67 - NEMA 4, 4X, 6 – IP66, 67 - NEMA 4, 4X, 6
Diagnostics	2 local counters Empty pipe detection	2 local counters Empty pipe detection Deposit on electrodes / short-circuit / corrosion Temperature Gas bubbles / solids	2 (optional 3) local counters Empty pipe detection Deposit on electrodes / short-circuit / corrosion Temperature Gas bubbles / solids Accuracy test Flow profile Partial filling

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