

# Smart Electromagnetic Flowmeters

# YAMATAKE



# Technology

# Portfolio

# Expertise

# Service

**YAMATAKE**

**E**lectromagnetic flowmeter applications can be much more complex than Faraday's electromagnetic conduction law implies. Successful implementation hinges on:

- proven technology
- broad instrument portfolio
- specialty flowmeter models for specific application and industry needs
- expert application assistance
- outstanding customer service

Yamatake America, Inc. (YAI) is dedicated to providing process instrumentation resources that will enhance your flowmeter and transmitter options.

YAI, an affiliate of the Yamatake Group, continues a 95 year tradition of engineering development and technical innovation. Yamatake flowmeters are operating in more than 100,000 loops worldwide – with more than 10,000 loops in North America alone.

Yamatake is recognized as an industry leader providing world class magnetic flowmeter technology. This team brings advanced technology, a comprehensive instrument product line, application experience, customer service and much more to the American market.

Combining Yamatake flowmeter technical development and portfolio breadth with YAI manufacturing precision, application expertise, and outstanding local customer support yields a single resource solely dedicated to measurement instrumentation.

Yamatake offers more than 100,000 magnetic flowmeter models and associated options. An overview of four major product line categories will give you a glimpse at the extensive portfolio. Call our toll free number 1- 888-2MAGNEW (1- 888-262-4639) or visit [www.yainc.net](http://www.yainc.net) for detailed model descriptions and specifications.

## MagneW PLUS Flowmeters

MagneW™ 3000 PLUS electromagnetic flowmeter series offers high performance and high reliability. MagneW flowmeters are available in sizes from 0.1 to 44 inch (2.5 to 1100mm) diameters, and integral and remote types. The large backlit LED display features three simultaneous values; percent flow rate (%), actual flow rate (GPM), and totalized value. The one-touch infrared ray sensor enables you to display parameter settings without opening the converter cover – saving time and reducing the converter electronics' exposure to harsh environments. The converter supports HART®, DE and FOUNDATION Fieldbus standards.

The detector body is fully welded stainless steel to ensure virtually maintenance-free operation, even in corrosive environments. Both flange and wafer pipe connection styles are offered. The PFA lining option withstands fluid temperatures up to 320° F (160° C) and process pressure up to 426 PSI (2.94MPa).

The patented mirror finish significantly reduces scaling. The PFA, ETFE and ceramic lined detectors also prolong operating life in high temperature, pressure and wear environments.



Some typical industry applications include:

- pulp and paper
- petroleum
- chemical
- petrochemical
- beverage
- public utilities

## High-Noise Immunity Flowmeters

The MagneW 3000 PLUS HENRI (High Energy Noise Resistant Instrument) is designed to mitigate noise effects in slurry applications. The proven high frequency pulsed DC excitation enables HENRI flowmeters to minimize noise-induced output fluctuations and to deliver a stable and accurate flow. The HENRI series is a remote type model, available from 1.5 to 16 inch (40 to 400mm) diameters.



Both the converter and the detector provide the same features as the MagneW 3000 PLUS. High-performance EFTE lining models extend operating life in abrasive environments common in pulp and paper and mining applications to more than 15 times that of PFA linings.

## Two-wire Flowmeters

Now you can dramatically reduce wiring costs through loop powered two-wire technology without sacrificing performance or accuracy. The MagneW Two-Wire PLUS (TWP) is significantly less costly to install and maintain than devices requiring four-wire cable runs. The TWP series also enables you improve performance by replacing alternate technology two-wire flow measurement instruments.

This series is available in integral and remote types and in 0.1 to 8 inch (2.5 to 200mm) diameters. Flange or wafer units are both available.



The TWP series features DE and HART communications capabilities. The LED displays three simultaneous values; percent flow rate (%), actual flow rate (GPM), and totalized value. Sample flow rate measurement applications are:

- cooling water
- drainage and waste liquid
- chemical solutions
- caustic or corrosive liquid
- medical fluids
- industrial or seawater

## Specialty Flowmeters

Yamatake offers numerous electromagnetic flowmeters designed to meet specific application requirements. Following is a brief overview of several of the general types.

**Open Channel** – The MagneW 3000 PLUS NNC series is designed for operation in open channels. Noted for maintenance-free operation, these units resist clogging or corrosion due to fluid suspensions or adherents. The plastic housing structure also provides a perfect seal, ensuring up to 30 years of service life. The linear flow signal yields a measuring accuracy from 100% to 0 flow rate. These models are available in sizes from 2 to 24 inch diameters (50 to 500mm).

**Submersible** – Submersible models offer the same features as the MagneW 3000 Plus and are designed for indefinite submersion (NEMA 6P/IEC IP68).



**Hyper-Fill** – Designed for high speed batching and filling operations, Hyper-Fill is optimized for repeatable high speed measurements. The space-efficient model enables four detectors and converters to share a single power supply, reducing the instrument footprint and simplifying installation and maintenance. Hyper-Fill is available in 0.5 inch (10mm) diameter.

# Specification Overview\*

## MagneW 3000 PLUS Specification Overview\*

### Converter

Type	Integral/Remote
Power Supply	90 to 264 VAC 50/60Hz 24 VDC
Structure	IEC IP66, NEMA 4X
Outputs	4-20 mA DC, Pulse, Contact options, HART, DE, FOUNDATION Fieldbus
Inputs	Contact inputs (2 max.)
Display	Green backlit display
Data Setting	Infrared touch sensor
Power Consumption	13W max.
Housing	Aluminum alloy
Ambient Temp.	-13 to +140°F (-25 to +60°C)
Ambient Humidity	5 to 100% RH
Mounting	Integral/Wall/2 in. (50mm) pipe
Elec. Conductivity	3 µS/cm minimum
Functions	Empty pipe detection, data setting protection, communication, etc.

### Detector

Diameter	0.1, 0.2, 0.4, 0.5, 1, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 24, 28, 32, 36, 40, 44 inch (2.5, 5, 10, 15, 25, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1000, 1100mm)
Type	Integral/Remote
Structure	IEC IP67 or IP68, NEMA 4X or 6
Pipe Connections	Flange/Wafer (ANSI 150/300, JIS 10/20/30K, DIN PN 10/16/25/40)
Face-to-face Dimensions	ISO standard dims., Yamatake standard dims., custom dims.
Electrodes	SS316L, Hastelloy C, Titanium, Zirconium, Tungsten carbide, Tantalum, Platinum/Iridium, others
Grounding Rings	SS316, Hastelloy C, Titanium, Zirconium, Tantalum, Platinum, others
Lining	PFA, ETFE, Ceramic (Al <sub>2</sub> O <sub>3</sub> ), Rubber
Housing	Stainless Steel 0.1 to 8 inch (2.5 to 200 mm) Carbon Steel 10 to 44 inch (250 to 1100 mm)
Fluid Temp.	-40 to +320° F (-40 to +160°C)
Ambient Temp.	-22 to +176° F (-30° to +80°C)
Ambient Humidity	5 to 100% RH

## MagneW HENRI Specification Overview\*

### Converter

Type	Remote
Power Supply	90 to 264 VAC 50/60Hz
Structure	IEC IP66, NEMA 4X
Outputs	4-20 mA DC, Pulse, Contact options, HART, DE, FOUNDATION Fieldbus
Inputs	Contact inputs (2 max.)
Display	Green backlit display
Data Setting	Infrared touch sensor
Power Consumption	30W max.
Housing	Aluminum alloy
Ambient Temp.	-13 to +122°F (-25 to +50°C)
Ambient Humidity	5 to 100% RH
Mounting	Wall/2 in. (50mm) pipe
Elec. Conductivity	20 µS/cm minimum
Functions	Empty pipe detection, data setting protection, communication, etc.

### Detector

Diameter	1.5, 2, 3, 4, 6, 8, 10, 12, 14, 16 inch (40, 50, 80, 100, 150, 200, 250, 300, 350, 400mm)
Type	Remote
Structure	IEC IP67, NEMA 4X
Pipe Connections	Flange/Wafer (ANSI 150/300, JIS 10/20/30K, DIN PN 10/16/25/40)
Face-to-face Dimensions	ISO standard dims., Yamatake standard dims., custom dims.
Electrodes	SS316L, Hastelloy C, Titanium, Zirconium, Tungsten carbide, Tantalum, Platinum/Iridium, others
Grounding Rings	SS316, Hastelloy C, Titanium, Zirconium, Tantalum, Platinum, others
Lining	PFA, ETFE
Housing	Stainless Steel 1.5 to 8 inch (40 to 200 mm) Carbon Steel 10 to 16 inch (250 to 400 mm)
Fluid Temp.	-40 to +320° F (-40 to +160°C)
Ambient Temp.	-22 to +176° F (-30° to +80°C)
Ambient Humidity	5 to 100% RH

## MagneW TWP Specification Overview\*

### Converter

Type	Integral/Remote
Loop Power	15.6 to 42 VDC
Structure	IEC IP67, NEMA 4X
Output	4-20 mA DC, Pulse, Contact Options, DE, HART
Display	LED main display, 7 segments, 8 digits, subdisplay 2 lines, 16 digits, simultaneously displays % flow rate, actual flow rate, totalized value
Data Setting	4 key switches, communications
Housing	Aluminum alloy with baked acrylic or epoxy paint
Ambient Temp.	-4 to +140°F (-20 to +60°C)
Ambient Humidity	10 to 90% RH
Mounting	Integral/Wall/2 in. (50mm) pipe
Elec. Conductivity	10 µS/cm minimum
Functions	Data setting protection, low flow cutoff setting, dropout setting

### Detector

Diameter	0.1, 0.2, 0.5, 1, 1.5, 2, 2.5, 3, 4, 6, 8 inch (2.5, 5, 10, 15, 25, 40, 50, 80, 100, 150, 200 mm)
Type	Integral/Remote
Structure	IEC IP67, NEMA 4X
Approvals	FM Explosion-proof**
Pipe Connections	Flange/Wafer ANSI 150/300, JIS 10/20/30K, DIN PN 10/16/25
Electrodes	SS316L, Hastelloy C, Titanium, Zirconium, Tantalum, Platinum/Iridium, others
Grounding Rings	SS316, Hastelloy C, Titanium, Zirconium, Tantalum, Platinum, others
Lining	PFA
Housing	304 Stainless Steel
Fluid Temp.	-4 to +266° F (-20 to +130°C)
Fluid Pressure	-14.2 to 426 PSI (-0.098 to 2.94MPa)
Ambient Temp.	-14 to +140° F (-20° to +60°C)

\* The specifications are a summary. Contact Yamatake America, Inc.,  
to request detailed specifications.

\*\* Pending at time of printing

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