A Leading Manufacturer & Supplier of Flow Meters

MAG Insertion Meters
UNIQUE FLOW METERS FOR THE 21ST CENTURY

The MAG Flow Sensors

The goal in development of the MAG line was to create flow sensors which were as simple and economical as paddlewheels, but without the limitations which have always accompanied moving parts. The result is a simple, modular insertion mag meter which has pulse output proportional to flow. This flow sensor can be connected directly to many controls (PLC, counter, cooling tower control) or it can be combined with any of the standard Hays modules for indication, 4-20 mA, data logging, or flow switching. For batching, the Hays FT520 is rugged and straightforward.

The mechanical system for insertion and adjustment is time-tested on the Hays TX and IP insertion turbines and paddlewheels, and has proven reliable over many years. For smaller pipe sizes, the MAG80-Series is non-adjustable and uses dedicated, calibrated fittings.

A low-current version and solar panel system are available for remote locations (see the back cover). The DL75 system can be used to log flow rates for weeks at a time, with data retrieval by means of a Palm-compatible PDA or laptop computer.

Hays Fluid Controls

Hays Fluid Controls began as Hays Manufacturing Company in Erie, P.A. in 1869, producing brass valves for oil, water and beer applications.

In 1946 Hays introduced solenoid valves and flow controls for industrial and defense uses.

In 1977 Hays moved to Gastonia, N.C. and in 1986 Romac Industries, a leading pipeline products manufacturer in Seattle purchased the company.

Over the years the product line evolved to more sophisticated defense and commercial off-the-shelf products such as:

- Manual and automatic flow controls
- Hose kits and piping packages fully assembled for quick installation
- Solenoid valves and ball valves
- Flow meters and flow computers
- Custom designed products for a wide range of special applications

MAG FLOW SENSORS

MAG 80 Series

These non-adjustable insertion magmeters use dedicated fittings for simplicity. When the sensor is inserted in the fitting and held in place by the retainer clip, it is automatically set to the correct depth. Low-flow performance and accuracy are superior to that of any mechanical flow sensor, with the additional benefit of having no moving parts to wear out. The output is a simple pulse train, which can be combined with any of the Hays signal processing modules or sent direct to a PLC.

The MAG80-Series mag sensors are available for pipe sizes of 1” to 8”, in brass, 316 stainless steel, and PVC materials.

Fittings

Meter Fittings for MAG 80 Series

The 80-Series flow sensors mate with a wide variety of fittings in PVC, bronze, stainless steel, and carbon steel. Styles include tees, saddles, and weld fittings. Turbine sensors take TF fittings, paddlewheels match up with MF fittings. Each fitting is individually wet-calibrated.

MAG 100/200 Series

Adjustable Insertion Magmeter

In order to fit a range of pipe sizes without dedicated fittings, the MAG100/200 mag sensors are depth-adjustable. The MAG101 fits any 1-1/2” pipe fitting (standard saddle, for instance) and adjusts to pipe sizes 3”-10”. The MAG201 can be adjusted to any pipe from 10” to 48”. Like all the other MAG mag sensors, these units accept any of the Hays modules to provide indication, 4-20 mA, logging, and flow switching. Alternatively, the sensor output can be connected directly to a PLC or other control. Standard materials are brass and 316 stainless steel.

MAG 115/215 Series

Hot-tappable Insertion Magmeter

For hot-tap applications, these units incorporate an isolation valve to allow installation and removal under pressure. This is useful for large water utility pipe and other applications where shutdown for installation or a possible meter cleaning is not an option.

The MAG115 accommodates pipe from 3” to 10”. The MAG215 extends the range to 48”. In most applications an installation tool is not necessary due to the relatively small tube diameter. Standard materials are brass and 316 stainless. The valve is brass on all models unless the unit is ordered with an optional stainless valve.

Magmeter Insertion Depth

The meter only extends approximately 1/8th of a diameter into the pipe, minimizing the potential for clogging due to debris.
Convenience and economy are the hallmarks of this versatile logger. It tracks rate and daily totals over a period of up to six months between readings. Data can be transferred without removing the unit, either with a laptop computer or a Palm OS PDA. Both PDA and personal computer software are provided.

This indicating transmitter features rate and total display and 4-20 mA output. In addition, it provides scaled pulse output for solenoid-driven pump pacing, a pulse pass-through for use with a remote PLC, and a programmable flow rate setpoint. For remote mounting, order the FT420W (wall mount) or FT420P (panel mount) housing.

For applications requiring 4-20 mA and no indication, this blind transmitter is exceptionally easy to scale. Setting is digital, using rotary switches to enter the desired top of the range (20 mA). This unit can also be mounted remotely. Order the AO55W (wall mount) housing.

This unit converts the mag flow sensor into a reliable flow switch which can be used on even very large pipe. Setting is digital, using rotary switches inside the housing. An indicator shows switch status. Remote mounting is possible by specifying the FS30W housing.

Add any of the modules to the right, to expand the capabilities of the MAG Sensors.
REMOTE LOCATION MONITORING
No moving parts
For installations for which line power is lacking, Hays has a low-power version of the MAG line. With a current draw of approximately 25 mA, these units can be powered by a relatively small solar/battery package, available as an accessory. Agricultural and water utility metering are the most common uses, but installations as diverse as golf courses and industrial waste treatment can benefit from the convenience of not requiring external power.

REMOTE SYSTEMS
A standard 10-watt solar panel/charger will power the MAG low-power sensor.
The low power MAG is ideal for radio-telemetry or SCADA systems.

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