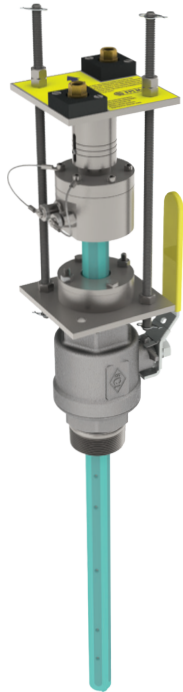


FPI Mag® Sensor



ProComm® GO Converter



The FPI Mag® (Full Profile Insertion) electromagnetic flow meter is the only hot tap full profile insertion flow meter available on the market. The FPI Mag installs without service interruption making it ideal for retrofits, upgrades and maintenance projects and sites never metered before. The hot tap installation significantly reduces installation time eliminating the need to de-water lines or cut pipe.

The multi-electrode sensor delivers an accurate measurement of the full pipe profile rivaling the performance of a full-bore mag meter. The repeatable, stable measurement across the entire flow profile compensates for variable flow profiles, including swirl and turbulent conditions.

The FPI Mag is the industry's most economical flow metering solution offering unbeatable value in the cost of installation and ownership reducing installed costs by more than 45 percent in medium and large line sizes. The compact insertion design fits in confined spaces and offers complete accessibility. The flow meter can be removed in pipes under pressure for easy inspection, cleaning, calibrating, or verification. Installation costs are reduced by eliminating the need for heavy equipment and extensive manpower.

The innovative flow meter comes pre-calibrated from McCrometer's NIST traceable calibration labs and requires no recalibration in the field. With no moving parts and a single-piece design, the FPI Mag's sensor contains nothing to wear or break and is generally immune to clogging by sand, grit, or other debris. The electrodes are encased in a heavy-duty 316 stainless steel sensor body for maximum structural integrity and coated with a NSF certified 3M™ fusion-bonded epoxy coating for operational longevity.

MUNICIPAL WATER AND WASTEWATER

The FPI Mag Full Profile Insertion mag meter supports the following water and wastewater treatment applications:

Water

- Distribution
- Effluent
- Filter balancing and backwash
- Pumping stations
- UV dosing
- Wells and booster stations

Wastewater

- Effluent
- Recycle / reclaim

The FPI Mag is ideal for chilled water in campus style facilities, hospitals, airports, hotels, casinos, etc.

INDUSTRIAL FACILITIES

The FPI Mag is also suitable for a variety of industrial facilities: power plants (including cogeneration), paper mills, chemical & petrochemical plants, metals & mining, and food & beverage.

Applications Include

- Cooling water
- Fire water
- Feed water
- Raw water
- Inlet to surge basin
- Effluent wastewater

Benefits:

- **Hot Tap Installation** - No service interruption
- **Accurate** – Measures the full flow profile
- **Lower Cost** – Installed savings more than 45%
- **Robust** – No moving parts to wear or break
- **Versatile** – Great for plant maintenance, upgrades and retrofits
- **Accessible** – Insertion design provides easy access
- **Virtually No Maintenance** – No field calibration required



PART NUMBER MATRIX FOR FPI MAG WITH PROCOMM GO CONVERTER

39	5	S	-	-	S	N	Q	B	3	--	2	1	-	--	-	--
Single or Bidirectional Flow																
Bidirectional Flow			4													
Single Forward Flow			5													
Meter Type																
Standard Length Sensor			S													
Custom Length Sensor			C													
Nominal Line Size																
	4 in	04														
	6 in	06														
	8 in	08														
	10 in	10														
	12 in	12														
	14 in	14														
	16 in	16														
	18 in	18														
	20 in	20														
	24 in	24														
	30 in	30														
	36 in	36														
	42 in	42														
	48 in	48														
	54 in	54														
	60 in	60														
	66 in	66														
	72 in	72														
	78 in	78														
	84 in	84														
	90 in	90														
	96 in	96														
	100 in	H0														
	110 in	H1														
	120 in	H2														
	130 in	H3														
Sensor Length Options																
	20" Sensor Length	020														
	21" Sensor Length	021														
	22" Sensor Length	022														
	Each nominal Inch Length	...														
	175" Sensor Length	###														

Continued on next page





PART NUMBER MATRIX FOR FPI MAG WITH PROCOMM GO CONVERTER (CONT.)

39	5	S	-	S	N	Q	B	3	--	2	1	-	--	-	--
Electrode Material Options															
S316 Stainless Steel (Standard) S															
Hastelloy H															
Ball Valve Options															
2" NPT N															
2" BSPT B															
No Valve 2" NPT X															
No Valve 2" BSPT Y															
Remote Mount Cable Connector Options															
25 ft Quick Connect (Standard) Q															
25 ft Strain Relief R															
Converter Power Options															
Battery Power (Standard) B															
Solar Power, Battery Backup S															
A/C Power, Battery Backup E															
DC Power, Battery Backup F															
Converter Output Options															
No Outputs (Standard) -															
No Outputs, DC Cable Only 0															
Two Digital Out 1															
4-20mA Analog only 2															
4-20mA Analog + Two Dig Out 3															
AMI Smart Output only 4															
AMI Smart Output + Two Dig Out 5															
AMI Smart Output + 4-20mA Analog 6															
AMI Smart Output + 4-20mA Analog + Two Dig Out 7															
DC Power/ Analog Out Cable Options															
No DC Power or Outputs (Standard) -															
No Cable - Output Configured (Quick Conn) 0															
6 ft (Open Leads) 1															
25 ft (Open Leads) 2															
50 ft (Open Leads) 3															
Pulse Cable Length Options															
No Outputs (Standard) -															
No Cable - Output Configured (Quick Conn) 0															
6 ft (Open Leads) 1															
25 ft (Open Leads) 2															
50 ft (Open Leads) 3															
25 ft (7-Pin Male connector for Telemetry) 4															
50 ft (7-Pin Male connector for Telemetry) 5															
Output Cable Terminal Options															
Strain Relief (Standard) 1															
Quick Connect Cable Terminals (25 & 50 ft only) 2															
Smart Output Protocol Options (*7 or 8 output option required)															
No AMI Outputs -															
Sensus Protocol (6ft cable, Nicor Connector hardwired only) SEN															
Itron 6 digit Protocol (6ft cable, Nicor Connector hardwired only) IT6															
Itron 9 digit [100W] Protocol (6ft cable, Nicor Connector hardwired only) IT9															
Neptune Protocol (6ft cable, Nicor Connector hardwired only) NEP															
Battery Power/ ATT wireless Telemetry System (RTU, Solar Panel, 7 Pin Cable) ATT															
Battery Power/ Verizon wireless Telemetry System (RTU, Solar Panel, 7 Pin Cable) VZW															
Hazardous Area Location															
Class 1, Division 2, Groups A-D, T5 HL															

FLOW METER SPECIFICATIONS

The full pipe averaging flow meter comes complete with Mounting Hardware, AC Converter with Dual 4-20mA output, 25 Feet of Dual Submersible Cables with quick connects at sensor, Stainless Steel Body, 316 Stainless Steel Electrodes, NSF Approved Fusion Bonded Epoxy Coating, 2" Stainless Steel Ball Valve (minimum of 1-7/8" port I.D.), 2" x Close Stainless Steel Nipple, 2-Year Warranty.

Measurement	
	Volumetric flow in filled flow conduits 4" (100 mm) to 138" (3,500 mm) utilizing insertable electromagnetic averaging sensor. Flow indication in English Standard or Metric units.
Flow Measurement	
Method	Electromagnetic
Calibrated accuracy for forward and bidirectional sensors	<ul style="list-style-type: none"> AC or DC power: $\pm 0.5\%$ of measured value ± 0.006 ft/s (± 0.0018 m/s) Battery power: $\pm 1\%$ of measured value ± 0.006 ft/s (± 0.0018 m/s) Reverse Flow: $\pm 1\%$ of measured value ± 0.006 ft/s (± 0.0018 m/s) <p>Note: See section "Flow Meter Pipe Sizes and Flow Ranges with ProComm Converter" for a table of velocities by pipe size.</p>
Linearity	0.3% of Range
Repeatability	0.2% of Reading
Direction measurement	<ul style="list-style-type: none"> 395 sensor - Forward flow measurement and reverse flow indication 394 sensor - bidirectional flow measurement
Materials	
Coating	Fusion bonded epoxy (NSF 61 approved) coated 316 stainless steel
Insertion hardware	316 Stainless Steel
Compression seal	Silicone Rubber
Sensor electrodes	316 Stainless Steel
Temperature Range	
Operation	-10 to 60°C (14 to 140°F) up to 250 PSI
Storage	-15 to 60°C (5 to 140° F)
	Note regarding storage: During freezing conditions and when meter is not in use, sensor must be removed from pipe and stored in dry conditions.
	Note: Damage to the sensor caused by allowing the sensor freeze in the pipe is not covered by the warranty.
Sensor Cable Lengths	
Standard	25'/7.6 m McCrometer supplied submersible cable with each remote mount unit.
Optional	Up to 500'/152.4 m, or 25'/7.6 m max for battery powered.
Quick Connect	Available in standard cable lengths: Feet: 25, 50, 75, 100, 125, 150, 175, 200, 500 Meters: 7.6, 15.25, 22.5, 30.5, 38.1, 45.75, 53.3, 61, 152.4 Custom cable lengths at additional cost.
Electrical Connections	
	<ul style="list-style-type: none"> Quick Connect Compression gland seals

IP Rating

Standard model	<ul style="list-style-type: none"> • Quick Connect (IP68) • Compression gland seals (IP68)
HL model	<ul style="list-style-type: none"> • Quick Connect (IP67) • Compression gland seals (IP67)

Sensor Submersibility Depth

With standard quick connect	1.8 m (6 ft.)
With optional strain relief cable	9 m (30 ft.)

Certifications and Approvals

Standard Model	<ul style="list-style-type: none"> • ISO 9001:2015 certified quality management system • Certified by MET to UL 61010-1 / CSA C22.2 No. 61010-1 • Certified to NSF / ANSI Standards*
HL Model	<ul style="list-style-type: none"> • ISO 9001:2015 certified quality management system • Certified by MET: Safety: UL61010-1 / CSA C22.2 No. 61010-1, Third Edition: Safety of Electrical Equipment For Measurement, Control, and Laboratory Use • Certified by MET: Standards: ANSI / ISA12.12.01 / CSA C22.2 No. 213, Nonincendive Electrical Equipment <ul style="list-style-type: none"> • Class I and II, Division 2 • Class III, Divisions 1 and 2 Hazardous (Classified) Locations • Certified to NSF / ANSI Standards*



* Certified by IAPMO R&T to NSF/ANSI 61 for material safety and NSF/ANSI 372 for low lead content.

Available System Options

- Hastelloy® electrodes
- Additional sensor cable up to 475' (500' max for model 395 and 200' max for model 394)
- Extension to hardware clearance
- Annual verification / calibration
- Sensor insertion tool
- Stainless steel ID tag

Note regarding cable length: McCrometer recommends minimizing cable length. Electromagnetic flow meters may have unfavorable signal strength to noise ratio in electrically noisy environments. Longer lengths of cable increase the likelihood of interference. In those cases where the meter's signal must be transmitted a long distance, or where the environment may be particularly noisy, we suggest using the converter's analog output(s). That allows locating the converter as close as possible to the metering location.

FLOW METER PIPE SIZES AND FLOW RANGES WITH PROCOMM GO CONVERTER
IMPERIAL UNITS

Pipe Size (Nominal)	Pipe ID Range		Flow Ranges (GPM Standard)		Standard Program Defaults ¹	Minimum Clearance Required During Installation ²	Velocity Range ³ (f/s)	
	Min Pipe ID	Max Pipe ID	Min (GPM) ¹	Max (GPM) ¹	20mA (GPM)			
S = Standard (Available in 395 models Pipe Sizes 4" - 24" as shown in table below) C = Custom (Available in all 394 and 395 models Pipe Sizes 4" - 138") Standard Length Hardware and Installation Clearance Dimensions are based on a 4" Maximum Height Coupling and Pipe Schedule Standard								
4"	3.74	4.99	20	1280	1280	51"	0.5 - 32	
6"	5.00	7.24	43	2800	2800	51"	0.5 - 32	
8"	7.25	9.24	78	5000	5000	55"	0.5 - 32	
10"	9.25	11.24	130	8000	8000	55"	0.5 - 32	
12"	11.25	12.99	180	11000	11000	59"	0.5 - 32	
14"	13.00	14.99	250	15000	15000	59"	0.5 - 32	
16"	15.00	16.75	320	20000	20000	59"	0.5 - 32	
18"	16.76	18.80	400	26000	26000	63"	0.5 - 32	
20"	18.81	22.74	500	28000	28000	63"	0.5 - 28	
24"	22.75	24.99	680	33000	33000	67"	0.5 - 23	
30"	25.00	33.99	1000	44000	44000	71.25"	0.5 - 20	
36"	34.00	39.99	1700	48000	48000	77.25"	0.5 - 15	
42"	40.00	45.99	2200	56000	56000	83.25"	0.5 - 13	
48"	46.00	51.99	2800	62000	62000	89.25"	0.5 - 11	
54"	52.00	57.99	3700	79000	79000	95.25"	0.5 - 11	
60"	58.00	63.99	4300	97000	97000	101.25"	0.5 - 11	
66"	64.00	69.99	5300	106000	106000	107.25"	0.5 - 10	
72"	70.00	75.99	6300	127000	127000	113.25"	0.5 - 10	
78"-128"	76.00	138.00	Available - Call Factory at 1-800-220-2279					

¹ Default totalizer units measured as KGAL.

² Hardware clearance after installation for all sizes is 28".

³ Flow temperature range -10° to 60° C (14° to 140° F) up to 250 PSI, max pressure is 250 psi.

! Required Information

At the time of ordering, please be prepared to provide the following information:

1. Pipe ID and Pipe OD
2. Unit of Measure (US Gallons is Default)
3. Maximum pressure
4. FPI Specification Data Sheet for custom length sensors

Consult factory if any chemicals are in use.

PROCOMM GO CONVERTER SPECIFICATIONS

Physical Specifications

Electronic Housing	Diecast aluminum, powder coated enclosure w/ tamper resistant seal, 6½" x 6½" x 43/8" tall
Converter Dimensions	See "Dimensions" section for meter mount and remote mount converter dimensions.
Power	Battery: Standard: three 3.6V lithium-thionyl chloride (Li-SOCl ₂) D size batteries with two AA backup batteries AC Power: 100-240VAC/45-66Hz (4W) DC Power: Linear power supply 10-35VDC (4 W)
Electrical Connections	<ul style="list-style-type: none"> • Optional shielded cable for 10-32VDC/4-20 mA output • Optional shielded cable for pulse out

Performance and Operational Specifications

Battery Life	Five-year expected battery life, five-year battery warranty
Location	Indoor or outdoor use
Altitude	Operating: 2000 meters Storage: 12,000 meters
Operating Temperature	-4° to 140° F (-20° to 60° C)
Storage Temperature	-4° to 140° F (-20° to 60° C)
Relative Humidity	0% to 100%
IP Rating	IP67 Die cast aluminum converter
Outputs	Digital output: Digital pulse (open collector) output for volumetric - Two isolated digital pulse (open collector) outputs for volumetric - AMI output Analog output: 4-20mA: Galvanically Isolated, 16 Bit resolution. All power configurations (including battery). ***** → Note: 9-30 VDC loop power required (not supplied via converter)

Display and Measurement

Display	<ul style="list-style-type: none"> • 2-Line LCD display (no backlight) • Non-volatile memory • Anti-reverse totalizer (standard) • Total (to 9 digits of precision) 	<ul style="list-style-type: none"> • Flow rate and velocity (to 5 digits of precision) • Two alarms: low battery and empty pipe (optional) • Opening lid activates display 			
Digits	5 Rate, 9 Total				
Units	GPM Gallons per minute MGD Mega gal per day CFS Cubic feet per second MLD Megaliters per day LPS Liters per second CMH Cubic meters per hour LPM Liters per minute GPH Gallons per hour	IGM Imperial gal per minute MI9 Miners inch (9G) MI1 Miners inch (11.22G) APD Acre feet per day KLH Kiloliters per hour LPH Liters per hour CMM Cubic meters per minute CFM Cubic feet per minute	CFM Cubic feet per minute B5M Barrels per minute (55G) B5H Barrels per hour (55G) B5D Barrels per day (55G) B4M Barrels per minute (42G) B4H Barrels per hour (42G) B4D Barrels per day (42G)		

Totalizer Units	GAL	Gallons	B42	Barrel (42G)	MH1	Miners	Inch	Hour
	CUF	Cubic Feet	B46	Barrel (46G)				(11.22G)
	AFT	Acre Feet	B55	Barrel (55G)	MD1	Miners	Inch Day	(11.22G)
	CUM	Cubic Meters	IMG	Imperial Gallon	MH9	Miners	Inch Hour	(9G)
	LIT	Liters	AIN	Acre Inch	MD9	Miners	Inch Day	(9G)
	MML	Megaliter	TON	Ton (Short)	KGL	Kilo Gallons		
	MTT	Metric Ton (KL)	MM1	Miners Inch Minute (11.22G)	MGL	Mega Gallons		
	B31	Barrel (31G)	MM9	Miners Inch Minute (9G)	IN3	Cubic Inch		

Data Logger Standard with all models, minimum of five years of data stored

Other Specifications

Options and Accessories

- Data Logger - included as standard with five years of data storage at default (12hr) interval. (Cable sold separately)
- AC, DC, and battery powered with battery backup powered available

Safety

- IEC 61010-1, Pollution Degree II
- Overvoltage protection Category III

Certifications

Standard Model

- ISO 9001:2015 certified quality management system
- Certified by MET to UL 61010-1 / CSA C22.2 No. 61010-1
- Certified to NSF / ANSI Standards*

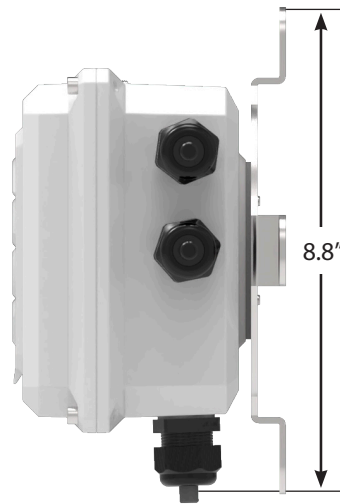
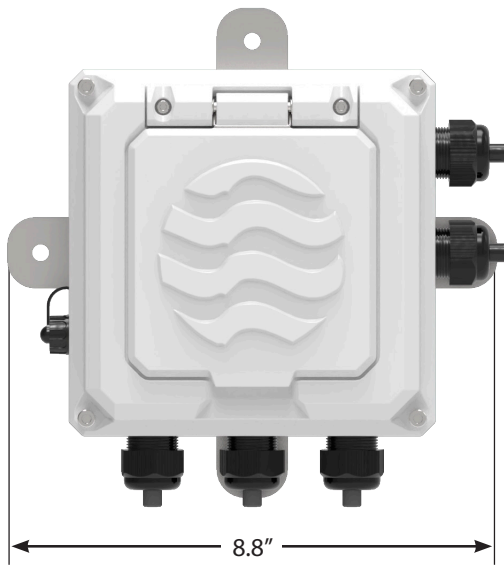
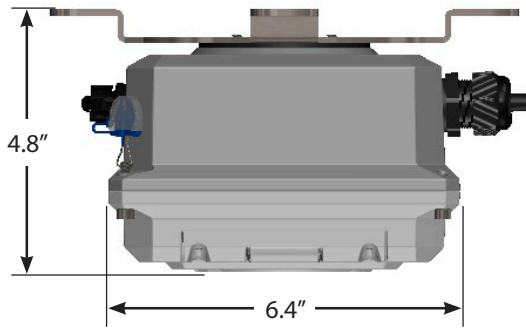
HL Model

- ISO 9001:2015 certified quality management system
- Certified by MET: Safety: UL61010-1 / CSA C22.2 No. 61010-1, Third Edition: Safety of Electrical Equipment For Measurement, Control, and Laboratory Use
- Certified by MET: Standards: ANSI / ISA12.12.01 / CSA C22.2 No. 213, Nonincendive Electrical Equipment
 - Class I and II, Division 2
 - Class III, Divisions 1 and 2 Hazardous (Classified)
- Locations
- Certified to NSF / ANSI Standards*



* Certified by IAPMO R&T to NSF/ANSI 61 for material safety and NSF/ANSI 372 for low lead content.

PROCOMM GO CONVERTER DIMENSIONS



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3255 WEST STETSON AVENUE • HEMET, CALIFORNIA 92545 USA
TEL: 951-652-6811 • 800-220-2279 • FAX: 951-652-3078
www.mccrometer.com

