

### FPI Mag® Sensor



### ProComm® Converter



### 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 CONVERTER**

39		-	-	-	-	-	-	-
Single or Bidirectional Flow								
Bidirectional Flow	4							
Single Forward Flow	5							
Meter Type (Calculated)								
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							

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

<b>39</b>	-	-	-	-	-	-	-	-
<b>Sensor Length Options (From Calc Sheet)</b>								
20" Sensor Length	020							
21" Sensor Length	021							
22" Sensor Length	022							
Each nominal Inch Length	...							
175" Sensor Length	##							
<b>Electrode Material Options</b>								
S316 Stainless Steel (Standard)	S							
Hastelloy	H							
<b>Ball Valve Options</b>								
2" NPT	N							
2" BSPT	B							
No Valve 2" NPT	X							
No Valve 2" BSPT	Y							
<b>Remote Mount Cable Connector Options</b>								
Quick Connect (Standard)	Q							
Strain Relief	R							
<b>Remote Cable Length Options</b>								
25 feet (Standard)	025							
50 feet	050							
75 feet	075							
100 feet	100							
125 feet	125							
150 feet	150							
175 feet	175							
200 feet	200							
500 feet	500							
<b>Converter Power Options</b>								
A/C Power	A							
DC Power	D							
<b>Converter Output Options</b>								
Dual 4-20mA Analog, Dual Digital (Standard)	1							
Modbus + STD (Two 4-20, two Dig)	2							
Hart + STD (Two 4-20, two Dig)	3							
Datalogger + STD (Two 4-20, two Dig)	4							
Datalogger + Modbus + STD (Two 4-20, two Dig)	5							
Datalogger + Hart + STD (Two 4-20, two Dig)	6							
AMI Smart Output + STD (Two 4-20, two Dig)	7*							
Datalogger + AMI Smart Output + STD (Two 4-20, two Dig)	8*							
<b>Smart Output Protocol Options (*7 or 8 output option required)</b>								
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							
<b>Hazardous Area Location</b>								
Class 1, Division 2, Groups A-D, T5	HL							



**PART NUMBER MATRIX FOR FPI MAG WITH PROCOMM GO CONVERTER**

<b>39</b>		-	-	-	-	-	-	-	-	-	-	-	-
<b>Single or Bidirectional Flow</b>													
	Bidirectional Flow	4											
	Single Forward Flow	5											
<b>Meter Type</b>													
	Standard Length Sensor	S											
	Custom Length Sensor	C											
<b>Nominal Line Size</b>													
	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											
<b>Sensor Length Options</b>													
	20" Sensor Length	020											
	21" Sensor Length	021											
	22" Sensor Length	022											
	Each nominal Inch Length	...											
	175" Sensor Length	###											
<b>Electrode Material Options</b>													
	S316 Stainless Steel (Standard)	S											
	Hastelloy	H											

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

39														
<b>Ball Valve Options</b>														
	2" NPT	N												
	2" BSPT	B												
	No Valve 2" NPT	X												
	No Valve 2" BSPT	Y												
<b>Remote Mount Cable Connector Options</b>														
	25 ft Quick Connect (Standard)	Q												
	25 ft Strain Relief	R												
<b>Converter Power Options</b>														
	Battery Power (Standard)	B												
	Solar Power, Battery Backup	S												
	A/C Power, Battery Backup	E												
	DC Power, Battery Backup	F												
<b>Converter Output Options</b>														
	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												
<b>DC Power/ Analog Out Cable Options</b>														
	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												
<b>Pulse Cable Length Options</b>														
	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												
<b>Output Cable Terminal Options</b>														
	Strain Relief (Standard)	1												
	Quick Connect Cable Terminals (25 & 50 ft only)	2												
<b>Smart Output Protocol Options (*7 or 8 output option required)</b>														
	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												
<b>Hazardous Area Location</b>														
	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

<b>Method</b>	Electromagnetic
<b>Calibrated accuracy for forward and bidirectional sensors</b>	<ul style="list-style-type: none"> <li>AC or DC power: <math>\pm 0.5\%</math> of measured value <math>\pm 0.006</math> ft/s (<math>\pm 0.0018</math> m/s)</li> <li>Battery power: <math>\pm 1\%</math> of measured value <math>\pm 0.006</math> ft/s (<math>\pm 0.0018</math> m/s)</li> <li>Reverse Flow: <math>\pm 1\%</math> of measured value <math>\pm 0.006</math> ft/s (<math>\pm 0.0018</math> m/s)</li> </ul> <p><b>Note:</b> See section "Flow Meter Pipe Sizes and Flow Ranges with ProComm Converter" for a table of velocities by pipe size.</p>
<b>Linearity</b>	0.3% of Range
<b>Repeatability</b>	0.2% of Reading
<b>Direction measurement</b>	<ul style="list-style-type: none"> <li>395 sensor - Forward flow measurement and reverse flow indication</li> <li>394 sensor - bidirectional flow measurement</li> </ul>

#### Materials

<b>Coating</b>	Fusion bonded epoxy (NSF 61 approved) coated 316 stainless steel
<b>Insertion hardware</b>	316 Stainless Steel
<b>Compression seal</b>	Silicone Rubber
<b>Sensor electrodes</b>	316 Stainless Steel

#### Temperature Range

<b>Operation</b>	-10 to 60°C (14 to 140°F) up to 250 PSI
<b>Storage</b>	-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.
	<b>Note: Damage to the sensor caused by allowing the sensor freeze in the pipe is not covered by the warranty.</b>

#### Sensor Cable Lengths

<b>Standard</b>	25'/7.6 m McCrometer supplied submersible cable with each remote mount unit.
<b>Optional</b>	Up to 500'/152.4 m, or 25'/7.6 m max for battery powered.
<b>Quick Connect</b>	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

- Quick Connect
- Compression gland seals

### IP Rating

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

### Sensor Submersibility Depth

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

### Certifications and Approvals

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



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

### 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 CONVERTER**  
**IMPERIAL UNITS**

Pipe Size (Nominal)	Pipe ID Range		Flow Ranges (GPM Standard)		Standard Program Defaults <sup>1</sup>	Minimum Clearance Required During Installation <sup>2</sup>	Velocity Range <sup>3</sup> (f/s)
	Min Pipe ID	Max Pipe ID	Min (GPM) <sup>1</sup>	Max (GPM) <sup>1</sup>	20mA (GPM)		
<b>S</b> = Standard (Available in 395 models Pipe Sizes 4" - 24" as shown in table below) <b>C</b> = 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	12	1280	1280	51"	0.3 - 32
6"	5.00	7.24	26	2800	2800	51"	0.3 - 32
8"	7.25	9.24	47	5000	5000	55"	0.3 - 32
10"	9.25	11.24	80	8000	8000	55"	0.3 - 32
12"	11.25	12.99	110	11000	11000	59"	0.3 - 32
14"	13.00	14.99	150	15000	15000	59"	0.3 - 32
16"	15.00	16.75	190	20000	20000	59"	0.3 - 32
18"	16.76	18.80	240	26000	26000	63"	0.3 - 32
20"	18.81	22.74	300	28000	28000	63"	0.3 - 28
24"	22.75	24.99	410	33000	33000	67"	0.3 - 23
30"	25.00	33.99	600	44000	44000	71.25"	0.3 - 20
36"	34.00	39.99	1000	48000	48000	77.25"	0.3 - 15
42"	40.00	45.99	1300	56000	56000	83.25"	0.3 - 13
48"	46.00	51.99	1700	62000	62000	89.25"	0.3 - 11
54"	52.00	57.99	2200	79000	79000	95.25"	0.3 - 11
60"	58.00	63.99	2600	97000	97000	101.25"	0.3 - 11
66"	64.00	69.99	3200	106000	106000	107.25"	0.3 - 10
72"	70.00	75.99	3800	127000	127000	113.25"	0.3 - 10
78"-128"	76.00	138.00	Available - Call Factory at 1-800-220-2279				

<sup>1</sup> Default totalizer units measured as KGAL.

<sup>2</sup> Hardware clearance after installation for all sizes is 28".

<sup>3</sup> 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.





**FLOW METER PIPE SIZES AND FLOW RANGES WITH PROCOMM CONVERTER**

**METRIC UNITS**

Pipe Size (Nominal) (mm)	Pipe ID Range		Flow Ranges (m <sup>3</sup> /h standard)		Standard Program Defaults <sup>1</sup>	Minimum Clearance Required During Installation (cm) <sup>2</sup>	Velocity Range <sup>3</sup> (m/s)
	Min Pipe ID (mm)	Max Pipe ID (mm)	Min (m <sup>3</sup> /h) <sup>1</sup>	Max (m <sup>3</sup> /h) <sup>1</sup>	20mA		
<b>S</b> = Standard (Available in 395 models pipe sizes 100 mm - 600 mm as shown in table below) <b>C</b> = Custom (Available in all 394 and 395 models pipe sizes 100 mm - 3,500 mm) Standard length hardware and installation clearance dimensions are based on a 100 mm maximum height coupling and pipe schedule standard							
DN100	95	127	3	290	135	129.5	0.1 - 10
DN150	127	184	6	635	295	129.5	0.1 - 10
DN200	184	235	11	1135	535	139.7	0.1 - 10
DN250	235	285	18	1815	900	139.7	0.1 - 10
DN300	286	330	25	2500	1250	149.9	0.1 - 10
DN350	330	381	35	3400	1700	149.9	0.1 - 10
DN400	381	425	45	4550	2150	149.9	0.1 - 10
DN450	426	478	55	5900	2700	160.0	0.1 - 10
DN500	478	578	70	6350	3400	160.0	0.1 - 8.5
DN600	578	635	95	7500	4650	170.2	0.1 - 7
DN750	635	863	135	10000	6800	181.0	0.1 - 6
DN900	864	1016	230	10900	8200	196.2	0.1 - 4.5
DN1050	1016	1168	295	12700	10200	211.5	0.1 - 4
DN1200	1168	1321	385	14000	12500	226.7	0.1 - 3.5
DN1350	1321	1473	500	18000	14750	241.9	0.1 - 3.5
DN1500	1473	1625	590	22000	18000	257.2	0.1 - 3.5
DN1650	1626	1778	725	24000	20500	272.4	0.1 - 3
DN1800	1778	1930	865	29000	22500	287.7	0.1 - 3
DN2000 and up	1931	3505	Available - Call Factory at 1-800-220-2279				

<sup>1</sup> Default totalizer units measured as m<sup>3</sup>.

<sup>2</sup> Hardware clearance after installation for all sizes is 700 mm.

<sup>3</sup> Flow temperature range -10° to 60° C (14° to 140° F) up to 17 bar, max pressure is 17 bar.

**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 (m<sup>3</sup> is default)
3. Maximum pressure
4. FPI specification data sheet for custom length sensors

Consult factory if any chemicals are in use.



**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 <sup>1</sup>	Minimum Clearance Required During Installation <sup>2</sup>	Velocity Range <sup>3</sup> (f/s)	
	Min Pipe ID	Max Pipe ID	Min (GPM) <sup>1</sup>	Max (GPM) <sup>1</sup>	20mA (GPM)			
<b>S</b> = Standard (Available in 395 models Pipe Sizes 4" - 24" as shown in table below) <b>C</b> = 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					

<sup>1</sup> Default totalizer units measured as KGAL.

<sup>2</sup> Hardware clearance after installation for all sizes is 28".

<sup>3</sup> 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.



**FLOW METER PIPE SIZES AND FLOW RANGES WITH PROCOMM GO CONVERTER**

**METRIC UNITS**

Pipe Size (Nominal) (mm)	Pipe ID Range		Flow Ranges (m <sup>3</sup> /h standard)		Standard Program Defaults <sup>1</sup>	Minimum Clearance Required During Installation (cm) <sup>2</sup>	Velocity Range <sup>3</sup> (m/s)
	Min Pipe ID (mm)	Max Pipe ID (mm)	Min (m <sup>3</sup> /h) <sup>1</sup>	Max (m <sup>3</sup> /h) <sup>1</sup>	20mA		
<b>S</b> = Standard (Available in 395 models pipe sizes 100 mm - 600 mm as shown in table below) <b>C</b> = Custom (Available in all 394 and 395 models pipe sizes 100 mm - 3,500 mm) Standard length hardware and installation clearance dimensions are based on a 100 mm maximum height coupling and pipe schedule standard							
DN100	95	127	5	290	135	129.5	0.15 - 10
DN150	127	184	10	635	295	129.5	0.15 - 10
DN200	184	235	18	1135	535	139.7	0.15 - 10
DN250	235	285	30	1815	900	139.7	0.15 - 10
DN300	286	330	41	2500	1250	149.9	0.15 - 10
DN350	330	381	57	3400	1700	149.9	0.15 - 10
DN400	381	425	73	4550	2150	149.9	0.15 - 10
DN450	426	478	91	5900	2700	160.0	0.15 - 10
DN500	478	578	114	6350	3400	160.0	0.15 - 8.5
DN600	578	635	154	7500	4650	170.2	0.15 - 7
DN750	635	863	227	10000	6800	181.0	0.15 - 6
DN900	864	1016	386	10900	8200	196.2	0.15 - 4.5
DN1050	1016	1168	500	12700	10200	211.5	0.15 - 4
DN1200	1168	1321	636	14000	12500	226.7	0.15 - 3.5
DN1350	1321	1473	840	18000	14750	241.9	0.15 - 3.5
DN1500	1473	1625	977	22000	18000	257.2	0.15 - 3.5
DN1650	1626	1778	1204	24000	20500	272.4	0.15 - 3
DN1800	1778	1930	1431	29000	22500	287.7	0.15 - 3
DN2000 and up	1931	3505	Available - Call Factory at 1-800-220-2279				

<sup>1</sup> Default totalizer units measured as m<sup>3</sup>.

<sup>2</sup> Hardware clearance after installation for all sizes is 700 mm.

<sup>3</sup> Flow temperature range -10° to 60° C (14° to 140° F) up to 17 bar, max pressure is 17 bar.

**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 (m<sup>3</sup> is default)
3. Maximum pressure
4. FPI specification data sheet for custom length sensors

Consult factory if any chemicals are in use.



**PROCOMM CONVERTER PART NUMBER MATRIX**

<b>PC</b>	-	-	-	-	-	-	-
<b>Converter Mounting Options</b>							
Remote Mount	R						
Meter Mount	M						
<b>Converter Power Options</b>							
A/C Power	A						
DC Power	D						
<b>Converter Output Options</b>							
Dual 4-20mA Analog, Dual Digital ( <i>Standard</i> )				1			
Modbus + STD (Two 4-20, two Dig)				2			
Hart + STD (Two 4-20, two Dig)				3			
Datalogger/BIV + STD (Two 4-20, two Dig)				4			
Datalogger/BIV + Modbus + STD (Two 4-20, two Dig)				5			
Datalogger/BIV + Hart + STD (Two 4-20, two Dig)				6			
AMI Smart Output + STD (Two 4-20, two Dig)				7*			
Datalogger/BIV + AMI Smart Output + STD (Two 4-20, two Dig)				8*			
<b>Smart Output Protocol Options (*7 or 8 output option required)</b>							
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		
ATT Wireless Telemetry System (RTU, Solar Panel, 15 ft 7 pin Cable)					ATT		
Verizon Wireless Telemetry System (RTU, Solar Panel, 15 ft 7 pin Cable)					VZW		
<b>Hazardous Area Location</b>							
Class 1, Division 2, Groups A-D, T5							HL



**PROCOMM GO CONVERTER PART NUMBER MATRIX**

<b>PG</b>	-	-	-	-	-	-	-	-	-	-
<b>Converter Mounting Options</b>										
Meter Mount Converter (Standard)		M								
Remote Mount		R								
<b>Converter Power Options</b>										
Battery Power (Standard)		B								
Solar Power, Battery Backup		S								
A/C Power, Battery Backup		E								
DC Power, Battery Backup		F								
<b>Converter Output Options</b>										
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								
<b>DC Power/ Analog Out Cable Options</b>										
No DC Power or Outputs (Standard)		-								
No Cable - Output Configured (Quick Conn)		0								
6 ft (Open Leads - Strain Relief)		1								
25 ft (Open Leads)		2								
50 ft (Open Leads)		3								
<b>Pulse Cable Length Options</b>										
No Outputs (Standard)		-								
No Cable - Output Configured (Strain Relief or 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								
<b>Output Cable Terminal Options</b>										
Strain Relief (Standard)		1								
Quick Connect (25 & 50 ft Cable length only)		2								
<b>Smart Output Protocol Options (*4 - 7 output option required)</b>										
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								
ATT Wireless Telemetry System (RTU, Solar Panel, 15 ft 7 pin Cable)		ATT								
Verizon Wireless Telemetry System (RTU, Solar Panel, 15 ft 7 pin Cable)		VZW								
<b>Hazardous Area Location</b>										
Class 1, Division 2, Groups A-D, T5										HL



**PROCOMM CONVERTER SPECIFICATIONS**

**Physical Specifications**

<b>Electronic Housing</b>	Diecast aluminum, powder coated enclosure w/ tamper resistant seal	
<b>Converter Dimensions</b>	Remote Mount: Height: 7.3" (18.5 cm) Width: 8.5" (21.6 cm) Depth: 4.3" (10.9 cm)	
	Meter Mount: Height: 6.9" (17.5 cm) Width: 7.2" (18.25 cm) Depth: 6.2" (15.7 cm)	
<b>Power</b>	AC Power: 100-240 VAC / 45-66 Hz (10 W)	Note: AC or DC must be specified at time of ordering.
	DC Power: 12-48 VDC (10 W)	
<b>Connection Options</b>	<ul style="list-style-type: none"> <li>• Compression gland seals for 0.24" to 0.47" diameter round cable</li> <li>• Conduit option: 1/2" NPT threaded connections</li> </ul>	
<b>Galvanic Isolation</b>	All inputs / outputs are galvanically isolated from power supply up to 500 V	
<b>Conductivity</b>	Minimum conductivity of 5µS/cm	

**Performance and Operational Specifications**

<b>Accuracy</b>	<ul style="list-style-type: none"> <li>• ±0.5% from 1 f/s to max velocity, up to ±1% for 0.3 to 1 f/s</li> <li>• ±1% for reverse flow</li> </ul>		
<b>Location</b>	Indoor or outdoor use		
<b>Operating and Storage Temperature</b>	-4° to 140° F (-20° to 60° C)		
<b>IP Rating</b>	IP67 Die cast aluminum converter (only when connected using compression gland seals)		
<b>Standard Outputs</b>	Dual 4-20mA Outputs: Galvanically isolated and fully programmable for zero and full scale (0-21mA rangeability)		
	Two separate digital programmable outputs: open collector transistor usable for pulse, frequency, or alarm settings.		
<b>Optional Outputs</b>	<ul style="list-style-type: none"> <li>• Volumetric Pulse</li> <li>• Flow Rate (Frequency)</li> <li>• Hardware Alarm</li> <li>• High/Low Flow Alarms</li> <li>• Empty Pipe</li> <li>• Directional Indication</li> </ul>	<ul style="list-style-type: none"> <li>• Range Indication</li> <li>• Maximum switching voltage: 40 VDC</li> <li>• Maximum switching current: 100mA</li> </ul>	<ul style="list-style-type: none"> <li>• Maximum switching frequency: 1250 Hz</li> <li>• Insulation from other secondary circuits: 500V</li> </ul>
	<ul style="list-style-type: none"> <li>• Modbus</li> <li>• HART</li> </ul>	<ul style="list-style-type: none"> <li>• Smart Output™ (Sensus, Itron 6, Itron 9)</li> </ul>	<ul style="list-style-type: none"> <li>• Datalogger</li> <li>• Built-in verification</li> </ul>

**Display and Measurement**

<b>Keyboard and Display</b>	Can be used to access and change set-up parameters using six membrane keys and an LCD display		
<b>Engineering Units</b>	<ul style="list-style-type: none"> <li>• Cubic Meter</li> <li>• Cubic Centimeter</li> <li>• Milliliter</li> <li>• Liter</li> <li>• Cubic Decimeter</li> <li>• Decaliter</li> <li>• Hectoliter</li> <li>• Cubic Inches</li> </ul>	<ul style="list-style-type: none"> <li>• US Gallons</li> <li>• Imperial Gallons</li> <li>• Cubic Feet</li> <li>• Kilo Cubic Feet</li> <li>• Standard Barrel</li> <li>• Oil Barrel</li> <li>• US Kilogallon</li> <li>• Ten Thousands of Gallons</li> </ul>	<ul style="list-style-type: none"> <li>• Imperial Kilogallon</li> <li>• Acre Feet</li> <li>• Megagallon</li> <li>• Imperial Megagallon</li> <li>• Hundred Cubic Feet</li> <li>• Megaliters</li> </ul>

**PROCOMM CONVERTER SPECIFICATIONS (CONT.)**

**Other Specifications**

**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\*



**IMPORTANT**

Electrical safety certifications above do not apply to model 282L Single Point Insertion (SPI Mag) Electromagnetic Flow Meter.



**IMPORTANT**

Refer to certification requirements. Do not substitute components.



**IMPORTANT**

The ProComm converter, models PC-RA1-HL series and PC-MA1-HL series have no user serviceable parts.



**PROCOMM GO CONVERTER SPECIFICATIONS**

**Physical Specifications**

<b>Electronic Housing</b>	Diecast aluminum, powder coated enclosure w/ tamper resistant seal, 6½" x 6½" x 43/8" tall
<b>Converter Dimensions</b>	See "Dimensions" section for meter mount and remote mount converter dimensions.
<b>Power</b>	<b>Battery:</b> Standard: three 3.6V lithium-thionyl chloride (Li-SOCI2) D size batteries with two AA backup batteries <b>AC Power:</b> 100-240VAC/45-66Hz (4W) <b>DC Power:</b> Linear power supply 10-35VDC (4 W)
<b>Electrical Connections</b>	<ul style="list-style-type: none"> <li>• Optional shielded cable for 10-32VDC/4-20 mA output</li> <li>• Optional shielded cable for pulse out</li> </ul>

**Performance and Operational Specifications**

<b>Battery Life</b>	Five-year expected battery life, five-year battery warranty
<b>Location</b>	Indoor or outdoor use
<b>Altitude</b>	Operating: 2000 meters Storage: 12,000 meters
<b>Operating Temperature</b>	-4° to 140° F (-20° to 60° C)
<b>Storage Temperature</b>	-4° to 140° F (-20° to 60° C)
<b>Relative Humidity</b>	0% to 100%
<b>IP Rating</b>	IP67 Die cast aluminum converter
<b>Outputs</b>	<b>Digital output:</b> Digital pulse (open collector) output for volumetric - Two isolated digital pulse (open collector) outputs for volumetric - AMI output  <b>Analog output:</b> 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**

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





# Specification Sheet

## FPI Mag Flow Meter with Converter

<b>Totalizer Units</b>	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		
	<b>Data Logger</b>	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**

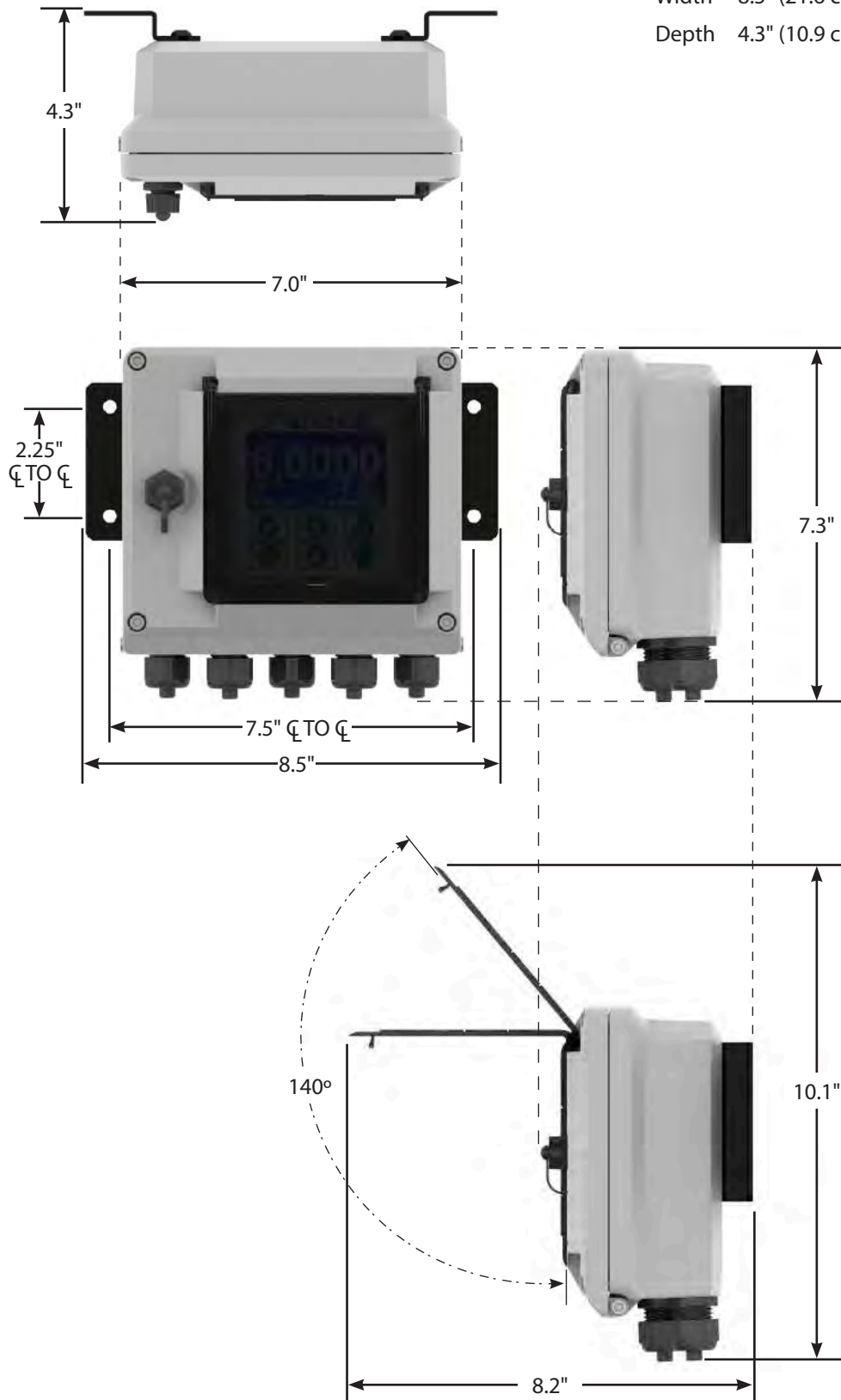
- ISO 9001:2015 certified quality management system
- Certified by MET: Safety: UL61010-1 / CSA C22.2 No. 61010-1, Third Edition: Safety of Electrical Equipment For Measurement, Control, and Laboratory Use
- Certified by MET: Standards: ANSI / ISA12.12.01 / CSA C22.2 No. 213, Nonincendive Electrical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



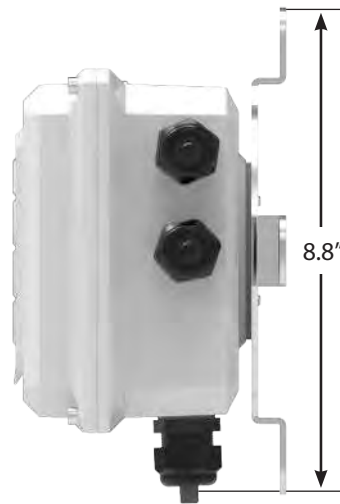
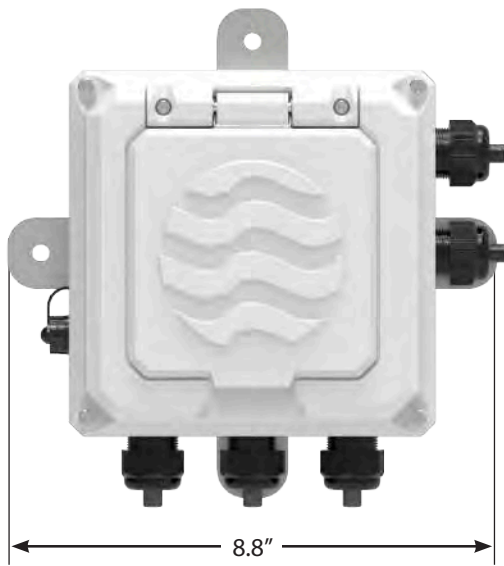
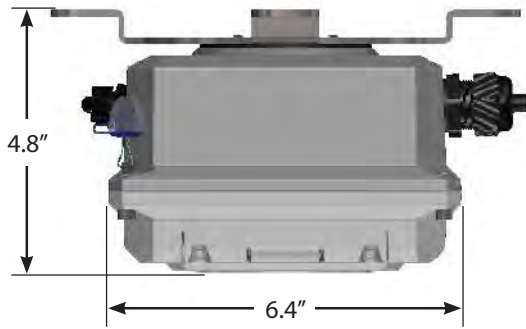
\* Certified by IAPMO R&T to NSF/ANSI 61 for material safety and NSF/ANSI 372 for low lead content.

**PROCOMM CONVERTER DIMENSIONS**

Height 7.3" (18.5 cm)  
 Width 8.5" (21.6 cm)  
 Depth 4.3" (10.9 cm)



**PROCOMM GO CONVERTER DIMENSIONS**



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