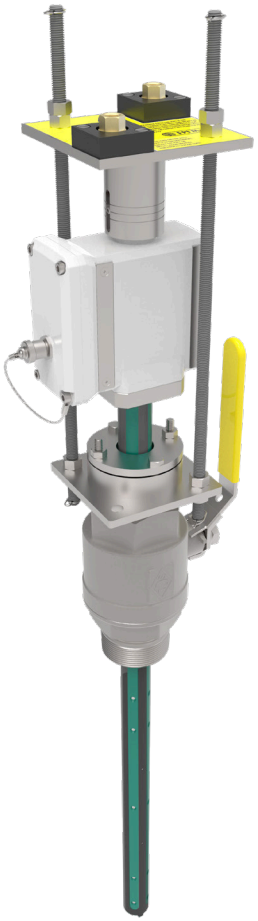
FPI Mag™ Plus

FPI Mag Plus 3000
FPI Mag Plus 5000
Flow Meter Specification Sheet



Applications

FPI Mag Plus 3000 and 5000 Series flow meters are intended exclusively for clean water applications. These can include:

- Well Water
- Potable Water
- Pump Stations
- Rate-of-Flow Control
- Raw Water Transmission
- Distribution
- Effluent
- Filter balancing and backwash
- Pumping stations
- UV dosing
- Wells and booster stations

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

Performance Advantages

- Hot tapped for quick, simple installation
- Measures the full profile, not just a single point
- High accuracy, FPI Mag Plus 5000 +/- 0.5%
- FPI Mag Plus 3000 +/- 1%
- Bi-directional flow indication and measurement
- Maintenance free
- Wide flow range
- Available from 4" – 138"

Features

No Service Interruption for Installation

The FPI Mag Plus® (Full Profile Insertion) electromagnetic flow meter is the only rugged steel shaft, hot tap full profile insertion flow meter available on the market. The FPI Mag Plus installs without service interruption making it ideal for retrofits, upgrades and maintenance projects and sites not previously metered. The hot tap installation significantly reduces installation time; eliminating the need to de-water lines or cut pipe.

Accurate Measurement

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.

McCrometer

An Economical Metering Solution

The FPI Mag Plus 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, calibration, or verification. Installation costs are reduced by eliminating the need for heavy equipment and extensive manpower.

Durability and Longevity

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 Plus'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.

Signal Conversion and Transmission

The signal converter is where the raw flow data is converted into calibrated, usable output parameters for display and transmission through the transmitter. This allows the measurements, functional programming, and data logs to be communicated through the display visually and through external connections to transmit both wired and wirelessly to external devices and networks. There are two different models used in various applications; both are available as either meter or remote mount.

ProComm Go Transmitter

The FPI Mag Plus 3000 flow meter is accompanied by the ProComm GO electronics and can be battery powered, ideal for remote installations and locations with unreliable power sources.

- Output options include pulse, 4-20mA, Modbus, and telemetry
- Battery powered with optional solar, AC or DC power with battery backup
- Offering ±1% accuracy
- DIY battery replacement and in-field programming available via USB cable and laptop
- UL, CSA certifications

ProComm Max Transmitter

The FPI Mag Plus 5000 is offered with the ProComm Max electronics, offering greater accuracy and more sophisticated output options for users needing superior system integration and data collection.

- Output options include Digital Pulse, 4-20mA, Hart, Modbus, and Ethernet IP
- Datalogger and optional AMI/AMR
- Optional Class 1 Div 2
- AC/DC powered
- ±0.5% standard accuracy, ±0.2% optional
- Bi-directional flow standard
- Rated to 140F for high temperatures
- CE, UL, CSA certification

Installation

- **Hot Tap Installation** - No service interruption
- **Pipe Run Requirements** - Pipe run requirements for the FPI Mag Plus sensor can vary, depending on the disturbances in the pipe run. See FPI Mag Plus flow meter manual 30126-03 or 30126-04, step 3 of the installation procedure for a table of upstream and downstream straight-pipe run recommendations.

FPI Mag Plus Flow Meter Specifications

All specifications apply to both FPI Mag Plus 3000 and FPI Mag Plus 5000 models except where noted.

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.

Physical Specifications

Measurement	Electromagnetic
Directionality	Forward and reverse
Pipe Sizes	Up to 138"
Body Style	Full profile insertion
Materials	• 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
Coating	Fusion bonded epoxy (NSF 61 approved) coated 316 stainless steel
Electrodes	316 Stainless Steel, Hastelloy optional
Electrical Connections	Quick Connect
Electronics	• FPI Mag Plus 3000: ProComm GO electronics • FPI Mag Plus 5000: ProComm Max transmitter
Electronics Mount	Remote mount only
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 quick connect cable lengths at additional cost.
Insertion Hardware	316 Stainless Steel
Compression Seal	Silicone Rubber

Performance and Operational Specifications

Measurement Method	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.
Direction Measurement	• 395 sensor: Forward flow measurement and reverse flow indication • 394 sensor: Bidirectional flow measurement
Operating Temperature	-10 to 93°C (14 to 200°F) up to 250 PSI
Storage Temperature	-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.**
IP Rating	• Standard model: Quick Connect (IP68) • HL model: Quick Connect (IP67)

FPI Mag Plus Flow Meter Specifications (cont.)

Sensor Submersibility Depth	With standard quick connect: 9 m (30 ft.)
Velocity Range	See following pages flow velocity ranges by line size for each type of electronics.
Calibrated accuracy for forward and bidirectional sensors	• ProComm Max Electronics: ±0.5% of measured value ±0.006 ft/s (±0.0018 m/s) • ProComm Go Electronics : ±1% of measured value ±0.006 ft/s (±0.0018 m/s) • Reverse Flow: ±1% of measured value ±0.006 ft/s (±0.0018 m/s)
Linearity	0.3% of Range
Repeatability	0.2% of Reading
Pipe Run Requirements	Pipe run requirements for the FPI Mag Plus sensor can vary, depending on the disturbances in the pipe run. See FPI Mag Plus flow meter manual 30126-03 or 30126-04, step 3 of the installation procedure for a table of upstream and downstream straight-pipe run recommendations.

Other Specifications

Certifications and Approvals	**FPI Mag Plus 3000**
	Standard model:
	• ISO 9001:2015 certified quality management system
	• Certified by MET to UL 61010-1
	• Certified to NSF / ANSI Standards*
	HL Model:
	• ISO 9001:2015 certified quality management system
	• Certified by MET to UL 61010-1 and MET C22.2 No. 61010-1-04
	  • Class I, Division 2, Groups A-D, T4
	  • Class I, Zone 2, IIC T4
	• Certified to NSF / ANSI Standards*

	FPI Mag Plus 5000 • ISO 9001:2015 certified quality management system • Certified to NSF / ANSI Standards*
System Options	• Hastelloy electrodes • Annual verification / calibration • Stainless steel ID tag
Meter Options and Accessories	• Sensor insertion tool • Extension to hardware clearance • Additional sensor cable up to 475' (500' max for model 395 and 200' max for model 394)
Warranty	2 years

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

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 transmitter as close as possible to the metering location.

Flow Meter Pipe Sizes and Flow Ranges with ProComm Go Electronics

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.

Flow Meter Pipe Sizes and Flow Ranges with ProComm Go Electronics

Metric Units

Pipe Size (Nominal) (mm)	Pipe ID Range		Flow Ranges (m^3/h standard)		Standard Program Defaults[1]	Minimum Clearance Required During Installation (cm)[2]	Velocity Range[3] (m/s)
	Min Pipe ID (mm)	Max Pipe ID (mm)	Min (m^3/h)[1]	Max (m^3/h)[1]	20mA		
S = Standard (Available in 395 models pipe sizes 100 mm - 600 mm as shown in table below) **C** = 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				

[1] Default totalizer units measured as m^3.

[2] Hardware clearance after installation for all sizes is 700 mm.

[3] 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^3 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 Max Transmitter

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	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				

[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.

Flow Meter Pipe Sizes and Flow Ranges with ProComm Max Transmitter

Metric Units

Pipe Size (Nominal) (mm)	Pipe ID Range		Flow Ranges (m^3/h standard)		Standard Program Defaults[1]	Minimum Clearance Required During Installation (cm)[2]	Velocity Range[3] (m/s)
	Min Pipe ID (mm)	Max Pipe ID (mm)	Min (m^3/h)[1]	Max (m^3/h)[1]	20mA		
S = Standard (Available in 395 models pipe sizes 100 mm - 600 mm as shown in table below) **C** = 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				

[1] Default totalizer units measured as m^3.

[2] Hardware clearance after installation for all sizes is 700 mm.

[3] 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^3 is default)
3. Maximum pressure
4. FPI specification data sheet for custom length sensors

Consult factory if any chemicals are in use.

FPI Mag Plus 3000 Part Number Matrix

FI339			-										-		-		-	
Single or Bidirectional Flow																		
Bidirectional Flow	4																	
Single Forward Flow	5																	
Standard or Customer Length Sensor																		
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**														
Each nominal Inch Length				**XXX**														
175" Sensor Length				**175**														
Electrode Material Options																		
S316 Stainless Steel *(Standard)*					**S**													
Hastelloy					**H**													

FPI Mag Plus 3000 Part Number Matrix (cont.)

FI339 -														-		-		-	
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	Q																		
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																
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														
Output Cable Terminal Options																			
No Output Cables																			
Strain Relief						1													
Quick Connect Cable Terminals						2													
Smart Output Protocol / SmartTrax Options																			
No AMI Outputs/SmartTrax Options																			
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												
SmartTrax: Built-in Telemetry							STX												
6 ft SmartTrax Standalone Unit ExactRead Cable (Strain Relief Only)							S06												
25 ft SmartTrax Standalone Unit ExactRead Cable (Strain Relief Only)							S25												
50 ft SmartTrax Standalone Unit ExactRead Cable (Strain Relief Only)							S50												
No Batteries, Battery Tray Options																			
Includes Batteries (*Standard*)																			
No Batteries (Alkaline Tray)																NBA			
No Batteries (Lithium Tray)																NBL			
Hazardous Area Location																			
No Hazardous Location Needed																			
Class 1, Division 2, Groups A-D, T5																			HL

FPI Mag Plus 5000 Part Number Matrix

FI539				-									-		-		-	
Single or Bidirectional Flow																		
Bidirectional Flow	4																	
Single Forward Flow	5																	
Standard or Customer Length Sensor																		
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															
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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													
Each nominal Inch Length					XXX													
175" Sensor Length					175													
Electrode Material Options																		
S316 Stainless Steel *(Standard)*						S												
Hastelloy						H												

FPI Mag Plus 5000 Part Number Matrix (cont.)

FI539	-								-		-		-	
Ball Valve Options														
2" NPT	N													
2" BSPT	B													
No Valve 2" NPT	X													
No Valve 2" BSPT	Y													
Cable Connector Options														
Quick Connect		Q												
Remote Cable Length Options														
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											
Transmitter Power Options														
A/C Power				A										
DC Power				D										
Transmitter Analog/Hart Output Options														
Single 4-20mA Analog, Dual Digital *(Standard)*					1									
Dual 4-20mA Analog, Dual Digital					2									
1 Hart 4-20mA Analog, 1 Standard 4-20mA Analog, Dual Digital					3									
Transmitter Output Protocol Options														
No Digital Protocol Outputs														
Modbus Protocol						MOD								
Ethernet IP Protocol (TCP/IP Card only)						EIP								
Output Protocol Types														
No Digital outputs														
RTU (RS485) Output (Modbus)							R							
TCP/IP Output (Modbus, Ethernet IP)							E							
Smart Output Protocol / SmartTrax Options														
No AMI Outputs/SmartTrax Options														
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						
6 ft SmartTrax Standalone Unit ExactRead Cable (Strain Relief Only)								S06						
25 ft SmartTrax Standalone Unit ExactRead Cable (Strain Relief Only)								S25						
50 ft SmartTrax Standalone Unit ExactRead Cable (Strain Relief Only)								S50						
Hazardous Area Location														
No Hazardous Location Needed														
Class 1, Division 2, Groups A-D, T5														HL

ProComm Go Transmitter Specifications

Physical Specifications

Electronic Housing	Diecast aluminum, powder coated enclosure w/ tamper resistant seal, 6½" x 6½" x 43/8" tall
Transmitter Dimensions	See "Dimensions" section for meter mount and remote mount transmitter dimensions.
Power	**Battery:** Standard: three 3.6V lithium-thionyl chloride (Li-SOCI2) 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	• 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 transmitter
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 transmitter)

Display and Measurement

Display	• 2-Line LCD display (no backlight) • Non-volatile memory • Anti-reverse totalizer (standard) • Total (to 9 digits of precision)	• 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	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		

ProComm Go Transmitter Specifications (cont.)

Display and Measurement (cont.)

Totalizer Units

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

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
- CE
- Certified by MET to UL 61010-1

HL Model

- ISO 9001:2015 certified quality management system
- CE
- Certified by MET to UL 61010-1 and MET C22.2 No. 61010-1-04
  - Class I, Division 2, Groups A B C D, T4
  - Class I, Zone 2, IIC T4

Note: ProComm GO with SmartTrax On Board is not available for hazardous locations.

ProComm Max Transmitter Specifications

Physical Specifications

Electronic Housing	Diecast aluminum, powder coated enclosure w/ tamper resistant seal
Transmitter Dimensions	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)
Power	AC Power: 100-240 VAC / 47-66 Hz (10 W) DC Power: 10-35 VDC (10 W) Note: AC or DC must be specified at time of ordering.
Connection Options	Conduit option: 1/2" NPT threaded connections
Galvanic Isolation	All outputs are galvanically isolated from power supply up to 500 V
Conductivity	Minimum conductivity of 5µS/cm

Performance and Operational Specifications

Location	Indoor or outdoor use
Operating and Storage Temperature	-4° to 140° F (-20° to 60° C)
IP Rating	IP67 Die cast aluminum transmitter
Standard Outputs	Single 4-20mA (standard). Galvanically isolated and fully programmable for zero and full scale. A second 4-20mA is available. Two separate digital programmable outputs: open collector transistor usable for pulse, frequency, or alarm settings. • Volumetric Pulse • Range Indication • Maximum switching voltage: 35 VDC • Maximum switching current: 100mA • Insulation from other secondary circuits: 500V
Optional Outputs	• Modbus • HART • Ethernet IP • Datalogger • Smart Output™ (Sensus, Itron 6, Itron 9)

Display and Measurement

Keyboard and Display	Can be used to access and change set-up parameters using six membrane keys and an LCD display

Units

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

Other Specifications

- ISO 9001:2015 certified quality management system
- CE

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