

DESCRIPTION

McCrometer's Dura Mag is the easy choice for tough applications. With a 5-year meter warranty and a 5-year battery life, Dura Mag eliminates the need for AC power connection while providing the easiest installation possible for a flanged mag flow meter.

The meter is available to fit a common range of irrigation line sizes, from 2" to 12" diameter pipe. Dura Mag offers accuracy of +/- 1% with minimal upstream and downstream straight pipe required for most installations, all with the durability that customers have come to expect from McCrometer for over 65 years.

The integrated electronic converter is secured with tamper evident screws. The meter offers flow rate and totalizer with a 5-year battery warranty. Dura Mag features three 3.6V lithium-thionyl chloride (Li-SOCI₂) D size batteries, with two AA batteries serving as back-up power. The main power batteries are easily replaced in the field.

Pulse, 4-20mA, and AMI output are available for remote meter reading or SCADA. Dura Mag is compatible with McCrometer CONNECT wireless systems, which allows users to access flow data by simply logging on to the Internet. This eliminates costly manual meter reading.

KEY APPLICATIONS - Agriculture

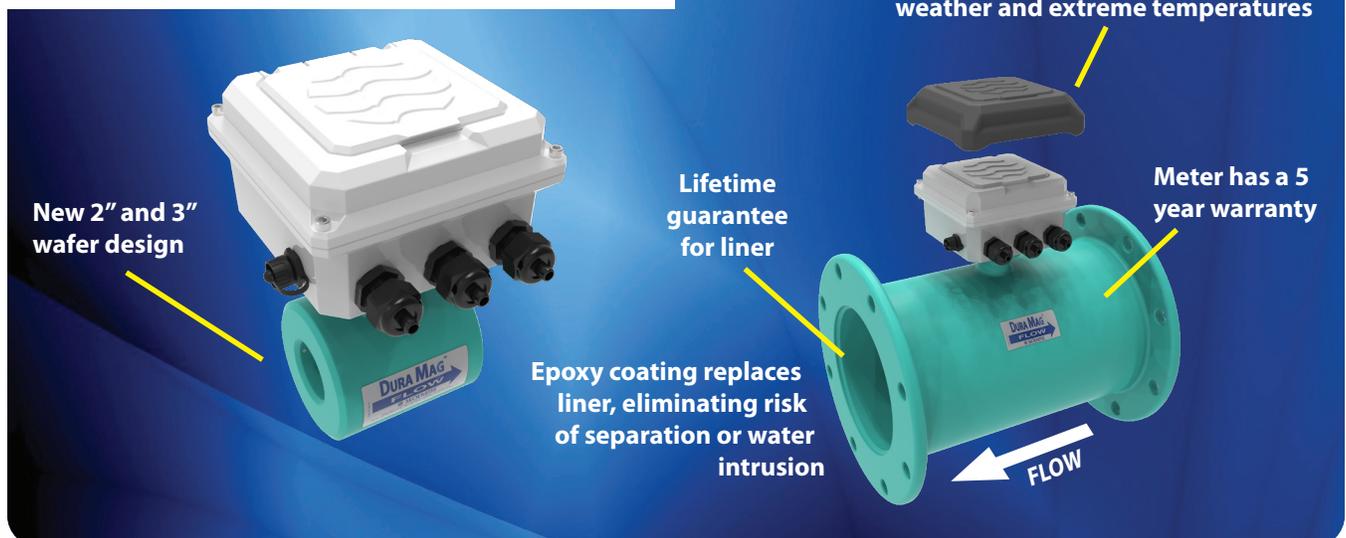
- Irrigation
- Center Pivot Systems
- Well Monitoring
- Water Distribution
- Dairy Lagoons
- Surface Water
- Chemigation Downstream
- Golf Course & Park Management
- Sandy Water

KEY FEATURES

- 5-year meter warranty
- 5-year battery warranty
- Lifetime liner guarantee
- Upstream/downstream requirements:
 - 2" & 3": 3D/1D
 - 4" & larger: 2D/1D
- Battery powered for easy installation – eliminate the hassle of cables or AC power
- Durable design – Proven in tough environments
- 10 minute DIY replaceable battery pack, keeps your meter running
- Made in the USA



Included canopy protects converter from weather and extreme temperatures





DURA MAG FLOW METER PART NUMBER STRUCTURE

DM	-	-	-	-	-	-	-	-	-	-	-	-
Line Size												
2 in	02											
3 in	03											
4 in	04											
6 in	06											
8 in	08											
10 in	10											
12 in	12											
Flange Connections												
AWWA Class D (150 psi Rating) (Standard)	1											
ANSI Class 150# (285 psi Rating)	2											
ANSI Class 300# (300 psi Rating)	3											
Wafer Style (2 & 3" Only)	N											
Electrode Material Options												
S316 Stainless Steel (Standard)	S											
Hastelloy	H											
Converter Mounting and Cable Connector Options												
Meter Mount Converter (Standard)	M											
Strain Relief [25 ft Remote Mount]	R											
Quick Connect [25 ft Remote Mount]	Q											
Strain Relief [25 ft Remote Mount] (Potted)	P											
Quick Connect [25 ft Remote Mount] (Potted)	C											
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											



DURA MAG FLOW METER PART NUMBER STRUCTURE (CONT.)

DM	-	-	-	-	-	-	-	-	-	-
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 (*4 or 5 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										
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										
Non Standard Length Options										
McCrometer Length (Standard) -										
Competitor Replacement Length LS										
Competitor Replacement Length LP										
Custom Specified Length (Nominal Length) L(XX)										
Color Options										
McCrometer Green (Standard) -										
Dark Blue DB										
Hazardous Area Location										
Class 1, Division 2, Groups A-D, T5 HL										

PROCOMM GO PART NUMBER STRUCTURE

PG	-	-	-	-	-	-	-	-
Converter Mounting Options								
Meter Mount Converter (Standard)	M							
Remote Mount	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 - Strain Relief)	1							
25 ft (Open Leads)	2							
50 ft (Open Leads)	3							
Pulse Cable Length Options								
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							
Output Cable Terminal Options								
Strain Relief (Standard)	1							
Quick Connect (25 & 50 ft Cable length only)	2							
Smart Output Protocol Options (*4 - 7 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							
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							
Hazardous Area Location								
Class 1, Division 2, Groups A-D, T5	HL							

DURA MAG FLOW METER SPECIFICATIONS

Physical Specifications

Directionality	Single direction and bidirectional
Pipe Sizes	2", 3", 4", 6", 8", 10", 12"
Body Style	Unflanged and flanged tube
Electrical Connections	Optional quick connect for easy installation

Performance and Operational Specifications

Operating Temperature	-4° to 140°F (-20° to 60°C)
Storage Temperature	-40° to 149°F (-40° to 65°C)
Operating Pressure	150 psi
	+/- 1% of measured value ±0.006 ft/s (±0.0018 m/s)
Accuracy	All Dura Mag meters are calibrated in a NIST traceable gravimetric test stand with a minimum straight run of 10D upstream and 2D downstream. A calibration certification report is provided with each Dura Mag meter certifying the specification accuracy in our laboratory test. Alternative piping configurations or electrical environments may impact the performance of the meter in the field.
Pipe Run Requirements	2" & 3": 3D upstream / 1D downstream 4" and larger: 2D upstream / 1D downstream

Performance and Operational Specifications

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* 	
<p>* Dura Mag is certified by IAPMO R&T to NSF/ANSI 61 for material safety and NSF/ANSI 372 for low lead content.</p>		

Other Specifications

Options and Accessories	<ul style="list-style-type: none"> Bidirectional Epoxy coated carbon steel flanged spool piece (for 2" & 3" wafer style meters) Annual verification / calibration Stainless Steel ID tag
Warranty	<p>Meter: 5-year warranty</p> <p>Battery: 5-year warranty</p> <p>Liner: Lifetime guarantee</p>

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 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 Dura Mag Flow Meter

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*



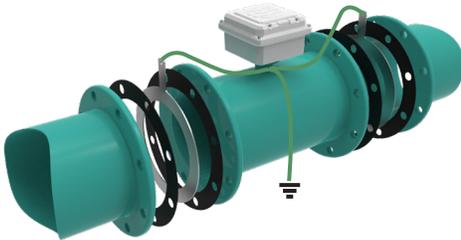
* Certified by IAPMO R&T to NSF/ANSI 61 for material safety and NSF/ANSI 372 for low lead content.

METER GROUNDING RECOMMENDATIONS

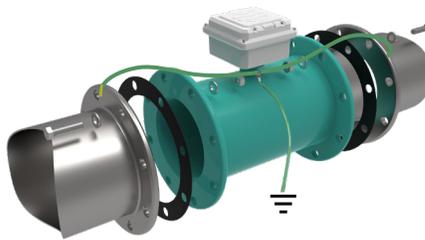
Dura Mag meters come standard with a set of grounding rings for use with the preferred method of grounding Dura Mag meters.

Grounding the meter body for safety according to national (NEC) or local electrical codes is recommended on ALL meter installations. Dura Mag meters come standard with a set of grounding rings for use with the preferred method of grounding Dura Mag meters.

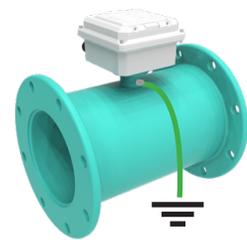
See the Dura Mag IOM Manual, Lit. # 30122-53, for more information on grounding configurations using grounding rods and grounding rings.



Preferred method of grounding



**Sensor grounding for meters in
an electrically noisy environment**



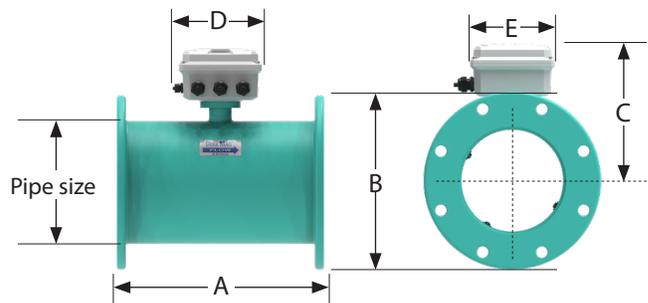
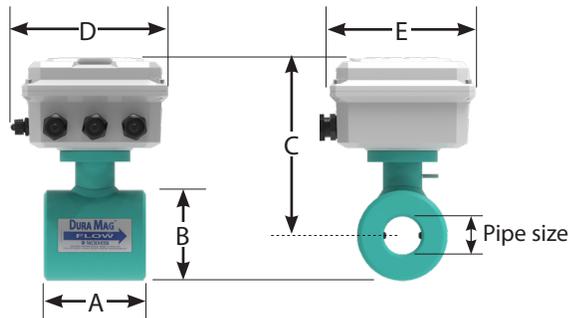
**Sensor grounding for meters
with minimal ground noise**

DIMENSIONS AND WEIGHTS

Body Type	Pipe Size (Nominal)	Standard GPM Flow Ranges Min - Max	DIMENSIONS (Lay Lengths in inches)			Estimated Shipping Weight (lbs.)*
			A	B	C	
Type 1	2"	10-250	4.5	5	8.1	10
	3"	20-550	4.5	5	8.6	11.7
Type 2	4"	30 - 1,000	13.4	9.0	9.25	70
	6"	60 - 2,000	14.6	11.0	10.25	80
	8"	105 - 3,500	16.1	13.5	11.25	115
	10"	165 - 5,500	18.5	16.0	12.5	140
	12"	195 - 6,500	19.7	19.0	13.5	190

D (front)	E (side)
6.94"	6.44"

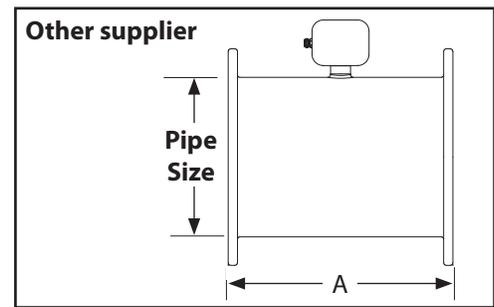
*Shipping weights are estimated and may change due to specific order packaging



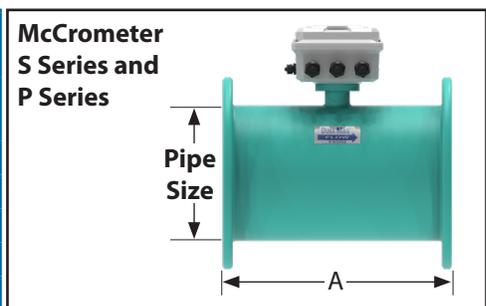
Dura Mag S Series and P Series meters are available in lay lengths compatible with products from other meter suppliers. See the tables below for matched lay length options.

Pipe Size (Nominal)	Other Supplier Dimensions*		S Series Dimensions	
	L (in.)	Weight (lbs.)	L (in.)	Weight (lbs.)
4"	10.24	34	10.24	70
6"	12.27	50	12.27	80
8"	14.24	71	14.24	115
10"	18.18	130	18.18	140
12"	19.68	170	19.68	190

* Seametrics Electromagnetic Meters (Ag3000/Ag3000P or iMag4700 series); Seametrics® is a registered trademark of their respective owners.



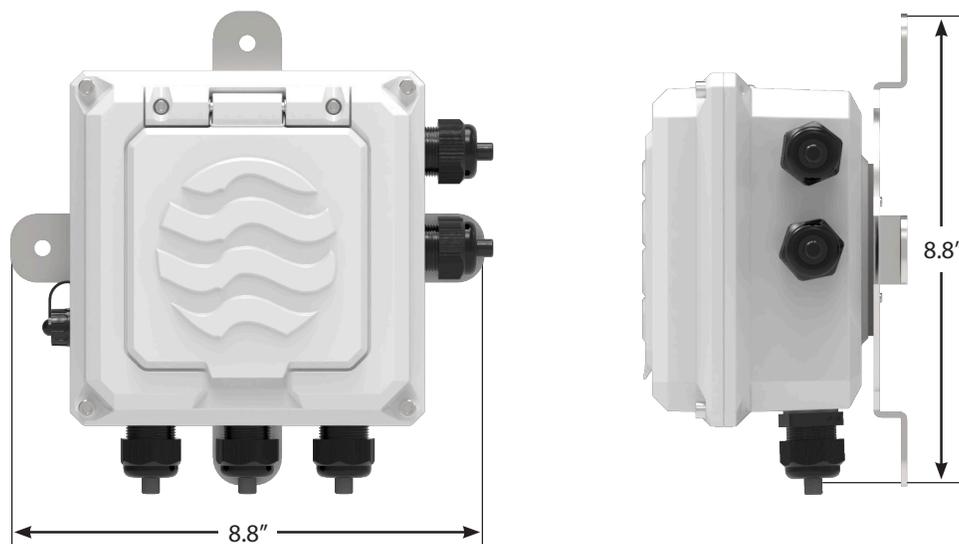
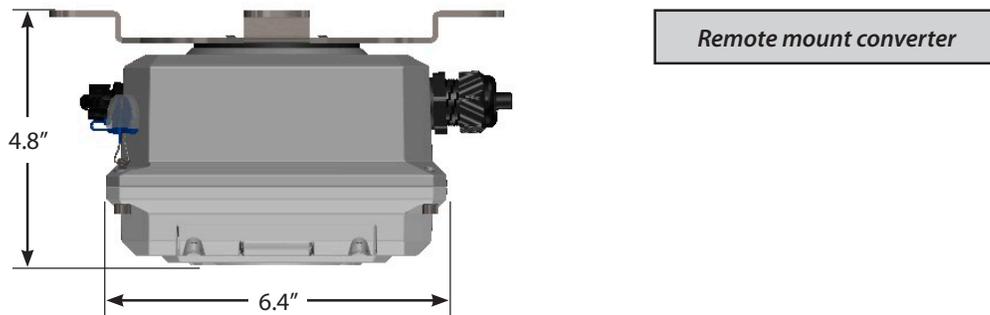
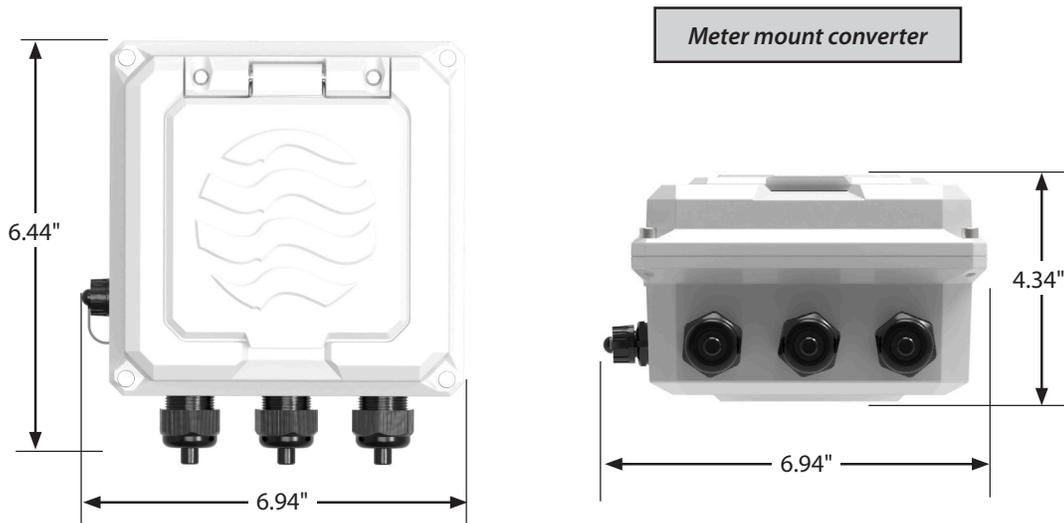
Pipe Size (Nominal)	Other Supplier Dimensions**				P Series Dimensions			
	150 lb psi		300 lb psi		150 lb psi		300 lb psi	
	L (in.)	Weight (lbs.)	L (in.)	Weight (lbs.)	L (in.)	Weight (lbs.)	L (in.)	Weight (lbs.)
4"	6	55	6	***	6.25	50	6.25	***
6"	13.38	75	14.88	***	13.38	65	14.88	***
8"	13.38	105	15.40	***	13.38	120	15.40	***
10"	18.15	155	20.55	***	18.15	130	20.55	***
12"	19.40	235	21.78	***	19.40	170	21.78	***



** Sparling Instruments (Tigermag EP FM656); Sparling® is a registered trademark of their respective owners.

*** Contact factory for weight.

PROCOMM GO CONVERTER DIMENSIONS



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