

# iMAG 4700 Series

## FLANGED MAGMETER

# Seametrics



### RIGHT METER FOR

Water & Wastewater Treatment  
Municipal  
Pump skids  
Pump stations  
Packaged plants  
Filtration systems  
Reclaimed water  
Hydraulic fracturing

## Features

- Easy setup
- Minimal straight pipe
- Mounted or remote rate & total
- Tamper-evident seal
- NSF-61 approved
- IP68 rated
- No moving parts

The **iMAG-Series** is the most economical flanged electromagnetic flowmeter on the market. With electrodes designed to discourage fouling, it is available in 3" to 12" pipe in municipal or industrial water, waste and reclaimed water, pump stations, and packaged plant applications. Minimal straight pipe requirements allow iMAG-Series meters to be used in piping configurations where there is little space between the meter and an elbow.

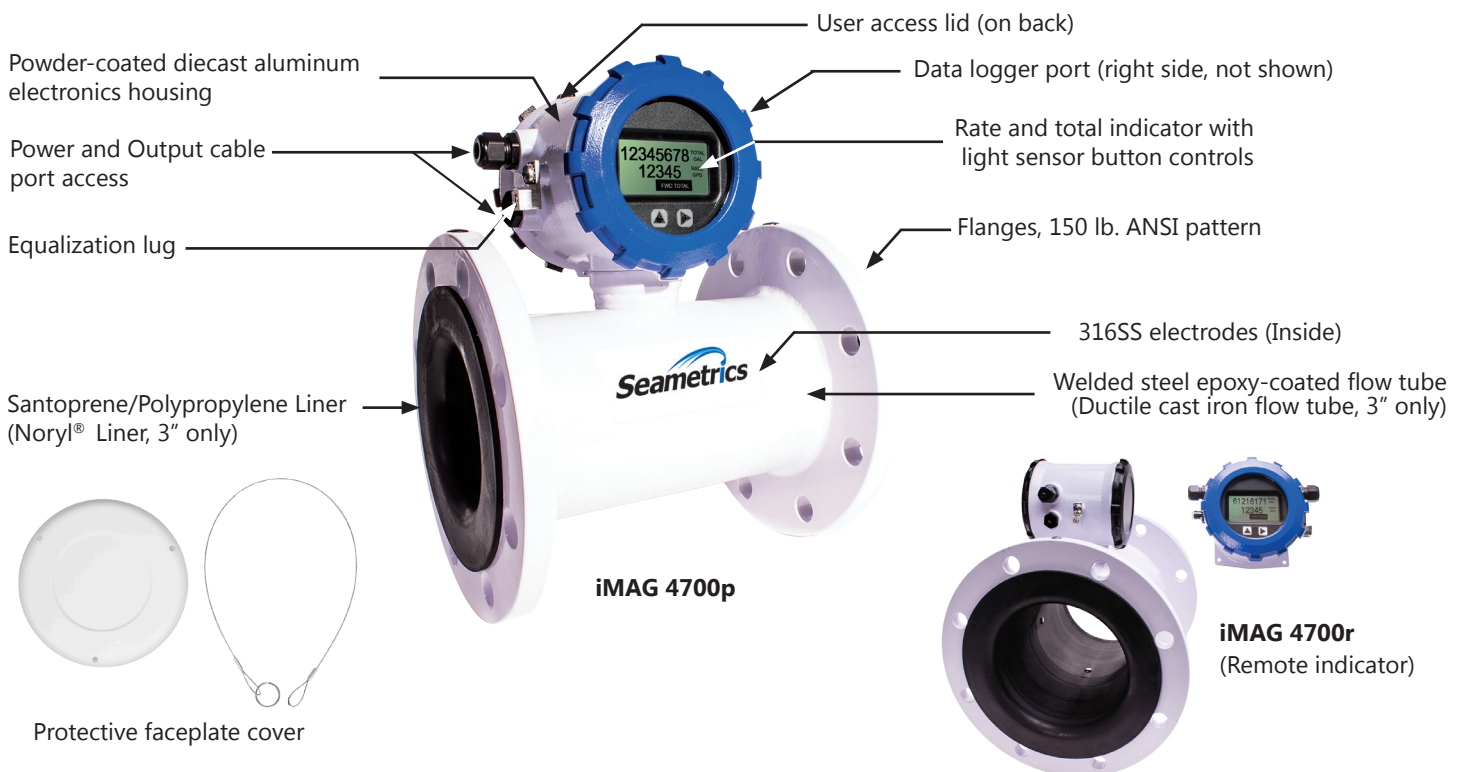
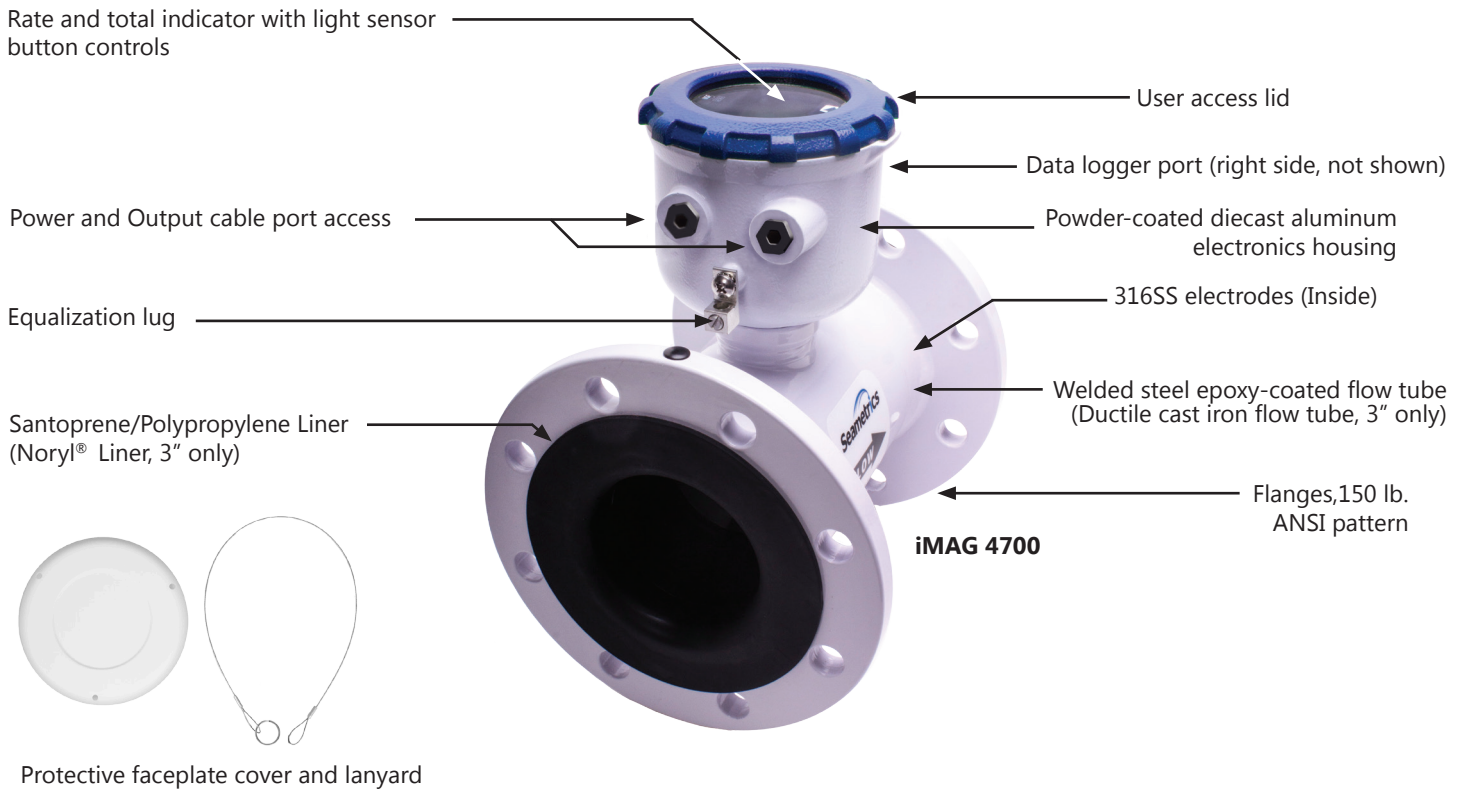
iMAG-Series meters are NSF-61 approved and are rated IP68 for applications where the meter may be operated under water to a depth of at least 10 feet (3 meters) continuously.

The display can be meter mounted or remote, and both rate and total indication are standard. Rate and total units and pulse scaling can be set via the front panel touch key pad by the user. Bidirectional flow reading is standard with totals available in forward, reverse, net flow, batch forward flow, and batch reverse flow. Batch totals can be reset.

A power/output cable allows outputs for use with a variety of Seametrics and other displays and controls for remote reading and telemetry applications. Pulse output is standard on all models and 4-20mA passive current loop is standard on the iMAG 4700p. In addition, 4-20mA loop, HART protocol, high speed digital, and Modbus® protocol outputs are optional on the externally powered units, depending on model.

## Contact Your Supplier

**Features**



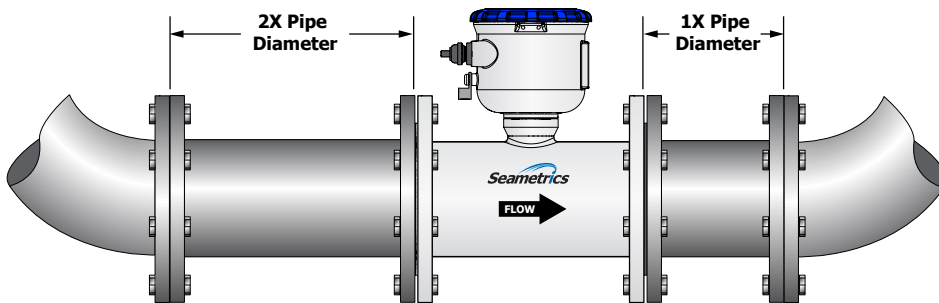
**Features**



- Built-in Data Logger (*Optional*)
- Bidirectional Flow Reading (*Standard*)
- Pulse Scaled Output (*Standard*)
- 4-20mA Output (*Optional\**)
- HART Protocol Output (*Optional\**)
- Modbus® Protocol Output (*Optional\**)
- High Speed Digital Output (*Optional\**)
- Battery Power (*iMAG 4700 battery model only*)
- External DC Power (*Optional\**)
- Integrated AC Power Supply (*Optional\**)
- Remote Display (*iMAG 4700r*)

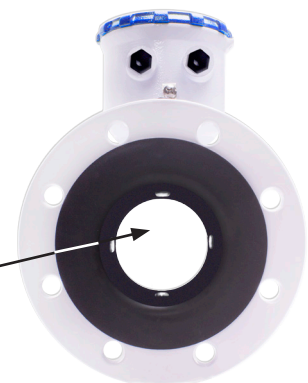
Quickly and easily change Total Volume Units, Flow Rate Units, Pulse Output Scaling, and many other settings using the two light sensor button controls on the display panel.

*\* Some optional items only available on some configurations. See last page for further details.*



Minimal straight pipe requirements to ease installation in tight quarters.

No moving parts to break or foul!



## Specifications

<b>Pipe Sizes</b>	3", 4", 6", 8", 10", 12"						
<b>Flanges</b>	150 lb. ANSI Pattern						
<b>Pressure</b>	150 psi (10.3 bar) line pressure						
<b>Temperature</b>	<b>Operating</b> 10° to 140° F (-12° to 60° C)						
	<b>Storage</b> -40° to 158° F (-40° to 70° C)						
<b>Accuracy</b>	±0.75% of reading on iMAG 4700p and 4700r (±1.0% iMAG 4700), ±0.025% of full-scale flow from low flow cutoff to maxi. flow rate of 10 m/sec						
<b>Low Flow Cutoff</b>	0.5% of maximum flow rate						
<b>Material</b>	<b>Body (3" only)</b>	Ductile cast iron, powder coated					
	<b>Body (4"-12")</b>	Welded steel, epoxy-coated					
	<b>Liner (3" only)</b>	Noryl®					
	<b>Liner (4"-12")</b>	Santoprene flange/Polypropylene liner body					
	<b>Electronics Housing</b>	Powder-coated diecast aluminum					
	<b>Electrodes</b>	316 stainless steel					
	<b>O-ring (3" only)</b>	EPDM					
<b>Display</b>	<b>Type</b>	128x64 dot-matrix LCD					
	<b>Digits</b>	5 Digit Rate	8 Digit Total				
	<b>Units</b>	Rate Volume Units	Rate Time Units	Total Volume Units			
	<i>Please Note: All iMAG meters are factory set for gallons per minute (GPM) rate and gallons total. If other units are required, they can be set in the field.</i>	Gallons Liters Barrels(42 gal) Cubic Feet Cubic Meters	Million Gallons <sup>2</sup> Mega Liters <sup>2</sup> Imperial Gallons Million Imperial Gallons <sup>2</sup>	Second Minute Hour Day	Gallons Gallons x 10 Gallons x 100 Gallons x 1000 Million Gallons Liters Kilo Liters Mega Liters	Barrels (42 gal) Cubic Meters Cubic Meters x 1000 Cubic Feet Cubic Feet x 1000 Second Foot Day Million Cubic Feet	Acre Feet Acre Inches Imperial Gallons Imperial Gallons x 1000 Million Imperial Gallons Fluid Ounces
	<b>Bidirectional<sup>1</sup></b>	Forward Total, Reverse Total, Net Total, Batch Forward Total, Batch Reverse Total (Batch totals can be reset)					
<b>Power</b>	<b>DC Power</b>	9-36 Vdc @ 250 mA max, 30 mA average					
	<b>Battery Backup</b>	DC powered units: Two lithium 3.6V 'D' batteries, replaceable. AC powered units: One 9V alkaline battery, replaceable.					
	<b>AC Power (iMAG 4700r and 4700p only)</b>	85-264Vac, 50/60Hz, 0.12A					
	<b>Battery (iMAG 4700 only)</b>	Two lithium 3.6V 'D' batteries, replaceable.					
<b>Scaled Pulse Output</b>	<b>Signal</b>	Current sinking pulse, isolated, 36 Vdc at 10 mA max					
	<b>Pulse Rates</b>	User-scalable from 0.1 to 99,999.9 volume units/pulse. Pulse width is one-half of pulse period with minimum pulse width of 2.5 ms, 200 pulses/sec max, 150 pulses/sec max with battery option					
<b>Options</b>	<b>4-20mA Current Loop</b>	Isolated, passive, 24Vdc, 650 Ω maximum current loop					
	<b>HART/4-20mA</b>	HART protocol over 4-20mA line					
	<b>High Speed Digital Output (iMAG 4700 &amp; 4700p only)</b>	Isolated, open collector, 24 Vdc					
	<b>Serial Communications</b>	Isolated, asynchronous serial RS485 (Reconfigurable for RS232 or 3.3V CMOS), Modbus® RTU protocol (factory selectable)					
<b>Cable</b>	<b>Power/Output Cable</b>	20ft (6m) standard length polyurethane jacketed cable—for power and outputs (lengths up to 200' available).					
	<b>Remote Display Cable (iMAG 4700r)</b>	20ft (6m) standard length polyurethane jacketed cable—for connection between meter and remote display (lengths up to 200' available).					
<b>Conductivity</b>	> 20 microSiemens/cm						
<b>Empty Pipe Detection</b>	Hardware/software, conductivity-based						
<b>Regulatory</b>	CE (EN 61326), 4"-12" NSF-61 60°C (140°F); 3" NSF-61 Cold Water 23°C (73.4°F)						
<b>Environmental</b>	NEMA 6P, IP68 (10ft (3m) depth, continuously)						

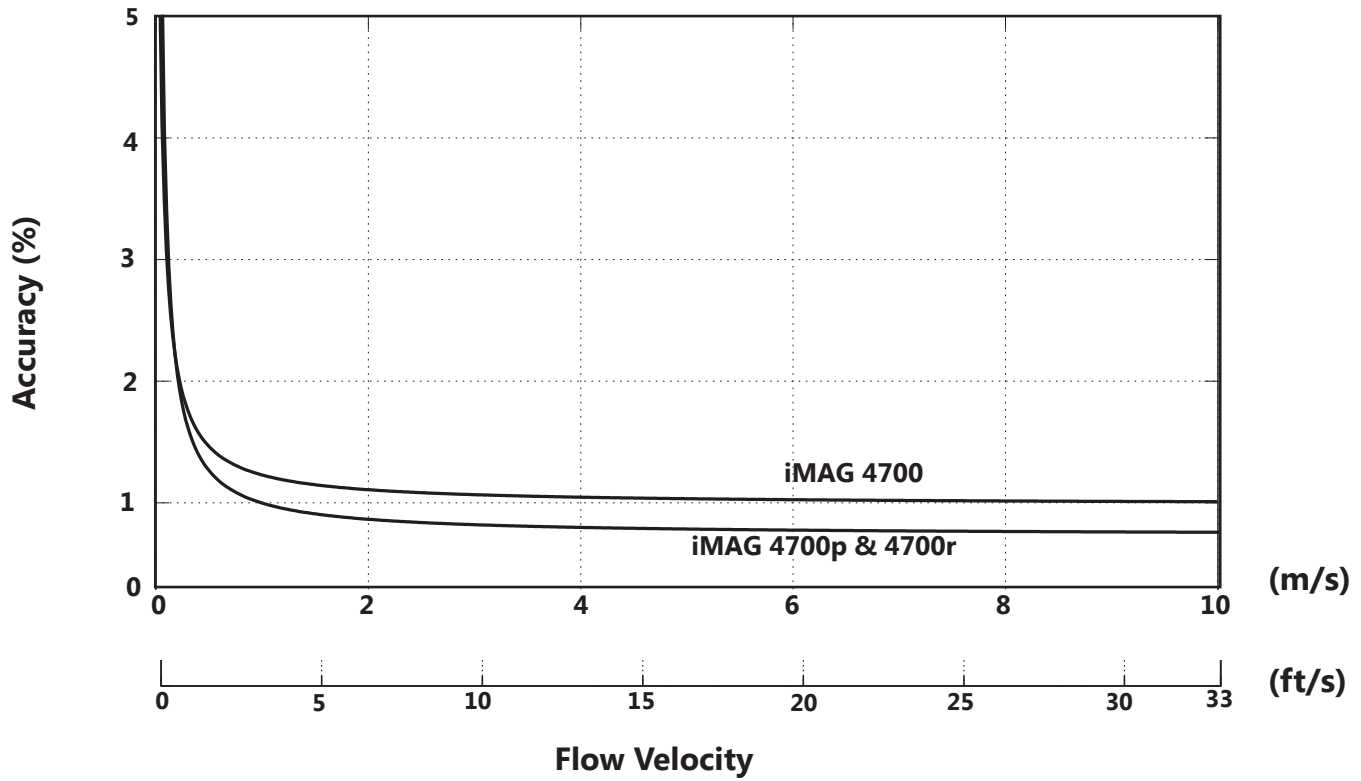
Modbus is a registered trademark of Schneider Electric.

\* Specifications subject to change. Please consult our website for the most current data ([www.seametrics.com](http://www.seametrics.com)).

<sup>1</sup> If forward and reverse flow data needs to be sent to another device, either the Digital or Modbus output is required.

<sup>2</sup> Rate Time Unit is available in Day only.

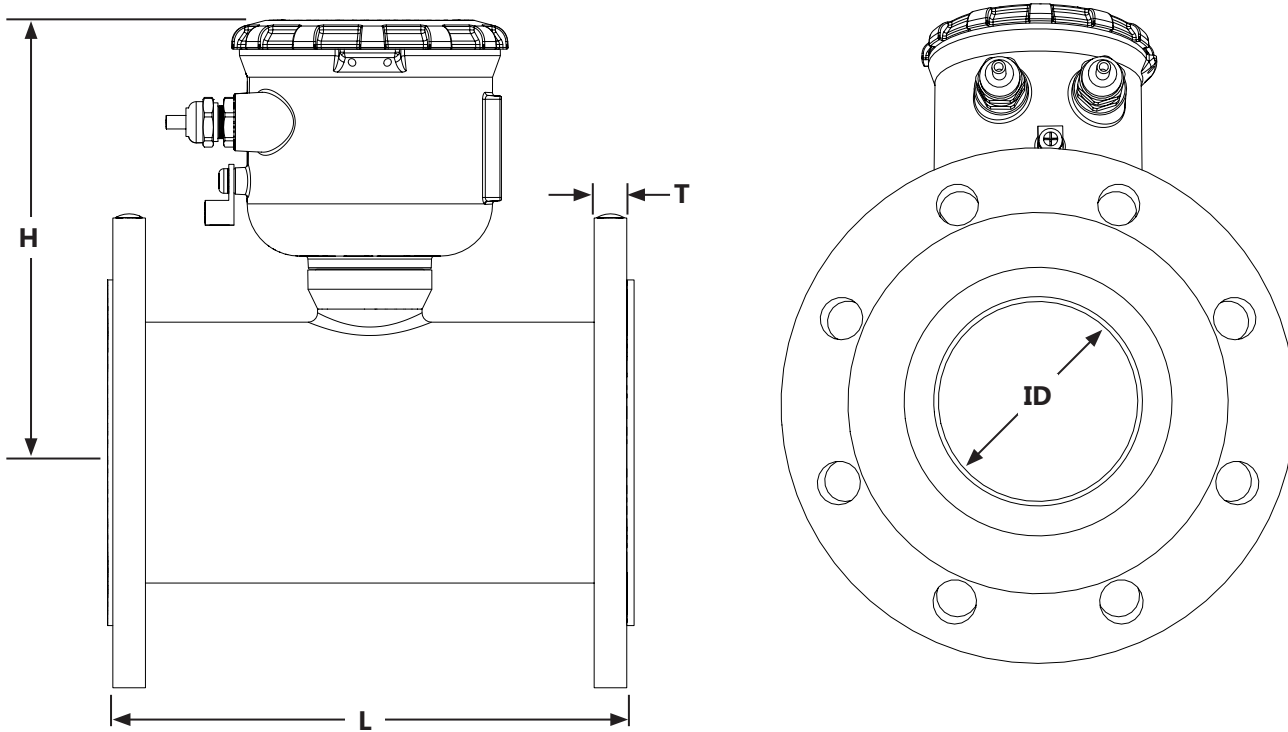
## iMAG Accuracy



## Flow Rate (3" - 12")

Pipe Size (Inches in diameter)	3"	4"	6"	8"	10"	12"
<b>Max Flow Rate</b> (Gallons/Minute)	723	1285	2891	5140	8031	11565
<b>Cut-off (min) Flow Rate</b> (Gallons/Minute)	3.62	6.43	14.46	25.70	40.15	57.82
<b>Max Flow Rate</b> (Liters/Second)	46	81	182	324	507	730
<b>Cut-off (min) Flow Rate</b> (Liters/Second)	0.23	0.41	0.91	1.62	2.54	3.65
<b>Max Flow Velocity</b> (Meters/Second)	10	10	10	10	10	10

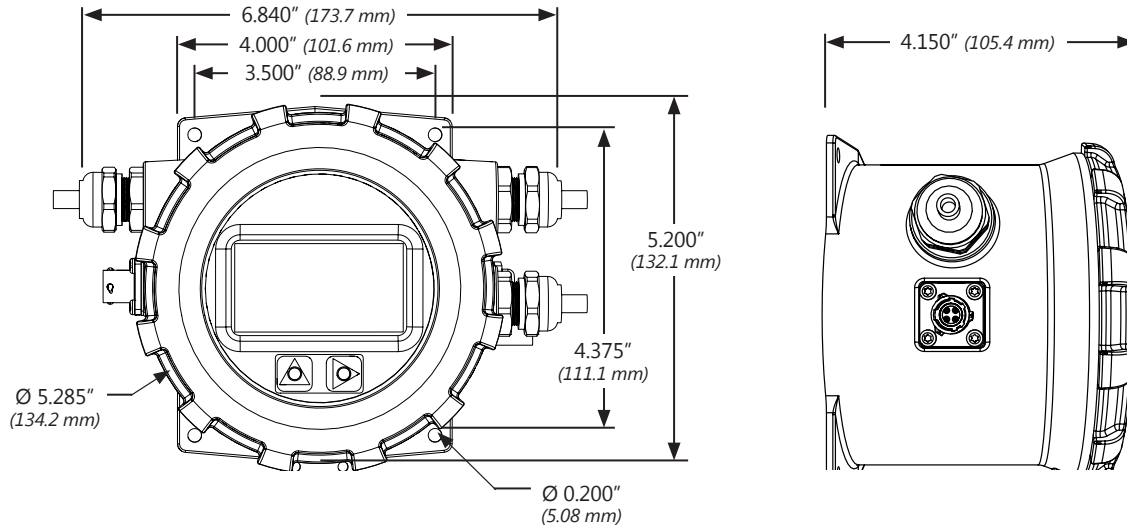
**Dimensions - iMAG 4700**



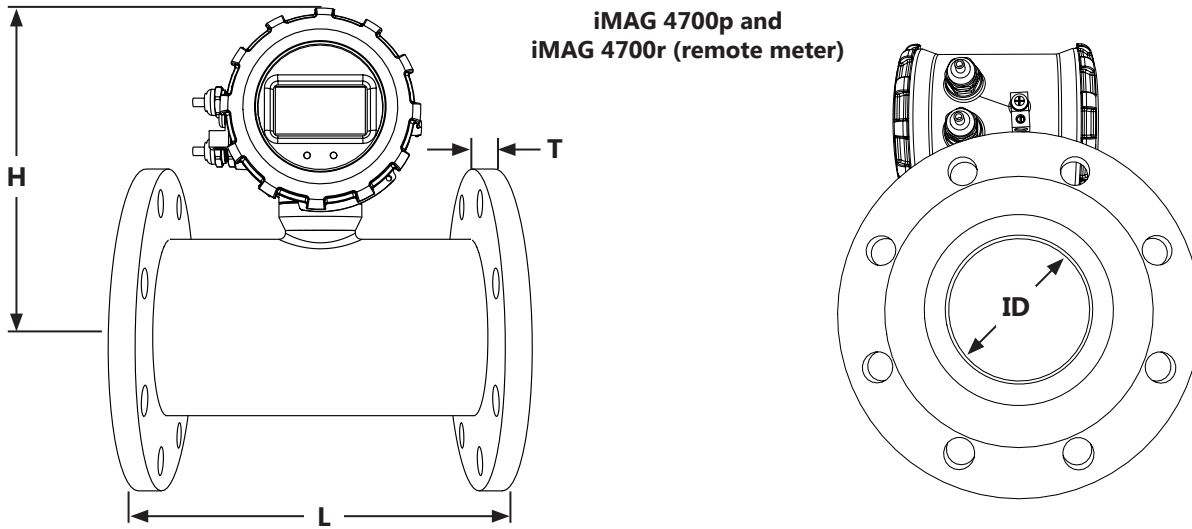
iMAG 4700 Meter Size	L		H		T		ID		Shipping Weight	
	inch	mm	inch	mm	inch	mm	inch	mm	lbs	Kg
<b>3"</b>	12.25	311.15	7.08	179.8	.68	17.25	2.6	66.04	31	14
<b>4"</b>	10.24	260	8.3	211	.62	15.7	3.12	79	27	12
<b>6"</b>	12.27	312	9.1	231	.69	17.5	5.05	128	42	19
<b>8"</b>	14.24	362	10.1	257	.69	17.5	6.44	164	64	29
<b>10"</b>	18.18	462	11.2	284	.69	17.5	8.61	219	123	56
<b>12"</b>	19.68	500	12.2	310	.81	20.6	10.55	268	165	75
<b>Flanges</b>	Standard ANSI 150 lb. drilling								Cable 1 lb.	

**Dimensions - iMAG 4700r and iMAG 4700p**

**iMAG 4700r (remote display)**



**iMAG 4700p and  
iMAG 4700r (remote meter)**



iMAG 4700 Meter Size	L		H		T		ID		Shipping Weight			
									iMAG 4700p		iMAG 4700r	
	inch	mm	inch	mm	inch	mm	inch	mm	lbs	Kg	lbs	Kg
<b>3"</b>	12.25	311.15	7.95	201.9	.68	17.25	2.6	66.04	31	14	34	15.4
<b>4"</b>	10.24	260	8.6	218	.62	15.7	3.12	79	28	13	31	14
<b>6"</b>	12.27	312	9.4	239	.69	17.5	5.05	128	43	19.5	46	21
<b>8"</b>	14.24	362	10.4	264	.69	17.5	6.44	164	65	29.5	68	31
<b>10"</b>	18.18	462	11.5	292	.69	17.5	8.61	219	124	56.5	127	58
<b>12"</b>	19.68	500	12.5	317	.81	20.6	10.55	268	166	75.5	169	77
<b>Flanges</b>	Standard ANSI 150 lb. drilling								Cable 1 lb.			

**How to Order Worksheet**

<p><b>iMAG 4700</b></p> <p><b>iMAG 4700p</b></p> <p><b>iMAG 4700r</b></p>	1	2	3	4	5	6	7																	
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<p><b>2 Style:</b> F1 = 150 lb ANSI Pattern</p>		<p><b>3 Power:</b> D1 = DC 60Hz, D2 = DC 50Hz A1 = AC 60Hz, A2 = AC 50Hz BX = Battery</p>		<p><b>4 Outputs:</b> X = No optional output L = 4-20mA S = Modbus® H = HART/4-20mA G = Digital</p>																				

	1 Size	2 Style	3 Power	4 Optional Output <i>(The 4700 comes standard with one pulse output)</i>	5 Options	6 DC Power/Output Cable - 6 conductor <i>(Must select one)</i>
<b>iMAG 4700 (Integrated Display)</b>	-0300 3"	-F1	-D1 -D2	-X <i>(requires single cable for DC power &amp; output)</i>	-XX None	-0000 No Cable <i>(customer will supply)</i>
	-0400 4"			-L <i>(requires single cable for DC power &amp; output)</i>	-01 Data Logger	Single Dual
	-0600 6"			-H <i>(requires single cable for DC power &amp; output)</i>	-006S -006D 6 meter (20 ft)	
	-0800 8"			-S <i>(requires dual cable for DC power &amp; output)</i>	-015S -015D 15 meter (50 ft)	
	-1000 10"			-G <i>(requires dual cable for DC power &amp; output)</i>	-030S -030D 30 meter (100 ft)	
	-1200 12"			-BX	-X <i>(requires single cable for pulse output)</i>	-045S -045D 45 meter (150 ft)

	1 Size	2 Style	3 Power <sup>1</sup>	4 Optional Output <i>(The 4700p comes standard with 4-20mA and one pulse output)</i>	5 Options	6 DC Power/Output Cable - 8 conductor <i>(Must select one)</i>
<b>iMAG 4700p (Integrated Display)</b>	-0300 3"	-F1	-D1 -D2	-X <i>(requires single cable for DC power &amp; output)</i>	-XX None	-0000 No Cable <i>(customer will supply)</i>
	-0400 4"			-H <i>(requires single cable for DC power &amp; output)</i>	-01 Data Logger	Single Dual
	-0600 6"			-S <i>(requires dual cable for DC power &amp; output)</i>	-006S -006D 6 meter (20 ft)	
	-0800 8"			-G <i>(requires dual cable for DC power &amp; output)</i>	-015S -015D 15 meter (50 ft)	
	-1000 10"			-A1	-X <i>(requires single cable for output)</i>	-030S -030D 30 meter (100 ft)
	-1200 12"			-A2	-H <i>(requires single cable for output)</i>	-045S -045D 45 meter (150 ft)

	1 Size	2 Style	3 Power <sup>1</sup>	4 Optional Output <i>(The 4700r comes standard with one pulse output)</i>	5 Options	6 DC Power/Output Cable - 6 conductor <i>(Must select one)</i>	7 Remote Display Cable - 6 conductor <i>(Must select one)</i>
<b>iMAG 4700r (Remote Display)</b>	-0300 3"	-F1	-D1 -D2	-X <i>(requires single cable for DC power and output)</i>	-XX None	-0000 No Cable <i>(customer will supply)</i>	-006 6 meter (20 ft)
	-0400 4"			-L <i>(requires single cable for DC power and output)</i>	-01 Data Logger	Single Dual	-015 15 meter (50 ft)
	-0600 6"			-H <i>(requires single cable for DC power and output)</i>	-006S -006D 6 meter (20 ft)		
	-0800 8"			-S <i>(requires dual cable for DC power and output)</i>	-015S -015D 15 meter (50 ft)		
	-1000 10"			-G <i>(requires dual cable for DC power and output)</i>	-030S -030D 30 meter (100 ft)		
	-1200 12"			-A1	-X <i>(requires single cable for output)</i>	-045S -045D 45 meter (150 ft)	-060 60 meter (200 ft)

Modbus is a registered trademark of Schneider Electric. Viton is a registered trademark of DuPont Corporation.

Note: All iMAG meters are factory set for gallons per minute (GPM) rate and gallons total. If other units are required, they can be programmed in the field.

<sup>1</sup> AC meters come with a 1.8 meter (6 ft) AC power cable.