

# iMAG 4700 Series

## FLANGED MAGMETER



iMAG 4700



iMAG 4700 200/300




iMAG 4700p



iMAG 4700r  
(Remote Display)

**THE 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 display
- Tamper-evident seal
- Certified to NSF/ANSI standard 61
- IP68 rated
- No moving parts
- Data logging (Optional)
- Sensus Smart Output (Optional)
- Telemetry ready for wireless meter reading. Solutions available now by our sister company 

### Contact Your Supplier

The **iMAG-Series** is the most economical flanged electromagnetic flowmeter on the market. With electrodes designed to discourage fouling, it is available in 2" to 12" pipe in municipal or industrial water/wastewater and reclaimed water applications. Pump station, pump skid, and packaged plant applications are also suitable. 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.

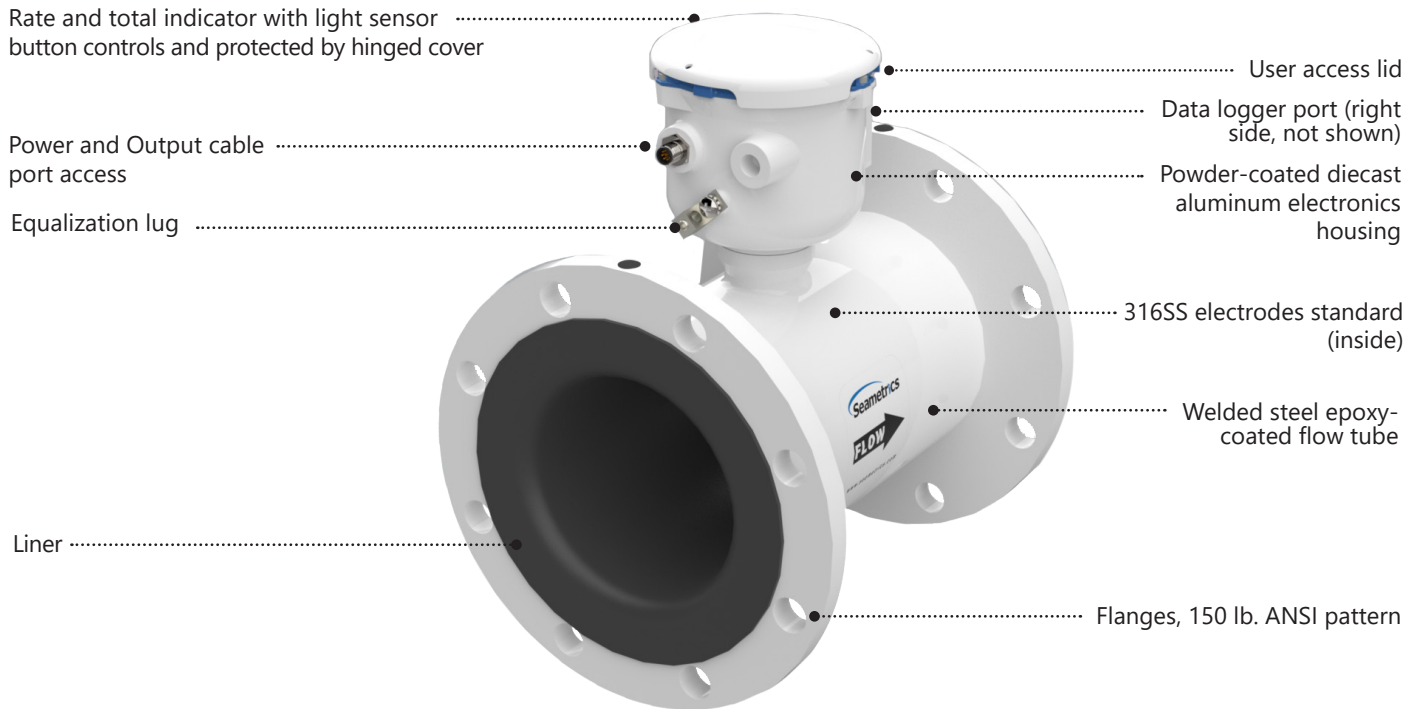
iMAG-Series meters are CE certified, certified to NSF/ANSI standard 61 and are rated IP68 for applications where the meter may be operated under water to a depth of at least 10 feet (3 meters) continuously.

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 total, reverse total, net flow total, batch forward flow total, and batch reverse flow total.

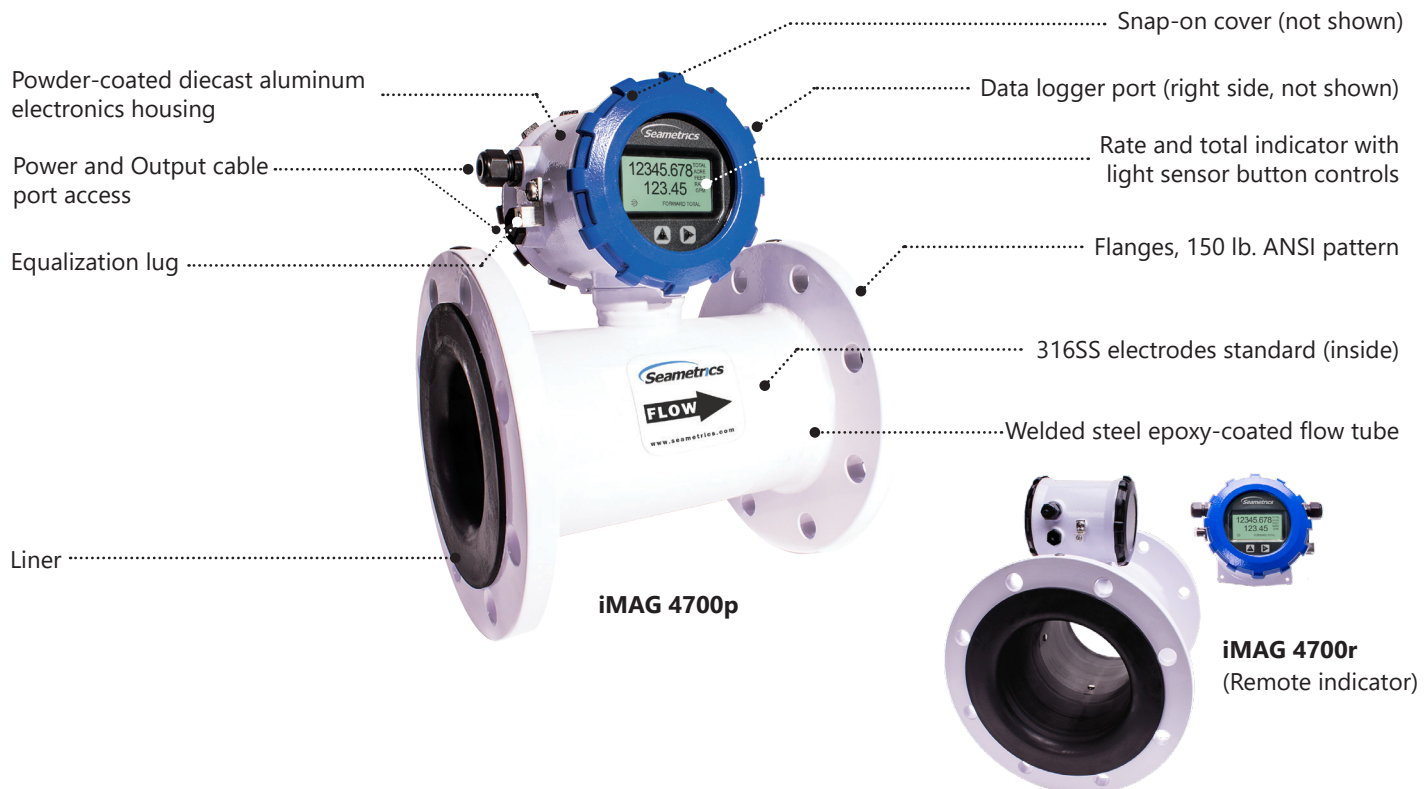
The iMAG 4700 is also available in either AC or DC powered versions, with battery backup. Pulse output is standard on all models, while 4-20mA passive current loop is also standard on the iMAG 4700p. 4-20mA loop is optional on the iMAG 4700 and iMAG 4700r externally powered meters and Modbus® protocol outputs are optional on all models although battery life will be reduced if ordered on battery powered units. A power/output cable allows outputs for use with a variety of Seametrics displays and other controls for remote reading and telemetry applications.



**Features**



**iMAG 4700**



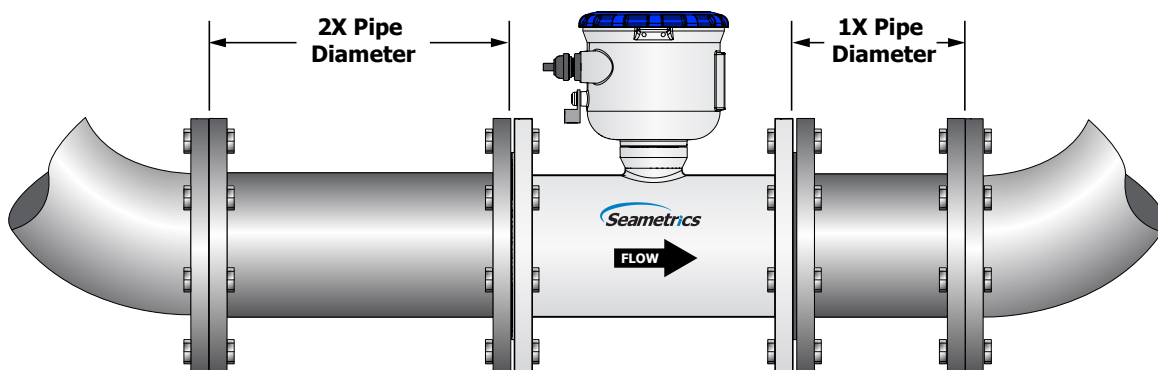
## Features



- ..... Built-in Data Logger (*Optional*)
- ..... Bidirectional Flow Reading (*Standard*)
- ..... Pulse Scaled Output (*Standard*)
- ..... 4-20mA Output (*Optional\**)
- ..... Modbus® Protocol Output (*Optional\**)
- ..... Sensus Smart 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.

## Specifications

<b>Pipe Sizes</b>	2", 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>Humidity</b>	Humidity 0-90% RH to 60° C, altitude 2000m					
	<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 (2"-12")</b>	Welded steel, epoxy-coated					
	<b>Liner (2", 3" &amp; 8")</b>	Polyurethane/Noryl®					
	<b>Liner (4", 6", 10" &amp; 12")</b>	Santoprene flange/Polypropylene liner body					
	<b>Electronics Housing</b>	Powder-coated diecast aluminum					
	<b>Electrodes</b>	316 stainless steel standard/ Hastelloy optional					
<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 100 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 <sup>3</sup>					
<b>Power<sup>4</sup></b>	<b>DC Power</b>	9-36 Vdc @ 250 mA max, 30 mA average supplied from secondary non-hazardous live source					
	<b>Battery Backup</b> <i>(Not for use as primary power)</i>	DC powered units: One lithium 7.2V 'D' size battery pack, replaceable. AC powered units: One 9V alkaline battery, replaceable.					
	<b>AC Power</b>	100-240Vac, 50/60Hz, 0.12A (iMAG 4700r and 4700p only) Overvoltage category II					
	<b>Battery</b>	One lithium 7.2V 'D' size battery pack, replaceable. (iMAG 4700 only)					
<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. For battery option meters, pulse width varies with frequency, 150 pulses/sec max.					
<b>Options</b>	<b>4-20mA Current Loop</b>	Isolated, passive, 24Vdc, 650 Ω maximum current loop					
	<b>High Speed Digital</b>	Isolated, open collector, 24 Vdc (iMAG4700p only)					
	<b>Serial Communications</b>	Isolated, asynchronous serial RS485, Modbus® RTU protocol					
	<b>Sensus Smart Output</b>	Connects to Sensus SmartPoint					
<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</b>	20ft (6m) standard length polyurethane jacketed cable—for connection between meter and remote display (lengths up to 200' available). (iMAG 4700r)					
<b>Conductivity</b>	>20 microSiemens/cm						
<b>Empty Pipe Detection</b>	Hardware/software, conductivity-based						
<b>Regulatory</b>	CE (EN 61326), 2"-12" certified to NSF/ANSI standard 61 60°C (140°F), CSA/CUS 						
<b>Environmental</b>	NEMA 6P, CSA 6P, IEC 60925 IP68 (10ft (3m) depth, continuously) Pollution degree 4, stability fixed/built in						

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)).

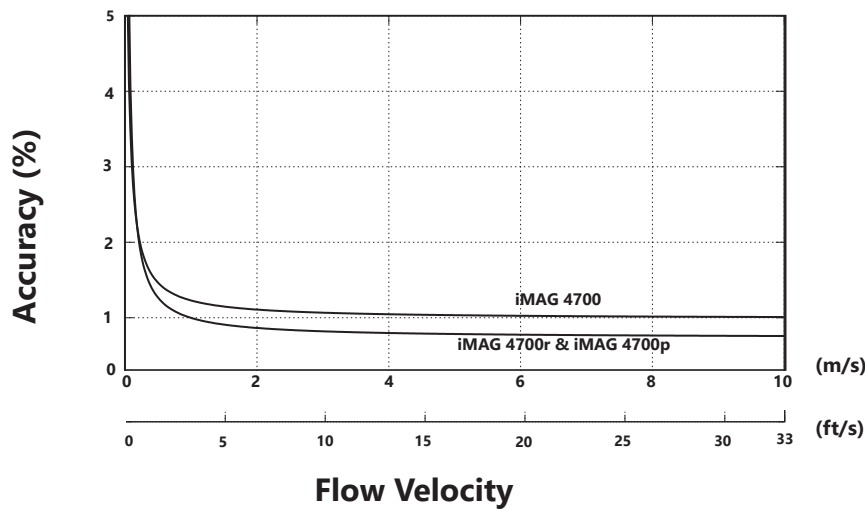
<sup>1</sup> If forward and reverse flow data needs to be sent to another device, either the Digital or Modbus output is required.

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

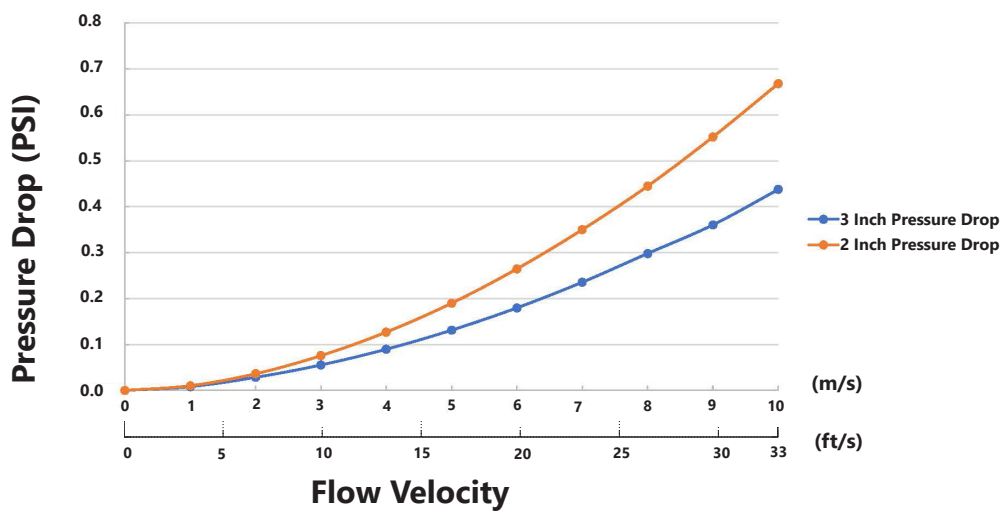
<sup>3</sup> Forward and reverse flow totals are non-resettable. Batch forward and batch reverse totals can be reset.

<sup>4</sup> If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

## iMAG Accuracy



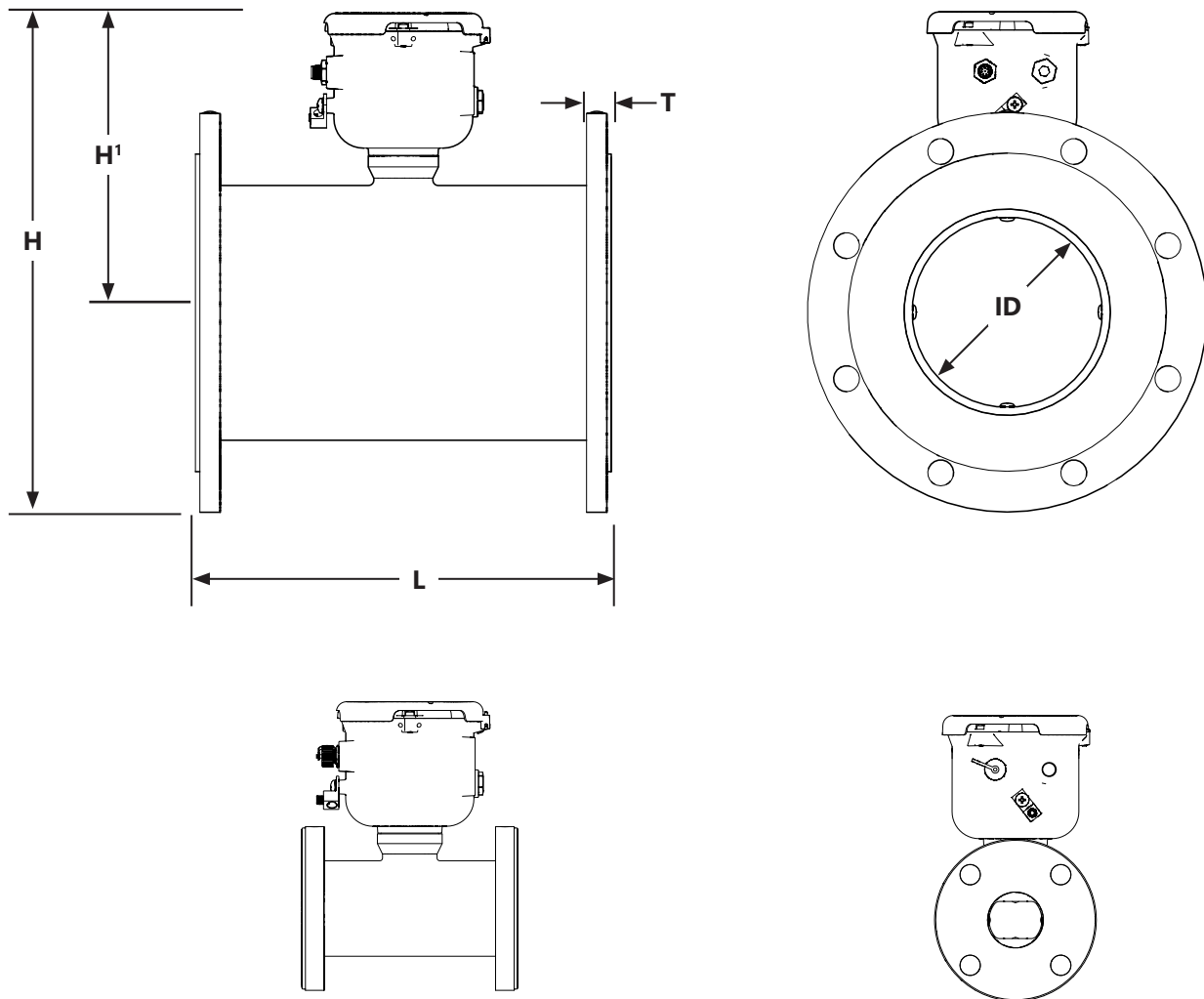
## 2" & 3" Pressure Drop Curve (No Pressure Drop 4"-12")



## Flow Rate (2" - 12")

Pipe Size (Inches in diameter)	2"	3"	4"	6"	8"	10"	12"
<b>Max Flow Rate</b> (Gallons/Minute)	321	722	1285	2891	5140	8031	11565
<b>Cut-off (min) Flow Rate</b> (Gallons/Minute)	2	4.0	6.43	14.46	25.70	40.15	57.82
<b>Max Flow Rate</b> (Liters/Second)	20.25	46	81	182	324	507	730
<b>Cut-off (min) Flow Rate</b> (Liters/Second)	0.13	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	10

**Dimensions - iMAG 4700**



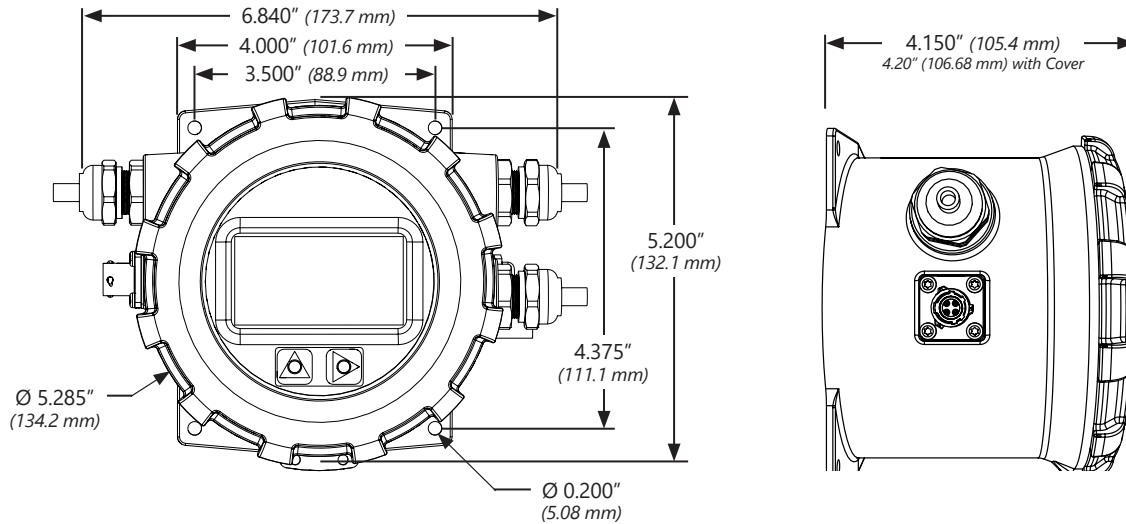
iMAG 4700 Meter Size	L		H <sup>1</sup>		H		T		ID		Bolt Holes #	Shipping Weight	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		lbs	Kg
2"	7.9	200	7.58	193	10.58	268.73	.62	15.7	1.76*	45*	4	20	9
3"	7.9	200	8.08	206	11.83	300.48	.62	15.7	2.68*	68*	4	26	11.8
4"	10.12	257	8.33	211	12.83	325.88	.62	15.7	3.12	79	8	33	15
6"	12.09	307	9.14	231	14.64	371.86	.69	17.5	5.05	128	8	49	22
8"	14.14	359	10.14	257	16.89	429.01	.69	17.5	6.44	164	8	70	32
10"	18.08	459	11.2	284	19.2	487.68	.69	17.5	8.61	219	12	130	59
12"	19.68	500	12.2	310	21.7	551.18	.81	20.6	10.55	268	12	170	77
<b>Flanges</b>	Standard ANSI 150 lb. drilling											Cable 1 lb.	

Note: 'L' dimension is total from liner face to liner face

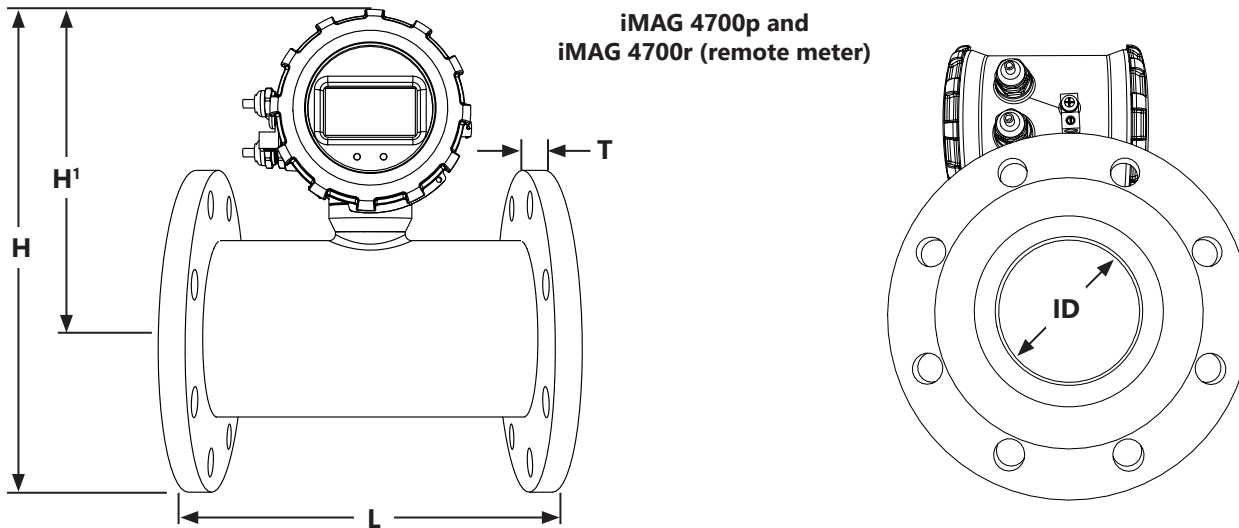
\*Average ID

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

**iMAG 4700r (remote display)**



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



iMAG 4700 Meter Size	L		H'		H		T		ID		Bolt Holes #	Shipping Weight			
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		iMAG 4700p		iMAG 4700r	
												lbs	Kg	lbs	Kg
2"	7.9	200	7.8	198	10.8	274	.62	15.7	1.76*	45*	4	21	9.5	22	10
3"	7.9	200	8.35	212	12.1	307	.62	15.7	2.68*	68*	4	27	12.3	28	12.7
4"	10.12	257	8.6	218	13.1	332	.62	15.7	3.12	79	8	34	15.5	43	19.5
6"	12.09	307	9.4	239	14.9	378	.69	17.5	5.05	128	8	50	22.5	59	27
8"	14.14	359	10.4	264	17.15	435	.69	17.5	6.44	164	8	71	32	78	35
10"	18.08	459	11.5	292	19.5	495	.69	17.5	8.61	219	12	130	59	135	61
12"	19.68	500	12.5	317	22	559	.81	20.6	10.55	268	12	170	77	175	79
<b>Flanges</b>	Standard ANSI 150 lb. drilling											Cable 1 lb.			

Note: 'L' dimension is total from liner face to liner face \*Average ID



## How to Order Worksheet

<b>iMAG 4700</b> <b>iMAG 4700p</b> <b>iMAG 4700r</b>	1	1a	1b	2	3	4	5	6	7	8
	□	□	□	□	□	□	□	□	□	□
	□	□	□	□	□	□	□	□	□	□

- 1a Ground Rings:** 0 = User Installed Grounding Rings  
G = Factory Installed Grounding Rings
- 2 Flange:** F1 = 150 lb ANSI Pattern
- 3 Electrode:** 0 = SS Button H = Hastelloy Button  
B = SS Bullet Y = Hastelloy Bullet
- 4 Power:** D1 = DC 60Hz D2 = DC 50Hz  
A1 = AC 60Hz A2 = AC 50Hz  
BX = Battery
- 5 Outputs:** X = No optional output S = Modbus®  
L = 4-20mA G = Digital

iMAG 4700 (Integrated Display)	1	1a	1b	2	3	4	5	6	7
	Size	Grounding Rings	Electrode	Flange	Gaskets <sup>3</sup>	Power	Optional Output <sup>2</sup> <i>The 4700 comes standard with one pulse output</i>	Options	DC Power/Output Cable <i>(Must select one)</i>
2" 02	0	0	F1	X None R Non NSF P NSF	D1 D2	X (requires 4 conductor cable for DC power & output) L (requires 8 conductor cable for DC power & output) S (requires 8 conductor cable for DC power & output)	XX None 01 Data Logger 02 Sensus Smart Output <i>(Includes 6' Cable)</i>	0000 No Cable (Cable required for power/output) <u>4 Conductor</u> <u>8 Conductor</u> 0064    0068 6 meter (20 ft) 0154    0158 15 meter (50 ft) 0304    0308 30 meter (100 ft) 0454    0458 45 meter (150 ft) 0604    0608 60 meter (200 ft)	
3" 03	G <sup>6</sup>	H <sup>5</sup>							
4" 04		B <sup>5</sup>							
6" 06		Y <sup>5</sup>							
8" 08									
10" 10									
12" 12						BX	X (requires 4 conductor cable for pulse output) S (requires 8 conductor cable for output) <sup>4</sup>		

iMAG 4700p (Integrated Display)	1	1a	1b	2	3	4	5	6	7
	Size	Grounding Rings	Electrode	Style	Gaskets <sup>3</sup>	Power <sup>1</sup>	Optional Output <sup>2</sup> <i>The 4700p comes standard with 4-20mA and one pulse output</i>	Options	DC Power/Output Cable <b>8 conductor</b> <i>(Must select one)</i>
2" 02	0	0	F1	X None R Non NSF P NSF	D1 D2	X (requires single cable for DC power & output) S (requires dual cable for DC power & output) G <sup>7</sup> (requires dual cable for DC power & output)	XX None 01 Data Logger 02 Sensus Smart Output <i>(Includes 6' Cable)</i>	0000 No Cable (customer will supply) <u>Single</u> <u>Dual</u> 006S    006D 6 meter (20 ft) 015S    015D 15 meter (50 ft) 030S    030D 30 meter (100 ft) 045S    045D 45 meter (150 ft) 060S    060D 60 meter (200 ft)	
3" 03	G <sup>6</sup>	H <sup>5</sup>							
4" 04		B <sup>5</sup>							
6" 06		Y <sup>5</sup>							
8" 08									
10" 10						A1 A2	X (requires single cable for output) S (requires single cable for output) G <sup>7</sup> (requires single cable for output)		
12" 12									

iMAG 4700r (Remote Display)	1	1a	1b	2	3	4	5	6	7	8
	Size	Grounding Rings	Electrode	Style	Gaskets <sup>3</sup>	Power <sup>1</sup>	Optional Output <sup>2</sup> <i>The 4700r comes standard with one pulse output. One Option from either 5 or 6 can be selected</i>	Options	DC Power/Output Cable <b>- 6 conductor</b> <i>(Must select one)</i>	Remote Display Cable - <b>6 conductor</b> <i>(Must select one)</i>
2" 02	0	0	F1	X None R Non NSF P NSF	D1 D2	X (requires single cable for DC power and output) L (requires single cable for DC power and output) S (requires dual cable for DC power and output)	XX None 01 Data Logger 02 Sensus Smart Output <i>(Includes 6' Cable)</i>	0000 No Cable (customer will supply) <u>Single</u> <u>Dual</u> 006S    006D 6 meter (20 ft) 015S    015D 15 meter (50 ft) 030S    030D 30 meter (100 ft) 045S    045D 45 meter (150 ft) 060S    060D 60 meter (200 ft)	006 6 meter (20 ft) 015 15 meter (50 ft) 030 30 meter (100 ft) 045 45 meter (150 ft) 060 60 meter (200 ft)	
3" 03	G <sup>6</sup>	H <sup>5</sup>								
4" 04		B <sup>5</sup>								
6" 06		Y <sup>5</sup>								
8" 08										
10" 10						A1 A2	X (requires single cable for output) L (requires single cable for output) S (requires single cable for output)			
12" 12										

Modbus is a registered trademark of Schneider Electric.  
 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.  
<sup>2</sup> You can choose up to one additional output on powered meters only.  
<sup>3</sup> If -X is selected, customer must provide full faced gaskets. Failure to install gaskets will void warranty. No charge for non NSF (-R) gaskets.  
<sup>4</sup> Battery life is shortened when using Modbus with battery powered units. Expected battery life is approximately 1 year, based on usage.  
<sup>5</sup> Available for 4" - 12" meters only.  
<sup>6</sup> Installed grounding rings are not available on 2" and 3" meters.  
<sup>7</sup> Sensus Smart Output option not available with Digital output

**User is responsible for reviewing end use application with their supplier for product suitability.**