

### FEATURES

- Wide flow range
- One moving part
- Hot tap available
- Modular electronics compatible
- Easily depth adjustable for 3-40" pipe

### APPLICATIONS

- Clean water
- Large pipes
- Aquariums, water parks
- Water & wastewater monitoring



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### GENERAL INFORMATION

The **IP100/200-Series** are adjustable depth insertion paddlewheels that come in brass, PVC or 316 stainless models to fit 3" to 40" pipe. Installation fittings are standard 1-1/2" (101/201) or 2" (115/215 or PVC101/201) NPT. Fittings such as saddles and weldolets may be purchased either locally or from Seametrics.

Ruby bearings and a non-drag Hall-effect sensor give these meters the widest flow range of any of the paddlewheel types. A sensor detects the passage of miniature magnets in the six rotor blades. The resulting square-wave signal can be sent for hundreds of feet over unshielded cable without a transmitter and connected directly to many PLC's and other controls without any additional electronics.

If desired, a modular system of electronics can be installed directly on the flow sensor or mounted remotely. The FT415 (battery powered) or FT420 (loop powered) flow indicator provides digital rate and total display, as well as programmable pulse output; the FT420 also provides a 4-20 mA analog output. If a display is not required, the A055 provides 4-20 mA analog output, and the PD10 provides a programmable pulse for pump pacing.

The "hot-tap" models (IP115/215) can be installed or serviced without shutting down the line by means of a 2" full-port isolation valve that comes with a nipple for installation on the pipe fitting. In most circumstances, no special tool is required.

## FEATURES

- Modular electronics (optional)
- rate/total/pulse/4-20 mA
  - blind 4-20 transmitter
  - pulse divider

18 Foot Cable

Rugged cast aluminum housing

Compression nut  
for easy adjustment, secure locking

Adapter fitting  
with 1-1/2" NPT threads

Rotor housing

Removable jewel bearings

Rotor

**IP101/201**

3/4" diameter tubing  
for low insertion force

2" Adapter  
removes to mount  
hot-tap machine

Full-port 2" ball valve  
for sensor removal  
(2" gate valve for PVC)

Adapter fitting  
with 2" NPT  
threads

**IP115/215**

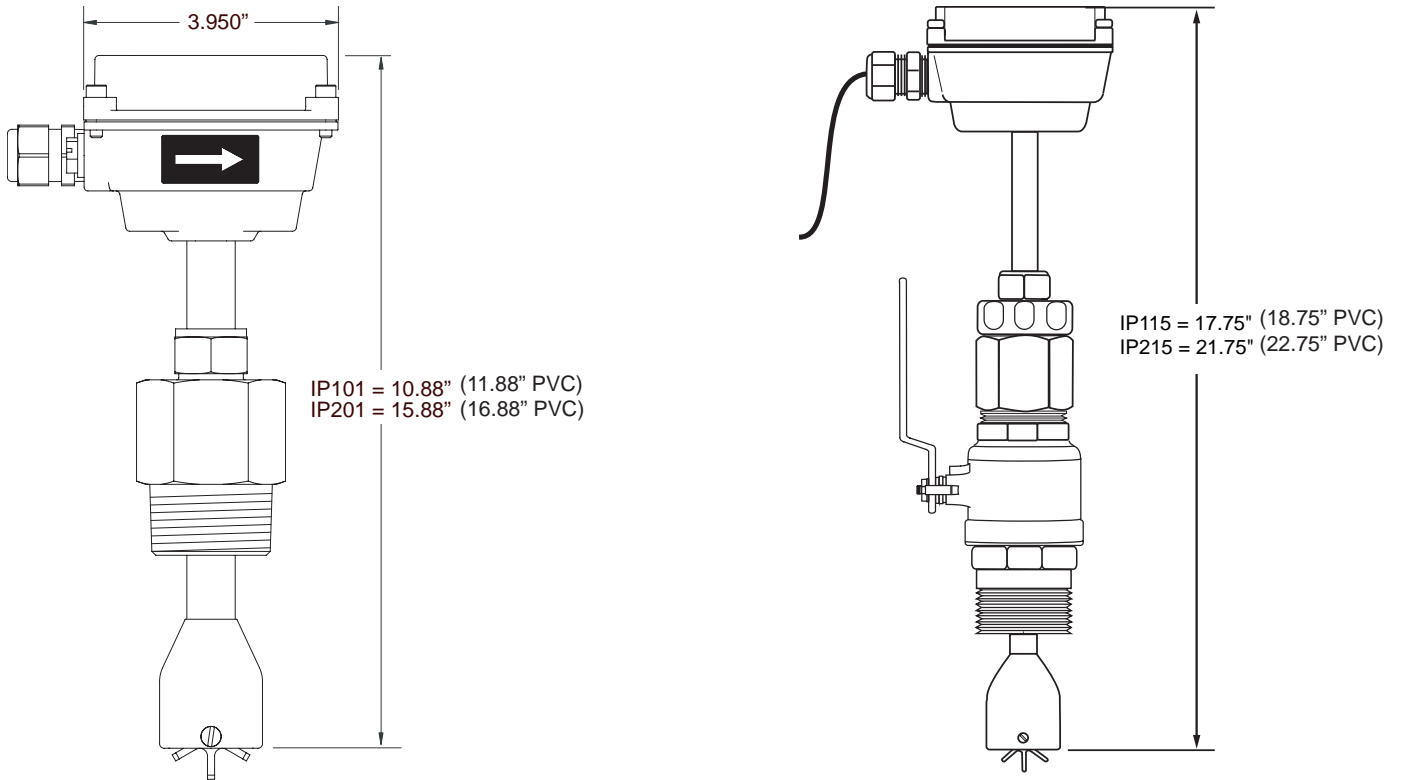
Locking collar

## SPECIFICATIONS\*

Pipe Size	IP101/115	IP201/215
	3" to 12" (50 - 300mm)	12" to 40" (300 - 1000mm)
<b>Sensor</b>	Hall Effect sensor, 12 Vdc current sinking pulse	
<b>Materials</b>	<b>Housing</b> Cast aluminum	
	<b>Sensor Body</b> Brass, PVC or 316 SS	
	<b>Rotor</b> PVDF (Kynar)	
	<b>Shaft</b> Nickel-bound tungsten carbide (zirconia ceramic optional)	
	<b>Bearings</b> Ruby jewel	
	<b>IP101/201 (Brass/SS)</b>	<b>IP115/215 (Brass/SS)</b>
<b>Isolation Ball Valve</b>	None	Bronze (316SS optional)
		<b>PVC 101/201/115/215</b> (PVC uses gate valve)
<b>Fitting Size</b>	1.5" NPT	2" NPT
<b>Flow Range</b>	0.3 - 30 feet/sec (0.1 - 9 meter/sec)	
<b>Accuracy</b>	+/- 1.5% of full scale	
<b>Maximum Temperature</b>		
	<b>Brass/SS</b>	200° F (93° C)
	<b>PVC</b>	130° F (55° C)
<b>Maximum Pressure</b>		
	<b>Brass/SS</b>	200 psi (14 bar)
	<b>PVC</b>	150 psi (10 bar)
<b>Insertion Force</b>	0.44 x pressure in pipe	
<b>Power</b>	5-24 Vdc, 1.5 mA (3.5 -N 16 Vdc with -04 option)	
<b>Cable</b>	#22 AWG 3-con, 18' (6m); 2,000' (650m) maximum cable run	
<b>Regulatory</b>	CE Mark (Standard Power Only)	

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

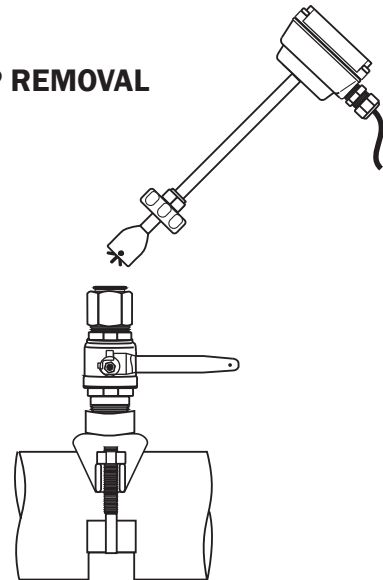
## DIMENSIONS



## HOT TAP INSTALLATION

Insertion and removal under pressure is possible due to the 2" full-port isolation valve, which comes with a nipple for installation on the pipe fitting. If it is necessary to do the initial installation under pressure, any standard hot tap drilling machine with 2" NPT adapter, such as a Transmate or a Mueller, can be used. Ordinarily, it is not necessary to use an installation tool, since the small-diameter tube can be controlled by hand at all but the highest pressures.

## HOT TAP REMOVAL



## FLOW RANGE (Gallons Per Minute)

Pipe Size	3"	4"	6"	8"	10"	12"	16"	18"	24"	30"	36"	40"
Min. (.3 ft/sec)	6.9	12	27	46.8	73	105	165	209	375	624	874	1,110
Max. (30 ft/sec)	691	1,190	2,700	4,680	7,370	10,470	16,520	20,900	37,600	62,505	87,410	111,000

Approximations based on Schedule 40 pipe.



# IP100/200-SERIES Insertion Paddlewheel Flow Sensor

## HOW TO ORDER

### MODEL

3-12" = **IP101**  
3-12" hot tap = **IP115**  
12-40" = **IP201**  
12-40" hot tap = **IP215**

### MATERIAL

Brass = **B**  
PVC = **P**  
316 Stainless = **S**

### OPTIONS

Ceramic Shaft = **-01**  
Adapter Fitting, 2" Threads = **-02**  
Micropower Pickup (FT415 & DL76 Only) = **-04**  
LMI Pump Connector = **-06**  
Seametrics Control Connector = **-07**  
Stainless Valve Assembly (115/215 only) = **-08**  
No Valve Assembly (115/215 only) = **-09**  
\*Immersibility = **-40**  
12" Extension (200-Series Brass & SS only) = **-72**

\*Consult factory for suitable applications

### ACCESSORIES

Rate & Total Indicator w/4-20 mA Output = **FT420**  
Battery Operated Rate/Totalizer = **FT415**  
Blind 4-20 mA Transmitter = **AO55**  
Power Supply = **PC3**

Data Logger = **DL76**  
Pulse Divider = **PD10**  
Saddle Fittings = **Consult Factory**

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