



### TX11x/21x

(Shown with externally powered electronics)



### TX15x/25x

(Shown with battery powered electronics)

### 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

### GENERAL INFORMATION

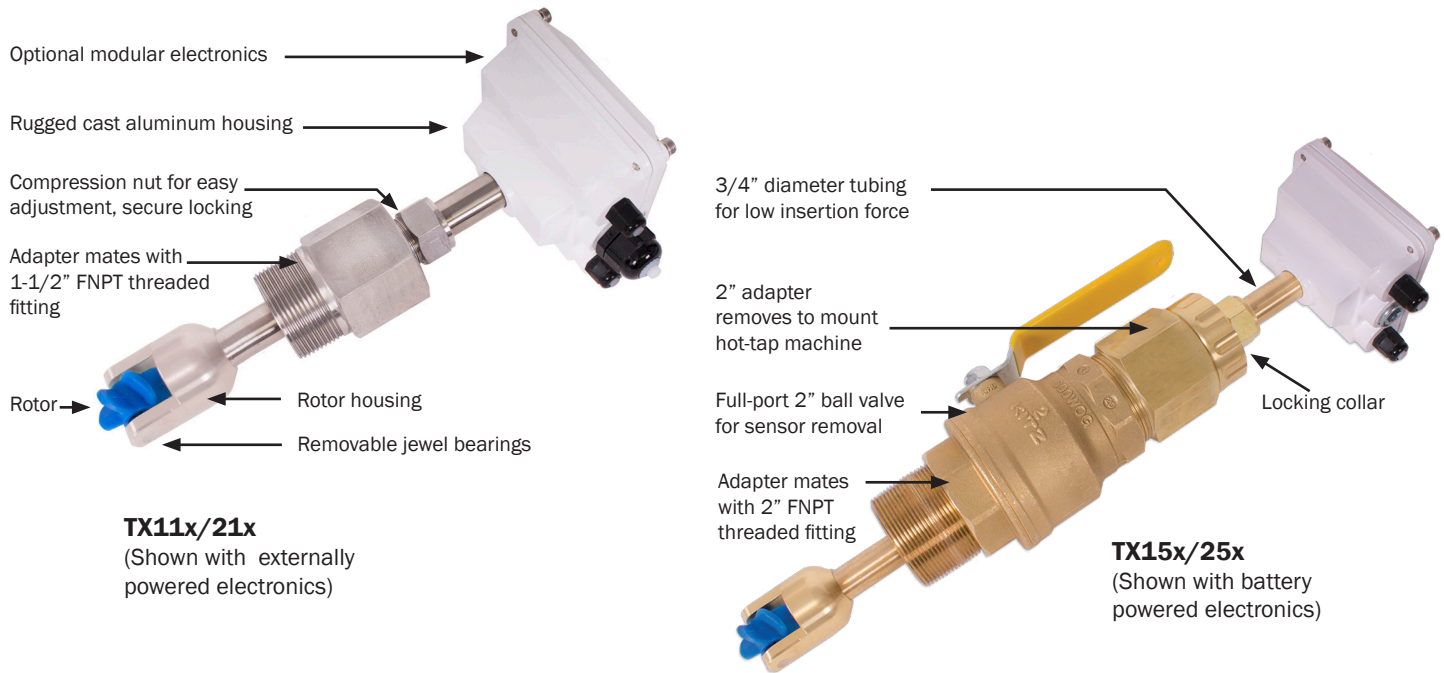
The **TX100/200-Series** are adjustable depth insertion turbines that come in brass or 316 stainless models to fit 3" to 40" pipe. Adapters mate with standard 1-1/2" (11x/21x) or 2" (15x/25x) FNPT threaded fittings such as saddles and weldolets which may be purchased either locally or from Seametrics.

Ruby bearings and a non-drag pickoff give these adjustable insertion turbine flow sensors a wide flow range and long life. A sensor detects the passage of miniature magnets in the rotor blades. The resulting square-wave signal can be sent for hundreds of feet without a transmitter, over unshielded cable. This signal can be connected directly to many PLC's and other controls without any additional electronics.

A modular system of electronics can be installed directly on the flow sensor or mounted remotely. The FT430 (externally powered with pulse), FT440 (loop powered), and FT450 (battery powered) all provide digital rate and total displays, as well as a programmable pulse; the FT440 also provides a 4-20 mA analog output. The AO55 is a blind analog (4-20 mA) transmitter. Programmable pulse for pump pacing is available with the PD10.

The "hot-tap" models (TX15x/25x) 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

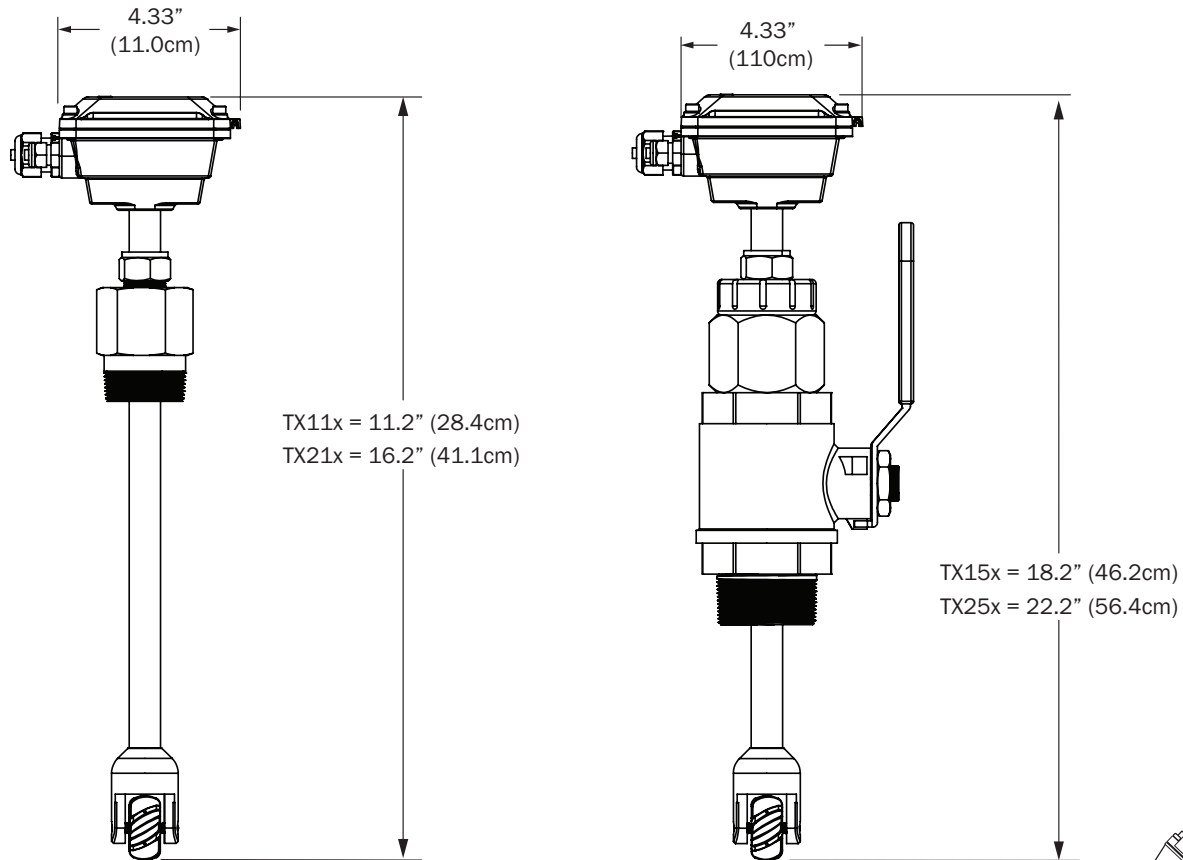


## SPECIFICATIONS\*

Power Source		Low Power	Micropowered (-04 Option)
Supply Voltage/Current		6-40 Vdc/< 2 mA	3.1-16 Vdc/60 µA @ 3.6 Vdc
Sensor	Type	Digital Magneto-resistive	Giant Magneto-resistance (GMR)
	Output	Current Sinking Pulse	Voltage Output
	Sinking Current	150 mA max	2 mA max
Pipe Size		<b>TX11x/15x</b> 3" - 12" (75 - 300mm)	<b>TX21x/25x</b> 12" - 40" (300 - 1000mm)
Materials	Housing	Cast aluminum	
	Sensor Body	Brass or 316 SS	
	Rotor	PVDF standard	
	Shaft/Bearings	Nickel-bound tungsten carbide/Ruby	
	Isolation Valve	<b>TX11x/21x</b> None	<b>TX15x/25x</b> Bronze (316SS optional)
Fitting Size Required		1-1/2" FNPT	2" FNPT
Flow Range		0.5 - 30 feet/sec (0.15 - 9.14 meter/sec)	
Accuracy		+/-1.5% of full scale	
Maximum Temperature		200° F (93° C)	
Maximum Pressure		200 psi (14 bar)	
Insertion Force		0.44 x pressure in pipe	
Cable		#22 AWG 3-con, 18' (6m); 2,000' (610m) maximum cable run	
Regulatory		CE	

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

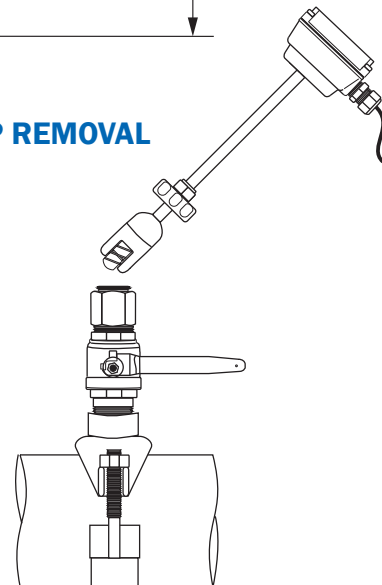
## DIMENSIONS



## 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.	11.5	19.8	45	78	123	176	313	396	704	1,100	1,585	1,960
Max.	691	1,190	2,700	4,680	7,370	10,470	16,520	20,900	37,600	62,505	87,410	117,500

Approximations based on Schedule 40 pipe.



# TX100/200-SERIES Insertion Turbine Flow Sensor

## HOW TO ORDER

	Description	Size	Material	Options (110/210)		Options (150/250)
<b>Sensor Only</b>	<b>Sensor Only.</b>	3" - 12" = <b>TX110</b> 12" - 40" = <b>TX210</b>	Brass = <b>B</b> 316 SS = <b>S</b>	Brass Adapter Fitting 2" NPT = <b>-02</b> SS Adapter Fitting 2" NPT = <b>-02</b> Bidirectional = <b>-03</b> Micropower Pickup = <b>-04</b> Standard Power, LMI 4-pin Connector = <b>-06</b> Std Power, Seametrics Ctrl Connector = <b>-07</b>	Brass Adapter 1 1/2" BSP = <b>-23</b> SS Adapter 1 1/2" BSP = <b>-24</b> Old Style Adapter 1 1/2" NPT = <b>-35</b> *Immersible = <b>-40</b> 12" Extension (200 Series Only) = <b>-72</b> Roytronic® Series-A 5-Pin Connector = <b>-106</b>	Bidirectional = <b>-03</b> Micropower Pickup = <b>-04</b> Standard Power, LMI 4-pin Connector = <b>-06</b> Standard Power, Seametrics Control Connector = <b>-07</b> 316 SS Valve Assembly = <b>-08</b> No Valve Assembly = <b>-09</b> *Immersible = <b>-40</b> 12" Extension (200 Series Only) = <b>-72</b> Roytronic® Series-A 5-Pin Connector = <b>-106</b>
	<b>Hot Tap</b>	3" - 12" = <b>TX150</b> 12" - 40" = <b>TX250</b>				
<b>A055 Mounted on Sensor</b>	<b>Blind 4-20 mA analog transmitter (A055) mounted on the sensor.</b>	3" - 12" = <b>TX112</b> 12" - 40" = <b>TX212</b>	Brass = <b>B</b> 316 SS = <b>S</b>	Brass Adapter Fitting 2" NPT = <b>-02</b> SS Adapter Fitting 2" NPT = <b>-02</b> Bidirectional = <b>-03</b> Standard Power, LMI 4-pin Connector = <b>-06</b> Brass Adapter 1 1/2" BSP = <b>-23</b> Std Power, Seametrics Ctrl Connector = <b>-07</b>	SS Adapter 1 1/2" BSP = <b>-24</b> Old Style Adapter 1 1/2" NPT = <b>-35</b> 12" Extension (200 Series Only) = <b>-72</b> Roytronic® Series-A 5-Pin Connector = <b>-106</b>	Bidirectional = <b>-03</b> Standard Power, LMI 4-pin Connector = <b>-06</b> Std Power, Seametrics Ctrl Connector = <b>-07</b> 316 SS Valve Assembly = <b>-08</b> No Valve Assembly = <b>-09</b> 12" Extension (200 Series Only) = <b>-72</b> Roytronic® Series-A 5-Pin Connector = <b>-106</b>
	<b>Hot Tap</b>	3" - 12" = <b>TX152</b> 12" - 40" = <b>TX252</b>				
<b>FT430 Mounted on Sensor</b>	<b>Rate &amp; total indicator with pulse, externally powered (FT430) mounted on the sensor.</b>	3" - 12" = <b>TX113</b> 12" - 40" = <b>TX213</b>	Brass = <b>B</b> 316 SS = <b>S</b>	Brass Adapter Fitting 2" NPT = <b>-02</b> SS Adapter Fitting 2" NPT = <b>-02</b> Bidirectional = <b>-03</b> Brass Adapter 1 1/2" BSP = <b>-23</b> SS Adapter 1 1/2" BSP = <b>-24</b> Tamperevident Kit = <b>-32</b> Old Style Adapter 1 1/2" NPT = <b>-35</b>	Non-resettable Total = <b>-64</b> 12" Extension (200 Series Only) = <b>-72</b> Hinged Display Cover = <b>-126</b>	Bidirectional = <b>-03</b> 316 SS Valve Assembly = <b>-08</b> No Valve Assembly = <b>-09</b> Tamperevident Kit = <b>-32</b> Old Style Adapter = <b>-35</b> Non-resettable Total = <b>-64</b> 12" Extension (200 Series Only) = <b>-72</b> Hinged Display Cover = <b>-126</b>
	<b>Hot Tap</b>	3" - 12" = <b>TX153</b> 12" - 40" = <b>TX253</b>				
<b>DL76 Mounted on Sensor</b>	<b>Data logger (DL76) mounted on the sensor.</b>	3" - 12" = <b>TX116</b> 12" - 40" = <b>TX216</b>	Brass = <b>B</b> 316 SS = <b>S</b>	Brass Adapter Fitting 2" NPT = <b>-02</b> SS Adapter Fitting 2" NPT = <b>-02</b> Bidirectional = <b>-03</b> Brass Adapter 1 1/2" BSP = <b>-23</b>	SS Adapter 1 1/2" BSP = <b>-24</b> Tamperevident Kit = <b>-32</b> Old Style Adapter 1 1/2" NPT = <b>-35</b> 12" Extension (200 Series Only) = <b>-72</b>	Bidirectional = <b>-03</b> 316 SS Valve Assembly = <b>-08</b> No Valve Assembly = <b>-09</b> Tamperevident Kit = <b>-32</b> 12" Extension (200 Series Only) = <b>-72</b>
	<b>Hot Tap</b>	3" - 12" = <b>TX156</b> 12" - 40" = <b>TX256</b>				
<b>FT450 Mounted on Sensor</b>	<b>Rate &amp; total indicator with pulse, battery powered (FT450) mounted on the sensor.</b>	3" - 12" = <b>TX117</b> 12" - 40" = <b>TX217</b>	Brass = <b>B</b> 316 SS = <b>S</b>	Brass Adapter Fitting 2" NPT = <b>-02</b> SS Adapter Fitting 2" NPT = <b>-02</b> Bidirectional = <b>-03</b> Brass Adapter 1 1/2" BSP = <b>-23</b> SS Adapter 1 1/2" BSP = <b>-24</b> Tamperevident Kit = <b>-32</b> Old Style Adapter 1 1/2" NPT = <b>-35</b>	Non-resettable Total = <b>-64</b> 12" Extension (200 Series Only) = <b>-72</b> Hinged Display Cover = <b>-126</b>	Bidirectional = <b>-03</b> 316 SS Valve Assembly = <b>-08</b> No Valve Assembly = <b>-09</b> Tamperevident Kit = <b>-32</b> Old Style Adapter = <b>-35</b> Non-resettable Total = <b>-64</b> 12" Extension (200 Series Only) = <b>-72</b> Hinged Display Cover = <b>-126</b>
	<b>Hot Tap</b>	3" - 12" = <b>TX157</b> 12" - 40" = <b>TX257</b>				
<b>PD10 Mounted on Sensor</b>	<b>Pulse Divider (PD10) mounted on the sensor.</b>	3" - 12" = <b>TX118</b> 12" - 40" = <b>TX218</b>	Brass = <b>B</b> 316 SS = <b>S</b>	Brass Adapter Fitting 2" NPT = <b>-02</b> SS Adapter Fitting 2" NPT = <b>-02</b> Bidirectional = <b>-03</b> LMI Pump 4-pin Connector = <b>-06</b> Brass Adapter 1 1/2" BSP = <b>-23</b> SS Adapter 1 1/2" BSP = <b>-24</b>	Old Style Adapter 1 1/2" NPT = <b>-35</b> 10 Ft. Cable for LMI Connector = <b>-37</b> 12" Extension (200 Series Only) = <b>-72</b> Roytronic® Series-A 5-Pin Connector = <b>-106</b>	Bidirectional = <b>-03</b> LMI Pump 4-pin Connector = <b>-06</b> 316 SS Valve Assembly = <b>-08</b> No Valve Assembly = <b>-09</b> 10' Cable for LMI Adapter = <b>-37</b> 12" Extension (200 Series Only) = <b>-72</b> Roytronic® Series-A 5-Pin Connector = <b>-106</b>
	<b>Hot Tap</b>	3" - 12" = <b>TX158</b> 12" - 40" = <b>TX258</b>				
<b>FT440 Mounted on Sensor</b>	<b>Rate &amp; total indicator with pulse &amp; 4-20 mA output, loop powered (FT440) mounted on the sensor.</b>	3" - 12" = <b>TX119</b> 12" - 40" = <b>TX219</b>	Brass = <b>B</b> 316 SS = <b>S</b>	Brass Adapter Fitting 2" NPT = <b>-02</b> SS Adapter Fitting 2" NPT = <b>-02</b> Bidirectional = <b>-03</b> Brass Adapter 1 1/2" BSP = <b>-23</b> SS Adapter 1 1/2" BSP = <b>-24</b> Tamperevident Kit = <b>-32</b> Old Style Adapter 1 1/2" NPT = <b>-35</b>	Non-resettable Total = <b>-64</b> 12" Extension (200 Series Only) = <b>-72</b> Hinged Display Cover = <b>-126</b>	Bidirectional = <b>-03</b> 316 SS Valve Assembly = <b>-08</b> No Valve Assembly = <b>-09</b> Tamperevident Kit = <b>-32</b> Old Style Adapter = <b>-35</b> Non-resettable Total = <b>-64</b> 12" Extension (200 Series Only) = <b>-72</b> Hinged Display Cover = <b>-126</b>
	<b>Hot Tap</b>	3" - 12" = <b>TX159</b> 12" - 40" = <b>TX259</b>				

\* Immersible to maximum of 3 ft (1m), up to 2 weeks • Roytronic is a registered trademark of Milton Roy Company