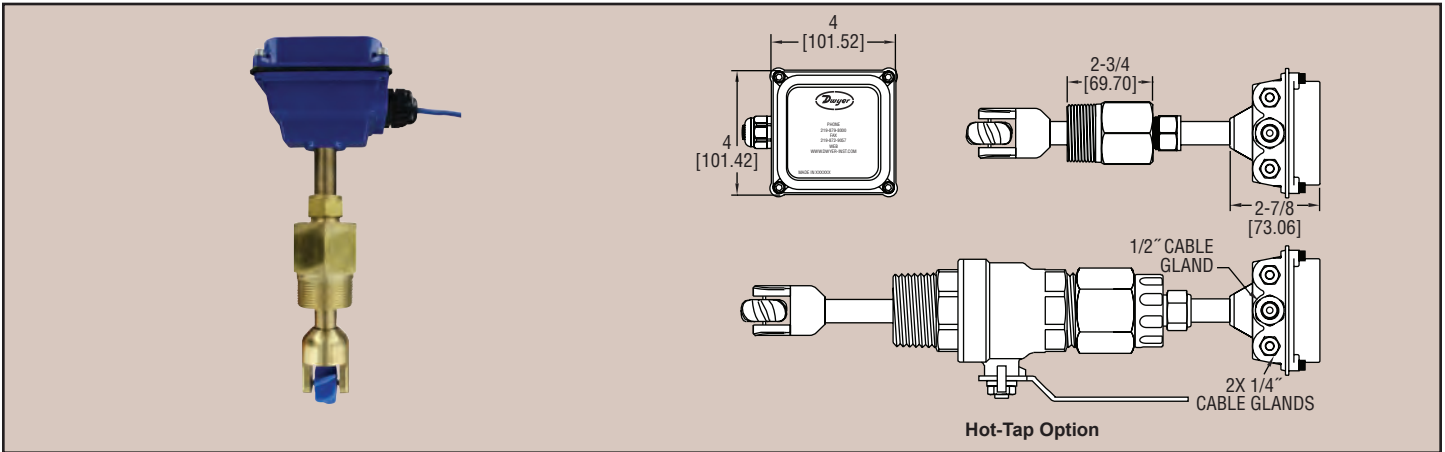




Series
TBS

Liquid Turbine Flow Sensor

Hot-Tap Option, 3 to 40" Field Adjustable Insertion



The Series TBS Insertion Turbine Flow Sensor comes in brass or stainless steel and has an available "hot-tap" model. The TBS has Series SDF fittings available to fit pipe sizes 3 to 40". Ruby bearings give the turbine a low coefficient of friction and long life. The low friction bearings also allow the Series TBS to handle a wide range for flow rates. Additional options for this meter include adapter fittings and valve assemblies. Series TBS is suitable for clean liquids and large pipe applications.

PRINCIPLE OF OPERATION

The Series TBS uses a turbine equipped with miniature magnets in the rotor blades to measure flow. Liquid flow rotates the turbine and a sensor detects the passage of the magnets resulting in a square wave output. The output signal can then be combined with the Series RTI for flow rate and total, and the Series BAT for a 4 to 20 mA signal conversion.

APPLICATIONS

- Chilled Water Monitoring in Building Automation Systems
- Water & Wastewater Monitoring
- Aquariums, Water Parks

ACCESSORIES

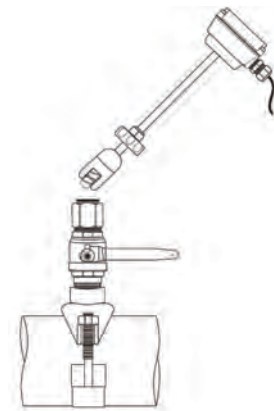
- Series BAT, Blind Analog Transmitter, converts pulse output to 4 to 20 mA analog output. Unit is loop powered, fits on the enclosure of the meter, and is field spannable.
- Series RTI, Rate Total Indicator, converts pulse output to 4 to 20 mA analog output with local flow rate and totalization display. Unit is loop powered, can fit on the enclosure of the meter, and provides a high/low flow alarm.
- Series PWD, Pulse Divider, for use with pacing electronic metering pumps. Unit divides the input frequency to any number from 1 to 9999 with the use of rotary switches to suit a number of metering pump inputs.

SPECIFICATIONS

- Service:** Compatible clean liquids.
- Range:** 0.5 to 30 ft/s (0.15 to 9.14 m/s).
- Wetted Materials:**
 - Shaft Body/Fitting: Brass or 316 SS;
 - Rotor: PVFD;
 - Shaft/Bearings: Nickel-bound tungsten carbide/ruby jewel.
 - Valve Assembly: TBS-1XX: Bronze (SS optional) with bronze ball valve;
 - O-ring: EPDM.
- Accuracy:** ±1.5% FS.
- Temperature Limit:** 200°F (93°C).
- Pressure Limit:** 200 psi (14 bar).
- Output:** Current sinking square wave pulse, 100 mA max.
- Power Requirements:** 6 to 40 VDC @ 2 mA.
- Process Connection:** TBS-0XX: 1-1/2" male NPT; TBS-1XX: 2" male NPT.
- Electrical Connection:** #22 AWG, 3 conductor, 18' (5.5 m), (max. 2000' (650 m)).
- Enclosure Material:**
 - Housing: Die-cast powder-coated aluminum.
- Enclosure Rating:** NEMA 4X (IP66).
- Weight:** TBS-0SX: 4 lb (1814 g); TBS-0LX: 6 lb (2722 g); TBS-1SX: 13 lb (5897 g); TBS-1LX: 15 lb (6804 g).

Example	TBS	OSS	IMM	TBS-OSS-IMM		
Series	TBS			Insertion Turbine Flow Sensor		
Model				Size	Hot-Tap	Material
		0SB		3 to 12"	No Hot-Tap	Brass
		0SS		3 to 12"	No Hot-Tap	316SS
		0LB		12 to 40"	No Hot-Tap	Brass
		0LS		12 to 40"	No Hot-Tap	316SS
		1SB		3 to 12"	Hot-Tap	Brass
		1SS		3 to 12"	Hot-Tap	316SS
		1LB		12 to 40"	Hot-Tap	Brass
		1LS		12 to 40"	Hot-Tap	316SS
Options			BAF	2" Brass Adapter Fitting (TBS-0XX only)		
			SAF	2" SS Adapter Fitting (TBS-0XX only)		
			SVA	316SS Valve Assembly (TBS-1XX only)		
			NVA	No Valve Assembly (deduct price) (TBS-1XX only)		
			BPT	1-1/2" Brass BPT Adapter (2 piece) (TBS-0XX only)		
			SPT	1-1/2" SS Adapter (2 piece) (TBS-0XX only)		
			IMM	Immersible (Urethane Potted Electrical Connection)		
			EXT	12" Extension (TBS-XLX only)		

*SS is stem and fitting. For SS valve order SVA option.



Hot-Tap Option
(Shown installed on pipe)

FLOW

Flow Transmitters, Turbine, Adjustable Insertion