

# ECONOMICAL LIQUID TURBINE FLOW METERS

## FTB-1300 Series



Optional

- ✓ ±1% of Actual Flow Accuracy
- ✓ Pressure Rating Up to 345 bar (5000 psi)
- ✓ Stainless Steel Construction with Tungsten Carbide Bearing
- ✓ Easy Maintenance Design

The FTB-1300 Series of turbine flow meters are designed for industrial and laboratory measurement of water, solvents and other low viscosity fluids. The FTB-1300 Series turbine flow meters feature a 316 stainless steel body and a tungsten carbide bearing. They offer good accuracy and reliability with very little pressure drop. The standard turbine flow meters feature threaded end connections.

The FTB-1300 series of turbine flow meters is designed with a wear resistant rotor assembly to provide trouble free operation and a long service life. Fluid moving through the flow meter causes the rotor to turn at a speed proportional to the flow rate, and as the rotor blades cut through the magnetic field of the pickup, an electronic pulse is generated. The pulse train is used to represent the actual flow or total amount of fluid passing through the flow meter. The number of electronic pulses generated per unit volume is known as a K-factor. The value is constant over each flow meter's operating range, and is unique to each meter.

### SPECIFICATIONS

**Accuracy:** ±1% reading  
**Pressure Max:** 345 bar (5000 psi)  
**Wetted Materials:** Stainless Steel (316L, 303 and 1.4122) and carbide with nickel binder (be sure that the operating fluid is compatible with these materials)



FTB-1302, 1.1 to 11 LPM flow meter, shown smaller than actual size.

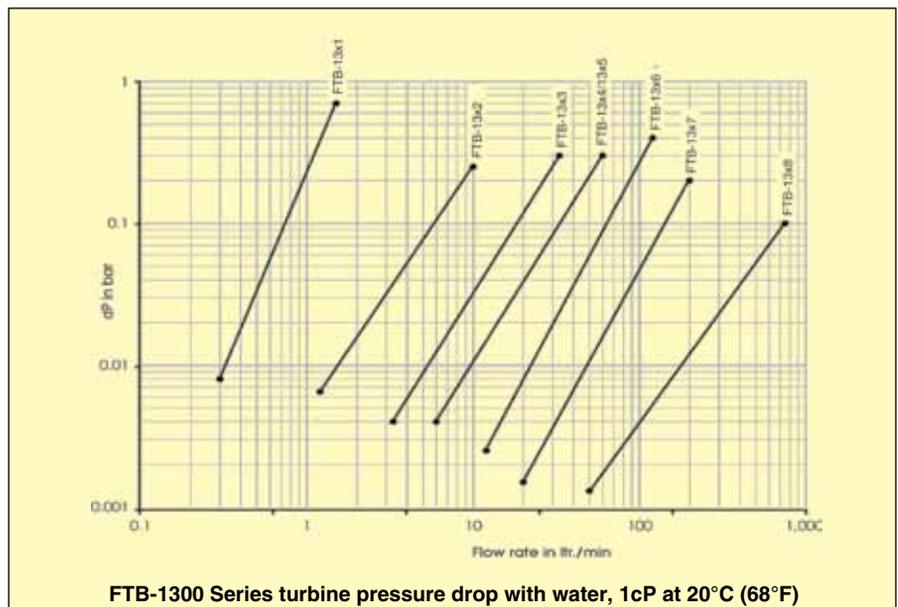
### Outputs

#### Square Wave (FTB-1300 Models):

**Supply Voltage:** 10 to 28 Vdc  
**Supply Current:** 8 mA @ 12 Vdc, 12 mA @ 24 Vdc  
**Duty Signal:** 50% ±15%  
**Minimum Signal:** 0.5 Hz  
**Frequency Output:** Flow dependent, up to 2000 Hz  
**Driving Capacity:** 50 mA Max resistive load  
**Output Impedance:** ~ 40 Ω, analog switch and self-resetting fuse  
**Temperature Range:** -40 to 85°C (-40 to 185°F)  
**Cable Length:** 60 cm (24")

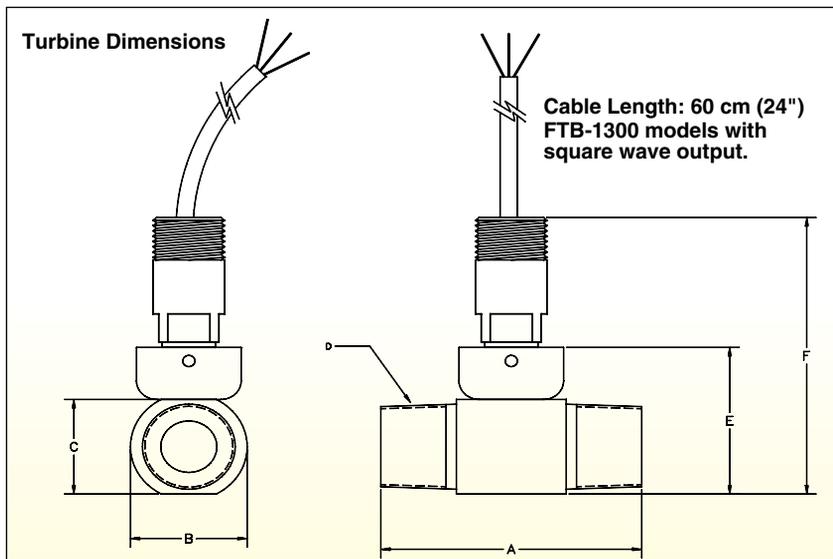
#### Current (FTB-1310 Models):

**Supply Voltage:** 10 to 30 Vdc  
**Input:** 0.25 Hz to 5 KHz  
**Update Time:** 1/F + 25 msec  
**Amplitude:** 1V p-p to 40V p-p  
**Linearity:** ±0.01% of reading  
**Output:** 4 to 20 mA  
**Enclosure Certifications:** NEC Class I Groups C, D; Class II Groups E, F, G (FTB-1310 Series)  
**Temperature Range:** -40 to 85°C (-40 to 185°F)





FTB-1313, with 4 to 20 mA transmitter (standard) on FTB-1310 Series. Shown smaller than actual size.



Turbine Dimensions: mm (inch)

Model No.	A	B	C	D	E*	F
FTB-13X1	76.2 (3)	34.29 (1.35)	30.48 (1.20)	½ NPT	55.88 (2.20)	97.79 (3.85)
FTB-13X2	76.2 (3)	34.29 (1.35)	30.48 (1.20)	½ NPT	55.88 (2.20)	97.79 (3.85)
FTB-13X3	76.2 (3)	34.29 (1.35)	30.48 (1.20)	½ NPT	57.15 (2.25)	100.33 (3.95)
FTB-13X4	76.2 (3)	34.29 (1.35)	30.48 (1.20)	½ NPT	57.15 (2.25)	101.6 (4)
FTB-13X5	76.2 (3)	39.37 (1.55)	35.56 (1.40)	1 NPT	62.23 (2.45)	104.14 (4.10)
FTB-13X6	76.2 (3)	39.37 (1.55)	35.56 (1.40)	1 NPT	64.77 (2.55)	107.95 (4.25)
FTB-13X7	76.2 (3)	54.61 (2.15)	49.53 (1.95)	1½ NPT	76.2 (3)	116.84 (4.60)
FTB-13X8	101.6 (4)	68.58 (2.70)	64.77 (2.55)	2 NPT	91.44 (3.60)	133.35 (5.25)

\* 4 to 20 mA output adds 168 mm (6.6") to the E dimensions for protection head.

To Order					
Model No.	Fittings NPT	Range LPM	GPM	Pulses Per Gallon	Output and Description
FTB-1301	½	0.3 to 1.5	0.08 to 0.4	125,000	Amplified square wave, 60 cm (24") cable
FTB-1302	½	1.1 to 11	0.3 to 3	48,000	
FTB-1303	½	3.4 to 34	0.9 to 9	15,000	
FTB-1304	½	6 to 60	1.6 to 16	10,500	
FTB-1305	1	6 to 60	1.6 to 16	10,500	
FTB-1306	1	11 to 121	3 to 32	1450	
FTB-1306A	1	11 to 121	3 to 32	2900	
FTB-1307	1½	19 to 200	5 to 53	800	
FTB-1308	2	49 to 757	13 to 200	100	4 to 20 mA industrial head electronics enclosure (FTB-1310-CONNECTOR recommended)
FTB-1311	½	0.3 to 1.5	0.08 to 0.4		
FTB-1312	½	1.1 to 11	0.3 to 3		
FTB-1313	½	3.4 to 34	0.9 to 9		
FTB-1314	½	6 to 60	1.6 to 16		
FTB-1315	1	6 to 60	1.6 to 16		
FTB-1316A	1	11 to 121	3 to 32		
FTB-1317	1½	19 to 200	5 to 53		
FTB-1318	2	49 to 757	13 to 200		

Accessories

Model No.	Description
FTB-1310 CONNECTOR	Recommended for use with FTB-1311 through FTB-1318
DPF701	6-digit rate or total display

Comes complete with operator's manual and certificate. Certificate has no points and is not NIST.

For a 5-point NIST certificate, add suffix "-NIST" to model number, for additional cost.

Ordering Examples: FTB-1301, ½ male NPT turbine, 0.3 to 1.5 LPM (0.08 to 0.4 GPM) range with square wave frequency output and DPF701, ½ DIN digital panel LED display.

FTB-1313, stainless turbine with linear 4 to 20 mA output, ½ NPT connections and a range of 3.4 to 34 LPM (0.9 to 9 GPM).