

### DESCRIPTION

The TFX Ultra transit time meter measures clean liquids as well as those with small amounts of suspended solids or aeration such as surface water or sewage.

### FEATURES

- Bi-directional flow measurement system
- Totalizer options include forward, reverse and net total
- Modbus RTU or BACnet MSTP over RS485; Ethernet connections including BACnet/IP, EtherNet/IP, and Modbus TCP/IP protocols
- Large, easy-to-read digital display
- Rugged, aluminum enclosure ensures a long service life in harsh environments
- Certified for hazardous area installation in North America and Europe

### APPLICATIONS

TFX Ultra ultrasonic flow and energy meters clamp onto the outside of pipes and do not contact the internal liquid. The technology has inherent advantages over alternate devices including: low-cost installation, no pressure head loss, no moving parts to maintain or replace, and a large, bi-directional measuring range that ensures reliable readings even at very low and high flow rates. The TFX Ultra is available in a variety of configurations that permit the user to select a meter with features suitable to meet particular application requirements.

The TFX Ultra is available in two versions:

- A flow meter
- An energy flow meter used in conjunction with dual clamp-on RTDs for temperature measurement—ideal for retrofit, hydronic process and HVAC applications

### OPERATION

Transit time flow meters measure the time difference between the travel time of an ultrasound wave going with the fluid flow and against the fluid flow. The time difference is used to calculate the velocity of the fluid traveling in a closed-pipe system. The transducers used in transit time measurements operate alternately as transmitters and receivers. Transit time measurements are bi-directional and are most effective for fluids that have low concentrations of suspended solids.



Temperature measurements, when used in conjunction with flow measurement, can yield energy usage readings in the form of heat flow. To find the net heat loss or gain, energy usage is calculated by multiplying the flow rate of the heat transfer fluid by the change of heat content in that fluid after it has done some kind of work.

An ultrasonic meter equipped with heat flow capabilities is designed to measure the rate and quantity of heat delivered or removed from devices such as heat exchangers. The instrument measures the volumetric flow rate of the heat exchanger liquid, the temperature at the inlet pipe and the temperature at the outlet pipe.

$$\text{Rate of Heat Delivery} = Q \times (T_{in} - T_{out}) \times C \times \rho$$

Where

- Q = Volumetric flow rate
- T<sub>in</sub> = Temperature at the inlet
- T<sub>out</sub> = Temperature at the outlet
- C = Heat capacity
- ρ = Density of fluid

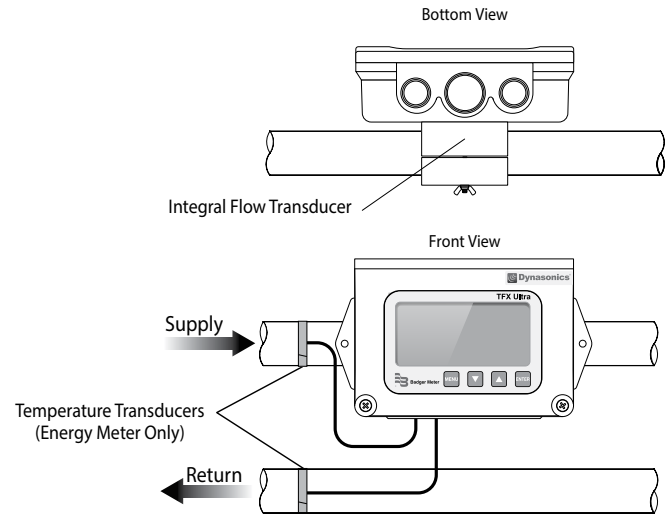
By applying a scaling factor this heat flow measurement can be expressed in various units: Btu, Watts, Joules, Kilowatts, and others.

## COMMON FEATURES

- Rate-Total Backlit Display
- 4...20 mA Output
- 0...1000 Hz Rate Pulse and Dual Alarm Outputs (Flow Meter Model only)
- Auxiliary Total Pulse Output 0...16 Hz (Energy Meter model only)
- USB Programming Port
- RS485 Modbus Network Connection
- Remote Totalizer Reset

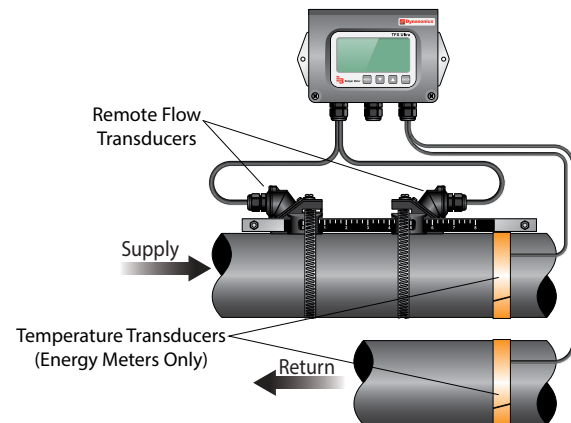
## METER WITH INTEGRAL FLOW TRANSDUCER

For pipe/tubing sizes of 2 in. (50 mm) and smaller, the TFX Ultra meter is available with a clamp-on transducer mounted and wired directly to the flow meter display/electronics enclosure. This design provides a convenient installation in areas where local indication is required.



## METER WITH REMOTE FLOW TRANSDUCER

The TFX Ultra is available with remote mounted transducers that permit separation of up to 990 feet (300 m). This design is used on larger pipes or when pipes are located in areas that are not convenient for viewing, or on piping systems with severe vibration.



## RAIL MOUNTING KIT

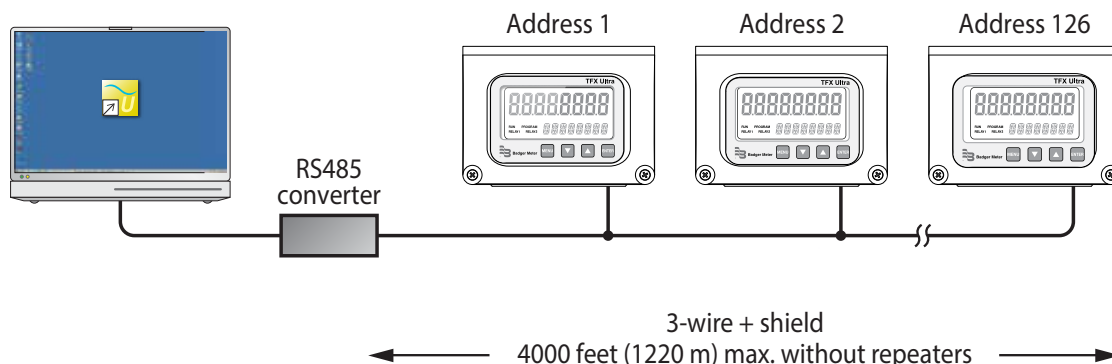
For remote flow DTTR transducers, the rail mounting kit aids in installation and positioning of the transducers. Transducers slide on the rails, which have measurement markings that are viewable through the sight opening.



## NETWORK OPTIONS

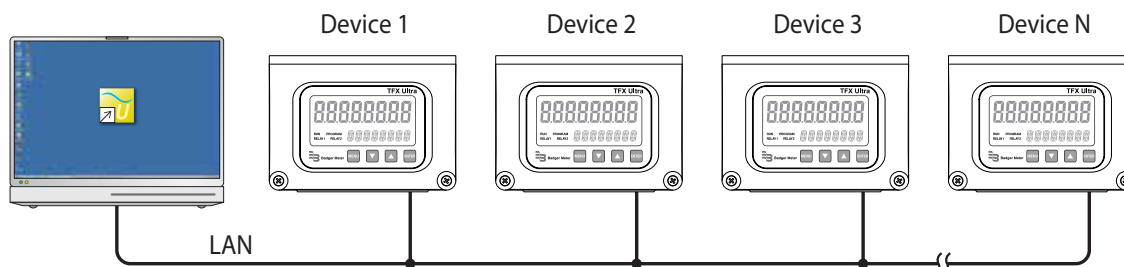
### RS485 Network

All TFX Ultra meters come equipped with an RS485 and use a Modbus RTU command set (data can be returned in single-precision, double-precision, integer or floating point values) or an optional BACnet MSTP protocol. Up to 126 Ultra products can be run on a single daisy-chain network and be individually queried for flow rate, positive flow accumulator, negative flow accumulator, supply temperature, return temperature and signal strength. Flow accumulators can be cleared at discrete addresses or globally. The RS485 network is also compatible with EnergyLink, direct to Excel, application. (EnergyLink is compatible with Modbus RTU only.)



### Ethernet 10/100 Base-T Network

If equipped with the optional Ethernet communications module, the TFX Ultra can be plugged into a LAN and queried for flow rate, positive flow accumulator, negative flow accumulator, supply temperature, return temperature and signal strength. The module contains Modbus TCP/IP, EtherNet/IP and BACnet/IP network compatibility.



## RTD KITS FOR INTEGRAL AND REMOTE ENERGY MEASUREMENT METERS

Ordering number	Description
480178	RTD Kit <sup>1</sup> , clamp on, 180° C, 1000 Ohm, 20 ft
480182	RTD Kit <sup>1</sup> , clamp on, 180° C, 1000 Ohm, 50 ft
480184	RTD Kit <sup>1</sup> , clamp on, 180° C, 1000 Ohm, 100 ft

<sup>1</sup>RTD Kit includes: 2RTDs, heat sink compound and installation tape

### MOUNTING SYSTEM FOR DTTR TRANSDUCERS

D010-2102-310	10 in. scaled mounting rail system
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### MOUNTING SYSTEM FOR DTTN TRANSDUCERS

D010-2102-010	10 in. scaled mounting rail system
D010-2102-016	16 in. scaled mounting rail system

## SPECIFICATIONS

### System

<b>Liquid Types</b>	Most clean liquids or liquids containing small amounts of suspended solids or gas bubbles		
<b>Velocity Range</b>	Bi-directional to greater than 40 FPS (12 MPS)		
<b>Flow Accuracy</b>	Easy Rail/DTTR/DTTN/DTTH/DTTL: $\pm 1\%$ of reading or $\pm 0.01$ FPS (0.003 MPS), whichever is greater DTTS/DTTC: 1 in. (25 mm) and larger = $\pm 1\%$ above 1 FPS (0.3 MPS) and $\pm 0.01$ FPS below 1 FPS DTTS/DTTC: 3/4 in. (19 mm) and smaller = $\pm 1\%$ of full scale		
<b>Temperature Accuracy</b>	Option A: 32...122° F (0...50° C)	Absolute: 0.22° F (0.12° C)	Difference: 0.09° F (0.05° C)
<b>(Energy Models Only)</b>	Option B: 32...212° F (0...100° C)	Absolute: 0.45° F (0.25° C)	Difference: 0.18° F (0.1° C)
	Option C: -40...350° F (-40...177° C)	Absolute: 1.1° F (0.6° C)	Absolute: 1.1° F (0.6° C) Difference: 0.45° F (0.25° C)
	Option D: -4...85° F (-20...30° C)	Absolute: 0.22° F (0.12° C)	Absolute: 0.22° F (0.12° C) Difference: 0.09° F (0.05° C)
<b>Sensitivity</b>	Flow:	0.001 FPS (0.0003 MPS)	
	Temperature:		
	Option A:	0.03° F (0.012° C)	
	Option B:	0.05° F (0.025° C)	
	Option C:	0.1° F (0.06° C)	
Option D:	0.03° F (0.012° C)		
<b>Repeatability</b>	0.5% of reading		
<b>Installation Compliance</b>	General Safety (all models): UL 61010-1, CSA C22.2 No. 61010-1; (power options A and D only) EN 61010-1 Hazardous Location (power supply options A and D only): Class I Div. 2 Groups C, D, T4; Class II, Division 2, Groups F, G, T4; Class III Division 2 for US/CAN; Standards: UL 1604, CSA 22.2 No. 213, ANSI/ISA 12.12.01 (2013) Compliant with directives 2004/108/EC, 2006/95/EC and 94/9/EC on meter systems with integral flow transducers, transducers constructed with twinaxial cable (all transducers with cables 100 ft (30 m) and shorter) or remote transducers with conduit		

### Transmitter

<b>Power Requirements</b>	AC: 95...264 V AC 47...63 Hz @ 17 VA max. or 20...26 V AC 47...63 Hz @ 0.35 A max. DC: 10...28 V DC @ 5 W max. Protection: Auto resettable fuse, reverse polarity and transient suppression
<b>Display</b>	Two line LCD, LED backlit: Top row 0.7 inch (18 mm) height, 7-segment Bottom row 0.35 inch (9 mm) height, 14-segment
	Icons: RUN, PROGRAM, RELAY1, RELAY2
	Flow rate indication: 8-digit positive, 7-digit negative
	Flow accumulator (totalizer): 8-digit positive, 7-digit negative, max. Reset via keypad, ULTRALINK™
<b>Enclosure</b>	NEMA Type 4 (IP-65) Construction: Powder-coated aluminum, polycarbonate, stainless steel, polyurethane, nickel-plated steel mounting brackets
	Size: 6.0 in. W x 4.4 in. H x 2.2 in. D (152 mm W x 112 mm H x 56 mm D)
	Conduit Holes: (2) 1/2 in. NPT female; (1) 3/4 in. NPT female; Optional Cable Gland Kit
<b>Temperature</b>	-40...131° F (-40...55° C) for line AC power with Ethernet option; -40...149° F (-40...65° C) for all others
<b>Configuration</b>	Via optional keypad or PC running ULTRALINK software ( <b>Note:</b> not all configuration parameters are available from the keypad—for example flow and temperature calibration and advanced filter settings)
<b>Engineering Units</b>	Flow-Only Model: Feet, gallons, cubic feet, million gallons, barrels (liquid and oil), acre-feet, pounds, meters, cubic meters, liters, million liters, kilograms
	Energy Model: Btu, mBtu, mmBtu, tons, kJ, kW, MW, kilocalorie, megacalorie
<b>Inputs/Outputs</b>	USB 2.0: For connection of a PC running ULTRALINK configuration utility
	RS485: Modbus RTU command set or BACnet® MSTP; Baud rates 9600, 14400, 19200, 38400, 56000, 57600, 76800
	Ethernet: Optional 10/100 Base T RJ45, communication via Modbus TCP/IP, EtherNet/IP, or BACnet/IP
	4-20 mA: 12-bit, internal power, can span negative to positive flow/energy rates
	Input: Reset totalizer when input is connected to signal ground
	Energy Model: Total Pulse: Opto isolated open collector transistor 2...28V DC, 100 mA max, 30 ms pulse width up to 16 Hz, 12-bit resolution, can span negative to positive rates; square-wave or turbine meter simulation outputs. Cannot be used with Ethernet option
	Flow-Only Model: Frequency Output: Open collector, 10...28V DC, 100 mA max, 0...1000 Hz; square wave or turbine meter simulation Two Alarm Outputs: Open-collector, 10...28V DC, 100 mA max, configure as rate alarm, signal strength alarm or totalizer pulse (100 ms pulse width up to 1 Hz max)

### Transducers

<b>Construction</b>	Easy Rail	max. 120 °C (250 °F)	
	DTTR	NEMA 6*/IP67	PBT; -40...120° C (-40...250° F)
	DTTC/DTTL	NEMA 6*/IP67	CPVC; ; -40...90° C (-40...194° F)
	DTTN (IS)	NEMA 6*/IP67	CPVC; -40...85° C (-40...185° F)
	DTTN/DTTL (Submersible)	NEMA 6P*/IP68	CPVC; -40...90° C (-40...194° F)
	DTTH	NEMA 6*/IP67	PTFE; -40...175° C (-40...350° F)
	DTTS	NEMA 6*/IP67	PVC; -40...60° C (-40...140° F)
*NEMA 6 units: to a depth of 3 ft (1 m) for 30 days max. NEMA 6P units: to a depth of 100 ft (30 m) seawater equivalent density indefinitely.			
<b>Frequency</b>	DTTS/DTTC: DTTR/DTTN/DTTH/Easy Rail: DTTL:	2 MHz 1 MHz 500 KHz	
<b>Cables</b>	RG59 Coaxial or Twinaxial (optional armored conduit)		
<b>Cable Length</b>	990 ft (300 meter) max. in 5 ft (1.5 m) increments; Submersible Conduit limited to 100 ft (30 m)		
<b>RTDs (Energy Models Only)</b>	Platinum 385, 1000 ohm, 3-wire; PVC jacket cable		
<b>Installation</b>	DTTN (option N) /DTTR/DTTS/DTTH/DTTC:		General (see "Installation Compliance" on page 4)
	DTTN Transducer (option F) and IS Barrier D070-1010-002:		Class I Div. 1, Groups C&D T5 Intrinsically Safe Ex ia; CSA C22.2 No. 142 & 157; UL 913 & 916

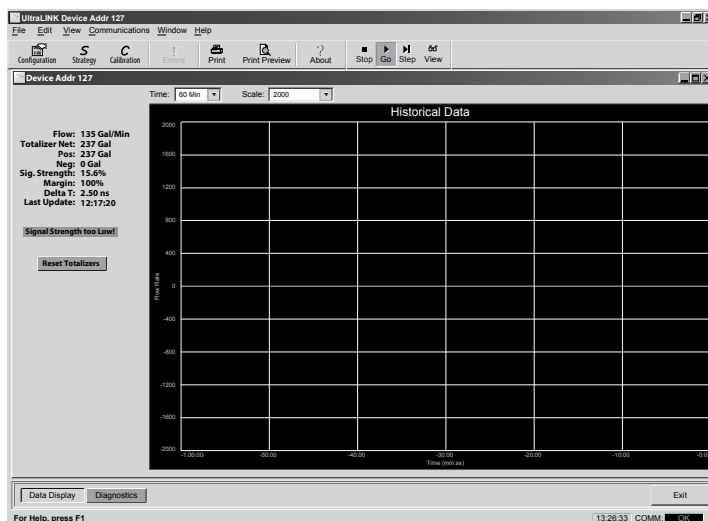
### Software Utilities

<b>ULTRALINK™</b>	Used to configure, calibrate and troubleshoot Flow-Only and Energy models. Connection via USB A/B cable; software is compatible with Windows® 2000, Windows® XP, Windows Vista® and Windows® 7
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### ULTRALINK™ SOFTWARE UTILITY

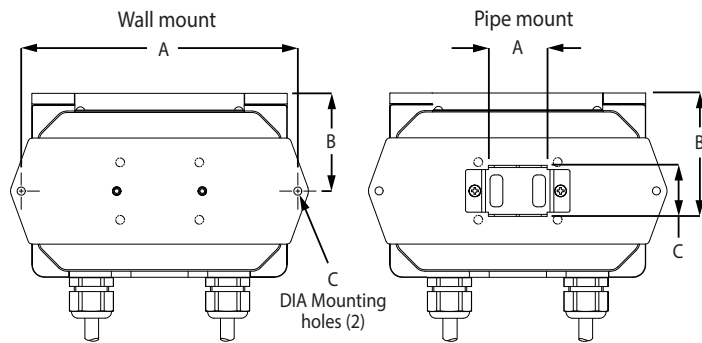
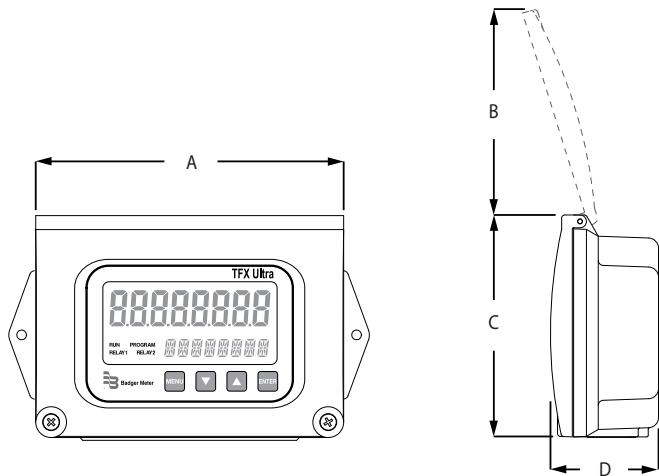
In addition to, or as a replacement for, the keypad entry programming, the flow meter can be used with the ULTRALINK™ software utility. The software is used to configure, calibrate and communicate with TFX Ultra flow meters. Additionally, it has numerous troubleshooting tools to make diagnosing and correcting installation problems easier.

A PC can be hard-wired to the TFX Ultra through a standard USB connection found on most current computers.



## DIMENSIONS

### Remote System



### Electronics Enclosure

	Enclosure	Wall Mount	Pipe Mount
<b>A</b>	6.00 in. (132.4 mm)	6.50 in. (165.1 mm)	1.38 in. (35.1 mm)
<b>B</b>	4.20 in. (106.7 mm)	2.30 in. (58.4 mm)	2.90 in. (73.7 mm)
<b>C</b>	4.32 in. (110 mm)	0.19 in. (4.8 mm)	1.20 in. (30.5 mm)
<b>D</b>	2.12 in. (53.8 mm)		

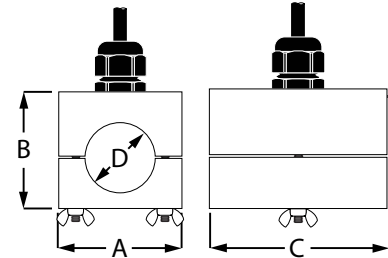
### DTTR/DTTN/DTTH/DTTL

#### Transducers

	DTTR	DTTN	DTTH	DTTL
<b>A</b>	3.75 in. (95 mm)	2.95 in. (74.9 mm)	2.95 in. (74.9 mm)	3.40 in. (86.4 mm)
<b>B</b>	2.35 in. (60 mm)	2.75 in. (69.8 mm)	2.75 in. (69.8 mm)	2.94 in. (74.7 mm)
<b>C</b>	—	3.00 in. (76.2 mm)	3.00 in. (76.2 mm)	3.20 in. (81.3 mm)
<b>D</b>	2.19 in. (56 mm)	1.70 in. (43.2 mm)	1.71 in. (43.4 mm)	2.50 in. (63.5 mm)

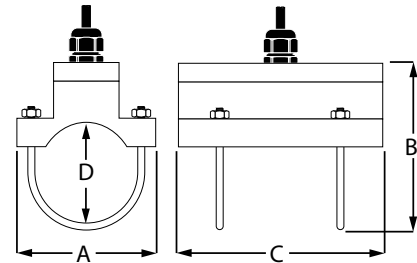
### DTTS/DTTC

Pipes and Tubing 1/2" to 2" (12 mm to 50 mm)

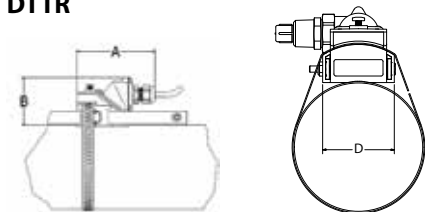


### DTTS/DTTC U-Bolt Connections

ANSI/DN and Copper 2" (50 mm) Models

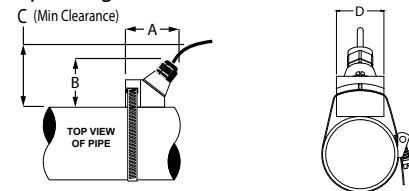


### DTTR

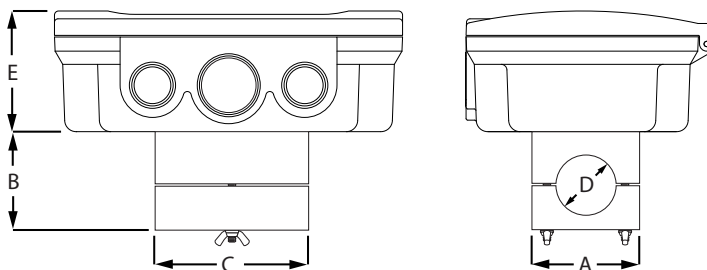


### DTTN/DTTH/DTTL

Pipes Larger than 2" (50 mm)



### Integral System

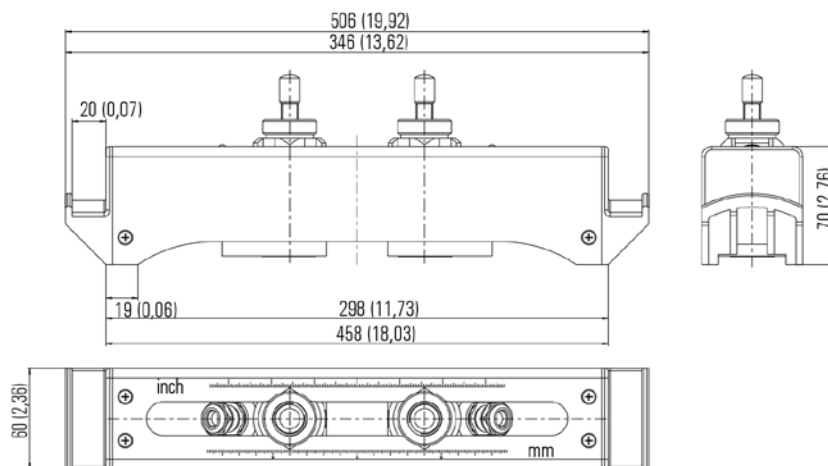


### DTTS/DTTC Transducers

Pipe Size	Pipe Material	A	B	C	D	E	Measuring Range
1/2 in.	ANSI/DN	2.46 in. (62.5 mm)	2.36 in. (59.9 mm)	2.66 in. (67.6 mm)	0.84 in. (21.3 mm)	2.12 in. (53.8 mm)	2.0...38 gpm (8...144 lpm)
	Copper	2.46 in. (62.5 mm)	2.36 in. (59.9 mm)	3.33 in. (84.6 mm)	0.63 in. (15.9 mm)	2.12 in. (53.8 mm)	1.8...27 gpm (7...102 lpm)
	Tubing	2.46 in. (62.5 mm)	2.28 in. (57.9 mm)	3.72 in. (94.5 mm)	0.50 in. (12.7 mm)	2.12 in. (53.8 mm)	1.5...18 gpm (6...68 lpm)
3/4 in.	ANSI/DN	2.46 in. (62.5 mm)	2.57 in. (65.3 mm)	2.66 in. (67.6 mm)	1.05 in. (26.7 mm)	2.12 in. (53.8 mm)	2.75...66 gpm (10...250 lpm)
	Copper	2.46 in. (62.5 mm)	2.50 in. (63.5 mm)	3.56 in. (90.4 mm)	0.88 in. (22.2 mm)	2.12 in. (53.8 mm)	2.5...54 gpm (10...204 lpm)
	Tubing	2.46 in. (62.5 mm)	2.50 in. (63.5 mm)	3.56 in. (90.4 mm)	0.75 in. (19.0 mm)	2.12 in. (53.8 mm)	2.5...45 gpm (10...170 lpm)
1 in.	ANSI/DN	2.46 in. (62.5 mm)	2.92 in. (74.2 mm)	2.86 in. (72.6 mm)	1.32 in. (33.4 mm)	2.12 in. (53.8 mm)	3.5...108 gpm (13...409 lpm)
	Copper	2.46 in. (62.5 mm)	2.87 in. (72.9 mm)	3.80 in. (96.5 mm)	1.13 in. (28.6 mm)	2.12 in. (53.8 mm)	3.5...95 gpm (13...320 lpm)
	Tubing	2.46 in. (62.5 mm)	2.75 in. (69.9 mm)	3.80 in. (96.5 mm)	1.00 in. (25.4 mm)	2.12 in. (53.8 mm)	3.5...85 gpm (13...320 lpm)
1-1/4 in.	ANSI/DN	2.80 in. (71.0 mm)	3.18 in. (80.8 mm)	3.14 in. (79.8 mm)	1.66 in. (42.2 mm)	2.12 in. (53.8 mm)	5.0...186 gpm (19...704 lpm)
	Copper	2.46 in. (62.5 mm)	3.00 in. (76.2 mm)	4.04 in. (102.6 mm)	1.38 in. (34.9 mm)	2.12 in. (53.8 mm)	4.5...152 gpm (17...575 lpm)
	Tubing	2.46 in. (62.5 mm)	3.00 in. (76.2 mm)	4.04 in. (102.6 mm)	1.25 in. (31.8 mm)	2.12 in. (53.8 mm)	4.0...136 gpm (15...514 lpm)
1-1/2 in.	ANSI/DN	3.02 in. (76.7 mm)	3.40 in. (86.9 mm)	3.33 in. (84.6 mm)	1.90 in. (48.3 mm)	2.12 in. (53.8 mm)	6.0...250 gpm (23...946 lpm)
	Copper	2.71 in. (68.8 mm)	2.86 in. (72.6 mm)	4.28 in. (108.7 mm)	1.63 in. (41.3 mm)	2.12 in. (53.8 mm)	5.0...215 gpm (19...814 lpm)
	Tubing	2.71 in. (68.8 mm)	3.31 in. (84.1 mm)	4.28 in. (108.7 mm)	1.50 in. (38.1 mm)	2.12 in. (53.8 mm)	5.0...200 gpm (19...757 lpm)
2 in.	ANSI/DN	3.70 in. (94.0 mm)	3.42 in. (86.9 mm)*	5.50 in. (139.7 mm)	2.38 in. (60.3 mm)*	2.12 in. (53.8 mm)	8.0...420 gpm (30...1590 lpm)
	Copper	3.70 in. (94.0 mm)	3.38 in. (85.9 mm)*	5.50 in. (139.7 mm)	2.13 in. (54.0 mm)*	2.12 in. (53.8 mm)	8.0...375 gpm (30...1419 lpm)
	Tubing	3.21 in. (81.5 mm)	3.85 in. (98.0 mm)	4.75 in. (120.7 mm)	2.00 in. (50.8 mm)	2.12 in. (53.8 mm)	8.0...365 gpm (30...1381 lpm)

\*Varies due to U-bolt configuration

### Dimension Easy Rail mm (inch)



**PART NUMBER CONSTRUCTION—TFX ULTRA FLOW METERS**

DTFX								
<b>Model</b>								
Flow <sup>1</sup>		B						
Energy <sup>2</sup>		E						
<b>Pipe Size/Measurement Range</b>								
1/2 Inch ANSI Pipe		A						
3/4 Inch ANSI Pipe		B						
1 Inch ANSI Pipe		C						
1-1/4 Inch ANSI Pipe		D						
1-1/2 Inch ANSI Pipe		E						
2 Inch ANSI Pipe		F						
1/2 Inch Copper Tube		G						
3/4 Inch Copper Tube		H						
1 Inch Copper Tube		I						
1-1/4 Inch Copper Tube		J						
1-1/2 Inch Copper Tube		K						
2 Inch Copper Tube		L						
1/2 Inch O.D. Std Tube		M						
3/4 Inch O.D. Std Tube		N						
1 Inch O.D. Std Tube		P						
1-1/4 Inch O.D. Std Tube		Q						
1-1/2 Inch O.D. Std Tube		R						
2 Inch O.D. Std Tube		S						
Remote Mount   Use with DTTR/N/H/L/S/C		Z						
<b>Transducer Material/Temperature</b>								
None   Select for Transducer Option Z		N						
PVC   -40 ... 140° F (-40 ... 60° C)		P						
CPVC   -40 ... 194° F (-40 ... 90° C)		C						
<b>Power</b>								
AC (Universal)   95 ... 264V AC		A						
AC   20 ... 28V AC		C						
DC   11 ... 28V DC		D						
<b>Keypad</b>								
No Keypad		N						
4 Button Keypad		K						
<b>Advanced Communications</b>								
Modbus RTU						N		
BACnet® MS/TP						B		
BACnet® MS/TP 76800 Baud						H		
BACnet® MS/TP; 10/100 Base-T (Ethernet/IP™, BACnet®/IP, Modbus TCP/IP)						C		
Modbus RTU and 10/100 Base-T (Ethernet/IP™, BACnet®/IP, Modbus TCP/IP)						E		
Totalizing Pulse - Isolated Open Collector Transistor   For Energy Units Only						P		
<b>RTD Temperature Range</b>								
None   Select for DTFXB						N		
32 ... 122° F (0 ... 50° C)						A		
32 ... 212° F (0 ... 100° C)						B		
-40 ... 350° F (-40 ... 177° C)						C		
4 ... 85° F (-20 ... 35° C)						D		
<b>Approvals</b>								
Class I Div 2, Groups C&D T6; Class I Zone 2 Ex nA IIB T6   For Power Supply Options A or D						F		
General Safety						N		
<b>Options</b>								
None						N		
Cable Gland Kit						A		
<b>Language</b>								
English								
French							F	
German							G	
Spanish							S	

1.) 4 ... 20 mA Output; 0 ... 1000 Hz Frequency Pulse Output; Dual Open Collector Outputs; RS485 (Modbus RTU)  
 2.) 4 ... 20 mA output; Dual 1000 Ohm RTD Connections; RS485 (Modbus RTU)



**PART NUMBER CONSTRUCTION—REMOTE FLOW TRANSDUCERS, SMALL PIPES 1/2...2 IN. (15...50 MM)**

	DTT				-		-		
<b>Piping Environment</b>									
PVC -40... 140° F (-40... 60° C)				S					
CPVC -40... 194° F (-40... 90° C)				C					
<b>Nominal Pipe Size</b>									
1/2 in.				D					
3/4 in.				F					
1 in.				G					
1-1/4 in.				H					
1-1/2 in.				J					
2 in.				L					
<b>Pipe Type</b>									
ANSI Pipe						P			
Copper Pipe						C			
Tubing						T			
<b>Cable Length</b>									
20 ft. (6.1 m)								020	
50 ft. (15 m)								050	
100 ft. (30 m)								100	
<b>Conduit Type</b>									
None - (Bare Twinax Cable)									N
Flexible Armored (LiquidTite)									A
<b>Conduit Length</b>									
0 ft (0 m)									000
20 ft (6.1 m)									020
50 ft (15 m)									050
100 ft (30 m)									100

	DTT				-		-			-	N
<b>Sensor type</b>											
Standard (1 MHz), 121°C (250 °F) max temperature <u>including mounting rail</u>				R							
Standard (1 MHz), 90 °C (194 °F) max temperature				N							
Large Pipe (500 kHz), 90 °C (194 °F) max temperature				L							
High temperature (1 MHz), 176 °C (350 °F) max temperature <sup>2</sup> Easy				H							
Rail Small (1MHz), 120 °C (250 °F), DN50-DN150 (2"-6") Easy Rail Big	EASY			S							
(1MHz), 120 °C (250 °F), DN50-DN300 (2"-12")	EASY			B							
<b>Cable length</b>											
6 m (20 ft)								020			
15 m (50 ft)								050			
30 m (100 ft)								100			
Additional cable per meter (from next shortest length) <sup>3</sup>											
<b>Conduit type</b>											
None										N	
Flexible armored <b>Not available with high temperature DTTH transducer</b>										A	
<b>Conduit length for cable option A</b>											
None										000	
6 m (20 ft)										020	
15 m (50 ft)										050	
30 m (100 ft)										100	
Additional conduit per meter (from next shortest length)											

**PART NUMBER CONSTRUCTION—REMOTE FLOW TRANSDUCERS, PIPES LARGER THAN 2 IN. (50 MM)**

**General Purpose**

DTT [ ] - [ ] - [ ] - [ ] - N

**Transmitter Type**

Standard (1 MHz), 250° F (121° C) Max Temp.

Large Pipe (500 kHz), 194° F (90° C) Max Temp.

High Temperature (1 MHz), 350° F (176° C) Max Temp.

R

L

H

**Cable Length**

20 ft. (6.1 m)

020

50 ft. (15 m)

050

100 ft. (30 m)

100

**Conduit Type**

None - Bare Twinax Cable

N

Flexible Armored | **Not available with high temperature DTTH transducer**

A

**Conduit Length**

None

000

20 ft. (6.1 m)

020

50 ft. (15 m)

050

100 ft. (30 m)

100

**General Purpose, Submersible (IP68)**

DTT [ ] - [ ] - S 000 - N

**Transmitter Type**

Standard: 1 MHz

N

Large Pipe: 500 kHz

L

**Cable Length**

20 ft. (6.1 m)

020

50 ft. (15 m)

050

100 ft. (30 m)

100

**Hazardous Location (Class 1, Division 1, Groups C and D)**

DTT N - [ ] - [ ] - [ ] - F

**Cable Length**

20 ft. (6.1 m)

020

50 ft. (15 m)

050

100 ft. (30 m)

100

**Conduit Type**

None - Bare Twinax Cable

N

Flexible Armored

A

**Conduit Length**

None

000

20 ft. (6.1 m)

020

50 ft. (15 m)

050

100 ft. (30 m)

100

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## Control. Manage. Optimize.

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