AquaTrans[™] UTX878

Panametrics Liquid Flow Ultrasonic Transmitter



Applications

The AquaTrans UTX878 is a loop-powered, full-featured clamp-on flow ultrasonic transmitter system for flow measurement of:

- Potable water
- Wastewater
- Discharge water
- Treated water
- Cooling and heating water
- Other liquids

Features

- 4-wire HART output
- 2-wire standard output option
- Low power consumption
- Suitable for pipe sizes from 1/2 in to 20 in (13 mm to 500 mm) diameter
- Full external keypad
- Large integral display
- Simple meter and transducer installation and setup
- Velocity, volumetric and totalized flow
- Economical non-intrusive flow measurement



The AquaTrans UTX878 flow ultrasonic transmitter combines the simplicity of a loop-powered meter installation with proven, advanced clamp-on ultrasonic flow transmitter technology. It provides customers with an economical solution for flow measurement in pipes up to 20 in (500 mm).

HART Output or 2-wire Standard

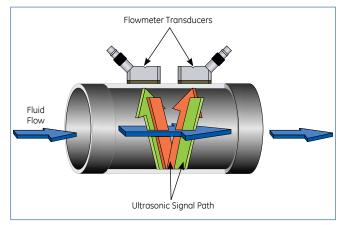
The AquaTrans UTX878 comes with HART protocol as an available output. This protocol requires the meter to be installed as a 4-wire device. The UTX878 is also available as a 2-wire device without HART; the 2-wire UTX878 may be preferable when replacing existing 2-wire devices.

Two-Channel Model

An optional second channel provides the capability to measure flow at a single point to obtain two-path averaging of the flow measurement for increased accuracy.

Uses the Transit-Time Flow Measurement Technique

The Correlation Transit-Time™ technique uses a pair of transducers with each transducer sending and receiving coded ultrasonic signals through the fluid. When the fluid is flowing, signal transit-time in the downstream direction is shorter than in the upstream direction; the difference between these transit-times is proportional to the flow velocity. The AquaTrans UTX878 measures the time difference and uses programmed pipe parameters to determine flow rate and direction.



Transit-time flow measurement technique

UTX878 Specifications

Operation and Performance

Fluid Types

Acoustically conductive fluids, including most clean liquids, and many liquids with entrained solids or gas bubbles. Maximum void fraction depends on transducer, interrogation carrier frequency, path length and pipe configuration.

Pipe Sizes

- 1/2 in to 1.5 in (13 mm to 40 mm): UTXDR-408
- 1 in to 4 in (25 mm to 100 mm): UTXDR-407
- 2 in to 12 in (50.8 mm to 300 mm): UTXDR-410
- 8 in to 20 in (200 mm to 500 mm): UTXDR-409

Pipe Materials

All metals and most plastics. Consult GE for concrete, composite materials, and highly corroded or lined pipes.

Flow Accuracy (Velocity)

0.5% of reading (achievable with process calibration)
Pipe ID>6 in (150 mm): ±1% to 2% of reading typical
Pipe ID<6 in (150 mm): ±2% to 5% of reading typical

Accuracy depends on pipe size and installation and whether measurement is one-path or two path.

Repeatability

±0.1% to 0.3% of reading

Range (Bidirectional)

-40 ft/s to 40 ft/s (-12.2 m/s to 12.2 m/s)

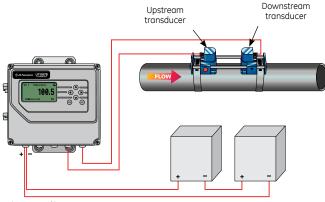
Rangeability (Overall)

400:1

Specifications assume a fully developed flow profile (typically 10 diameters upstream and 5 diameters downstream of straight pipe run) and flow velocity greater than 1 ft/s (0.3 m/s).

Measurement Parameters

Volumetric flow, totalized flow and flow velocity



Schematic of loop-power

Electronics

Flow Measurement

Patented Correlation Transit-Time mode

Enclosure

Epoxy-coated aluminum weatherproof Type 4X/IP67

Dimensions ($h \times w \times d$)

Size 8.8 in \times 8.2 in \times 3.6 in (220 mm \times 210 mm \times 90 mm, weight 3.9 lb (1.77 kg)

Display

128 x 64 pixel LCD graphic display

Keypad

6 button external keypad

Power Supply

15 to 30 VDC loop power

Power Consumption

700 mW maximum

Memory

FLASH memory; field upgradable

Operating Temperature

-4°F to 140°F (-20°C to 60°C)

Storage Temperature

-4°F to 158°F (-20°C to 70°C)

Standard Inputs/Output

- One 2-wire 4 to 20 mA output
- Optional 4-wire HART 4-20 mA output

Digital Interface

RS232

European Compliance

System complies with EMC Directive 89/336/EEC

Clamp-On Flow Ultrasonic Transducers

Operating Temperature

UTXDR-407 and 408: -4°F to 250°F (-20°C to 120°C) UTXDR-409 and 410: -4°F to 300°F (-20°C to 150°C)

Mounting

Stainless steel strap

Area Classification

General purpose
UTXDR-407 and 408
UTXDR-409 and 410
IP66

Transducer Cable

25 ft. (7.5 m) standard cable with transducers Optional 50 ft. (15 m) or 100 ft. (30 m) lengths with transducers

Ordering Information

Model									
UTX	Output								
	Α	Single looped powered 4-20 mA output; 2-wire device							
	Н	Hart, Single 4-20 mA loop; 4-wire device)							
		Cable Connection							
		CG	Plastic cable glands						
		NPT	1/2" NPT	F					
		M20	M20 M20						
		BCG	Nickel-plated Brass cable glands						
			Option Card						
			00	No optior	No option card				
			TT	Two totalizers Transducer					
				407	2 MHz t	2 MHz transducer for 0.5 - 6 inch (13-150 mm) pipe			
				408 409 410	4 MHz transducer for 0.5 - 1.5 inch (13-50 mm) pipe 500 kHz transducer/clamping fixture for 4 - 20 inch (80-500 mm) pipe				
									1 MHz transducer/clamping fixture for 2 - 12 inch (50-300 mm) pipe Cable Length
					25	25 25 ft (7.5 meters) of cable			
						50	50 ft (15 meters) of cable		
					100	100 ft (30	O meters) of cable		
						Pipe OD			
									Α
						В	Straps for pipe OD from 2 in. (50 mm) to 6 in. (125 mm)		
						С	Straps for pipe OD from 6 in. (125 mm) to 12 in. (300 mm)		
						D	Straps for pipe OD from 12 in. (300 mm) to 20 in. (500 mm)		
*	*	₩	*	₩	*	٧			
UTX -		-		_					



www.gesensinginspection.com

920-004E