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Applications

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

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

Features

- Loop powered
- Low power consumption
- Suitable for pipe sizes from 1/2 in to 8 in (15 mm to 200 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

AquaTrans™ UTX878

Panametrics Ultrasonic Liquid Flow Transmitter

AquaTrans UTX878 is a Panametrics product. Panametrics has joined other GE high-technology sensing businesses under a new name– GE Industrial, Sensing.

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The AquaTrans UTX878 ultrasonic flow 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 8 in (200 mm).

Loop Powered

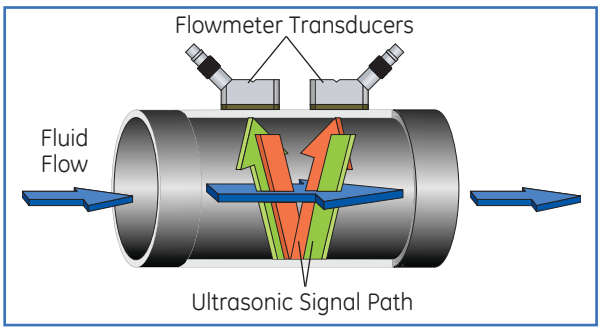
Loop-powered measurement devices have increased in popularity in the recent past because of the simplicity of their installation. A single cable to the meter carries both power to the meter and flow information back to the control system. New low-powered ultrasonic transducer technology, coupled with smart-microprocessor power management, allow the AquaTrans UTX878 to function as a loop-powered meter.

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

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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 8 in (15 mm to 200 mm) and larger

Pipe Wall Thickness
Up to 0.5 in (13 mm)

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

Flow Accuracy (Velocity)
- Pipe ID≥6 in (150 mm); ±1% to 2% of reading typical
- Pipe ID≤6 in (150 mm); ±2% to 5% of reading typical

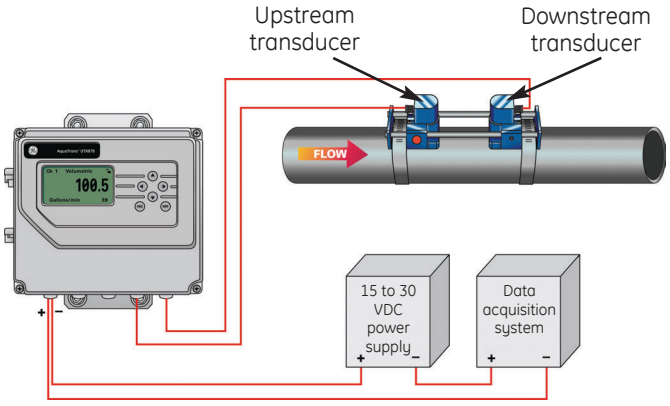
Accuracy depends on pipe size and whether measurement is one-path or two-path. Accuracy to ±0.5% of reading may be achievable with process calibration.

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).



Schematic of loop-power

Measurement Parameters
Volumetric flow, totalized flow and flow velocity

Electronics

Flow Measurement
Patented Correlation Transit-Time mode

Enclosure
Epoxy-coated aluminum weatherproof Type 4X IP67

Dimensions (h x w x d)
Size 8.8 in x 8.2 in x 3.6 in (220 mm x 210 mm x 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

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UTX878 Specifications

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 4 to 20 mA on power loop

Digital Interface
RS232

European Compliance
System complies with EMC Directive 89/336/EEC

Clamp-On Ultrasonic Flow Transducers

Temperature Range
–40°F to 194°F (–40°C to 90°C)

Mounting
Stainless steel strap

Area Classification
General purpose

Transducer Cable

Integral transducer cable up to 100 ft (33 m) with transducers

N4271 CE

920-004C

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