

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

- Loop powered
- Low power consumption
- Suitable for pipe sizes from 1/2 in to 16 in (15 mm to 400 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

Panometrics Liquid Flow Ultrasonic Transmitter

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



GE Sensing

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 16 in (400 mm).

Loop Powered

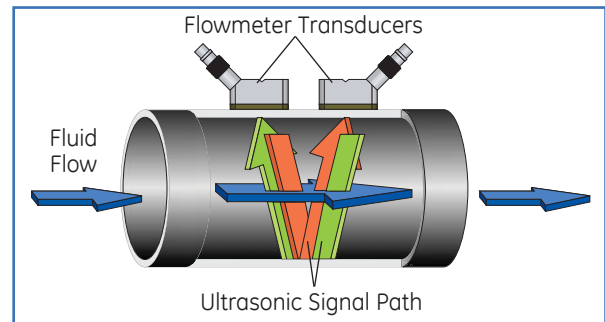
Loop-powered measurement devices have increased in popularity in the recent past because of the simplicity of their installation. A single cable to the meter carries both power to the meter and flow information back to the control system. New low-powered ultrasonic transducer technology, coupled with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

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 16 in (15 mm to 400 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)

0.5% of reading (achievable with process calibration)

Typical Clamp-On Flow Accuracy (Velocity)

Pipe ID > 6 in (150 mm): ±1% to 2% of reading
Pipe ID < 6 in (150 mm): ±2% to 5% of reading

Typical Wetted Flow Accuracy (Velocity)

±1% of reading

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

Repeatability

±0.1% to 0.3% of reading

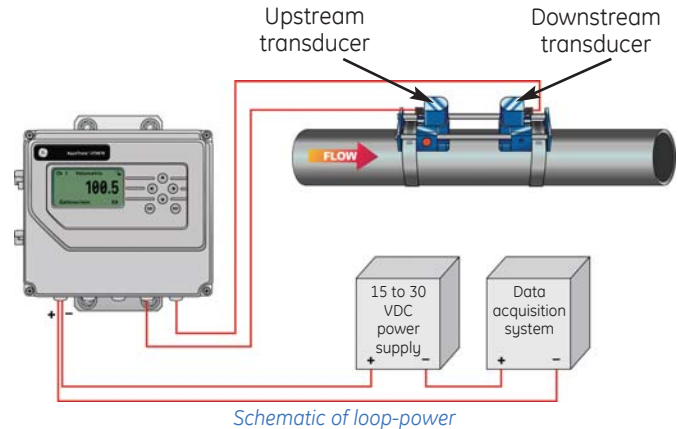
Range (Bidirectional)

-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

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

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 Flow Ultrasonic 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



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