

# Model 8510+ Multiple Chordal Path Transit-Time Flowmeter



## About Accusonic

Accusonic, a brand of ADS LLC, designs and manufactures multi-path transit-time flow measurement systems, which are renowned for their precise accuracy and reliability in difficult operating environments. Accusonic flowmeters can be found in hydroelectric and thermal power plants, water and wastewater treatment facilities, sewage collection systems, and other types of water conveyance pipelines and channels. Since 1967, Accusonic has installed thousands of systems worldwide, and offers a full range of services including installation and startup, system verification, turbine performance testing services, and field training.

## SYSTEM DESCRIPTION

The Accusonic Model 8510+ provides accurate, reliable flow measurement for applications ranging from full and partially full pipes, to open channels, canals, and waterways. The 8510+ has the ability to measure up to 10 acoustic paths in the same measurement section, assuring superior performance even in the presence of severely distorted flow conditions. Additionally, the 8510+ can measure flow in up to 5 separate pipes and/or channels simultaneously.

The Model 8510+ can be fully integrated into a complete flowmeter network system via the Accusonic Model 7700 Master Control Unit. Further information on the Model 7700 may be obtained in the Model 7700 Network Flowmeter System data sheet.

A wide assortment of Accusonic transducers are available for use with the Model 8510+, including designs for hazardous areas (with the Intrinsic Safety option), exposed pipes, buried or encased pipes, and pipes and channels that cannot be dewatered.

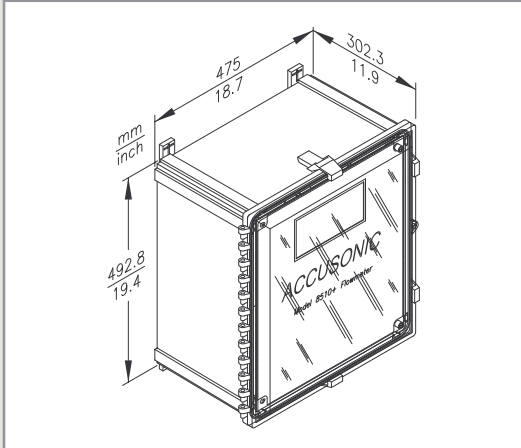
## UNIQUE FEATURES

**Flexibility:** Measurable pipe and channel sizes can range from 8 inches (200 mm) to 600 feet (180 m). This versatility allows customers to utilize one flowmeter technology for a wide variety of applications, thus providing a common platform for maintenance, inventory, and training.

**Accuracy:** Utilizing multiple chordal path transit-time technology, the 8510+ provides accurate flow measurement ( $\pm 0.5\%$  for full pipes and  $\pm 1.0\%$  for partially full pipes and open channels) even in the presence of flow profile distortions and cross flow. No other flow measurement technology can offer this level of performance over the range of pipe/channel sizes and under such challenging operating conditions.

**Economy:** The 8510+ is configurable to measure up to 5 separate pipes and/or channels simultaneously, thus significantly reducing the cost per measurement. This feature, combined with the meter's high performance and minimal maintenance requirements, provides the 8510+ with a lower cost of ownership and greater value than comparable flow measurement technologies.

## SYSTEM SPECIFICATIONS



### Measurement Options:

- Open / Closed Channel
- Pipe Flowing Full
- Pipe Flowing Partially Full to Surcharged

### Number of Acoustic Paths: 1 – 10

### Number of Pipes or Channels: 1 – 5

Note: The total number of acoustic paths in all pipes and channels cannot exceed 10 for a single console.

### Accuracy:

- $\pm 0.5\%$  of rate for full pipes (typical with 4 paths)
- $\pm 1\text{-}2\%$  of rate for partially full pipes or open channels (typical with 4 submerged paths)

### Repeatability:

- $\pm 0.2\%$  of rate for full pipes (typical with 4 paths)
- $\pm 0.3\%$  of rate for partially full pipes or open channels (typical with 4 submerged paths)

### Outputs:

- (4) or (8) Isolated Analog 4–20 mA with 750 ohm max impedance load
- Optional (6) Relay Outputs 7.0 A @ 110 VAC or 5.0 A @ 24 VDC
- Modbus (RTU Mode) via RS-232, RS-485 and TCP/IP

### Inputs:

- (4) or (8) Analog 4-20 mA, 100 ohm impedance
- 24 VDC loop power is available

### Software Interface:

AccuFlow™ Windows-based software utility allows for easy setup and configuration via customer-supplied PC

### Internal Datalogger:

4 GB internal storage of measured and calculated variables or via USB flash drive (not included)

### Local Display:

7.7" LCD Touchscreen Color Display with Windows CE Operating System

### Diagnostic Information:

- Signal Travel Times
- Sonic Velocity
- Signal Gains
- Signal to Noise Ratio
- Error Messages

### Power Requirement:

- 90 - 250 VAC, 47-65 HZ or 100 - 300 VDC
- 24 VDC (Optional, for non-IS consoles)
- 26 to 35 watts power consumption (200 watts with optional heater)

### Console Enclosure:

- NEMA 4X (IP66) wall mounted; Polycarbonate
- 18" h x 16" w x 10" d (457 x 406 x 254 mm) Inside
- 19.4" h x 18.7" w x 11.9" d (493 x 475 x 302 mm) Outside
- 30 lb. (14 kg)

### Environmental Conditions:

- Storage: 0 to 150 deg. F (-18 to 65 deg. C); 0 to 95% RH
- Operation: -4 to 158 deg. F (-20 to 70 deg. C); 0 to 95% RH
- Operational range can be increased with optional heater to: -15 to 158 deg. F (-26 to 70 deg. C)

### Hazardous Area Requirements:

Optional console for Class 1, Divisions 1 & 2, Groups C & D, ATEX Zone 0 & 1 applications