

## Area-Velocity Flowmeter Systems

Large pipes and open channels require specially engineered systems that are capable of accurately measuring flow under a broad range of conditions. Each Accuron 7750 Area-Velocity Flowmeter System is specifically engineered to measure flow in partially or totally full pipes or conduits and open channels of any shape or configuration. Depending upon accuracy requirements, the Series 7750 is designed to operate with a single or multiple set of chordal measurement velocity sensors in conjunction with a high precision ultrasonic level sensor. For systems requiring reliable and traceable measurements at very low flows, an optional stainless steel trapezoidal flume may be provided.

Each Accuron 7750 system utilizes single or multiple path acoustic transit-time technology capable of realizing highly accurate flow measurements under the most difficult metering conditions. Sensor pairs, positioned on opposite sides of the flow stream, alternately send and receive flow velocity signals across the entire fluid path. By integrating the average velocities ascertained at each measurement path, and then combining that information with data from the ultrasonic level sensor, flow rates may be precisely calculated to within  $\pm 0.5\%$ .

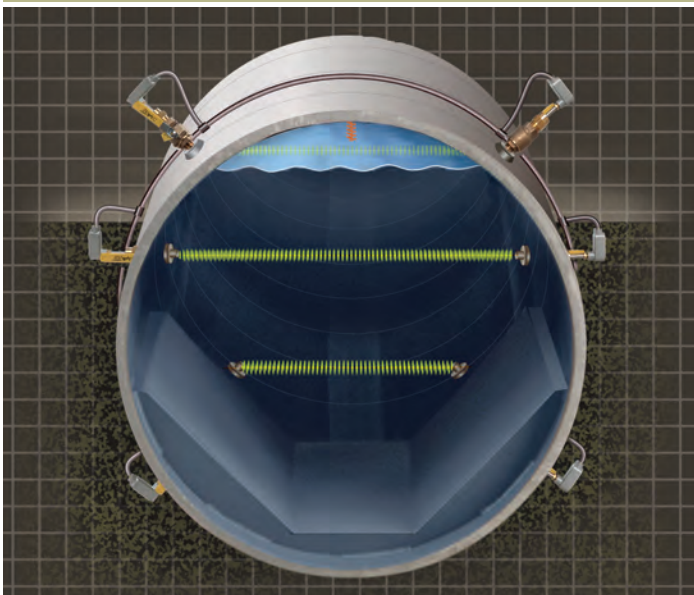


Installation in 12' diameter aqueduct (10 - 290MGD), Dunwoodie Project, Yonkers, N.Y.  
Three chordal transit-time paths with ultrasonic level sensor

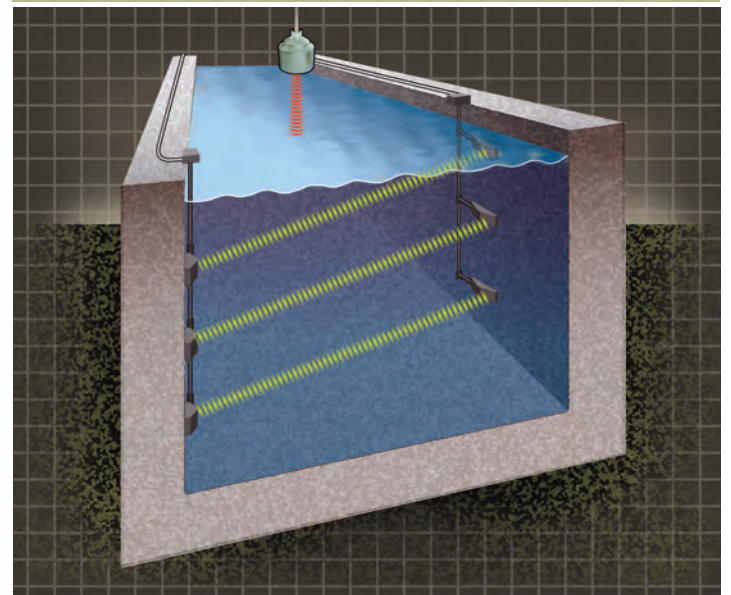
### TYPICAL ACCURACIES ACHIEVABLE WITH CHORDAL PATH AREA-VELOCITY FLOWMETERS

Number of Paths	1	2	3
<b>Open Channel</b>	$\pm 4 - 6\%$	$\pm 2 - 3\%$	$\pm 1 - 2\%$
<b>Closed Pipe</b>	$\pm 3 - 5\%$	$\pm 1 - 2\%$	$\pm 0.5 - 1\%$

#### TYPICAL 3-PATH AREA-VELOCITY SYSTEM WITH HOTSHOT FEED-THROUGH SENSORS, ULTRASONIC LEVEL SENSOR AND OPTIONAL TRAPEZOIDAL FLUME



#### TYPICAL 3-PATH AREA-VELOCITY SYSTEM WITH INTERNAL WETTED SENSORS AND ULTRASONIC LEVEL SENSOR



## METER SPECIFICATIONS (Bi-directional)

### FACTORY PROGRAMMED FLOWMETERS

Pre-programmed at the factory for specific customer applications, the Accuron flowmeter is a highly advanced microprocessor-based ultrasonic flow transmitter for extremely precise measurement of flow in open channels.



#### DATA LOGGING

The Accuron has a built-in datalogger with eight distinct channels for logging flow and totals. The storage capacity for a single channel at 5 minute intervals is 113 days. Logger data may be visually accessed on the display of the meter in pre-programmed time intervals or retrieved through a laptop or optional modem installed within the enclosure of the meter.

**Daily Averages:** Daily summary allows viewing of the previous eight days. This includes times, dates, averages, minimums, maximums and totals.

**Logger Graph:** In addition, a bar graph may be visually displayed on the CrossFire. The graph will display the stored logger data in pre-programmed time intervals.

**Data Retrieval:** Logger data can be collected by using a laptop computer or an optional modem installed within the Accuron enclosure.

#### ENCLOSURE

Standard	IP66 / Nema 4, 4X polycarbonate enclosure
Optional	Explosionproof, Aluminum Enclosure
Accessories	Class I, Grps. C & D, Class II, Grps. E, F, G, Div. 1 & 2 Heater and thermostat, Door Lock

#### TEMPERATURE

Standard	-4° to 158°F (-20 to 70°C)
With Heater	-40° to 158°F (-40 to 70°C)

#### OUTPUTS

3) 4-20 mA (Flow, Level, Velocity)	Analog isolated into 800 ohms max, monitored to detect open circuits. RFI and gas discharge surge protection and two fuses.
Relay Alarms	3 SPDT (plug-in) 2.5 Amps
RS-232 Serial Port	1200-38400 Baud, Modbus RTU
RS-485 Serial Port	Optically isolated, Modbus RTU
Network Protocols	Modbus, Profibus or DeviceNet
DC Power Out	12 VDC. 750mA maximum

#### DISPLAY

Backlit LCD	Graphical LED
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#### POWER

Wattage	30
Voltage	80/240VAC, 50-60Hz/12-24 VDC @ 3 Amps

#### DATA LOGGING

Non-volatile flash memory, storage of up to 32768 records.

## SENSOR SPECIFICATIONS



#### LEVEL SENSOR (See Spec. Sheet LS-U)

Sensor Housing	PVC, Submersible, Nema 4, 4X
Sensor	Temperature Compensated
Temperature	-40° to 158°F (-40° to 70°C)
Accuracy	± 0.02" or 0.05% of target distance
Warranty	18 months



#### VELOCITY SENSOR (Hotshot) (See Spec. Sheet VS-H)

Environ. Rating	Submersible Nema 4, 4X
Sensor Housing	PVC
Temperature	-40° to 158°F (-40° to 70°C)
Warranty	18 months
Accuracy	± 0.015 FPS
Repeatability	± 0.25%
Linearity	± 0.5%
Turndown	60:1
Max Pressure	300 PSI



#### VELOCITY SENSOR (Wetted) (See Spec. Sheet VS-W)

Environ. Rating	Submersible Nema 4, 4X
Sensor Housing	PVC & 304 Stainless
Temperature	-40° to 158°F (-40° to 70°C)
Warranty	18 months
Accuracy	± 0.015 FPS
Repeatability	± 0.25%
Linearity	± 0.5%
Turndown	60:1

## DATA GRAPHING PACKAGE

### QTrend

QTrend 2007 is an Excel Workbook Flow Data Graphing Package specifically designed to interface with every meter offered within the Eastech product line.

QTrend incorporates specific formulas capable of automating the process of charting and displaying all data contained within the onboard logger of the meter. Each individual Worksheet presents an OPEN FILE button. Upon initiation, the file browser is displayed with a complete list of all CSV files contained within the directory. Choosing a file of interest will automatically import the data from that file into the QTrend Excel Workbook. By simply clicking on the tab labeled CHART, a comprehensive flow evaluation and trend analysis Worksheet is displayed.

