

LEFM® 880

Multi-pipe Ultrasonic Flow Meter

The system operates on a principle whereby acoustic pulses are sent back and forth between pairs of transducers, precisely mounted in the pipe or open channel. The transit time of the pulses is measured and, by knowing the precise path dimensions and path location in the pipe, water velocity at that path elevation is measured. By measuring the velocity at several parallel path elevations, the overall velocity profile can be integrated and then, along with accurately measured pipe/penstock dimension information, the data can be used to accurately calculate flow rate.

The LEFM 880 is a highly reliable system that requires little maintenance and provides preventative diagnostic indicators. Continuous on-line testing verifies the system is operating correctly and within the specified accuracy envelope. Any detected faults that cause system operation to be outside the specified accuracy will generate a failure indication to the display and set an alarm signal. Means for fault isolation are provided should a failure occur. The system has a modular hardware design that allows any defective components to be isolated and repaired quickly.



Flow Metering System

Features:

- High accuracy ($\pm 0.5\%$) flow measurement in large pipes and open channel
- ASME PTC-18/IEC-41 measurement method
- High reliability – system has sophisticated signal processing and continuous on-line diagnosis
- Ease of maintenance – long-term maintenance-free design

Operation Specifications

System Accuracy

Volumetric Flow $\pm 0.5\%*$
or better, when installed per Cameron requirements

Electronics Unit

Storage Temperature	-65°F to 165°F (-54°C to 74°C)
Ambient Temperature	32°F to 140°F (-0°C to 60°C)
Storage/Operating	
Humidity	0%-95% (non-condensing)
Supply Power	90-260 VAC, 47-63 Hz
Surge Protection	up to 1200V for 50µsec
Outputs	4-20 mA
	RS-232
	RS-485
	Contact Closure Alarm
Display	4 line LCD (Wall Mount)
	Touch Screen LCD (master PC))
Data Storage	Hard Drive or CD (master PC)



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 **CAMERON**
MEASUREMENT SYSTEMS

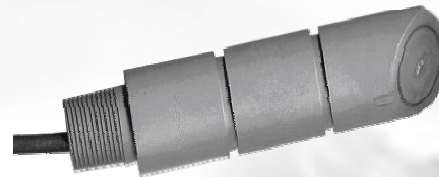
Model 7656A/7655A

The Model 7656A Transducer Element and Model 7655A Feedthrough Assembly are designed to be direct replacement compatible with Accusonic® 7656/7655 transducer feedthrough units. Flowmeter Services model 7656A transducers may be used with either Flowmeter Services model 7655A Feedthrough units, or may be installed in existing Accusonic® feedthroughs.

For applications where only new Feedthrough assemblies are required, Flowmeter Services model 7655A Feedthrough assemblies are compatible with Accusonic® model 7565 transducers.



7655A Feedthrough Assemblies in FRP



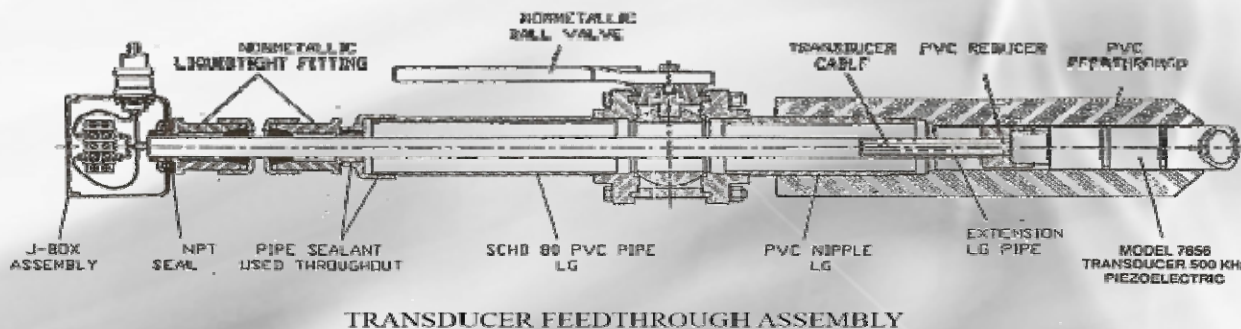
7656A Transducer

Dimensionally, Flowmeter Services 7656A/7655A transducer / feedthrough assemblies are identical to Accusonic® 7656/7655 units.

Operationally, Flowmeter Services 7656A/7655A transducer/feedthrough assemblies exceed the specifications of Accusonic® 7656/7655 units, offering broader beam width and superior signal strength. The broader beam width allows for ease of alignment in the field and reliable operation in uneven and irregular pipes where transducers may not be installed exactly perpendicular to the pipe.

Specifications

Operating Frequency:	500 kHz
Maximum Operating Pressure:	2.2 bar
Temperature Range:	0° - 55° C Operation -15° - 60° C Storage
Construction Materials:	CPVC, PVC, Stainless Steel



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