

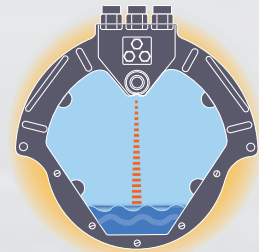
## Dual Path Cartridge Meter

The Accuron 7400 extends the performance capabilities of the Cartridge Meter to include the continuous collection of reliable data over a wide range of changing flow conditions, especially in surcharged conduits (Fig. 1). Identical to the Accuron 7200, except for an additional pair of transit-time velocity sensors mounted at 66% of the pipe diameter, the 7400 will maintain its stated overall accuracy ( $\pm 1-5\%$  of actual rate) during wet weather conditions that are prone to creating less than ideal flow profiles.

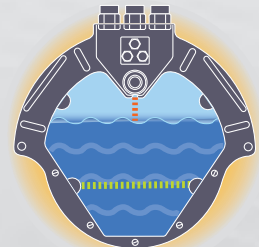


By utilizing advanced performance dual path construction, velocities are simultaneously calculated at two elevations (33% and 66%) and then averaged. This multi-path method affords the Cartridge Meter the ability to quickly respond to varying flow profiles. As an added benefit, during a surcharge event, the Accuron 7400 provides for redundant confirmation of bi-directional flow. This feature can be extremely important to communities seeking to avoid additional billings for backflows relating to downstream hydraulics or unresolved maintenance issues.

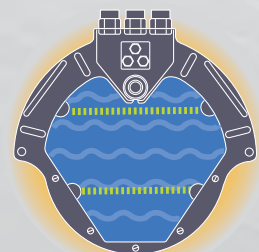
Dual path Cartridge Meters provide for enhanced measurement of average velocity under asymmetrical, surcharged, reverse flow, backflow and stagnant conditions, therefore maintaining a consistent level of reliability throughout a multitude of continuously varying flow conditions.



LOW FLOW  
Accuracy:  $\pm 1-5\%$



HIGH FLOW  
Accuracy:  $\pm 1-2\%$



SURCHARGED FLOW  
Accuracy:  $\pm 1-2\%$

STAINLESS STEEL  
CARTRIDGE

ULTRASONIC  
LEVEL SENSOR

DUAL PATH TRANSIT-TIME  
VELOCITY SENSORS

TRAPEZOIDAL  
FLUME

Fig. 1. Surcharged Flow Conditions



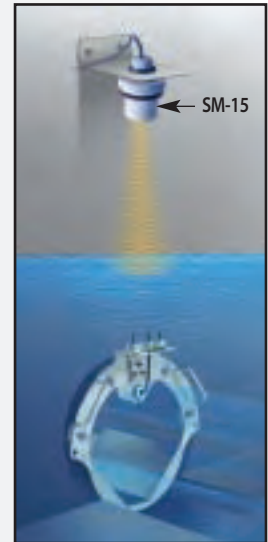
The Accuron SM-15 non-contact Surcharge Monitor provides for continuous measurement of accurate flow data during intermittent periods of surcharged conditions. (See Accuron SM-15 brochure)

## OPTIONAL SM-15 SURCHARGE MONITOR

To allow for the monitoring of conditions that change from open channel flow to submerged flow (as experienced in sewers during a storm event or downstream blockage), a maintenance-free, "above the flowstream" independent level sensor can be provided for all Cartridge Meters.

The Accuron SM-15 non-contact Surcharge Monitor provides for continuous measurement of accurate flow data during intermittent periods of surcharged conditions. When utilized in conjunction with the Accuron 7200/7400 Area-Velocity Cartridge Meters, the Surcharge Monitor (an independent ultrasonic level sensor mounted near the highest point of the manhole) will accurately ascertain the sewerage or storm water level that has accumulated above the crown of the incoming pipe. During this event, flow continues to be monitored by the transit-time velocity sensors integrated within the Cartridge Meter.

Since the Accuron SM-15 is located above the flowstream and calculates level by non-contact ultrasonic means, the requirement for periodic cleaning of the sensor, as is the case with submerged pressure transducers, becomes a non-issue. Field operating personnel may now monitor flow through both dry and wet weather conditions without the need for repetitive manhole entry.



**SUGGESTED SPECIFICATIONS:** An ultrasonic microprocessor-based Dual Path Cartridge Meter shall be installed at the location on the plans in accordance with the manufactures recommendation. A field-ready \_\_\_\_\_ (pipe size) stainless steel cartridge, containing a stainless steel trapezoidal flume/ultrasonic level sensor/dual transit-time velocity sensor combination and optional surcharge monitor shall be provided with each flowmeter. The IP66/Nema 4,4X flowmeter (or Chartmeter) shall be factory programmed for the specific application and be provided with a datalogger integral to the electronics. The Cartridge Meter must be capable of field validation prior to installation of permanent power. The unit shall be Model Accuron 7400 as manufactured by Eastech Flow Controls, Tulsa, OK or equal.

### ORDERING GUIDE

DUAL PATH CARTRIDGE METER	OPTIONAL SURCHARGE MONITOR	SENSOR CABLE	
To order the 7400 Series Dual Path Cartridge Meter, please refer to the Ordering Guide on the back page of the Accuron 7200 brochure. Order in the same manner, except change the Cartridge Number (72) to (74)	<b>SM-15</b> Teflon® Level Sensor w/ Stainless Steel Wall Bracket	30 ft.	W
		50 ft.	X
		100 ft.	Y
		200 ft.	Z
		Over 200 ft.	Please Specify

To Order Surcharge Monitor, Suffix standard Accuron part number with SM-15- (cable length).  
Ordering Example: 7410-12"-PSWA-SM-15-Y

