

4110 Ultrasonic Flow Logger – Specification

Size:	10.5 x 9.0 x 6.0 in (26.7 x 22.9 x 15.2 cm)
Weight:	8.0 lbs (3.6 kg) (without batteries)
Material:	Body and battery end are structural foam molded polystyrene. Connector end is Ryton® (polyphenylene sulfide).
Enclosure:	NEMA 4X, 6 (IP67)
Operating temperature:	0° to 140°F (-18° to 60°C)
Storage temperature:	-40° to 140°F (-40° to 60°C)
Power:	Two 6 volt lantern batteries (alkaline recommended) or one rechargeable 12 volt Isco 947 Lead Acid Battery
Typical battery life (1-hour data storage interval):	With alkaline lantern batteries - 12 months. With Isco 947 Lead Acid Battery - 4 months (between recharges). Battery life is proportionately less with more frequent data storage, e.g. 3 months for 15-minute storage interval with alkaline batteries.
Program Memory:	Non-volatile, programmable flash; can be updated via Interrogator port without opening enclosure
Time Base Accuracy:	±1 second per day
Level-to-Flow Rate Conversions	
WEIRS:	V-notch, rectangular with and without end contractions, Cipolletti.
FLUMES:	Parshall, Palmer-Bowlus, Leopold-Lagco, trapezoidal, H.
MANNING FORMULA:	Round, U-channel, rectangular, trapezoidal.
EQUATIONS:	Two-term polynomial of the form $K^1H^N1 \pm K^2H^N2$.
DATA POINTS:	50 level-flow rate points.
Data Storage	
Memory capacity:	230,000 bytes; equal to over 700 days of level and rainfall readings at 15 minute intervals, plus 5000 sample events.
Data Partitions:	Maximum of 6
Data types:	Level, flow rate, rainfall or sample data
Storage modes:	Rollover, slate or triggered slate
Storage interval:	1, 2, 5, 10, 15, 30, 60 or 120 minutes
Communication	
Serial:	connection to IBM PC® or compatible computer with Isco Flowlink Software
Baud rate:	300, 1200, 2400, 4800 or 9600
Sampler pacing output:	12 volt pulse
Sampler activation conditions:	Enabled, disabled, level, flow rate, rainfall and time; AND and OR combinations of any two of level, flow rate, rainfall and time; values may be above or below a set-point, inside or outside a range, or a rate of change
Ultrasonic Sensor	
Length x diameter:	6.9 x 3.6 in (17.5 x 9.1 cm)
Cable:	25 ft x 0.3 in (7.6 m x 0.8 cm)
Weight (incl cable):	2.6 lbs (1.2 kg)
Enclosure:	NEMA 4X, 6; IP67
Operating	-22° to 140°F (-30° to 60°C)

temperature:	
Compensated temperature:	-22° to 140°F (-30° to 60°C)
Materials:	Sensor housing is Xenoy 6120; Cable jacket is Polyvinyl chloride (PVC)
Frequency:	40 kHz
Range (distance from sensor to liquid):	Minimum 2 ft (0.6 m); Maximum 12 ft (3.7 m)
Span:	0 to 10 ft (0 to 3 m)
Blanking distance:	2 to 12 ft. (0.6 to 3.7 m)
Level Measurement Accuracy - at 22°C (72°F), still air, 40 to 70% humidity. Head change is actual change in vertical distance from ultrasonic sensor to liquid surface)	
for head change <1.0 ft (<0.31 m):	maximum error is ±0.02 ft. (±0.006 m)
for head change of 1.0 to 10 ft (0.31 to 3.05 m):	maximum error is ±0.03 ft. (±0.009 m)
Temperature coefficient:	Maximum error over compensated temperature range (per degree of temperature change) ±0.000047 x D per °F (±0.000085 x D per °C) where D is the distance from the transducer to the liquid surface