

Isco 2151 Intrinsically Safe Flowmeter - Specifications

Size (HxWxD):	8.4 x 11.3 x 7.6 in. (21.3 x 28.7 x 19.3 cm) including battery compartment.
Weight:	8.2 lbs. (2.4 kg)
Material:	High-impact moulded polystyrene
Enclosure:	NEMA 4X, 6P IP68 (self-certified)
Temperature Range:	-40°F to 140°F (-40°C to 60°C)
Power:	6.6 to 16.6V DC, 100 mA typical at 12V DC, 1 mA standby
Typical battery life, vs. data storage interval (using two 6-volt alkaline batteries, Eveready Energizer 529 or EN529)	
15 minute interval:	8 months
5 minute interval:	4.5 months
Program Memory:	Non-volatile, programmable flash; can be updated using PC without opening enclosure; retains user program after updating
Flow Rate Conversions:	Up to 2 independent level-to-area conversions and/or level-to-flow rate conversions
Level-to-Area Conversions	
Channel Shapes:	Round, U-shaped, rectangular, trapezoidal, elliptical, with silt correction
Data Points:	Up to 50 level-area points
Level-to-Flow Rate Conversions	
Weirs:	V-notch, rectangular, Cipolletti, Isco Flow Metering Inserts, Thel-Mar;
Flumes:	Parshall, Palmer-Bowlus, Leopold-Lagco, trapezoidal, H, HS, HL
Manning Formula:	Round, U-shaped, rectangular, trapezoidal
Data Points:	Up to 50 level-flow rate points
Equation:	2-term polynomial
Total Flow Calculations:	Up to 2 independent, net, positive or negative, based on either flow rate conversion
Data Storage Memory:	Non-volatile flash; retains stored data during program updates. Capacity 395,000 bytes (up to 79,000 readings, equal to over 270 days of level and velocity readings at 15 minute intervals, plus total flow and input voltage readings at 24 hour intervals)
Data Types:	Level, velocity, flow rate 1, flow rate 2, total flow 1, total flow 2, input voltage
Storage Mode:	Rollover with variable rate data storage based on level, velocity, flow rate 1, flow rate 2, total flow 1, total flow 2, or input voltage
Storage Interval:	15 or 30 seconds; 1, 5, 15, or 30 minutes; or 1, 2, 4, 12, or 24 hours. 5 Bytes per reading.
Setup and Data Retrieval:	Serial connection to IBM PC or compatible computer with Isco Flowlink Software.
Baud Rate:	38,400
Operating temperature:	0° to 140°F (-18° to 60°C)
Storage temperature:	-40° to 140°F (-40° to 60°C)
Area Velocity Sensor	
Size (H x W x L):	0.75 x 1.31 x 6.00 in. (1.9 x 3.3 x 15.2 cm)
Cable Length:	25 ft. (7.6 m)
Cable Diameter:	0.37 in. (0.9 cm)

Weight (including cable):	2.1 lbs. (0.95 kg)
Materials:	Sensor - Epoxy, chlorinated polyvinyl chloride (CPVC), stainless steel; Cable - Polyvinyl chloride (PVC), chlorinated polyvinyl chloride (CPVC).
Level Measurement	
Method:	Submerged pressure transducer mounted in the flow stream.
Transducer Type:	Differential linear integrated circuit pressure transducer
Range:	0.033 to 10 ft (0.010 to 3.05 m)
Maximum Allowable Level:	20 ft. (6.1 m)
Accuracy - non-linearity and hysteresis at 77°F (25°C) per foot of change from calibration depth, for indicated level range	
0.033 to 5.0 ft (0.03 to 1.52 m):	±0.008 ft/ft (±0.008 m/m)
Greater than 5.0 ft (1.52 m):	±0.012 ft/ft (±0.012 m/m)
Maximum Long-Term Drift:	0.033 ft. (0.010 m)
Temperature Coefficient:	±0.0035 ft/°F (±0.0019 m/°C) (Max error within compensated range, per degree of change from calibration temperature.)
Velocity Measurement	
Method:	Doppler ultrasonic, Frequency 500 kHz, Transmission Angle 20° from horizontal
Typical Minimum Depth:	1 inch (25 mm)
Range:	-5 to +20 ft/s (-1.5 to +6.1 m/s)
Accuracy - in water, uniform velocity, speed of sound = 1480 m/s, for indicated velocity range	
-5 to +5 ft/s (-1.5 to +1.5 m/s):	±0.1 ft./s (±0.03 m/s)
5 to 20 ft/s (1.5 to 6.1 m/s):	±2% of reading
Operating Temperature:	32° to 160°F (0° to 71°C)
Compensated Range:	32° to 122°F (0° to 50°C)