

Isco 3010 Ultrasonic Flow Transmitter - Specifications

Size (HxWxD):	15.3 x 10.6 x 7.38 in (38.7 x 27.0 x 18.7 cm)
Weight:	10 lbs (4.5 kg)
Material:	High-impact molded polystyrene structural foam
Enclosure:	Nema 4X (IP56)
Power:	104 to 127V AC, 0.075 A; or 208 to 254V AC, 0.038 A, 50/60 Hz
Operating Temperature:	-20° to 140°F (-30° to 60°C)
Storage Temperature:	-50° to 150°F (-46° to 66°C)
Display:	6-digit backlit LCD, digits 0.5 inch (1.27 cm) high
Totalizer:	7 digit mechanical, non-resettable
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 $K^1H^{N1} \pm K^2H^{N2}$.
Characterization PROM:	(optional) Factory programmed with any level-to-flow rate relationship
Communications and I/O	
Sampler pacing output:	Isolated contact closure, rated 1 A at 48V DC
Sampler input:	Event mark, bottle number
Analog output:	Isolated 4 to 20 mA based on level or flow rate, with or without sampler event marks, into a maximum of 1000 ohms
Relay outputs:	2 form C relays with field selectable trip points based on flow rate, rated 3 A at 24V AC or DC (with optional High/Low Alarm Relays)
Serial data output:	RS-232 ASCII string of level, flow rate, total flow, sample number and bottle number, once every 12 seconds
Format:	300 baud, 7 data bits, 2 stop bits, even parity
Remote totalizer output:	12V pulse, compatible with Isco Remote Totalizer
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 temperature:	-22° to 140°F (-30° to 60°C)
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) $\pm 0.000047 \times D$ per °F ($\pm 0.000085 \times D$ per °C) where D is the distance from the transducer to the liquid surface