

# 720 Submerged Probe

## Flow Module

The probe is mounted at the bottom of the channel, and uses a differential pressure transducer to measure the level of the flow stream. The 6700 Series or Avalanche® Sampler then converts this depth measurement into flow rate. The probe's venting system automatically compensates for changes in atmospheric pressure to maintain accuracy. The 720 provides accurate measurement at sites where wind, steam, foam, turbulence,

*Submerged probe accuracy unaffected by wind, steam, foam, turbulence or air temperature change.*

or air temperature fluctuations exist. The probe is suitable for small channels, and it accurately senses pressure even when covered with silt and sand.

Teledyne ISCO submerged probes are UL Classified for use in Class I, Division 1, Groups A, B, C, & D hazardous locations when installed using an ISCO Intrinsically Safe Barrier and Quickdisconnect Box. This makes the submerged probe suitable in applications where flammable gases or vapors may be present.

Mounting rings make it easy to install the probe in round pipes, manhole inverts, and other open channels. And with the Street Level Installation Tool, you can install your monitoring system from ground level, eliminating the costs and hazards of entering manholes. Most flumes are also available with an integral recess for mounting an Teledyne ISCO Submerged Probe.



*Simply plug in one of the environmentally-sealed modules to expand monitoring capabilities. They can easily be added or changed in the field.*



## Applications

- Flow measurement where wind, steam, foam, or turbulence exist
- Trigger sampling based on flow or level
- Flow-proportioned sample collection
- Treatment-capacity analysis
- Stormwater monitoring
- Combined sewer overflow studies
- Long-term river and stream gauging

## Standard Features

- Submerged probe accuracy unaffected by wind, steam, foam, turbulence, or air temperature change
- Built in flow conversions for most applications, including weirs and flumes, Manning formula, data points, or equation for special situations
- During program operation, current flow and level values are viewable on the sampler's LCD display
- All level data stored in the sampler is available for later retrieval, reporting, and graphing using ISCO Flowlink® software

## 720 MODULE

<b>Size (HxWxD):</b>	4.9 x 5.7 x 2.0 inches (12.4 x 14.5 x 5.1 cm)
<b>Weight:</b>	0.9 lbs (0.4 kg)
<b>Material:</b>	Polystyrene
<b>Enclosure:</b>	NEMA 4X, 6 (IP67)
<b>Power Requirements:</b>	9 to 14 Vdc (Provided by 6700 Series Sampler)
<b>Program Memory:</b>	Non-volatile, programmable flash; can be updated via interrogator port on 6700 Series Sampler using a PC
<b>Level Measurement Storage Interval:</b>	1, 2, 5, 10, 15, or 30 minutes (Programmable through 6700 Series Sampler)
<b>Operating Temperature:</b>	32° to 120°F (0° to 49°C)
<b>Storage Temperature:</b>	0° to 140°F (-18° to 60°C)

## SUBMERGED PROBE

<b>Hazardous Location Rating:</b>	UL Classified for use in Class I, Division 1, Groups A, B, C, & D hazardous locations as defined by Article 500 of the National Electrical Code when installed with ISCO Intrinsically Safe Barrier and Quick-disconnect Box per control drawing 60-3403-131.
<b>Length:</b> (with standard tip)	9.5 in (24.1 cm)
<b>Diameter:</b>	0.875 in (2.2 cm)
<b>Frontal Area:</b>	0.601 in <sup>2</sup> (3.88 cm <sup>2</sup> )
<b>Cable Length:</b>	
Standard Range Probe	25 ft (7.6 m)
Extended Range Probe	50 ft (15.2 m)
<b>Cable Diameter:</b>	0.3 in (0.8 cm)
<b>Weight: (w/ cable)</b>	
Standard Range Probe	3 lbs (1.4 kg)
Extended Range Probe	7 lbs (3.2 kg)
<b>Level Measurement Method:</b>	Submerged pressure transducer mounted in the flow stream

## SUBMERGED PROBE *CONTINUED*

<b>Transducer Type:</b>	Differential linear integrated circuit pressure transducer			
<b>Level Measurement Range:</b>				
Standard Range Probe	0.1 to 10 ft (0.03 to 3.05 m)			
Extended Range Probe	0.1 to 30 ft (0.03 to 9.14 m)			
<b>Maximum Allowable Level:</b>				
Standard Range Probe	20 ft (6.1 m)			
Extended Range Probe	40 ft (12.2 m)			
<b>Level Measurement Accuracy:</b> <i>Non-linearity, repeatability, and hysteresis at 77°F (25°C) (does not include temperature coefficient)</i>				
	<u>Level*</u>	<u>Error</u>	<u>Level*</u>	<u>Error</u>
Standard Range Probe	0.033-5.0 ft	±0.008 ft/ft	0.01-1.52 m	±0.008m
	>5.0 ft	±0.012 ft/ft	>1.52 m	±0.012 m
	<u>Level*</u>	<u>Error</u>	<u>Level*</u>	<u>Error</u>
Extended Range Probe	0.1-15 ft	±0.01 ft	0.03-4.6 m	±0.006 m
	0.1-21 ft	±0.03 ft	0.03-6.4 m	±0.009 m
	0.1-30 ft	±0.03 ft	0.03-9.1 m	±0.091 m
<b>Temperature Coefficient:</b> <i>Maximum error over compensated temperature range (per degree of temperature change)</i>				
	<u>Level*</u>	<u>Error</u>	<u>Level*</u>	<u>Error</u>
Standard Range Probe	0.1-4.0 ft	±0.005 ft/°F	0.03-1.22 m	±0.0027 m/°C
	4.0-10 ft	±0.007 ft/°F	1.22-3.05 m	±0.0038 m/°C
Extended Range Probe	0.1-30 ft	±0.008 ft/°F	0.03-9.14 m	±0.0044 m/°C
<b>Operating Temperature:</b>	32° to 120°F (0° to 49°C)			
<b>Compensated Temperature:</b>	32° to 100°F (0° to 38°C)			
<b>Materials:</b>				
Submerged Probe	Type 316 stainless steel, Chlorinated Polyvinyl Chloride (CPVC)			
Cable	Polyvinyl Chloride (PVC)			

## ORDERING INFORMATION

<u>Description</u>	<u>Part Number</u>
<b>720 Submerged Probe Flow Module</b> with 10 ft (3.05m) level measurement range	68-6700-068
<b>720 Accessories</b>	
Quick-disconnect Box	60-3224-003
Intrinsically Safe Barrier	60-3404-060

\*Actual vertical distance between the submerged probe and the liquid surface.

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