Pyxis®

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DATA SHEET

IK-73X PLUS Series Auto-Brushing Turbidity Analyzer

Product Description

The IK-73X-PLUS series are single parameter inline turbidity analyzers are specifically designed as a 'Turn-Key' monitoring solution for both industrial and potable water applications including drinking, cooling, process, influent and wastewater effluent. The IK-73X-PLUS series offers auto-brushing, highly accurate, real-time measurement, display and data-logging of turbidity utilizing proprietary Pyxis Lab smart sensor technology, coupled with the FS-100 ultrasonic flow sensor, motorized flow regulating valve and Pyxis touch screen display-data logging terminal. The IK-73X-PLUS series is offered in a convenient and easy to integrate panel mounted format for rapid installation and simple maintenance.

The IK-73X-PLUS series analyzer integrates the LT-739 and LT-736 ultra-low turbidity sensor platforms installed in the FT-100-PLUS auto-brushing flow tee. The LT-73X series sensor offers a unique flat surface distal end in a quartz glass plate, allowing for rapid in- line auto-cleaning and prevention of air bubble interference. With a detection range of 0.000 to 40 NTU (LT-739) and 0.000 – 1,000 NTU (LT-736) and an industry low resolution of 0.002 NTU, the LT- 73X series turbidity sensors are designed for optimal accuracy and repeatability with minimal sensor drift. The LT-73X series sensors use 90º surface scatter configuration in Warm White Light (LED) and are EPA-180.1 wavelength compliant. Infrared (ISO-7027 compliant) versions are also available upon request.

The IK-73X-PLUS series analyzers require a small installation foot- print and offer simple operation and maintenance and are specifically designed for use in commercial, industrial, and domestic/drinking water applications. The analyzer is also available with an optional Pyxis CloudLink™ 4G remote gateway, which can upload on-site analyzer data to a cloud server in real time and allow for additional sensor/ device inputs for cloud access.

See Specifications for Details.

Typical Applications

- *Industrial Cooling & Process Water*
- *Raw Surface Water*
- *Wastewater Effluent*
- *Domestic & Drinking Water*
- *Secondary Water Supply*
- *Sanitary Water*

Features

- Pyxis Lab advanced research and development sensor technologies to achieve highly accurate and stable measurement of Turbidity with ultra-low resolution.
- Pyxis LT-739 and LT-736 ultra-low resolution turbidity sensors offer a detection light source using warm white LED in 90-degree surface scatter format in accordance with USEPA 180.1 wavelength standards. The turbidity sensor is mounted in the unique Pyxis FT-100-PLUS auto-brushing flow reservoir with motorized mechanical cleaning of the sensor optical lense enabling the highest resolution possible of 0.002NTU with unmatched stability. The LT-739 and LT-736 both offer simple calibration via the Pyxis L-CAL Portable Turbidity Calibration Kit as outlined in this manual.
- The LT-73X series turbidity sensors offer a flat optical lens design making them easy to maintain and clean while effectively mitigating the impacts of air bubble entrainment on turbidity reading.
- Simple sensor removal and replacement. LT-73X sensor is connected to the display/data logger via RS-485 modbus (RTU) allowing for integrated sensor calibration interface and diagnostics within the display screen.
- Convenient simple to install back-panel for rapid and easy installation. Truly a plumb and power to go platform with intense factory setup, testing and sensor calibration prior to shipment.
- For NSF Certified Applications the IK-73X-PLUS discharge flow of approximately 500-2,000mL/minute may be sent to sanitary drain or returned to the inlet of the pretreatment system.

FS-100 Ultrasonic Flow Meter

Pyxis FS-100 is a state-of-the-art ultrasonic flowmeter that operates on the principle of transit time difference with a measurement range of 0 – 3,000 mL/min and resolution of 1mL. The sensors advanced PCB design offers built-in temperature compensation to eliminate the effect of temperature with instantaneous and accumulated sample water flow for live display display, motor valve flow regulation, data log and alarm on no flow condition.

UC-100 Display Data Logging Terminal

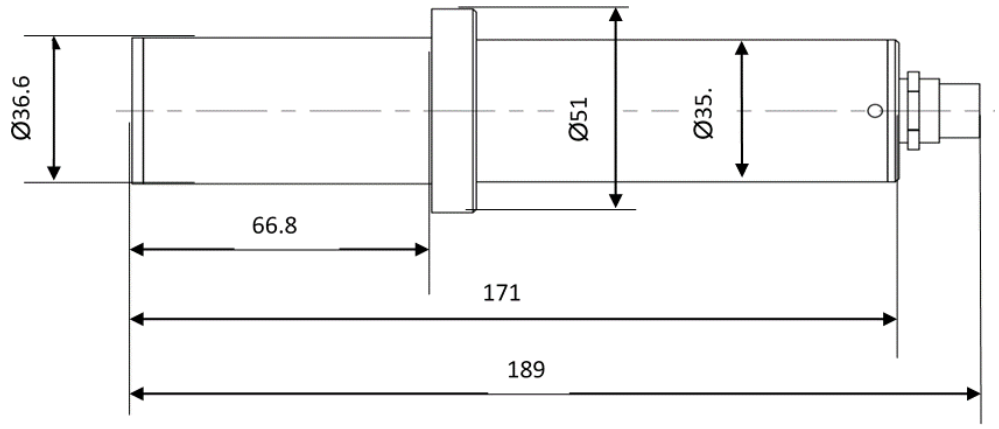
7inch touch screen display/data logger interface with sensor calibration integrated. Display/data logger offers 2x 4-20mA I/O as well as RS-485 for signal passthrough to any PLC or DCS network. Pyxis CloudLink™ 4G Gateway version available.

FT-100-PLUS Flow Reservoir

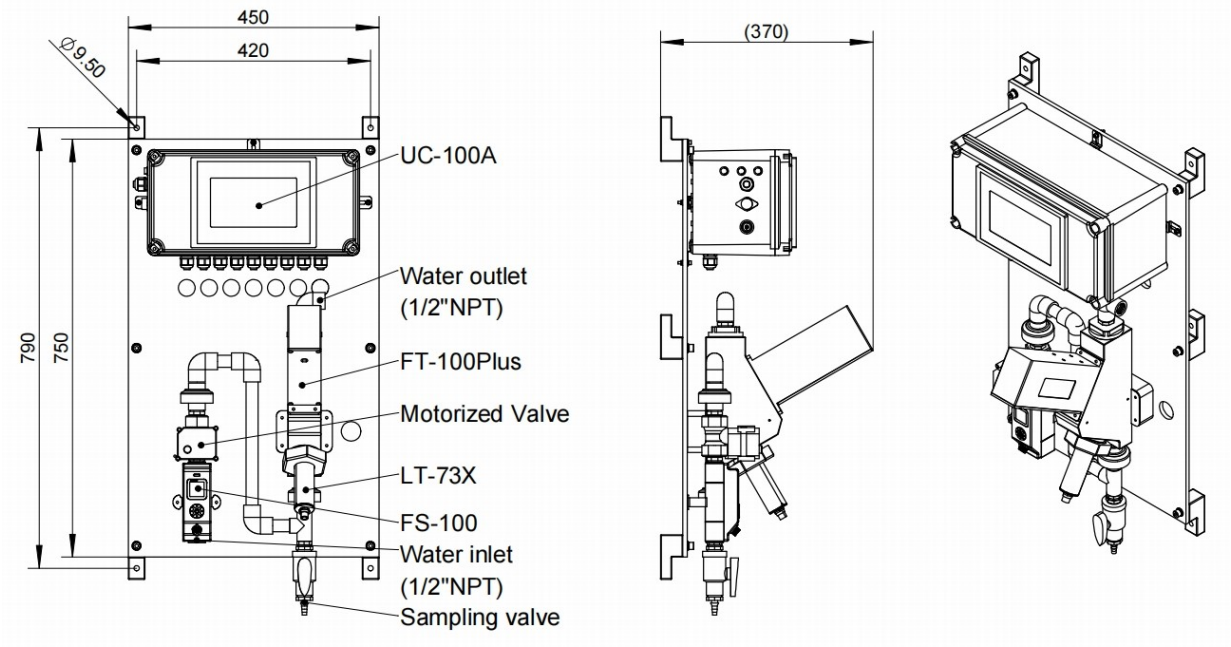
FT-100-PLUS is a motorized auto-brushing flow tee assembly that provides user programmable mechanical cleaning cycles of the LT-73X series inline ultra-low turbidity sensor. This unique flow tee design allows for trouble-free operation of the Pyxis inline sensor in a wide variety of water quality applications by automatically brushing the sensors optical lens to ensure optimum turbidity measurement, repeatability and accuracy. Programming of the FT-100-PLUS is simple through the UC-100A touch screen display interface and may be set to desired cycle frequency and duration. The minimum inlet pressure of FT-100-PLUS flow tee is only 7.5 psi (0.05mpa) making it highly suitable for the end of pipe networks.

Item	IK-739 Plus	IK-739 Plus G	IK-736 Plus	IK-736 Plus G
Part Number	12001	12002	12003	12004
4G Gateway	Not Included	Included	Not Included	Included
Turbidity Dual Range	0.000–40.00 NTU	0.000–40.00 NTU	0.000–1,000 NTU	0.000–1,000NTU
Source/Wavelength	LED/Warm White			
Flow Cell with Brush	INCLUDED			
Accuracy	0.001NTU or ±1% Full Scale			
MIN. Resolution	0.002NTU			
Response Time	4s After Immersion - Turbidity			
Compliance (nm)	EPA180.1			
Measure Interval	Continuous Measurement			
Display	7inch LED Color Industrial Capacitive Touch Screen			
Storage Capacity	Built-In 4GB of RAM for Storing up to 1-Million Data/Event Record			
Power Requirement	96– 260 VDC / 50-60Hz; 10A Fuse; 200W			
Output	(2) 4–20mA / RS-485 Modbus - RTU / Modbus - TCP			
Input	(2) 4–20mA / RS-485 Modbus - RTU			
USB	(1) USB Host for Data Download / Screen Upgrade			
Internet	RJ-45 Socket, Modbus TCP			
Storage Temp.	40–113 ºF (4–45 ºC)			
Sample Temp. Sample	Instrument: -4–131 ºF (-20–55 ºC) / Sensor: 32–122 ºF (0–50 ºC)			
Pressure Sample Flow	7.25–30psi (0.05–0.2 MPa)			
Rate Sample Line Size	500–2,000mL/min			
FS-100	1/2-inch NPT			
Measure Method				
Rated Flow Range	Ultrasonic-Transit Time			
Resolution/MAX Error	0–3,000mL/min			
Display	1mL/min or ±2% of the value			
PANEL	1.44inch Color 128 x128 Resolution			
Rating				
Regulation	IP-65 Panel Display / IP-67 Sensor			
Relative Humidity	CE/RoHS			
Altitude	20–90% (No Condensation)			
Dimensions	<6,516ft (<2,000m)			
Approx. Weight	750H x 450W x 243D (mm)			
	~15kg			

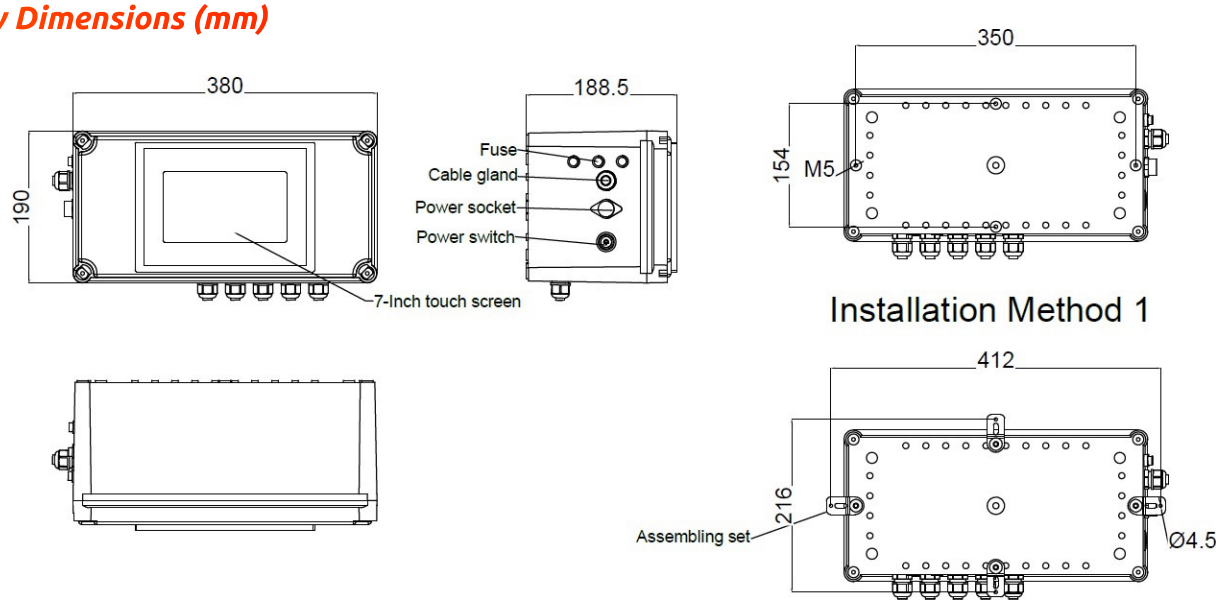
LT-73X Sensor Dimensions (mm)



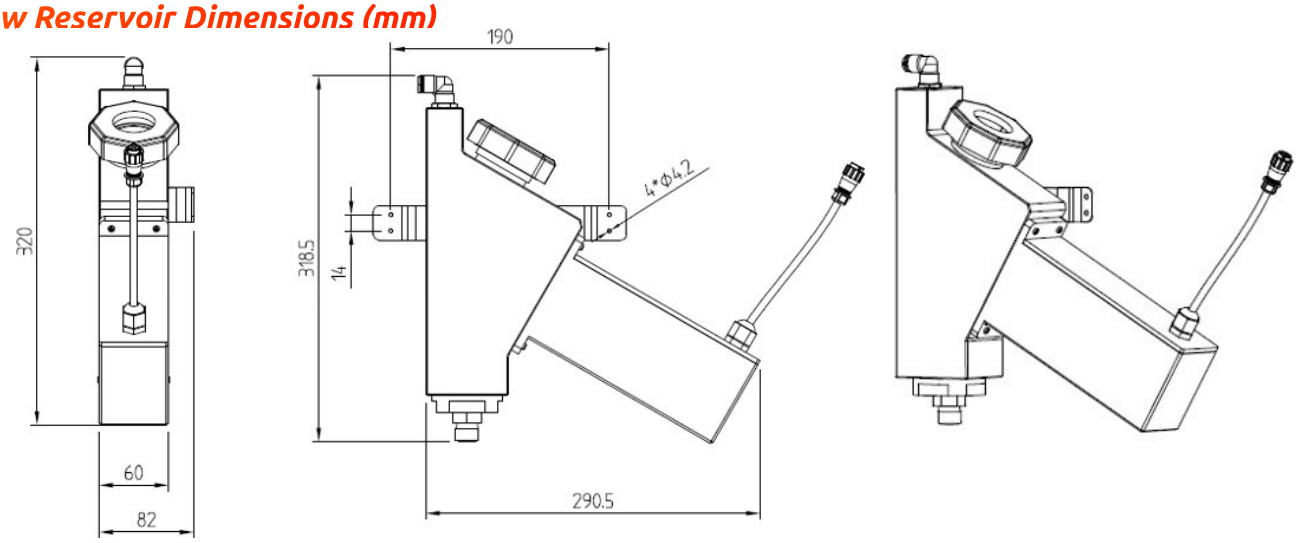
Panel Dimensions (mm)



Display Dimensions (mm)



Flow Reservoir Dimensions (mm)



Order Information	Part Number
IK-739-PLUS (Auto Brushing Turbidity Analyzer 0.000 – 40.000 NTU)	12001
IK-736-PLUS (Auto Brushing Turbidity Analyzer 0.000 – 1,000 NTU))	12003
FT-100-PLUS (Replacement FT-100-PLUS Reservoir Replacement)	16005
FTP-100-1 (Replacement Brush & Seal Assembly Kit for FT-100-PLUS)	28698
LT-739 (Replacement Inline Turbidity Sensor 0.000 – 40.000 NTU)	53221
LT-736 (Replacement Inline Turbidity Sensor 0.000 – 1,000 NTU)	53215
FS-100 (Replacement Ultrasonic Flowmeter with Display 0-3000mL/Minute)	54200
UC-100A (Replacement Display & Data Logging Terminal)	43054
Pyxis 10 NTU Turbidity Calibration Standard (500mL)	57010-4
Pyxis 30 NTU Turbidity Calibration Standard (500mL)	57010-8
Pyxis 500 NTU Turbidity Calibration Standard (500mL)	57010-2