DW-739 Series

Inline Turbidity Analyzers for Drinking Water

Product Description

The DW-739 series are single parameter inline turbidity analyzers specifically designed as a 'Turn-Key' monitoring solution for clean water applications including drinking water networks and secondary water supply networks. The DW-739 series offers highly accurate, real-time measurement, display and data-logging of Ultra-Low Turbidity utilizing proprietary Pyxis Lab smart sensor technology, coupled with the Pyxis touch screen display and data logging terminal. The DW-739 series is offered in a convenient and easy to integrate panel mounted format for rapid installation and simple maintenance.

The DW-739 series analyzer integrates the LT-739 ultra-low turbidity sensor installed in the FR-100 flow reservoir. The LT-739 sensor offers a unique flat surface distal end in a quartz glass plate, allowing for extended cleanliness, easy maintenance and prevention of air bubble interference. With a detection range of up to 40 NTU and an industry low resolution of 0.001 NTU, the LT-739 sensor is designed for optimal accuracy and performance with a wide range of turbidity water samples from raw influent to treated effluent. The LT-739 uses 90° surface scatter configuration and Warm White Light (LED) or InfraRed (LED) and is EPA-180.1 and ISO-7027 compliant respectively.

The DW-739 analyzer requires a small installation footprint and offers simple operation and maintenance and is specifically designed for use in domestic and drinking water applications. The analyzer is also available with an optional Pyxis CloudLink^{TM} 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.

Figure 1 – DW-739 Series

Typical Applications

- Drinking Water
- Domestic Water
- Secondary Water Supply
- Sanitary Water

Features

- Pyxis Lab's advanced research and development sensor technologies to achieve highly accurate and stable measurement of Turbidity with ultra-low resolution.

- Pyxis LT-739 (EPA) and LT-739B (ISO) 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 standards or Infra-Red 860nm in accordance with ISO-7027.1 standards. The turbidity sensors are mounted in the unique Pyxis FR-100 flow reservoir enabling the highest resolution possible of 0.001NTU with unmatched stability. The LT-739 and LT-739B offers simple calibration via the Pyxis LT-SOLID-CAL Solid State Turbidity Calibration Kit (no Formazin required) or the Pyxis L-CAL Portable Turbidity Calibration Kit (uses 500mL Formazin per calibration).

- Pyxis FR-100 Single-Sensor flow reservoir provides sample calming for dissipation of air-bubbles and settling of suspended solids, foam or other impurities commonly observed in drinking water influent. This unique flow reservoir design results in the highest level of turbidity resolution on the market and greatly extends the maintenance cycle of the sensor while providing a large buffer capacity to mitigate pressure fluctuations. The minimum inlet pressure of FR-100 flow reservoir is only 7.5 psi (0.05mpa) making it highly suitable for the end of pipe networks and secondary supply influent sampling.

- Turbidity sensor offers a self-cleaning flat electrode design making them easy to maintain and clean.

- Simple sensor removal and replacement. LT-739 sensors 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 and simple to install Back-Panel (DW-739 Series) for rapid and easy installation. Truly a plumb and power to go platform with intense factory setup, testing and sensor calibration prior to shipment.

- 7-inch 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^{TM} 4G Gateway version available.

- For NSF Certified Applications the DW-739 discharge flow of approximately 200-400mL/minute may be sent to sanitary drain or returned to the inlet of the pretreatment system.
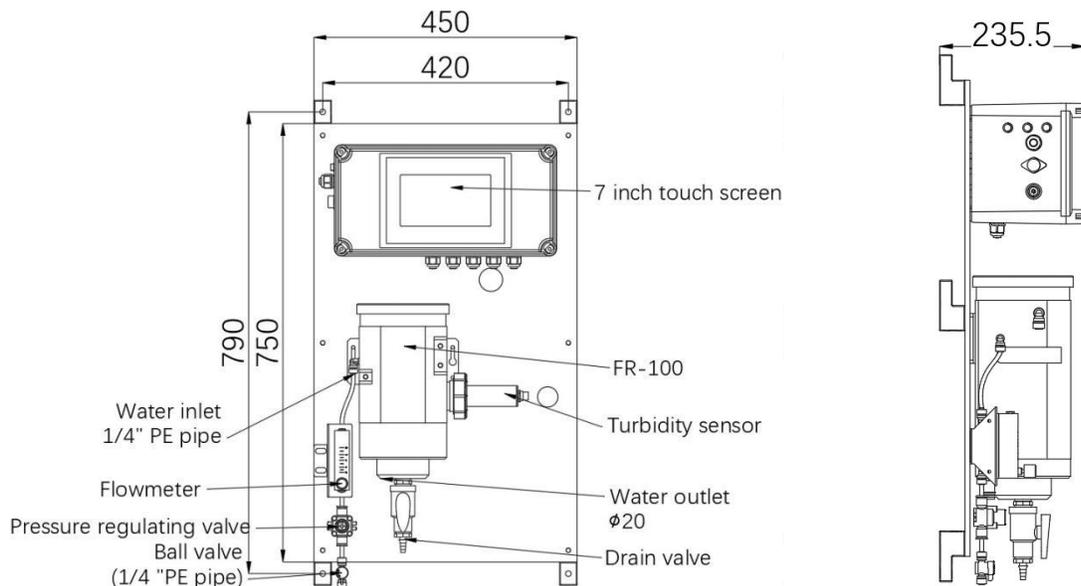
Specifications

Item	DW-739	DW-739B	DW-739-G	DW-739B-G
P/N	42143	42144	42145	42146
Turbidity Wavelength	Warm White	860nm	Warm White	860 nm
Light Source	LED			
Turbidity Dual Range	0.001 – 10 / 10 - 40.00 NTU			
Turbidity Accuracy	± 0.005 NTU or 2% <10NTU			
Turbidity Repeatability	± 0.001 NTU or 0.5% <10NTU			
Measurement Accuracy	0.001NTU or ± 1% Full Scale			
Minimum Resolution	0.001 NTU			
Response time	4s after immersion - Turbidity			
Compliance	EPA-180.1	ISO-7027	EPA-180.1	ISO-7027
Measurement Interval	Continuous Measurement			
Display	7-inch LCD Color Industrial Capacitive Touch Screen			
Storage Capacity	Built-In 4GB of Ram for Storing up to 1-Million Data/Event Records			
Power Requirement	96-260VAC / 50-60 Hz; 10A Fuse; 200 W			
Output	2 x 4-20 mA / RS-485 Modbus - RTU / Modbus TCP			
Input	2 x 4-20 mA / RS-485 Modbus - RTU			
USB	1 x USB host, for data downloading and screen upgrade			
Internet	RJ-45 socket, Modbus-TCP			
Panel Operational Temperature	40 – 113°F (4-45 °C)			
Storage Temperature	Instrument: -4 – 131°F (-20 – 55°C) / Sensors 32 – 122°F (0 – 50°C)			
Sample Water Temperature	40 – 104°F (4-40°C)			
Sample Water Pressure	7.25 – 30 psi (0.05 – 0.2MPa)			
Installation	FR-100 Self-Regulating Flow Reservoir w/Rotameter & PRV - Included			
FR-100 Minimum Flow Rate	200 mL/minute			
FR-100 Maximum Flow Rate	1,800 mL/minute			
FR-100 Sample Inlet	¼ - inch OD			
FR-100 Sample Outlet	20mm - To Drain			
FR-100 Drain	½ - inch NPT			
Rating	IP-65 Panel-Display / IP-67 Sensors			
Regulation	CE / RoHS			
Relative Humidity	20% - 90% (No Condensation)			
Altitude	<6,561 feet (<2,000 Meter)			
Dimensions (HxWxD)	Panel (DW-739) 790H x 450W x 231D mm			
Approximate Product Weight	DW-739 ~ 15 kg			
Pyxis 4G CloudLink™	NA		Included	
CloudLink™ Bands	NA		Global (B1/2/3/4/5/7/12/13/14/20/28/66/7	
CloudLink™ Protocols	NA		IP/TCP/UDP/HTTP/HTTPS/Modbus	

NOTE - Pyxis Lab is consistently updating technologies, as such, specifications may change without notice.
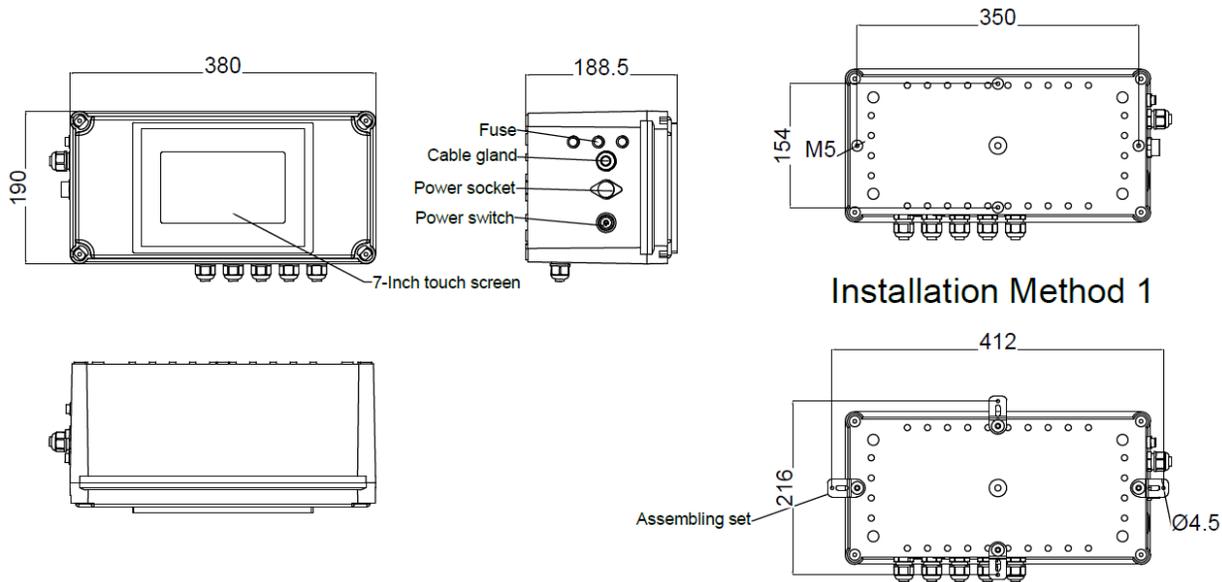Technical specifications on the LT-739/B can also be found in its respective Operation Manual.
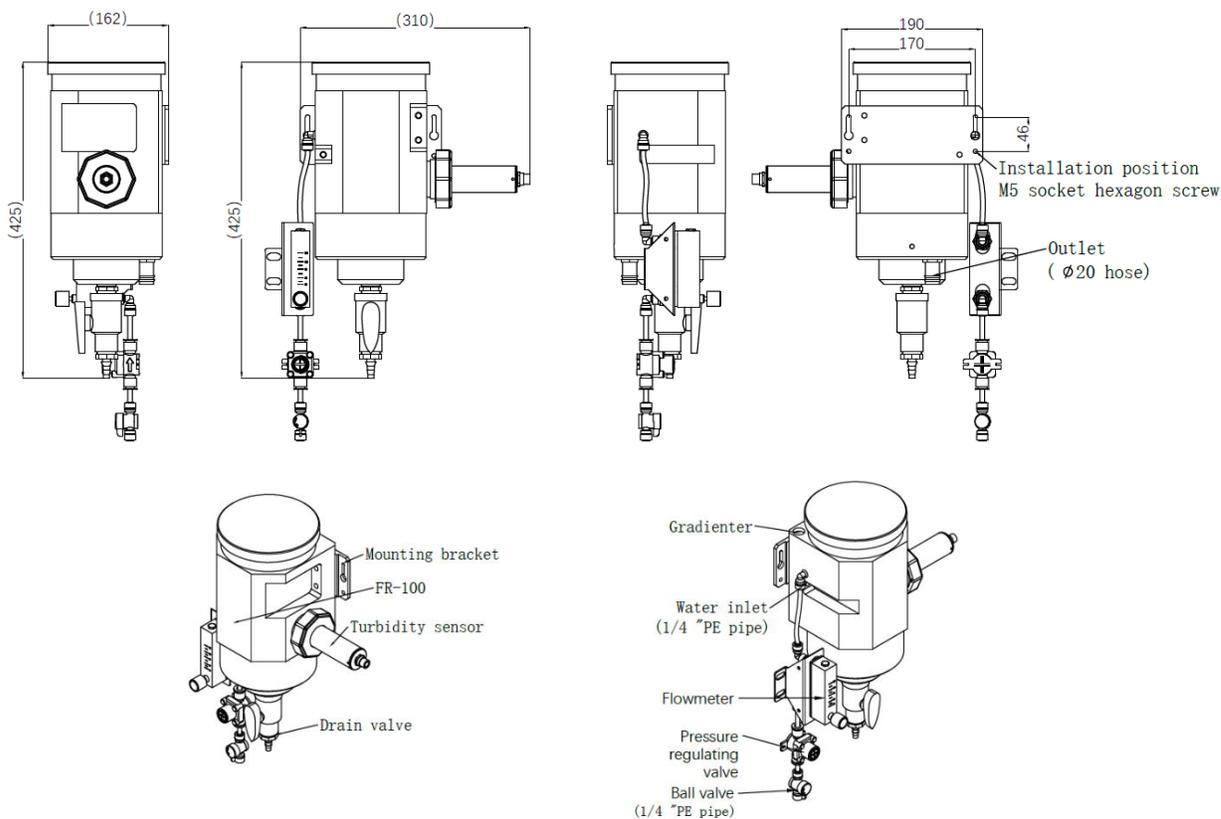Global SIM Card for 'G' version sold separately. Contact info@pyxis-lab.com for details or www.pyxis-lab.com .

DW-739 Series Panel Dimensions (mm)

450
420

7 inch touch screen

235.5

790
750

FR-100

Water inlet
1/4" PE pipe

Turbidity sensor

Flowmeter

Water outlet
ϕ20

Pressure regulating valve

Ball valve
(1/4 "PE pipe)

Drain valve

DW-739 Series UC-100A-Controller Dimensions (mm)

380

190

Fuse
Cable gland
Power socket
Power switch

188.5

7-Inch touch screen

350

154

M5

Installation Method 1

412

216

Assembling set

Ø4.5

DW-739 Series FR-100 – Flow Reservoir Dimensions (mm)

(162)   (310)   190   170

(425)   (425)   46

Installation position
M5 socket hexagon screw

Outlet
(⌀20 hose)

Mounting bracket
FR-100
Turbidity sensor
Drain valve

Gradienter
Water inlet
(1/4 "PE pipe)
Flowmeter
Pressure
regulating
valve
Ball valve
(1/4 "PE pipe)

DW-739 Series Sensor Dimensions (mm)

⌀36.6   ⌀51   ⌀35.

66.8

171

189

LT-739 / LT-739B Turbidity Sensor
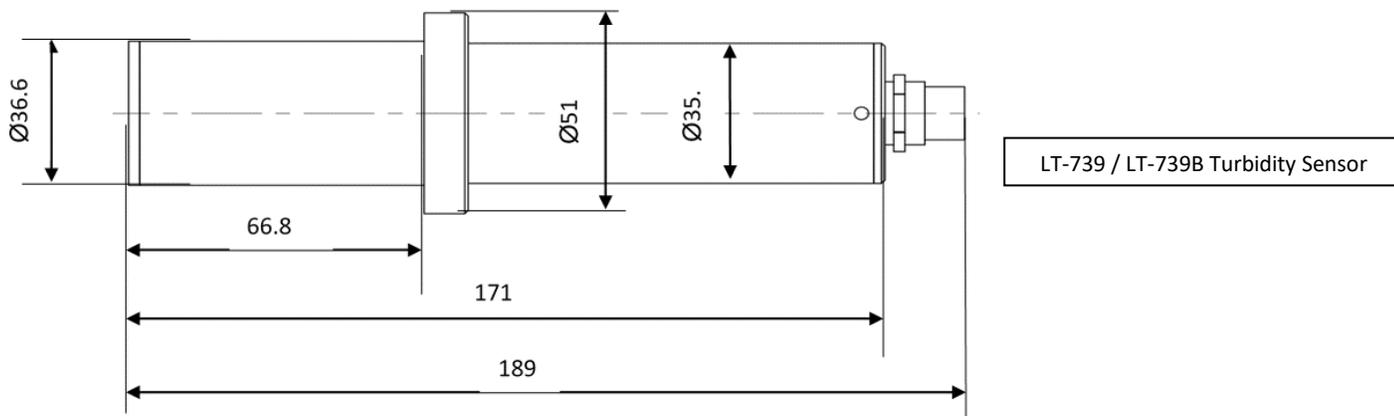
Order Information   P/N

DW-739 *(Drinking Water Turbidity Analyzer for EPA-180.1 Compliant Markets)*   42143

DW-739B *(Drinking Water Turbidity Analyzer for ISO-7027 Compliant Markets)*   42144

DW-739-G *(DW-739 with optional Pyxis CloudLink™ 4G Gateway)*   42145

DW-739B- G *(DW-739B with optional Pyxis CloudLink™ 4G Gateway)*   42146

Optional / Replacement Accessories Information   P/N

UC-100A Display/Data Logging Terminal   43054

LT-739 Ultra-Low Turbidity Sensor *(Warm White LED 0.000-40. 00 NTU)*   53221

LT-739B Ultra-Low Turbidity Sensor *(InfraRed 860nm LED 0.000-40. 00 NTU)*   53225

FR-100 Single Sensor Flow Reservoir Assembly   50779

FRP-100 *(Motorized Brush Cleaning Module for FR-100)*   50700-A16

FRP-100-1 *(Replacement Brush for FRP-200)*   50700-A14

LT-SOLID-CAL 739 *(Solid State Calibration Kit for LT-739 - 0.1 / 8.0 / 25 NTU)*   53229

LT-SOLID-CAL 739B *(Solid State Calibration Kit for LT-739B - 0.1 / 8.0 / 25 NTU)*   53239

L-CAL *(Portable Liquid Formazin Calibration Kit for LT-73X Series Sensors)*   53247

Pyxis Turbidity Calibration Std – 10.0 NTU *(4,000mL)*   57010-10L

Pyxis Turbidity Calibration Std – 30.0 NTU *(4,000mL)*   57010-30L

Global Prepaid SIM Card for Wireless Data *(1-year)*   CLD-SIM-01