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FS-SERIES FLOW METERS

Ultrasonic Flow Meters for Water & Corrosive Aqueous Solution Measurement and Control

DESCRIPTION

The new FS-Series are state-of-the-art ultrasonic flowmeters that operate on the principle of transit time difference. In this flow measurement method, the propagation speed of ultrasonic waves downstream is faster than upstream, and the transit time difference is directly proportional to the flow rate. The FS-100 series provides a measurement range of 0–3,000 mL/min, while the FS-200 series extends the range to 0–10,000 mL/min; both offer a resolution of 1 mL for precise water flow measurement.

The FS-Series flowmeters are ideal for flow measurement and are offered in two liquid end materials of construction, for standard water (FS-100 & FS-200) and highly corrosive solution applications (FS-101 & FS-201). The sensors advanced PCB design offers built-in temperature compensation to eliminate the effect of temperature with instantaneous, accumulated and controlled water flow based on user setpoint within the sensor itself. All FS-Series flowmeters are powered by a 24 VDC/2W power supply and provide both 4–20 mA and RS-485 Modbus output signals for connection to any OEM controller, PLC or DCS.

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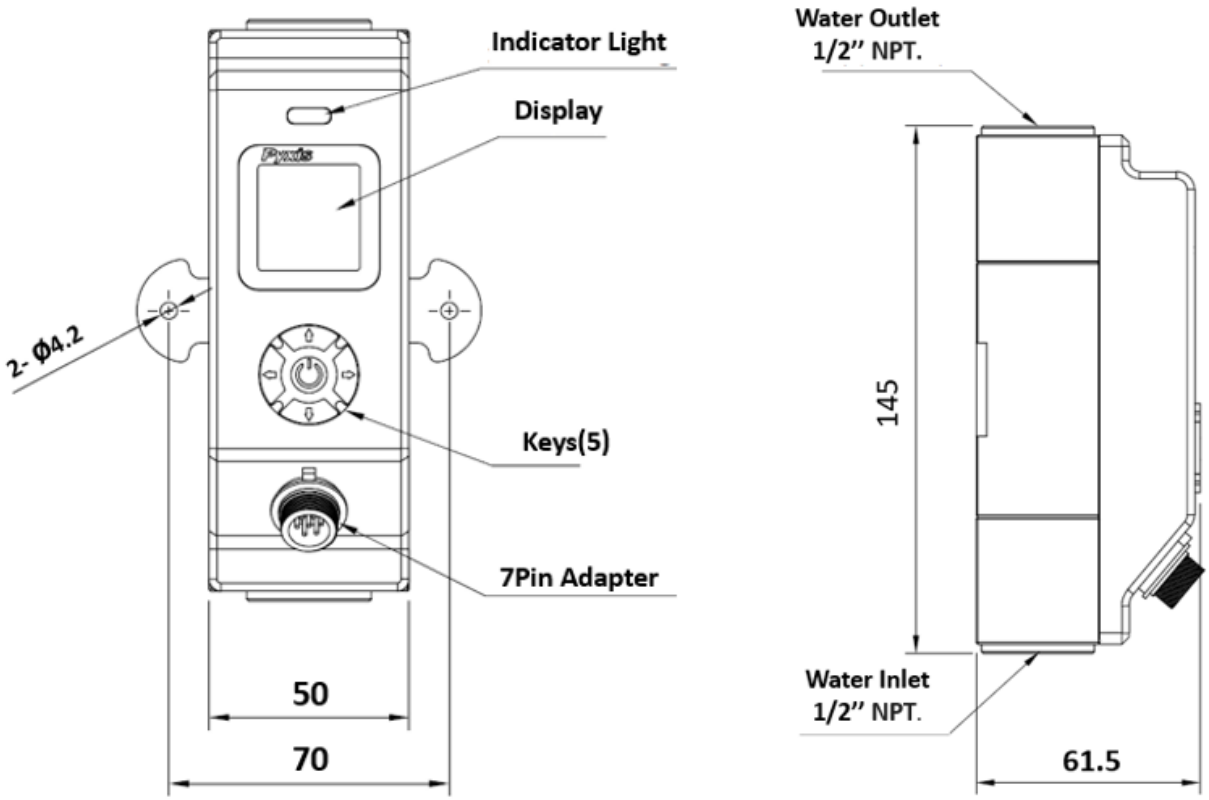
FEATURES

- Live Local Display with Real-Time Flow Rate Trend Chart
- Combination of (2x) Isolated 4-20mA Signal and (1x) RS-485 Modbus-RTU Output
- Ultrasonic Flowmeter available in 0–3,000mL/min (FS-100 Series) and 0–10,000mL/min (FS-200 Series) Ranges
- Built-In Temperature Sensor automatically compensates for the Effect of Temperature on Flow Rate
- Monitor and Display Instantaneous Flow Rate and Accumulated Volume
- Integrated User Defined Flow Rate Setpoint with PID Output Control for 4-20mA Regulating Valve/Pump
- Large Color LED Indicator for Operational State Indication
- CPVC Liquid End for Common Water Flow Measurement Applications (FS-100/FS-200)
- Ryton PPS/GF Polymer Liquid End for Highly Corrosive Solution Flow Measurement Applications (FS-101/FS-201)

DIMENSIONS



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SPECIFICATIONS

Item	FS-100	FS-101
Part Number	54200	58542
Supported Fluid	Liquids (Water)	Corrosive Aqueous Solution[1]
Wet End Material of Construction	UPVC PPS Plastic GF Polymer Epoxy Fluorine Rubber	PPS Plastic GF Polymer Epoxy Fluorine Rubber
Supported Fluid Temperature	4–49 °C (40–120 °F)	
Sample Inlet Pressure	7.25–100psi (0.05–0.689MPa)	
Sample Inlet/Outlet	½ inch - NPT	
Flow Path Inner Diameter	5mm	
Rated Flow Range	0–3,000mL/min	
Minimum Flow Rate Detection	10mL/min	
Resolution	1mL/min	
Maximum Error	±10mL/min or 1% of the value, whichever is greater	
Display	1.44” Color 128x128 Resolution	
Analog Outputs[2]	1# 4-20mA for Flow Rate 2# 4-20mA for Regulating Valve	
Digital Output	1x Isolated RS-485, Modbus RTU	
Power Supply	24V DC, 2W	
Operation Temperature	32–122 °F (0–50 °C)	
Storage Temperature	-4–158 °F (-20–70 °C)	
Dimensions	145mm H, 50mm W, 61.5mm D	
Weight	~600g	
Humidity	5–95% No Condensation	
Protection	IP-65	
Regulation	CE/RoHS	

[1] Refer to the separate document “Chemical Reagent Compatibility Comparison and Reference for FS-100/200 and FS-101/201” prior to use for measurement of any chemical or corrosive aqueous solution.

[2] The flow control module supports only one 4-20mA (flow rate) output for connection to another device. The second 4-20mA output is reserved exclusively for controlling the regulating valve.

[3] Specifications are subject to change without notice, contact service@pyxis-lab.com for any questions.

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SPECIFICATIONS

Item	FS-200	FS-201
Part Number	54081	51488
Supported Fluid	Liquids (Water)	Corrosive Aqueous Solution[4]
Wet End Material of Construction	UPVC PPS Plastic GF Polymer Epoxy Fluorine Rubber	PPS Plastic GF Polymer Epoxy Fluorine Rubber
Supported Fluid Temperature	4–49 °C (40–120 °F)	
Sample Inlet Pressure	7.25–100psi (0.05–0.689MPa)	
Sample Inlet/Outlet	½ inch - NPT	
Flow Path Inner Diameter	12mm	
Rated Flow Range	0–10,000mL/min	
Minimum Flow Rate Detection	10mL/min	
Resolution	1mL/min	
Maximum Error	±40mL/min or 1% of the value, whichever is greater	
Display	1.44” Color 128x128 Resolution	
Analog Outputs[2]	1# 4-20mA for Flow Rate 2# 4-20mA for Regulating Valve	
Digital Output	1x Isolated RS-485, Modbus RTU	
Power Supply	24V DC, 2W	
Operation Temperature	32–122 °F (0–50 °C)	
Storage Temperature	-4–158 °F (-20–70 °C)	
Dimensions	145mm H, 50mm W, 61.5mm D	
Weight	~600g	
Humidity	5–95% No Condensation	
Protection	IP-65	
Regulation	CE/RoHS	

[4] Refer to the separate document “Chemical Reagent Compatibility Comparison and Reference for FS-100/200 and FS-101/201” prior to use for measurement of any chemical or corrosive aqueous solution.

[5] The flow control module supports only one 4-20mA (flow rate) output for connection to another device. The second 4-20mA output is reserved exclusively for controlling the regulating valve.

[6] Specifications are subject to change without notice, contact service@pyxis-lab.com for any questions.

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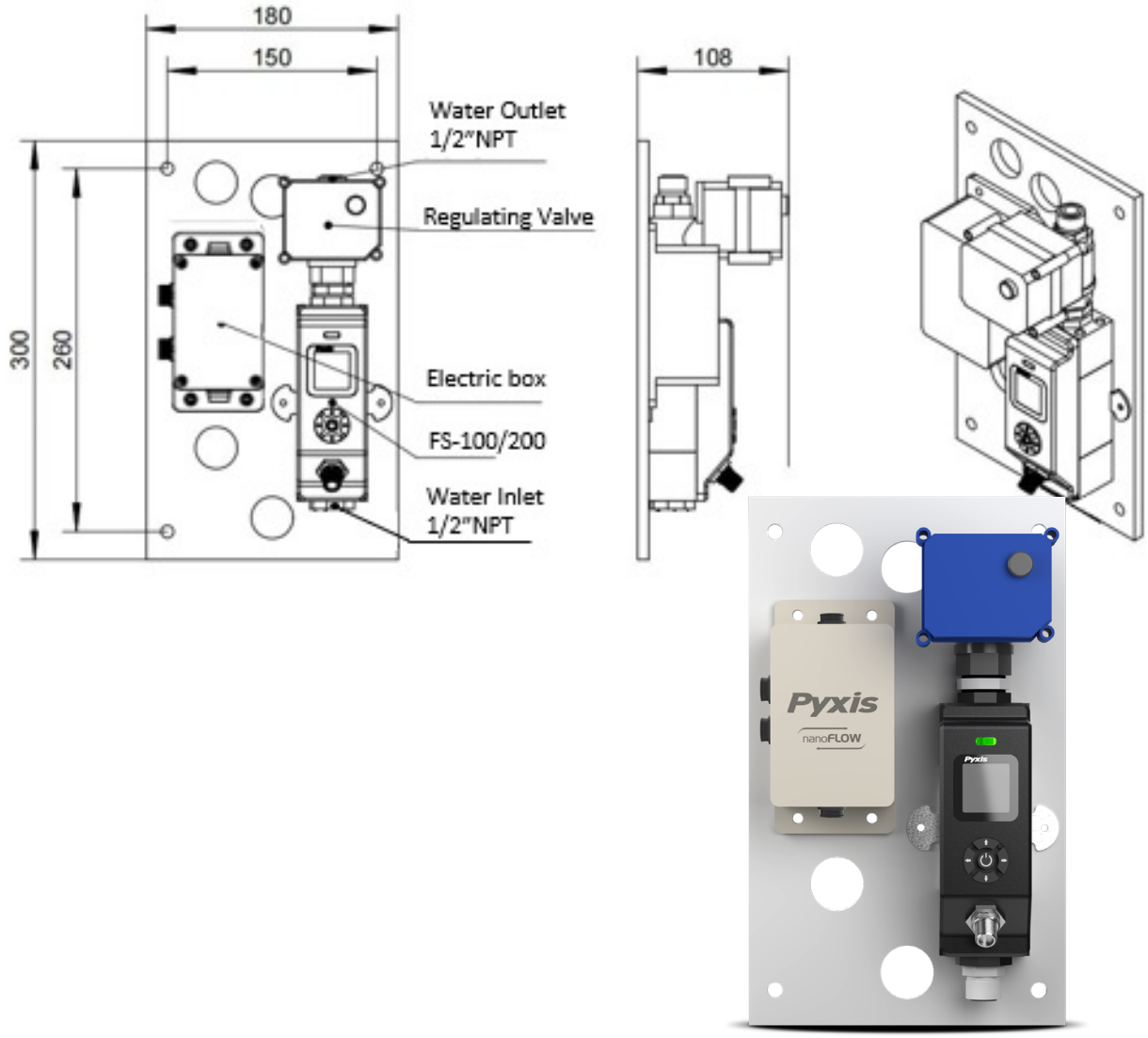
Nano-Flow Series Control Module for Water

Sold separately, the Pyxis Nano-Flow™ and Nano-Flow PLUS™ Control Modules are stand-alone water flow measurement and control solutions designed for use in critical cooling and process-water sample flow applications. This unique platform provides precise flow measurement and regulation and may be installed upstream of inline sensors in water systems that are subject to pressure and flow variation challenges.

The Nano-Flow series modules are offered in a convenient and easy to integrate micro-panel mounted format for rapid installation, setup and maintenance. Each micro-panel assembly integrates an ultrasonic flowmeter with display and a pre-mounted regulating valve controlled through a simple-to-program user interface: the Nano-Flow module is configured with the Pyxis FS-100, while the Nano-Flow PLUS module is configured with the Pyxis FS-200.

Item	P/N	Description
Nano-Flow Control Module	21329	FS-100 Ultrasonic Flow Meter + Regulating Valve
Nano-Flow PLUS Control Module	20867	FS-200 Ultrasonic Flow Meter + Regulating Valve



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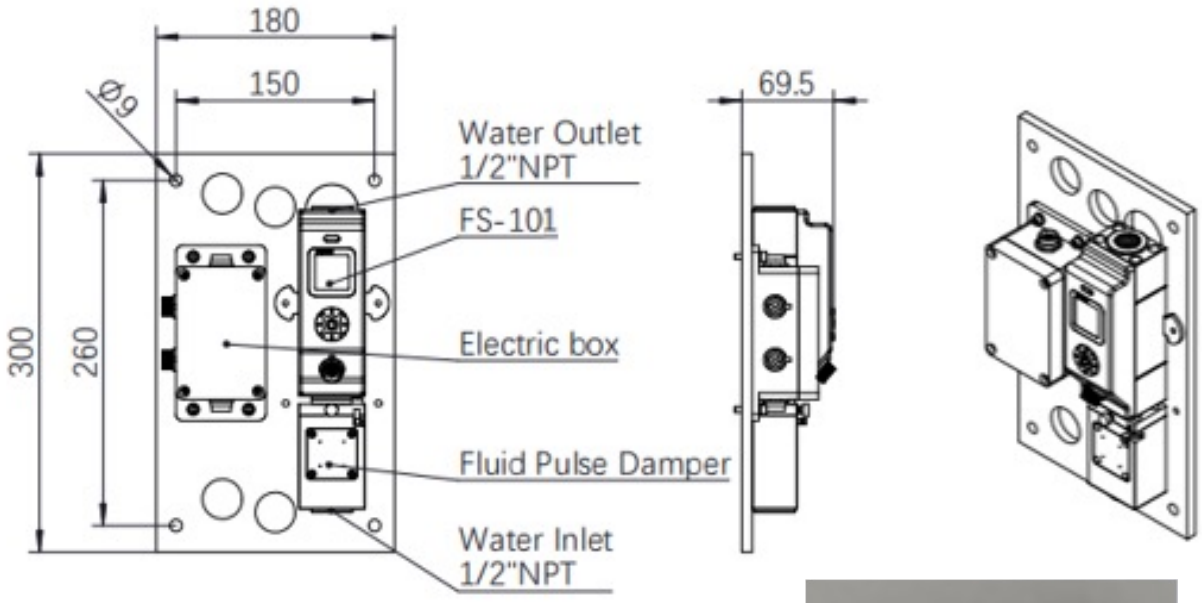
Nano-Feed Module for Corrosive Aqueous Solution

Sold separately, the Pyxis Nano-Feed™ Chemical Feed Module is a stand-alone flow measurement solution designed for pulsed chemical metering pump applications. The module combines a pulse dampener at the inlet with the Pyxis FS-101 ultrasonic flow meter, which uses PPS+GF wetted materials optimized for corrosive liquid environments.

Nano-Feed module should be Installed in the chemical feed line downstream of the metering pump and upstream of the injection point, Nano-Feed smooths the pulsating discharge typical of diaphragm pumps, enabling stable flow indication and more accurate confirmation of the delivered chemical dosage.

Item	P/N	Description
Nano-Feed Module	28080	FS-101 Ultrasonic Flow Meter + Pulsation Damper



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ORDER INFORMATION	PART NUMBER
FS-100 Ultrasonic Flowmeter with Display for Water	54200
FS-101 Ultrasonic Flowmeter with Display for Corrosive Aqueous Solution	58542
FS-200 Ultrasonic Flowmeter with Display for Water	54200
FS-201 Ultrasonic Flowmeter with Display for Corrosive Aqueous Solution	51488

OPTIONAL/REPLACEMENT ACCESSORIES

Nano-Flow Control Module with FS-100 + Regulating Valve	21329
Nano-Flow PLUS Control Module with FS-200 + Regulating Valve	20867
Nano-Feed Control Module with FS-101 + Fluid Pulse Dampener	28080
FS-Series Pulsation Dampener (Replacement for Nano-Feed Module)	24441
CE-FE-4.9 Replacement Flying Lead Cable with Female 7PIN Adapter (1.5m)	50762
MA-AC-7US Power Outlet Adapter with USA/Type A Plug (110VAC-24VDC)	26398
MA-AC-7EU Power Outlet Adapter with EU/DIN Plug (230VAC-24VDC)	28787
MA-AC-7UK Power Outlet Adapter with UK Plug (230VAC-24VDC)	25802

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