

FR-300-PLUS

Self-Brushing

Single Flow-Reservoir Startup Guide



Product Description

The Pyxis FR-300-PLUS is a magnetic coupling motorized brush flow assembly that provides an inline mechanical cleaning of the ST-765SS Series bare gold electrode enabling sensor accuracy in challenging industrial cooling and process waters. This unique device enhances the convective mass transport of the oxidizer analyte to the sensor surface eliminating the need for precision flow control commonly required for other amperometric sensors on the market. The FR-300-PLUS also provides supplemental deactivation protection of the bare gold electrode for long life, stability, and accuracy. The FR-300-PLUS also contains a 'chemical detergent injection port' in the assembly housing allowing for the optional injection of cleaning agents at the brush head for extremely challenged industrial waters containing oils and grease. The FR-300-PLUS may be operated at a broad range of sample flow from 200 and 800mL per minute with an inlet pressure of <30 psi. The FR-300-PLUS outlet flow line may be diverted to drain or returned to an atmospheric tank/sump within the process itself for reuse.

The FR-300-PLUS comes equipped on all IK-765-B Series and SFA-765-TCL-B series panels from Pyxis Lab. Over time, the internal brush itself may require replacement. Part number details on the replacement brush assembly can be found at the bottom of this page.

Specifications

Item	FR-300-PLUS
P/N	50700-A44
Description	Self-Brushing Single Flow-Reservoir Assembly for Pyxis Sensors
Power Supply	24V DC, ≤5W
Storage Temperature	-7 °C – 60 °C (20 – 140 °F)
Control Methodology	RS-485 or Powered Relay
Dimension (L x W x H)	Length 12.48-inch (317 mm), Body Square 3.15-inch (80 mm)
Body Material	UPVC
Weight	2600 g (5.732 lbs)
Operating Temperature	4 °C – 40 °C (40 – 104 °F)
Sample Inlet Pressure	7.25 – 30 psi (0.05 – 0.2MPa)
Minimum Speed	100 RPM
Maximum Speed	400 RPM
Sample Inlet/Outlet	3/8 - inch OD
Suggested Flow Rate	200 - 800 mL/min
Wet Material	UPVC & ABS & 316 Stainless Steel
Cable Length	1-Foot Terminated w/IP67 adapter + 4.9 feet flying lead w/IP67 adapters

NOTE – Pyxis Lab specifications are subject to change without notice. Contact service@pyxis-lab.com for any questions.

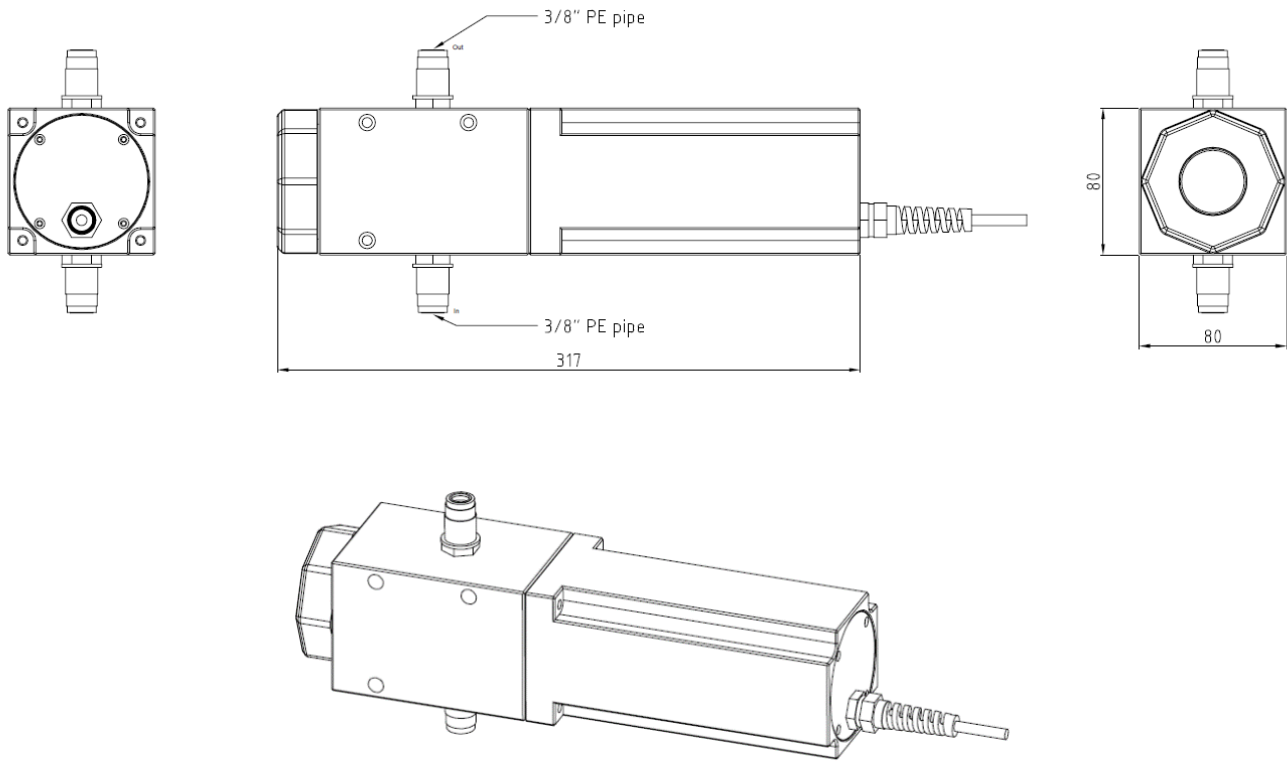
Order Information

FR-300-PLUS (Replacement FR-300-PLUS Auto-Brushing Flow Assembly Replacement)
FR-300-01 (Replacement Brush Assembly for FR-300-PLUS)

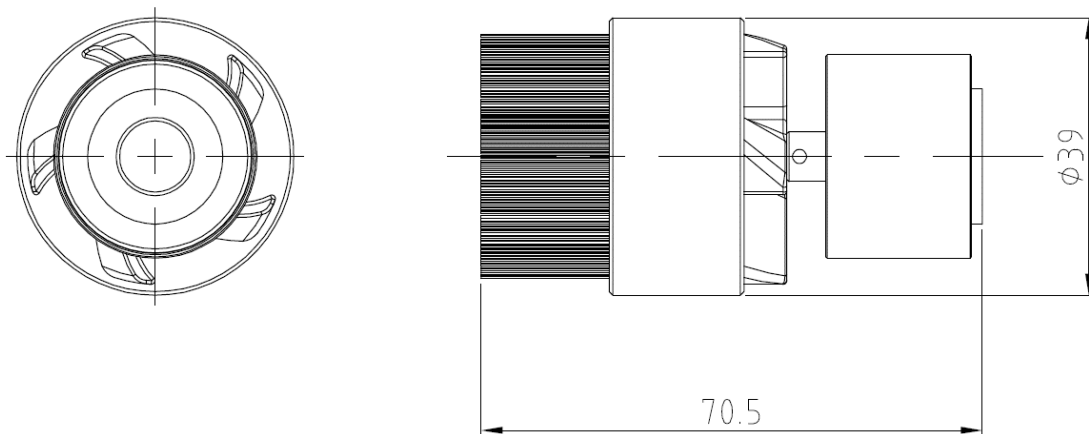
P/N

50700-A44
50700-A49

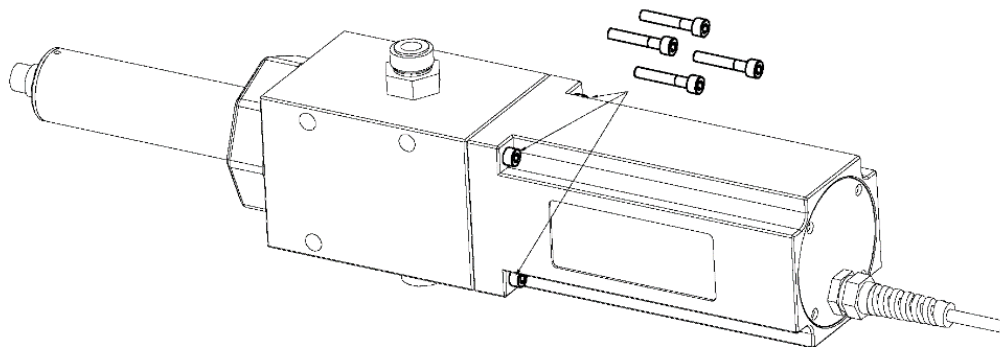
FR-300-Plus – Flow Reservoir Dimensions (mm)



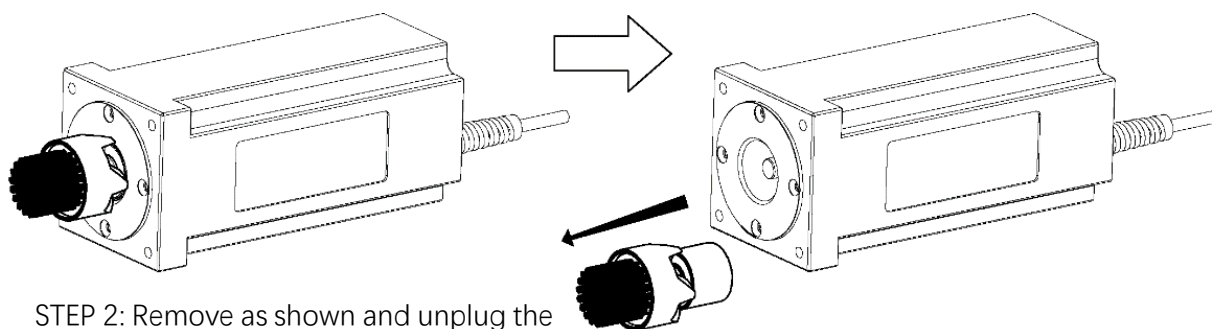
FR-300-01 Replacement Brushing Assembly Dimensions (mm)



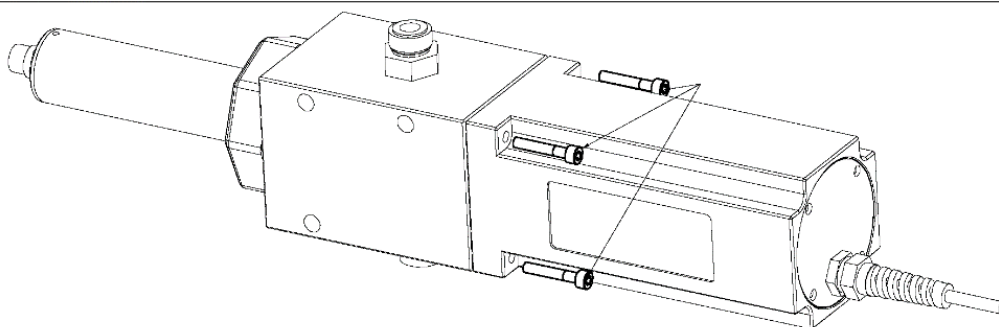
FR-300-01 Replacement Brushing Assembly Replacement Procedure



STEP 1: Remove the 4 screws (M5)



STEP 2: Remove as shown and unplug the FR-300-01 in the direction indicated then replace it with a new FR-300-01



STEP 3: Reinstall the parts shown and tighten the screws snugly. Do **NOT** forget to re-install the seals prior to tightening

FR-300-PLUS Wiring Instructions

Follow the wiring table below to connect the FR-300-PLUS to a controller or the Pyxis UC-50.

Wire-color	Designation
Red	24V
Black	0V
Blue	485A
Yellow	485B
Silver	Ground
White	NA
Green	NA

FR-300-PLUS Modbus (RTU) Communication Settings

Baudrate	9600 bps
Databit	8-bit
Stopbit	1-bit
Parity Check	Even
Bus Type	RS-485

FR-300-PLUS Modbus (RTU) Protocol

Register Address Model	PLC Address Base 1
Byte Order	CDAB Little Endian Byte Swap
Supported Function Code	
03	Read Holding Register
06	Write Single Register
16	Write Multiple Registers

FR-300-PLUS - Register List 1 - Communication Settings

Register Address	Function Code		Type of Data	Description
	Read	Write		
42001	0x03	0x06	16-bit unsigned integer	Mailing address, Range: 1-250,default:200
42002	0x03	---	16-bit unsigned integer	Communication Data Bits
42003	0x03	0x06	16-bit unsigned integer	Communication parity, 0: no parity, 1: even parity, 2: odd parity
42004	0x03	---	32-bit unsigned integer	Communication Baud Rate

FR-300-PLUS - Register List 2 - Parameter Settings

Register address	Function Code		Type of data	Description
	Read	Write		
48001	0x03	0x06	16-bit unsigned integer	Start/stop, 1 is start, 0 is stop
48002	0x03	---	16-bit unsigned integer	Reserve
48003	0x03	---	16-bit unsigned integer	Real-time speed, unit "RPM"
48004	0x03	0x06	16-bit unsigned integer	Target speed, unit "RPM" Range 100-400
48013	0x03	---	16-bit unsigned integer	Alarm flag, 0 means no alarm, others are alarm
48014	0x03	0x06	16-bit unsigned integer	Alarm timeout, within this time, the real-time speed has not reached the target speed, then start the alarm. Unit "seconds", range 1-600
48017	0x03	0x06	16-bit unsigned integer	Mode selection, 0 is normally open/normally closed mode, 1 is timing mode
48018	0x03	0x06	16-bit unsigned integer	Enable time in timing mode, unit "second", range 1-30000
48019	0x03	0x06	16-bit unsigned integer	Deactivation time in timing mode, unit "minute", range 1-30000