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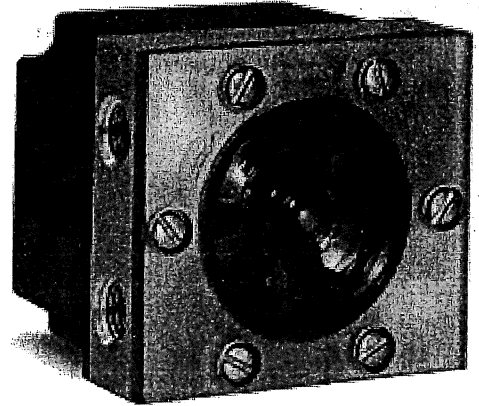
100 Series Flow Switches Installation and Operating Instructions

This document provides basic information describing the plumbing and electrical connections, and trip point adjustments to install and make operational your 100 Series Flow Switch.

A comprehensive Technical Reference Manual for these devices can be downloaded or printed from www.proteusind.com/100_flow_switch/100Manual.pdf

This manual includes technical descriptions, performance specifications, dimensions, mounting instructions, detailed dimensional drawings, pressure drop curves, maintenance instructions, product warranty information and part numbers for replacement parts.

If you are unable to access the Internet to obtain this manual, a printed copy can be mailed to you. Please write, call or fax us with your request.



Flow Ranges

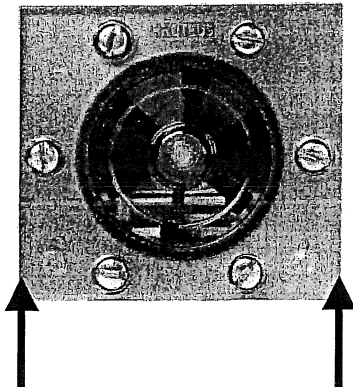
Connection Size FNPT	Flow Range		Brass	Celcon	Poly-propylene	Stainless Steel
	GPM	LPM				
1/4"	<i>Selectable *</i>		0100Bxxx	0100Cxxx	0100Pxxx	0100SSxxx
1/4"	0.08 – 0.8	0.3 – 3.0	0104Bxxx	0104Lxxx	0104Pxxx	0104SSxxx
1/4"	0.1 – 1.0	0.4 – 4.0	0101Bxxx	0101Cxxx	0104Pxxx	0104SSxxx
1/4"	0.5 – 2.5	1.9 – 9.5	0105Bxxx	0105Cxxx	0105Pxxx	0105SSxxx
1/4"	0.8 – 6	3 – 27	0103Bxxx	0105Cxxx	0105Pxxx	0105SSxxx
1/2"	1.5 – 12	6 – 45	0150Bxxx	0150Cxxx	0105Pxxx	0105SSxxx
1/2"	4 – 20	15 – 75	0155Bxxx	0155Cxxx	0155Pxxx	0155SSxxx
3/4"	6 – 30	22 – 110	0160Bxxx		0160Pxxx	0160SSxxx
1"	10 – 60	35 – 225	0170Bxxx		0170Pxxx	0170SSxxx

xxx = 24 24 V-DC power

xxx = 110 110 V-AC power

** See section 4 to select ranges of these product versions.*

1. Connect plumbing



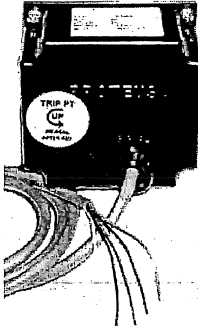
- Do NOT exceed the pressure limit of the faceplate.
- Do NOT use SWAK®, Loctite® or other anaerobic pipe sealants with devices with a clear plastic faceplate. Vapor from these materials cause the faceplate to crack!
- Do NOT install metal fittings into polypropylene or Celcon® units
- If temperature will exceed 85°C the electronics should be isolated from the flow sensor.

1. Identify the type and size of connections from the Model Number Table above.

Do NOT exceed the flow limit of your flow sensor!

2. Use Teflon tape or paste to lubricate and seal NPT threads.
3. Turn on your liquid flow slowly and check for leaks at the connections. Tighten connections as required to eliminate leaks.

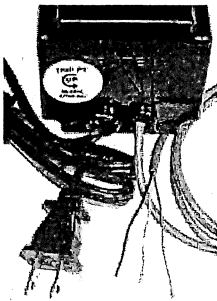
2a. Make 24V-DC electrical connection



1. Locate the 24VDC power source and turn it OFF.
2. Connect the WHITE wire to the ground or -VDC power connection.
3. For NC relay state, connect your external device to the BLACK and GREEN wires.
For NO relay state, connect your external device to the BLACK and RED wires.
4. Connect the BROWN wire to the +24VDC source connection.
5. Turn the 24VDC power source ON.

OR

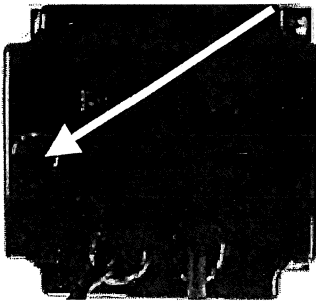
2b. Make 110V~AC electrical connection



1. Locate the 110 V~AC power source and turn it OFF.
2. For NC relay state, connect your external device to the BLACK and GREEN wires.
For NO relay state, connect your external device to the BLACK and RED wires.
3. Connect the two-pin plug to the 110 V~AC power source.
4. Turn the 110 V~AC power source ON.

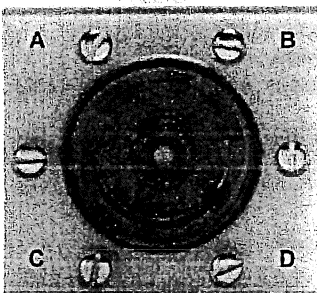
3. Adjust trip point

If a label on the back cover shows a factory-set trip point, no adjustment is needed.



1. Remove the yellow label on the back of the unit to access the trip point adjustment screw.
2. Install the flow switch in your actual circuit or calibration bench.
If a calibration bench is used ensure that the inlet fitting is of the same form as that used in your actual circuit.
3. Adjust the actual flow rate to the minimum flow rate at which the trip point is to be set.
Ensure that all air is removed from the flow switch BEFORE adjusting the trip point.
4. Connect an ohmmeter between the black and green or black and red wires.
5. With a small insulated screwdriver adjust the potentiometer until the ohmmeter shows that the relay has changed state.
*Turn the potentiometer clockwise to LOWER the trip point flow rate.
Turn the potentiometer counter-clockwise to RAISE the trip point flow rate.*
6. The trip point is slightly different for rising and falling flow rates. It is recommended that the trip point be set on a falling flow rate.

4. Selecting flow ranges of 100Cxxx, 100Bxxx and 100SSxxx



Model 100 flow switches have 4 connection ports. These devices can be configured to provide one of three flow ranges by inserting 1/4" NPT blanking plugs in two of the ports and using the other two ports to connect to your flow system. The 3 ranges are illustrated below.

The available ports are labeled A, B, C and D on the clear polysulfone faceplate.

Blanking plugs		Connection Ports		Flow Range	
		Inlet	Outlet	GPM	LPM
C	D	A	B	0.1 – 1.0	0.4 – 3.8
A	B	D	C	0.8 – 6.0	3.0 - 23
A	D	B	C	0.5 – 2.5	1.9 – 9.5

Note: In this configuration it is necessary to reverse the connections to the induction coil in the flow sensor. Refer to the Technical Reference Manual for details.