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200 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 200 Series Flow Switch.

A comprehensive Technical Reference Manual for these devices can be downloaded or printed from www.proteusind.com/200/200SeriesTRM.pdf.

This manual includes technical descriptions, performance specifications, and dimensions, mounting instructions, detailed dimensional drawings, pressure drop curves, maintenance instructions 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.

Section 1: Flow Ranges and Pipe Connections

Table 1 lists the model numbers and flow ranges. Model 200XX versions can be configured in one of three different ranges, depending on the placement of the supplied blanking plugs. Use of inlet fittings or pipes with small ID's can alter the calibration and flow rate readings. Please see the technical reference manual for details.

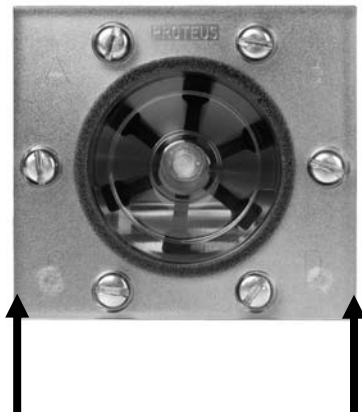


xx = 12 VDC
or
xx = 24 VDC

Connection Size FNPT	Flow Range		Brass	Celcon	Poly-propylene	Stainless Steel
	GPM	LPM				
1/4"	0.06 – 0.6	0.2 – 1.9	0204Bxx	0204Lxx	0204Pxx	0204SSxx
1/4"	0.1 – 1.0	0.4 – 4.0	0201Bxx	0201Cxx	0204Pxx	0204SSxx
1/4"	0.5 – 2.5	1.9 – 9.5	0205Bxx	0205Cxx	0205Pxx	0205SSxx
1/4"	0.8 – 6	3 - 27	0203Bxx	0205Cxx	0205Pxx	0205SSxx
1/2"	1.5 – 12	6 – 45	0250Bxx	0250Cxx	0205Pxx	0205SSxx
1/2"	4 – 20	15 – 75	0255Bxx	0255Cxx	0255Pxx	0255SSxx
3/4"	6 – 30	22- 110	0260Bxx		0260Pxx	0260SSxx
1"	10 – 60	35 - 225	0270Bxx		0270Pxx	0270SSxx

Table 1: Flow Ranges and Pipe Connection

2. 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.

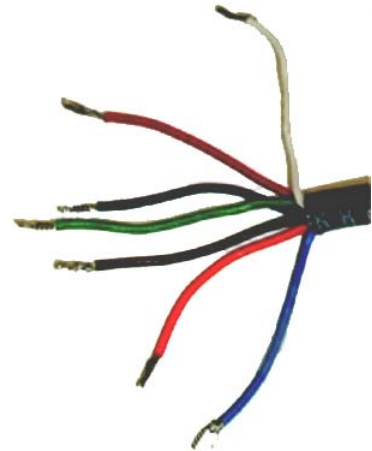
3. Make the electrical connections

Note

Only personnel familiar with the electrical circuit and control functions of the system in which the sensors are to be included should perform installation of this product.

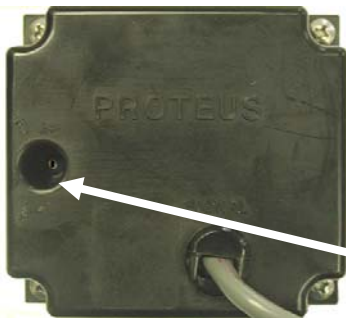
24V-DC and 12V-DC wiring Diagrams

Color	+12 VDC Input 0-5V analog output	+24 VDC Input 0-5V analog out	+24 VDC Input 4-20ma output
Red	+12 VDC	+24 VDC	+24 VDC
Black	Ground		
Brown	0-5 VDC Out		0 to 20 mA out
White	Ground		
Orange	+5 VDC out (to power an external display)		
Green	Relay-Normally Open		
Blue	Relay Common		



4. 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 meter BEFORE adjusting the trip point.
4. Connect an ohmmeter between the blue and green 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.