800 Series Metering Flow Switches

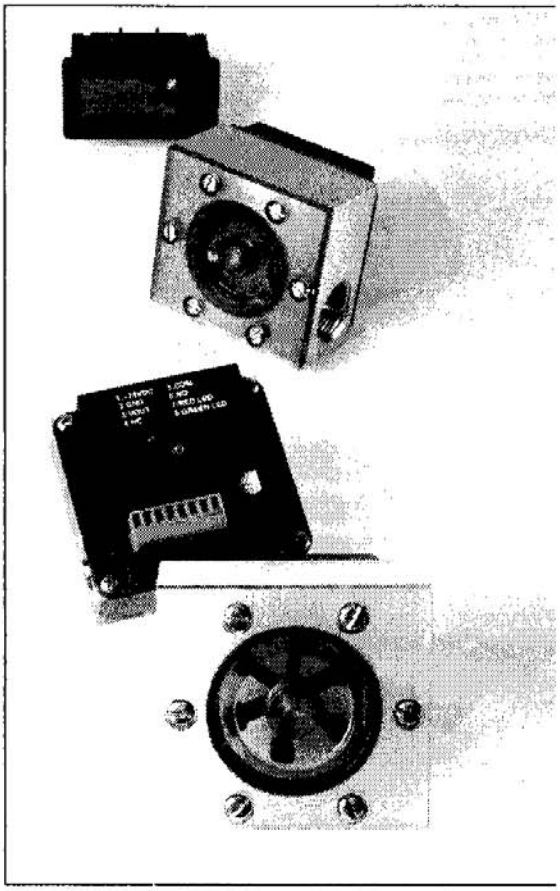
Installation and Operating Instructions

This document provides basic information describing the plumbing and electrical connections, and trip point adjustments to install and make operational your 800 Series Metering Flow Switch.

A comprehensive Technical Reference Manual for these devices can be downloaded or printed from our website, **www.proteusind.com**.

This manual includes technical descriptions, performance specifications, dimensions, detailed drawings, trip point tables, flow response graphs and tables, 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.



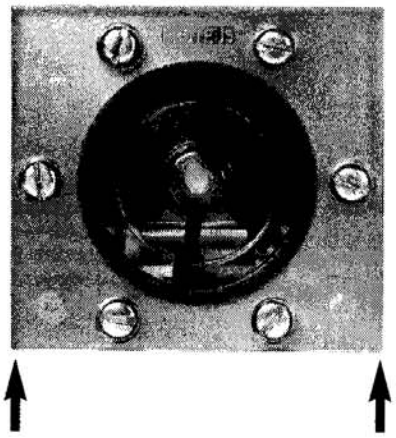
Model Number	Flow Range GPM	Flow Range LPM
0804XN03	0.05 – 0.3	0.2 – 1.2
0804XN2 0806SA2	0.1 – 2.0	0.6 – 7.5
0804XN4 0806SA4	0.3 – 4.5	1.2 – 17.0
0806XN10	0.8 – 10	3 – 38
0808SA10	0.8 – 10	3 – 38
0808XN15	1 – 15	3.8 – 56
0812XN19 0812SA19	1.3 – 19	5 – 72
0812SA25	1.5 – 25	6 – 95
0816XN50 0816SA50	3 – 50	11 – 190

Model Number Structure

Series 800	Material: S = stainless steel, P = polypropylene, B = brass	Maximum Flow GPM
08	04 X	N 4

- 04 — Connection size: 04 = 1/4", 06 = 3/8", 08 = 1/2", 12 = 3/4", 16 = 1"
- N — Thread type: N = FNPT, A = SAE

1 Connect plumbing



- Do NOT exceed the pressure limit of the faceplate.
- Do NOT use SWAK or other anaerobic sealants with devices with a clear plastic faceplate.
- Do NOT install metal fittings into polypropylene units.
- If temperature will exceed 85°C the electronics should be isolated from the flow sensor.

1. Identify the type and size of connection from the Model Number Table found on page 1.

   Do NOT exceed the flow limit of your flow sensor!

2. Use Teflon tape or paste to lubricate and seal NPT threads. Use a high-pressure lubricant to lubricate SAE threads.
3. Turn on your liquid flow slowly, and check for leaks at the two connections. Tighten connections as required to eliminate all leaks.

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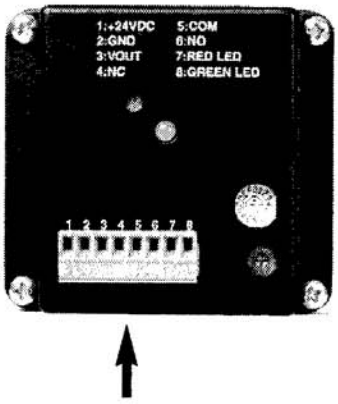
2 Make electrical connections



1. Locate the source of 24 VDC power and turn it OFF.
2. Prepare wiring cables of up to #16 gauge to connect power and the required relay and voltage outputs.
3. Connect the flow switch common wire in position 5.
4. For NC relay state connect the other flow switch wire in position 4. For NO relay state connect in position 6.
5. Connect the power common wire to position 2.
6. Connect the +24VDC wire to position 1.
7. Connect to the 24 VDC source and turn it ON.

- If liquid is NOT flowing, the LED will show RED indicating power is on and liquid flow is below the selected trip point flow.
- If liquid is flowing, the LED may show GREEN, AMBER or RED, depending on flow rate and the selected trip point flow as shown in table 1.

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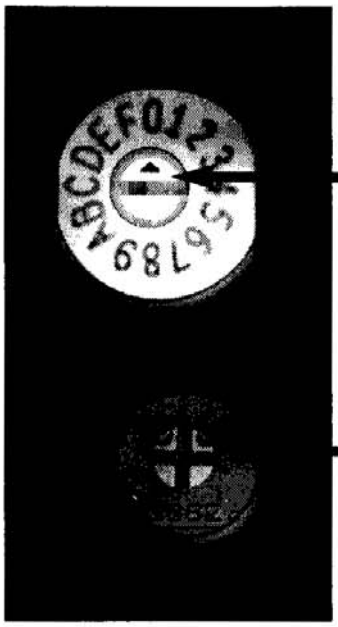
3 Select trip point

1. From the Trip Point Table (Table 2) select the row with the Part Number of your flow sensor.
2. Look ACROSS the table to select your desired trip point.
3. Look UP the table to identify the setting of the 16-position switch for your trip point.

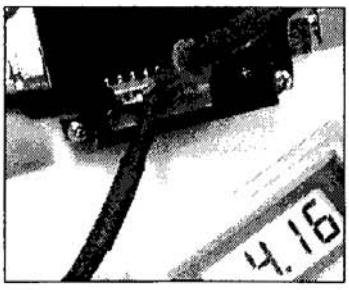


4. Set the 16-position switch so that the arrow points towards the setting you selected in step three.

5. Set the fine trip adjustment potentiometer to the 12 o'clock position.

Refer to the Technical Manual for use of the fine trip point adjustment feature.

4 Measure flow



1. Read the voltage between positions 2 & 3 with a voltmeter.
2. From flow response curves (Fig 1) identify the actual flow rate.

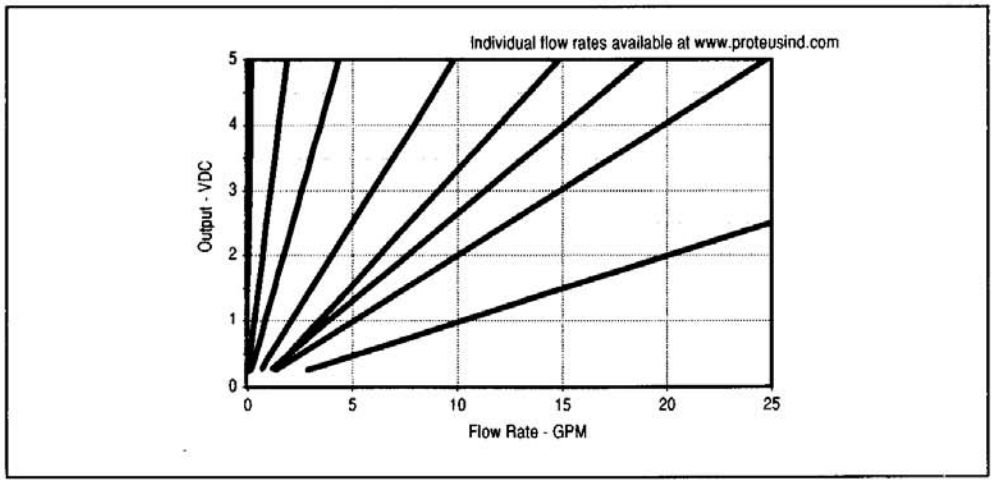
Table 1: LED color, flow rate and relay state Units US gallons per minute. 1 US gallon = 3.785 liters.

LED Color	Flow Rate Status	Example Trip Point 10 GPM	Relay State NO contact	Relay State NC contact
Green	Greater than 1.15 x flow rate at selected trip point	Actual Flow > 11.5 GPM	Closed	Open
Amber	Between 1x and 1.15 x flow rate at selected trip point	10 < Actual Flow < 11.5 GPM	Closed	Open
Red	Less than flow rate at selected trip point	Actual Flow < 10 GPM	Open	Closed

Table 2: Selecting Trip Flow Rate with 16-positions switch

Model Number	Switch Position															
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0804X03			0.05	0.06	0.08	0.10	0.12	0.14	0.16	0.17	0.19	0.21	0.23	0.25	0.26	0.28
0804XN2 0806SA2	0.18	0.29	0.41	0.52	0.63	0.75	0.86	0.98	1.09	1.20	1.32	1.43	1.54	1.66	1.77	1.9
0804XN4 0806SA4	0.36	0.62	0.87	1.13	1.39	1.65	1.91	2.17	2.43	2.69	2.95	3.21	3.46	3.72	3.98	4.2
0806XN10 0808SA10	0.89	1.46	2.03	2.60	3.17	3.74	4.31	4.88	5.45	6.02	6.58	7.15	7.22	8.29	8.86	9.4
0808XN15	1.6	2.5	3.3	4.1	5.0	5.8	6.6	7.5	8.3	9.1	10.0	10.9	11.7	12.5	13.3	14
0812XN19 0812SA19	1.6	2.7	3.8	4.8	5.9	7.0	8.1	9.2	10.3	11.4	12.5	13.5	14.6	15.7	16.8	17
0812SA25	1.8	3.2	4.7	6.1	7.6	9.0	10.5	12.0	13.4	14.9	16.3	17.8	19.2	20.7	22	23
0816XN50 0816SA50	4	7	9	12	15	18	21	24	27	30	33	36	38	41	44	47

Figure1: Flow Response Curves



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