AMERITROL, INC.

INSTALLATION

OPERATION MANUAL

AND

WIRING DIAGRAM

IX SERIES

FLOW SWITCH

Manual Number: IX2100-1

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OVERVIEW

The IX Series is an electronic flow switch designed to detect increasing or decreasing flow in virtually all liquids, gases, or slurries. Please refer to attached wiring diagram for DIP switch (SW1) and relay energization switch settings (S1).

- The flow switch factory default settings are configured for liquid flow and relay energized at flow.
- To change from factory default to air flow applications: Change DIP switch (SW1) positions 1 to OFF and 2 to ON.
- To change from factory default relay energization to relay energized at no flow: Reverse red slide switch (S1).
- Power input and relay rating are written on the board.

INSTALLATION

Conduit Recommendation: Do not place flow switch at low point of conduit, because moisture can collect at the low point. A conduit seal may be beneficial in preventing moisture from entering the enclosure and damaging the electronics.

The IX series Flow Switch is an inline device and is available with two distinct inlet configurations. Horizontal installation is preferred.

The IX-7575 has ¾" FNPT inlet and outlet connections. The device is bi-directional and either connection can be configured as the inlet or outlet.

The IX-1875 and IX-2575 have a ¼" FNPT inlet and ¾" FNPT outlet. The ¼" inlet must be the upstream connection in order to perform as shown in the literature.

For liquid service, fill the process line so that the probe is surrounded by liquid.

See attached drawing for wiring details.

CALIBRATION

Power the instrument and allow 1 minute for the sensor head to reach equilibrium.

Remove the housing cover observing the safety precautions associated with the area in which the unit is mounted.

TO DETECT A DECREASE IN FLOW (FACTORY DEFAULT):

It is assumed that the user will have the relay energized at flow and will alarm (relay de-energize) on loss or decrease of flow. Please refer to attached wiring diagram for relay energization switch setting (S1).

Flow product in the process line to the normal /expected rate for 1 minute.

Adjust the potentiometer (R22 on the wiring diagram) on the circuit board until the red LED changes state, as follows:

If the LED is on: Turn the potentiometer clockwise.
If the LED is off: Turn the potentiometer counterclockwise.
Typical backlash for the potentiometer is 1/8 turn.

Once the red LED on/off location is determined, turn the potentiometer in the LED "on" direction (counterclockwise), as follows:

- Air Flow Switch: 4 turns
- Organics/hydrocarbons Flow Switch: 2 turns
- Water Flow Switch: 1 turn

These turn numbers are typical and can be "fine tuned" as required.

TO DETECT AN INCREASE IN FLOW:

It is assumed that the user will have the relay energized at no flow and will alarm (relay de-energize) on increase of flow. Please refer to attached wiring diagram for relay energization setting. The relay energization switch (red slide switch: S1) will need to be changed from the factory default setting.

Flow product in the process line to the normal condition for 1 minute. If zero flow rate is normal/expected, omit this step.

Adjust the potentiometer (R22 on the wiring diagram) on the circuit board until the red LED changes state, as follows:

If the LED is on: Turn the potentiometer counterclockwise.
If the LED is off: Turn the potentiometer clockwise.

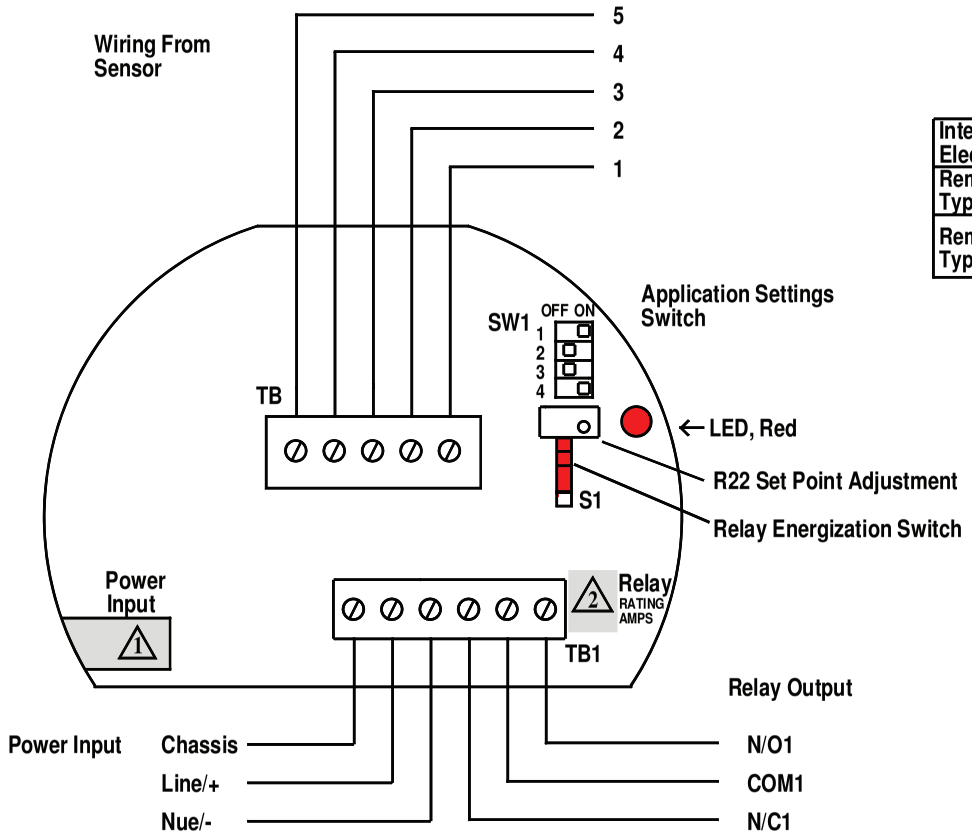
Typical backlash for the potentiometer is 1/8 turn.

Once the red LED on/off location is determined, turn the potentiometer in the LED "on" direction (clockwise), as follows:

- Air flow switch: 4 turns
- Organics/hydrocarbons flow switch: 2 turns
- Water flow switch: 1 turn

These turn numbers are typical and can be "fine tuned" as required.

Technical service hours are Monday – Friday from 8:00 AM to 4:30 PM Pacific Standard Time



	Terminal Number (TB)				
	1	2	3	4	5
Integral Electronics	Red or Purple	Red or Purple	Yellow or White	Black	Green
Remote Electronics Type H Cable	White	Blue + Drain	Yellow	Black	Green
Remote Electronics Type I Cable	Red of Pair #1 (Red Foil)	Black of Pair #1 + Drain of Pairs #2 and #3	White of Pair #2 (Green Foil)	Black of Pairs #2 and #3	Green of Pair #3 (Blue Foil)

Application Setting Switch	Switch Position				
	1	2	3	4	
Liquid Flow Switch	ON	OFF	OFF	ON	Factory Default
Air Flow Switch	OFF	ON	OFF	ON	
Liquid Level Switch	OFF	ON	OFF	ON	
Temperature Switch	OFF	OFF	ON	OFF	

Relay Energization Settings

	Switch Position	
Flow Switch		
Energized at Flow		Factory Default
Energized at No Flow		
Level Switch		
Energized when Wet		Factory Default
Energized when Dry		
Temperature Switch		
Energized below Set Point		Factory Default
Energized above Set Point		

NOTES

1 Power Input Written on Board

"120 VAC"	90-132 VAC, 4 Watts Max.
"12 VDC"	12 VDC +30%, -10% 300 mA
"24 VAC or VDC"	24 VAC or VDC ±10%, 4 Watts or 150 mA
"240 VAC"	200-240 VAC, 4 Watts Max.

2 Relay Rating Written on Board

"3"	3 AMP Relay Rated at 120 VAC or 24 VDC Resistive and 2 AMP at 240 VAC
"10"	10 AMP Relay Rated at 120 VAC or 24 VDC Resistive and 5 AMP at 240 VAC

Ameritrol, Inc
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Title: **Flow Switch**
Wiring Diagram, SPDT Relay Output, X Series Board

Size	Drawn by	Drawing No.	Rev
A	RAL	2100	5

Scale	Date	Sheet
	2/01	1 of 1