

# AMERITROL, INC.

## INSTALLATION OPERATION MANUAL AND WIRING DIAGRAM

### IX SERIES FLOW SWITCH

Manual Number: IX2010-0

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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 program switch (SW1) settings.

- 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 program switch (SW1) position 1 to OFF.
- To change from factory default relay energization to relay energized at no flow: Change program switch (SW1) positions 3 to OFF and 4 to ON.
- Power input is written on the board.
- The relay rating is 3amps at 120 VAC.
- The IX series with ‘Y’ option is intended for indoor general purpose applications. Other IX Series units are available for outdoor, Nema 4X, and explosion proof applications

## 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.

### 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 and program switch settings (SW1).

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

Adjust the potentiometer (R15 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 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 and program switch settings (SW1). For relay energized at no flow, change program switch positions 3 to OFF and 4 to ON.

Flow product in the process line to the normal condition for 1 minute. If zero flow rate is normal/expected, set with line full at zero flow.

Adjust the potentiometer (R15 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.

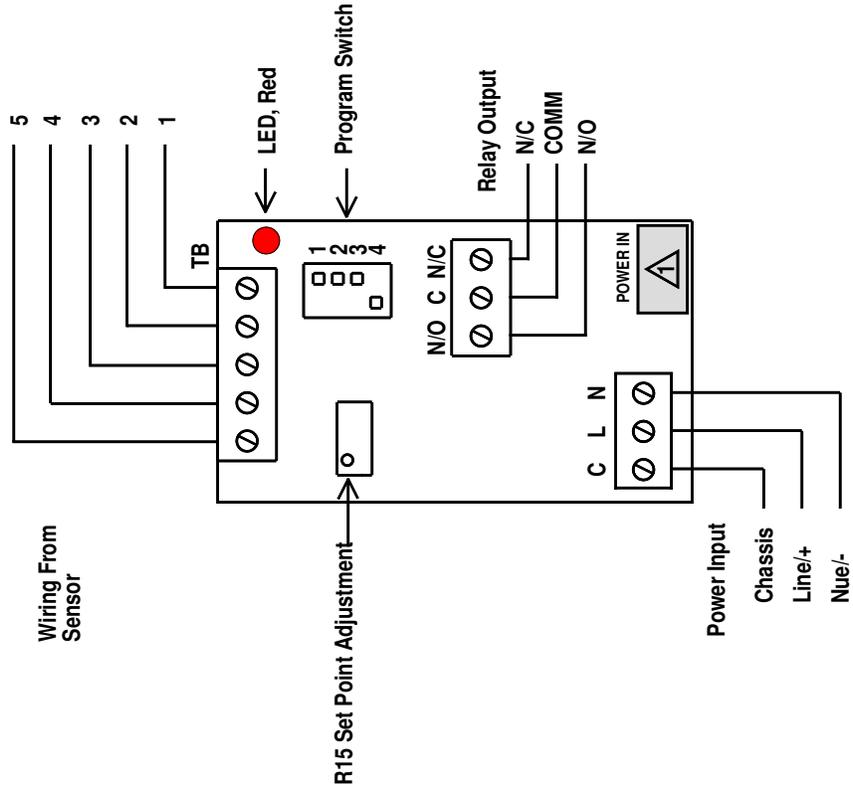
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Terminal Number (TB)				
1	2	3	4	5
Integral Electronics	Red or Purple	Yellow	Black	Green
Remote Electronics Type H Cable	White	Blue + Drain	Yellow	Black
			Black	Green



Application Settings Program Switch	Switch Position	Factory Default
Liquid Flow Switch	1 On	On
Air Flow Switch	2 Off	Off
Liquid Level Switch	3 Off	Off
Temperature Switch	4 Off	Off

Relay Energization Settings Program Switch	Switch Position	Factory Default
Flow Switch	3 Energized at Flow	On
	4 Energized at No Flow	Off

Relay Energization Settings Program Switch	Switch Position	Factory Default
Level Switch	3 Energized When Wet	On
	4 Energized When Dry	Off

**NOTES**

Power Input Written on Board

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

**2. Relay Rating**

3 AMP Relay Rated at 120 VAC or 24 VDC Resistive and 2 AMP at 240 VAC
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**Flow Switch**  
Wiring Diagram, SPDT Relay Output, M Series Board

Title	Flow Switch Wiring Diagram, SPDT Relay Output, M Series Board	
Size	Drawn by	Drawing No.
A	RAL	2010
Scale	Date	Sheet
	2/01	1 of 1

	Rev	<b>3</b>
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