

MFD-4 Sensor

Media Flow Detector for Suction-Type Abrasive Blasting Machines

Features

- For non-ferrous media
- Requires little maintenance due to no moving parts
- Operates from 24 Vdc
- Relay contact output
- Push-button setup
- LED indicators
- CE compliant



Description

The MFD-4 uses a charge-coupled amplifier that is connected to a sensing pin. The pin is inserted into the flow path of the abrasive blasting media. Each particle passing the pin shares a minute charge with the pin. This charge is converted to a voltage that is used to activate an output relay contact.

Setup is simple. The zero and span functions are automatic—pushing the “zero” button acquires zero for the no-flow condition and pushing the “flow” button sets the sensor gain and activates the relay. The relay contact will transfer whenever the flow is 50-100% of the programmed setting.



The MFD-4 is enclosed in a rugged aluminum housing. It can be attached to the media blast hose at any location and in any orientation via a sensing pin that protrudes from the bottom of the mounting base. (A sensing pin is included with the MFD-4. Replacement pins are available from Electronics Inc. See Ordering Information below.)

Specifications

Output	Form “A” relay contact 30 Vdc @ 1A
Input	24 Vdc @ 0.060a
LED Indicators	Yellow: Power okay Red: No flow Green: Flow Okay All LEDs blinking: No signal acquired or unstable flow

Ordering Information

Mating Plug and Cable		Replacement Sensor Pin	
LENGTH	P/N	LENGTH	P/N
6' / 1.8 m	940010	1.12"	940090
12' / 3.5 m	940011		
15' / 4.5 m	940012		



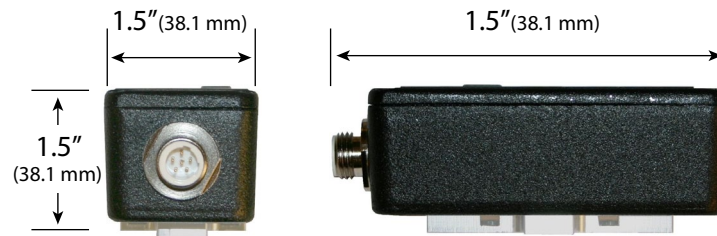
Electronics Inc.
56790 Magnetic Drive
Mishawaka, Indiana 46545 USA
(574)256-5001
www.electronics-inc.com

Specification is subject to change without notice
2017-05

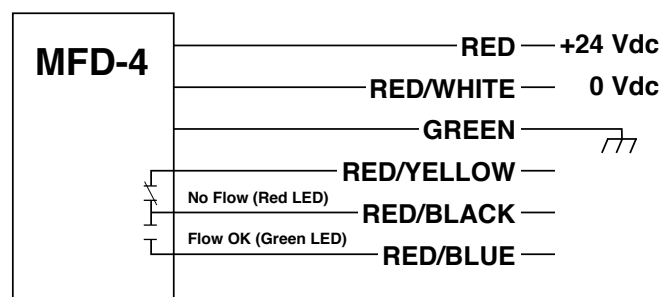
MagnaValve is a registered trademark of Electronics Inc.

Dimensions

Inches (Millimeters)



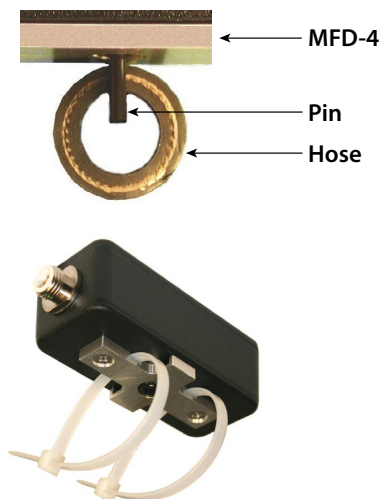
Cable Connections



Relays shown in the off-state (no-flow state)

Installation Directions

1. Drill 5/32" diameter hole in hose
2. Insert sensor pin into MFD-4, then insert pin into hole in hose
3. Clamp sensor to the hose with plastic tie wraps



Operating Instructions

1. Apply 24 Vdc power - the yellow power LED should be on.
2. **Calibrate No-Flow:** Airflow should be on when acquiring the no-flow signal (no media should be flowing). Push the "No-Flow" button. The red LED will blink momentarily as it acquires the no-flow signal and then will stay on until the Flow signal is acquired in the next step.
3. **Calibrate Flow:** With airflow and media flowing normally push the "Flow" button. The green LED will blink momentarily as it acquires the flow signal and then stays on whenever the flow is greater than 50% of the acquired signal level. The red LED for No-Flow will go off and the relay will transfer to the on-state. If the media flow is too low for a signal acquisition, all three LEDs will blink. Check to be sure enough media is flowing and then go back to step #2.
4. **Alarm:** Whenever the flow signal is less than 50% of the acquired flow signal (for at least 4 seconds), the red LED will come on (for no-flow), the green LED (for Flow-OK) will go off, and the relay will transfer to the off-state.

Note: Whenever power is removed from the unit, the relay will transfer to the off-state but no LEDs will be on.

The sensor pin is replaceable. Contact Electronics Inc. for extra pins or use a hardened drill rod that is .079" diameter.