

Applications Guide

Microphone Flow Switch - Model MFS100

DESCRIPTION

The MFS100 Microphone Flow Switch is an acoustic flow detector directly coupled to a set-point relay. It consists of a sensitive microphone sensor for attachment to the outside of a pipe, an amplifier, sensitivity control, and a relay.

OPERATING PRINCIPLE

The movement of fluid (or solids) in a pipe generates a broadband of shear noise in the 1 Hz to 100 KHz range. Although pumps and machinery generate noise, it is usually at the low end of the sound frequency spectrum (1-5 KHz). Higher frequency sound at 5-50 KHz (ultrasonic) provides a suitable indication of flow rate. The MFS100 electronic circuits discriminate against low frequencies, monitor high frequencies, and control the relay.

FLOW CHARACTERISTICS

The MFS100 Microphone switch is best suited to noisy or turbulent flow which is generally found close to elbows, valves, couplings etc. Laminar flow, as found in long horizontal pipe runs does not give good results. As a general guideline the MFS100 requires flow with a Reynolds number of 4000 or greater for reliable operation.

PHYSICAL SPECIFICATIONS

Weight: 2.5 lbs (1.2 kg)
Enclosure: water tight NEMA4X fibreglass
Sensor: 316 stainless, epoxy resin, buna N gaskets
Cable: shielded coaxial
Cable length: 5 ft. (1.5m) / 20 ft. (6 m) optional

ELECTRICAL SPECIFICATIONS

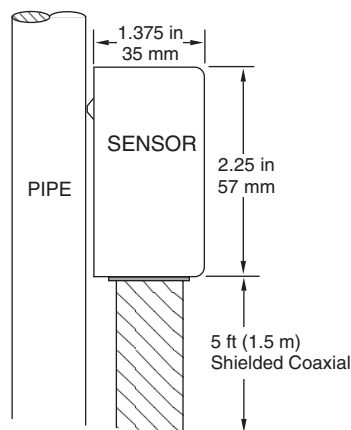
Power input: 115VAC 60Hz (230 VAC 50Hz optional)
Connection: internal terminal board
Relay: 5 ampere SPDT

OPERATING ENVIRONMENT

Electronics temperature: -10° to 140°F (-23° to 60°C)
Sensor temperature: -20° to 200°F (-30° to 94°C)

GENERAL

Recommended pipe size: 1/4" OD (6.5mm) or larger
Optional sensor cable length to 20 ft (6m)

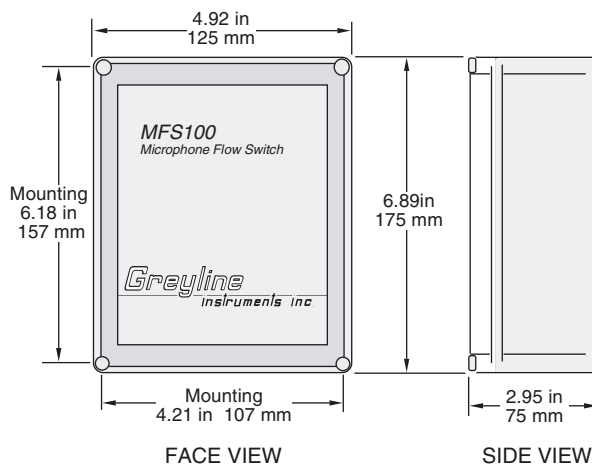


SENSOR CONSTRUCTION:

Sensor Housing: 316 stainless steel
Sensor Tip: 316 stainless steel
Sensor Gasket: Buna N rubber
Sensor Cable: RG174U shielded coaxial
5 ft (1.5 m) standard length, 20 ft (6 m) optional

ELECTRONICS ENCLOSURE

Watertight and Dust tight NEMA4X fibreglass



Greyline
instruments inc.

RELIABLE MEASUREMENT AND CONTROL

Canada: 16456 Sixsmith Dr., Long Sault, Ont. K0C 1P0
Tel: 613-938-8956 / 888-473-9546 Fax: 613-938-4857
USA: 407 County Route 46, Massena NY 13662
Tel: 315-788-9500 / 888-473-9546 Fax: 315-764-0419
Internet: www.greyline.com E-mail: info@greyline.com