Hall Effect Sensor

IS160

Description

The Hall Effect Sensor serves as a simple, but versatile sensor for Flow Technology positive displacement flowmeters. It is an integrated circuit device activated by magnetic field reversals. The magnets in the impellers of a positive displacement flowmeter trigger the latching circuit in the sensor, which in turn transmits a square-wave pulse to any connected signal conditioner, monitoring device, or controller. The sensor can handle a broad range of input frequencies and operating conditions. The IS160-01 combines the sensitivity of a Hall Effect Sensor with the durability and easy installation of a Micro-C connector. The quick-disconnect fitting makes installation and maintenance quick and effortless. Simply screw the sensor body into a Flow Technology positive displacement flowmeter, plug in the cable, and lock firmly in place with a few twists of the connector coupling nut.

Cable
725-70-91

IS160-01
Hall Effect Sensor

Application

Hall Effect Sensors are recommended when the desired output signal is a square-wave pulse and the requisite power is available. All Flow Technology electronic flow controllers designed to interface with the Hall Effect Sensors have DC sensor excitation capability when they are AC-powered. For frequencies above 10 Hz, either Hall Effect Sensors or magnetic pick-up sensors are applicable. Hall Effect Sensors are recommended when the output frequency from the meter over any part of the application flow range is 10 Hz or less. This frequency typically occurs at approximately the 10 to 1 turndown point for Flow Technology positive displacement flowmeters. If the desired output is an analog signal and the liquid to be measured has a low viscosity with variable flow rates, the Hall Effect Sensor may be used with linearizing frequency to analog transmitters. Contact Flow Technology for information on our full range of transmitters for use with this sensor.

Features

- Digital logic instrument compatible
- Easy installation
- NEMA 4 rating
- -40° F to +257° F (-40° C to +125° C) operating temperatures
- 5–30 VDC operation
- Non-intrusive
- Micro-C connections
- Stainless steel construction
- FM-approved intrinsically safe
- CE certified

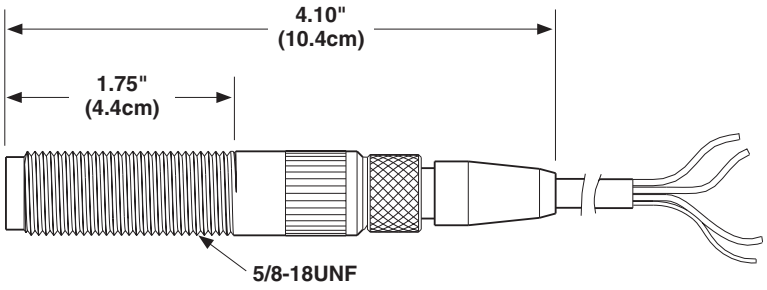
CE

Specifications

Supply Voltage	5–30 VDC
Supply Current	≤ 15mA
Operating Frequency	0–20 KHz
Output	
Type	NPN open collector with 2.2 K ohm resistor for pull-up to supply (straight open collector version available)
Rise Time	
Typical:	0.04 µS
Maximum:	2.0 µS
Fall Time	
Typical:	0.18 µS
Maximum:	2.0 µS
Temperature Range	
Sensor	-40° F to +257° F (-40° C to +125° C)
Cable	-76° F to +221° F (-60° C to +105° C)

Approvals	
FM	Intrinsically safe (when used with intrinsic safety barriers) Class I, II, III, Division 1 Groups A, B, C, D, E, F & G Class I, Zone 0. AEx ia IIC Control drawing: 85047
CE	EN55011, EN50022-2
Maximum Transmitting Distance	1500 feet (457.2 meters) to monitoring instrumentation
Sensor Body	303 stainless steel Threaded 5/8-18UNF
Cable	PVC insulation and jacket
Micro-C Quick Disconnect	
Plug Shell and Coupling Nut	Anodized aluminum
Receptacle Body	304 stainless steel
Insert Material	UL-recognized plastic

Dimensions



Installation

IS160-01	Red/Black	+5 to +30 VDC Supply
	Green	DC Common
	Red/White	Square-Wave Signal
	Bare Shield	RFI Shield

Caution: *Finger-tighten sensor into meter body.*

Specifications are for reference only and are subject to change without notice.

Ordering

Sensor

IS160-01	Pulse output equal to supply voltage
IS160-02	Open collector output

Cable

725-70-91	12 ft. (3.66 m) cable
725-70-92	50 ft. (15.24 m) cable
725-70-93	100 ft. (30.48 m) cable

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