Hall-4 Pickup

Installation and Technical Data Guide

Description:

The Hall-4 is a frequency multiplying sensor, typically used at the low flow range of flow meters to produce more resolution. The Hall-4 generates 1x, 2x, 5x or 10x the number of pulses compared to standard sensors.

The Hall-4 sensor is compatible with JV-CG, JV-KG, HPM and with select ZHM and SRZ flow meters - contact AW Company for model compatibility . The sensor detects the rotation of the flow meter gears and emits a frequency signal proportional to flow.The output signal is a square wave pulse which has a duty cycle of either 50% or 500 us. depending on multiplier settings.

The Hall-4 signal output is protected with a self-resetting fuse. This fuse has a 50mA nominal trip point. When a trip occurs, turn off power to the sensor and remove output load to reset fuse.The sensor has two different output configurations: sinking output and sourcing output.

The Hall-4 sensor circuit board is equipped with a red and green LED. The red LED is a status LED which, when the sensor is operating properly, will flash once every 4 seconds, a fast flash will indicate a failure of the pick-up. The green LED indicates the pulse of the input signal. Note that signals above 20Hz will look as solid green.

Installation:

- Ensure that the flowmeter sensor cavity is free of debris prior to installing pickup
- Install flow meter and sensor - CYCLE POWER - or sensor will not function properly!!
- An internal jumper determines if sensor output is sinking or sourcing
- Sensor is equipped with an output test feature to test for readouts before initial running of your system

### Test Feature: Note: Power must be cycled for new setting to take effect

- Switch setting 8 will cause the pick-up to output a 10 Hz (-/+ 20%) 50% duty cycle output, simulating low flow conditions without flow through the meter.
- Switch setting 9 will cause the pick-up to output a 250 Hz (+/- 20%) 500 us pulse output, simulating medium flow conditions without flow through the meter.

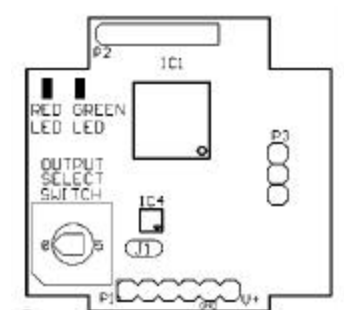NOTE: WIRING SHOULD BE INSTALLED BY A QUALIFIED INSTRUMENTATION TECHNICIAN

Electrical Connection for Pin Connector

Pin Number	Function
1	NC
2	NC
3	NC
4	Output
5	Ground
6	Supply

Pinout looking at male connector on sensor
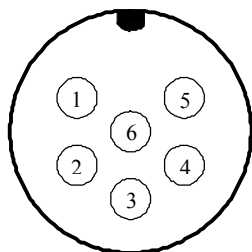
Top view of circuit board with view of LED's and switch

AW Flow Meters wiring color code:

	Pin Number	Wire Color
Signal:	4	White
Ground:	5	Black
Supply Voltage:	6	Red

| Switch	Output
0	Signal 1x frequency, 50% Duty Cycle
1	Signal 2x frequency, 500 us pulse
2	Reserved
3	Signal 5x frequency, 50% Duty Cycle
4	Reserved
5	Signal 10x frequency, 500 us pulse
6	Reserved
7	Reserved
8	Test: 10 Hz (+/- 20%) 50% Duty Cycle
9	Test: 250 Hz (+/- 20%) 500 us pulse

Note: Power must be cycled for new setting to take effect

Installation and Technical Data Guide

Average height from flow meter to sensor top

Flow meter range	Average height
01 to 30	2 1/8"
60	1 7/8"

Average height

1.2"

3.0"
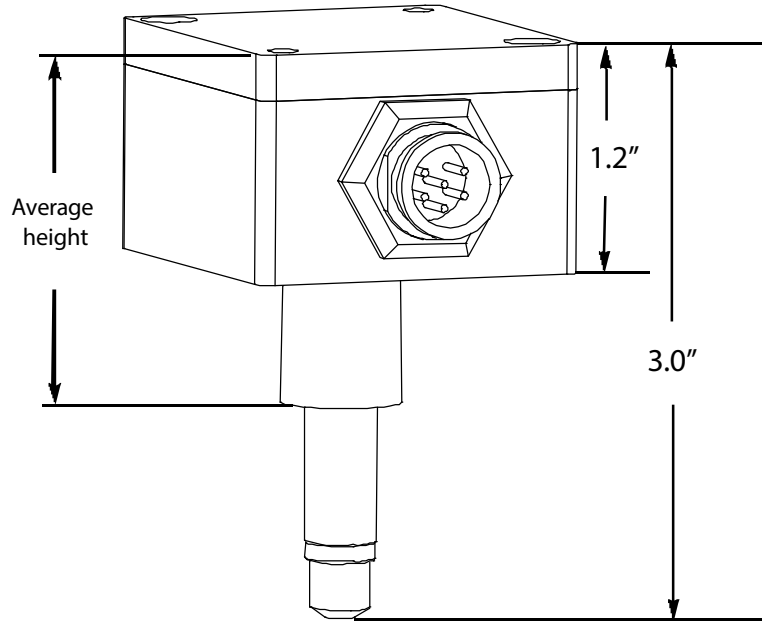
Technical Data:

Supply Voltage:	+10 to 27 Volt DC
Supply Current:	25 mA @ 12 VDC, 50mA @ 24 VDC
Duty Signal:	50% ± 5% for multiplier 1 & 5
	500 us pulse for multiplier 2 & 10
Minimum Input Signal:	0.5 Hz

Maximum input frequency:

1x	2x	5x	10x (multiplier)
250	250	200	100 (frequency)

Frequency Output:	Flow dependent, up to 1,000 Hz
Driving Capacity:	50 mA Max resistive load
Output Impedance:	~ 40 Ohm - analog switch and self-resetting fuse
Temperature Range:	-40° F to 160° F (-40° C to 70° C)

Hall-4 sensors can be used with Aluminum, 303 Stainless Steel and 316 Stainless Steel body flow meters
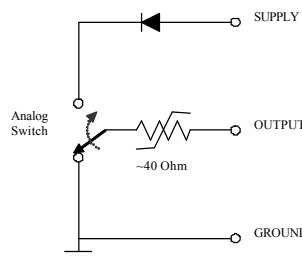
A swivel fitting is required to mount Hall-4 pick-up on AW   brand meters from AW-Lake Company.

Sinking Output Circuit
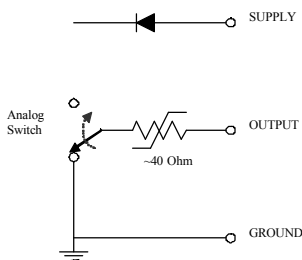
- Output jumper (J1) off
- User may need to add external components to interface to displays or other instruments
- User must limit output voltage to Supply -1V
- Max current sinking capability: 50mA

Sourcing Output Circuit - Default from factory

- Output jumper (J1) on
- Signal output square wave :
    V_{high} = Supply -1V @ no output load
    V_{low} = 0.1V
- Max sourced output voltage: Supply -0.5V
- Max current sourcing capabilities: 50mA