Quad-4 Hall Effect Pickup
Installation and Technical Data Guide

Description:

The Quad-4 Hall Effect Pickup is a microprocessor-based sensors for use with the JV-80/-90KL series of positive displacement flow meters. The Quad-4 sensor can detect both uni- and bi-directional flow. The sensors' mode of operation is determined by an output selection switch located inside the housing. The Quad-4 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 approximately 50%.

Quad-4 signal outputs are 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 when jumpers JP1 & JP2 are removed and sourcing when jumpers JP1 & JP2 are shorting pins.

The Quad-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 one or more of the pick-ups. 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 - <u>CYCLE POWER</u> - **or sensor will not function properly!!**
• Sensor is equipped with an output test feature 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%) Phase = +90 deg pulse output, simulating low flow conditions without flow through the meter
• For sinking outputs remove shorting block from JP1 & JP2
  For sourcing outputs place shorting block across JP1 & JP2 (factory default)
• Switch setting 9 will cause the pick-up to output a 250 Hz (+/- 20%) Phase = -90 deg pulse output, simulating medium flow conditions without flow through the meter

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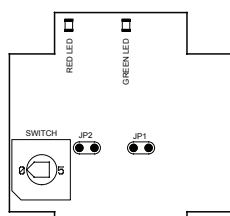**NOTE: WIRING SHOULD BE INSTALLED BY A QUALIFIED INSTRUMENTATION TECHNICIAN**

Electrical Connection for Pin Connector

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

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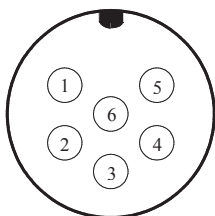
Top view of circuit board with view of LED's and switch

AW Company Wiring Color Code

	Pin Number	Wire Color
Signal 2:	2	Green
Signal 1:	4	White
Ground:	5	Black
Supply Voltage:	**6**	**Red**

Quad-4 Operating Modes

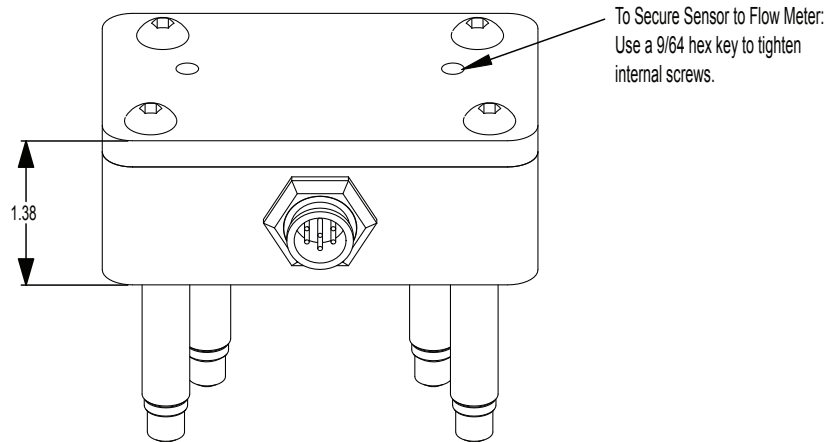| Switch	Output 1	Output 2
0	Flow Direction	Signal 2
1	1x frequency +90 deg phase	
2	Flow Direction	2x frequency
3	2x frequency +90 deg phase	
4	Flow Direction	4x frequency
5	Both outputs 4x frequency in phase	
6	Reserved	
7	Forward pulses (2x)	Reverse pulses (2x)
8	Test: S1 & S2 == 10 Hz (+/- 20%) Phase = +90 deg.	
9	Test: S1 & S2 == 250 Hz (+/- 20%) Phase = -90 deg.	

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

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Quad-4 Dual Hall Effect Pickup
Installation and Technical Data Guide

Rev 06/17

To Secure Sensor to Flow Meter:
Use a 9/64 hex key to tighten
internal screws.

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Technical Data:

Supply Voltage:	+10 to 28 Volt DC
Supply Current:	75 mA @ 24 VDC
Duty Signal:	50% ± 15%
Minimum Signal:	0.5 Hz
Maximum Signal:	1,000 Hz
Frequency Output:	Flow dependent, up to 2,000 Hz
Driving Capacity:	50 mA Max resistive load
Output Impedance:	~ 40 Ohm - analog switch and self-resetting fuse
Temperature Range:	-40° F to 185° F (-40° C to 85° C)

Sinking Output Circuit

SUPPLY

Analog
Switch

OUTPUT

~40 Ohm

GROUND
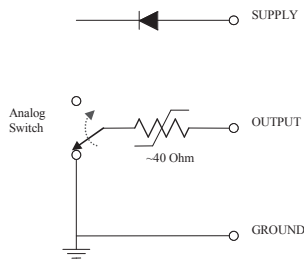
- Output selection jumper off: remove shorting block from JP1 & JP2
- User may need to add external components to interface to displays or other instruments
- User must limit output voltage to Supply -1V
- Max current sinking capability: 50mA

Sourcing Output Circuit - Default from Factory

SUPPLY

Analog
Switch

OUTPUT

~40 Ohm

GROUND
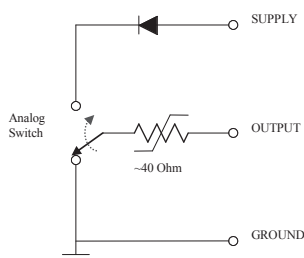
- Output selection jumper on: place shorting block across JP1 & JP2
- Signal output square wave :
  V_{high} = Supply -1V @ no output load
  V_{low} = 0.1V
- Max sourced output voltage: Supply -0.5V
- Max current sourcing capabilities: 50mA

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