

# MAG Hall Effect Pickup

## Installation and Technical Data Guide

Rev. 07/2017

### **Description:**

The MAG is a Hall Effect sensor which is compatible with all AW Company and KEM Positive Displacement gear flow meters except ZHM-04 to the ZHM-07KL and all AW Company and KEM turbine flow meters. The sensor detects the rotation of the flow meter's 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%.

MAG 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 MAG sensor has two different output configurations: MAG-PA for a sinking output and MAG-PB for a sourcing output.

### **Installation:**

- Ensure that the flowmeter sensor cavity is free of debris prior to installing pickup
- Swivel fitting is required for sensor mounting. **Note:** In order to receive correct swivel fitting with your sensor - you must specify meter part number when ordering
- 4 Steps to properly install sensor:
  - 1- Securely fasten swivel fitting on flow meter
  - 2- Turn set screws counter clockwise until they are not visible inside the swivel fitting
  - 3- Install sensor into swivel fitting until sensor bottoms out in the sensor hole
  - 4- Tighten set screws by turning clockwise

**NOTE: DO NOT OVER TIGHTEN SET SCREWS OR SENSOR DAMAGE WILL OCCUR!**

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

### **AW Company wiring color code:**

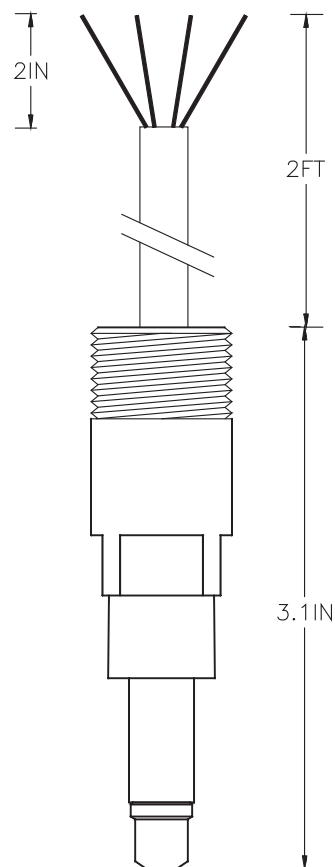
<b>MAG-PA</b>	<b>MAG-PB</b>	<b>Wire Color</b>
NC	NC	Green
Output	Output	White
Ground	Ground	Black
Supply	Supply	Red

### **Part number configuration:**

MAG sensors can be used with all AW Company and KEM Positive Displacement flow meters (except ZHM-04 to the ZHM-07KL) and all AW Company and KEM turbine flow meters

MAG-PA for a sinking output  
MAG-PB for a sourcing output

**Note:** In order to receive correct swivel fitting with your sensor - you must specify meter part number when ordering



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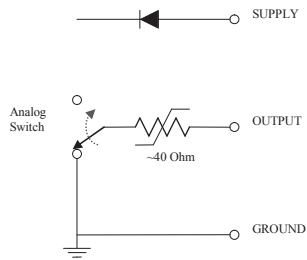
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### Technical Data:

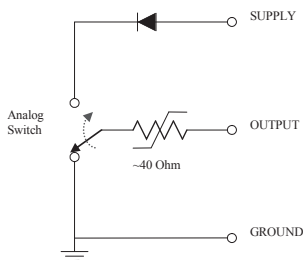
Supply Voltage:	+10 to 28 Volt DC
Supply Current:	8 mA @ 12 VDC, 12mA @ 24 VDC
Duty Signal:	50% ± 15%
Minimum Signal:	0.5 Hz
Frequency Output:	Flow dependent, up to 2,000 Hz
Driving Capacity:	50 mA Max resistive load
Output Impedance:	~ 40 Ohm - analog switch and self-resetting fuse
Temperature Range:	-40° F to 185° F (-40° C to 85° C)

### MAG-PA Sinking Output Circuit



- 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

### MAG-PB Sourcing Output Circuit



- Signal output square wave :  
 $V_{high} = \text{Supply} - 1V$  @ no output load  
 $V_{low} = 0.1V$
- Max sourced output voltage: Supply -0.5V
- Max current sourcing capabilities: 50mA