

XP12010 Explosion-proof Magnetic Pickup Sensor



Operation Manual

Model XP12010 pickup provides a sine wave output whenever there is an abrupt change from non-magnetic to magnetic material moving past the sensor pole. The output voltage is directly proportional to the change in magnetic flux intensity over the change in time.

Specifically engineered for use in the oil and petrochemical industries, this stainless steel sensor is completely sealed and explosion-proof. Low impedance allows for transistor circuit input. When mated with conduit, it provides positive protection against damage due to water, high humidity, oil, dirt, or corrosive liquids. ATEX listed for II 2 G Ex mb IIC T2 Gb. Explosion proof for gas, vapor, and liquid. This magnetic sensor is a passive device and no power supply shall be connected to it.

MOUNTING

The unit is designed to mount in a 3/4" -20 UN threaded hole and provides a jam nut for securing the sensor.

ADJUSTMENTS

The pick-up should be adjusted for a typical clearance of 0.01" (0.25 mm) between the sensor and gear. This adjustment will provide excellent sensitivity and resolution. Air gap between the sensor and the exciter must be set so that the output does not exceed 60 Vp for the maximum operating speed.

CONNECTIONS

The leads shall be terminated in a suitable certified enclosure or a non-hazardous area. Polarity: White Lead is Positive with Respect to Black Lead upon approach of ferrous metal.



SPECIFICATIONS

Temperature Limits: - 65 to 200°F (-53.8 to 93°C)

Ambient Temperature Limits: -40 to 250°F (-40 to 121°C)

Maximum Pressure: 3000 PSI

Output Voltage: 60 VPP MIN.*

Coil Resistance: 170 – 210 Ohm*

*Tested with 8 pitch gear, 100 kOhm Load, 1000 IPS, 0.005" gap

Output Inductance: 80 mH TYP @ 1.0 kHz

Dielectric: 500 VRMS @ 60 Hz

Leakage Resistance: 100 M Ohms Min. @ 500 V dc

Cable: Shielded Teflon with Teflon jacketed leads

Cable Length: 30" (762 mm)

Housing: Stainless Steel with epoxy resin potting

Standards: IEC 60079-0, Edition 6.0 2011-06; IEC 60079-18, Edition 4.0 2014; EN60079-0:2012 + A11:2013; EN60079-18:2015

Certificate Number: DEMKO 12 ATEX 1105974X; IECEx UL 12.0005X

OUTPUT

The output of the sensor is similar to the waveform in Figure 1. The frequency of the signal is proportional to the speed. The amplitude of the output signal increases with an increase in exciter speed as shown in Figure 2. The output amplitude is also dependent on the sensing gap. At larger sensing distances, the amplitude is lower.

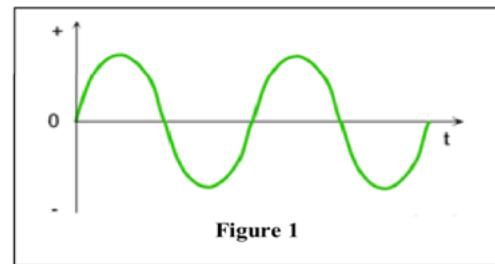
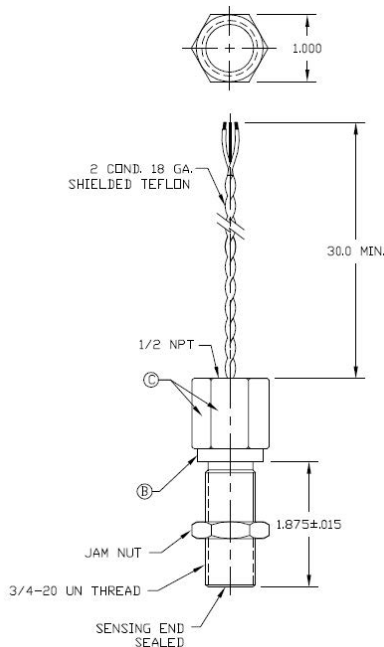


Figure 1

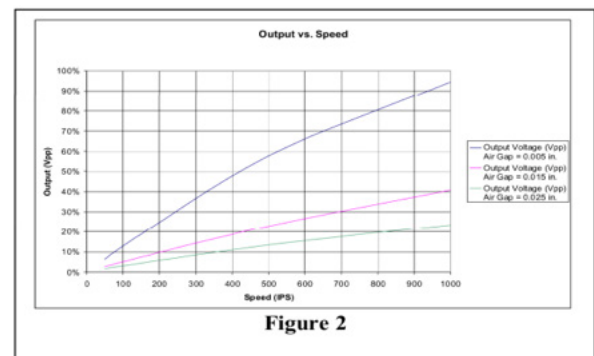


Figure 2