

Wiring Instructions

for Digital Output Hall Effect Sensors
Geartooth Series GHTS, GS, MGHTS, and MGS

Description

The Phares Electric Geartooth Sensors are peak-detecting devices which utilize special circuitry to provide extremely accurate gear edge detection down to low operating speeds. These sensors are compatible for use with a wide variety of gear shapes and sizes.

The technology used is Hall-effect based and incorporates a dual-element Hall IC that switches in response to differential magnetic signals created by ferromagnetic targets. As a result, the Phares Electric Geartooth Sensors can detect high ferrous (iron) targets such as geartooth wheels, bolt heads, key stock, etc. They also detect magnetic targets. The omnipolar operation allows activation with either a north or a south polarity field of sufficient strength.

The Phares Electric Geartooth Sensors switch between logic low ("0") and logic high ("1") when sensing a target of sufficient strength, and are ideal for use in systems that gather speed and timing information using gear-tooth-based configurations. These sensors are particularly suited to applications which require extremely accurate duty cycle control or accurate edge-detection.

Installation

Some of the Phares Electric Geartooth Sensors can be secured via 1/2" conduit fitting, bracket, or both depending on sensor housing length. Various sensor housing lengths allow greater flexibility regarding mounting and bracket location. Use our *Terminal Strip Assembly (TSA) Box* for quick mounting and termination, and applications that require long cable runs. When using a bracket do not over tighten jam nuts. If vibration is an issue, use removable thread lock to keep jam nuts secure.

For most applications no external electrical components are required for operation. Occasionally a 2.2K pull-up resistor may be needed. Place resistor between signal (white) wire and VDC+ (red) wire.

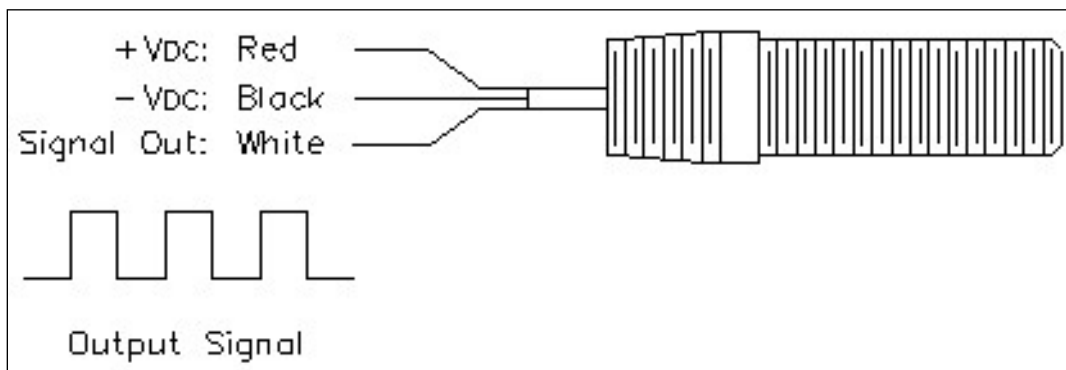


Figure 1. Phares Electric Geartooth Sensor Wiring

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Disclaimer

The Phares Electric Geartooth Sensors are not intended for safety critical applications. Users of this Phares Electric product in such applications assume all risks of such use and shall indemnify Phares Electric against all damages, including attorneys' fees and costs, resulting from such use.

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Geartooth Sensor and Target Orientation

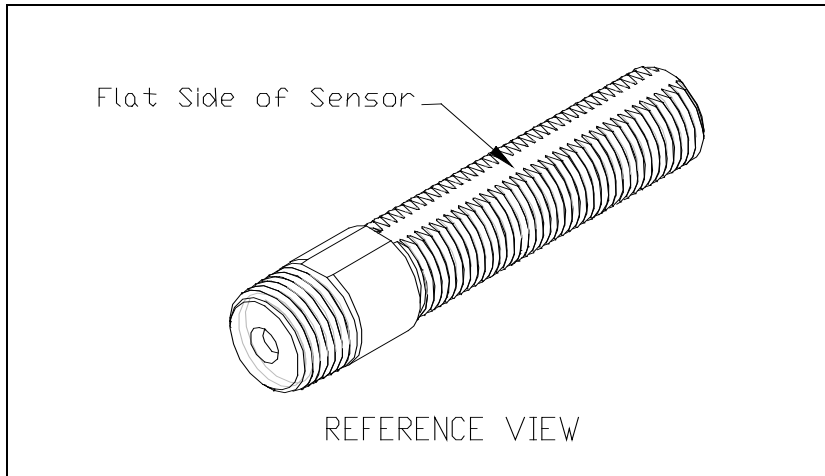


Figure 2. Geartooth Sensor Illustration

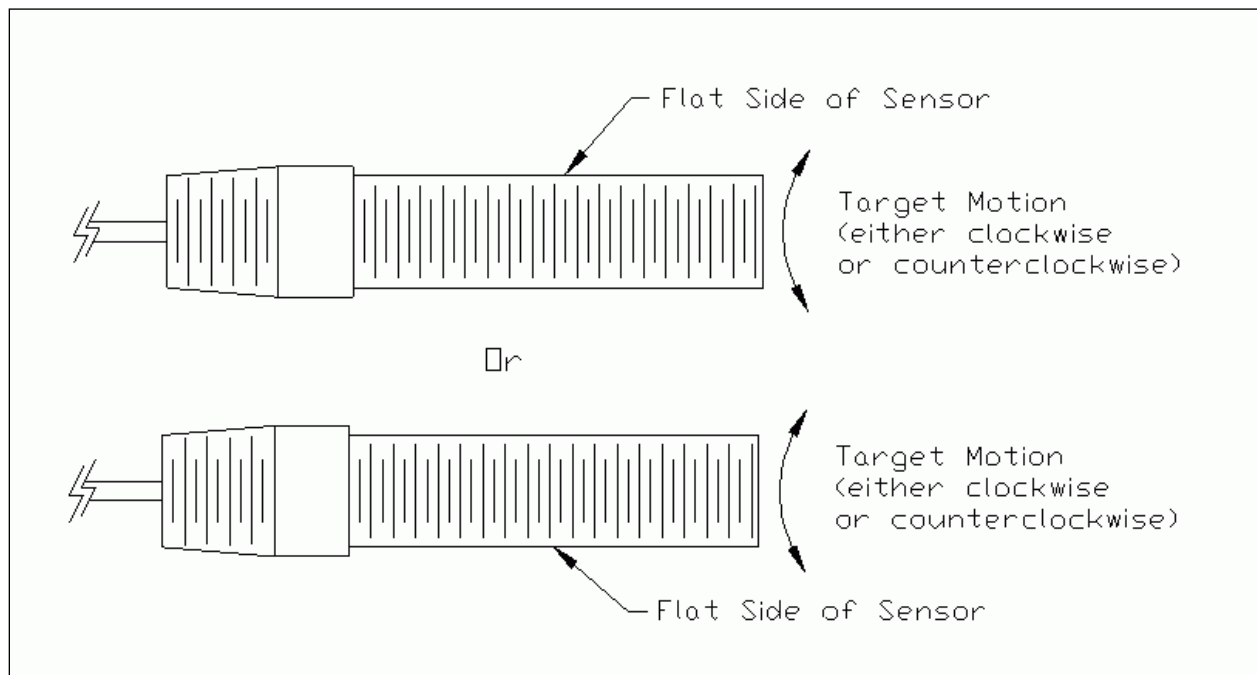


Figure 3. Geartooth Sensor Orientation

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Specifications

Digital Output Hall Effect Sensor Type

3 wire, sinking signal (NPN)

Supply Voltage Range

6-24 VDC

Supply Current

3.5 mA

Output Voltage

6-24 VDC (Corresponds with Supply Voltage used)

Output Current

Output capable of sinking 25 mA

Magnetic Pole Detect

North and South

(Positive and Negative field)

Gap

1/16" to 1/4" (determined by purity of steel on gear wheel or bolt head)

Frequency

10 kHz Maximum

Sensor Housing Material

Aluminum

Delrin for corrosive environments

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Warranty

All products are thoroughly tested before shipping. If a product is found to be defective within 30 days from the date of purchase, *not the date of installation*, we will repair or replace the unit. The defective unit must be received and tested at Phares Electric before a replacement is shipped. If a replacement is needed before the defective unit arrives at Phares Electric, the replacement will be charged to your credit card, or invoiced to your Net30 Account. A credit will be issued once the unit is received at Phares Electric and deemed defective upon inspection and testing. Please call us for return shipping instructions.

The warranty is void if the unit is physically damaged from abuse or misuse, or if the unit shows evidence of excessive current, heat, moisture, vibration, or operating conditions outside of design limits or unauthorized modification.

The above constitutes the sole and exclusive warranty provided by Phares Electric. In no event shall Phares Electric, or its agents, be liable for any damages, whether direct, indirect, consequential, punitive or otherwise, arising out of any product or service provided or arranged by Phares Electric.

Returns

Returns are accepted within 30 days from date of sale. Please call us for return shipping instructions. Returned items must be in resalable condition. A credit will be issued after the item is received by Phares Electric and deemed resalable after inspection and testing.

Contact

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