

# SSH-G01

## Gear Tooth Speed and Direction Sensor

The flange mount gear tooth speed and direction sensors of Piher Sensing Systems are designed to precisely calculate speed and direction of ferrous gears in demanding environments such as vehicle transmissions. The hall-effect sensor measures the variation in flux found in the air-gap between the magnet and the passing teeth. Based on its non-contact technology and rugged design the SSH-G01 sensor provides true long-term reliability.



### KEY FEATURES

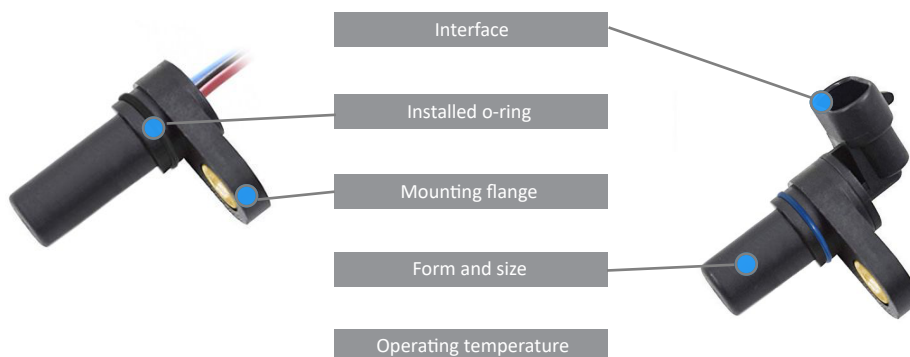
- ▶ Speed and direction feedback
- ▶ Operating temperature of 125°C (higher on demand)
- ▶ Fast and near zero speed sensing capable
- ▶ Compact and rugged for automotive & industrial areas
- ▶ Sealed for harsh environments
- ▶ Resistant to moist and high vibration environments such as engines, transmissions, brakes and chassis systems
- ▶ ESD protection
- ▶ Easily customizable cable or connector interface

### POTENTIAL APPLICATIONS

- ▶ Traction Control System (TSC)
- ▶ Wheel speed and direction
- ▶ Hoist and engine speed and direction
- ▶ Anti-lock braking system
- ▶ Electronic Stability Control (ESC)
- ▶ Crankshaft / camshaft
- ▶ Pump speed feedback
- ▶ Transmission Speed and Direction Gear Tooth Sensor

### CUSTOMIZATION POSSIBILITIES

Custom product design can easily be provided to meet any form, fit and function including the choice of wire harness and interface connector.



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## Gear Tooth Speed and Direction Sensor

| ENVIRONMENTAL SPECIFICATIONS |  |            |
|------------------------------|--|------------|
|                              | Two Wire Current Source  | A/B Signal |
| Operating temperature        | -40°C to +125°C*   |            |
| Storage temperature          | -40°C to +105°C*   |            |
| Shock                        | IEC 60068-2-27 50g; 3 axis   |            |
| Thermal Shock                | 100 cycles; Tmax: +125°C   |            |
| Chemical Resistance          | Windshield washer, Diesel, Gasoline, Battery liquid, Coolant liquid, Potash, Brake liquid, Detergent, Engine oil |            |
| Salt Spray                   | UNE-EN ISO 9227  |            |
| Sealing                      | IP67, IP69K ISO 20653  |            |
| Humidity                     | 168 h 40°C 95%RH   |            |
| High Temperature Exposure    | ISO 16720-4 100h, 125°C  |            |
| Vibration                    | IEC 60068-2-6 5-2000Hz;20g; Amax 0,75 mm   |            |
| Bulk current injection       | ISO 11452-4 /GMW3097 Level 2   | -          |
| Radiated Immunity            | ISO 11452-2 150V/m; 200MHz-2000MHz   |            |
| Transients Immunity          | ISO 7637-3   |            |
| Radiated Emissions           | CISPR25:2008   | -          |
| ESD                          | ISO 10605:2008 ±8kV; Air Gap ±16kV   |            |

\*Others available on request

| MECHANICAL SPECIFICATIONS |                                    |            |
|---------------------------|------------------------------------|------------|
|                           | Two Wire Current Source            | A/B Signal |
| Air gap                   | 1.5mm                              |            |
| Max. installation torque  | 5.6 Nm (for 1/4-20 bolt or M6 x 1) |            |
| Maximum speed             | 12 kHz (forward) / 7 kHz (reverse) | 40 kHz     |

| ELECTRICAL SPECIFICATIONS |   |            |
|---------------------------|---|------------|
|                           | Two Wire Current Source                     | A/B Signal |
| Operating voltage range   | 4-24 VDC                                    |            |
| Reverse supply voltage    | -18 VDC                                     |            |
| Supply current            | Low state: 5.9-8 mA<br>High state: 12-16 mA | Typ. 10 mA |
| Power-on time             | 1 ms  |            |
| Output risetime           | 10 µs                                       | 5 µs       |
| Output falltime           | 10 µs                                       | 5 µs       |

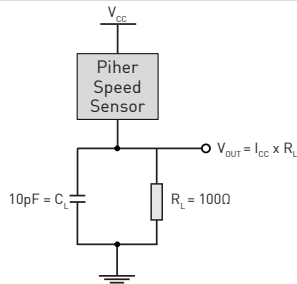
Other specifications available. Contact [info@piher.net](mailto:info@piher.net)

# SSH-G01

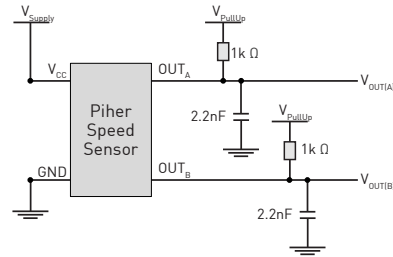
## Gear Tooth Speed and Direction Sensor

### RECOMMENDED CONNECTIONS

#### Two Wire Current Source

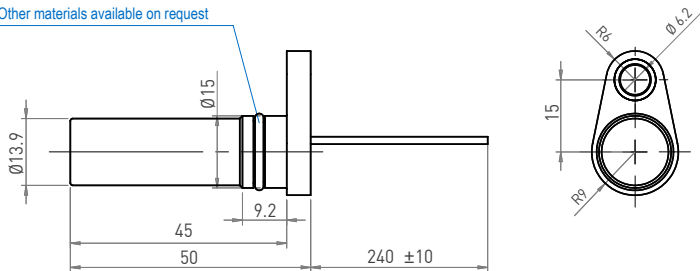


#### A/B Signal



### DIMENSIONS (MM)

O-ring Material EPDM 70  
Other materials available on request



### CONNECTION SCHEME

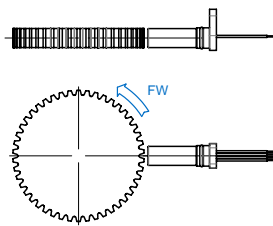
| Color  | A/B Signal      | Current Source |
|--------|-----------------|----------------|
| Brown  | Vcc             | Vcc            |
| Blue   | Ground          | n/a            |
| Black  | Signal output A | n/a            |
| White  | Signal output B | n/a            |
| Yellow | n/a             | Signal output  |

Download the STEP file at: [www.piher.net](http://www.piher.net)

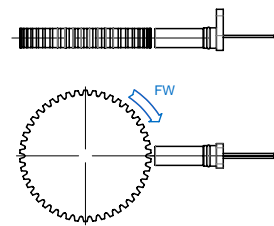
Connector assembly available on request.

### TYPICAL MOUNTING

#### SSH-G01-002-AB and SSH-G01-002-CP



#### SSH-G01-002-CP-R



### HOW TO ORDER

| Series           | Output                                 |
|------------------|--|
| SSH-G01-002-AB   | A/B signal                             |
| SSH-G01-002-CP   | two wire current source - CCW          |
| SSH-G01-002-CP-R | two wire current source - CW (reverse) |



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