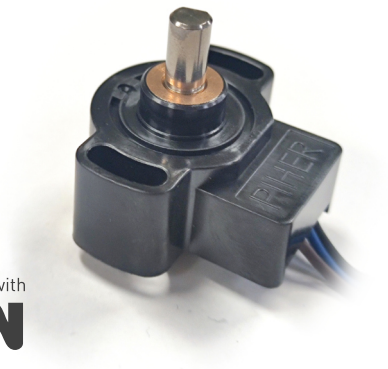
Enabling the Electronics Revolution

PIHER sensing systems
an Amphenol® company

# PSCM

## Absolute Hall-Effect Multiturn Sensor




### KEY FEATURES

**True, contactless operation**
Without any gears or mechanical interfaces the sensor is easily assembled and calibrated and subject to limited wear and tear over lifetime.

**Up to 32 turn absolute position feedback**
Keeps the last position on power loss with configurable electrical angles from 720 to 11.520 degrees.

**Made for harsh environments**
The rugged package protects the sensor from dust, moisture, vibration and extreme temperatures for usage in the most demanding environments.

**Durable and robust design**
The non-contacting design allows for an extra-long product lifetime of up to 50 million cycles.

**Adaptable to your requirements**
Programmable transfer function and switch outputs as well as different output protocols and redundancy levels available.

### DESCRIPTION

The PSCM is a non-contacting multiturn rotary position sensor based on Hall-effect technology and a cost-effective replacement for absolute encoders. It is also perfectly suited to substitute wire actuated encoders by translating a linear movement into angular position. In the event of a power loss, the sensor will preserve the last measured position.

This compact and rugged sensor is configurable with angular ranges between 720 and 11.520 degrees (up to 32 revolutions). Connector assemblies are available on request.

The high level of ingress protection, vibration and temperature resistance makes it well suited for extreme environments of industrial, off-highway and transportation applications.

### APPLICATIONS

Industrial / Machine tool
Off-Highway Vehicles
Material Handling

# PSCM

## Absolute Hall-Effect Multiturn Rotary Sensor

### MECHANICAL SPECIFICATIONS

| | |
|---|---|
| Rotational life | Up to 50.000.000 cycles |
| Mechanical range | 360° (endless rotation) |
| Shaft diameter | 6mm |

### ELECTRICAL SPECIFICATIONS

| | | |
|---|---|---|
| Linearity[1] | | ±1% (up to ±0.1% upon request) |
| Electrical angular range | | Configurable from 720° to 11520° degrees (2 to 32 turns) |
| Output protocols[2] | | Analog (ratiometric) |
| Output curve[2] | Standard<br>Inverted<br>Redundant | 05% to 95% Vdc (CW)<br>95% to 05% Vdc (CCW)<br>05% to 95% Vdc (CW and CCW) |
| Switch | | Upon request |
| Resolution | | Up to 12 bit |
| Supply voltage[3] | | 5V ±10% |
| Supply current | Single version<br>Redundant version | Typ 32.7 mA<br>Typ 41.2 mA |

[1] Ferromagnetic materials close to the sensor (i.e. shaft, mounting surface) may affect the sensor's linearity.
[2] Other output protocols / specifications available on request
[3] Please note: Sensor saves last position if power is turned off, but does not count turns if not powered. For application instructions please reach out to Piher.

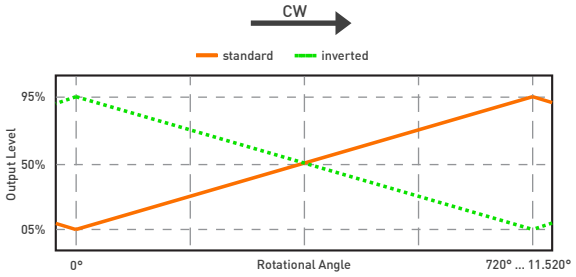
### ENVIRONMENTAL SPECIFICATIONS

| | |
|---|---|
| Operating and storage temperature[1] | -40° to +85°C |
| Shock | 50g |
| Vibration | 10-2000 Hz; 10g; Amax 0,75 mm |

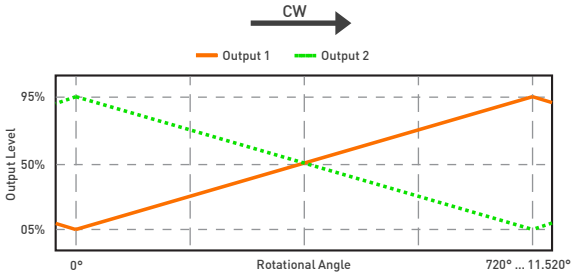
[1] Higher on request.

### OUTPUT CURVE

**Simple**




**Redundant**




Custom output functions available on request.

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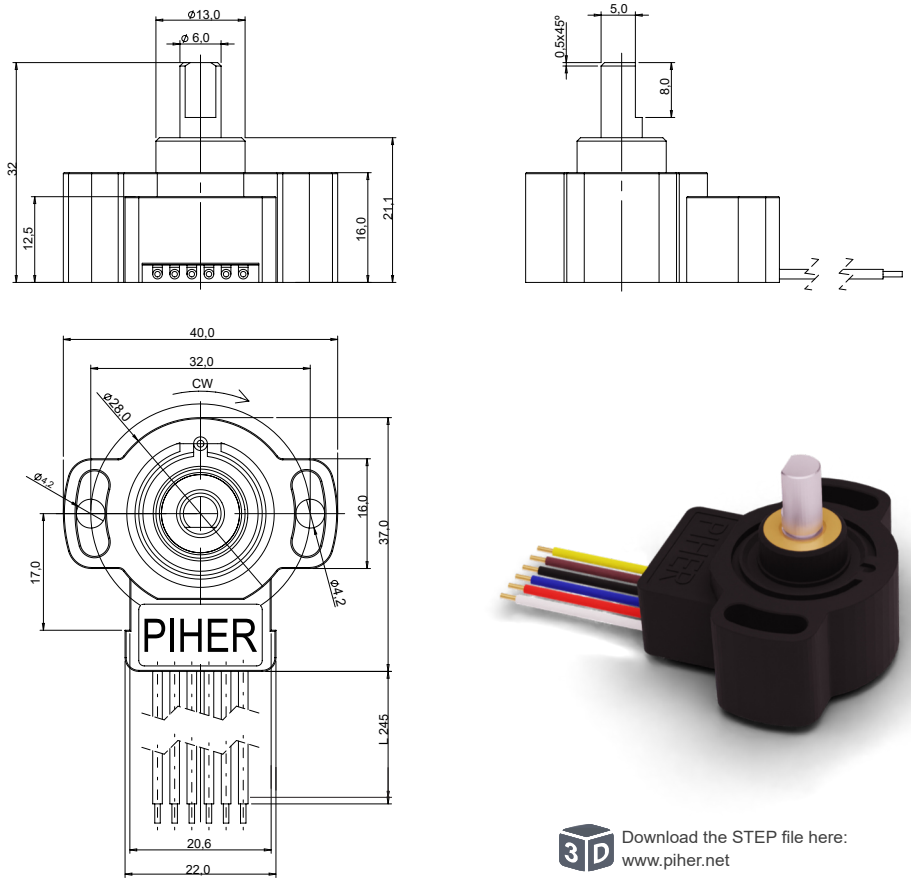
### DIMENSIONS (MM)






Download the STEP file here:
www.piher.net

Sensor delivered at random position. Connector assembly on request.

### CONNECTION SCHEME

| Color | Simple output | Redundant output |
|---|---|---|
| Brown | Power supply | Power supply |
| Blue | Ground | Ground |
| Grey | Set to 0 (connect to power supply after calibration) | Set to 0 (connect to power supply after calibration) |
| Black | Output | Output 1 |
| White | n/a | Output 2 |

More instructions of use on www.piher.net.

### MOUNTING INSTRUCTIONS

1. Place the component on a flat surface.
2. Fit the actuator onto the shaft avoiding any mechanical play/wobble.
3. Fasten the two M4 screws (M4 washers are recommended).
4. To define the 0-degree position connect black wire to Ground for more than 100 ms.

# PSCM

## Absolute Hall-Effect Multiturn Rotary Sensor

### HOW TO ORDER (Example: PSCM-A-16S-05)

| PSCM | - | A | - | __ | _ | - | 05 |
|---|---|---|---|---|---|---|---|
| Series | | Output protocol[1] | | Number of turns[2] | Output function[3] | | Voltage supply |
| | | A = analogic | | 02<br>03<br>06<br>10<br>16<br>24<br>32 | S = standard / CW<br>I = inverted / CCW<br>R = redundant | | 05 = 5V ±10% |

1 Other output protocols upon request. The analog output is ratiometric, proportional to input voltage.
2 Others on request.
3 Other output functions available on request.

Please always use the latest updated datasheets and 3D models published on our website.



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