

PSCM

Absolute Hall-Effect Multiturn Rotary Sensor



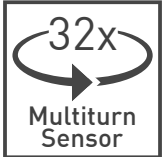
Available with
CAN

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) and support for low and high-voltage power supply. Different available output protocols (Analog, PWM, CAN J1939, CAN Open) allow integration in a variety of systems. 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

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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	Analog (ratiometric) PWM CAN SAE J1939 CAN Open	
Output curve ²	Standard	05% to 95% Vdc (CW)
	Inverted	95% to 05% Vdc (CCW)
	Redundant	05% to 95% Vdc (CW and CCW)
Switch	Upon request	
Resolution	Up to 12 bit	
Supply voltage ³	5V ±10% 10V-30V	
Supply current	Single version	Typ 32.7 mA
	Redundant version	Typ 41.2 mA

¹ Ferromagnetic materials close to the sensor (i.e. shaft, mounting surface) may affect the sensor's linearity.

² Other specifications available on request

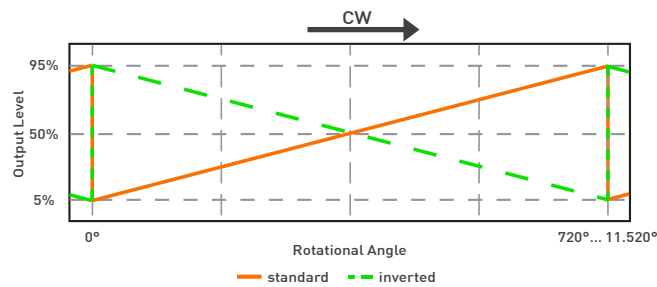
³ Please note: Sensor saves last position if power is turned off, but does not count turns if not powered. For application instructions please reach out to Piher.

ENVIRONMENTAL SPECIFICATIONS

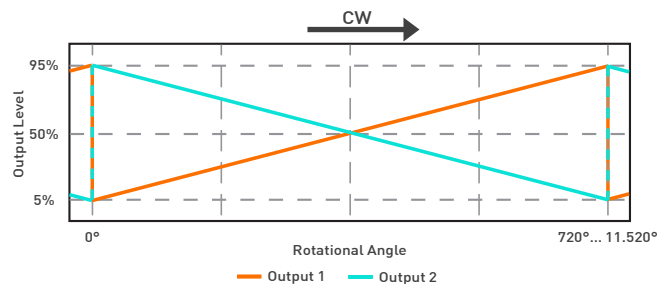
Operating and storage temperature	-40° to +125°C
Shock	50g
Vibration	10-2000 Hz; 10g; Amax 0,75 mm

OUTPUT CURVE

Simple



Redundant

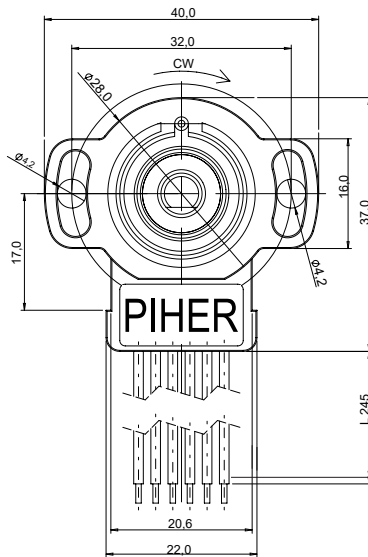
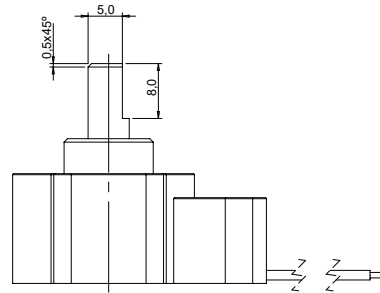
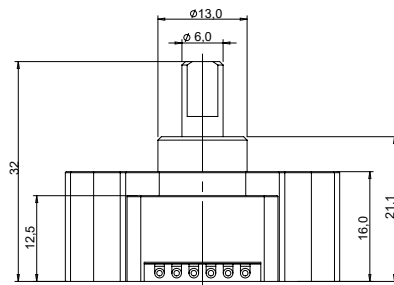


Custom output functions available on request.

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DIMENSIONS (MM)



Download the STEP file here:
<https://piher.net/piher/?p=7141>

Sensor delivered at random position. Connector assembly on request.

CONNECTION SCHEME

Color	Simple output	Redundant output
Brown	Power supply	Power supply
Blue	Ground	Ground
Black	Set to 0 (connect to power supply after calibration)	Set to 0 (connect to power supply after calibration)
White	Output	Output 1
Grey	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.

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

Simple Output

PSCM	-	-	-	-	-
Series	Output protocol ¹	Number of turns ²	Output function ³	Voltage supply	
	A = analogic P = PWM J = CAN SAE J1939 O = CAN OPEN	02 03 06 10 16 24 32	S = standard / CW I = inverted / CCW	05 = 5V ±10% RE = 10V-30V	

Redundant output

PSCM	-	-	-	R	-	05
Series	Output protocol ¹	Number of turns ²	Output function ³	Voltage supply		
	A = analogic P = PWM J = CAN SAE J1939 O = CAN OPEN	02 03 06 10 16 24 32	R = redundant	05 = 5V ±10%		

- 1 The analog output is ratiometric, proportional:
 - for supply voltage "5V" to input voltage;
 - for supply voltage "RE" to 5V.
 Default frequency for PWM versions is 200 Hz. Others available on request.
- 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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