Enabling the Electronics Revolution

PIHER sensing systems
an Amphenol® company

PSC-360

Hall-Effect End-of-Shaft Rotary Position Sensor



Available with CAN

DESCRIPTION

The robust PSC-360 is a cost-effective non-contacting rotary position sensor that provides high performance in harsh environments such as transportation, industrial and medical applications.

This compact sensor of Piher Sensing Systems is truly non-contacting with a permanent magnet that is securely fastened to the shaft and acts as the only moving component in the sensor. Redundant versions provide independent voltage outputs with fully customizable characteristics. Additionally a switch output can optionally be configured.

The endless rotation sensor is highly configurable with a programmable angular range between 15 and 360 degrees, different signal output options and support for low and high-voltage power supply. Sealed, flange mounted for easy positioning and with fly leads, it can be customized to fit any desired connector configuration.

Multi-turn configurations are available on request.

KEY FEATURES

Non-contacting

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.

360º Endless Rotation

360 degree absolute position feedback
Endless mechanical rotational angle without dead band, keeps the position on power loss with programmable electrical angles from 15 to 360 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.

50 million Long life

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

End-of-Shaft Sensing

Integrated shaft
The magnet is securely fastened to the shaft and acts as only moving component in the sensor.

Fully customizable

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

POTENTIAL APPLICATIONS

Industrial

- Autonomous warehouse robotics
- Robotics and automation feedback
- Robot arm position
- Valve monitoring
- Conveyor operation

Transportation

- Steering wheel angle
- Pedal Position
- Suspension/height detection
- Fork height and mast tilt
- Bucket position
- Hitch position
- Transmission gear shift

Marine

- Steering and shifter sensor

Home and Building Automation

- HVAC systems

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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]	Analog, PWM CAN	±1% absolute (±0.5% on request) ±3 degrees absolute
Electrical angular range		Configurable from 15° to 360°
Output protocols		Analog (Ratiometric), PWM CAN SAE J1939 CAN OPEN
Output		Simple Redundant Full-redundant
Switch output		On request
Resolution		Up to 12 bit
Supply voltage[2]	Analog, PWM Analog, PWM, CAN	5V ±10% 7V to 15V
Supply current	Single version Redundant version CAN version	Typ 8.5 mA Typ 17 mA Typ 47 mA
Voltage protection		±10V
Self-diagnostic features		yes

[1] Ferromagnetic materials close to the sensor (i.e. shaft, mounting surface) may affect the sensor's linearity.
[2] Voltages up to 25V possible on request.

ENVIRONMENTAL SPECIFICATIONS		
Operating and storage temperature[1]	Analog, PWM CAN	-40° to +125°C -40° to +85°C
Shock		50g
Vibration		5-2000 Hz; 20g; Amax 0,75 mm
IP rating		IP67/IP69K

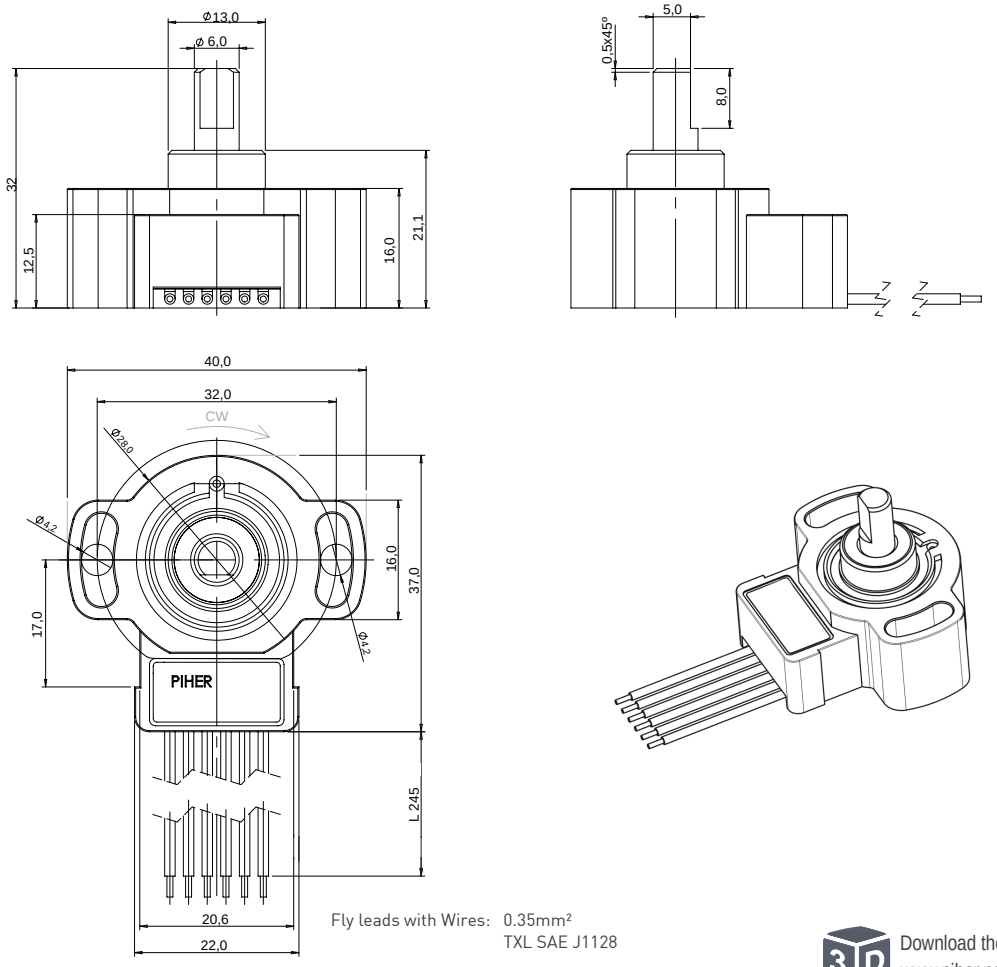
[1] Other specifications on request

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DIMENSIONS (MM)

PSC-360G2-F



Fly leads with Wires: 0.35mm²
TXL SAE J1128

Download the STEPs f le here:
www.piher.net

Sensor shown with the shaft at zero position.

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).

CONNECTION SCHEME

Color	Simple		Redundant		Full-redundant		CAN
	5V	7V to 15V	5V	7V to 15V	5V	7V to 15V	
Brown	Power supply	Power supply	Power supply	Power supply	Power supply 1	Power supply 1	Power supply
Blue	Ground	Ground	Ground	Ground	Ground 1	Ground 1	Ground
Black	Signal output	Signal output	Signal output 1	Signal output 1	Ground 2	Ground 2	CAN High
White	n/a	n/a	Signal output 2	Signal output 2	Signal output 2	Signal output 2	CAN Low
Red	n/a	n/a	n/a	n/a	Power supply 2	Power supply 2	n/a
Yellow	n/a	n/a	n/a	n/a	Signal output 1	Signal output 1	n/a
Grey	n/a	Not used	n/a	Not used	n/a	n/a	n/a
Green	n/a	n/a	n/a	n/a	n/a	Not used	n/a

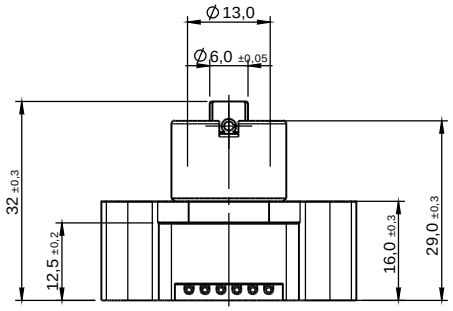
More instructions of use on www.piher.net. Connector assembly available on request.

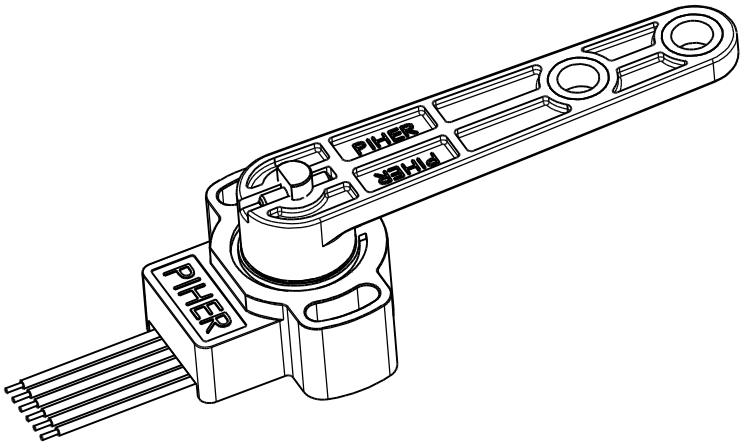
PSC-360

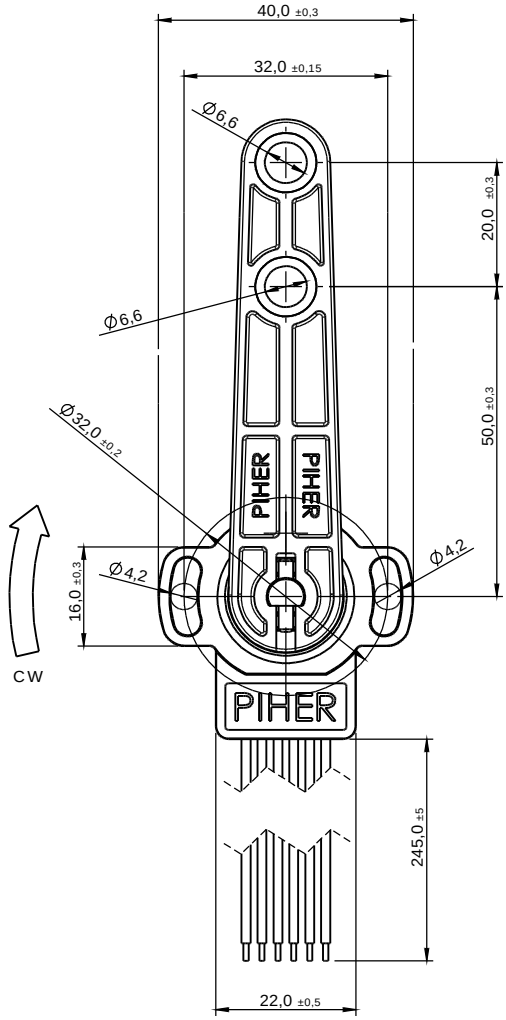
Hall-Effect End-of-Shaft Rotary Position Sensor

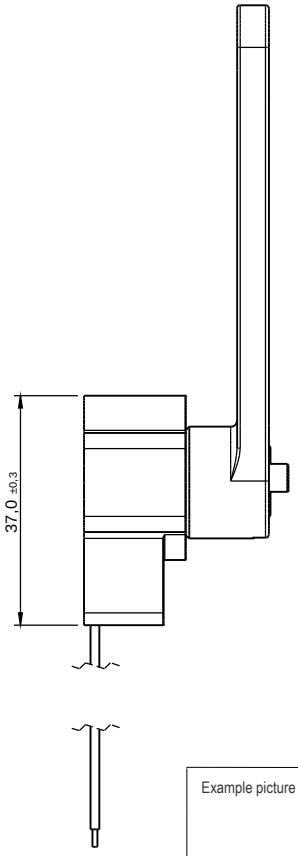
DIMENSIONS (MM)

PSC-360G2-H









Example picture of the sensor with a lever and a mounting plate.



Download the STEPs f le here:
www.piher.net

Sensor shown with the rotor at zero position.

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Hall-Effect End-of-Shaft Rotary Position Sensor

HOW TO ORDER (Example: PSC360G2-F1A-C0001-ERA360-05K)

Simple Output - Analogic, PWM and CAN

PSC360G2 - F _ 1 _ - C _ _ _ _ - ERA _ _ _ - _ _ K - _ _ _ _

Series	Actuator	Mounting plate	Type	Output[1]	Output function[2]	Electric rotational angle[3]	Voltage supply[4]	Temp. range[5]	PWM Frequency Hz[6]
	F = flat shaft H = lever	[empty] = no M = yes	1 = simple	A = analogic P = PWM J = CAN SAE J1939 O = CAN OPEN	C0000 C0001	ERA040 ERA041 ... ERA360	05 = 5V ±10% RE = 7V-15V	Analogic, PWM = -40°C to +125°C CAN: -40°C to +85°C	[empty] = 200Hz F100 = 100Hz F101 = 101Hz ... F999 = 999Hz

Redundant output - Analogic, PWM and CAN

PSC360G2 - F 2 _ _ - C _ _ _ _ - ERA _ _ _ - _ _ K - _ _ _ _ _ _ _ _

Series	Actuator	Type	Output[1]	Output function[2]	Electric rotational angle[3]	Voltage supply[4]	Temp. range[5]	PWM Frequency Hz. (1)[6]	PWM Frequency Hz. (2)[6]
	F = flat H = lever	2 = redundant	AA= analogic PP = PWM JJ = CAN SAE J1939 OO = CAN OPEN	C0002	ERA040 ERA041 ... ERA360	05 = 5V ±10% RE = 7V-15V	Analogic, PWM = -40°C to +125°C CAN: -40°C to +85°C	F100 F101 ... F999	F100 F101 ... F999

Full-redundant output - Analogic and PWM

PSC360G2 - F 3 _ _ - C _ _ _ _ - ERA _ _ _ - 05 K - _ _ _ _ _ _ _ _

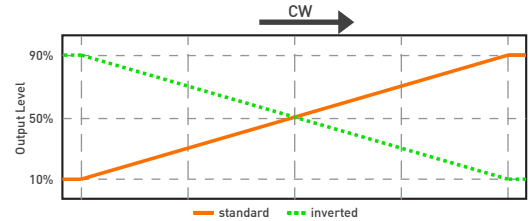
Series	Actuator	Type	Output[1]	Output function[2]	Electric rotational angle[3]	Voltage supply[4]	Temp. range	PWM Frequency Hz. (1)[6]	PWM Frequency Hz. (2)[6]
	F = flat H = lever	3 = full-redundant	AA = analogic PP = PWM	C0002	ERA040 ERA041 ... ERA360	05 = 5V ±10% RE = 7V-15V	-40°C to +125°C	F100 F101 ... F999	F100 F101 ... F999

1 The analog output is ratiometric, proportional:
- for supply voltage "5V" to input voltage;
- for supply voltage "RE" to 5V.

2 Other output functions available, please check availability. Enter CXXXX as long as the new output function is not defined.
3 Models with ERA < 40° available on request
4 CAN models are available in 7V-15V. For other voltages up to 25V, check availability. For 7V-15V PWM Full-redundant models please contact us before ordering.
5 CAN models: other temperatures to be studied on request
6 Leave empty if not applicable. Default frequency is 200 Hz

check inventory

OUTPUT FUNCTIONS



ERA	Mechanical Rotational Angle		
270 →	45°	180°	315°
180 →	90°	180°	270°
120 →	120°	180°	240°
090 →	135°	180°	225°
040 →	160°	180°	200°

ERA	Standard	Inverted	Redundant & Full redundant
360°	C0000	C0001	C0002
270°	C0208	C0158	C0031
180°	C0007	C0072	C0036
120°	C0024	On request	C0032
90°	C0011		C0025
70°	C0150		C0149
60°	C0006		C0020
40°	C0026		C0123

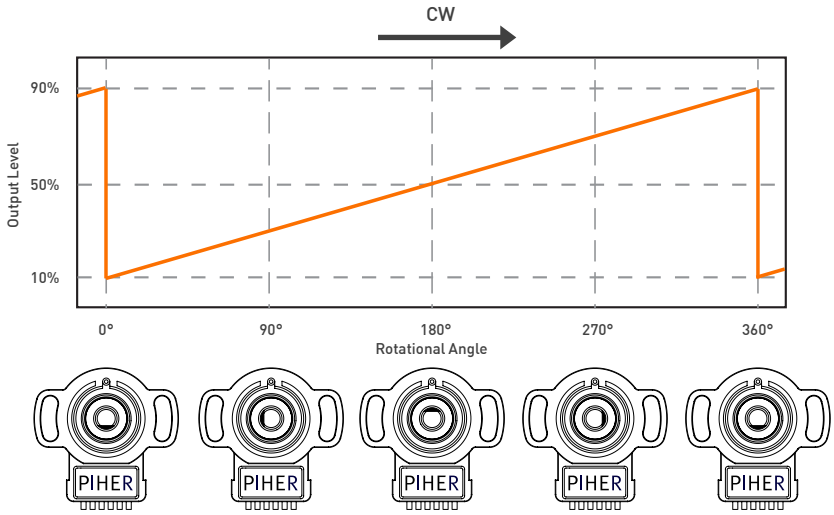
Custom output functions on request

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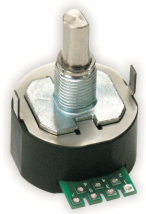
OUTPUT VOLTAGE DEPENDING ON MAGNET POSITION

PSC360G2-F1A-C0000-ERA360-05K



Custom output functions on request.

RELATED PIHER'S ANGULAR MAGNETIC POSITION SENSORS (END-OF-SHAFT)



PSC-360U series - Panel mount 360º Angular Sensor



HRPS series - standard design with integrated connector

IATF 16949 Automotive Quality Management CERTIFIED

ISO 9001 Quality Management Systems CERTIFIED

ISO 14001 ISO 45001 BUREAU VERITAS Certification

RoHS REACH compliant

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