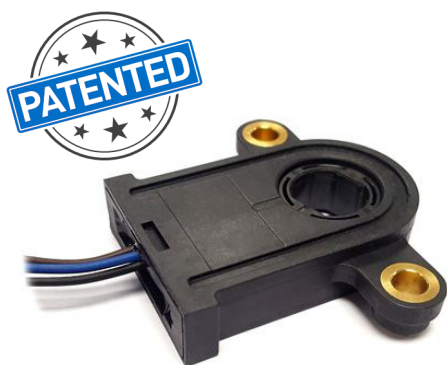


# PST-360

## Hall-Effect Through-Shaft Position Sensor

The PST-360 position sensor combines a through-shaft design with high accuracy 360 degree absolute position feedback and a true non-contacting sensing element that does not rely on gears or other rotating parts. This innovative and unique patented design compliments the attributes of the target application and maintains the mechanical integrity of the application by design. As the sensor is mounted directly at the pivot point no levers, connecting rods or other mechanical interfaces are needed. Furthermore it adapts to shaft's eccentricity, mounting tolerances and mechanical wear over the life of the application.



Available with

**CAN** SAE J1939



### KEY FEATURES

- ▶ True non-contacting technology, without gears or mechanical interfaces
- ▶ Simple and robust magnetic design
- ▶ Absolute position feedback up to 360° (keeps position on power loss) with endless rotation
- ▶ True full redundant version
- ▶ Sealed construction for harsh environments such as off-highway and marine
- ▶ Fully programmable transfer function output
- ▶ Self-diagnostic features
- ▶ Over voltage protection and reverse voltage protection
- ▶ Extended voltage input supply values
- ▶ Multi-turn capability available on request

### MECHANICAL SPECIFICATIONS

Rotational life	Up to 50.000.000 cycles
Mechanical range	360° (endless rotation)

### ELECTRICAL SPECIFICATIONS

Linearity <sup>1</sup>	±1% absolute (±0.5% upon request)	
Angular range	Programmable from 15 to 360 degrees	
Output	Analog (Ratiometric), PWM Serial Protocol (SPI) CAN SAE J1939 or SENT upon request	
Switch output	Programmable upon request	
Angular resolution	Analog, PWM SPI	Up to 12 bit Up to 14 bit
Supply voltage <sup>2</sup>	Up to 25 V	
Supply current	Single version Redundant version	Typ 8.5 mA Typ 17 mA

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

<sup>2</sup> Others specifications available

### APPLICATIONS

- ▶ Steering wheel angle
- ▶ Pedal position
- ▶ Robotic arm position
- ▶ Excavator bucket position
- ▶ Joystick controls
- ▶ Active suspension
- ▶ Marine engine throttle

# PST-360

## Hall-Effect Through-Shaft Position Sensor

### ENVIRONMENTAL SPECIFICATIONS

Operating temperature <sup>1</sup>	-40° to +125°C
Storage temperature	-40° to +125°C
Shock	50g
Vibration	5-2000 Hz; 20g; A <sub>max</sub> 0,75 mm
Sealing <sup>2</sup>	IP67, IP69K
Approval	CE <sup>3</sup>

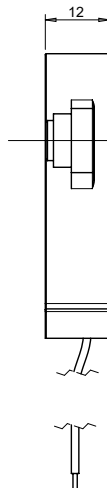
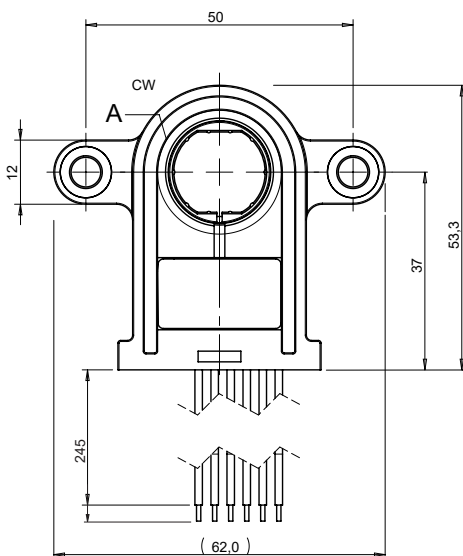
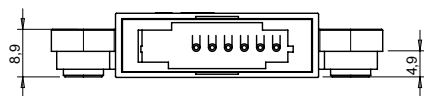
<sup>1</sup> Other specifications available


<sup>2</sup> IP rating on electronics

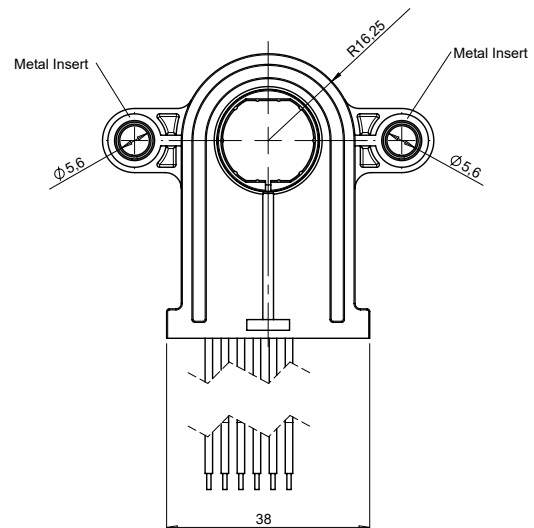
<sup>3</sup> EMC-testing according to standards EN 61000-6-2 and EN 6100-6-3. CE-approval applies to analogic-simple and analogic-redundant models.

### DIMENSIONS (MM)

#### Outer Dimensions

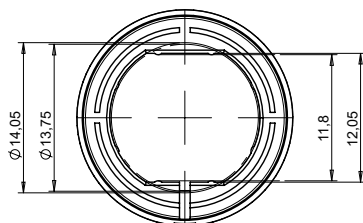


 Download the STEP file here:  
<https://piher.net/piher/?p=838>

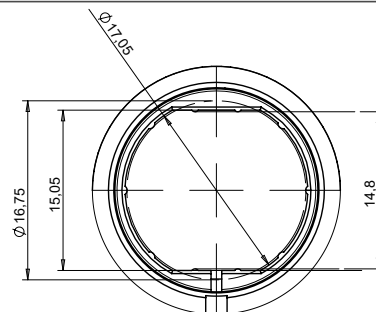


Sensor shown above is the 17mm version with the rotor at zero position. Sensor is delivered at random position

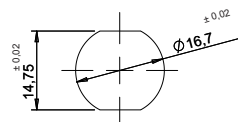
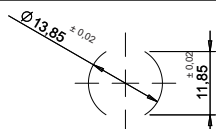
#### 14mm rotor



#### 17mm rotor



#### Recommended shaft dimensions



# PST-360

## Hall-Effect Through-Shaft Position Sensor

HOW TO ORDER (Example: PST360G2-1A-C0001-ERA190-05K)

### Simple Output - Analog and PWM

PST360G2	-	_	1	-	C_____	-	ERA____	-	__	K	-	_____
Series	Rotor <sup>1</sup>		Type	Output <sup>2</sup>	Output function <sup>3</sup>	Electric rotational angle <sup>4</sup>	Voltage supply	Temp. range	PWM Frequency Hz <sup>5</sup>			
	[empty] = 14mm B = 17mm		1 = simple	A = analogic P = PWM	C0000 C0001	ERA040 ERA041 ... ERA360	05 = 5V ±10% RE = 7V-25V	K = -40°C to +125°C	[empty] = 200Hz F100 = 100Hz F101 = 101Hz ... F999 = 999Hz			

### Simple output - SPI

PST360G2	-	_	1	S	-	C_____	-	ERA____	-	__	K	-	_____
Series	Rotor <sup>1</sup>		Type	Output <sup>2</sup>	Output function <sup>3</sup>	Electric rotational angle <sup>4</sup>	Voltage supply	Temp. range					
	[empty] = 14mm B = 17mm		1 = simple	S = SPI	C0000 C0001	ERA040 ERA041 ... ERA360	05 = 5V ±10% RE = 7V-25V	K = -40°C to +125°C					

### Redundant output - Analog and PWM

PST360G2	-	_	2	__	-	C_____	-	ERA____	-	__	K	-	_____	_____
Series	Rotor <sup>1</sup>		Type	Output <sup>2</sup>	Output function <sup>3</sup>	Electric rotational angle <sup>4</sup>	Voltage supply	Temp. range	PWM Frequency Hz. (1) <sup>5</sup>	PWM Frequency Hz. (2) <sup>5</sup>				
	[empty] = 14mm B = 17mm		2 = redundant	AA= analogic PP = PWM	C0002 C0003	ERA040 ERA041 ... ERA360	05 = 5V ±10% RE = 7V-25V	K = -40°C to +125°C	F100 F101 ... F999	F100 F101 ... F999				

### Full-redundant output - Analog and PWM

PST360G2	-	_	3	__	-	C_____	-	ERA____	-	05	K	-	_____	_____
Series	Rotor <sup>1</sup>		Type	Output <sup>2</sup>	Output function <sup>3</sup>	Electric rotational angle <sup>4</sup>	Voltage supply	Temp. range	PWM Frequency Hz. (1) <sup>5</sup>	PWM Frequency Hz. (2) <sup>5</sup>				
	[empty] = 14mm B = 17mm		3 = full-redundant	AA= analogic PP = PWM	C0002 C0003	ERA040 ERA041 ... ERA360	05 = 5V ±10%	K = -40°C to +125°C	F100 F101 ... F999	F100 F101 ... F999				

1 Other rotors available on request.

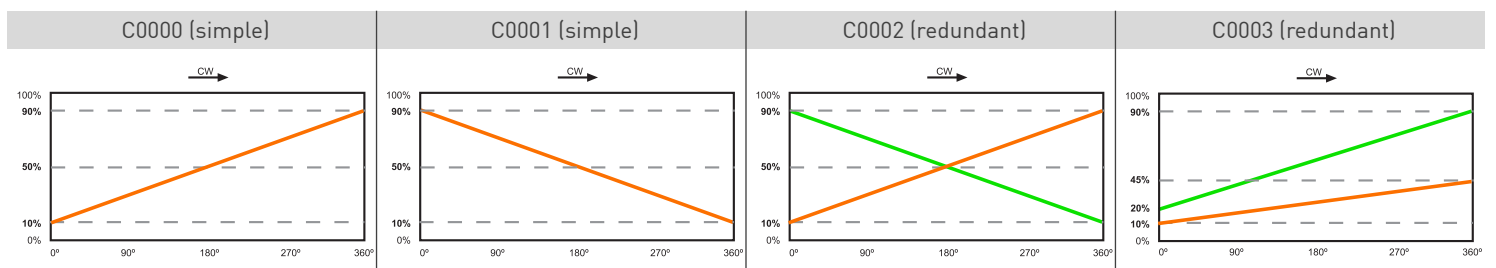
2 The analog output is ratiometric, proportional: - for supply voltage "5V" to input voltage; -for supply voltage "RE" to 5V.

3 Other output functions available, please check availability. Enter CXXXX as long as the new output function is not defined.

4 Models with ERA < 40° available on request

5 Leave empty if not applicable. Default frequency is 200 Hz

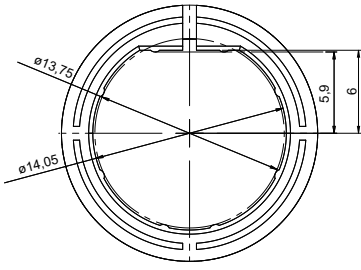
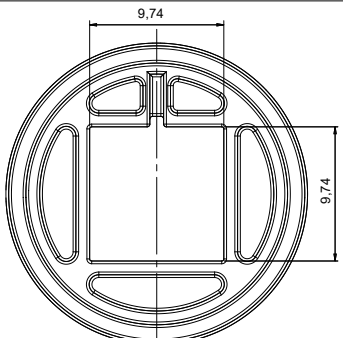
### EXAMPLE OUTPUT FUNCTIONS



# PST-360

## Hall-Effect Through-Shaft Position Sensor

### SPECIAL ROTORS

Ref. 3457	Ref. 3458
	






For more information visit: [www.pihernet.net](http://www.pihernet.net)

### MOUNTING INSTRUCTIONS

1. Place the component on a flat surface.
2. Fit the shaft of the application (see recommended shaft dimensions) through the sensor's rotor avoiding any mechanical play/wobble.
3. Fasten the two M5 screws (M5 washers are recommended).

### CONNECTION SCHEME

Simple analog output connection wiring scheme. Other versions and connector options available upon request.

-  Brown = Power supply
-  Blue = Ground
-  Black = Signal output
-  White = Not used
-  Grey = Not used

Fly leads with Wires: 0.35mm<sup>2</sup>  
TXL SAE J1128

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- ▶ Leading-edge innovative position sensing solutions
  - ▷ Contactless (Hall-effect and Inductive Technology)
  - ▷ Contacting (Potentiometers, Printed Electronics)
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- ▶ All our products can be customized to fit target application and customer requirement
- ▶ Capability to move seamlessly from development to true high-volume production
- ▶ A global footprint with global engineering and commercial support
- ▶ One-stop shop not limited to position sensors (temperature, pressure, gas,...) through group collaboration
- ▶ Flexibility and entrepreneurship of a medium-sized company with the backing of Amphenol Corporation



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