

Magnetic rotary hollow shaft position sensor.

Contactless sensor. PST-360



The PST-360 through / hollow shaft position sensors combines three critical design features; 1) through hole where the shaft passes through the sensor, 2) high accuracy absolute position feedback over up to 360°, and 3) a true non-contacting sensing element. Piher's design does not rely on gears or other rotating parts.

This innovative and unique patented design, features the following advantages:

- Compliments the attributes of the target application.
- Mechanical integrity that matches customer's application by design.
- Unique shaft mounted design that mounts at the pivot point of the application.
- No levers, connecting rods or mechanical interfaces needed.
- Adapts to shaft's eccentricity, mounting tolerances and mechanical wear over the life of the application.

Mechanical specifications

Rotational life (depends on application and mounting)	up to 50.000.000 cycles.
Operating temperature ¹	up to -40°C to +125°C
Sealing (electronics) ¹	IP67

Electrical specifications

Linearity ¹	±1% absolute (0.5% upon request).
Angular range	Programmable from 15 to 360 degrees (without dead band).
Output	Analog (Ratiometric), PWM, Serial Protocol.
Switch output	Yes, programmable. Two-switches version upon request.
Angular Resolution (depends on electrical angle and rotational speed)	Analog & PWM: up to 12 bits. Serial Protocol (SPI): up to 14 bits.
Operating temperature	-40°C to +85°C (-13°F to + 158°F)
Supply voltage ¹	5V/12V/15V ±10%
Supply current	Typ 8.5mA for single version Typ 17mA for redundant version

¹ Others check availability.

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Our product competencies and services:
Potentiometers | Position / angle sensors | Rotary switches | Incremental encoders
Printed circuit resistors | Mechatronics | Value added assemblies

Key features

- Simple & Robust Magnetic Design.
- High resolution (up to 14-bit).
- Absolute position feedback up to 360° (keeps position on power loss).
- Low profile.
- Easy integration into existing systems.
- Full true-redundant versions.
- Conceived for harsh environments applications.
- Protected from magnetic fields, dust, moisture, vibrations, extreme temperatures.
- Multiturn (endless rotation).
- Programmable Linear Transfer Characteristic:
(some positive slopes & one negative slope can be programmed in the same transfer characteristic;
up to 4 programmable points; see last page).
- Self-Diagnostic features.
- Over voltage protection and reverse voltage protection.

Applications

- Non-Contacting long life angle/position sensor.
- Absolute rotary position sensor
- Pedal position sSensor.
- Throttle/EGR valve and gear position sensor.
- Height & suspension sensor
- Motor-shaft position sensor.
- Pivot point angle sensing for all applications.
- Off road / highway steering.
- Agricultural machinery hydraulic lift arms, scoops, articulations/joints.
- Forklifts / material handling.
- Industrial pumps.
- Precision robotics, industrial equipment, HVAC monitoring & control, etc.

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How to order.

Simple output (analogic / PWM).

PST360	-	-	-	-	-	-	-	-	-	-
Series	Rotor	Type	Output1	Switch1	Switch ON1	Output function	Electrical rotation angle	Voltage supply	Temp. range	PWM Frequency (Hz.) ¹
	[empty] = 14mm B = 17mm (see note 1)	1 = simple	A = Analogic P = PWM (see note 2)	[empty] = none W = switch	000 016 ... 360 (see note 3)	C0000 C0001 (see note 4)	ERA015 ERA016 ... ERÄ360	05 12 15	E = -40 to +85°C K= -40 to +125°C	F100 ... F999 (see note 5)

Simple output (SPI).

PST360	-	-	-	-	-	-	-
Series	Rotor	Type	Output1	Output function	Electrical rotation angle	Voltage supply	Temp. range
	[empty] = 14mm B = 17mm (see note 1)	1 = simple	S = SPI	C0000 C0001 (see note 4)	ERA015 ERA016 ... ERÄ360	05	E = -40 to +85°C K= -40 to +125°C

Redundant output.

PST360	-	-	-	-	-	-	-	-	-
Series	Rotor	Type	Output	Output function	Electrical rotation angle	Voltage supply	Temp. range	PWM Frequency (Hz.) ¹	PWM Frequency (Hz.) ²
	[empty] = 14mm B = 17mm (see note 1)	2 = redundant	AA = Analogic PP = PWM (see note 2)	C0002 C0003 (see note 4)	ERA015 ERA016 ... ERÄ360	05 12 15	E = -40 to +85°C K= -40 to +125°C	F100 ... F999 (see note 5)	F100 ... F999 (see note 5)

Other product configurations will be studied case by case.

Notes

- (1) Other rotors: check availability.
- (2) The analog output is a ratiometric output, proportional to input supply voltage.
- For supply voltage 5V: to input supply voltage.
 - For supply voltage 12V: to 5V.
 - For supply voltage 15V: to 5V.

(3) Leave empty if no applicable.

Switch function diagram:



(4) Other output functions available check availability. In the How To Order reference, enter **CXXXX** meanwhile the new output function reference is not defined.

(5) Leave empty if no applicable. Default frequency is 200 Hz

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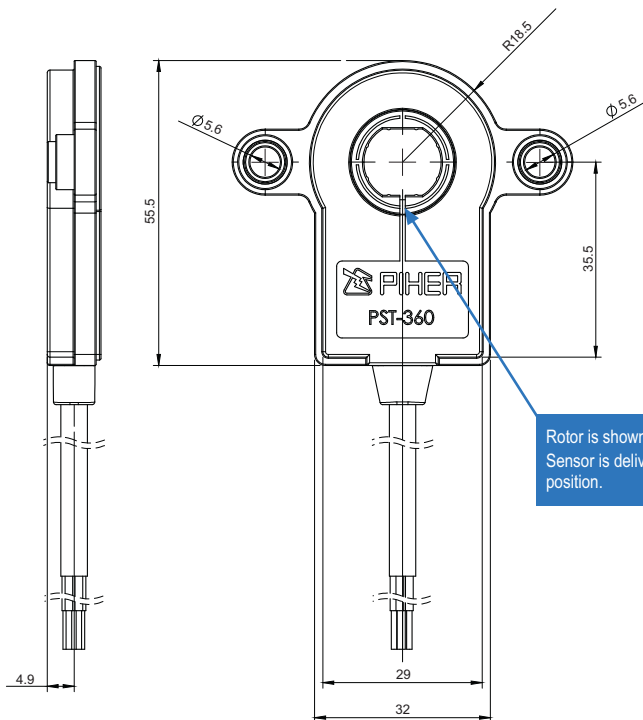
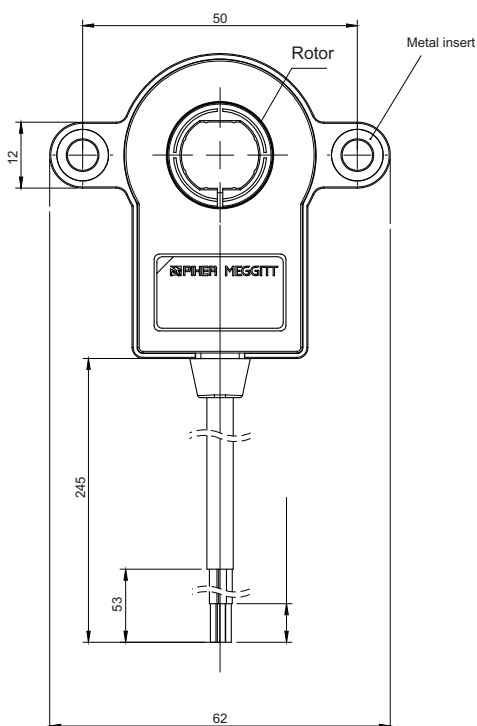
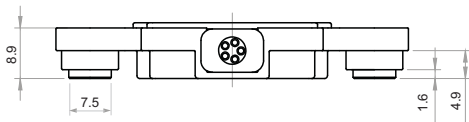
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Options.

- Special outputs slopes and protocols.
- Full redundant version with switches.
- Energy harvesting versions.
- Fast versions.
- Custom cabling and connector configurations.
- IP sealing.
- Shaft interfaces.
- Contact the factory for other options.

Dimensions.



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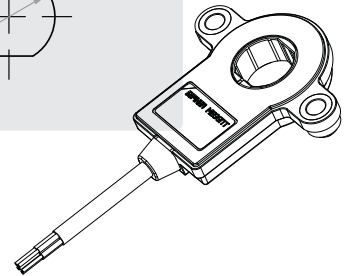
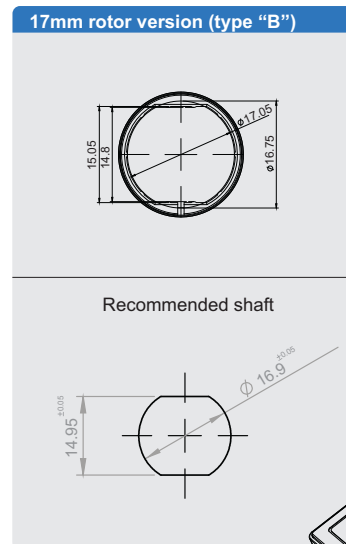
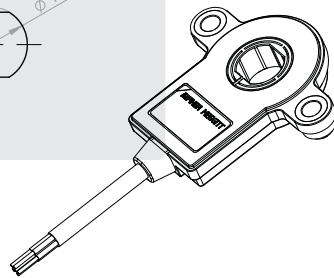
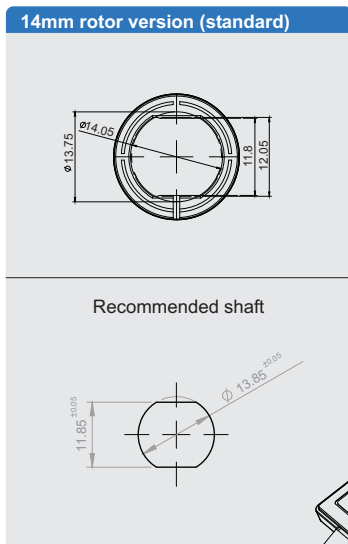
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Recommended shaft



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].



Electronic semiconductor products are sensitive to Electro Static Discharge (ESD).
Always observe Electro Static Discharge control procedures whenever handling semiconductor products.

Connections scheme.

Simple analog output connection wiring scheme:

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

Cable length: 245mm

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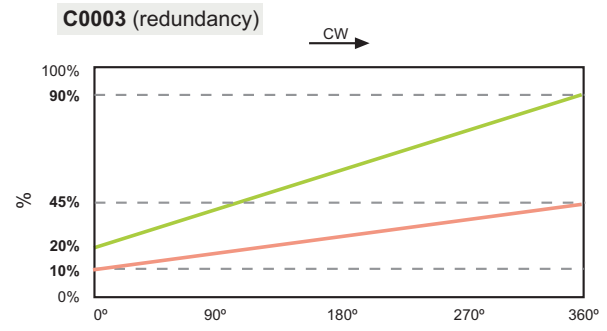
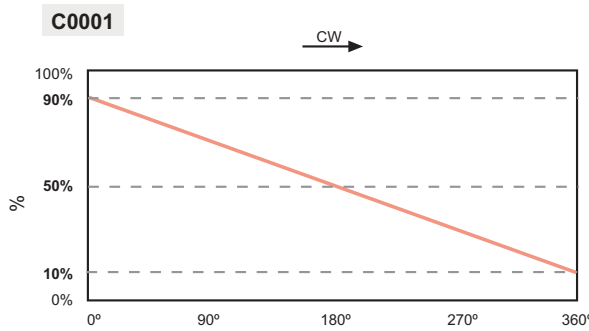
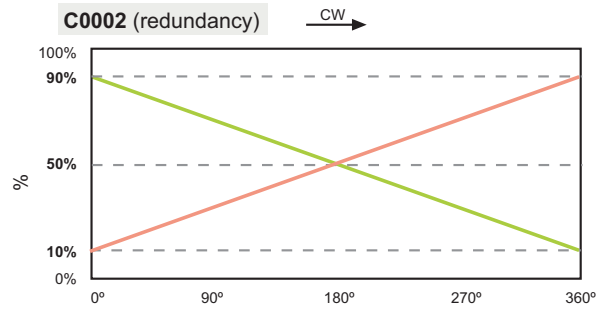
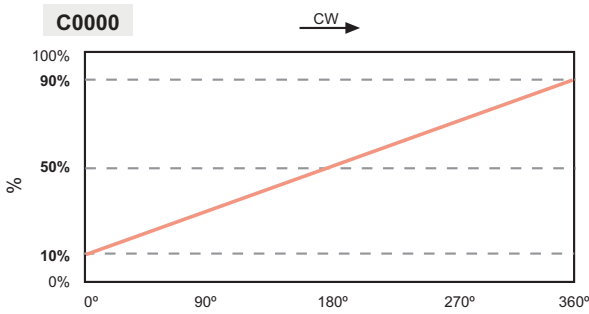
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Output.



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