

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.

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.

Piher Sensors & Controls SA

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

MEGGITT
smart engineering for
extreme environments

Magnetic rotary hollow shaft position sensor.

Contactless sensor. PST-360

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)

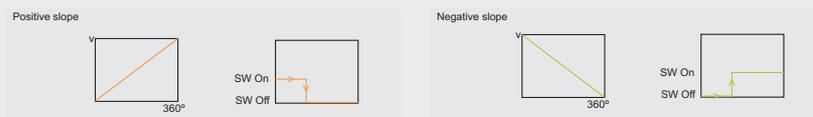
Other product configurations will be studied case by case.

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

Piher Sensors & Controls SA

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

MEGGITT
smart engineering for
extreme environments

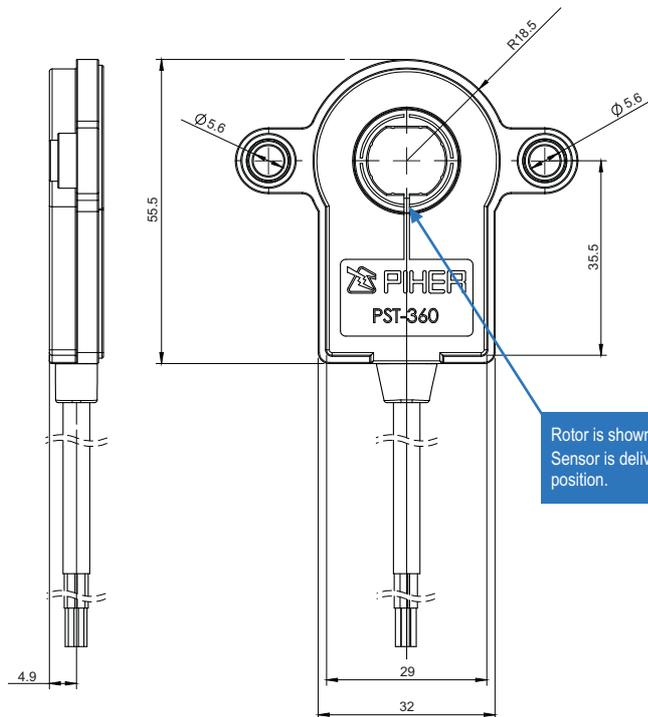
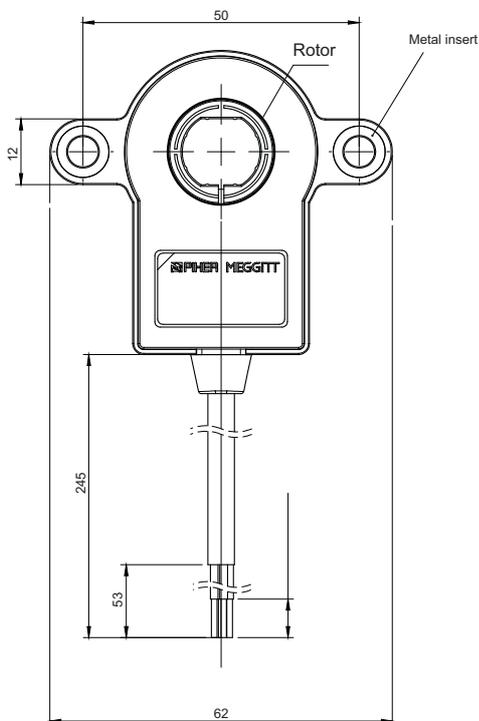
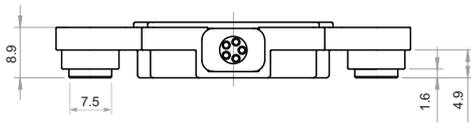
Magnetic rotary hollow shaft position sensor.

Contactless sensor. PST-360

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.



Piher Sensors & Controls SA

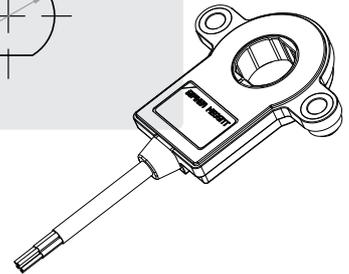
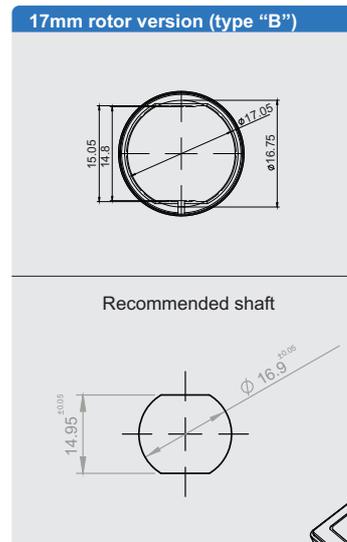
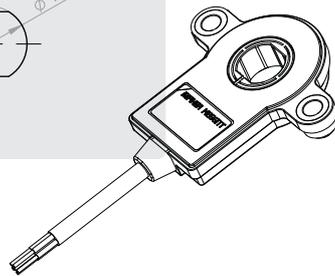
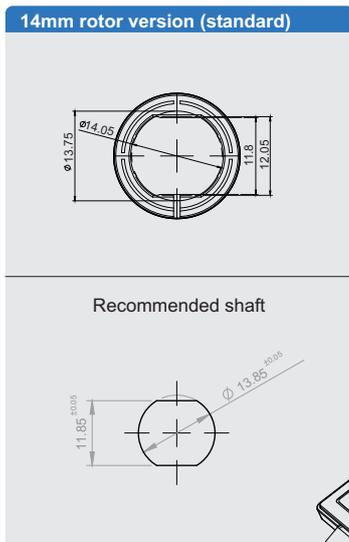
Our product competencies and services:
Potentiometers | Position / angle sensors | Rotary switches | Incremental encoders
Printed circuit resistors | Mechatronics | Value added assemblies



Magnetic rotary hollow shaft position sensor.

Contactless sensor. PST-360

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

Piher Sensors & Controls SA

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

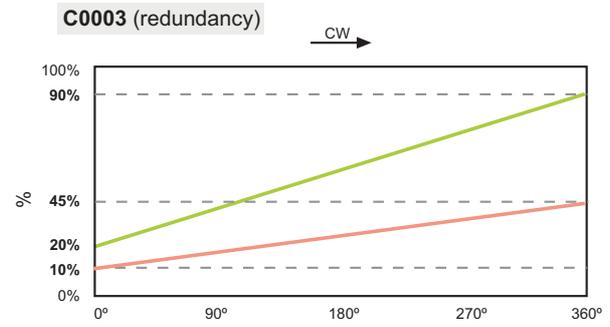
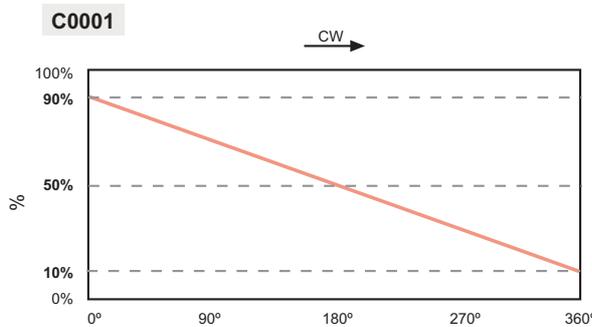
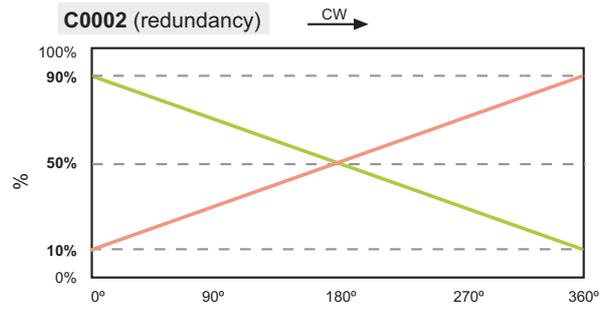
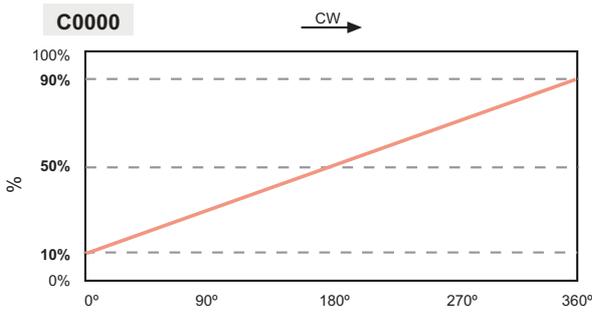
MEGGITT
smart engineering for
extreme environments



Magnetic rotary hollow shaft position sensor.

Contactless sensor. PST-360

Output.



Disclaimer

The product information in this catalogue is for reference purposes. Please consult for the most up to date and accurate design information.

Piher Sensors & Controls S.A., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Piher"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product described herein.

Piher disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Piher's terms and conditions of sale, including but not limited to the warranty expressed therein, which apply to these products.

No licence, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Piher.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Piher products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Piher for any damages arising or resulting from such use or sale. Please contact authorised Piher personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Information contained in and/or attached to this catalogue may be subject to export control regulations of the European Community, USA, or other countries. Each recipient of this document is responsible to ensure that usage and/or transfer of any information contained in this document complies with all relevant export control regulations. If you are in any doubt about the export control restrictions that apply to this information, please contact the sender immediately. For any Piher International Corp. Exports, Note: All products / technologies are EAR99 Classified commodities. Exports from the United States are in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited.



All Piher products can be adapted to meet customer's requirements.
Due to continuous process improvement, specifications are subject to change without notice.
Please always use the datasheets published at our website www.piher.net for the most up-to-date information.

v220616

Piher Sensors & Controls SA

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

Contact

piher.sales@meggitt.com

www.piher.net
www.meggitt.com

MEGGITT
smart engineering for
extreme environments