



PST-360

Through shaft
contactless sensor

DESCRIPTION

Piher has released a breakthrough in through / hollow shaft position sensors which 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.**

Piher's new PST-360 features a unique non-contacting technology that senses the shaft's position over 360 degrees with accuracy up to $\pm 0.5\%$. This device can be programmed with full scale output over smaller angles. The output is selectable between Analog, PWM and SPI. A programmable switch signal output channel has also been incorporated (useful for multi-turn applications). Further, Piher's technology keeps its position even after a power interruption.

For more complete information including drawings go to www.piher.net or contact your nearest Piher supplier.

STANDARD SPECIFICATIONS

- Linearity*: $\pm 1\%$ (0.5% upon request)
- Simple & Robust Magnetic Design
- Angular Range: programmable from 15° to 360°
- Programmable Linear Transfer Characteristic
(positive slopes & one negative slope can be programmed in the same transfer characteristic)
- Angular Resolution
(depends on electrical angle and rotational speed)
 - Analog & PWM: up to 12 bits
 - Serial Protocol (SPI): up to 14 bits
- Different redundancy options available
- Self-Diagnostic features
- Rotational life: virtually unlimited
(depending on application and mounting)
- Operating temperature: up to -40°C to +125°C
(others upon request)
- Over voltage protection and reverse voltage protection.
- Supply voltage: 5V/12V/15V $\pm 10\%$ (others upon request)
- Supply current
 - Typ 8.5mA for single version
 - Typ 17mA for redundant version
- IP67 (electronics)
- Custom cabling & connector configurations

* Ferromagnetic materials close to the sensor (i.e. shaft, mounting surface) may affect the sensor linearity. Please contact Piher for further support.

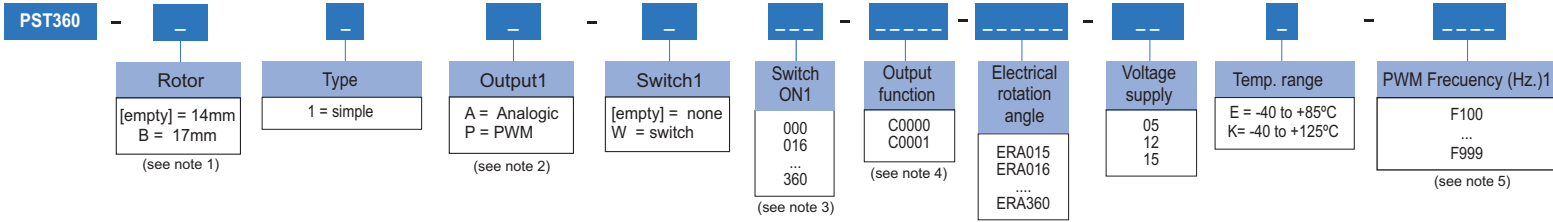
APPLICATION EXAMPLES

- **Pivot point angle sensing for all applications**
- Off Road/Highway Steering
- Pedal Position Sensing
- Agricultural Machinery hydraulic lift arms, scoops, articulations/joints
- Forklifts/Material Handling
- Industrial Pumps
- Robotics

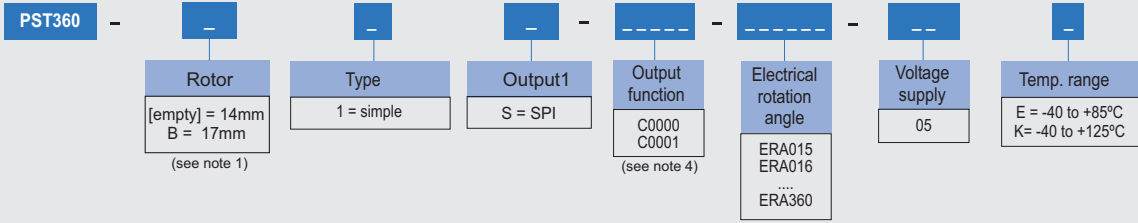


HOW TO ORDER

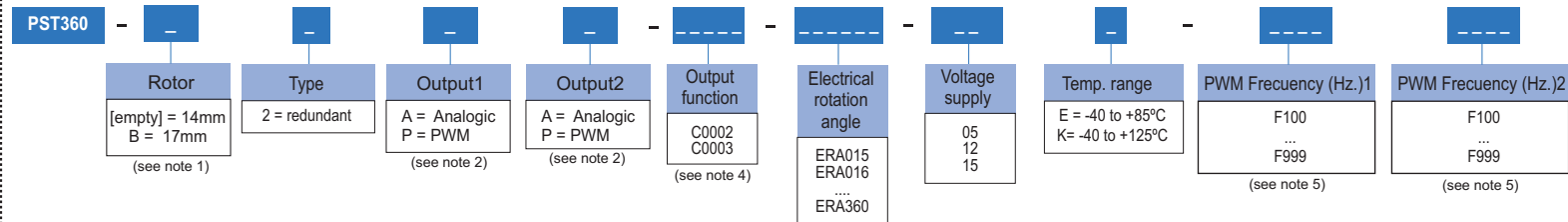
Simple output (analog / PWM)



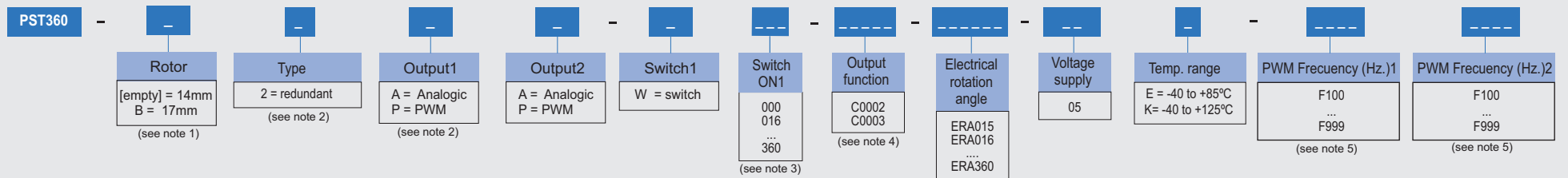
Simple output (SPI)



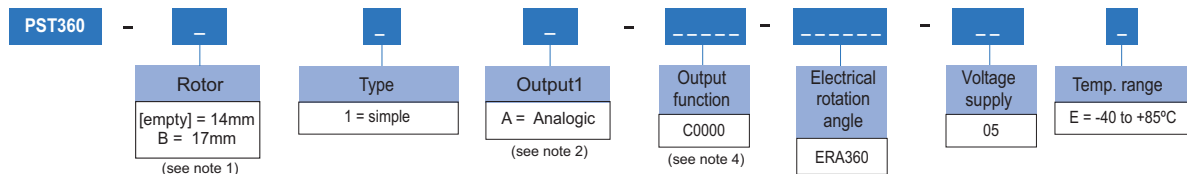
Redundant output (analog / PWM) without switch



Redundant output (analog / PWM) with switch

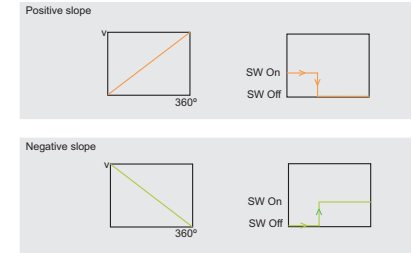


Simple output analog / no housing



- (1) Other rotors upon request
- (2) The analog output is a ratiometric output, proportional to:
 - 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.

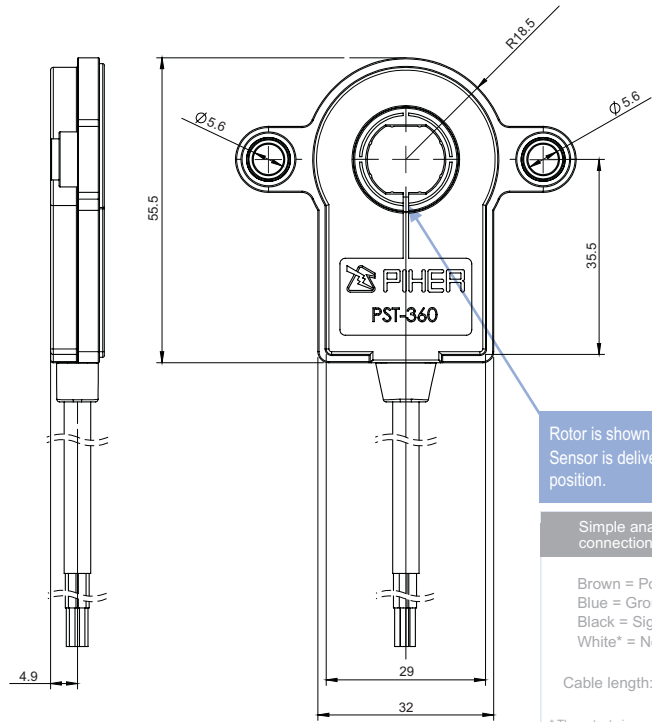
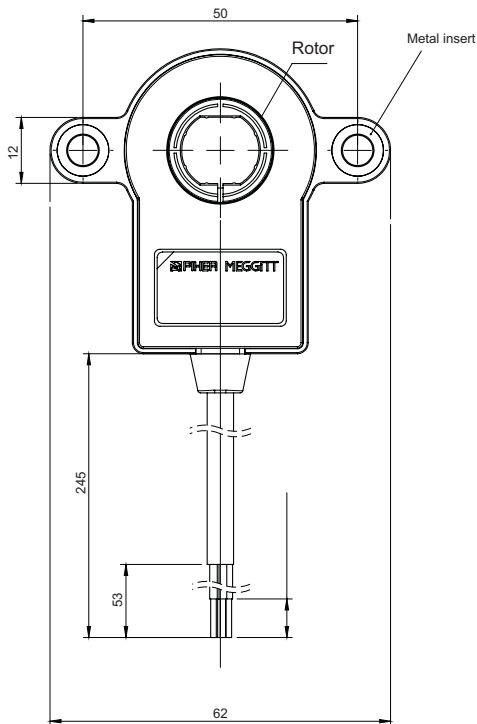
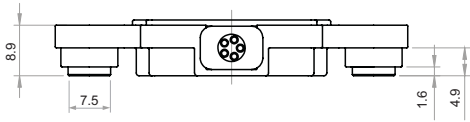
Switch function diagram:



- (4) Other output functions available upon request. In the How To Order reference, enter **CXXXX** meanwhile the new output function reference is not defined.
- (5) Leave empty only if no applicable. Default frequency is 200 Hz

Other product configurations will be studied case by case.

DIMENSIONS



Rotor is shown at zero position.
Sensor is delivered at random position.

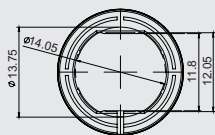
Simple analog output connection scheme

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

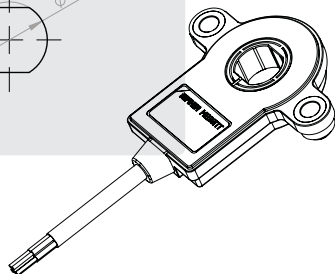
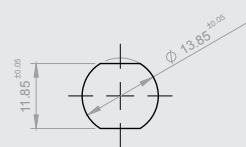
Cable length: 245mm

* The output pin needs to be connected to the ground

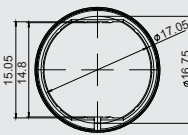
14mm Rotor (standard)



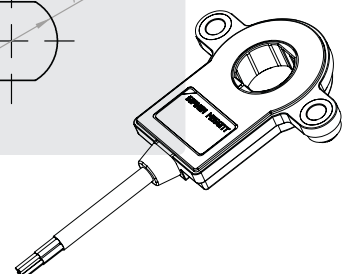
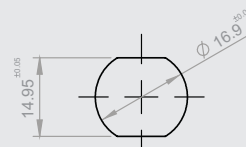
Recommended shaft



17mm Rotor (type "B")



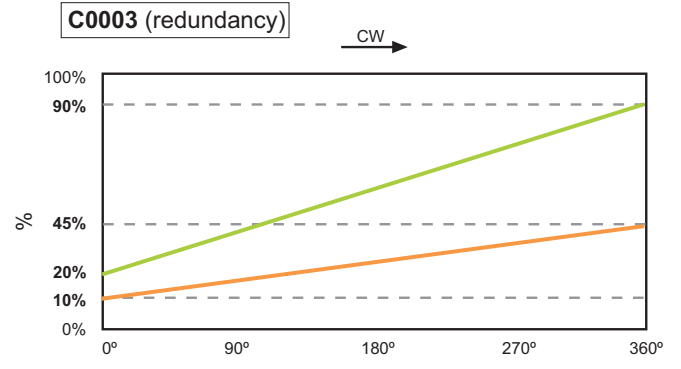
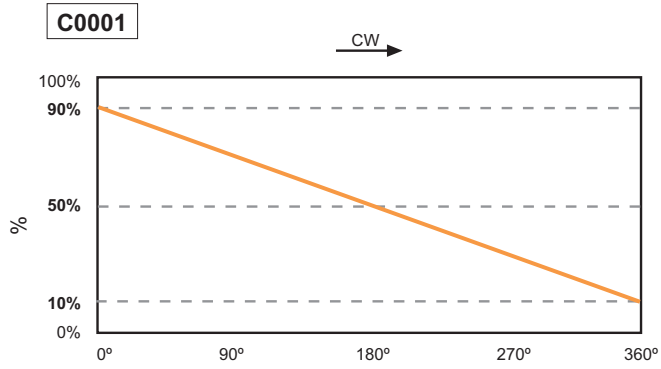
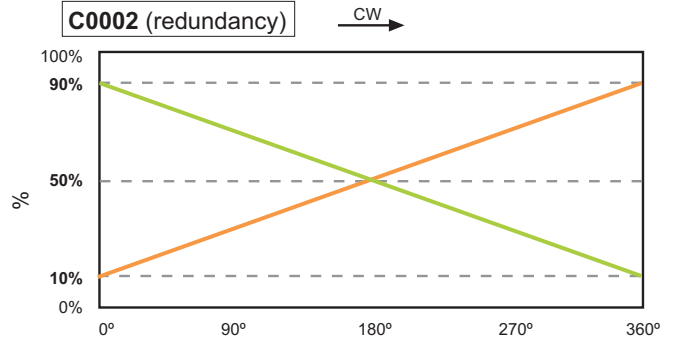
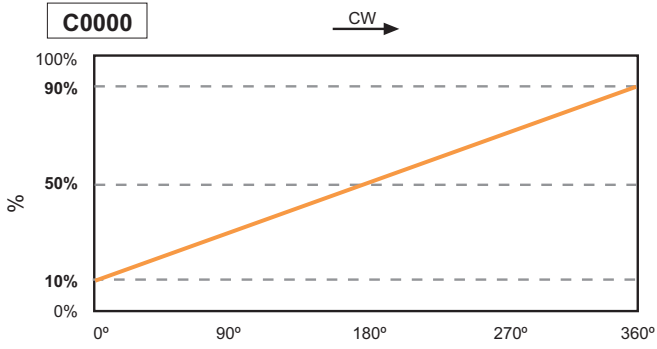
Recommended shaft



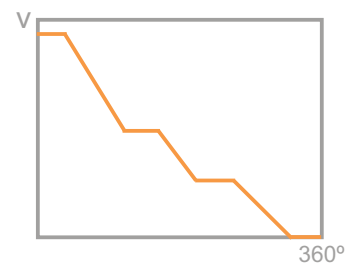
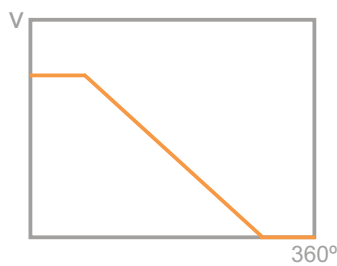
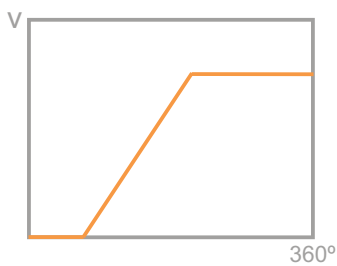
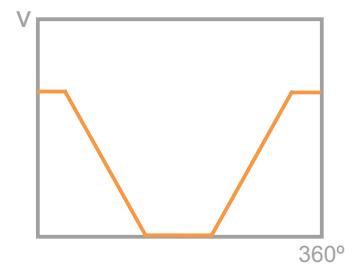
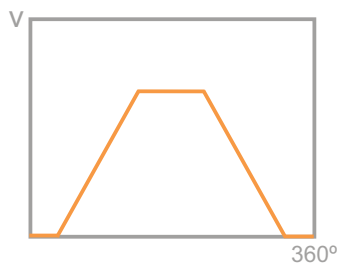
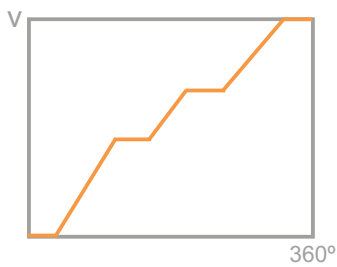
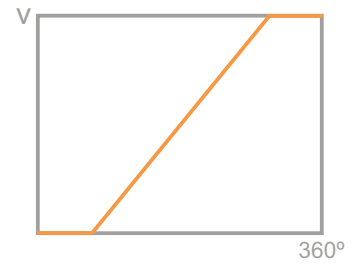
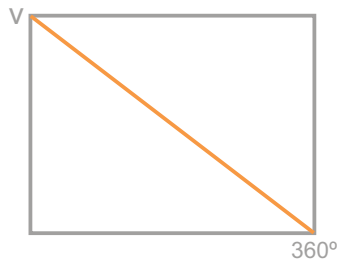
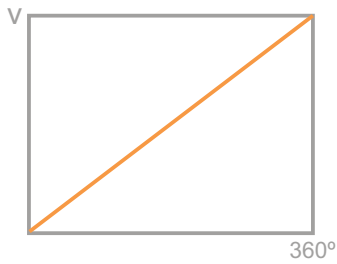
HOW TO ASSEMBLE THE SENSOR - RECOMMENDED INSTRUCTIONS

- 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)

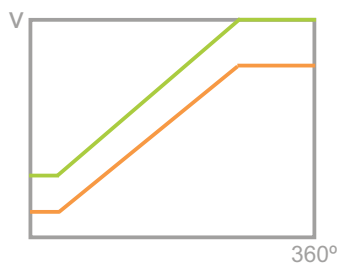
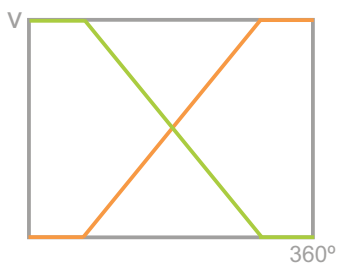
STANDARD OUTPUT FUNCTIONS



OUTPUT FUNCTION EXAMPLES



Redundant examples:



Disclaimer

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

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