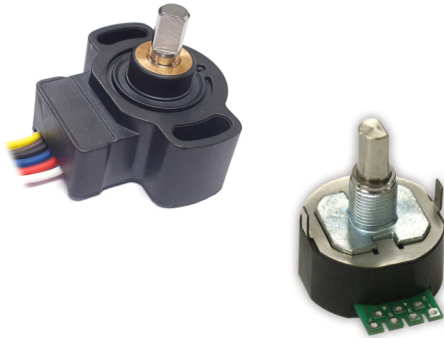


PSC-360

Hall-Effect End-of-Shaft Rotary Position Sensor

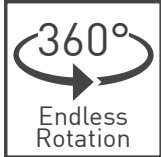


KEY FEATURES



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.



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.



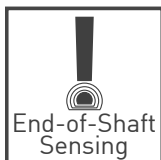
Made for harsh environments

The rugged package protects the sensor from dust, moisture, vibration and extreme temperatures for usage in the most demanding environments.



Durable and robust design

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



Integrated shaft

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



Adaptable to your requirements

Programmable transfer function and switch outputs as well as different output protocols and redundancy levels available.

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 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.

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

PSC-360

Hall-Effect End-of-Shaft Rotary Position Sensor

MECHANICAL SPECIFICATIONS

| | PSC-360 | PSC-360U |
|------------------|-------------------------|----------|
| Rotational life | Up to 50.000.000 cycles | |
| Mechanical range | 360° (endless rotation) | |
| Shaft diameter | 6mm | 6,35mm |

ELECTRICAL SPECIFICATIONS

| | PSC-360 | PSC-360U |
|-----------------------------|--|---|
| Linearity ¹ | ±1% absolute (±0.5% on request) | |
| Electrical angular range | Programmable from 15° to 360° | |
| Output protocols | Analog (Ratiometric), PWM Serial Protocol (SPI) upon request SENT upon request | Analog (Ratiometric), PWM Serial Protocol (SPI) SENT upon request |
| Output | Simple Redundant Full-redundant | |
| Switch output | On request | Programmable |
| Resolution | Analog, PWM SPI Up to 12 bit n/a | Up to 12 bit Up to 14 bit |
| Supply voltage ² | 5V ±10% 7V to 25V | 5V ±10% 12V ±10% 15V ±10% |
| Supply current | Single version Redundant version Typ 8.5 mA Typ 17 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 Other specifications available

ENVIRONMENTAL SPECIFICATIONS

| | |
|--|------------------------------|
| Operating and storage temperature ¹ | -40° to +125°C |
| Shock | 50g |
| Vibration | 5-2000 Hz; 20g; Amax 0,75 mm |

¹ Other specifications available

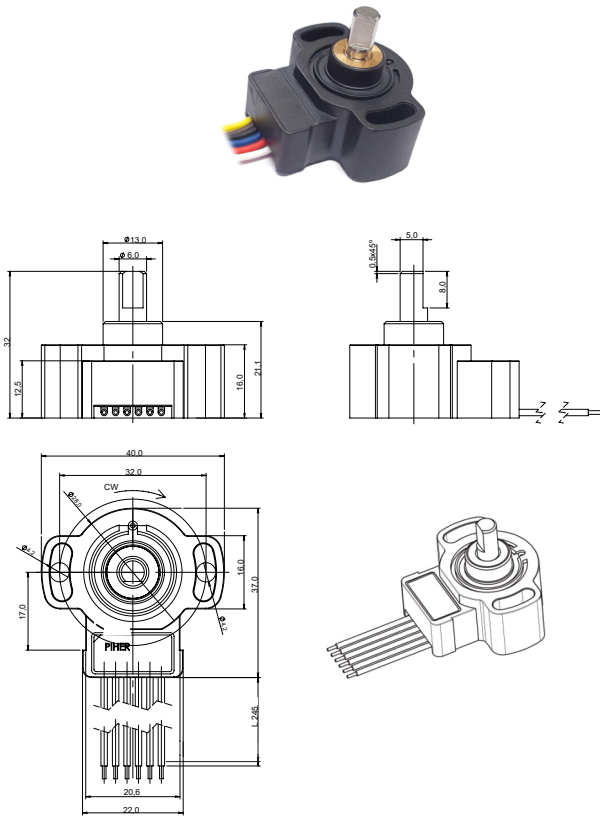
PSC-360

Hall-Effect End-of-Shaft Rotary Position Sensor

DIMENSIONS (MM)

PSC-360G2

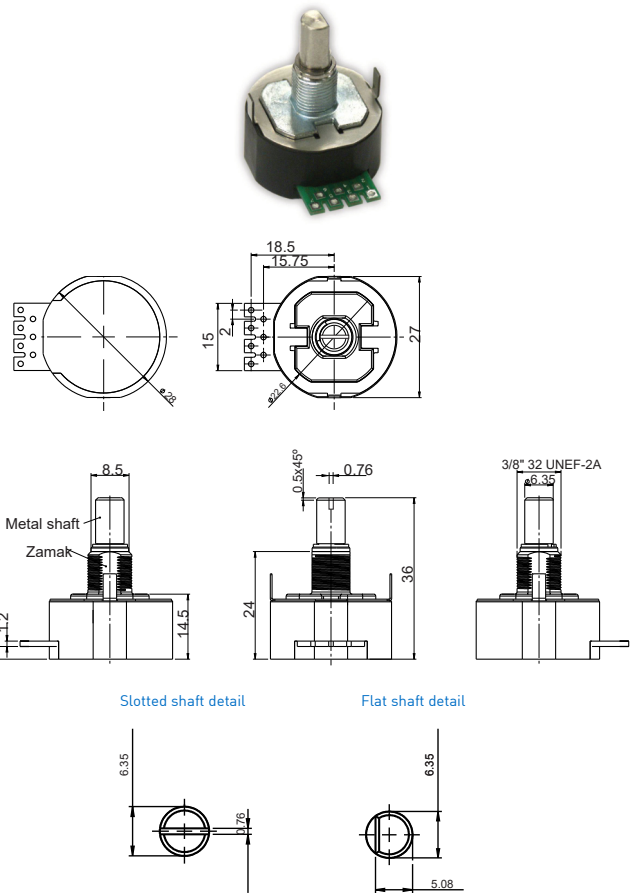
PSC-360U - panel mount version



Sensor shown with the shaft at zero position.



Download the STEP file here:
<https://piher.net/piher/?p=830>



Sensor shown with the shaft at 0° position. Nut and washer included.



Download the STEP file here:
<https://piher.net/piher/?p=1830>

Sensor delivered at random position. Assembly of any type of connector on request.

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

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

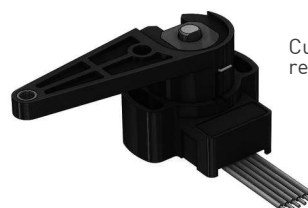
- Brown = Power supply
- Blue = Ground
- Black = Signal output
- White = Not used
- Grey = Not used

Fly leads with Wires: 0.35mm²
 TXL SAE J1128

FOR CUSTOM SOLUTIONS CONTACT PIHER SENSING SYSTEMS



Custom design with integrated connector.



Custom design with return spring lever.

PSC-360

Hall-Effect End-of-Shaft Rotary Position Sensor



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

Simple Output - Analog and PWM

| PSC360G2 | - | F | 1 | - | C_____ | - | ERA____ | - | ___ | K | - | _____ |
|----------|----------|------------|-------------------------|------------------------------|--|-----------------------------|---------------------|--|-----|---|---|-------|
| Series | Shaft | Type | Output ¹ | Output function ² | Electric rotational angle ³ | Voltage supply | Temp. range | PWM Frequency Hz ⁴ | | | | |
| | F = flat | 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 | | | | |

Redundant output - Analog and PWM

| PSC360G2 | - | F | 2 | - | ___ | - | C_____ | - | ERA____ | - | ___ | K | - | _____ | _____ |
|----------|----------|---------------|--------------------------|------------------------------|--|-----------------------------|---------------------|------------------------------------|------------------------------------|---|-----|---|---|-------|-------|
| Series | Shaft | Type | Output ¹ | Output function ² | Electric rotational angle ³ | Voltage supply | Temp. range | PWM Frequency Hz. (1) ⁴ | PWM Frequency Hz. (2) ⁴ | | | | | | |
| | F = flat | 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

| PSC360G2 | - | F | 3 | - | ___ | - | C_____ | - | ERA____ | - | 05 | K | - | _____ | _____ |
|----------|----------|--------------------|--------------------------|------------------------------|--|----------------|---------------------|------------------------------------|------------------------------------|---|----|---|---|-------|-------|
| Series | Shaft | Type | Output ¹ | Output function ² | Electric rotational angle ³ | Voltage supply | Temp. range | PWM Frequency Hz. (1) ⁴ | PWM Frequency Hz. (2) ⁴ | | | | | | |
| | F = flat | 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 The analog output is ratiometric, proportional:

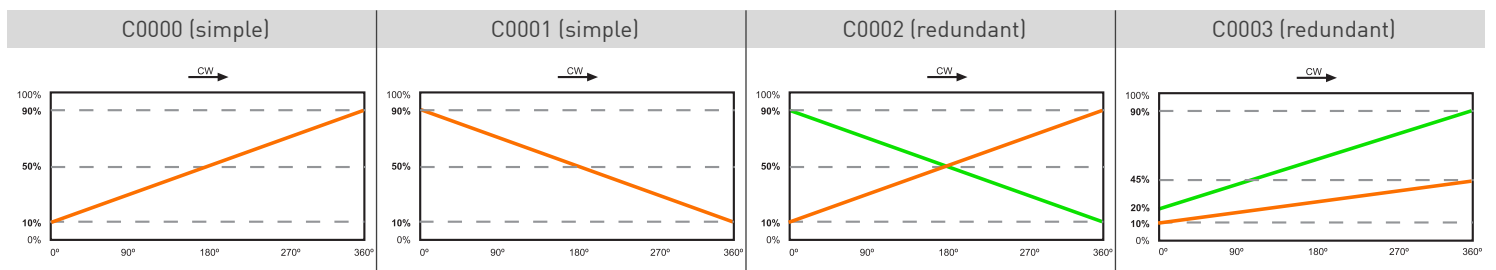
- for supply voltage "5V" to input voltage;
- for supply voltage "RE" to 5V.

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 Leave empty if not applicable. Default frequency is 200 Hz

EXAMPLE OUTPUT FUNCTIONS



PSC-360U Panel Mount Version



HOW TO ORDER - PANEL MOUNT VERSION (Example: PSC360U-F1A-C0000-ERA360-05E)

Simple Output - Analogic and PWM

| PSC360U | - | _ | 1 | - | - | - | - | C_____ | ERA____ | - | ___ | - | ___ |
|---------|----------------------------------|------------|-------------------------|------------------------------|-------------------------------------|------------------------------|--|---------------------------------|---|---|-----|---|-----|
| Series | Shaft | Type | Output ¹ | Switch | Switch position ² | Output function ³ | Electric rotational angle ⁴ | Voltage supply | Temp. range | | | | |
| | F = flat shaft L = slot shaft | 1 = simple | A = analogic P = PWM | [empty] = none W = switch | [empty] 000 016 ... 360 | C0000 C0001 | ERA040 ERA041 ... ERA360 | 05 = 5V 12 = 12V 15 = 15V | E = -40°C to +85°C K = -40°C to +125°C | | | | |

Simple output - SPI

| PSC360U | - | _ | 1 | S | - | C_____ | ERA____ | - | ___ | - | ___ |
|---------|----------------------------------|------------|---------|------------------------------|--|---------------------------------|---|---|-----|---|-----|
| Series | Shaft | Type | Output | Output function ³ | Electric rotational angle ⁴ | Voltage supply | Temp. range | | | | |
| | F = flat shaft L = slot shaft | 1 = simple | S = SPI | C0000 C0001 | ERA040 ERA041 ... ERA360 | 05 = 5V 12 = 12V 15 = 15V | E = -40°C to +85°C K = -40°C to +125°C | | | | |

- Annotations:
- The analog output is rati...
- For supply voltage 5V:
- For supply voltage 12V:
 - Leave empty if not applic...
 - Other output functions a...
function is not defined.
 - Models with ERA < 40° av...
 - Leave empty if not applic...

Redundant output - Analogic and PWM

| PSC360U | - | _ | 2 | -- | - | - | - | - | - | - | C_____ | ERA____ | - | ___ |
|---------|----------------------------------|---------------|--------------------------|------------------------------|-------------------------------------|------------------------------|-------------------------------------|------------------------------|--|---------------------------------|--------|---------|---|-----|
| Series | Shaft | Type | Output ¹ | Switch1 | Switch1 position ² | Switch2 | Switch2 position ² | Output function ³ | Electric rotational angle ⁴ | Voltage supply | | | | |
| | F = flat shaft L = slot shaft | 2 = redundant | AA= analogic PP = PWM | [empty] = none W = switch | [empty] 000 016 ... 360 | [empty] = none W = switch | [empty] 000 016 ... 360 | C0002 C0003 | ERA040 ERA041 ... ERA360 | 05 = 5V 12 = 12V 15 = 15V | | | | |

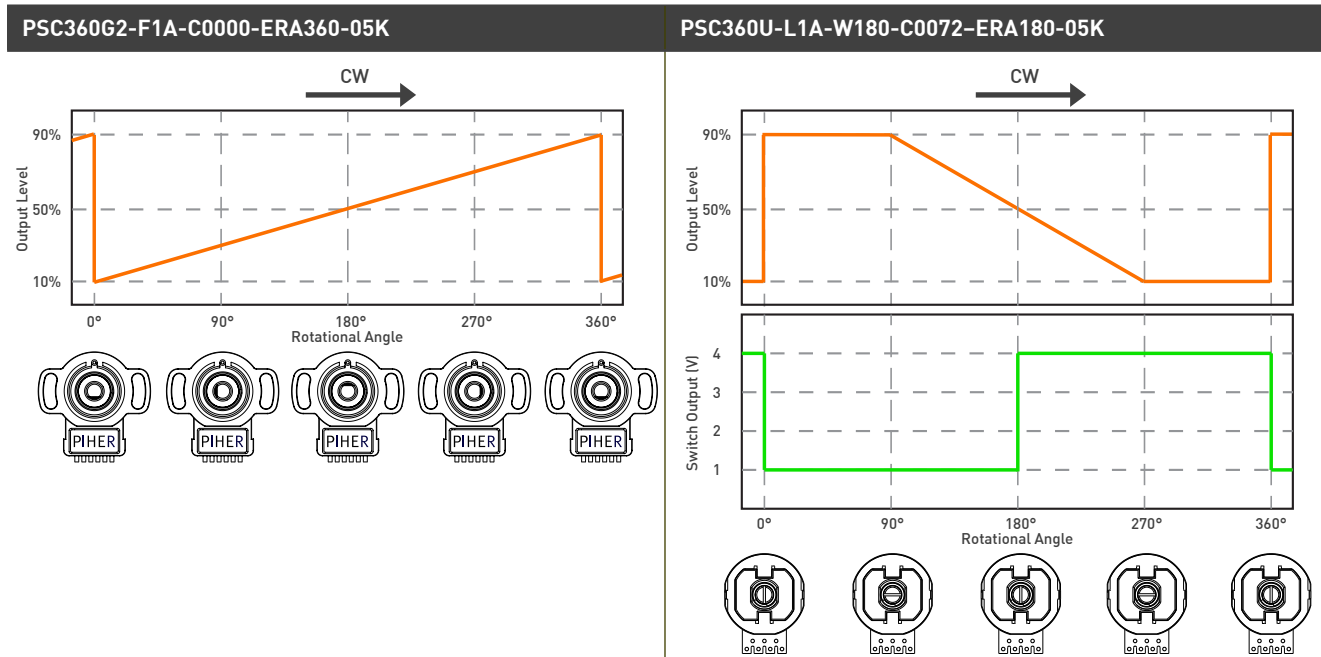
Full-redundant output - Analogic and PWM

| PSC360U | - | _ | 3 | -- | - | - | - | - | - | - | C_____ | ERA____ | - | ___ |
|---------|----------------------------------|---------------|--------------------------|------------------------------|-------------------------------------|------------------------------|-------------------------------------|------------------------------|--|---------------------------------|--------|---------|---|-----|
| Series | Shaft | Type | Output ¹ | Switch1 | Switch1 position ² | Switch2 | Switch2 position ² | Output function ³ | Electric rotational angle ⁴ | Voltage supply | | | | |
| | F = flat shaft L = slot shaft | 3 = redundant | AA= analogic PP = PWM | [empty] = none W = switch | [empty] 000 016 ... 360 | [empty] = none W = switch | [empty] 000 016 ... 360 | C0002 C0003 | ERA040 ERA041 ... ERA360 | 05 = 5V 12 = 12V 15 = 15V | | | | |

PSC-360

Hall-Effect End-of-Shaft Rotary Position Sensor

OUTPUT VOLTAGE DEPENDING ON MAGNET POSITION



Custom output functions with up to 4 programmable points on request.

OUR ADVANTAGE

- ▶ Leading-edge innovative position sensing solutions
 - ▷ Contactless (Hall-effect and Inductive Technology)
 - ▷ Contacting (Potentiometers, Printed Electronics)
- ▶ Engineering design-in support
- ▶ 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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