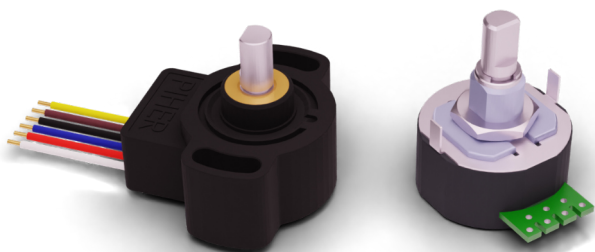


# PSC-360

## Hall-Effect End-of-Shaft Rotary Position Sensor



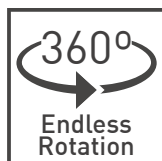
Available with  
**CAN**

### 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.



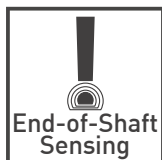
#### Made for harsh environments

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 can 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.

Multi-turn configurations are available on request.

### 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 <sup>1</sup>	±1% absolute (±0.5% on request)	
Electrical angular range	Programmable from 15° to 360°	
Output protocols	Analog (Ratiometric), PWM Serial Protocol (SPI) upon request CAN SAE J1939 CAN OPEN	Analog (Ratiometric), PWM Serial Protocol (SPI)
Output	Simple Redundant Full-redundant	
Switch output	On request	Configurable
Resolution	CAN, Analog, PWM SPI	Up to 12 bit Up to 14 bit
Supply voltage <sup>2</sup>	5V ±10% 7V to 15V	5V ±10% 12V ±10% 15V ±10%
Supply current	Single version Redundant version CAN version	Typ 8.5 mA Typ 17 mA Typ 47 mA
Voltage protection	±10V	
Self-diagnostic features	yes	

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

<sup>2</sup> Voltages up to 25V possible on request.

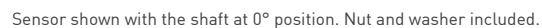
### ENVIRONMENTAL SPECIFICATIONS

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

<sup>1</sup> Other specifications available

## Hall-Effect End-of-Shaft Rotary Position Sensor

### PSC-360U - panel mount version



# PSC-360

## Hall-Effect End-of-Shaft Rotary Position Sensor



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

#### Simple Output - Analogic, PWM and CAN

PSC360G2 - F 1 - - C - ERA - - K - -

Series	Shaft	Type	Output <sup>1</sup>	Output function <sup>2</sup>	Electric rotational angle <sup>3</sup>	Voltage supply <sup>4</sup>	Temp. range	PWM Frequency Hz <sup>5</sup>
	F = flat	1 = simple	A = analogic P = PWM J = CAN SAE J1939 O = CAN OPEN	C0000 C0001	ERA040 ERA041 ... ERA360	05 = 5V ±10% RE = 7V-15V	K = -40°C to +125°C	[empty] = 200Hz F100 = 100Hz F101 = 101Hz ... F999 = 999Hz

#### Redundant output - Analogic, PWM and CAN

PSC360G2 - F 2 - - C - ERA - - K - -

Series	Shaft	Type	Output <sup>1</sup>	Output function <sup>2</sup>	Electric rotational angle <sup>3</sup>	Voltage supply <sup>4</sup>	Temp. range	PWM Frequency Hz. [1] <sup>5</sup>	PWM Frequency Hz. [2] <sup>5</sup>
	F = flat	2 = redundant	AA= analogic PP = PWM JJ = CAN SAE J1939 OO = CAN OPEN	C0002	ERA040 ERA041 ... ERA360	05 = 5V ±10% RE = 7V-15V	K = -40°C to +125°C	F100 F101 ... F999	F100 F101 ... F999

#### Full-redundant output - Analogic and PWM

PSC360G2 - F 3 - - C - ERA - 05 K - -

Series	Shaft	Type	Output <sup>1</sup>	Output function <sup>2</sup>	Electric rotational angle <sup>3</sup>	Voltage supply <sup>4</sup>	Temp. range	PWM Frequency Hz. [1] <sup>4</sup>	PWM Frequency Hz. [2] <sup>4</sup>
	F = flat	3 = full-redundant	AA= analogic PP = PWM	C0002	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 Voltages up to 25V possible on request.  
5 Leave empty if not applicable. Default frequency is 200 Hz

### OUTPUT FUNCTIONS

ERA	Mechanical Rotational Angle
270 → 45°	180°
180 → 90°	180°
120 → 120°	180°
090 → 135°	180°
040 → 160°	180°
	200°
	225°
	240°
	270°
	315°

ERA	Standard	Inverted	Redundant
360°	C0000	C0001	C0002
270°	C0208	C0158	C0031
180°	C0007	C0072	C0036
120°	C0024	On request	C0032
90°	C0011		C0025
70°	C0150		C0149
60°	C0006		C0020
40°	C0026		C0123

Custom output functions on request.

# 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 <sup>1</sup>	Switch	Switch position <sup>2</sup>	Output function <sup>3</sup>	Electric rotational angle <sup>4</sup>	Voltage supply	Temp. range	PWM Frequency Hz <sup>5</sup>							
	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	[empty] = 200Hz F100 = 100Hz F101 = 101Hz ... F999 = 999Hz							

### Simple output - SPI

PSC360U	-	-	1	S	-	C _ _ _ _	-	ERA _ _ _	-	_ _	-	-
Series	Shaft	Type	Output	Output function <sup>3</sup>	Electric rotational angle <sup>4</sup>	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 ratiometric, proportional:
  - For supply voltage 5V: to input supply voltage.
  - For supply voltage 12V and 15V: to 5V.
- Leave empty if not applicable. Switch function diagram: see next page.
- Other output functions available, please check availability. Enter CXXX as long as the new output function is not defined.
- Models with ERA < 40° available on request
- Leave empty if not applicable. Default frequency is 200 Hz

### Redundant output - Analogic and PWM

PSC360U	-	-	2	--	-	-	-	-	-	C----	-	ERA----	-	--	-	-	-	----	----
Series	Shaft	Type	Output <sup>1</sup>	Switch1	Switch1 position <sup>2</sup>	Switch2	Switch2 position <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>						
	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	E = -40°C to + 85°C K = -40°C to +125°C	F100 F101 ... F999	F100 F101 ... F999						

### Full-redundant output - Analogic and PWM

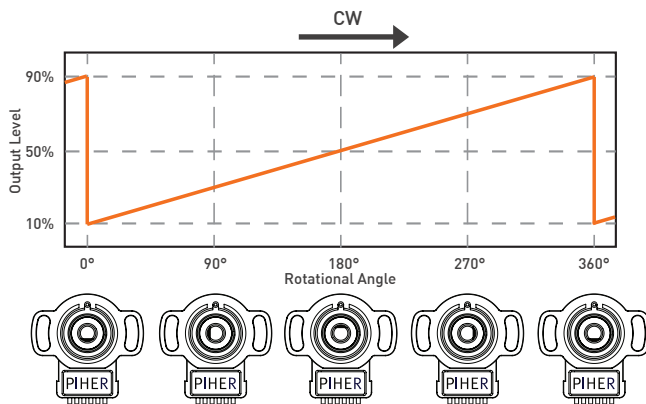
PSC360U	-	-	3	--	-	-	-	-	C----	-	ERA----	-	--	-	-	-	----	----
Series	Shaft	Type	Output <sup>1</sup>	Switch1	Switch1 position <sup>2</sup>	Switch2	Switch2 position <sup>2</sup>	Output function <sup>3</sup>	Electric rotational angle <sup>4</sup>	Voltage supply	Temp. range	PWM Frequency Hz. (1) <sup>5</sup>	PWM Frequency Hz. (2) <sup>5</sup>					
	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	E = -40°C to +85°C K = -40°C to +125°C	F100 F101 ... F999	F100 F101 ... F999					

# PSC-360

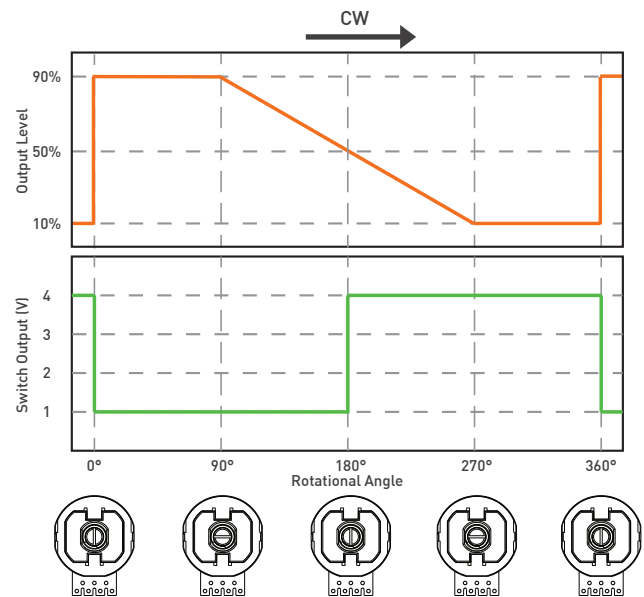
## Hall-Effect End-of-Shaft Rotary Position Sensor

### OUTPUT VOLTAGE DEPENDING ON MAGNET POSITION

PSC360G2-F1A-C0000-ERA360-05K



PSC360U-L1A-W180-C0072-ERA180-05K

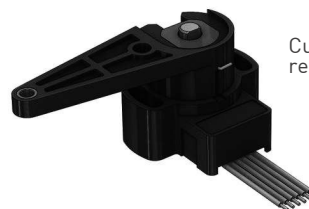


Custom output functions on request.

### CONTACT PIHER SENSING SYSTEMS FOR CUSTOM SOLUTIONS



Custom design with integrated connector.



Custom design with return spring lever.

### 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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