Enabling the Electronics Revolution

PIHER sensing systems
an Amphenol® company

PSCR-360

High-Precision Non-Contact Rotary Sensor

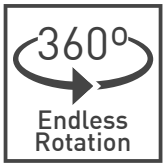
DESCRIPTION

The PSCR-360 rotary angle sensor delivers reliable, high-accuracy position feedback in a compact, roughly 28-millimeter diameter housing. Its contactless measurement principle ensures minimal wear and long operational life, even under demanding conditions. With high linearity (±0.5%) and a 12-bit resolution, the sensor provides precise and stable output signals tailored to your application's requirements. The integrated flange simplifies installation and alignment, making it easy to retrofit into existing systems. Full redundancy options enhance safety-critical operations, while its cost-effective design helps maintain project budgets. The PSCR-360 is a versatile solution that combines durability, accuracy, and affordability.

The sensor also features robust construction that resists shock, vibration, and wide temperature ranges, which is why it's commonly used in industrial automation, off-highway vehicles, medical equipment, and other demanding applications.

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 IP65 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 million of cycles.

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

POTENTIAL APPLICATIONS

Industrial

> Robotics and automation feedback
> Valve and actuator position monitoring
> Conveyor operation

Transportation & Agriculture & Construction

> Throttle and brake pedal position
> Suspension and chassis height detection
> Fork height and mast tilt
> Hitch position
> Crane jib and boom angle
> Position sensing for boom arms, loaders, and other articulated mechanisms
> Angle detection in control levers for tractors, harvesters, and construction equipment
> Steering angle measurement in passenger cars and commercial vehicles

Renewable Energy

>Wind turbines blade pitch and yaw

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MECHANICAL SPECIFICATIONS	
Rotational life	Up to 50.000.000 cycles
Mechanical range	360° (endless rotation)
Shaft diameter	6mm
Max. mounting torque	2.5Nm
Bearing type	Plain

ELECTRICAL SPECIFICATIONS	
Linearity*	±0.3% independent Typ.
Electrical angular range	Configurable from 15° to 360°
Output Ratiometric (when 5V supply) RE	 10% to 90% of Supply Voltage 0.5 to 4.5 VDC
Angular resolution	12 bit
Supply voltage	4.5 to 5.5 V / 8 to 35 V (RE)
Supply current Ratiometric RE	 8mA 10mA
Over / Reverse voltage protection Ratiometric RE	 +15/-10V +30V/-30V
Self-diagnostic features	Yes

* Ferromagnetic materials and external magnetic fields close to the sensor (i.e. shaft, mounting surface) may affect the sensor's linearity.

ENVIRONMENTAL SPECIFICATIONS	
Operating and storage temperature[1]	-40° to +80°C
Sealing	IP65

[1] Other specifications on request

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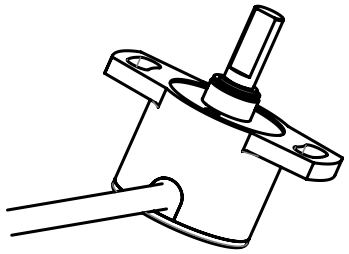
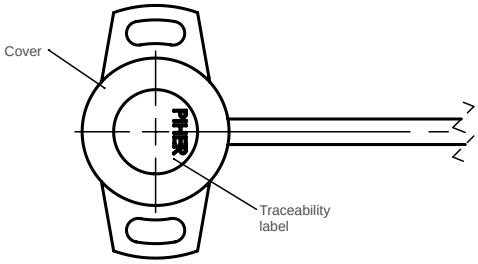
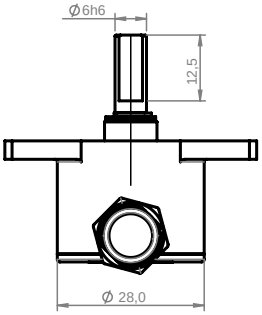
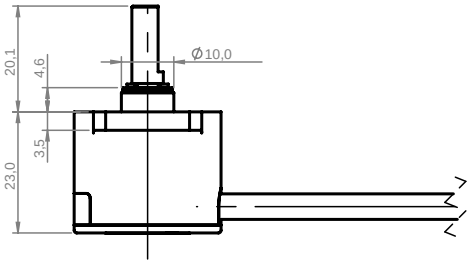
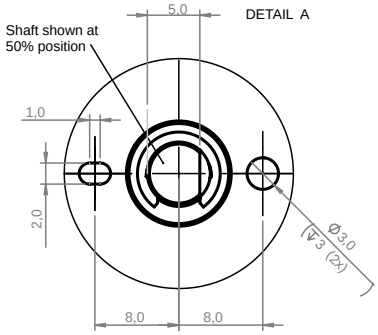
DIMENSIONS (MM)

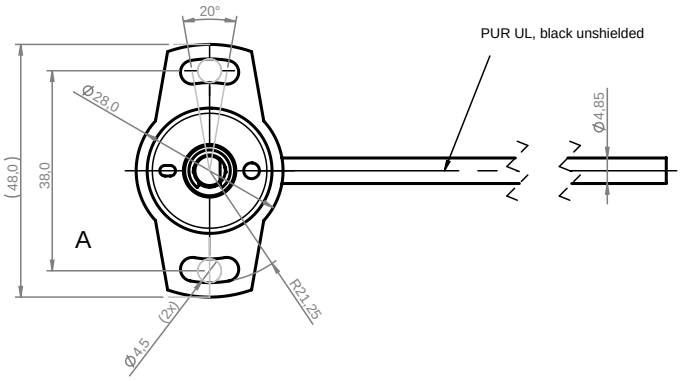












WIRING

Output function	3-wire cable (AWG20) Length 1000mm	4-wire cable (AWG20) Length 500mm	6-wire cable (AWG20) Length 500mm
Simple S / I	✓		
Redundant		✓	
Full Redundant			✓

CONNECTION SCHEME

Color	Simple output	Color	Redundant output	Color	Full-redundant output
Red	VCC	Brown	VCC	Red	VCC2
Black	GND	White	GND	Black	GND2
Brown	Output 1	Green	Output 1	Brown	VCC1
-	n/a	Yellow	Output 2	Green	Output 1
-	n/a	-	n/a	Yellow	Output 2
-	n/a	-	n/a	White	GND1

A connector assembly is available upon request. The sensor will be delivered with the appropriate number of wires for the selected output type. Drawings may not be to scale.

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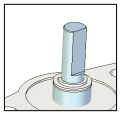
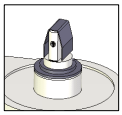
HOW TO ORDER (Example: PSCR360-F-A-120S-05)

PSCR360	-	_	-	_	-	___	_	-	__
Series		**Actuator**[1]		**Output protocol**[2]		**Electric rotational angle**[3]	**Output function**[4]		**Voltage supply**
		F = flat H = spring fit		A = analogic		030 050 070 090 120 180 270 360	S = standard (CW) I = inverted (CCW) R = redundant F = full redundant		05 = 5 VDC ±10% RE = 8 to 35 V

1



Standard



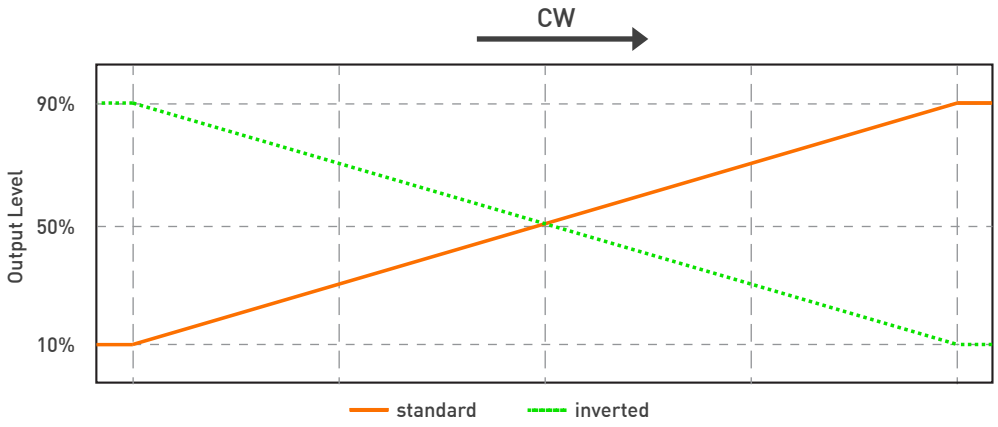
Spring-loaded

2 The analog output is ratiometric, proportional:
- for supply voltage "5V" to input voltage;
- for supply voltage "RE" to 5V.

3 Models with ERA ‹ 30° available on request.

4 "I" models must use "RE" voltage supply. Other output functions available (PWM, SPI, 4-20mA, 0-10V, CAN), please check availability.

OUTPUT VOLTAGE DEPENDING ON SHAFT POSITION



ERA		Mechanical Rotational Angle		
360	→	-180°	0°	+180°
270	→	-135°	0°	+135°
180	→	-90°	0°	+90°
120	→	-60°	0°	+60°
090	→	-45°	0°	+45°
070	→	-35°	0°	+35°
050	→	-25°	0°	+25°
030	→	-15°	0°	+15°

ERA = electrical rotation angle. The electrical rotation angle is the part of the rotation where the rotor's position affects the sensor's output.
Custom output functions available on request.

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One Stop Shop

Our Advantage

Engineering design-in support

Output customization

Cable harness and connector assembly

One-stop solution provider for different position sensing technologies

- Hall-effect
- Inductive
- Resistive
- TMR
- Printed electronics

Global footprint

Manufacturing capabilities for high and low volume programs

Diverse portfolio of standard and customized sensors: Position, Current, Tilt and Speed.

IATF 16949 Automotive Quality Management CERTIFIED

ISO 9001 Quality Management Systems CERTIFIED

ISO 14001 ISO 45001 BUREAU VERITAS Certification

RoHS REACH compliant

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Please always use the latest updated datasheets and 3D models published on our website.

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