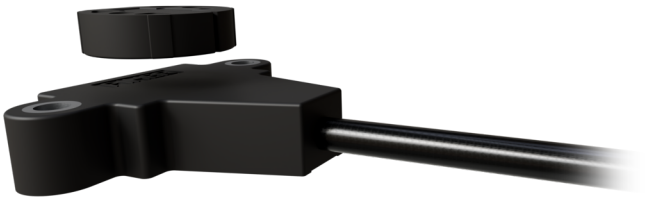
Enabling the Electronics Revolution

PIHER sensing systems
an Amphenol® company

PSCR-2P

2-piece Non-Contacting Angular Position Sensor



Available with CANopen®

DESCRIPTION

The PSCR-2P rotary position sensor provides genuine touchless sensing for demanding industrial and vehicle environments, featuring a low-profile and robust magnetic design.

The magnet and sensor module are housed separately allowing them to be placed anywhere along the pivoting shaft. This design enables easy mounting, resulting in additional cost savings during production. Additionally, by eliminating wear and tear from radial forces, the product's reliability is significantly enhanced, offering a **virtually unlimited lifespan.**

Engineered for versatile applications, this encoder provides highly accurate angular measurements even in harsh conditions, thanks to its rugged construction and advanced engineering. The PSCR-2P is ideal for industrial automation, vehicle control systems, and medical devices, delivering optimal performance with minimal wear and an extended service life.

Key features include customizable electrical angles, multiple output options, and robust environmental resistance, including IP-rated protection against dust and moisture.

KEY FEATURES

Touchless Sensor

True touchless operation
Without any internal or external gears or linkages the sensor is easily assembled and calibrated and free from wear and tear over lifetime.

Virtually unlimited life

Unlimited mechanical life
The separation of electronics and magnet module allows for a virtually unlimited lifetime independent of number of revolutions.

IP67 IP69K

Made for harsh environments
IP69K sealing, high operating temperature range as well as shock and vibration resistance allow the use in the most demanding environments.

Compact size

Compact and low profile package
Without the need for a shaft the sensor is provided in a exceptionally compact and low profile package that fits in space contraint applications.

Fully customizable

Adaptable to your requirements
Custom mechanical design, programmable transfer function and switch outputs as well as different output protocols and redundancy levels available.

POTENTIAL APPLICATIONS

Off-Highway
› Bucket position
› Pedal / throttle position
› Hitch position
› Bus suspension / kneeling position
› Transmission systems

Automotive
› Gear selector

Home & Building Automation
› HVAC damper actuator monitoring

Marine
› Trim / tilt position

Industrial
› Robotic / hydraulic arm position
› Valve monitoring
› IoT modules
› Vacuum circuit breaker monitoring

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MECHANICAL SPECIFICATIONS	
Life	Virtually unlimited
Nominal air gap	3mm, between plastic parts
Maximum air gap	5mm, higher on request
Maximum allowed radial offset	±2mm

ELECTRICAL SPECIFICATIONS		
Linearity[1]		±0.3% independent Typ.
Angular range		Programmable from 60 to 360 degrees
Output protocol		Analog (Ratiometric), CAN Open. Upon request: PWM, 4-20mA, 0-10V, SPI.
Output		Simple Redundant Full-redundant
Switch Output		On request
Resolution	Analog CAN	12 bit 16 bit from µC
Supply voltage[2]		05: 5V±10% RE: 8 - 35V
Supply current	Single version Redundant version CAN version	Typ 8.5 mA Typ 17 mA Typ 47 mA
Self-diagnostic features		Yes

[1] Ferromagnetic materials close to the sensor (i.e. shaft, mounting surface) may affect the sensor's linearity.
[2] Voltages up to 25V possible on request.

ENVIRONMENTAL SPECIFICATIONS	
Operating temperature[1]	-40°C to +85°C
Shock	50g
Vibration	5Hz to 2000 Hz; 20g; A_{max} 0,75 mm
Sealing	IP67, IP69K

[1] Other specifications available

EMI/EMC Testing

Characteristic	Standard	Level
Radiated emissions	EN 55022 Class B, Emission radiated (30 MHz to 230 Mhz)	Max. 30dB (µV/m)
	EN 55022 Class B, Emission radiated (30 MHz to 1000 Mhz)	Max. 37dB (µV/m)
ESD on housing and connections	EN 61000-4-2:2009	±4 kV contact ±8 kV air
Burst (on supply lines / signal lines)	EN 61000-4-4:2012	±1kV
Surge (on supply lines / signal lines)	EN 61000-4-5:2014	±1kV
Immunity HF radiated (80 ... 2000 MHz)	EN 61000-4-3:2006	100 V/m
Immunity HF conducted (0,15 ... 80MHz)	EN 61000-4-6:2014	10 Vemk
Immunity magnetic field (50 Hz)	EN 61000-4-8:2010	30 A/m

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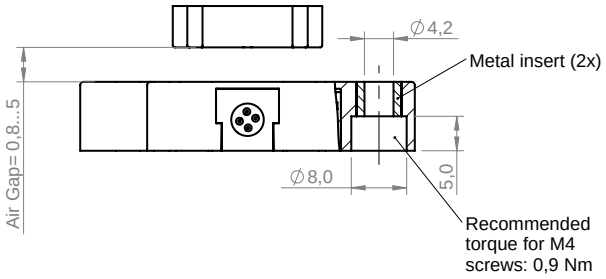
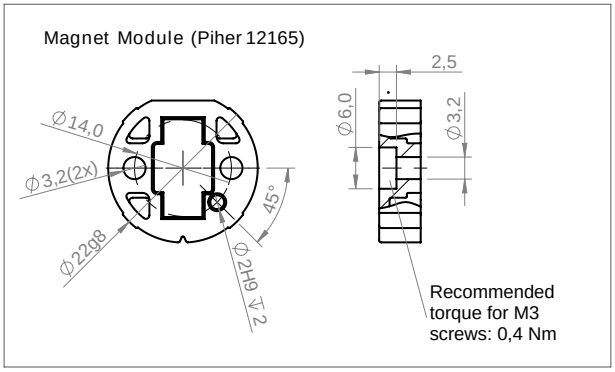
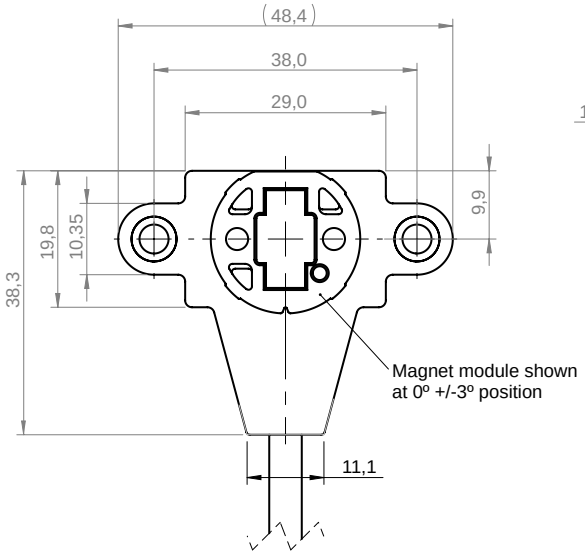
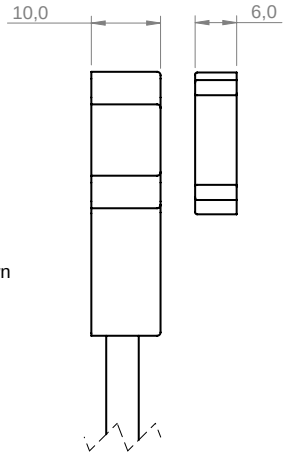
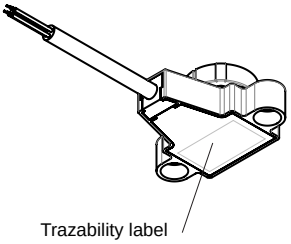
DIMENSIONS (MM)





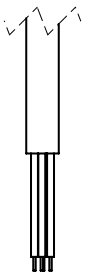


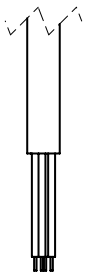




Line 1 YWW##### with:
Y: Year letter (O=2024, P=2025...)
WW: Week (From 01 to 52)
Line 2: Individual Sensor
Traceability number

Material: Silver Polyester





WIRING

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

Drawings may not be to scale. Number and function of wires pictured may vary according to output configuration.

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.

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HOW TO ORDER (Example: PSCR2P-MC6-A-360S-05)

PSCR2P	-	MC6	-	_	-	___	_	-	__

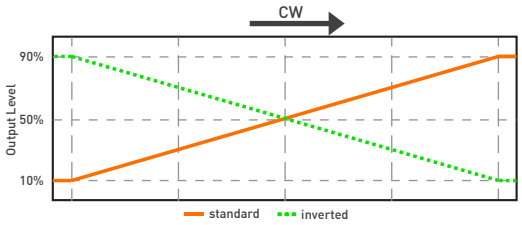
Series	Actuator	Output protocol[1]	Electric rotational angle[2]	Output function	Voltage supply[3]
	MC6 = standard magnet	A = analogic O = CAN OPEN	060 090 120 180 270 360	S = standard (CW) I = inverted (CCW) R = redundant F = full redundant	05 = 5V ±10% RE = 8V-35V

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

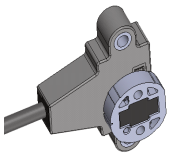
2 Models with ERA ‹ 60° available on request

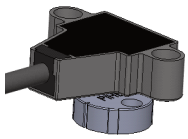
3 Voltages up to 25V possible on request.

OUTPUT FUNCTIONS



ERA	Rotational Angle		
360 →	0°	180°	360°
270 →	45°	180°	315°
180 →	90°	180°	270°
120 →	120°	180°	240°
090 →	135°	180°	225°
060 →	150°	180°	210°





Magnet shown on 0° position.

All our products are customizable to meet your specific requirements.
Please always use the latest updated datasheets and 3D models published on our website.

CONTACT

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