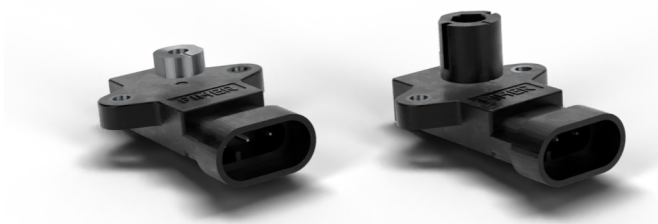


HRPM

Hall-Effect Rotary Position Sensor with integrated connector



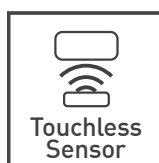
DESCRIPTION

The HRPM Series of Hall-effect Rotary Position Sensors is a cost-effective, non-contacting position sensing solution for applications in harsh environments such as transportation, industrial and marine.

This compact sensor with integrated AMP superseal connector is based on a touchless concept with separate housings for electronics and magnet. The magnet is mounted on the actuated axis and without wear and tear due to radial forces, the reliability and lifetime are increased significantly.

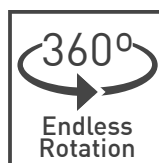
Fully sealed and flanged mounted for easy positioning, the sensor is versatile with configurable angular ranges from 50 to 360 degrees, option for a bare or housed magnet, different pin-outs and support for low and high-voltage power supply.

KEY FEATURES



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.



360 degree absolute position feedback

Endless mechanical rotational angle without dead band, keeps the position on power loss with configurable electrical angles from 50 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.



Unlimited mechanical life

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

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

HRPM

Hall-Effect Rotary Position Sensor with integrated connector

MECHANICAL SPECIFICATIONS

	HRPM
Rotational life	Virtually unlimited
Mechanical range	360° (endless rotation)
Mating connector	AMP Superseal 282087-1
Air Gap	3mm ±1mm
Mounting screw sizes	
Sensor to mounting surface	non-magnetic, stainless steel M4 X 0.7 screws and 8 mm OD washers
Housed magnet to actuator mounting shaft	non-magnetic, stainless steel M3 X 0.5 plain cup point set screws

ELECTRICAL SPECIFICATIONS

	HRPM	
Supply voltage	5V ±10%	7V to 32V
Supply current	12 mA	14 mA
Overvoltage protection	+10V	+36V
Reverse voltage protection	-10V	-30V
Output		
standard	10% to 90% Vdc (CW)	
inverted	90% to 10% Vdc (CCW)	
Absolute linearity / Accuracy error ¹	± 1% (0,5% on request)	
Resolution	Up to 12 bit	
Self-diagnostic features	yes	

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

ENVIRONMENTAL SPECIFICATIONS

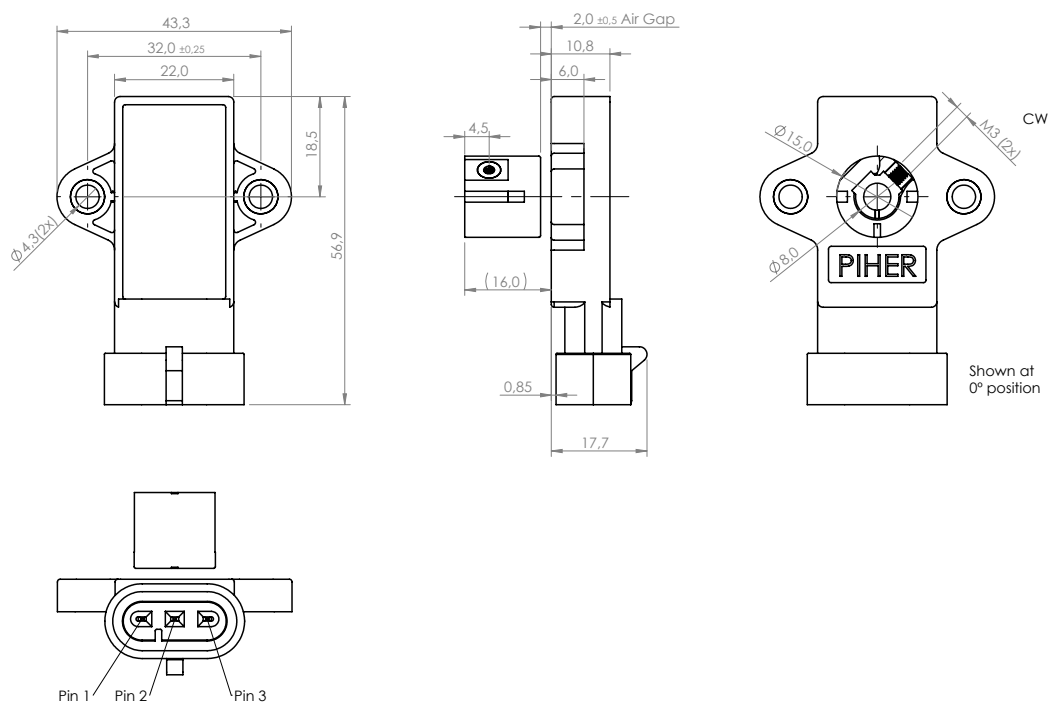
	HRPM
Operating temperature	-40° to +125°C
Shock	50g
Vibration	5-2000 Hz; 20g; Amax 0,75 mm
Sealing	IP69K

HRPM

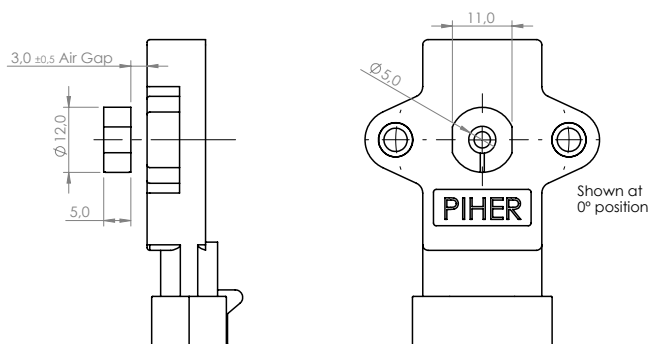
Hall-Effect Rotary Position Sensor with integrated connector

DIMENSIONS (MM)

HRPM-A (housed magnet)



HRPM-M (bare magnet)



CONNECTION SCHEME

PIN	European Pinout	American Pinout
1	Ground	Power supply
2	Power Supply	Ground
3	Signal output	Signal output

HRPM

Hall-Effect Rotary Position Sensor with integrated connector

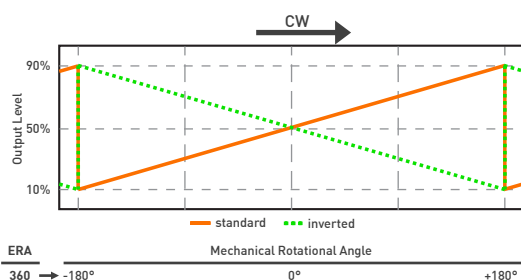
HOW TO ORDER

HRPM-Series (two piece design / separate magnet)

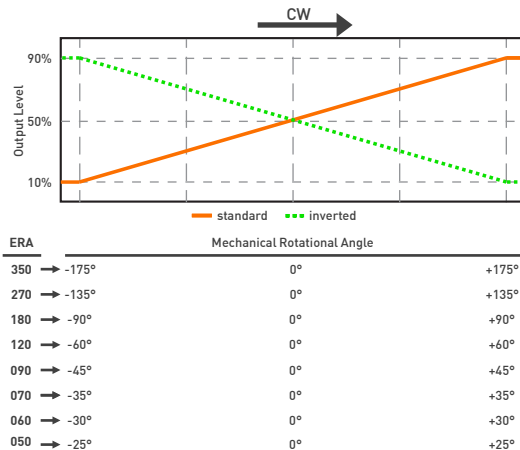
HRPM	-	-	-	-	-	-	-	-
Series	Actuator	Electric rotational angle	Output Function	Voltage supply	Pinout			
	M = Bare magnet A = Housed magnet	050 060 070 090 120 180 270 350 360	S = standard (CW) I = inverted (CCW)	05 = 5V ±10% RE = 7V-32V	E = European A = American			

OUTPUT FUNCTIONS

360 degrees



Others



Custom output functions on request.



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

Disclaimer:

The product information in this catalog is for reference purposes. Please consult for the most up to date and accurate design information. Piher Sensors & Controls S.A., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Piher"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product described herein. Piher disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Piher's terms and conditions of sale, including but not limited to the warranty expressed therein, which apply to these products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Piher. The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Piher products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Piher for any damages arising or resulting from such use or sale. Please contact authorized Piher personnel to obtain written terms and conditions regarding products designed for such applications. Product names and markings noted herein may be trademarks of their respective owners. Information contained in and/or attached to this catalogue may be subject to export control regulations of the European Community, USA, or other countries. Each recipient of this document is responsible to ensure that usage and/or transfer of any information contained in this document complies with all relevant export control regulations. If you are in any doubt about the export control restrictions that apply to this information, please contact the sender immediately. For any Piher Exports, Note: All products / technologies are EAR99 Classified commodities. Exports from the United States are in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited.

CONTACT

Piher Sensing Systems
Polígono Industrial Municipal
Vial T2, N°22
31500 Tudela
Spain

sales@piher.net

Europe: +34 948 820 450
Americas: +1 636 251 0855
Asia Pacific: +65 9641 8886
India: +91 9538 686 586

Rev. 26/04/2023 © 2023 Piher Sensors & Controls S.A.