

# HRPS

## Hall-Effect Rotary Position Sensor with integrated connector



### DESCRIPTION

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

This compact sensor with integrated AMP superseal connector uses a permanent magnet that is securely fastened to the shaft and acts as the only moving component in the sensor.

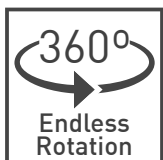
Fully sealed and flanged mounted for easy positioning, the sensor is versatile with configurable angular ranges from 50 to 360 degrees, different pin-out options and support for low and high-voltage power supply.

### 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 configurable electrical angles from 50 to 360 degrees.



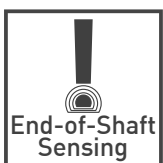
#### Made for harsh environments

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



#### 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.

### APPLICATIONS

#### Industrial

- Warehouse automatic guided vehicles
- Valve monitoring
- HVAC systems

#### Heavy-duty transportation vehicles

- Steering wheel angle
- Pedal position for off-road vehicles
- Suspension/height detection
- Fork height and mast tilt
- Bucket position
- Hitch position
- Transmission gear shift

## Hall-Effect Rotary Position Sensor with integrated connector

### MECHANICAL SPECIFICATIONS

Rotational life	Up to 50 M cycles
Mechanical range	360° (endless rotation)
Mating connector	AMP Superseal 282087-1
Mounting screw sizes	
Sensor to mounting surface	non-magnetic, stainless steel M5 screws and 10 mm OD washers
Lever to mounting surface	non-magnetic stainless steel M6 screws

### ELECTRICAL SPECIFICATIONS

Output Protocol	Analog (Ratiometric)	
Supply voltage	5V $\pm$ 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 <sup>1</sup>	$\pm$ 1% ( $\pm$ 0,5% upon request)	
Resolution	Up to 12 bit	
Self-diagnostic features	yes	

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

### ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-40° to +125°C
Shock	50g
Vibration	5-2000 Hz; 20g; Amax 0,75 mm
Sealing	IP67, IP69K

# HRPS

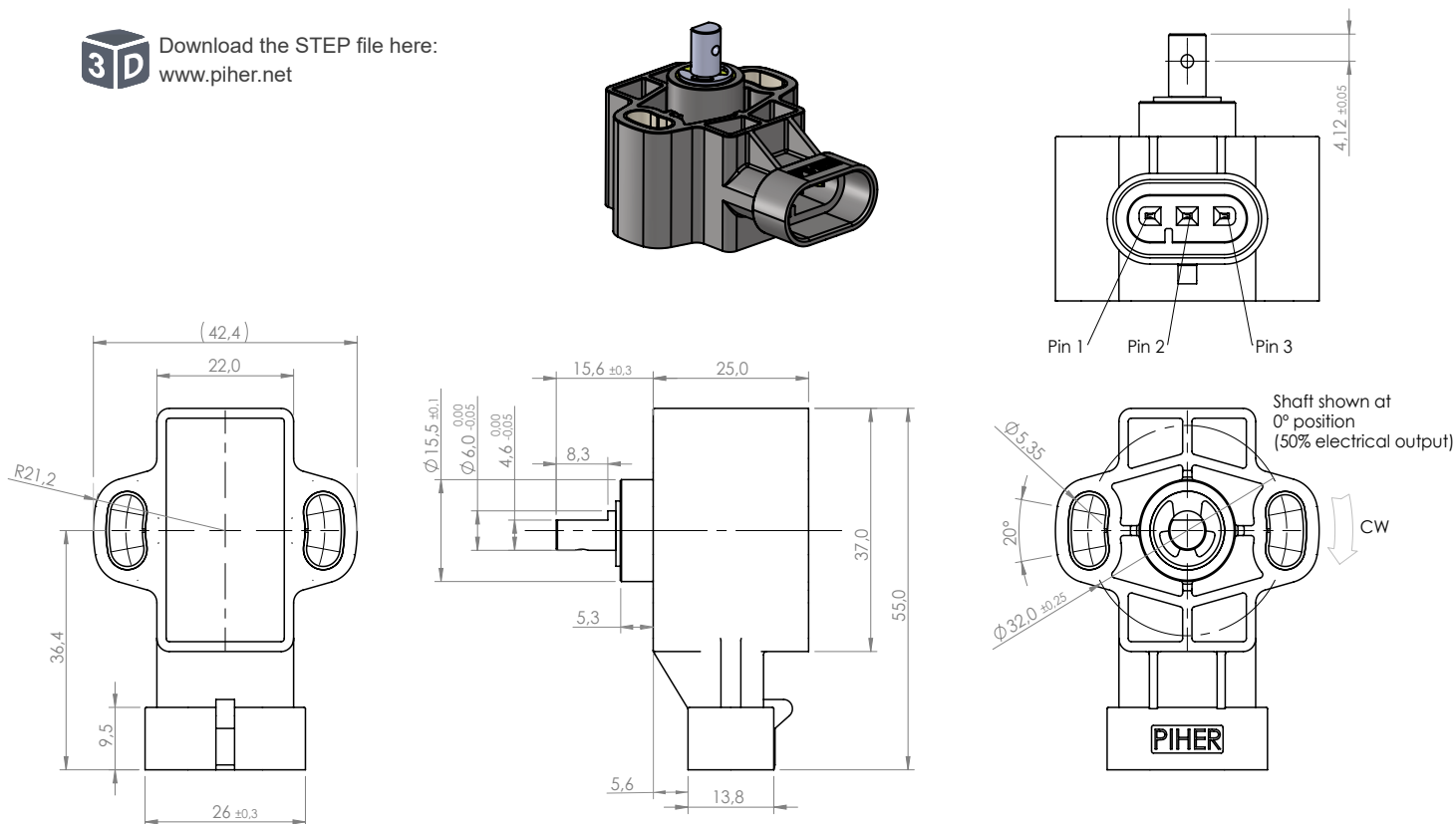
## Hall-Effect Rotary Position Sensor with integrated connector

### DIMENSIONS (MM)

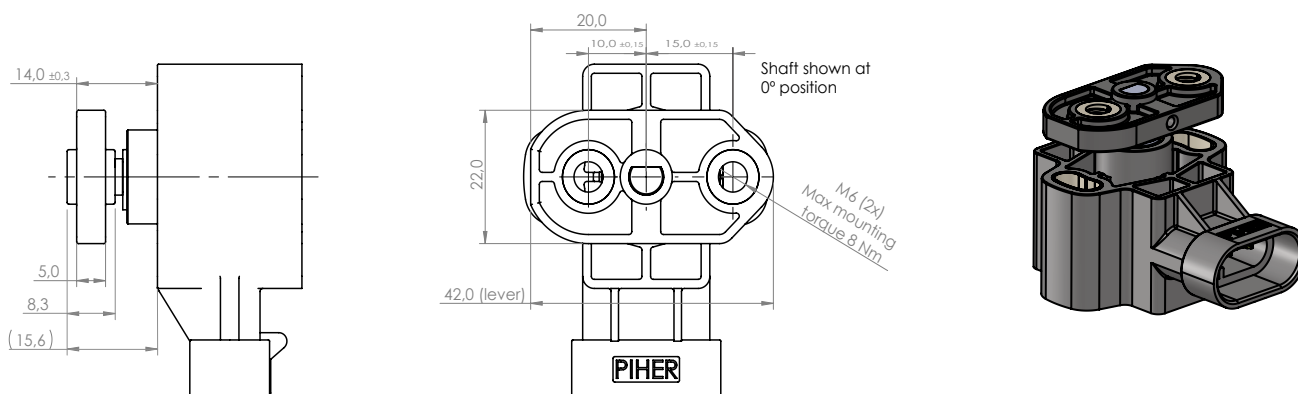
#### HRPS-F (w/o lever)



Download the STEP file here:  
[www.pihher.net](http://www.pihher.net)



#### HRPS-H (with lever)



### CONNECTION SCHEME

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

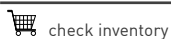
# HRPS

## Hall-Effect Rotary Position Sensor with integrated connector

### HOW TO ORDER

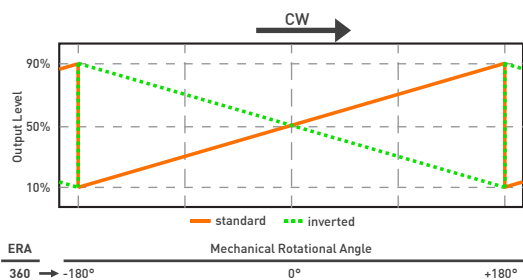
#### HRPS-Series

HRPS	-	-	---	-	--	-	-
Series	Actuator	Electric rotational angle	Output Function	Voltage supply	Pinout		
	F = Shaft w/o lever H = Shaft with lever	050 060 070 090 120 180 270 360	S = standard [CW] I = inverted [CCW]	05 = 5V ±10% RE = 7V-30V	E = European A = American		

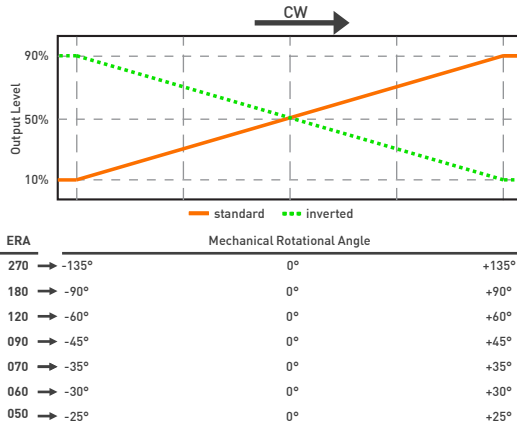


### OUTPUT FUNCTIONS

#### 360 degrees



#### Others



Custom output functions on request.



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

#### Disclaimer

This device is not for use in any application or situation where failure of any kind of the device could lead to death, serious bodily injury or severe environmental damage. Failure to follow these instructions could result in serious personal injury, death, or property damage. 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.

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

Tel: +34 948 820 450

Rev.081123 © 2023 Piher Sensors & Controls S.A.