

Rotary Position Sensor RP 360-H

www.bosch-motorsport.com



- ▶ Rotational movement measurement
- ▶ Hall effect technology
- ▶ Measurement range: 0 to 360°
- ▶ Analogue output 0.5 to 4.5 V

This sensor is designed to measure rotational movement, e.g. throttle angle, spring travel, gearbox position or steering angle.

The electronic is designed with a magnetic rotary sensor with Hall elements and digital signal processing. The angular position is provided by a two pole magnet integrated in the sensor shaft. A Hall effect sensor is disposed between two magnets in association with a movable specially formed ferromagnetic part. This is used to control flux in the sensor in order to produce a linearly varying output voltage dependent on the position.

The main benefit of this sensor is its contactless Hall effect technology and its robust design for motorsport applications. Other measurement ranges are available on request.

Application

Application	0 to 360°
Operating temperature range	-40 to 140°C (5 V supply)
Storage temperature range	-55 to 140°C
Max. vibration	200 m/s ² at 5 to 2,000 Hz

Technical Specifications

Mechanical Data

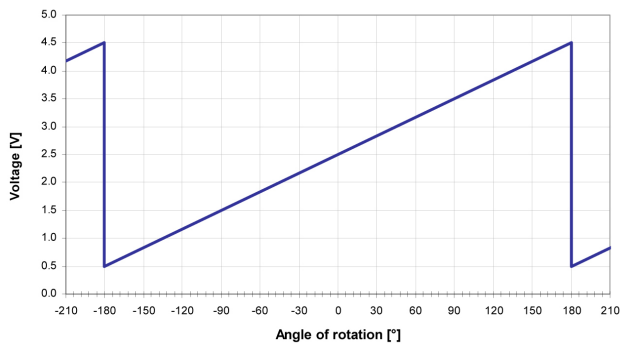
Weight w/o wire	< 35 g
Protection class	IP68
Mounting	2 x M4
Lifetime	20 x 10 ⁶ operations of ±75°
Housing	Synthetic material

Electrical Data

Power supply U _s	5 ± 0.5 V regulated
	9 V to 30 V unregulated
Max. power supply	30 V
Total resistance	10 kOhm
Current I _s	< 12.5 mA
Resolution	0.025 % of measurement range
Output voltage range	0.5 to 4.5 V
Output load	10 kV

Characteristic

Max. rotation speed	600 min ⁻¹
Temp. coefficient	< 30 ppm/°K in 5 V supply mode
< 90 ppm/°K in 9 V to 30 V supply mode	< 90 ppm/°K in 9 V to 30 V supply mode
Direction of rotation	Anti-clockwise
Both rotation directions are available on request.	
Redundancy	No

**Connectors and Wires**

Connector	ASL 6-06-05PA-HE
Mating connector ASL 0-06-05SA-HE	F 02U 000 226-01
Pin 1 (A)	U _s
Pin 2 (B)	Gnd
Pin 3 (C)	Sig
Pin 4 (D)	-
Pin 5 (E)	-
Sleeve	DR-25
Wire size	AWG 24
Wire length L	16 to 45 cm

Various motorsport and automotive connectors are available on request.

Please specify the required wire length with your order.

Installation Notes

The products of the RP series can be connected directly to most control units.

The sensor is designed with contactless Hall effect technology.

Any mounting orientation is possible.

Sensor is at mid point of electrical angle when shaft and wire exit are aligned as shown in the offer drawing.

Operating temperature range for unregulated supply: -40 to 135.7°C (9 V supply). Derate upper temperature limit by 1.7°C for every 1 V increase in supply, e.g. -40 to 100°C at 30 V.

Both rotation directions and other measurement ranges are available on request.

Please find further application hints in the offer drawing at our homepage.

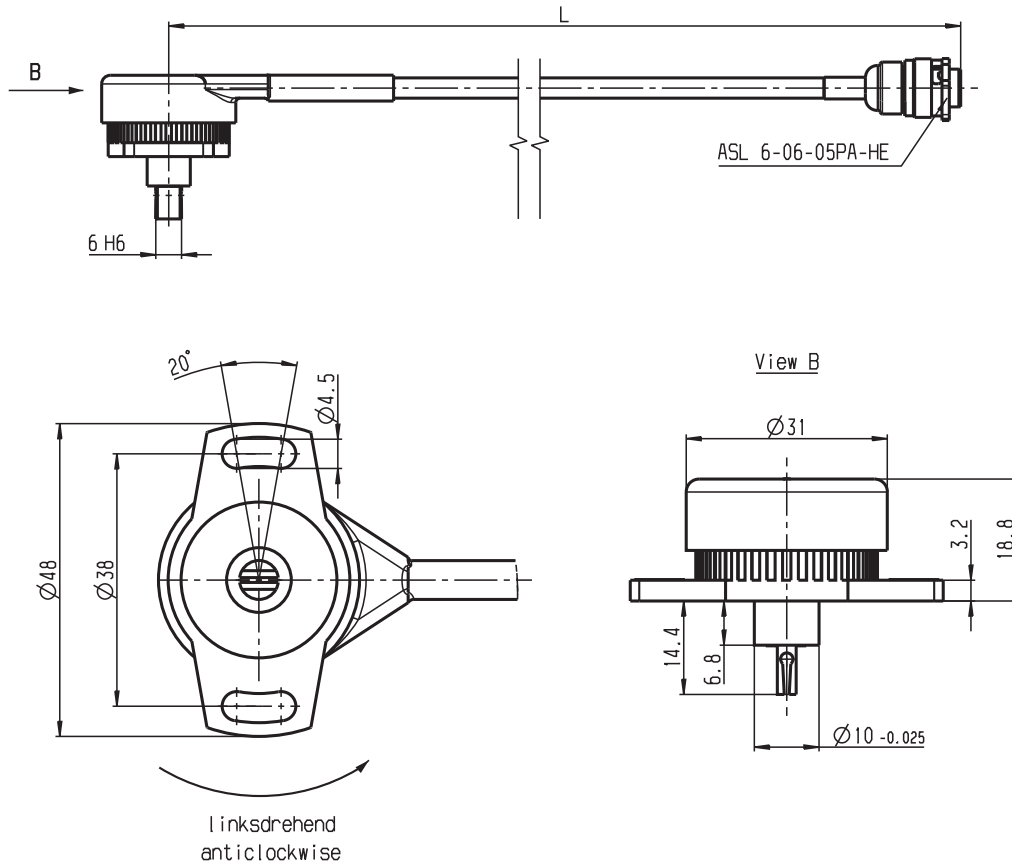
Safety Note

The sensor is not intended to be used for safety related applications without appropriate measures for signal validation in the application system.

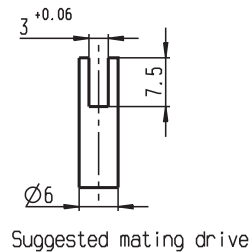
Ordering Information

Rotary Position Sensor RP 360-H
Order number **F 02U V00 641-02**

Dimensions



Sensor is at mid point of electrical angle when mark on shaft and cable exit are aligned as shown



Represented by:

Europe:
 Bosch Engineering GmbH
 Motorsport
 Robert-Bosch-Allee 1
 74232 Abstatt
 Germany
 Tel.: +49 7062 911 9101
 Fax: +49 7062 911 79104
 motorsport@bosch.com
 www.bosch-motorsport.de

North America:
 Bosch Engineering North America
 Motorsport
 38000 Hills Tech Drive
 Farmington Hills, MI 48331-3417
 United States of America
 Tel.: +1 248 876 2977
 Fax: +1 248 876 7373
 motorsport@bosch.com
 www.bosch-motorsport.com

Latin America:
 Robert Bosch Ltda
 Motorsport
 Av Juscelino Kubitschek de
 Oliveira 11800
 Zip code 81460-900
 Curitiba - Parana
 Brasilia
 Tel.: +55 41 3341 2057
 Fax: +55 41 3341 2779

Asia-Pacific:
 Bosch Engineering Japan K.K.
 Motorsport
 18F Queen's Tower C, 2-3-5 Minato Mirai
 Nishi-ku, Yokohama-shi
 Kanagawa 220-6218
 Japan
 Tel.: +81 45 650 5610
 Fax: +81 45 650 5611
 www.bosch-motorsport.jp

Australia, New Zealand and South Africa:
 Robert Bosch Pty. Ltd
 Motorsport
 1555 Centre Road
 Clayton, Victoria, 3168
 Australia
 Tel.: +61 (3) 9541 3901
 motor.sport@au.bosch.com