

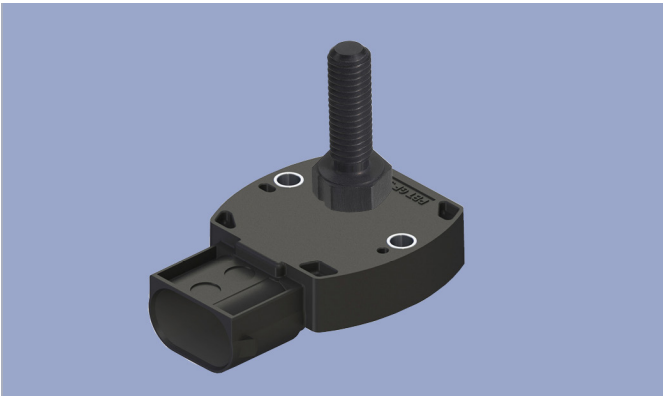
**NOVOHALL  
Rotary Sensor  
Touchless**

**RFE-3200**



**Flat - Non-contact - Wear-free  
Magnetic Angle Sensor for Mobile Machines**

- Touchless hall technology
- Electrical range up to 360°
- 2-part, mechanically decoupled
- High protection class IP67 resp. IP6K9K (housing side)
- Resolution up to 14 bits
- Temperature range -40°C to +125°C
- One and multi-channel versions
- Optimized for use in mobile applications
- For highest EMC requirements such as ISO pulses and interference fields according to ISO 11452 and ECE directive
- Suitable for safety-related applications according to DIN EN ISO 13849
- Interfaces: voltage, current, CANopen, CAN SAE J1939



**Applications**

- Mobile working machines (industrial trucks, construction machinery, agricultural and forestry machinery)
- Marine applications



The two-part design consisting of sensor and magnetic position marker offers great flexibility when mounting. The absence of shaft and bearing makes the assembly much less sensitive to axial and radial application tolerances - separate couplings are obsolete.

Measurements can be made transmissively through any non-ferromagnetic material. The sensor is perfectly suitable for use in harsh environmental conditions through the completely encapsulated electronics.

Single and multi-channel versions are available and suitable for use in safety-related applications.

**Magnetic Position Measurement**

When a current flows through a Hall element it provides a voltage across the current flow if a magnetic field acts perpendicular to both.

Since this voltage is proportional to the magnetic field strength, a non-contact and absolute angle or displacement measurement can be easily achieved by attaching a position magnet to the moving part of the application.

By combining several sensor elements and integrating the complete signal processing in only a few components, complex systems are feasible in the smallest possible space.

The systems are insensitive to aging and independent of field strength fluctuations of the magnets.

Both shafted and touchless 2-part systems enable angle measurement over up to 360°, even over several revolutions or a linear displacement measurement up to 50 mm.

High resolution with great dynamic response, large mechanical tolerances and fast feasibility of customer-specific output options are added benefits of this wear free technology.

### Angle measurement in the tightest of spaces

With a sensor thickness of only 12.4 mm, angle measurement is possible even in confined spaces. Since the sensor element and position magnet are separated from each other, mounting is simplified. A marking on the position marker shows the correct alignment to the sensor.

- Standard measuring angles 60°, 120°, 180°, 240°, 360°
- Unlimited mechanical life
- Large working distance up to 9 mm between position marker and sensor
- Industry-specific connector (Micro Quadlock System)

### Hall Sensing Technology - Robust Position Detection

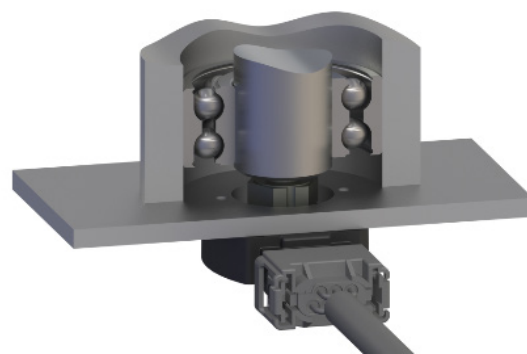
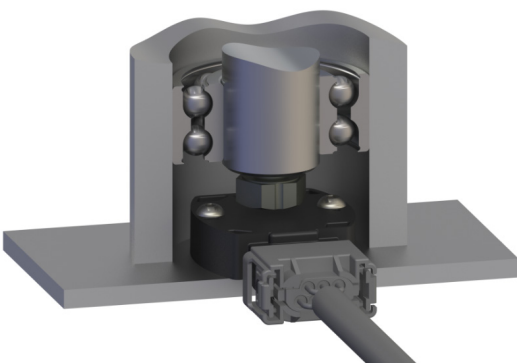
The analog interfaces (ratiometric interface, current and voltage outputs) were developed for safety-related applications according to DIN EN ISO 13849 and are approved to E1 type approval according to the ECE directive. Alternatively, the sensor communicates via fieldbus CANopen or CAN SAE J1939.

- European E1 approved
- Suitable for safety-related applications
- Position and speed
- Resolution up to 14 bits
- One and multi-channel versions
- Supply voltage 5 VDC and 12/24 VDC

### Resilient in Harsh Environments

The RFE-3200 meets the requirements of mobile applications: high ingress rating, media and temperature resistance as well as excellent EMC robustness. The electronics are completely encapsulated and offer an extremely wide temperature range of -40 to +125°C and can therefore be used in a wide variety of applications.

- Protection class up to IP6K9K (electronics encapsulated)
- -40 ... +125°C
- Interference immunity up to 200 V/m according to ISO 11452-5



Installation example

### Required Accessories



- Position markers and magnets in various designs for different working ranges between sensor and position marker

### Recommended Accessories



- Connector Kit Micro Quadlock System



## Ordering Specifications

### Preferred types printed in bold

- Delivery time up to 25 pcs. within 10 working days EXW
- Best low-volume pricing

### Interface

- 21\_**: 5 ... 95% ratiometric to supply voltage  $U_b$  (0.25 ... 4.75 VDC)  
 22\_: 10 ... 90% ratiometric to supply voltage  $U_b$  (0.5 ... 4.5 VDC)  
**32\_**: **Current output 4 ... 20 mA**  
 34\_: Voltage output 0.5 ... 4.5 VDC  
**35\_**: **Voltage output 0.25 ... 4.75 VDC**  
**61\_/65\_**: CANopen, one-channel  
**62\_/66\_**: CANopen, two-channel  
**J1\_/J5\_**: CAN SAE J1939, one-channel  
**J2\_/J3\_/J6\_/J7\_**: CAN SAE J1939, two-channel

### Electrical connection

- 521**: Connector AMP MQS 6-pin, male

**R F E - 3 2 0 1 - 8 3 6 - 3 2 4 - 5 2 1**

Series

Mechanical version  
**3201**: Standard design

**214**: Digital interface

### Analog interfaces

- 6**: One-channel version (1x supply voltage  $U_b$ , 1x output)  
**7**: Partly redundant version (1x supply voltage  $U_b$ , 2x output)  
**8**: Fully redundant version (2x supply voltage  $U_b$ , 2x output)  
 03: Angle 0° ... 30° min.  
**06, 12, 18, 24, 36**  
 36: Angle 0° ... 360° max.  
 Other angles on request

For more information and detailed ordering specifications, see <https://www.novotechnik.de/en/products/rotary-sensors-linear-position-transducers/>

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Novotechnik is represented in all of the world's major markets with our own subsidiaries or by approved dealers and representatives.

Thanks to this tightly knit network we can ensure that wherever our customers may be located we can provide first-class service and customer care.

Your contacts can be found at <https://www.novotechnik.de/nc/en/service/representatives/>

## Technical Support

Do you need further technical information?

Please do not hesitate to contact the representative for your country or contact us directly:

+49 711 4489-250  
[support@novotechnik.de](mailto:support@novotechnik.de)