

**NOVOHALL  
Rotary Sensor  
Non-contacting**

**RSC-2800  
SPI**

**Industrial**



**Special Features**

- Non-contacting, magnetic technology
- Measuring range 360°
- Available with push-on coupling or marked shaft
- Simple mounting
- Protection class IP54, IP65, IP67
- Long life
- Very small hysteresis
- High resolution 14 bits
- Linearity <math>< \pm 0.5 \%</math>
- Other configurations see separate data sheets

**Applications**

- Manufacturing Engineering (textile machinery, packaging machinery, sheet metal and wire machinery)
- Automation technology
- Medical engineering

The RSC-2800 sensor utilizes a contactless magnetic measurement technology to determine the measured angle. Unlike conventional Hall sensors, the orientation of the magnetic field is measured. The position information corresponding to the angular position is transmitted via a variety of analog and digital interfaces (see separate data sheets).

The housing is made of a special high grade temperature-resistant plastic material. Elongated slots allow simplicity in mounting together with ease of mechanical adjustment.

Three shaft options are available, including a push-on coupling option that ensures fast and simple installation.

**Description**

Material	Housing: high grade, temperature resistant plastic PPS-GF40/SF50 Shaft: stainless steel, X8CrNiS18-9 1.4305
Mounting	With 2 screws M4 and washers
Max. fastening torque of mounting screws	max. 180 Ncm
Bearing	Sintered bronze bushing
Electrical connection	Cable 5x 0.14 mm <sup>2</sup> (AWG 26), PUR, shielded

**Mechanical Data**

Dimensions	See dimension drawing
Mechanical travel	360° continuous
Permitted shaft load static or dynamic	20 N (axial / radial)
Torque	0.15 Ncm (IP54), 0.5 Ncm (IP65), 1.0 Ncm (IP67)
Weight (w/o connection)	approx. 50 g

## Ordering Specifications

### Ordering Specifications

**Preferred types printed in bold**

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

Supply voltage  $U_b$

**8: Serial Peripheral Interface (SPI)**

Interface parameters

**31:  $U_b = 5$  VDC, Binary code, rising cw**

Electrical connection

**302: Cable, 5-pole, shielded, L = 1 m**

Cable versions and assembled connectors on request

**R S C** - **2 8 3 2** - **2 1 4** - **8 3 1** - **3 0 2**

Series

**Mechanical version**

2802: 6 mm shaft with flattening, IP54

**2832: 6 mm shaft with flattening, IP65**

2862: 6 mm shaft with flattening, IP67

2821: push-on coupling, IP54

**2841: push-on coupling, IP65**

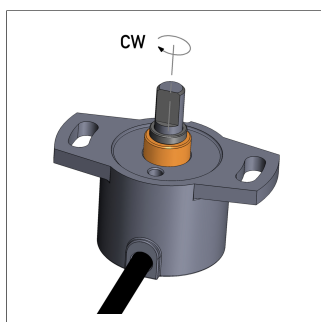
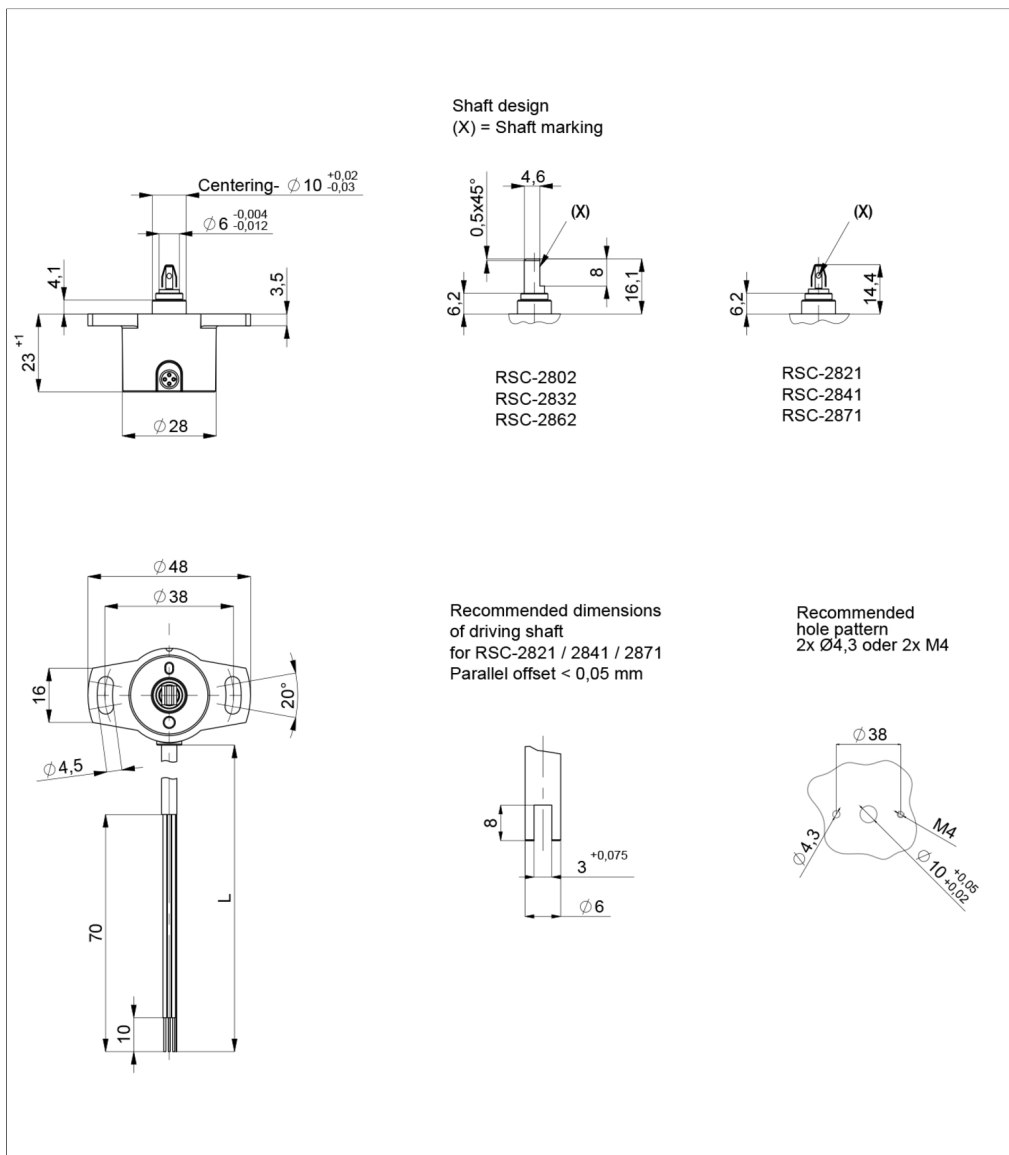
2871: push-on coupling, IP67

Other shaft configurations on request

Resolution  
214: 14 bits

**Drawing**

CAD data see  
www.novotechnik.de/en/download/cad-  
data/



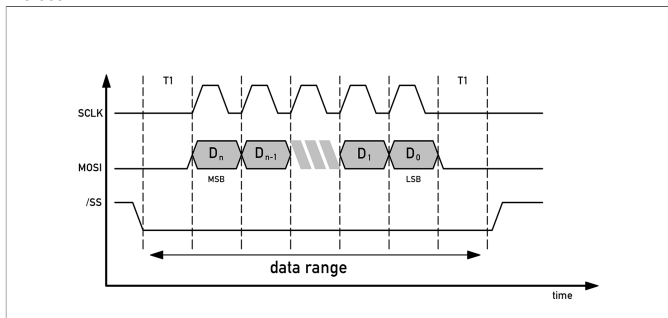
When the marking of the shaft is pointing towards the electrical outlet, the sensor output is near the electrical center position.

## Technical Data

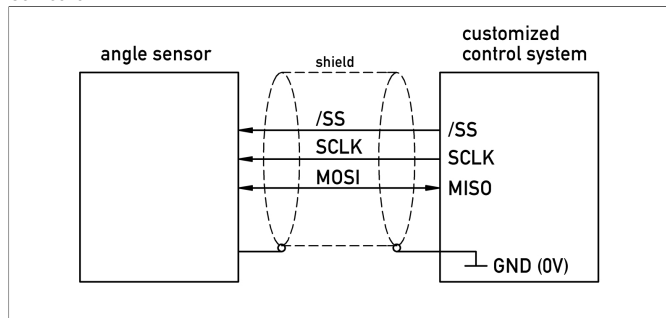
Type	RSC-28 _-214-8 _- _- _-
Protocol	SPI
Level SCLK, MOSI, /SS	TTL level (see application note SPI protocol)
Update rate (internal)	5 kHz
Resolution (across 360°)	14 bits
Measuring range	360°
Independent linearity	≤ ±0.5 %FS
Repeatability	≤ ±0.1°
Hysteresis	≤ ±0.1°
Temperature error	±0.625 %FS
Supply voltage Ub	5 VDC (4.5 ... 5.5 VDC)
Current consumption w/o load	typ. 15 mA
Polarity protection	yes (supply lines)
Short circuit protection	yes (vs. GND and supply voltage Ub)
Max. clock rate	400 kHz
Insulation resistance (500 VDC)	≥ 10 MΩ
<b>Environmental Data</b>	
Max. operational speed	800 rpm
Vibration IEC 60068-2-6	20 g, 5 ... 2000 Hz, Amax = 0.75 mm
Shock IEC 60068-2-27	50 g, 6 ms
Protection class DIN EN 60529	IP54 / IP65 / IP67
Operating temperature	-40 ... +85°C
Life	> 50 Mio. movements (mechanically)
Functional safety	If you need assistance in using our products in safety-related systems, please contact us
MTTF (IEC 60050)	316 years
<b>EMC Compatibility</b>	
EN 61000-4-2 ESD (contact/air discharge)	4 kV, 8 kV
EN 61000-4-3 Electromagnetic fields (RFI)	10 V/m
EN 61000-4-4 Fast transients (burst)	1 kV
EN 61000-4-6 Cond. disturbances (HF fields)	10 V eff.
EN 61000-4-8 Magnetic fields	3 A/m
EN 55011 Noise radiation	Class B
<b>Connection Assignment</b>	
Signal	Cable code 3_ _
Supply voltage Ub	GN
GND	BN
MOSI / MISO	YE
SCLK	GY
/SS (slave select)	WH
	Connect cable shielding to GND

## Technical Data

### Protocol



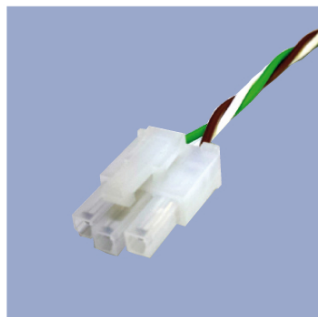
### Connection



## Connecting Options on request



- M12 connector**
- Customized lengths
  - 3-, 4-, 6- and 8-pole versions
  - Protection class IP68
  - Ordering codes of standard versions see ordering specifications



- Molex Mini Fit jr.**
- Customized length and lead wires
  - 3-, 4- and 6-pole versions
  - On request



- Tyco AMP Super Seal**
- Pin- and bushing housing
  - Customized lengths
  - 3-, 4- and 6-pole versions
  - Protection class IP67
  - On request



- Molex Mini Fit jr.**
- Customized length and lead wires
  - 3-, 4- and 6-pole versions
  - On request



- Deutsch DTM 04**
- Pin- and bushing housing
  - Customized lengths
  - 3-, 4- and 6-pole versions
  - Protection class IP67
  - On request



- ITT Cannon Sure Seal connector**
- Customized lengths
  - 3-, 4- and 6-pole versions
  - Protection class IP67
  - On request

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