

**Project item**  
Please contact your local distributor or our technical support  
Phone (+49) 711 4489-250  
support@novotechnik.de

**NOVOHALL**  
**Rotary Sensor**  
**Non-contacting**

**RSC-2800**  
**SSI**  
**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 12 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	Connector M12x1, A-coded with cable L = 0.15 m / Cable 4x 2x 0.25 mm <sup>2</sup> (AWG 24), TPE, shielded

**Mechanical Data**

Dimensions	See dimension drawing
Mechanical travel	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

#### Interface

**4: Synchronous-Serial Interface (SSI)**

#### Interface parameters

- 11: Ub = 5 VDC, rising output characteristic cw**
- 12: Ub = 5 VDC, rising output characteristic ccw
- 41: Ub = 24 VDC, rising output characteristic cw**
- 42: Ub = 24 VDC, rising output characteristic ccw

#### Electrical connection

- 432: Cable, 8-pole, shielded, L = 1 m**
  - 436: Cable, 8-pole, shielded, L = 3 m**
  - 440: Cable, 8-pole, shielded, L = 5 m
  - 450: Cable, 8-pole, shielded, L = 10 m
  - 531: Connector M12x1, 8-pin, with cable, shielded, L = 0.15 m**
- Cable versions and assembled connectors on request

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

Series

#### Mechanical version

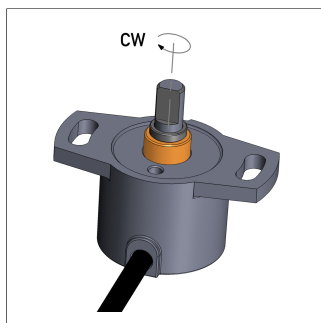
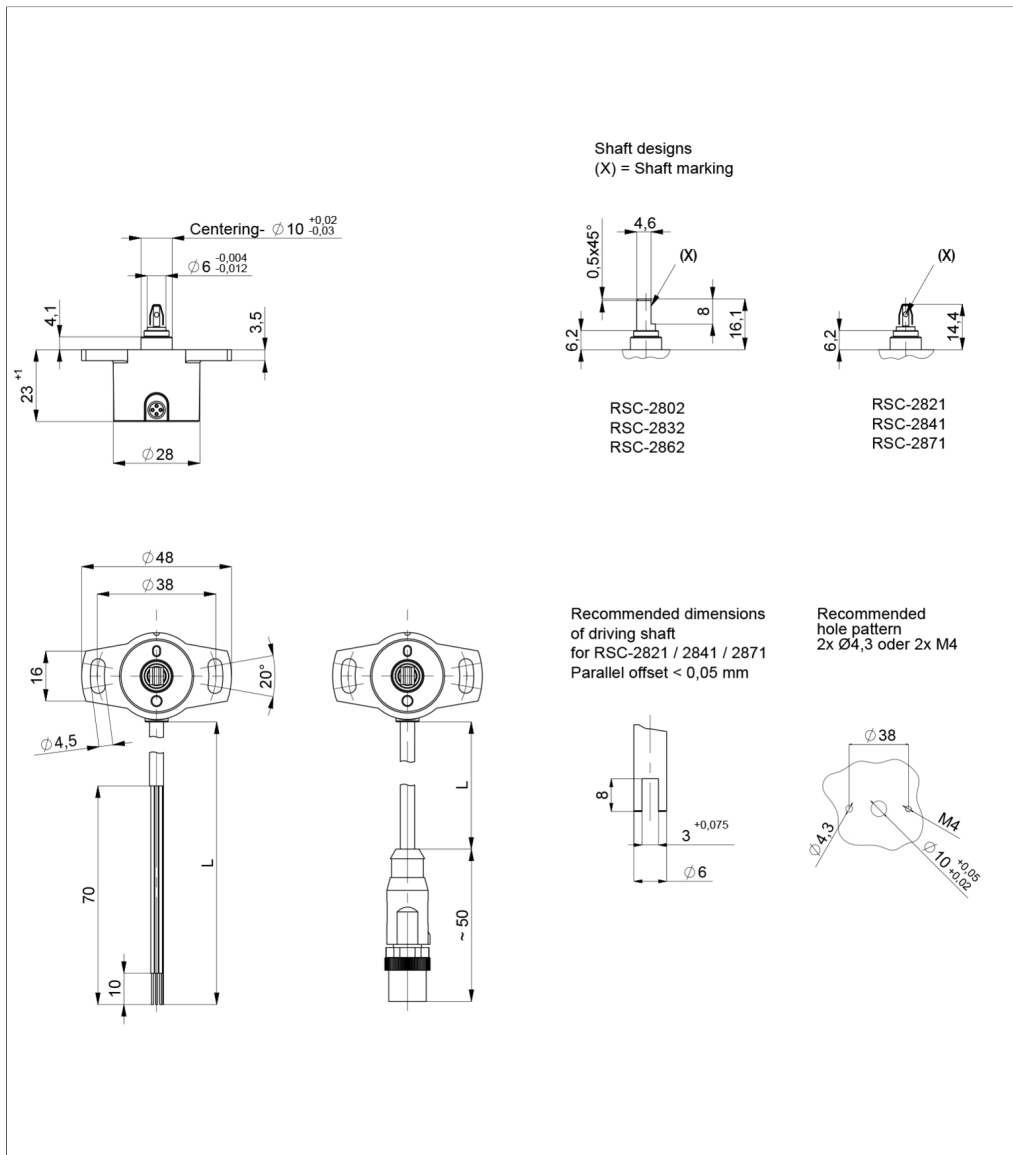
- 2802: 6 mm shaft with flattening, IP54
  - 2832: 6 mm shaft with flattening, IP65**
  - 2862: 6 mm shaft with flattening, IP67
  - 2821: push-on coupling, IP54
  - 2841: push-on coupling, IP65**
  - 2871: push-on coupling, IP67
- Other shaft configurations on request

#### Resolution

- 212: 12 bits**
- Other resolutions on request

**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.

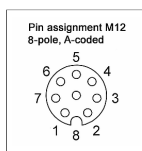
## Technical Data

Type	RSC-28__-212-44_-_-_- Versorgung 24 VDC	RSC-28__-212-41_-_-_- Supply voltage 5 VDC	RSC-28__-212-44_-_-_- Supply voltage 24 VDC
Measuring range	360°		
Protocol	SSI 13 bits (12 bits data + 1 stop bit)		
Coding	Gray		
Inputs	RS-422 compatible, CLK lines via optocoupler galvanically isolated		
Monoflop time (tm)	16 µs		
Update rate (internal)	2 000 kHz		
Resolution (across 360°)	12 bits		
Independent linearity	typ. ±0,5 %FS		
Repeatability	≤ ±0,2°		
Hysteresis	≤ ±0,7°, lower hysteresis on request		
Temperature error	±0,375 %FS		
Supply voltage Ub	24 VDC (18 ... 30 VDC)	5 VDC (4.5 ... 5.5 VDC)	24 VDC (18 ... 30 VDC)
Current consumption w/o load	typ. 10 mA	typ. 27 mA	typ. 10 mA
Polarity protection	yes (supply lines)		
Short circuit protection	yes (all outputs vs. GND)	yes (all outputs vs. GND and supply voltage)	yes (all outputs vs. GND)
Ohmic load at outputs	≥ 120 Ω		
Max. clock rate	1 MHz		
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 -25 ... +85°C (connector M12)		
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)	104 years	148 years	104 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 55016-2-3 Radiated disturbances	Industrial and residential area		

FS = Full scale: Signal span according to electrical measuring range

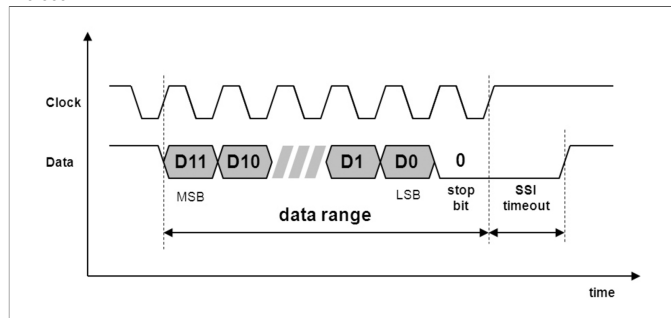
### Connection Assignment

Signal	Connector code 5__	Cable code 4__
Supply voltage Ub	Pin 1	WH
GND	Pin 2	BN
CLK -	Pin 3	GN
CLK +	Pin 4	YE
Data -	Pin 5	GY
Data +	Pin 6	PK
Do not connect	Pin 7	BU
Do not connect	Pin 8	RD
Connect cable shielding to GND		

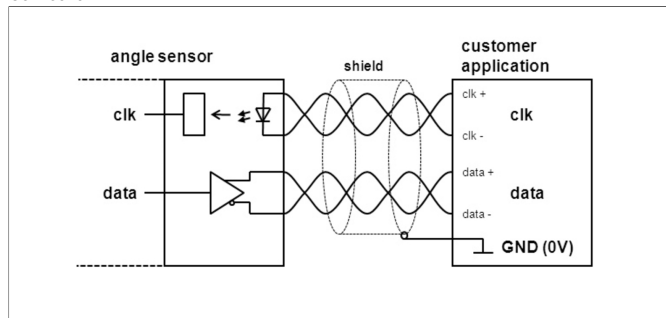


## Technical Data

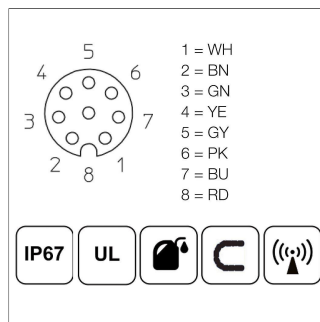
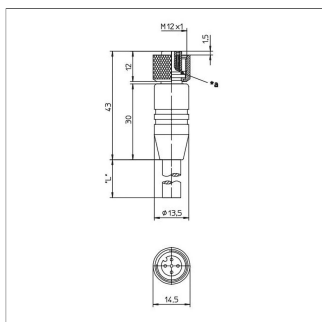
Protocol



Connection



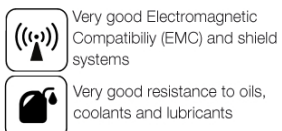
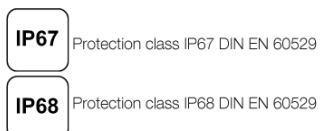
## Connector System M12



**EEM-33-86/90/92**  
M12x1 Mating female connector, 8-pin, straight, A-coded, with molded cable, shielded, IP67, open ended

Plug housing PA  
Cable sheath PUR, Ø = max. 8 mm, -25 ... +80°C (moved), -50 ... +80°C (fixed)  
Lead wires PP, 0.25 mm<sup>2</sup>

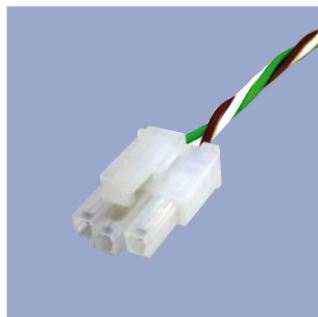
P/N	Type	Length
400005629	EEM-33-86	2 m
400005635	EEM-33-90	5 m
400005637	EEM-33-92	10 m



## 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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© Feb 24, 2023

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