

**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 < $\pm 0.5\%$
- 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 4x 2x 0.25 mm ² (AWG 24), TPE, shielded / Connector M12x1, A-coded with cable L = 0.15 m

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

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

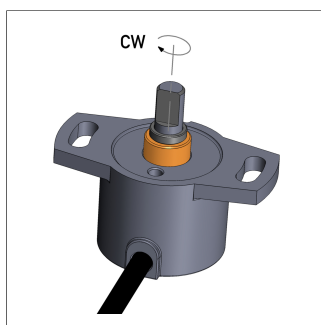
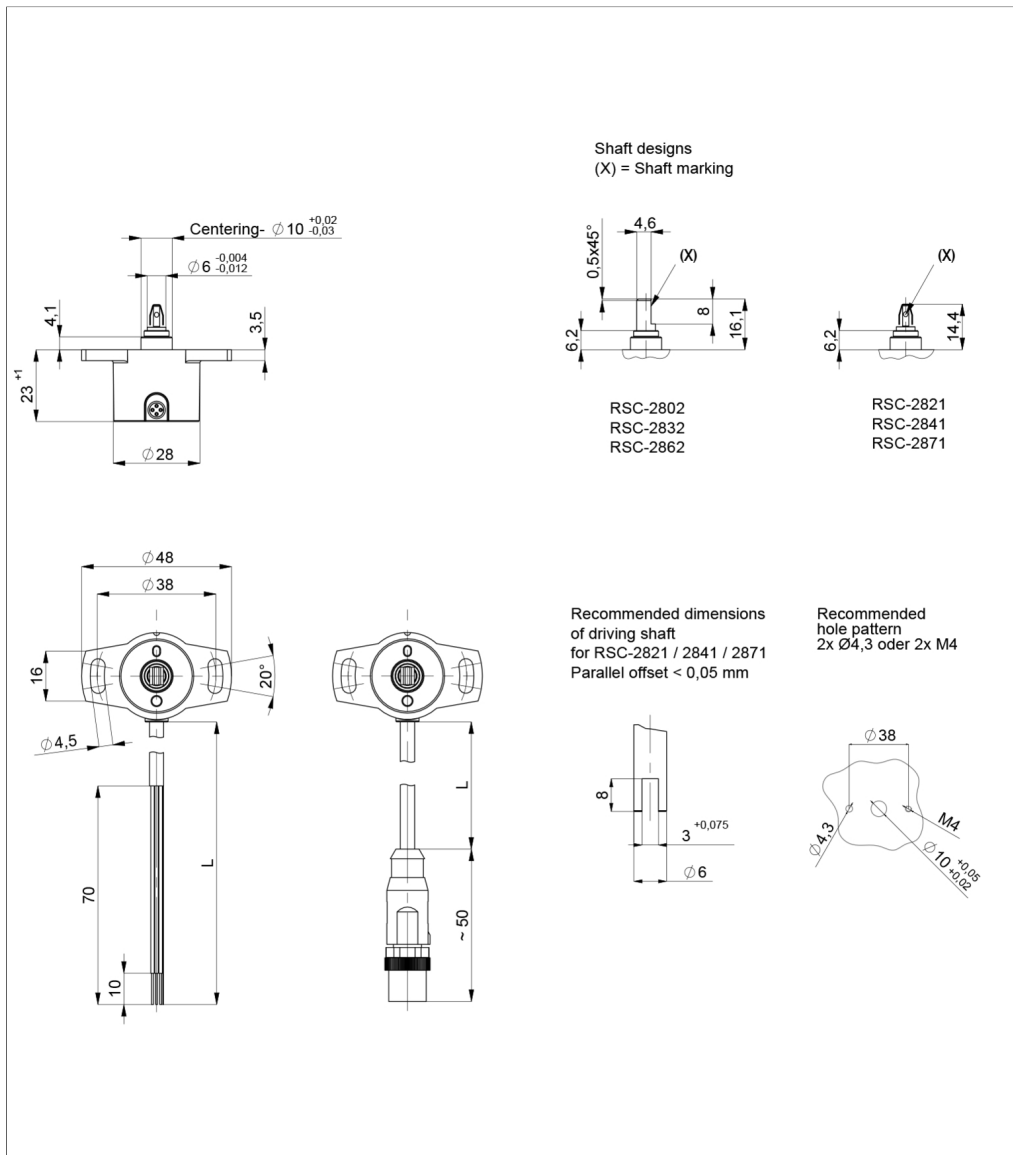
- 2802: 6 mm shaft with flattening, IP54
 - 2832: 6 mm shaft with flattening, IP65**
 - 2862: 6 mm shaft with flattening, IP67
 - 2821: push-on coupling, IP54
 - 2841: push-on coupling, IP65**
 - 2871: push-on coupling, IP67
- Other shaft configurations on request

Resolution

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

Drawing

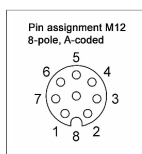
CAD data see
www.novotechnik.de/en/download/cad-
data/



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

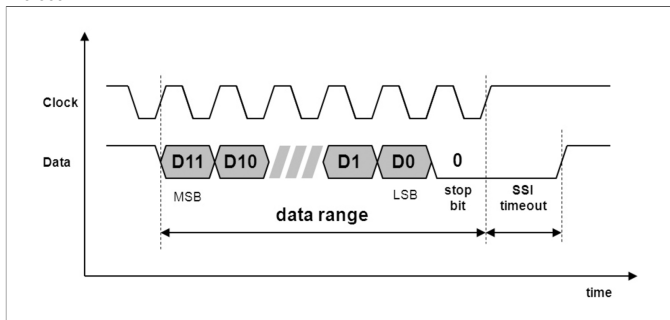
Technical Data

Type	RSC-28 __-212-41 _-_-_- 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	5 VDC (4.5 ... 5.5 VDC)	24 VDC (18 ... 30 VDC)
Current consumption w/o load	typ. 27 mA	typ. 10 mA
Polarity protection	yes (supply lines)	
Short circuit protection	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	
Environmental Data		
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)	148 years	104 years
EMC Compatibility		
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	
Connection Assignment		
Signal	Cable code 4__	Connector code 5__
Supply voltage Ub	WH	Pin 1
GND	BN	Pin 2
CLK -	GN	Pin 3
CLK +	YE	Pin 4
Data -	GY	Pin 5
Data +	PK	Pin 6
Do not connect	BU	Pin 7
Do not connect	RD	Pin 8
Connect cable shielding to GND		

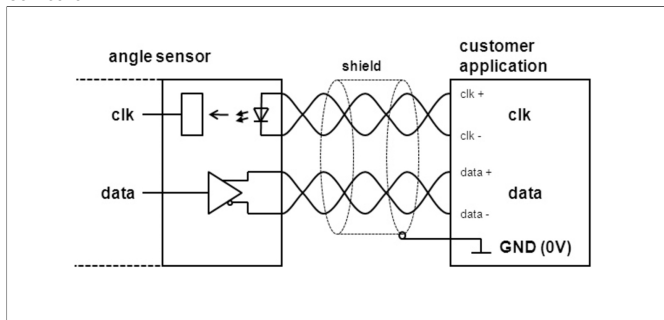


Technical Data

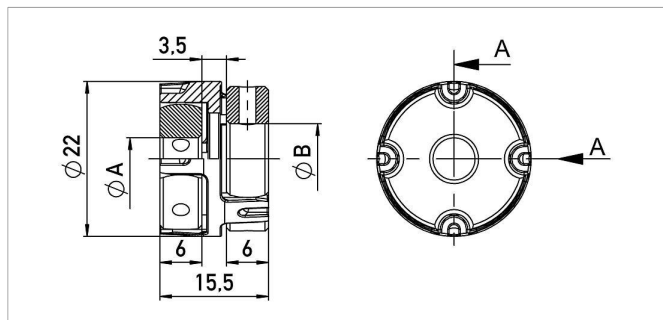
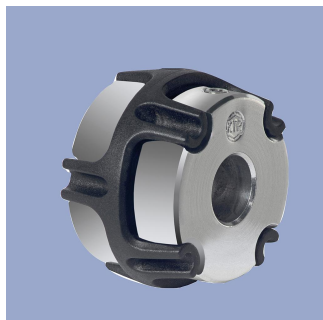
Protocol



Connection



Sensor Mounting



Z-106-G_

Backlash-free, double cardanic shaft coupling for $\varnothing 6$ mm to $\varnothing 6$ mm, $\varnothing 6.35$ mm or $\varnothing 10$ mm, mounting via 2 threaded pins with internal hexagon

Material Aluminium, PEEK

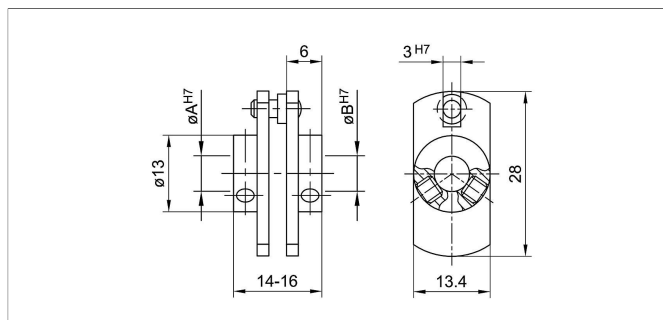
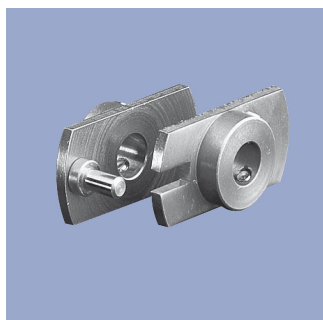
Operating temp. $-40 \dots +160^\circ\text{C}$

Transferable ≤ 1 Nm

torque

Displacement rad. ≤ 0.1 mm, angl. $\leq 0.45^\circ$

P/N	Type	$\varnothing A / \varnothing B$ [mm]
400103910	Z-106-G-6	6 / 6
400103912	Z-106-G-6,35	6 / 6.35
400103913	Z-106-G-10	6 / 10



Z-104-G-6

Fork coupling with low backlash for $\varnothing 6$ mm.

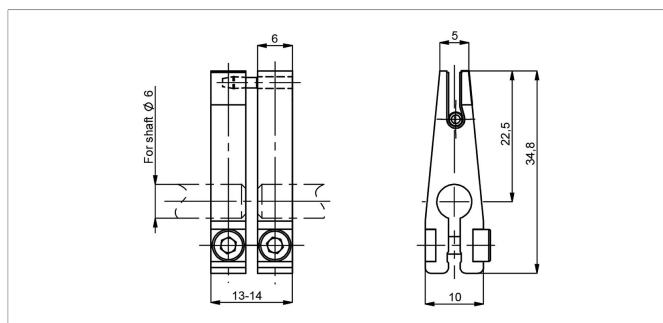
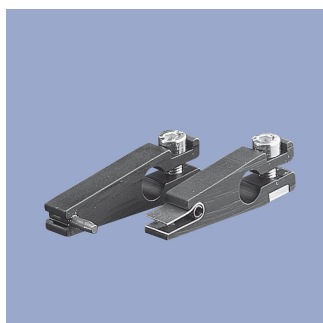
Mounting with 2 cylinder head screws M3 with internal hexagon.

Angle screwdriver DIN 911 AF 1.5 included in delivery.

Material Stainless Steel, driving pin polished

Displacement ≤ 1 mm

P/N	Type	$\varnothing A / \varnothing B$ [mm]
400005690	Z-104-G-6	6 / 6



Z-105-G-6

Backlash-free fork coupling for $\varnothing 6$ mm. Mounting with 1 cylinder head screw M3 with internal hexagon.

Angle screwdriver DIN 911 AF 2.5 included in delivery.

Material Aluminium, anodized (black)
Driving pin and spring hardened

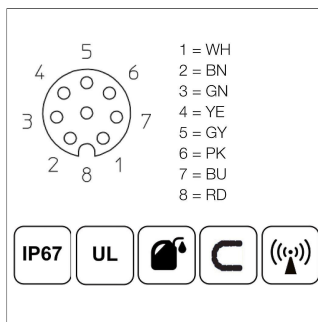
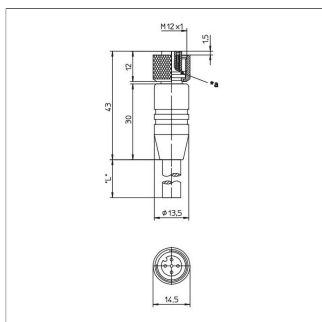
Transferable ≤ 5 Ncm

torque

Displacement ≤ 1 mm

P/N	Type
400005691	Z-105-G-6

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 mm²

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

IP67 Protection class IP67 DIN EN 60529

IP68 Protection class IP68 DIN EN 60529

 Very good Electromagnetic Compatibility (EMC) and shield systems

 Very good resistance to oils, coolants and lubricants

C Suited for applications in dragchains

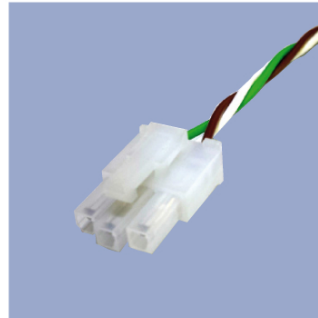
UL UL - approved

 CAN-Bus

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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