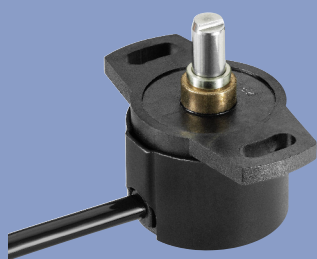


## Multiturn Sensor non-contacting

Series RSM2800  
 analogue

Preliminary data sheet



### Special features

- non-contacting, magnetic
- long life
- electr. angle 720° up to 5760° in 360°-steps available (equates 2 ... 16 turns)
- continuous analogue output signal across the selected angle range
- True Power On System: detection also in unpowered state, position value is non-volatile
- available with push-on coupling or marked shaft
- easy mounting
- protection class IP54 or IP65
- resolution 12 bit
- independent linearity  $\pm 0,25\%$
- optional digital interfaces see separate data sheet

This sensor unites the ability to measure angles across multiple turns with the compactness and priced attractivity of multiple turn wirewound potentiometers.

By combining a single turn angle detection and a separate turn detection this sensor is able to measure angles across multiple turns providing high resolution and accuracy. Due to the facts that the sensor can detect turns in unpowered state and that the sensor does store turns non volatile, it is a real true power on angle sensor in a very compact size.

The sensor works internally magnetic and hereby contactless and serves a very long life time. By using contactless technology the sensor has a high resistance against mechanical influences like shock, vibration etc.

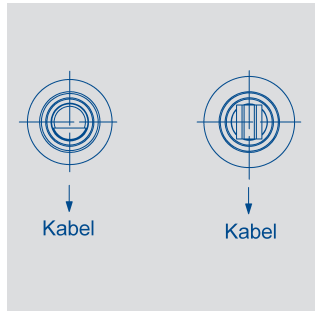
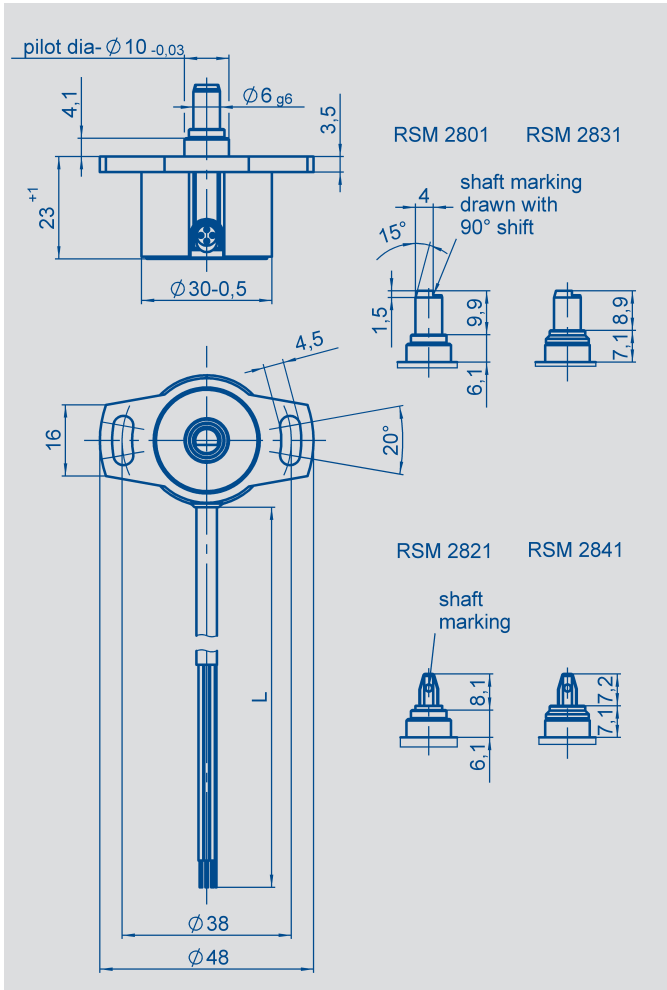
The housing is made of a special high grade temperature resistant plastic material. Fixings are in the form of elongated slots which allow simplicity in mounting together with ease of mechanical adjustment.

The special backlash-free push-on coupling ensures extremely quick and easy installation. The transducer is not sensitive to either dirt or dampnes. Electrical connection is made via a shielded cable which is potted into the housing.

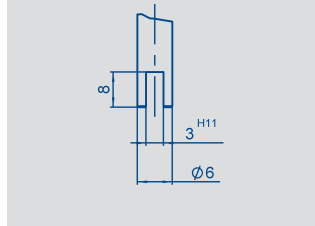
With the RSM2800 for the first time a compact and contactless solution can be provided that makes in many places actual costly solutions like gear drives and so this sensor can help to reduce total cost of systems.

Applications can be found in many areas like printing machines, drive and steering systems, wire length sensors, gate and door drives, in mobile applications such as lifts, in paper industry, in robotics and in common as a replacement for wirewound potentiometers or encoders.

Description	
Housing	high grade, temperature resistant plastic
Shaft	stainless steel
Bearings	bronze sleeve bearing
Electrical connections	shielded cable, 4 x AWG26

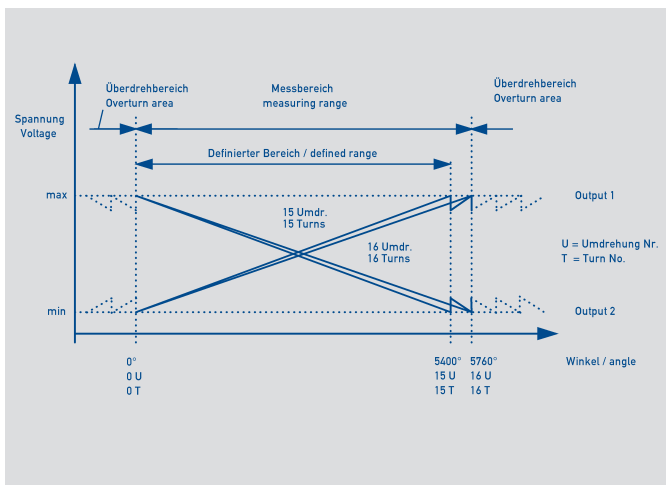
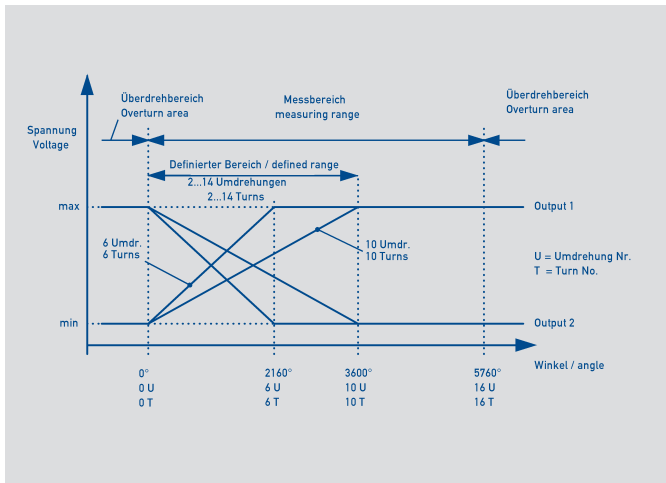


Recommended dimensions of driving shaft  
for RSM2821 and RSM2841.  
Parallel offset < 0.05 mm.



	Cable
Ground	brown
Supply voltage	green
Signal output 1	white
Signal output 2	yellow

Cable shielding connect to ground.



### Mechanical Data

Dimensions	see dimension drawing	
Mounting	2 M4 flister-head screws and washer	
Starting torque of mounting clamps at housing flange	180	Ncm
Mechanical travel	360 continuous	°
Permitted shaft load (axial and radial) static or dynamic force	20	N
Torque	0.5 (IP65) 0.15 (IP54)	Ncm
Permitted operational speed	120	min <sup>-1</sup>
Weight	ca. 50	g

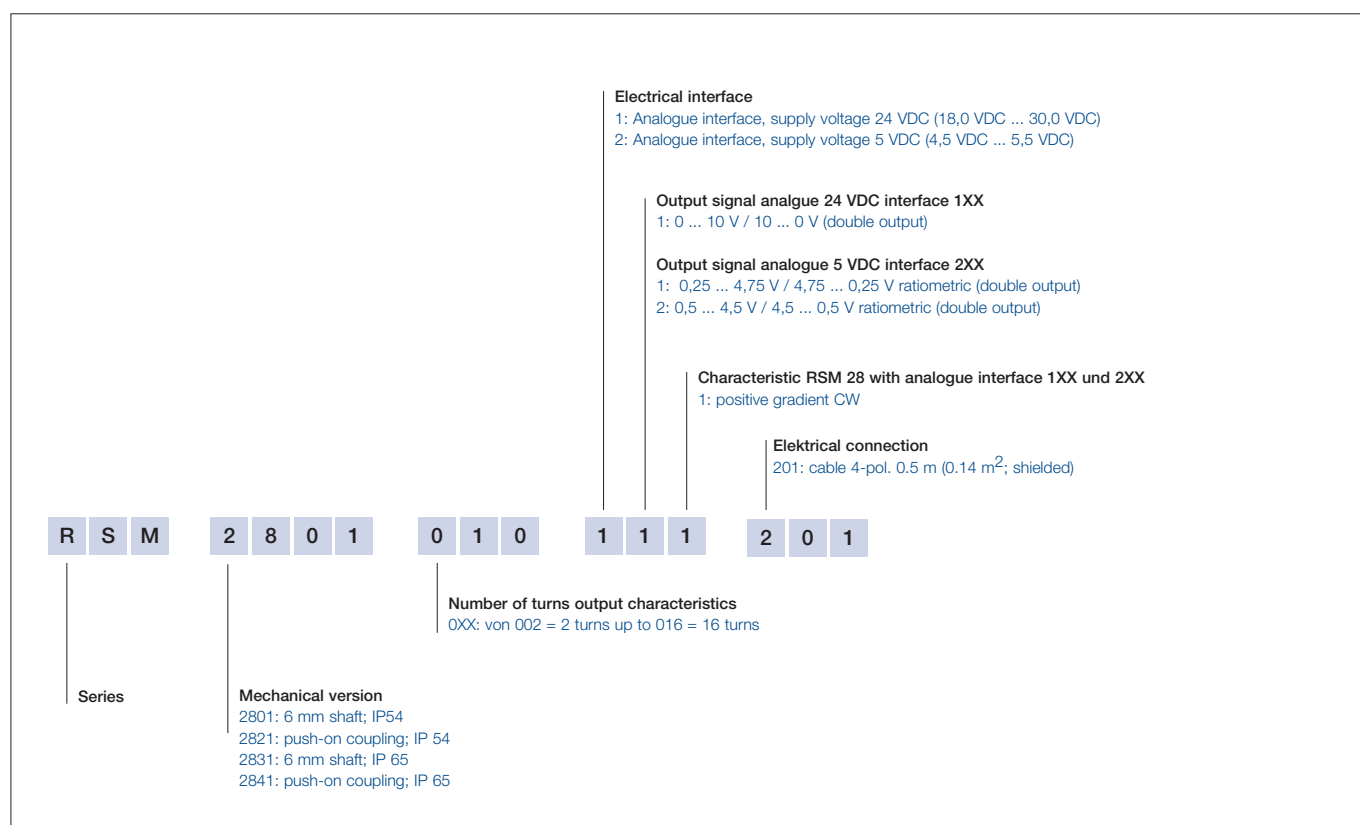
### Electrical Data

Supply voltage U <sub>b</sub>	5 ±0.5 24 ±6	VDC VDC
Output signal	ratiometric (supply voltage 5V ±0.5V) load ≥ 10 kΩ 0.1...10 V (supply voltage 24V ±6V) load ≥ 10 kΩ	V V
No-load supply current	30 typical	mA
Reverse voltage	yes, only supply lines	
Short circuit protection	signal to ground	
Measuring range	0 ... 720°, 0...5760 (360° steps)	°
Resolution	12	bit
Repeatability	±1	LSB
Independent linearity	0.25	%
Ripple	U <sub>b</sub> = 5V → no ripple definable in case of ratiometric output U <sub>b</sub> = 24V/ output 0,1...10 V	20 %
TC of output signal	≤ 50	ppm/K
Insulation resistance (500 VDC, 1 bar, 2s)	≥ 10	MΩ
Wire diameter	ca. 0.14 <sup>2</sup> (AWG26)	mm <sup>2</sup>

### Environmental Data

Temperature range	-40...+85	°C
Vibration (IEC 68T2-6)	5...2000 A <sub>max</sub> = 0.75 a <sub>max</sub> = 20	Hz mm g
Shock (IEC 68T2-27)	50 (11 ms)	g
Life	> 50 x 10 <sup>6</sup> (mechanical)	movem.
Protection class (DIN 40050 / IEC 529)	IP54 or IP65	
EMC specifications	ESD EN 61000-4-2 RF-Field EN 61000-4-3 BURST EN 61000-4-4 EM-Field 61000-4-8 EN 55011	

## Ordering specifications



### Recommended accessories

Process-controlled indicators  
MAP300/400/4000 with  
display.

### Available on request

- other angle ranges
- other characteristics
- customized connectors
- other shaft versions