

Non-Contacting Angle Sensors Measuring Absolute up to 360°

RSC2200 Series



Special features

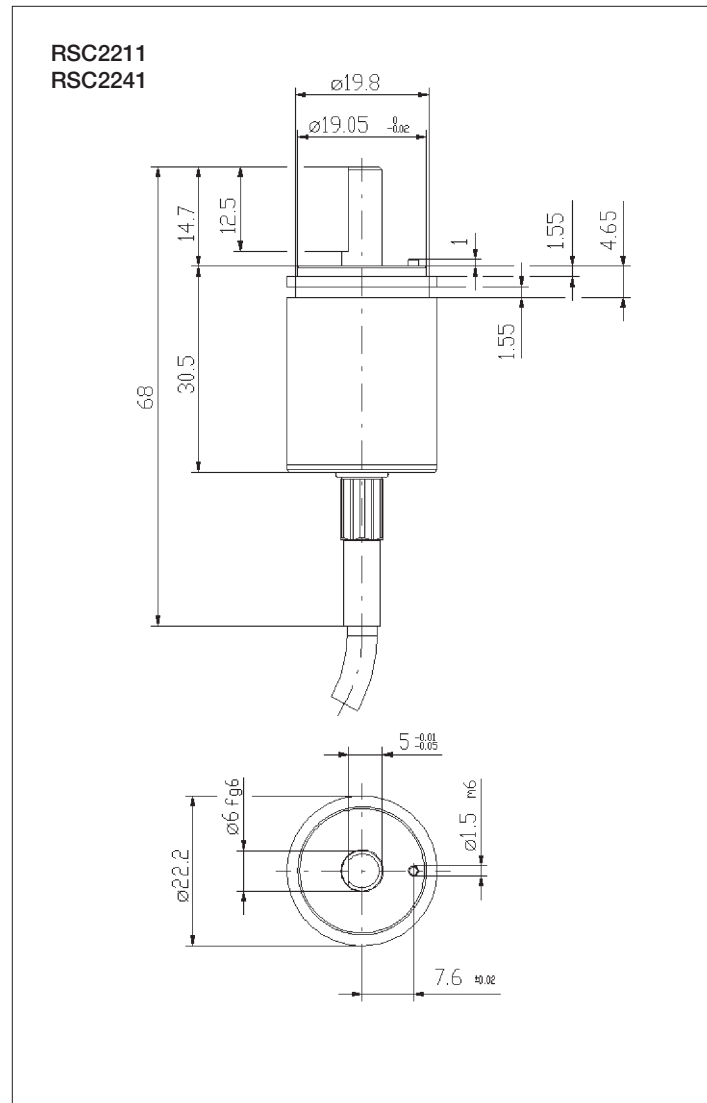
- compact dimensions
- non-contacting measuring method using VERT-X® Hall technology
- absolute angle measurement up to 360°
- output signals: analog or digital
- very long service lifetime
- high resolution
- high accuracy of measurement
- high adjusting speed
- initialization of the measurement direction (CW/CCW) is user selectable
- output characteristic programmable on request
- a permanent self-monitoring of the system is possible
- applications under adverse ambient conditions possible (humidity/dampness, oil, dust, vibrations, etc.)
- mechanically compatible with our Rotary Sensors PL300 and PL310

VERT-X® is a technology with absolute measurement for angles up to 360°. The absolute value measurement is referred to a mechanical index point, so that in case of a rotation during a power failure the new angular position is still held.

The rotation angle sensor can be supplied in two different ways: 5 VDC $\pm 10\%$ or 12 to 30 VDC. The outputs are digital and/or analog and the output characteristic curve can be programmed prior to delivery in accordance with the customer's requirements. The angle sensor is suitable for all applications in which an angle has to be converted into an analog voltage, current or digital value.

The RSC2200 has a micro-processor incorporated into it to provide 12-bit resolution and custom performance enhancements.

The measuring system is protected against overvoltage, pole reversal and short-circuits (only analog output signals 0.5 V to 4.5 VDC).



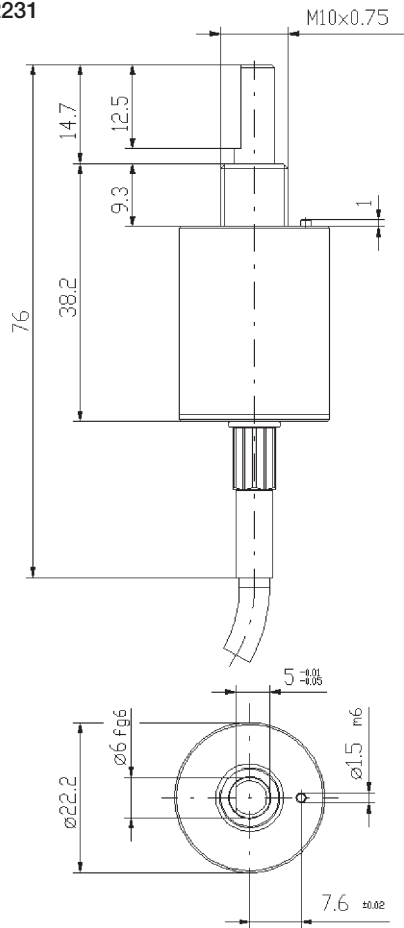
Description

Dimensions	see drawing
Case	aluminum
Shaft	$\varnothing 3.175$ mm -> Arcap / $\varnothing 6.00$ mm -> stainless steel
Bearings	ball bearings
Mounting	Bushing M 10 x 0.75 or Servo-mount size 9
Electrical connections	shielded 10-core cable, AWG28

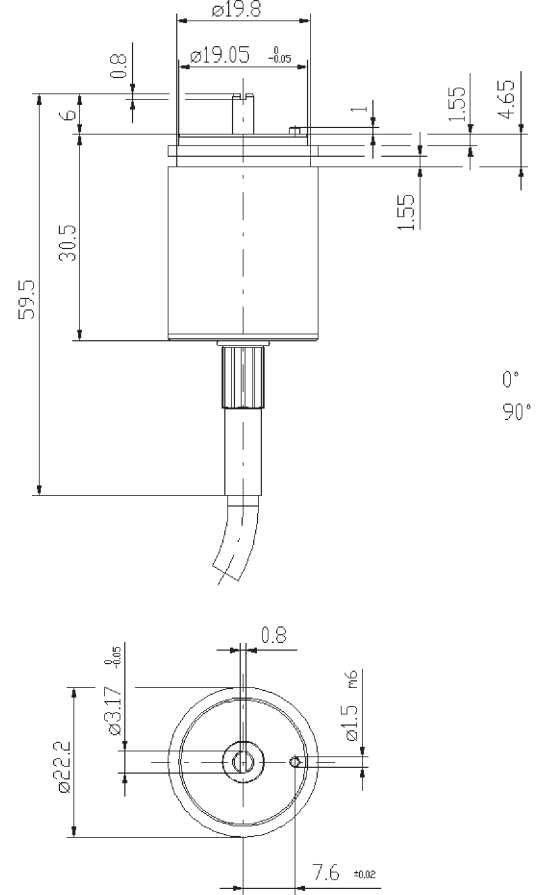
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RSC2201
RSC2231



RSC2212
RSC2242

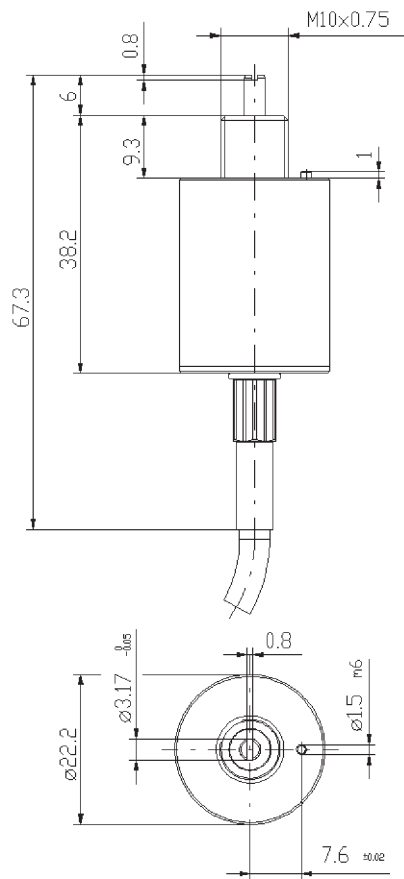


Subject to changes

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RSC2202
RSC2232



Electrical Data

Power supply voltage 12 ... 30 V (typically at +25°C, $U_b = +24$ V and $R_L = 10$ k Ω , if nothing different indicated)		
Power supply voltage U_b	24 (12...30)	VDC
Voltage supply rise time	≥ 20	V/ms
Oversvoltage	35 (max. 10s)	VDC
Current consumption	10	mA
Ohmic load at output 0.5...4.5 V	≥ 5	k Ω
Ohmic load at output 0...10 V	≥ 5	k Ω
Capacitive load at output 0.5...4.5 V	≤ 5	nF
Capacitive load at output 0...10 V	1	μ F
Output voltage	0.5...4.5	VDC
	0...10	VDC
Current for digital output	1	mA

Power supply voltage 5 V (typically at +25°C, $U_b = +5$ V and $R_L = 10$ k Ω , if nothing different indicated)

Power supply voltage U_b	5 (0.5...4.5)	VDC
Voltage supply rise time	≥ 20	V/ms
Over-voltage	6.5 (max. 10s)	VDC
Current consumption	10	mA
Ohmic load at output 10...90%	≥ 5	k Ω
Capacitive load at output 10...90%	≤ 5	nF
Output voltage	10...90	% of U_B
Current for digital output	1	mA

General

Measuring range	360	°
Resolution	± 0.09	°
Accuracy	± 0.35	°
Hysteresis	0.1	°
Temperature coefficient	50	ppm/K
Sample rate	1000 (330 for PWM)	Hz
Other interfaces	on request	

Mechanical Data

Dimensions	see drawing	
Starting torque	< 0.05	Ncm
Highest permissible speed	6,000	RPM

Environmental Data

Life time	360 million movem.	
(at 60 RPM, 100,000 h, axial and radial load 3 N)		
Temperature range	-40...+85	°C
Vibration	20...2000	Hz
	$a_{max} = 3$	g
Shock	20	g
Protection class (DIN 400 50 / IEC 529)	IP 54, IP 67	

Conform to CE (89/336/CEE)

EN 580081-1

EN 580081-1-2

EN 61000-6-2

Ordering specifications

R S C	2 2 0 1	2 3 6	1 1 1	1 0 2
Series		Electrical angle information 2 Standard: Electrical angle 0° ... 360° xx Optional: Other electrical angles available	Power supply voltage Ub 1 Standard: 24 VDC (12.0 VDC ... 30 VDC) 2 Optional: 5 VDC (0.5 VDC ... 4.5 VDC)	Output signal at 24 VDC supply (Ub1) 1 Standard: 0 VDC ... 10 VDC 4 Optional: PWM (500Hz, 5% ... 95%) 5 Optional: 4 mA ... 20 mA (ohmic load for current output < 500 Ω)
		Sensor principle 2 Standard: Vertical-Hall	Output signal at 5 VDC (Ub2) 2 Standard: 10% ... 90% from Ub2 4 Optional: PWM (500Hz, 5% ... 95%)	Output characteristics 1 Standard: Positive gradient CW
	Mechanical specifications 2201 Standard: Bushing mount M10 x 0.75; shaft OD 6 x 14.7 mm, D-shape; IP54 2202 Optional: Bushing mount M10 x 0.75; shaft OD 3.175 x 6 mm; IP54 2211 Optional: Servo mount size 9; shaft OD 6 x 14.7 mm, D-shape; IP54 2212 Optional: Servo mount size 9; shaft OD 3.175 x 6 mm; IP54 2231 Optional: Bushing mount M10 x 0.75; shaft OD 6 x 14.7 mm, D-shape; IP67 2232 Optional: Bushing mount M10 x 0.75; shaft OD 3.175 x 6 mm; IP67 2241 Optional: Servo mount size 9; shaft OD 6 x 14.7 mm, D-shape; IP67 2242 Optional: Servo mount size 9; shaft OD 3.175 x 6 mm; IP67		Electrical connection 102 Standard: NT-Standard cable 1.0 m 106 Optional: NT-Standard cable 3.0 m	

Possible Options:

- max. 8 logic switches programmable as requested
- max. 4 analog switches programmable as requested
- max. 2 inputs for external analog signals with A/D-converter
- max. 8 inputs for external digital signals