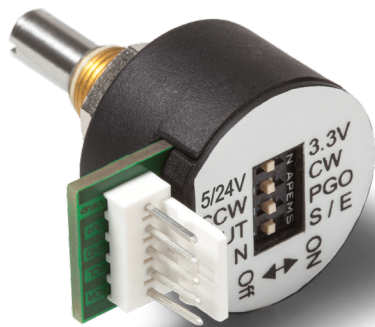


Data Sheet for Angle Sensors

Programmable Hall-Effect Single-Turn Rotary Encoder with Analog Output

Series SPOT25S



- Angle 0..20° to 0..360° programmable by DIP-Switches
- Sense of rotation switchable (CW / CCW)
- Supply voltage: 5 V / 3,3V (switchable), 24V
- Analogue output: 0..5 V / 0..3,3 V (ratiom.), 0..10 V
- High life expectancy >100 mio. shaft revolutions
- Power save mode < 1mA on request
- Small housing case (ø25mm)

Only one sensor for different electrical rotating angles and an easy and accurate programming of start- and end position and senses of rotation. This helps saving production time and to simplify logistics. In combination with the long life expectancy the SPOT25S offers an outstanding price performance relationship.

Electrical Data

Effective electrical angle of rotation 1.)	0..20° to 0..360°		
Independent linearity (best straight line) 1.)	±0.05 % @ 360°		
Absolute Linearity 1.)	±0.1 % @ 360°		
Output signal	0...3,3V ratiometric (3,3V ± 10%)	0...5V ratiometric (5V ± 10%)	0...10V (15...30 V)
Resolution	12 bit (4096 steps) @360°, 11Bit @180°		
Update rate	0,14ms standard		
Supply current (no load)	<8mA (U = 3,3V)	<8mA (U = 5V)	<10mA (U = 15...30V)
Output load	≥ 5 kOhm		
Insulation resistance 1.)	100 MOhm @ 1000 VDC, 1 min		
Insulation voltage 1.)	1000 VAC @ 50 Hz, 1 min		
Maximum amount of configuration cycles	With DIP-Switch: 1x (OTP)		

Mechanical and Environmental Data

Mechanical angle 1.)	Endless
Lifetime 2.)	> 100 mio. revolutions (in dependence of application) Tested under room temperature +20 °C, with radial load 1N, without sealing ring
Bearing	Sleeve bearing
Max. operational speed	100 rpm (800 rpm within short time)
Operational torque without / with X-Ring	0,1 ≤ M ≤ 0,6 Ncm / 0,3 ≤ M ≤ 1,3 Ncm (@ RT, 10 rev./min)
Operating temperature range	-40°..85°C (cabling fixed installed)
Storage temperature range	-40°..+105° C
Protection grade front side (IEC 60529) Standard	IP40
Protection grade rear side (IEC 60529) Clamping terminal	IP40

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Mechanical and Environmental Data

Vibration (IEC 68-2-6, Test Fc)	±1,5 mm / 20 g / 10 bis 2000 Hz / 16 frequency cycles (3x4 h)
Mechanical shock (IEC 68-27, Test Ea)	50 g / 11 ms / halfsine (3x6 shocks)
Max. radial load	1 N
Mass (product with option ST1)	Approx. 26 g
Fastening parts included in delivery	Hex nut (AF14) and tooth washer
Fastening torque mounting nut	≤ 3 Nm
Material shaft	Stainless steel
Material housing	Plastic / Bronze

Immunity

EN 61000-4-2 ESD	Class B
EN 61000-4-3 RF sine wave	Class A
EN 61000-4-6 Conducted sine wave	Class A
EN 61000-4-8 Power frequency magnetic fields	Class A

1.) According IEC 60393

2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

Order Code

Description

Series SPOT	SPOT25S					
Shaft diameter Ø 6 mm		6				
Supply voltage / Output signal 5 V ± 10 % / 0..5 V ratiometric (switchable to 3,3V) 24 V (15..30 V) / 0..10 V			0505 2410			
Starting torque				LT		
Electrical connection: 5 pin connector, grid dimension 2,54 mm					ST1	
Option A (drill pattern compatible to series MxB25)						A

Data Sheet for Angle Sensors

Programmable Hall-Effect Single-Turn Rotary Encoder with Analog Output

Series SPOT25S

For higher quantities or on-going demand, additional options are available as described below



For example:

- Modified shaft shape
- Clamping terminals, cables ready made
- Output signal 0,5...4,5V
- Output signal 5V PWM (10-90% Duty-Cycle)
- Ultra Low Power (ULP) / Ultra Low Speed (ULS)

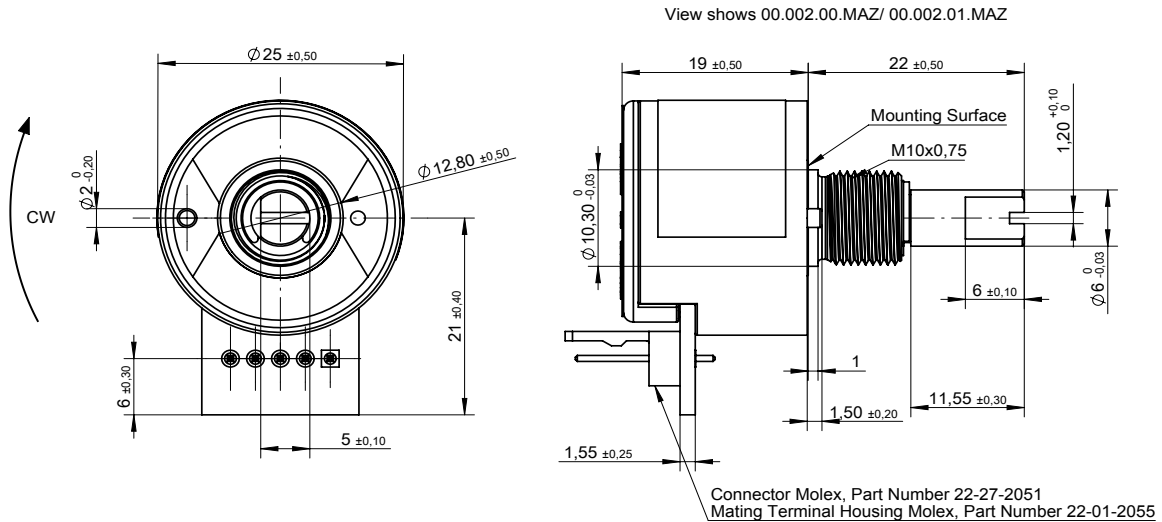
Data Sheet for Angle Sensors



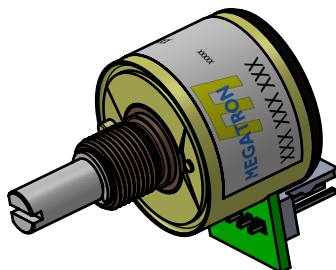
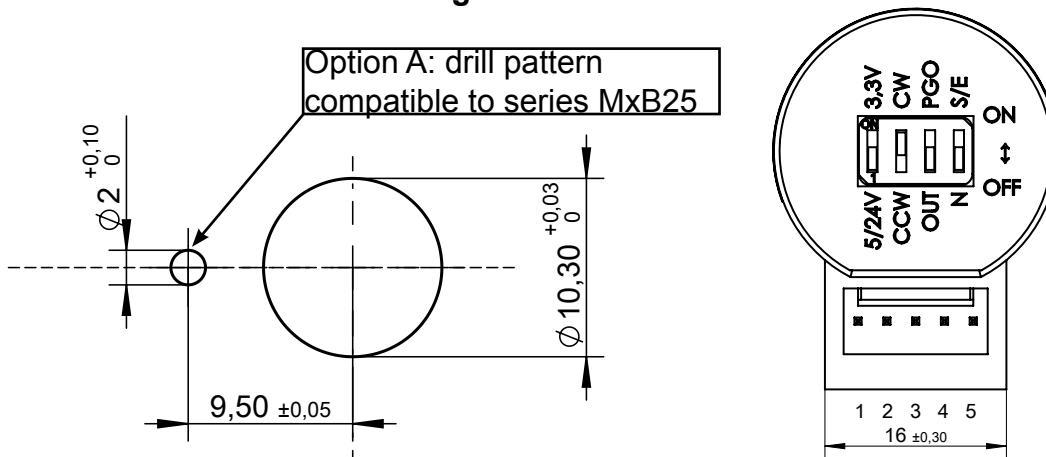
Programmable Hall-Effect Single-Turn Rotary Encoder with Analog Output

Series SPOT25S

Drawing



Pattern of Drilling



Pin	Function
1	VSUP
2	OUT
3	GND
4	SCL
5	SDA