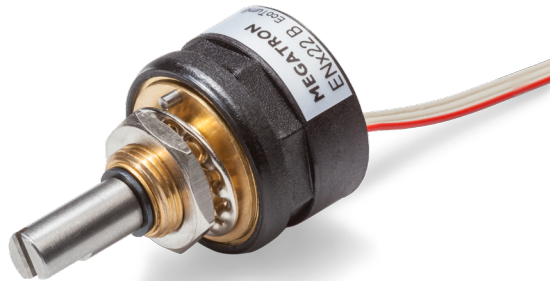


Data Sheet for Angle Sensors

Hall-Effect Single-Turn Rotary Encoder with Serial Output

Series ENS22B



- SSI- Interface (redundant SPI version on request)
- Resolution up to 12 bit
- With high or low torque
- With or without mechanical stops
- Life expectancy > 100 x 10⁶ shaft revolutions
- Potted electronics

Besides the use as a sensor, the encoder series ENS22B with high torque and stops is also for manual setpoint. The bushing enables a simple and space-saving installation. The ENS22B is a perfect alternative to a Potentiometer with 22 mm housing diameter.

Electrical Data

Effective electrical angle of rotation 1.)	
Without stops (Option OCW)	0..360°
With stops (Option SCW)	0..320°
Independent linearity (best straight line) 1.)	± 0,5 %
Output signal	SSI
Theoretical Resolution	12 bit
Update rate	0,1 ms
Supply voltage	9-30 VDC
Power consumption (no load)	≤ 30 mA
Insulation voltage 1.)	1000 VAC @ 50 Hz, 1 min
Insulation resistance 1.)	2 MOhm @ 500 VDC, 1 min

Mechanical Date, Environmental Conditions, Miscellaneous

Mechanical angle of rotation 1.)	Without stops 320° +5°/-0°
Lifetime 2.)	
Standard	> 10 x 10 ⁶ rotations
Option P	> 100 x 10 ⁶ rotations
	<small>Depending on the application - values determined at room temperature +20 ° C, with a radial load of 1 N without sealing ring</small>
Bearing	Sleeve bearing
Max. operational speed	
Standard	800 rpm
Option P	4000 rpm
Starting torque @ ambient temperature 1.) 2.)	
Option LT and P LT	< 0,3 Ncm
Option HT and D (sealing ring)	> 1 Ncm
End stop torque 1.) 2.)	< 80 Ncm
Operating temperature range	-40..+85 °C (fixed cable, extended temperature range on request)
Storage temperature range	
Standard	-40..+105 °C
Option P	-40..+90 °C
Protection grade (IEC 60529)	IP65
Sealing shaft / bearing	
Standard	no sealing (IP40)
Option D	O-sealing ring (IP55S)
Vibration (IEC 68-2-6, Test Fc)	±1,5 mm / 20 g / 10 bis 2000 Hz / 16 frequency cycles (3x4 h)
Shock (IEC 68-2-27, Test Ea)	50 g / 11 ms / half sine (3x6 Shocks)
max. radial load	1 N

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Mass	approx. 22 g
Fastening parts included in delivery	Hex nut wrench size 14, tooth washer
Fastening torque mounting nut	<1 Nm
Material shaft	stainless steel
Material housing	plastic

Emission / Immunity

DIN EN 55011 Emission AC/DC power	Class B
DIN EN 55011 Emission housing	Class B
DIN EN 61000-4-2 Immunity housing ESD	Class B
DIN EN 61000-4-3 Immunity RF sine wave	Class A
DIN EN 61000-4-4 Immunity DC power, I/O cable: Burst	Class B
DIN EN 61000-4-5 Immunity DC power, I/O cable: Surge	Class B
DIN EN 61000-4-6 Immunity DC power, I/O cable: Conducted sine wave	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	Options					
Series ENS22	ENS22					
Shaft diameter / bushing thread Ø 6 mm / M10		B1				
Resolution / supply voltage / interface 14 bit / 5 V ± 10% / SPI redundant (*) 12 bit / 5 V ± 10% / SSI (*) 12 bit / 24 V (9-30 V) / SSI			1405SPI (*) 1205SSI (*) 1224SSI			
Without stops; clockwise rising signal; 360°; zero point alignment				OCW360 N		
Polymerbearing + low torque Metal bearing + sealing ring					P LT LT D	
With stops; clockwise rising signal; 320° mechanical and electrical angle				SCW320		
High torque + sealing ring					HT D	
Other shaft length [mm] (*)						Axx (*)
Other cable length [m] (*) (SPI redundant max. 0,6m)						CVxx (*)

(*) = on request available for projects

On request for higher quantities or on-going demand, additional options are available as described below

For example:

- Mu-Metal shielding
- Other mechanical angle
- Other starting torque
- Special housings
- Special shaft design
- SPI- redundant version (max cable length 0,6m)

For technical advice, projects, samples, questions about pricing, delivery times and availability please contact us

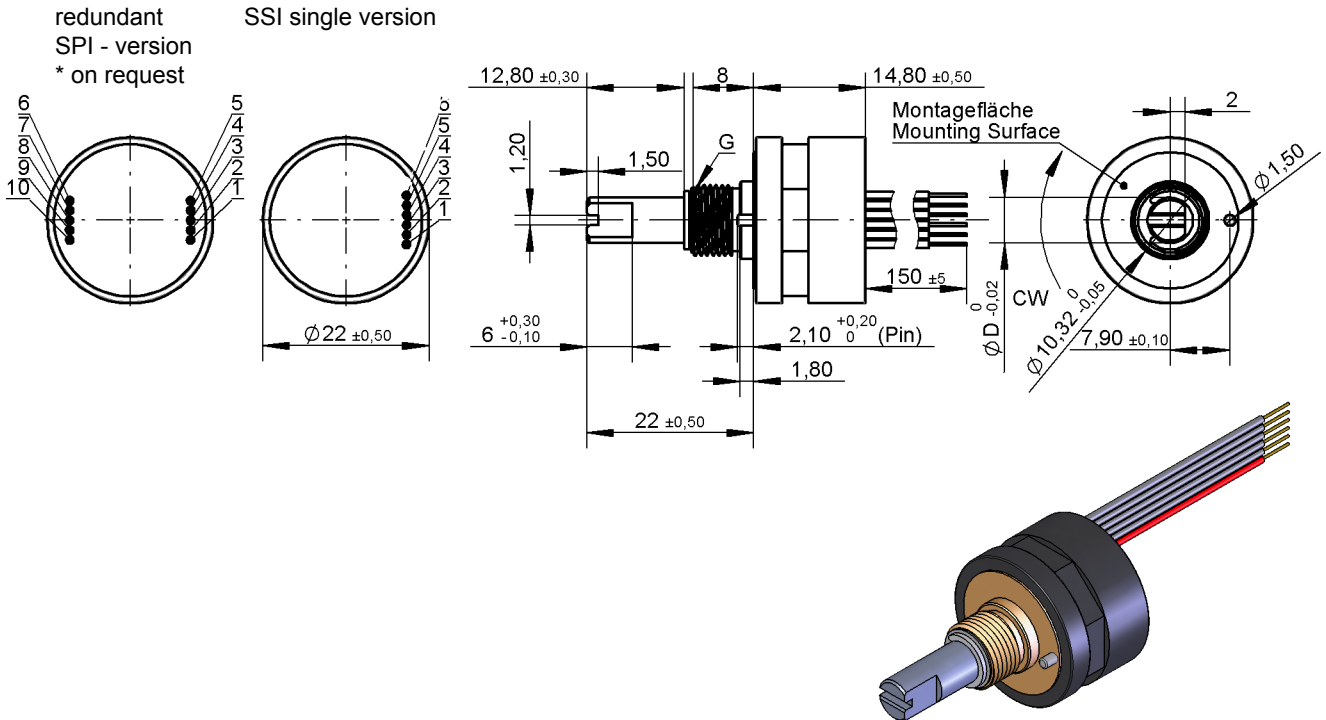
Tel.: +49 89 46094-500
export@megatron.de

Data Sheet for Angle Sensors

Hall-Effect Single-Turn Rotary Encoder with Serial Output

Series ENS22B

Technical Drawing



Option	Dimension D	Dimension G
B1	6 mm	M10

Cable assignment Single SSI version	
VSUP 1	1
GND 1	2
CLK +	3
CLK -	4
DAT +	5
DAT -	6

Cable assignment Redundant SPI version *on request	
VSUP 1	1
GND 1	2
DAT 1	3
CLK 1	4
CS 1	5
VSUP 2	6
GND 2	7
DAT 2	8
CLK 2	9
CS 2	10

08.11.2012