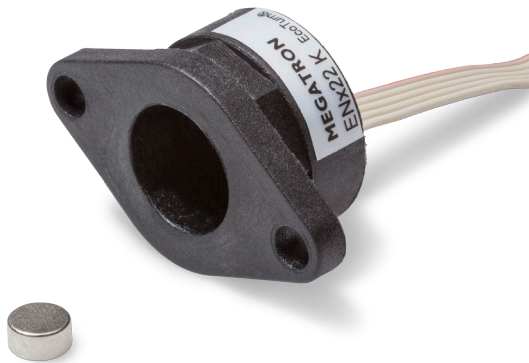


Data Sheet for Angle Sensors

Hall-Effect Single-Turn Rotary Encoder with Serial Output

Series ENS22K



- SPI- Interface (SSI interface on request)
- Resolution up to 14 bit
- Unlimited Life expectancy
- Potted electronics

The Hall effect Kit-Encoder Series ENS22 K has an endless mechanical life expectancy because there isn't any bearing nor wear. A separate magnet is enclosed. There are push on magnet holders as an accessory available. Due to the easy connection of the flat ribbon cable, e.g. using IDC, the cost of soldering can be reduced as well.

Electrical Data

Effective electrical angle of rotation 1.)	0..360°
Independent linearity (best straight line) 1.)	± 0,5 %
Output signal	SPI
Theoretical Resolution	14 bit
Update rate	200 µs
Supply voltage	5 VDC ±10 %
Power consumption (no load)	≤ 10 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
Lifetime	Unlimited
Operating temperature range	-40..+85 °C (fixed cable, extended temperature range on request)
Storage temperature range	-40..+105 °C
Protection grade (IEC 60529)	IP65
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)
Mass	Approx. 11 g
Material housing	Plastic

Emission / Immunity

EN 55011 Emission AC/DC power	Class B
EN 55011 Emission housing	Class B
EN 61000-4-2 Immunity housing ESD	Class B
EN 61000-4-3 Immunity RF sine wave	Class A
EN 61000-4-4 Immunity DC power, I/O cable: Burst	Class B
EN 61000-4-5 Immunity DC power, I/O cable: Surge	Class B
EN 61000-4-6 Immunity DC power, I/O cable: Conducted sine wave	Class A

1.) According IEC 60393

Data Sheet for Angle Sensors

Hall-Effect Single-Turn Rotary Encoder with Serial Output

Series ENS22K

Order code

Description

Series	ENS22 K			
Resolution / supply voltage / interface 14 Bit / 5V ± 10% / SPI 12 bit / 24 V (9-30 V) / SSI (*)		1405SPI 1224SSI (*)		
Without stops; clockwise rising signal; 360°			OCW360	
Other cable length [m] (*) Standard cable length 150mm (tolerance -10 mm...+25 mm according IPC)				CVxx (*)

(*) = on request available for projects

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

For example:

- 1405SPI with redundancy (cable length max. 0,6m)
- 1205SSI electronic
- Mu-Metal shielding
- Other mechanical angle
- Other starting torque
- Special housings
- Special magnet holder

Data Sheet for Angle Sensors

Hall-Effect Single-Turn Rotary Encoder with Serial Output

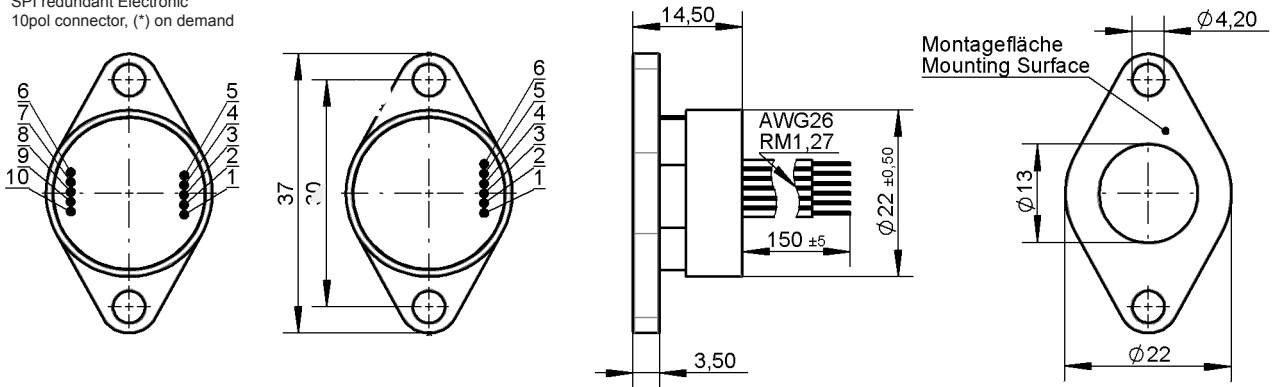
Series ENS22K

Technical Drawing

SPI single electronic
5pol connector (standard)

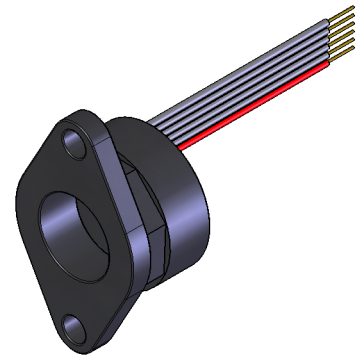
SPI redundant Electronic
10pol connector, (*) on demand

SSI version



Cable assignment SPI version	
VSUP 1	1
GND 1	2
DAT 1	3
CLK 1	4
CS 1	5

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



For details of the communication of the interfaces please have a look at the data sheets of the chip producer.

SER-Interface

Producer: ams
Type: AS5045
web: www.ams.com

SPI-Interface

Producer: Melexis
Type: MLX90316EDC
web: www.melexis.com

Data Sheet for Angle Sensors

Hall-Effect Single-Turn Rotary Encoder with Serial Output

Series ENS22K

Technical Drawing

