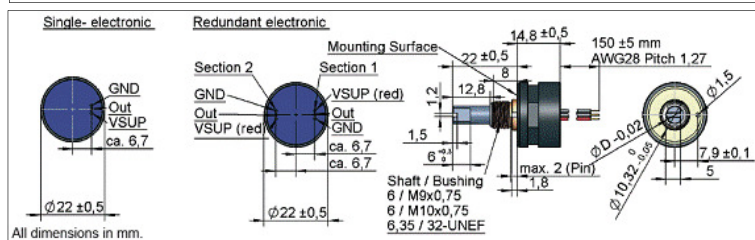


'ANALOG' Output Precision Contactless Rotary Position Sensors

Bush Mounting - Sleeve bearing

Economical - Hall CMOS technology
Ø22 mm plastic robust housing
Bush mounting - Sleeve bearing
Analog output - Current / voltage output
Shock and vibration proof
Alternative to precision potentiometers

1-Supply (red) 2-Output (grey) 3-Ground (grey)



ELECTRICAL CHARACTERISTICS

Electrical angle	0 to 360°, any angle from 0 - 20... 0 - 360 programmable in steps of 1°	
Electrical speed (Max.)	160 rpm (default) / 800 rpm (optional)	
Resolution	4096 step (12 bit)	
Independent linearity tolerance	± 0.5%	
Signal type	Supply voltage	Output signal
S0505	5V ±10%	0 - 5V ratiometric
SDC05	9 - 30 V	0 - 5V
S2410	15 - 30 V	0 - 10 V
S2442	15 - 30 V	4 - 20 mA
S2420	15 - 30 V	0 - 20 mA
S05052C	5V ±10%	2 channel 0 - 5V ratiometric
SDC052C	9 - 30 V	2 channel 0 - 5V
S24102C	15 - 30 V	2 channel 0 - 10 V
Supply current	< 16 mA	
Update rate	1 ms	

MECHANICAL CHARACTERISTICS

Mechanical angle	(O) 360° without stop (S) 320° +5° / - 0° with stop
Mechanical speed (Max.)	800 rpm (brass), 3000 rpm (polymer bearing)
Shaft diameter X length (FMS)	6 mm or 1/4 inch Ø X 22 mm
Life: with brass sleeve bearings	~15 million rotations
Life: with polymer sleeve bearings	~20 million rotations
End stopper strength	Max 80 Ncm
Operating temperature	- 40 ... +85 °C
Operating torque	0.3 to 0.5 Ncm (Low), 0.5 to 1 Ncm (Medium)
Vibration (IEC 68-2-6, Test Fc)	±1.5 mm / 20g / 2000Hz / 16cycles
Mechanical shock (IEC 68-2-7, Test Ea)	50g /11ms /halfsine (3X6 shocks)
Weight	25 gm
Interconnection	3 core flat cable 0.15 mtr long

MATERIAL

Bushing	Brass
Bearing	Sleeve bearing - brass (default)
Bearing (option P)	Polymer sleeve bearing (optional) - only for B1
Housing	Nylon 66 Glass Fibre reinforced
Shaft	Stainless steel

ORDERING INFORMATION

Refer to electrical and mechanical options on page2

22		Housing diameter
A		Analog output
EPP		
B1 B2 B3		Bush mounting
Sxxx		Signal
S0005 S0005 S2410 S2442 S2420 S00052C S00052C S24102C	Sxxxx	0 - 5V DC (ratiometric) 0 - 5V DC 0 - 10V DC 4 - 20mA 0 - 20mA 2 channel 0 - 5V DC (ratiometric) 2 channel 0 - 5V DC 2 channel 0 - 10V DC
Sxxx		With stop, (default 320°) options 90°, 180°, 270°
Oxxx		Without stop, (default 360°) any angle from 20° to 360° in steps of 1°
cw ccw	CW/ CCW	Clockwise (CW) (default) Counter clockwise (CCW)
PEX		Programming options for non-effective electrical angle (only if Elec. angle is < 360°)
PE1 PE2 PE3 PE4	PEX	Delta 1/2 (default) Low level High level Variable level
P0x		Programming options
P0L P0Z P0C P0M	P0x	Output signal level Zero point Center point Multipoint
LT MT HT	xT	Low torque (0.3 to 0.5 Ncm) Medium torque (0.5 to 1 Ncm) High torque (1.5 to 3 Ncm) - price adder
P	P	Polymer sleeve bearing (only for B1) Torque - 0.3 to 0.5 Ncm
D	D	Shaft seal IP65 (not for "P" option)
Axx	Axx	Special shaft length (default 22 mm FMS)
Cvxx	CVxx	Special cable length (default 0.15 mtr)

Example with description - **22A EPP B2 S2410 S90 CW POZ LT A18** - 22 mm housing, Analog output, Bush - mount, thread M9X0.75 / 6mm shaft, 0-10V output, with stop 90° clockwise, zero point, low torque, special shaft length 18mm FMS,3 core fl at cable 0.15 mtr long

March 2019 • Subject to change without notice / E & OE. RoHS compliant product

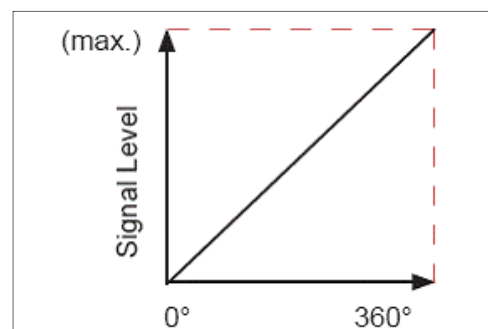
Series 22A EPPB



FUNCTION PRINCIPLE

The determination of angular position and signal generation is realised by an intelligent CMOS Hall sensor. A diametrical polarised magnet induces its magnetic field into the sensor. It rotates and provides a conditioned signal to the integrated electronic.

ANALOG OUTPUT



At the output of the sensor a variable voltage or variable current is provided proportional to the position of the shaft / axis over a complete angle range of 360 ° or a subrange. The contactless sensor electronic guarantees a steady signal level and a very low linearity error of 0.5%. With supply voltages of 5VDC $\pm$ 10%; 9 - 30VDC; 15 - 30V (24VDC) output signals of 0 - 5V ratiometric, 0 - 5VDC; 0 - 10VDC; 0 - 20mA ; 4 - 20mA at the sensor output are provided. Besides this a large variety of electrical options such as Output signal level programming, Zero point programming, Centre point programming, Multipoint programming can be provided. Two channel redundant outputs can be provided for voltage outputs.

Default Version :

22 mm housing, bush mount, 360° CW Electrical & Mechanical angle, Electrical speed 160 rpm, Low or Medium Torque, Output signal level 0-100%, 3 core flat cable 0.15 mtr long

ELECTRICAL OPTIONS FOR ANALOG VERSION 22A ERCB

Electrical options for Effective electrical angle :

Electrical angle (xxx) : Standard configuration is 360° . As an option, any angle from 0-20° to 0-359° in steps of 1° can be programmed.(Price adder)

Output Signal level Programming (POL) : Standard configuration is 0-100%. Output signal can be programmed at any defined lower limit or upper limit in terms of percentage of output. Example : 10% to 90% for S0505 will give output from 0.5V to 4.5V (Price Adder).

Direction of Rotation (CW/CCW) :

CW(Clockwise) When shaft is viewed from top, and rotated in clockwise direction, output increases from minimum to maximum value(standard configuration).

CCW(Counter clockwise) when shaft is viewed from top,and rotated in counter clockwise direction,output increases from minimum to maximum value(Price adder).

Zero point Programming (POZ) :

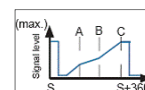
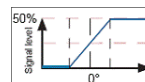
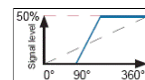
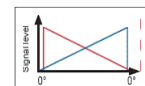
Standard configuration is zero point without orientation. At POZ, when we do zero point programming rising ramp will start from marking on encoder housing or from the endstop CCW. Zero point can also be programmed at any defined offset from marking on the housing (Price Adder).

Center Point Programming (POC) :

Effective electrical angle is aligned with the mechanical zero point in such a way that equal effective angles in both rotating directions are achieved. Center point can also be programmed at any offset (Price Adder).

Multi Point Programming (POM) :

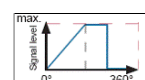
Output characteristics : 3 to 6 rising or falling linear segments. Minimum and maximum signal level can be defined within the total electrical angle. First and last linear segment (min./max.) is always horizontal 1 to 3 setable calibration points. (Price Adder)



Electrical options for Non - Effective electrical angle (Price Adder) : (If electrical angle is < 360°)

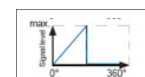
Delta 1/2 (PE1) :

If the electrical effective angle is programmed smaller than 360°, the remaining non-effective electrical angle is divided in two equal parts : high level & low level - Delta 1/2.



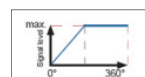
Low level (PE2) :

If the electrical effective angle is programmed smaller than 360°, after reaching the maximum, the signal level falls to low level.



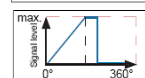
High level (PE3) :

If the electrical angle is programmed smaller than 360°, the signal level remains high after reaching the full level.



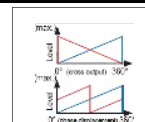
Variable level (PE4) :

If the electrical angle is programmed smaller than 360°, remaining non-effective electrical angle can be divided into high and low level in any ratio according to customer request.



2 Channel Redundant Output (2C) - Special type

2 Channel Output (2C) : The sensor provides 2 operating modes: A) Redundancy i.e. channel one and channel two are identical. If one channel fails the other channel remains active.B) It is also possible to have 2 different programs in the 2 channels. For this, additional functions can be obtained.



MECHANICAL OPTIONS FOR ANALOG VERSION 22A ERCB

Type / Series	Standard mechanical options (Price adder)	Customized mechanical options (Price adder)
22A ERCB	High torque (HT), endstop at 90°, 180°, 270° - Mu metal cap , special cable length	Special shaft length ; Special endstop angle

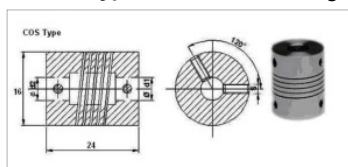
INTERCONNECTION

Standard Interconnections - 3 core flat cable 0.15 mtr long

ACCESSORIES - SPIRAL COUPLINGS

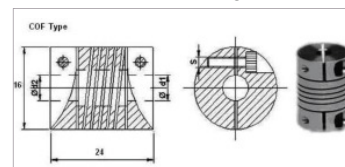
Whenever the shafts of the sensors are available only in metric (mm) or radial force is expected on the shaft, we recommend our very economical precision machined metal spiral couplings with set screws or clamp fixing. there are two dimensions in stock. One side for 6 mm dia shaft and other side either 1/4th inch or 1/8 inch shaft dia. These can be used to connect metric and non metric devices.

COS Type - Set Screw Fitting



6 mm (d1) - 1/4" (d2) / 6 mm (d1) - 1/8" (d2)

COF Type - Flange Clamping



6 mm (d1) - 1/4" (d2) / 6 mm (d1) - 1/8" (d2)

We are here for you. Addresses and Contacts.

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Scan here and get an overview of personal contacts!



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