

'Analog' Output Precision Contactless Rotary Position Sensors

Bush Mounting - Sleeve bearing

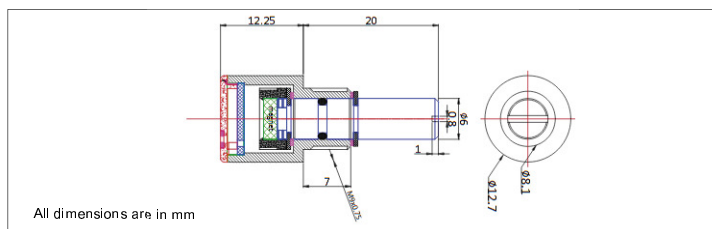
12 mm Ø metal housing

Hall CMOS technology, low cost

Output 0 - 5V ratiometric, Measurement range 0° to 360°

Bush mounting - Sleeve bearing - 6 mm shaft diameter

1 - Supply (Red); 2 - Output (Grey); 3 - Ground (Grey)



All dimensions are in mm

ELECTRICAL CHARACTERISTICS

Electrical angle	0 to 360°, any angle from 0-20 to 0-360 programmable in steps of 1°	
Electrical speed (max)	160 rpm	
Resolution	4096 steps (12 bit)	
Signal type	Supply voltage	Output signal
S0505	5V ±10%	0 - 5V ratiometric
Independent linearity tolerance	± 0.5%	
Supply current (mA)	< 16 mA	
Update rate	1 ms	

MECHANICAL CHARACTERISTICS

Mechanical angle	0 - 360°(continuous)
Shaft diameter and length (FMS)	6 mm Ø X 20mm
Bushing	M9 X 0.75
Mechanical speed (Max.)	800 rpm
Rotational life	~ 10 million rotations
Operating torque (approx.)	0.1 to 0.3 Ncm
Operating temperature range	- 40 to +85° C
Weight	10 gm
Interconnection	3 core flat cable 0.15 mtr long

MATERIAL

Housing	Aluminium anodized
Shaft	Stainless Steel
Bearing	Sleeve bearing- teflon

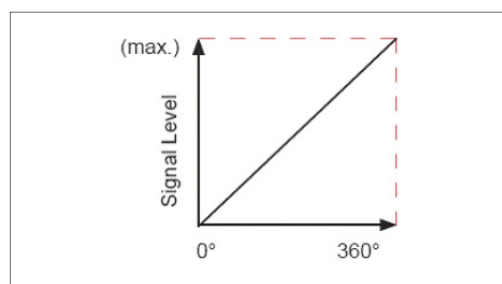
12A MMPB2



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±10% output signal of 0 - 5V ratiometric at the sensor output is provided. Besides this a large variety of electrical options such as Output signal level programming, Zero point programming and Centre point programming are provided.

Default Version :

12 mm housing, 6 mm shaft, bush mount, 360° CW
Electrical & Mechanical angle, Electrical speed 160 rpm
3 core flat cable 0.15 mtr long.

ORDERING INFORMATION

Refer to electrical and mechanical options on page 2

Housing diameter	Analogue output	Miniline (Bush Thread M9X0.75 & Shaft 6 mm Ø)	Miniline	Bush mounting M9X0.75	Signal	0 - 5V (ratiometric)	Electrical angle	any angle from 0-20 to 0-360 programmable in steps of 1° (default 360°)	Direction of rotation	Clockwise (CW) - (default) Counter clockwise (CCW)	Programming options for non - effective electrical angle (only if elec angle is < 360°)	Delta 1/2 - (default) Low level High level Variable level	Programming options	Output signal level Zero point Center point	Special cable length (default 0.15 m long)	Output connection	3 core flat cable 0.15 mtr long - (default)
12	A	M	MP	B2	S0505	xxx	CW CCW	PE PE1 PE2 PE3 PE4	PO POL POZ POC	CVxx	OCF						
12	A	M	MP	B2	S0505	xxx	CW / CCW	PE _x	PO _x	CV _{xx}	OCF						

Example with description - 12A MMPB2 S0505 360CW OCF - 12 mm diameter, Analog output, Miniline, RotaCol bush mount, (Bush Thread M9X0.75 & Shaft 6 mm Ø), Signal - 0 - 5V ratiometric, 360° angle clockwise, 3 core flat cable 0.15 mtr long

Example with description - 12A MMPB2 S0505 360CW OCF - 12 mm diameter, Analog output, Miniline, RotaCol bush mount, (Bush Thread M9X0.75 & Shaft 6 mm Ø), Signal - 0 - 5V ratiometric, 360° angle clockwise, 3 core flat cable 0.15 mtr long

ELECTRICAL OPTIONS FOR ANALOG VERSION 12A MMPB2

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).

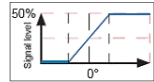
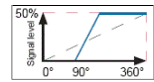
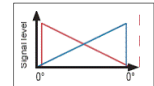
CCW(Counter clockwise) when shaft is viewed from top, and rotated in counter clockwise direction, output increases from minimum to maximum value(Price adder).

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).



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) :

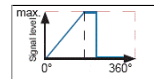
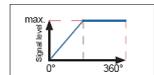
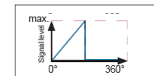
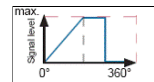
If the electrical effective angle is programmed smaller than 360°, after reaching the maximum, the signal level falls to low level.

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.



MECHANICAL OPTIONS FOR ANALOG VERSION 12A MMPB2

Type / Series	Customized mechanical options
12A MMPB2	Special cable length

INTERCONNECTIONS

Standard Interconnections - 3 core flat cable 0.15 mtr long

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