

RotaCol® - Silverline

ANALOG CONTACTLESS ROTARY POSITION SENSOR

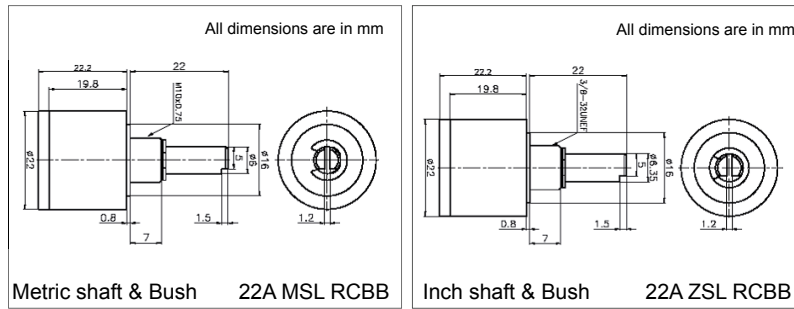
BUSH MOUNTING - 1 PRECISION BALL BEARING

Series 22A MSL RCBB
Series 22A ZSL RCBB



Metalcase, Hall effect magnetic
Output : 0 - 5V, 0 - 10V, 4 - 20 mA, 0 - 20 mA
Robust metal aluminium housing, 22 mm Ø housing
Bush mounting - 1 precision ball bearing
Measurement range 0° - 360°

1-Supply (red); 2-Output (grey); 3-Ground (grey) : For OCF
 1-Supply; 2-Output; Ground : For OCTA, OCTR

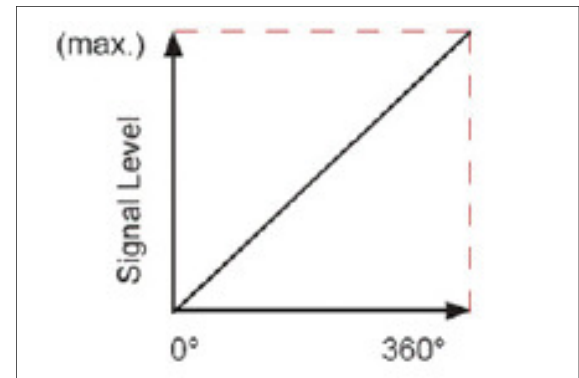


For full range of Rotary Sensors refer - www.rotacol.info/rotamec.pdf

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 INTERFACE



ELECTRICAL CHARACTERISTICS

Electrical angle	0 - 360°, any angle from 0 - 20..0 - 360 programmable in steps of 1°	
Electrical speed (max.)	160 rpm (default) / 800 rpm (optional)	
Resolution	4096 steps (12 bit)	
Signal type	Supply voltage	Output signal
0505	5V ± 10%	0 - 5V (ratiometric)
DC05	9 - 30V	0 - 5V
2410	15 - 30V	0 - 10V
2442	15 - 30V	4 - 20 mA
2420	15 - 30V	0 - 20 mA
Supply current	< 16 mA	
Independent linearity tolerance	± 0.5%	
Update rate	1 ms	

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% ; 9 - 30VDC ; 15 - 30V (24VDC) output signals of 0 - 5VDC ; 0 - 10VDC ; 0 - 20mA ; 4 - 20mA at the sensor output are provided. Besides this a large variety of electrical options such as Zero point programming, Centre point programming, Multipoint programming, two Channel redundant outputs are provided. Other options on request.

MECHANICAL CHARACTERISTICS

Mechanical angle	360° (continuous)	
Bushing	Metric M10 X 0.75 (MSL)	Inch 3/8" X 32 UNEF (ZSL)
Shaft diameter and length (FMS)	Metric 6mm Ø X 22mm (MSL)	Inch 1/4" Ø X 22mm (ZSL)
Operating torque (approx.)	0.1 Ncm	
Protection	IP 40	
Operating temperature	- 40 to +85° C	
Operating life (approx.)	15 million rotations	
Mechanical speed (max.)	4000 rpm	
Weight	25 gm	
Interconnection	3 core flat cable 0.15 mtr long / terminal block axial or radial	

Default Version :

360° CW Electrical & Mechanical angle, electrical speed 160 rpm, 3 core flat cable 0.15 mtr long

MATERIAL

Housing with bushing	anodized aluminium
Shaft	stainless steel
Bearings	1 precision ball bearing

ORDERING INFORMATION

Refer to electrical and mechanical options on page 2

Housing diameter	Housing	Thread	Mounting	Signal	Electrical angle	Direction of rotation	Options	Output connections					
22	A	MSL Metric Silverline (Bush Thread M10X0.75 & Shaft 6mm Ø) ZSL Inch Silverline (Bush Thread 3/8" X32UNEF & Shaft 1/4" Ø)	RC RotaCol BB Bush mounting - 1 ball bearing	Signal 0 - 5V (ratiometric) 0 - 5V S 0505 S DC05 S 2410 S 2442 S 2420	xxx any angle from 0-20 to 0-360° programmable in steps of 1° (default 360°)	CW Clockwise (CW) - (default) CCW Counter clockwise (CCW)	PEX Programming options for non - effective electrical angle (only if elec. angle is < 360°) PE1 Delta 1/2 PE2 Low level PE3 High level PE4 Variable level	OCxx Output connections OCF 3 Core Flat cable (default) OCTA Terminal block Axial OCTR Terminal block Radial					
22	A	xSL	RC	BB	Sxxxx	2C	xxx	CW /	PEx	POx	Axx	CVxx	OCxx

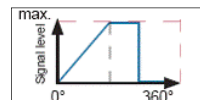
Example with description - **22A MSL RCBB S2442 180CW PE1 POZ OCTA** - 22mm diameter, analog output, Metric Silverline (Bush Thread M10X0.75 & Shaft 6mm), RotaCol, Bush version with 1 ball bearing, Signal - 4-20 mA, 180 angle and clockwise, delta 1/2, Zero point, Terminal block axial

Please note: The specification and information in this datasheet cannot consider all special demands that are caused by the application. Because of this, they are no general description of the properties of the product. Megacraft does not assume any responsibility for damages due to improper application of our products. The user has to ensure on his own, that the products used are suitable for this application. Megacraft does not warrant the reproducibility of published information. The specifications can be changed any time without notice.

ELECTRICAL OPTIONS FOR ANALOG VERSION 22A MSL/ZSL RCBB

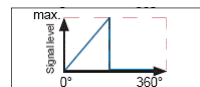
Non-effective Electrical Angle (PE1) - Delta 1/2

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



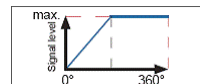
Low level (PE2)

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



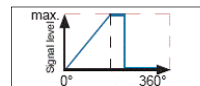
High level (PE3)

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



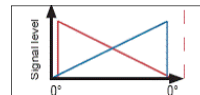
Variable level (PE4)

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



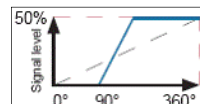
Direction of Rotation (CW/CCW)

By default the direction of rotation is clockwise (CW). With this option it is also possible to change the direction from clockwise(CW) to counterclockwise (CCW).



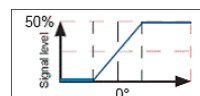
Zero point Programming (POZ)

Mechanical zero point is aligned with marking on the sensor housing. Electrical zero point can be aligned to mechanical zero point. Zero point can be programmed at any offset.



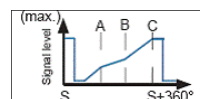
Center Point Programming (POC)

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 be programmed at any offset.



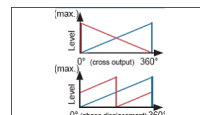
Multi Point Programming (POM)

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



2 Channel Redundant Output (2C)

This is realized by a Hall sensor chip consisting of 2 galvanically separated sensing elements. One magnet provides a magnetic field simultaneously for both elements. Both elements can be programmed identically, or channel 2 can also be programmed independently from channel 1. (Valid only for 0505, DC05, and 2410 outputs).



MECHANICAL OPTIONS FOR ANALOG VERSION 22A MSL/ZSL RCBB

Type / Series	Standard mechanical options	Customized mechanical options
22A MSL / ZSL RCBB	Terminal Block axial or terminal block radial (OCTA / OCTR)	Special shaft length; special cable length

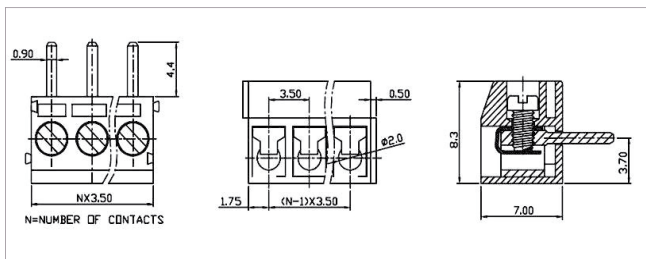
INTERCONNECTIONS

Standard Interconnections - 3 Core flat cable

Other Interconnection options

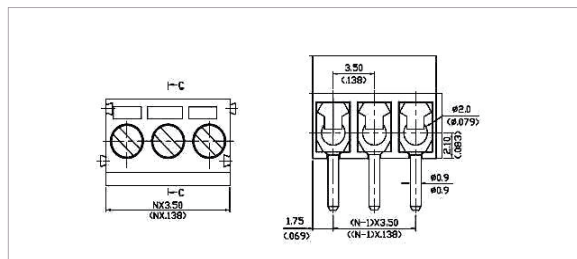
Terminal block - Axial (OCTA)
Wires leaving axial to shaft axis

3 sockets



Terminal block - Radial (OCTR)
Wires leaving radial to shaft axis

3 sockets



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