

# RotaCol® - Ecoline Speedconnect PRECISION ANALOG CONTACTLESS ROTARY POSITION SENSORS - BUSH MOUNTING

Series 25A RSB  
Series 30A RSB

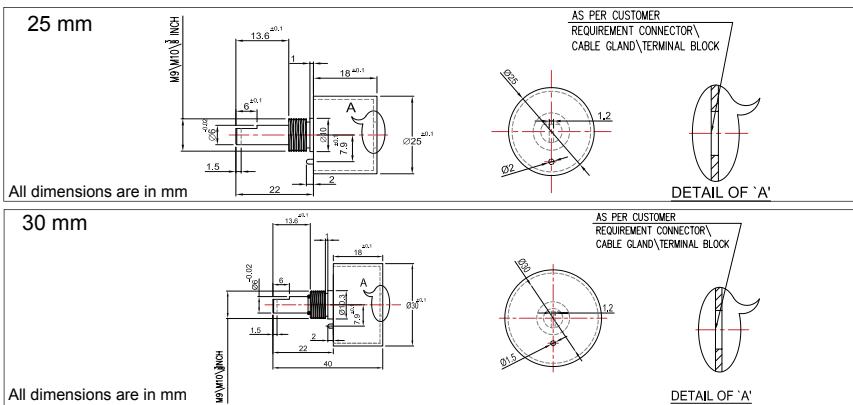
25 mm & 30 mm Ø plastic robust housing - Bush mounting

Analog output - Current / voltage output

Following interconnections are available :

Round cable, Cable gland, Miniature connector and Terminal block

1 - Supply (Red) 2 - Output (Brown) 3 - Ground (Black) : For OCR, OCG  
1 - Supply 2 - Output 3 - Ground : For OCM, OCTA, OCTR

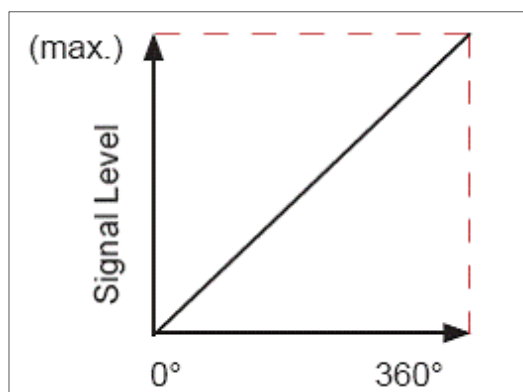


with cable gland with connector  
For full range of Rotary Sensors refer - [www.rotacol.info/rotamec.pdf](http://www.rotacol.info/rotamec.pdf)

## 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



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 - 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 Zero point programming, Centre point programming, Multipoint programming are provided. Two channel redundant outputs are provided for voltage outputs.

## Default Version :

360° CW Electrical & Mechanical angle, Electrical speed 160 rpm, Medium Torque

## 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 steps (12 bit)	
Independent linearity tolerance	± 0.5%	
Signal type	Supply voltage	Output signal
0505	5V ±10%	0 - 5V ratiometric
DC05	9 - 30 V	0 - 5V
2410	15 - 30 V	0 - 10 V
2442	15 - 30 V	4 - 20 mA
2420	15 - 30 V	0 - 20 mA
Supply current	< 16 mA	
Update rate	1ms	

## MECHANICAL CHARACTERISTICS

Mechanical angle	(O) 360°; (S) 320° +5° / -0° with stop
Mechanical speed (max.)	800 rpm (brass) ; 3000 rpm (polymer)
Shaft diameter X length (FMS)	6 mm or 1/4 inch X 22 mm
Life: with brass sleeve bearings	~ 10 million rotations
Life: with polymer sleeve bearings	~ 15 million rotations
End stopper strength	< 80 Ncm
Operating temperature	- 40 ... +85 °C
Operating torque (Medium.)	0.5 -1 Ncm (default)
Vibration (IEC 68-2-6, Test Fc)	±1.5 mm / 20g / 2000Hz / 16cycles
Mechanical shock (IEC 68-2-7, Test Ea)	50g /11ms /half sine (3X6 shocks)
Weight (25ARSB) - (gm)	40 (OCR), 45 (OCG), 25 (OCTA/R), 32 (OCM)
Weight (30ARSB) - (gm)	45 (OCR), 55 (OCG), 32 (OCTA/R), 38 (OCM)

## MATERIAL

Bushing	brass
Bearing standard	sleeve bearing- brass
Bearing type: option P	polymer sleeve bearing
Housing	Nylon 66 Glass fibre reinforced
Shaft	stainless steel

## ORDERING INFORMATION

Refer to electrical & mechanical options on page 2

xx	A	RS	Bx	Sxxxx	2C	Oxxx / Sxxx	CW/CCW	PEx	POx	xT	P	D	Axx	CVxx	OCxx
25 / 30	A	RS	B1 B2 B3	S 0505 S DC05 S 2410 S 2442 S 2420	2C	Oxxx Sxxx	CW CCW	PEX PE1 PE2 PE3 PE4	POX POZ POC POM	LT MT HT	P D	Axx	CVxx	OCxx	
Example with description - <b>25A RSB1 SDC05 180 CW PE1 POZ A18 OCG</b> -25 mm housing, analog output, Ecoline RotaCol Speedconnect, Bush mounting - Thread M10 X 0.75 / 6mm shaft, 0 - 5V, 180° clockwise, delta 1/2, zero point, special shaft length 18 mm, cable gland with round cable 1m long															

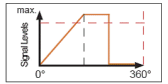
Please note: The specification and information in this datasheet cannot consider all special demands that are caused by the application. Because of this, they are no general description of the properties of the product. Megacraft does not assume any responsibility for damages due to improper application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

## ELECTRICAL OPTIONS FOR ANALOG VERSIONS 25/30A RSB

The following options are electrically programmable & are available very cost effective, with short delivery time

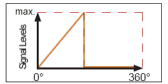
### Non-effective Electrical Angle (PE1) - Delta 1/2

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)



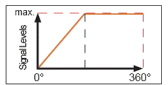
### Low level (PE2)

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



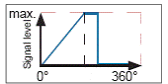
### High level (PE3)

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



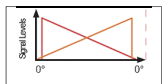
### Variable level (PE4)

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.



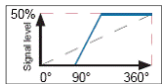
### Direction of Rotation (CW/CCW)

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).



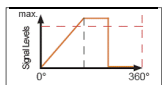
### Zero point Programming (POZ)

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.



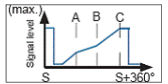
### Center Point Programming (POC)

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.



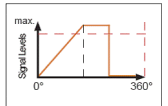
### Multi Point Programming (POM)

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 channel1. (Valid only for 0505, DC05, and 2410 outputs).



## MECHANICAL OPTIONS FOR ANALOG VERSIONS 25/30A RSB

Type / Series	Standard mechanical options	Customized mechanical options
25 / 30A RSB	Low torque (LT), High torque (HT); Endstop at 90°, 180°, 270°, Mu metal cap	Special shaft length ; Special endstop angle

## SPEEDCONNECT OUTPUT CONNECTIONS FOR ANALOG VERSIONS 25/30A RSB

Cable gland (OCG)	Miniature connector (OCM)	Terminal block - Axial (OCTA) Wires leaving axial to shaft axis	Terminal block - Radial (OCTR) Wires leaving radial to shaft axis
3 core round cable 1 m long	3 pin in integrated socket with plug	3 sockets	3 sockets

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