

RotaCol® - Ecoline Speedconnect
'ANALOG' Output Precision Contactless Rotary Position Sensors
Bush Mounting - Sleeve bearing

Series 25A RSB
Series 30A RSB



with cable gland

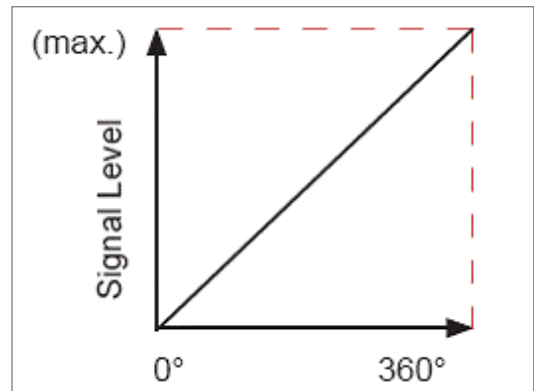
with connector

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



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 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 :

Bush mount, 360° CW Electrical & Mechanical angle, Electrical speed 160 rpm, Low or Medium Torque, Output signal level 0-100% .

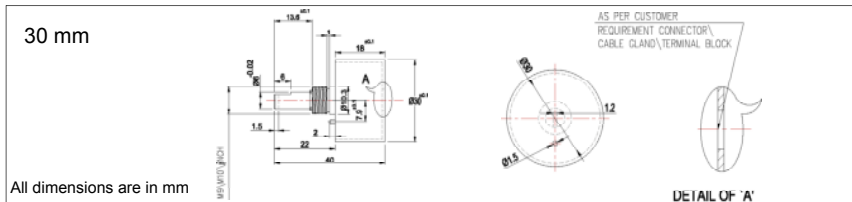
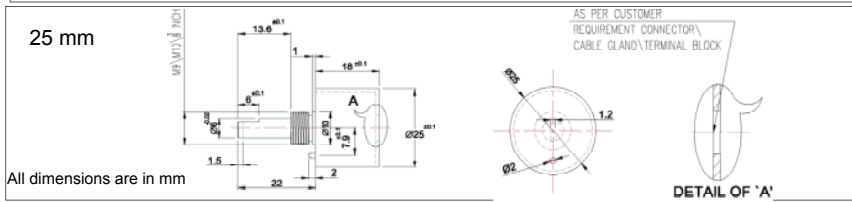
25 mm & 30 mm Ø plastic robust housing - Bush mounting

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 OCG, OCG
 1 - Supply 2 - Output 3 - Ground : For OCM, OCTA , OCTR



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° continuous; (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 Ø X 22 mm
Life: with brass sleeve bearings	~ 15 million rotations
Life: with polymer sleeve bearings	~ 20 million rotations
End stopper strength	< 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 /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)
Interconnection	OCF, OCG, OCM, OCTA, OCTR

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	Oxxx / Sxxx	CW/CCW	PEx	POx	xT	P	D	Axx	CVxx	OCxx
25 / 30	A	RS	B1 B2 B3	S 0505 SDC05 S 2410 S 2442 S 2420 S05052C SDC052C S24102C	Oxxx Sxxx	CW CCW	PEX PE1 PE2 PE3 PE4	POX POL POZ POC POM	LT MT HT	P	D	Axx	CVxx	OCxx
Example with description - 25A RSB1 SDC05 O180 CW PE1 POZ LT A18 OCG -25 mm housing, Analog output, Ecoline RotaCol Speedconnect, Bush mounting - Thread M10 X 0.75 / 6mm shaft, 0 - 5V, 180° clockwise without stop, delta 1/2, zero point, low torque, 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

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) :

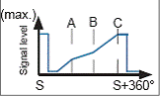
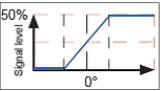
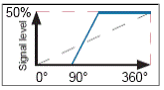
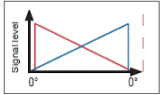
Standard configuration is zero point without orientation. At POZ, when we do zero point programming rising ramp will start from marking on encoder housing or from the endstop CCW. Zero point can also be programmed at any defined offset from marking on the housing (Price Adder).

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 settable calibration points. (Price Adder)



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

If effective electrical angle is < 360° then following configurations are available:

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) :

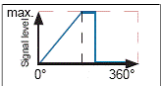
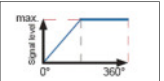
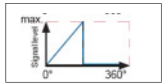
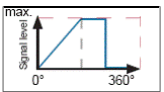
If the electrical effective angle is programmed smaller than 360°, after reaching the maximum, the signal level falls to low level.

High level (PE3) :

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

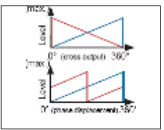
Variable level (PE4) :

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.



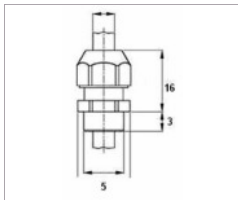
MECHANICAL OPTIONS FOR ANALOG VERSION 25/30A RSB

Type / Series	Standard mechanical options (Price adder)	Customized mechanical options (Price adder)
25/30A RSB	High torque (HT), endstop at 90°, 180°, 270° - Mu metal cap, special cable length	Special shaft length ; Special endstop angle

SPEEDCONNECT OUTPUT CONNECTIONS FOR ANALOG VERSIONS 25/30A RSB

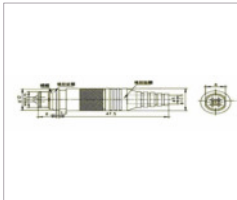
Cable gland (OCG)

3 core round cable 1 m long



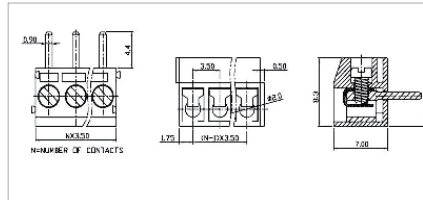
Miniature connector (OCM)

3 pin in integrated socket with plug



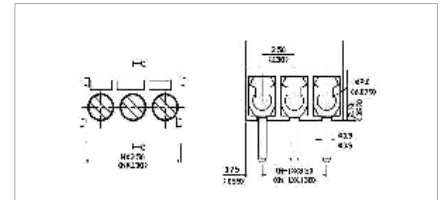
Terminal block - Axial (OCTA) Wires leaving axial to shaft axis

3 sockets



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

3 sockets



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