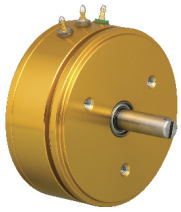
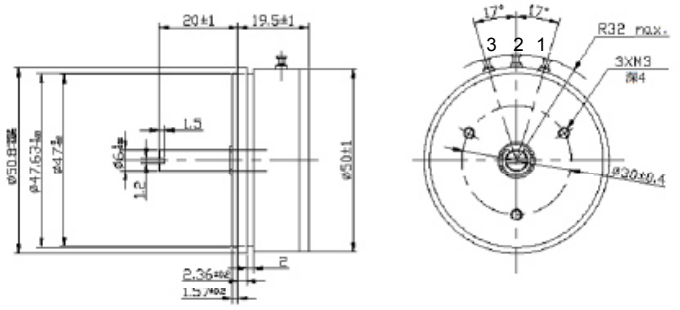
RotaCol® - *Goldline*
PRECISION ANALOG SERVOMOUNT CONTACTLESS LONG LIFE ROTARY POSITION SENSOR

Series 50A RCS

Servomount case - 2 Ball bearings
Hall effect magnetic
Output : 0 - 5V (ratiometric)
Precision robust aluminium housing
Synchro size 20, shock & vibration proof
Measurement range 0° - 360°



www.rotacol.info/50arcs.pdf



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

All dimensions are in mm

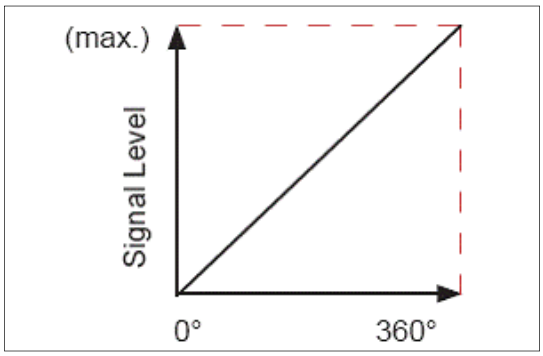
FUNCTION PRINCIPLE

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.

ELECTRICAL CHARACTERISTICS

Electrical angle	0 - 360°, any angle from 0 - 20..0 - 360 programmable in steps of 1°	
Resolution	4096 step (12 bit)	
Signal type	Supply voltage	Output signal
0505	5V ± 10%	0 - 5V (ratiometric)
Supply current	< 16 mA	
Independent linearity tolerance	0.3%	

ANALOG INTERFACE



At the output of the sensor a variable voltage 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 voltage of 5V ± 10% , output signal of 0 - 5V (ratiometric) at the sensor is provided. Besides this a large variety of electrical options such as Zero point programming, Centre point programming, Multipoint programming, PWM, are provided.

MECHANICAL CHARACTERISTICS

Mechanical angle	360° (continuous)
Starting torque (approx.)	0.4 Ncm
Protection	IP 40
Operating temperature	- 40 to +85° C
Operating life (approx.)	40 million rotations
Mechanical speed (max.)	9000 rpm
Electrical speed (max.)	160 rpm
Weight	77 gm

MATERIAL

Housing	anodized aluminium
Shaft	stainless steel
Terminals	3 pins brass gold plated
Bearings	2 precision ball bearing

OPTIONS AND ORDERING REFERENCES

Refer to electrical options on page 2

Housing diameter	Analog output	RotaCol	Servomount Goldline	Signal	0 - 5V (ratiometric) Pulse widthth modulation	Angle and electrical rotational direction	Angle and Clockwise (CW) Angle and Counter clockwise (CCW) Any angle from 20 - 360°	Programming options for non - effective electrical angle	Delta 1/2 Low level High level Variable level	Programming Options	Multipoint Center point Zero point	Output connections	3 Pins (standard)
50	A	RC	S	S0505 SPWM		xxx CW xxx CCW		PEx	PE1 PE2 PE3 PE4	POx	POM POC POZ	OCx	OCP
50	**A**	**RC**	**S**	**S0505**		**xxx CW / CCW**		**PEx**		**(**)POx**		**OCx**	

Example with description - **50A RCS S0505 90CCW PE1 OCP -** 50mm diameter, analog output, RotaCol sensor, Servomount Goldline , Signal - 0 - 5V (ratiometric), 90 angle and counter clockwise, Delta 1/2, 3 pins (standard)

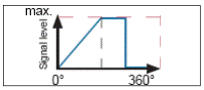
Standard Version : 360° CW Electrical & Mechanical angle, 5V (ratiometric), OCP - 3 pins

For complete RotaCol Contactless Rotary Sensor product range refer - www.rotacol.info/rotamec.pdf

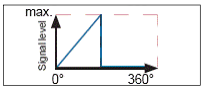
ELECTRICAL OPTIONS FOR ANALOG VERSION 50A RCS

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

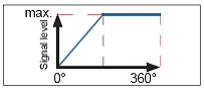
Non-effective Electrical Angle (PE1) - Delta 1/2
If the electrical effective angle is programmed smaller than 360°, the remaining electrical non-effective angle is divided in two equal parts : high level & low level (Delta 1/2)



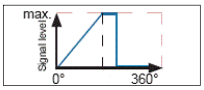
Low level (PE2)
If the electrical effective angle is programmed smaller than 360°, after reaching the maximum, the signal level falls to low level.



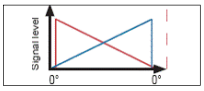
High level (PE3)
If the elecrical angle is programmed smaller than 360°, the signal level remains high after reaching the full level.



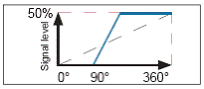
Variable level (PE4)
If the electrical angle is programmed smaller than 360°,remaining electrical non effective angle can be divided into high and low level in any ratio according to customer request.



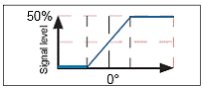
Direction of Rotation (CW/CCW)
By default the direction of rotation is clockwise (CW). With this option it is also possible to change the direction from clockwise(CW) to counterclockwise (CCW).



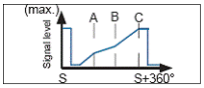
Zero point Programming (POZ)
Mechanical zero point is aligned with marking on the sensor housing. Electrical zero point can be aligned to mechanical zero point. Zero point can be programmed at any offset.



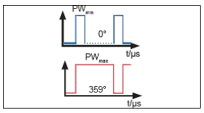
Center Point Programming (POC)
Effective electrical angle is aligned with the mechanical zero point in such a way that equal effective angles in both rotating directions are achieved. Center point can be programmed at any offset.



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 setable calibration points.



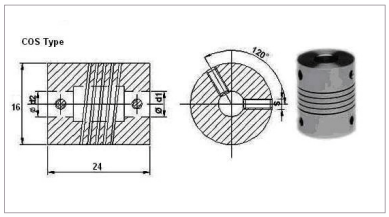
Pulse Width Modulation (PWM)
PWM provides a constant carrier frequency which defines high to low ratio. The ratio between high & low corresponds to the signal characteristics. It is in a fixed relation to the angle. Generally, for further signal processing, no A/D converter is required because many microcontrollers already have PWM input.



ACCESSORIES - SPIRAL COUPLINGS

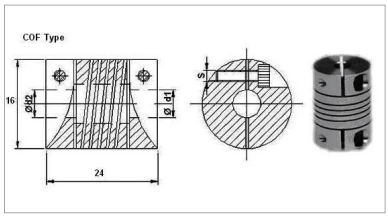
Whenever the shafts of the sensors are available only in metric (mm) or radial force is expected on the shaft, we recommend our very economical precision machined metal spiral couplings with set screws or clamp fixing. there are two dimensions in stock. One side for 6 mm dia shaft and other side either 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)

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