

# RotaCol® - Silverline

'ANALOG' Output Contactless Rotary Position Sensor

Servo Mount - 2 Precision Ball Bearings

Metalcase - Hall effect magnetic

Precision potentiometer replacement

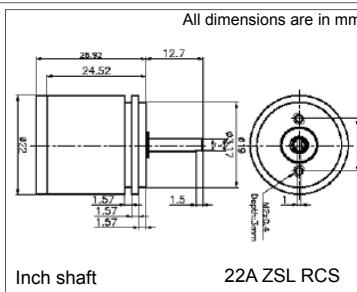
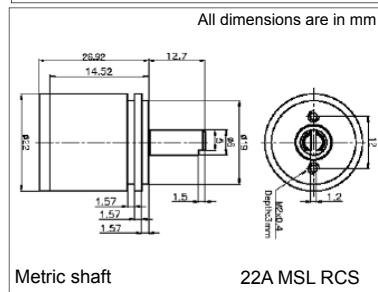
Output : 0 - 5V, 0 - 10V, 4 - 20 mA, 0 - 20 mA

22 mm Ø metal aluminium housing with 2 precision ball bearings

Servo mount - 2 Ball bearings / Screw fitting

Shock & vibration proof, Measurement range 0° - 360 °

1-Supply (Red); 2-Output (Grey); 3-Ground (Grey) : For OCF  
1- Supply ; 2-Output ; 3-Ground : For 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)	
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	
Independent linearity tolerance	±0.5%	
Update rate	1 ms	

## MECHANICAL CHARACTERISTICS

Mechanical angle	360° (continuous)	
Shaft diameter and length (FMS)	Metric 6 mm Ø X 12.7 mm (MSL) Inch 1/8" Ø X 12.7 mm (ZSL)	
Operating torque (approx.)	0.05 Ncm	
Protection	IP 40	
Operating temperature	- 40 to +85° C	
Operating life (approx.)	35 million rotations	
Mechanical speed (max.)	6000 rpm	
Weight	22 gm	
Interconnection	3 core flat cable 0.15 mtr long/ terminal block axial or radial	

## MATERIAL

Housing	Anodized aluminium
Shaft	Stainless steel
Bearings	2 precision ball bearings

## ORDERING INFORMATION

Refer to electrical and mechanical options on page 2									
22	22	A	MSL	ZSL	RC	S	Sxxxx	xxx	CW / CCW
22	A	xSL	RC	S	Sxxxx	xxx	CW / CCW	PEx	POx
PE1	PE2	PE3	PE4	PEx	POx	Axx	CVxx	OCxx	OCxx
POL	POZ	POC	POM	POX	Output signal level Zero point Center point Multipoint	Special shaft length - only for MSL (default length - 12.7 mm FMS)	Special cable length - only for OCF (default length - 0.15 mtr long)	Output connections	3 Core Flat cable 0.15 mtr long (default) Terminal block Axial Terminal block Radial

Example with description - 22A MSL RCS S2442 180CW PE1 POZ OCTR - 22 mm diameter, analog output, Metric Silverline ( Shaft 6 mm Ø ), RotaCol, Servo mount with 2 ball bearings, Signal - 4-20 mA, 180° angle clockwise, Delta 1/2, Zero point, Terminal block Radial

Series 22A MSL RCS  
Series 22A ZSL RCS

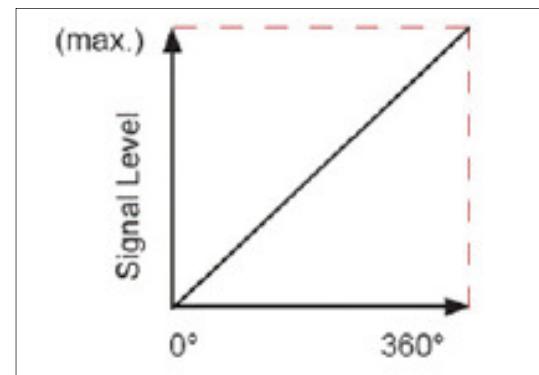


For full range of Rotary Sensor refer - [www.rotacol.info/rotamec.pdf](http://www.rotacol.info/rotamec.pdf)

## 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 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% ; 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 Output signal level programming , Zero point programming, Centre point programming, Multipoint programming, 2 Channel redundant outputs are provided. Other options on request.

### Default Version :

22 mm housing,Servo mount , 360° CW Electrical & Mechanical angle, electrical speed 160 rpm, Output signal level 0-100% 3 core flat cable 0.15 mtr long

## ELECTRICAL OPTIONS FOR ANALOG VERSION 22A MSL/ZSL RCS

### 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) :

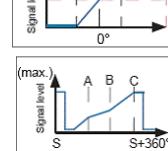
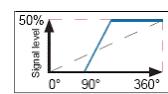
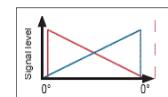
Standard configuration is zero point without orientation. At POZ, when we do zero point programming rising ramp will start from marking on encoder housing or from the endstop CCW. Zero point can also be programmed at any defined offset from marking on the housing (Price Adder).

### 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) :

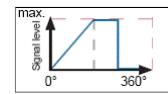
Output characteristics : 3 to 6 rising or falling linear segments. Minimum and maximum signal level can be defined within the total electrical angle. First and last linear segment (min./max.) is always horizontal 1 to 3 setable calibration points. (Price Adder)



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

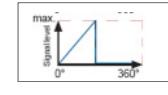
#### Delta 1/2 (PE1) :

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.



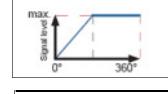
#### Low level (PE2) :

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



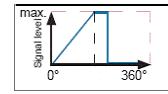
#### High level (PE3) :

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



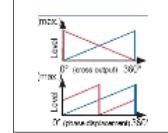
#### Variable level (PE4) :

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.



### 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 22A MSL/ZSL RCS

Type / Series	Standard mechanical options	Customized mechanical options
22A MSL/ZSL RCS	Terminal Block Axial (OCTA) or terminal block Radial (OCTR), special cable length	Special shaft length

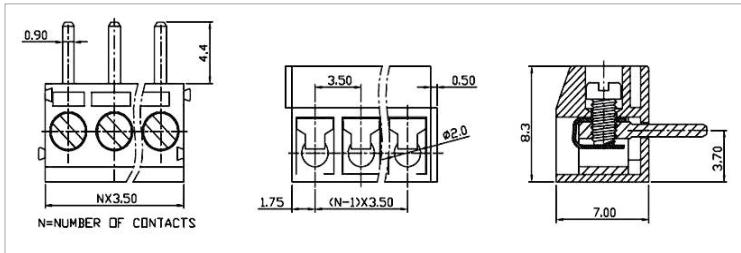
## INTERCONNECTIONS

Standard Interconnections - 3 Core flat cable

### Other Interconnection options

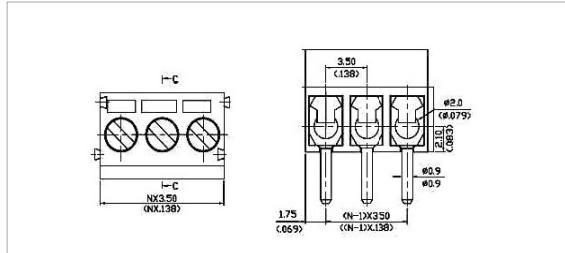
Terminal block - Axial (OCTA)  
Wires leaving axial to shaft axis

3 sockets



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

3 sockets



### MegAuto KG

Am Tummelsgrund 48  
D 01156 Dresden, Germany  
Tel : +49 351 65878940 Fax : +49 351 65878949  
Email : info@megauto.de / www.megauto.de  
Skype : megautodd / whats app: +491781244294



### Sensall - MegAuto International

Div of Sendap Precision Electronics Pvt Ltd.  
3, Electronic Sadan - I, MIDC, Bhosari, Pune - 411026, INDIA  
Tel : +91 8669617194, +91 8669617195  
Email : mail@megacraft.net / www.sensall.info  
Skype: sendapimc / whats app: +91 8669617198

