RotaCol® - *Silverline*

'ANALOG' Output Precision Contactless Rotary Position Sensors

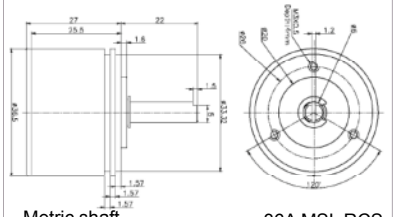
Servo Mount - 2 Precision Ball Bearings

Metalcase - Hall effect magnetic

Output : 0 - 5V (ratiometric), 0 - 5V, 0 - 10V, 4 - 20 mA, 0 - 20 mA
36 mm Ø metal aluminium housing with 2 precision ball bearings
Servo mount / Screw fitting
Shock & vibration proof, Measurement range 0° - 360 °

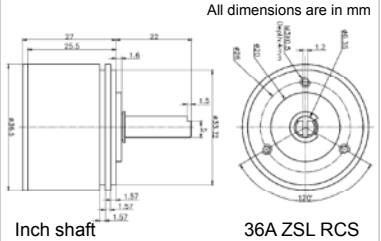
1- Supply (Red); 2- Output (Yellow); 3- Ground (Black) : **For OCP**
1- Supply (Red) ; 2- Output (Green) ; 3- Ground (Black) : **For OCG, OCR**
1-Supply; 2-Output; 3-Ground : **For OCM, OCTA , OCTR**

All dimensions are in mm



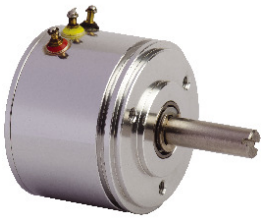
Metric shaft — 36A MSL RCS

All dimensions are in mm



Inch shaft — 36A ZSL RCS

Series 36A MSL RCS
Series 36A ZSL RCS



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

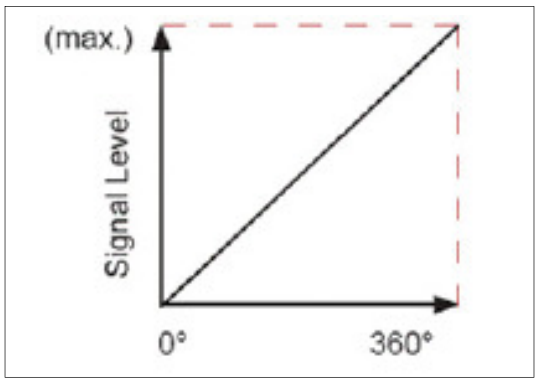
FUNCTION PRINCIPLE

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.

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	

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, two channel redundant outputs are provided. Other options on request.

Default Version :
Servo mount, 36 mm housing with 2 precision ball bearing,360° CW Electrical & Mechanical angle, electrical speed 160 rpm, Output signal level 0-100% ,3 pins

MECHANICAL CHARACTERISTICS

Mechanical angle	360° (continuous)	
Shaft diameter and length (FMS)	Metric	6 mm Ø X 22 mm (MSL)
	Inch	1/4" Ø X 22 mm (ZSL)
Operating torque (approx.)	0.05 Ncm	
Protection	IP 40	
Operating temperature	- 40 to +85° C	
Operating life (approx.)	40 million rotations	
Mechanical speed (max.)	8000 rpm	
Weight	60 gm	
Interconnection	3 pins (default)	

MATERIAL

Housing	Anodized aluminium
Shaft	Stainless steel
Bearings	2 precision ball bearings

ORDERING INFORMATION

Refer to electrical and mechanical options on page 2

Housing diameter	Analog output	Metric Silverline (Shaft 6mm Ø)	Inch Silverline (Shaft 1/4" Ø)	RotaCol	Servo mount with 2 ball bearings	Signal		Electrical angle		Direction of Rotation		Programming options for non - effective electrical angle (only if elec. angle is < 360°)		Programming options		Special shaft length (Default 22mm FMS)	Special cable length - only for OCR, OCG (default 1 mtr long)	Output connections	
						0 - 5V DC (ratiometric) 0 - 5V DC 0 - 10V DC 4 - 20mA 0 - 20mA 2 channel 0 - 5V DC (ratiometric) 2 channel 0 - 5V DC 2 channel 0 - 10V DC		any angle from 0-20 to 0-360 programmable in steps of 1° (default 360°)		Clockwise (CW)- (default) Counter clockwise (CCW)		Delta 1/2 Low level High level Variable level		Output signal level Zero point Center point Multipoint			3 Pins (Default) 3 Core round cable 1 mtr long Miniature connector Cable gland with 1m round cable Terminal block Axial Terminal block Radial	
36	A	MSL	ZSL	RC	S	Sxxx	S0505 SDC05 S2410 S2442 S2420 S05052C SDC052C S24102C	xxx		CW CCW		PEx	PE1 PE2 PE3 PE4	POx	POL POZ POC POM	Axxx	CVxx	OCxx	OCP OCR OCM OCG OCTA OCTR
36	**A**	**xSL**		**RC**	**S**	**Sxxxx**		**xxx**		**CW / CCW**		**PEx**		**POx**		**Axxx**	**CVxx**	**OCxx**	

Example with description - **36A MSL RCS S2442 180CW PE1 POZ OCM -** 36mm 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, Miniature connector

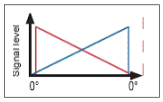
ELECTRICAL OPTIONS FOR ANALOG VERSION 36A MSL/ZSL RCS

Electrical options for Effective electrical angle :

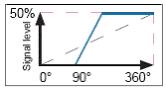
Electrical angle (xxx) : Standard configuration is 360° . As an option, any angle from 0-20° to 0-359° in steps of 1° can be programmed.(Price adder)

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).

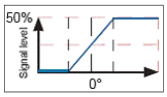
Direction of Rotation (CW/CCW) :
CW(Clockwise) When shaft is viewed from top, and rotated in clockwise direction, output increases from minimum to maximum value(standard configuration).
CCW(Counter clockwise) when shaft is viewed from top,and rotated in counter clockwise direction,output increases from minimum to maximum value(Price adder).



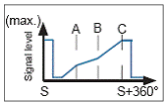
Zero point Programming (POZ) :
Standard configuration is zero point without orientation. At POZ, when we do zero point programming rising ramp will start from marking on encoder housing or from the endstop CCW. Zero point can also be programmed at any defined offset from marking on the housing (Price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

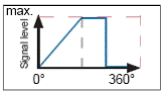


Multi Point Programming (POM) :
Output characteristics : 3 to 6 rising or falling linear segments. Minimum and maximum signal level can be defined within the total electrical angle. First and last linear segment (min./max.) is always horizontal 1 to 3 setable calibration points. (Price Adder)

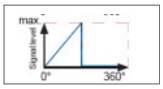


Electrical options for Non - Effective electrical angle (Price Adder) : (If electrical angle is < 360°)

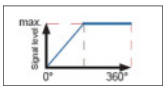
Delta 1/2 (PE1) :
If the electrical effective angle is programmed smaller than 360°, the remaining non-effective electrical angle is divided in two equal parts : high level & low level - Delta 1/2.



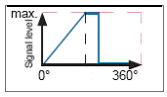
Low level (PE2) :
If the electrical effective angle is programmed smaller than 360°, after reaching the maximum, the signal level falls to low level.



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

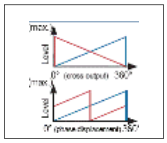


Variable level (PE4) :
If the electrical angle is programmed smaller than 360°, remaining non-effective electrical angle can be divided into high and low level in any ratio according to customer request.



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 36A MSL/ZSL RCS

Type / Series	Standard mechanical options	Customized mechanical options
36A MSL/ZSL RCS	Cable gland (OCG), Round cable(OCR), Miniature connector (OCM), Terminal block (OCTA / OCTR)	Special shaft length; special cable length

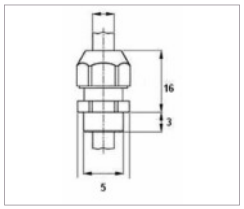
INTERCONNECTIONS

Standard Interconnections - 3 pins

Other Interconnection options

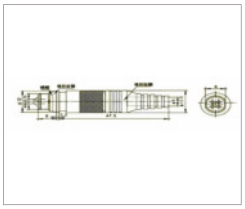
Cable gland (OCG)

3 core round cable 1 m long



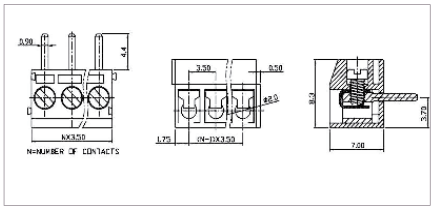
Miniature connector (OCM)

3 pin in integrated socket with plug



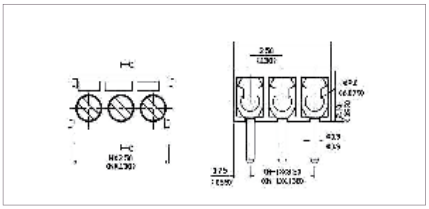
Terminal block - Axial (OCTA)
Wires leaving axial to shaft axis

3 sockets



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

3 sockets



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