

RotaCol® - Silverline

SPI DIGITAL CONTACTLESS ROTARY POSITION SENSOR

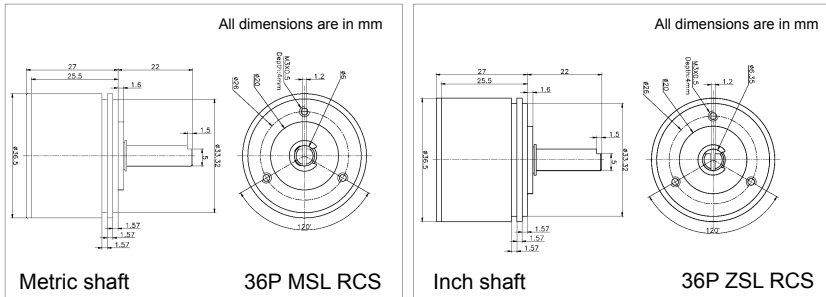
SERVO MOUNTING - 2 PRECISION BALL BEARINGS

Series 36P MSL RCS
Series 36P ZSL RCS



Economical Hall effect magnetic sensor
Direct SPI interface to microcontroller, 3 wire SPI
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-Ground (black); 3-MOSI /MISO (brown); 4-Clock (orange); 5-Chip select (yellow) : **For OCR, OCG**
 1-Supply; 2-Ground; 3-MOSI /MISO; 4-Clock; 5-Chip select : **For OCM, OCTA, OCTR**

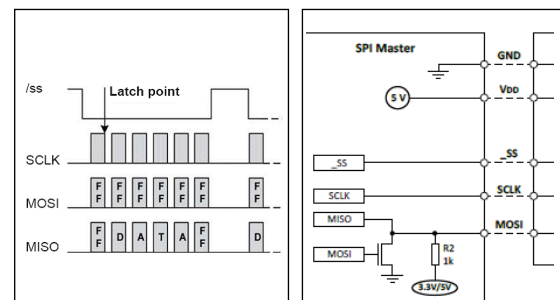


For full range of Rotary Sensor refer -
www.rotacol.info/rotamec.pdf

FUNCTION PRINCIPLE

The angular position and the signal generation is detected by a CMOS Hall sensor over which a parallel diametrically polarized magnet induces a magnetic field. An integrated electronic provides the output of a 2 byte WORD with an SPI interface.

SERIAL PERIPHERAL INTERFACE



The serial peripheral interface (SPI) is a bus system for a serial synchronous data transmission between different integrated circuits. The bus consists of 3 lines MOSI / MISO (one common line), SCLK - (Serial Clock, output from master) and SS Slave Select (active low, output from master). By these signal lines the master selects the slave for communication. This is done because the master sets the SS line from high to low. The angular informations are calculated all 350 and are available for the master on demand. There is no fixed protocol for the SPI bus. Nevertheless many microcontroller IC's have a SPI input. By programming this microcontroller IC many SPI suitable sensors can be managed by one microcontroller. Two channel redundant outputs can be provided.

Default Version : 360° CW Electrical & Mechanical angle, 5V SPI - 3 wire, 5 core round cable 1 mtr long

ELECTRICAL CHARACTERISTICS

Electrical angle	0 - 360°	
Electrical speed (max.)	800 rpm	
Resolution	14 bit (16383 steps)	
Signal type	Supply voltage	Output signal
S05SPI	5V ± 10%	SPI - 3 wire
Supply current	< 30 mA	
Frequency response	5 KHz	
Update rate	0.6 ms	

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.)	35 million rotations	
Mechanical speed (max.)	8000 rpm	
Weight	95 gm	
Interconnection	5 core round cable 1 mtr long (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	Serial peripheral interface (SPI)	Metric Silverline (Shaft 6mm Ø)	Inch Silverline (Shaft 1/4" Ø)	RotaCol	Servo mount with 2 ball bearings	Signal	Output	Direction of Rotation	Zero point	Special shaft length (default length - 22 mm FMS)	Special cable length - only for OCR, OCG (default 1 mtr long)	Output connections			
36	P	MSL	ZSL	RC	S	S05SPI	2C	S14	O360	CW CCW	POZ	Axx	CVxx	OCxx	5 Pins 5 Core round cable 1 mtr long (default) Miniature connector Cable gland with 1m round cable Terminal block Axial Terminal block Radial
36	P	xSL	RC	S	S05SPI	2C	S14	O360	CW/CCW	POZ	Axx	CVxx	OCxx		

Example with description - **36P MSL RCS 05SPI S14 CW POZ OCTR** - 36 mm diameter, SPI output, Metric Silverline (Shaft 6 mm Ø), RotaCol, Servo mount with 2 ball bearings, 5V SPI - 3 wire, 14 bit output, 360° clockwise, Zero point, Terminal block Radial

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 SPI VERSION 36P MSL/ZSL RCS

SPI Bus Interface

The Serial Peripheral Interface bus or SPI bus is a synchronous serial data link standard developed by Motorola that operates in full duplex mode. One or more devices can communicate with one master. The length of the signal wire should not be longer than 0.5m. To bridge larger distances it is recommended to use the SSI interface. The digital signal in 2 byte Grey code transmits the angular position information through the data bus.

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.

2 Channel Output (2C)

The Hall sensor chip which is integrated into the sensor consists of two galvanically separated sensor units which are influenced by the same magnetic field. The sensor provides 2 operating modes: 1) redundancy i.e. channel one and channel two are identical. If one channel fails the other channel remains active. 2) It is also possible to have 2 different programs in the 2 channels. For this, additional functions can be obtained.

MECHANICAL OPTIONS FOR SPI VERSION 36P MSL/ZSL RCS

Type / Series	Standard mechanical options	Customized mechanical options
36P MSL/ZSL RCS	Cable gland (OCG), pins (OCP) , miniature connector (OCM), terminal block (OCTA / R)	Special shaft length; Special cable length

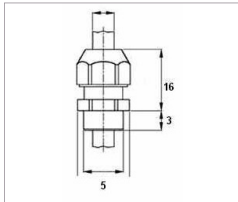
INTERCONNECTIONS

Standard Interconnections - 5 Core round cable

Other Interconnection options

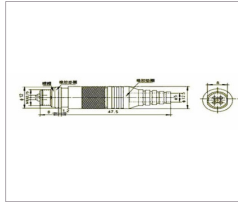
Cable gland (OCG)

5 core round cable 1 m long



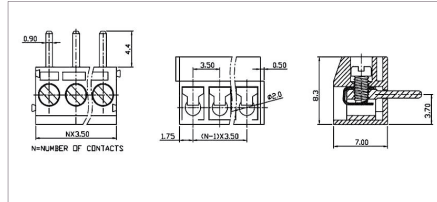
Miniature connector (OCM)

5 pin in integrated socket with plug



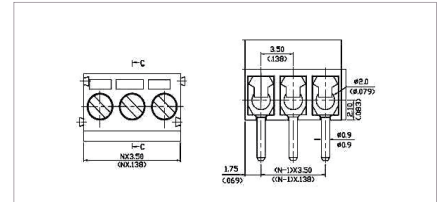
Terminal block - Axial (OCTA) Wires leaving axial to shaft axis

5 sockets



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

5 sockets



MegAuto KG

Am Tummelsgrund 48
D 01156 Dresden, Germany
Tel : +49 351 6587894 0 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