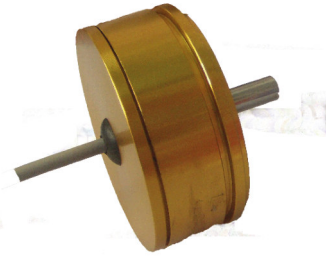
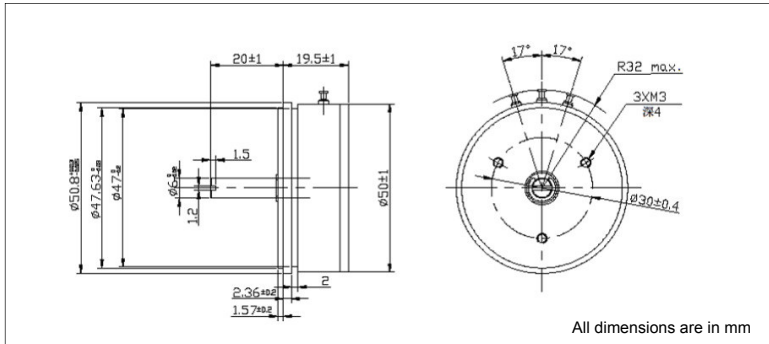


'INCREMENTAL' Output Precision Contactless Rotary Position Sensors
Servo Mount - 2 Precision Ball Bearings

Metalcase - Hall effect magnetic sensor
A - B - Z channels- Any pulse from 2 - 128, 256,512,1024 ppr
50 mm Ø metal aluminium housing with 2 precision ball bearings
Synchro size 20, Shock & vibration proof,
Servo mount / Screw fitting, Measurement range 0° - 360 °



1-Supply (Red); 2-Ch Z (Brown); 3-Ch B (Yellow); 4-Ch A (Orange); 5-Ground (Black) : **For OCG, OCR**
 1-Supply ; 2-Ch Z; 3-Ch B ; 4-Ch A; 5-Ground : **For OCM, OCTA, OCTR**



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

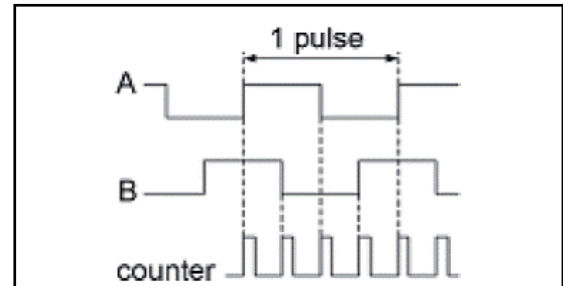
FUNCTION PRINCIPLE

A magnet rotates over the sensor IC with 4 Hall sensors for angular determination and converts the magnetic field into a measurable Hall voltage. When the magnet rotates around them longitudinal axis, sine and cosine voltages are generated to determine the angles. Two separatesine/digital converters provide A, B, Z incremental signals.

ELECTRICAL CHARACTERISTICS

Electrical angle	0 - 360°	
Electrical speed (max.)	1600 rpm	
Elec. Pulses	Any pulse from 2 to 128, 256, 512, 1024 ppr	
Resolution	4096 step (12 bit)	
Signal type	Supply voltage	Output signal
S05TTL	5V +/- 10%	5V TTL
S05OC	5V +/- 10%	5V Open collector
S24OC	9-30V	24V Open collector
Supply current	< 30 mA	
Frequency response	500 KHz	

INCREMENTAL OUTPUT



MECHANICAL CHARACTERISTICS

Mechanical angle	360° (continuous)
Shaft diameter and length (FMS)	6 mm Ø X 20 mm
Operating torque (approx.)	0.05 Ncm
Protection	IP 40
Operating temperature	- 40 to +85° C
Operating life (approx.)	45 million rotations
Mechanical speed (max.)	9000 rpm
Weight	115 gm
Interconnection	5 core round cable 1 mtr long (default)

There are 3 signals for incremental output : A, B and Z. Signals A and B are quadrature signals, shifted by 90° and signal Z is a reference mark. One revolution generates N pulses of signal A or B. The reference mark signal is produced once per revolution. The width of the Z pulse is 1/4 of quadrature signal period and is matched with A high and B high. Generally, the magnetic incremental encoders are directly comparable with the conventional optical incremental encoders. They provide additional features and can much easier be adjusted to customer requirements. Nevertheless optical and magnetic incremental encoders do not provide an absolute signal.

MATERIAL

Housing	Anodized aluminium
Shaft	Stainless steel
Bearings	2 precision ball bearing

Default Version :

Servo mount, 50 mm housing with 2 precision ball bearing 360° CW Electrical & Mechanical angle, 1024 ppr, 5 core round cable 1 mtr long

ORDERING INFORMATION

Refer to electrical and mechanical options on page 2

Housing diameter	Incremental output	Metric Silverline (Shaft 6 mm Ø)	RotaCol	Servo mount with 2 ball bearings	Signal	No of Pulses	Direction of Rotation	Programming options	Zero point Inverted signal	Special shaft length (default length - 20 mm FMS)	Special cable length- only for OCG, OCR (default 1 mtr long)	Output connections
50	I	MSL	RC	S	S05TTL S05OC S24OC	xxxx Any pulse from 2 - 128,256, 512,1024 ppr (default 1024 ppr)	CW CCW	POx POZ POI	Axx	CVxx	OCxx	5 Pins 5 Core round cable 1 mtr long (default) Miniature connector Cable gland with 1 m round cable Terminal block Axial Terminal block Radial
50	I	MSL	RC	S	Sxxxx	xxxx	CW / CCW	POx	Axx	CVxx	OCxx	

Example with description - **50I MSL RCS S05OC 512 CW OCTR** - 50mm diameter, incremental output, metric Silverline (Shaft 6mm Ø), Servo mount with 2 ball bearings, 5V open collector, 512 pulses, clockwise, 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 INCREMENTAL VERSION 50I MSL RCS

RotaCol® are the latest development in rotational position sensors and contactless devices. Modern Hall IC's in combination with special magnets and RISC processors provide intelligent customizing of output signals and interfacing. Not only precision potentiometer but also optoelectronic incremental and absolute encoders are replaced. The RotaCol® series is divided into three groups : analog - types with analog output (replacement for precision potentiometer), incremental output (replacement of optoelectronic encoders), absolute digital SPI and SSI output. Because of wide variety of mechanical and electrical options it is possible to use them in almost any automation and control application where rotary angular sensing is required. Regardless of the wide variety of existing technical features, the price is relative low.

Rotary incremental magnetic encoders and sensors - RotaCol® are angular position sensors with an integrated signal conditioning unit, which generates constant amplitude sine and cosine voltages which are used for angle calculation. The maximum resolution is 4096 angular measurements per revolution (0.1°). Like in the standard optical incremental encoders a rising and falling edge at channel A and channel B is available. Thus the rotational direction can be detected. The quadrature signal consist of 2 wave signal out of phase. The Z channel enables the counter to be reset to zero with the function of a non true power on absolute encoder. The programming of the position for the reference "Z" impulse in a relation to the marking on the shaft and housing can be factory set. Contrary to optical encoders, any pulse between 2 - 128 pulses per revolution can be programmed by software without disc change

Number of Pulses(xxxx) :

Standard configuration is 1024 ppr. As an option, every ppr between 2 to 128 ppr are programmable. Besides that 256 or 512 ppr can also be programmed (Price Adder).

Direction of Rotation (CW / CCW) :

In standard configuration direction of rotation is clockwise. With this option, it is possible to change direction from Clockwise (CW) to counter clockwise (CCW). (Price Adder)

Start Up Performance :

In the standard configuration, when the sensor is switched on, first the output A-B pulses are received only if the shaft rotates. After reaching the Z pulse it is used for resetting the counter (identical to optical encoders). In this option, when the electronic is switched on, the A and B output pulses are received automatically till the Z pulse is reached. Then the counter can be reset without rotating the shaft. From this point, the A, B and Z outputs are received corresponding to the shaft rotation.

Z Pulse :

A counter which is connected to the sensor is reset once per revolution by the Z - pulse. Within one rotation a simulation of non - true power on encoder is possible. In the basic type the counter is reset manually .

Zero Point Programming (POZ) :

Standard configuration is zero point without orientation. It is possible to position the Z Pulse in line with the marking on the shaft and the housing (Price Adder).

Inverted Signal (POI) :

The standard configuration is not inverted. With this option, the channels A and B can be inverted independent of each other (Price Adder).

MECHANICAL OPTIONS FOR INCREMENTAL VERSION 50I MSL RCS

Type / Series	Standard mechanical options	Customized mechanical options
50I MSL RCS	Cable gland (OCG), pins (OCP), miniature connector (OCM), terminal block (OCTA / R),special cable length	Special shaft length

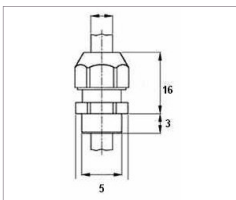
INTERCONNECTIONS

Standard Interconnections - 5 Core round cable

Other Interconnection options

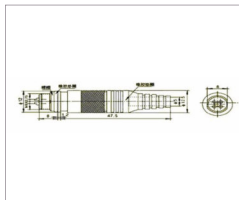
Cable gland (OCG)

5 core round cable 1 m long



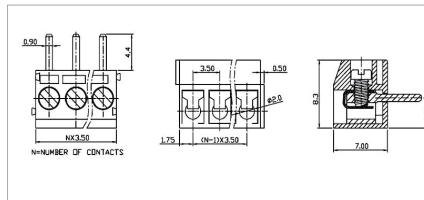
Miniature connector (OCM)

5 pin in integrated socket with plug



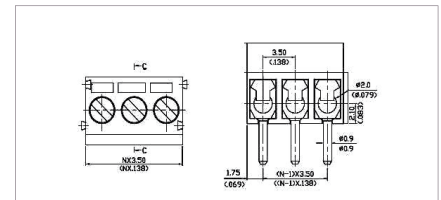
Terminal block - Axial (OCTA) Wires leaving axial to shaft axis

5 sockets



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

5 sockets



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