

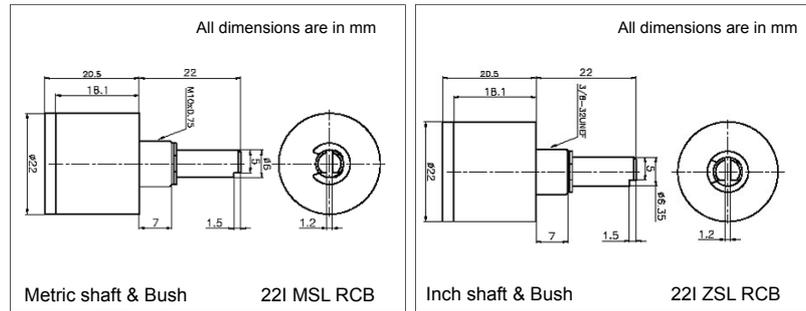
RotaCol® - Silverline
'INCREMENTAL' Output Hall Contactless Rotary Position Sensor
Bush Mounting - Sleeve Bearing

Series 22I MSL RCB
Series 22I ZSL RCB



Economical Hall effect magnetic sensor
A - B - Z channels- Any pulse from 2 - 128, 256, 512,1024 ppr programmable
Robust metal aluminium housing, 22 mm Ø housing
Bush mounting - sleeve bearing , Shock & vibration proof
Measurement range 0° - 360°

1-Supply (Red); 2-Ch Z (Grey); 3-Ch B (Grey); 4-Ch A (Grey); 5-Ground (Grey) : **For OCF**
 1-Supply ; 2-Ch Z ; 3-Ch B; 4-Ch A; 5-Ground : **For OCTA, OCTR**

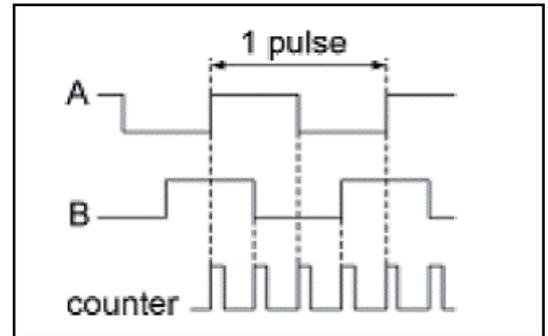


For full range of Rotary Sensors refer -
www.rotacol.info/rotamec.pdf

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 the longitudinal axis, sine and cosine voltages are generated to determine the angles. Two separate sine/digital converters provide A, B, Z incremental signals.

INCREMENTAL OUTPUT



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.

Default Version :

22 mm housing ,Bush Mounting,With sleeve bearing, 360° Electrical & Mechanical angle CW, 1024 ppr , 5 core flat cable 0.15 mtr long

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	

MECHANICAL CHARACTERISTICS

Mechanical angle	360° (continuous)		
Bushing	Metric	M10 X 0.75	(MSL)
	Inch	3/8" X 32 UNEF	(ZSL)
Shaft diameter and length (FMS)	Metric	6 mm Ø X 22 mm	(MSL)
	Inch	1/4" Ø X 22 mm	(ZSL)
Operating torque (approx.)	0.2 to 0.3 Ncm		
Protection	IP 40		
Operating temperature	- 40 to +85° C		
Operating life (approx.)	15 million rotations		
Mechanical speed (max.)	1000 rpm		
Weight	22 gm		
Interconnection	5 core flat cable 0.15 mtr long / terminal block axial or radial		

MATERIAL

Housing with bushing	Anodized aluminium
Bearing	Sleeve bearing
Shaft	Stainless steel

ORDERING INFORMATION

Refer to electrical and mechanical options on page 2

Housing diameter	Incremental output	Metric Silverline (Bush Thread M10X0.75 & Shaft 6mm Ø)	Inch Silverline (Bush Thread 3/8"X32TPI & Shaft 1/4" Ø)	RotaCol	Bush mount -sleeve bearing	Signal	No of Pulses	Direction of rotation	Programming options	Zero point Inverted signal	Special shaft length (default 22 mm)	Special cable length- only for OCF (default 0.15 m)	Output connections
22	I	MSL	ZSL	RC	B	S05TTL S05OC S24OC	xxxx Any pulse from 2 - 128,256, 512,1024 ppr programmable (default 1024 ppr)	CW CCW	POx	POZ POI	Axx	CVxx	OCxx OCF OCTA OCTR
22	I	xSL	RC	B	Sxxxx	xxxx	CW / CCW	POx	Axx	CVxx	OCxx		

Example with description - **22I ZSL RCB S05TTL 512 OCF** - 22mm diameter, incremental output, Inch Silverline (Bush Thread 3/8"X 32 TPI & Shaft 1/4" Ø), Bush mount, 5V TTL, 512 pulses, 5 core flat cable 0.15 mtr long

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 221 MSL/ZSL RCB

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 221 MSL/ZSL RCB

Type / Series	Standard mechanical options	Customized mechanical options
221 MSL/ZSL RCB	Terminal block Axial (OCTA) / Terminal block Radial (OCTR), Special cable length	Special shaft length

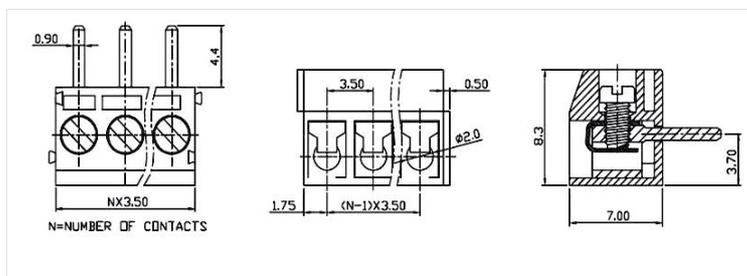
INTERCONNECTIONS

Standard Interconnections - 5 Core flat cable

Other Interconnection options

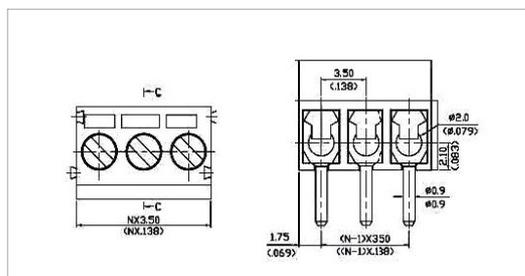
Terminal block - Axial (OCTA)
Wires leaving axial to shaft axis

5 sockets



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

5 sockets



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