

# RotaCol® - Diamondline

## DIGITAL SERIAL SYNCHRONOUS CONTACTLESS HALL ROTARY POSITION SENSOR SSI

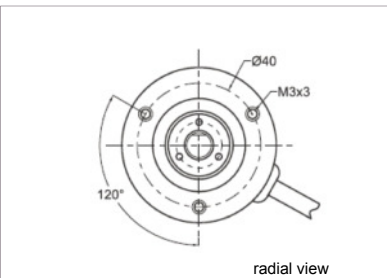
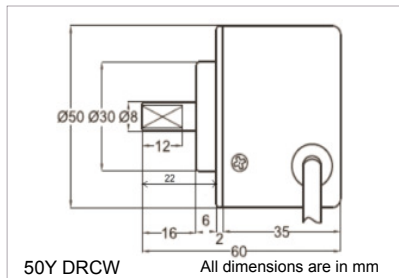
### CLAMPING FLANGE - 2 PRECISION BALL BEARINGS

50Y DRCW



**Servomount case - 2 Ball bearings**  
**Hall effect magnetic**  
**50 mm Ø robust metal aluminium housing with 2 ball bearings**  
**Direct serial synchronous interface for direct input to PLC etc.**  
**Clamping flange with 3 screws.**  
**Measurement range 0° - 360°**

1. Supply (Red); 2. Ground (Black); 3. Clock +ve (Orange); 4. Clock -ve (Brown); 5. Data +ve (Green); 6. Data -ve (Yellow) : For OCR, OCG  
 1. Supply; 2. Ground; 3. Clock +ve; 4. Clock -ve; 5. Data +ve; 6. Data -ve : For OCM, OCTA, OCTR

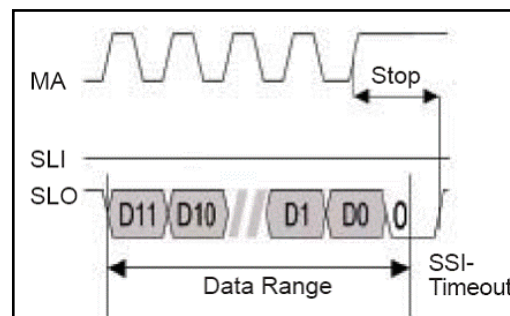


For full range of Rotary Sensor refer - [www.rotacol.info/rotamec.pdf](http://www.rotacol.info/rotamec.pdf)

### 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 in Grey-code for SSI interface.

### SERIAL SYNCHRONOUS INTERFACE



With the SSI interface the absolute angular position is provided serially and synchronous to a receiving electronic which has an SSI input (PLC indicator etc). The main advantage of the SSI interface is that long cable distances can be overcome by very few data lines. The actual angle of position is provided in 2 byte WORD Grey code with 12 bit over 360°. The receiving electronic provides pulse sequences and thus determines the transmission rate. With the first following signal of the pulse sequence, the angular position is detected and kept. The following rising ramps control the bit-wise transmission of the data word. After a small pause a new angular value can be transmitted.

**Default Version :**  
 360° CW Electrical & Mechanical angle, 6 core round cable 2.5 mtr long

### ELECTRICAL CHARACTERISTICS

Electrical angle	0 - 360°	
Electrical speed (max)	1600 rpm	
Resolution	12 bit (4096 steps)	
Signal	Supply voltage	Output signal
S05SSI	5V ± 10%	5V SSI
S24SSI	9-30V DC	24V SSI
Supply current	< 30 mA	
Frequency response	10 KHz	
Update rate	0.1 ms	

### MECHANICAL CHARACTERISTICS

Mechanical angle	360° (continuous)
Shaft diameter X length (FMS)	8 mm Ø X 22 mm
Protection	IP 54
Operating torque	0.05 Ncm
Operating temperature	- 40 to +85° C
Operating life	~ 75 million rotations
Mechanical speed (max.)	5000 rpm
Weight	250 gm
Interconnection	6 core round cable 2.5 mtr long

### MATERIAL

Housing	anodized aluminium
Shaft	stainless steel
Bearings	2 precision ball bearing

### ORDERING INFORMATION

Refer to electrical and mechanical options on page 2

Housing diameter	Serial Synchronous Interface (SSI)	Diamondline	RotaCol	Clamping flange with 3 screws	Signal	12 bit output	Without stop (default 360°)	Direction of rotation	Programming options	Special shaft length (default length - 22 mm FMS)	Special cable length - only for OCR, OCG (default 2.5 mtr long)	Output connections
50	Y	D	RC	W	S05SSI S24SSI	S12	O360	CW CCW	POX POZ	Axx	CVxx	OCxx OCR OCM OCG OCTA OCTR
<b>50</b>	<b>Y</b>	<b>D</b>	<b>RC</b>	<b>W</b>	<b>SxxSSI</b>	<b>S12</b>	<b>O360</b>	<b>CW/CCW</b>	<b>POZ</b>	<b>Axx</b>	<b>CVxx</b>	<b>OCxx</b>

Example with description **50Y DRCW S24SSI O360 CCW S12 POZ OCR-** 50mm diameter, SSI output, Diamondline, RotaCol, Clamping flange with 3 screws, Signal - 24V SSI, without stop 360° Counter clockwise direction, 12 bit output, Zero point, 5 Core round cable 2.5 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 SSI VERSION 50Y DRCW

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 putput signals and interfacing. Not only precision potentiometer but also optoelectronic incremental and absolute encoders are replaced. The RotaCol® series is divided into 3 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.

**SSI - Serial Synchronous Interface** is wide spread in industrial applications with absolute angle sensors. There are a lot of programmable logic controls (PLC) or other peripheral appliances like counters available that can be easily configured for this communication. Furthermore this interface is very insensitive against electromagnetic interferences because of the differential signals that should be transmitted via twisted pair leads.

### Direction of Rotation (CW / CCW)

The standard direction of rotation is clockwise (CW). It is also possible to change the direction of turning to counter clockwise mode (CCW).

### Zero Point Programming (POZ)

The electrical zero point is at the beginning of the signal rise. If a shaft marking is brought in line with the housing marking, the electrical zero point can be set to that position.

## MECHANICAL OPTIONS FOR SSI VERSION 50Y DRCW

Type / Series	Standard mechanical options	Customized mechanical options
50Y DRCW	Cable gland (OCG) ; Terminal Block (OCTA / OCTR) ; Miniature connector (OCM)	Special shaft length ; Special cable length

## INTERCONNECTIONS

Standard Interconnections - 6 Core round cable - 2.5m long radial

### Cable gland (OCG)

### Miniature connector (OCM)

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

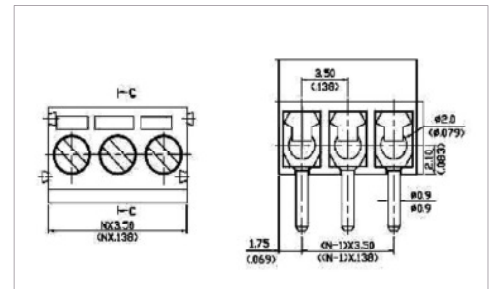
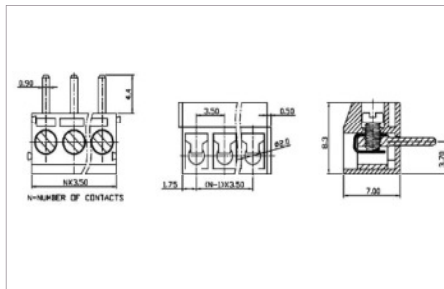
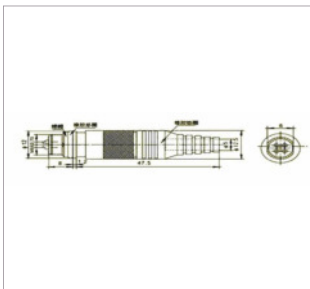
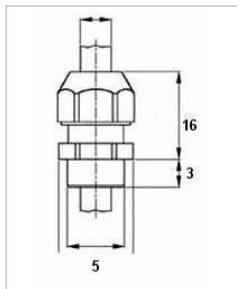
### Terminal block - Radial (OCTR) Wires leaving radial to shaft axis

6 core cable of 2.5 m length

6 pin in integrated socket with plug

6 sockets

6 sockets



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