

RotaCol® Contactless Hall Rotary Sensors + Encoders

Contactless magnetic rotary sensors replace more and more optical encoders and precision potentiometers. Software instead of hardware provide together with state of art (modern) semiconductors with integrated RISC processor a large variety of standard and customized output signals for position control feedback applications and any conversion of a rotary movement into an electrical signal.

RotaCol® Multi-Interface

Our RotaCol® sensors are available with a variety of integrated interfaces. The main advantage is that it offers inbuilt interfaces for the end user. The following interfaces are available - Analog, Incremental, Absolute digital SPI and SSI, PWM and I²C. Maximum mechanical speed data depends on the type of bearing. Electrical speed data are different for each interface and depends on Update rate. Generally the Update rate in Analog ~ 1 milli sec (1 KHz), Incremental ~ 10 KHz, SPI ~ 5 KHz, SSI ~ 10 KHz. If the resolution is 1° then the maximum speed because of electrical reason is as follows ; Analog ~ 160 rpm, PWM ~ 160 rpm, Incremental ~ 1600 rpm, SPI ~ 800 rpm, SSI ~ 1600 rpm, I²C ~ 800 rpm. Generally electrical speed is much lower than mechanical speed but can be increased on demand.

Analog Interface

At the output of sensor a variable voltage or variable current is provided proportionally to the position of shaft / axis over a complete angle range of 360° or a subrange. The contactless sensor electronic guarantees a steady signal level and a low independent linearity error of ± 0.5% according to IEC60393. Supply voltages of 5VDC ± 10% ; 9 - 30 VDC & 15 - 30 VDC and output signals of 0 - 5VDC (ratiometric) ; 0 - 5VDC ; 0 -10VDC; 0 - 20 mA & 4 - 20 mA are provided.

PWM Interface

PWM as output is a pulse width modulated signal, based on constant carrier frequency. Within one period of this frequency the change in duty cycle indicates the angle. Supply voltages of 5VDC±10%, and in some cases 3.3V±10% are available.

Incremental Interface A - B - Z

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 1/4th of quadrature signal period and is matched with A high and B high. The optical incremental encoders can be directly replaced by magnetic incremental encoders. They provide additional features and can much easier be adjusted to customer requirements. Contrary to optical incremental encoders the RotaCol® series provides an absolute sensor information by counting the number of pulses which matches with the actual absolute angle. Everything between 2 to 128 ppr is already now software programmable. Higher resolution upto 2048 ppr software programmable will be available soon.

SPI Interface

The Serial Peripheral Interface (SPI) is a bus system for a serial synchronous data transmission between different integrated circuits. It consists of MOSI (Master Out --> Slave In), MISO (Master In <-- Slave Out), 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 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. Types with 3V3 and 5VDC supply voltages are also available. In 12/13mm *Miniline* and 30mm *Locoline* full duplex with independent two signal lines & two data lines are provided as standard. For wire optimization a three wire half duplex SPI bus for all other types are available as standard (See datasheet). Four wire SPI is optional for those types.

Digital I²C Interface

If no SPI - network is available the I²C bus system can be used for easy integration with dedicated microcontrollers. Types with 3V3 & 5VDC supply voltages are also available. Certain configurations on customer-site by software are also possible.

SSI Interface

With the SSI interface the absolute angular position is provided serially and synchronous to a receiving electronic which has an 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.

RotaSet® - Setting Potentiometers; RotaCon®/RotaSense® - Rotary Position Sensors

RotaSet® includes rotary manual setting devices and rotary position sensors for simple applications. Being very economical they meet industrial requirements without having exaggerated specifications. Single turn and multiturn potentiometers of the RotaSet® family use proven designs and in most cases they meet industrial standards. In spite of new developments, these components are still required because they offer best price performance ratio for standard applications. Wirewound RotaSet® potentiometers are very suitable for applications with higher wiper current and special resistance values. RotaSet® conductive plastic potentiometers are mainly used for position control applications. Carbonplast formulation for resistance element offers a good operating life. They are very suitable for low current applications. For applications where shock and vibration exist or special interfaces other than ohms are required our RotaCol® contactless Hall position sensors are recommended.

RotaCon® (New) This new medium priced family of single turn conductive plastic rotary sensing potentiometers are available in the international synchro sizes 05 (12mm Ø), 07 (22mm Ø), 15 (36mm Ø) & 20 (50mm Ø) and are designed for rotational life of 4 million to 10 million rotations. Bushing and servo types are also available as conductive plastic potentiometers.

RotaSense® precision servo potentiometers correspond fully to international standards. They are used for rotary position feedback applications where a very long rotational life is required. Metal housings with ball bearings and stainless steel shafts, combined with excellent electrical data, make it suitable for any automation and control application. They meet international standardised dimensions. Generally all standard types without modifications in standard resistance values are available in the long life co-moulded technology.

All technical data have been established under laboratory conditions with great care and are for information only. As a guideline international standard IEC 60393 has been used. Because of different conditions, properties cannot be assured and every user has to ensure by himself that the product as it is, is suitable for his applications. No responsibility for any damages is assumed. Data can be changed without notice.

Electrical Options For Analog Versions For Rotacol® Series

Note: Please check individual datasheets for the options available in each series.

Non-effective Electrical Angle (PE1) - Delta 1/2

By default the electrical angle is 360°. With this option 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 (Price Adder).

Low level (PE2)

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

High level (PE3)

If the electrical angle is programmed smaller than 360°, the signal level remains high after reaching the full level (Price Adder).

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. (Price Adder) .

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 counter clockwise (CCW) (Price Adder).

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. Zero point can be programmed at any offset (Price Adder).

Center Point Programming (POC)

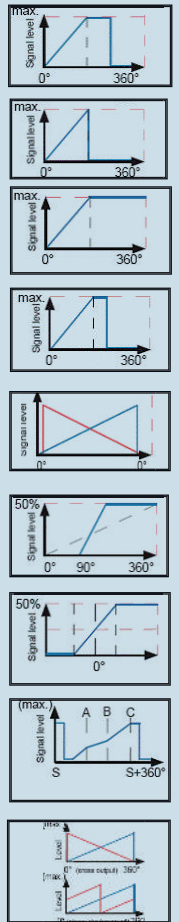
Effective electrical angle is aligned with the mechanical zero point in such a way that equal effective angles in both rotating directions are achieved. Center point can be programmed at any offset (Price Adder)

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, Not available in 12/13mm *MiniLine* and 30mm *LocoLine*) .

2 Channel Redundant Output (2C)

This is realized by a Hall sensor chip consisting of 2 galvanically separated sensing elements. One magnet provides a magnetic field simultaneously for both elements. Both elements can be programmed identically, or channel 2 can also be programmed independently from channel 1. Valid only for 0505, DC05 and 2410 outputs. (Price Adder, Not available in 12/13mm *MiniLine* and 30mm *LocoLine*) .



Electrical Options For Incremental Versions For Rotacol® Series

Number of Pulses & Direction (XXX CW/CCW)	Start Up Performance	Zero Positioning (POZ)
As a unique feature any number of pulses from 2 - 128 pulses per revolution (ppr) can be programmed in a 3 channel configuration. Above 128 ppr the following resolutions are possible as standard option: 256, 512, 1024 ppr (in preparation 2048 ppr). Default is 1024 ppr. The default direction of rotation is clockwise (CW). With this option it is also possible to change direction from clockwise (CW) to counter clockwise (CCW) (Price Adder).	In the basic default version, 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 (Price Adder).	It is possible to position the Z Pulse in line with the marking on the shaft and the bushing.
Z Pulse	Push Pull Function (POP)	Inverted Signal (POI)
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 default type the counter is reset manually	In an open collector mode the driver current is limited by pull up resistor. In push-pull mode the driver current goes up to 300 mA. Longer distances and faster switching are possible (Price Adder - Only for <i>DiamondLine</i>).	The channels A and B can be inverted or not inverted independent of each other. The default type is not inverted (Price Adder).

Electrical Options For SPI / SSI / I²C Versions For Rotacol® Series

Zero Point Programming (POZ)	Direction of Rotation (CW / CCW) The default direction of rotation is clockwise (CW). It is also possible to change the direction of turning to counter clockwise mode (CCW) - (Price Adder).	2 Channel Output (2C)
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. Beside that, it is also possible to position the zero point at any position within the mechanical angle. In any case it is necessary to have a reference to the shaft marking (Price Adder).	SPI Full Duplex - 4 Wire And Half duplex - 3 wire In 12-13mm <i>MiniLine</i> and 30mm <i>LocoLine</i> SPI full duplex - 4 wire is standard. In all other SPI types half duplex - 3 wire is standard. But full duplex - 4 wire is available as an option.	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. (Valid for SPI version, Not valid for 12/13mm <i>MiniLine</i> and 30mm <i>LocoLine</i>) (See separate type in the Price List).

Standard And Customized Mechanical Options And Accessories

Standard Mechanical Options (SM)

Standard mechanical options (SM) = Deviation from list price version. All RotaCol and Megauto products are manufactured in batches. If premanufactured components or changed processes can be used, no minimum quantity orders apply. A surcharge as adder according to the list price is applicable.

Customized Mechanical Options (CM) (Price Adder)

If special parts are not in stock, or no standard process can be changed, a MOQ (Minimum Order Quantity) and surcharge applies.

Type / Series	Standard Mechanical Options (Price Adder)	Customized Mechanical Options
22/28 ERCB	Low / High torque (no bearings) ; Endstop at 90°, 180°, 270°, 320°	Special shaft length ; Special cable
25/30 RS B	Low / High torque (no bearings) ; Endstop at 90°, 180°, 270°, 320°	Special shaft length ; Special cable
30 LOC B	Low / High torque (no bearings) ; Endstop at 90°, 180°, 270°, 320°	
22 M/Z SL RCB	Low torque (LT) ; High torque (HT); OCTA, OCTR	Special shaft length
22 M/Z SL RCBB	OCTA, OCTR [OCG, OCM (Larger housing dia of 25 mm - see 25 RSB)]	Special shaft length
22 M/Z SL RCS	OCTA, OCTR [OCG, OCM (Larger housing dia of 25 mm - see 25 RSB)]	Special shaft length
36 M/Z SL RCS	Cable gland (OCG) ; Terminal block (OCT) ; Miniature connector (OCM)	Special shaft length and shape ; Special cable
50 MSL RCS	Cable gland (OCG) ; Terminal block (OCT) ; Miniature connector (OCM)	Special shaft length and shape ; Special cable
40/50 DRCW	Cable gland (OCG) ; Terminal block (OCT) ; Miniature connector (OCM)	Special Connector ; Special cable
50 DRCH	Cable gland (OCG) ; Terminal block (OCT) ; Miniature connector (OCM)	Special Connector ; Special cable
58 DRCW	Cable gland (OCG) ; Terminal block (OCT) ; Miniature connector (OCM)	Special Connector ; Special cable
58 DRCS	Cable gland (OCG) ; Terminal block (OCT) ; Miniature connector (OCM)	Special Connector ; Special cable

Interconnections

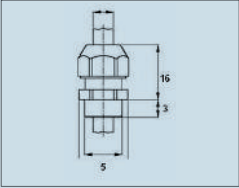
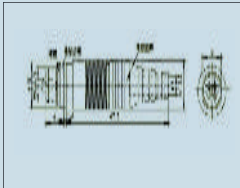
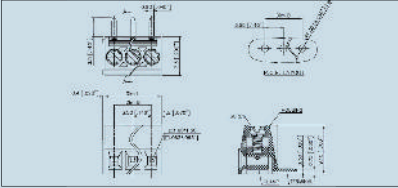
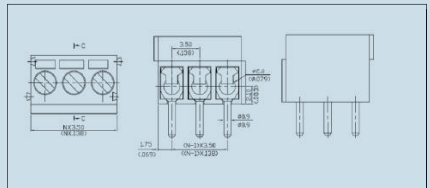
In order to make the assembly for our customer as easy as possible, we have created certain interconnection possibilities for different series.

Default Interconnections (No surcharge) - Standard Version

- 22/28 ERC (B) (F) (K) 3,5,6 core flat cable 0.15 m. (**Ecoline** ERC 22/28 mm \varnothing with bush, flange, kit)
- 25/30 RS (B) (F) (K) - Cable gland, miniature connector, terminal block axial & radial (**Ecoline** speed connect 25/30 mm \varnothing with bush, flange, kit)
- 22 LOC (B) - 3 Round wires of 0.15 m (**LoColine** 22mm \varnothing with bush)
- 30 LOC (B) (F) (K) - Round cable with rubber grommet 0.15 m (**LoColine** 30mm \varnothing with bush, flange, kit)
- 22 M/Z SL RCB / 22 M/Z SL RCBB - 3, 5, 6 core flat cable 0.15 m. (**Silverline** 22 mm \varnothing Bush mounting with sleeve or 1 ball bearing)
- 22 M/Z SL RCS - 3,5,6 core flat cable 0.15 m. (**Silverline** 22 mm \varnothing Servomount)
- 36 M/Z SL RCS - 3 Pins (Analog) & other interfaces 3, 5, 6 core round cable 1m. (Silverline 36 mm \varnothing Servomount)
- 50 MSL RCS - 3 Pins (Analog) & other interfaces 3, 5, 6 core round cable 1m. (Silverline 50 mm \varnothing Servomount)
- 40/50 DRCW - 3,5,6 core round cable 2.5 m. (**Diamondline** 40/50 mm \varnothing Clamping flange with 3 Screws)
- 50 DRCH - 3,5,6 core round cable 2.5 m. (**Diamondline** 50 mm \varnothing Hollow shaft with clamping flange)
- 58 DRCW - 3,5,6 core round cable 2.5 m. (**Diamondline** 58 mm \varnothing Clamping flange with 3 screws)
- 58 DRCS - 3,5,6 core round cable 2.5 m. (**Diamondline** 58 mm \varnothing Synchro Flange)

Other standard SPEED CONNECT Interconnections (With Surcharge)

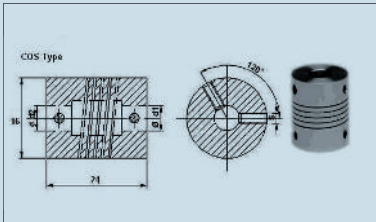
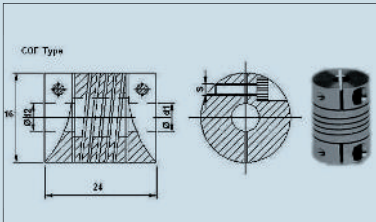
In the following drawings only the interconnections themselves are shown, with dimensions

<p>Cable gland (OCG) Cable gland with 3,5,6 core cable 1 m long according to interface</p> 	<p>Miniature connector (OCM) 3,5,6 pin in integrated socket with plug according to interface</p> 	<p>Terminal block - Axial - (OCTA) Wires leaving axial to shaft axis 3,5,6 sockets according to interface</p> 	<p>Terminal block Radial - (OCTR) Wires leaving radial to shaft axis 3,5,6 sockets according to interface</p> 
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Note: The speed connect surcharge is not applicable for 25/30 **Ecoline** RS series. They are available in all interconnections such as cable gland (OCG), miniature connector (OCM), terminal block axial (OCTA) & radial (OCTR). (Refer Price List).

Accessories - Spiral Couplings

Whenever the shafts of the sensors are available only in metric (mm) or radial force is expected on the shaft, we recommend our precision machined metal spiral couplings with set screws or clamp fixing. There are two dimensions in stock. One side for 6 mm dia shaft and other side either 1/4 inch or 1/8 inch shaft dia. These can be used to connect metric and non-metric devices. All **Silverline** - RotaCol sensors are as a standard also available with non-metric (inch) shafts.

<p style="text-align: center;">COS Type</p> <p>Set Screw Fitting 6 mm (d1) - 1/4" (d2) 6 mm (d1) - 1/8" (d2)</p> 	<p style="text-align: center;">COF Type</p> <p>Flange Clamping 6 mm (d1) - 1/4" (d2) 6 mm (d1) - 1/8" (d2)</p> 
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RotaCol® *Ecoline* 22/28 Ø ERC : Bushing (B) / Flange (F) / No Shaft Flange (K) Analog (A), Incremental (I), SPI (P), SSI (Y), PWM (W), I²C (C) Multiinterfaces

RotaCol® *Ecoline* ERC is a very economical **Multi-Interface** precision contactless rotary position sensor range available in plastic housings. **Multiinterfaces** = Analog, PWM, Incremental, SPI, SSI, I²C. The ERC series is divided into 3 groups : bush, flange and kit. Analog types with analog outputs 0-5V ratiometric, 0-10V, 4-20mA (replacement for precision potentiometers), Incremental output (replacement for optoelectronic encoders), PWM for signal where this output is required, Absolute digital SPI & SSI as well as I²C outputs. These digital outputs can be easily combined with appropriate microcontroller. Dimensions of 22mm & 28mm in economical plastic housing are available with shafts in bushings and with sleeve bearings. Besides that there are flange continuous rotation types available with polymer bearings and the kit version with no shaft where the user can mount the magnet wherever it is required. The mechanical and electrical data, except dimensions, are identical for RotaCol® 22ERC & 28ERC (for maximum speed explanation see page 2). Because of the wide variety of mechanical & electrical options it is possible to use them in almost any automation and control application where rotary angular sensing is required.

22/28 ERCB



Interconnection : flat cable

Detailed Datasheet :
www.rotacol.info/22aerccb.pdf
www.rotacol.info/22ierccb.pdf
www.rotacol.info/22perccb.pdf
www.rotacol.info/22yercb.pdf
www.rotacol.info/22wercb.pdf
www.rotacol.info/22cerccb.pdf
www.rotacol.info/28aerccb.pdf
www.rotacol.info/28ierccb.pdf
www.rotacol.info/28perccb.pdf
www.rotacol.info/28yercb.pdf
www.rotacol.info/28wercb.pdf
www.rotacol.info/28cerccb.pdf

Bushing Version : 22 and 28mmØ ERCB Rotary Position Sensor Contactless Hall Effect - Shaft 6mm or 1/4" , Plastic Case - Brass Sleeve bearing

Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	22/28 A ERCB	22/28I ERCB	22/28P ERCB	22/28Y ERCB	22/28W ERCB	22/28C ERCB
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512, (1024 ppr std)	0 - 360°	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5 VDC
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0-20mA 4-20mA	5V TTL; 5V / 24V Open Collector	Absolute SPI Single/dual channel 3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer .
Resolution steps	4096 (12 bit)	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)	4096 (12 bit)
Mech.speed (max.)	800 rpm	800 rpm	800 rpm	800 rpm	800 rpm	800 rpm
Elec. speed (max.)	160 / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm
Life (rotations)	~ 10X10 ⁶	~ 10X10 ⁶	~ 10X10 ⁶	~ 10X10 ⁶	~ 10X10 ⁶	~ 10X10 ⁶

22/28 ERCF



Interconnection : flat cable

Detailed Datasheet :
www.rotacol.info/22aerclf.pdf
www.rotacol.info/22ierclf.pdf
www.rotacol.info/22perclf.pdf
www.rotacol.info/22yercf.pdf
www.rotacol.info/22wercf.pdf
www.rotacol.info/22cerclf.pdf
www.rotacol.info/28aerclf.pdf
www.rotacol.info/28ierclf.pdf
www.rotacol.info/28perclf.pdf
www.rotacol.info/28yercf.pdf
www.rotacol.info/28wercf.pdf
www.rotacol.info/28cerclf.pdf

Flange Version : 22 and 28mmØ ERCF Rotary Position Sensor Contactless Hall Effect - Shaft 6mm, Plastic Case - Polymer bearings

Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	22/28A ERCF	22/28I ERCF	22/28P ERCF	22/28Y ERCF	22/28W ERCF	22/28C ERCF
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512 (1024 ppr. std)	0 - 360°	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5V DC,
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0-20mA 4-20mA	5V TTL; 5V / 24V Open collector	Absolute SPI Single/dual channel 3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer .
Resolution steps	4096 (12 bit)	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)	4096 (12 bit)
Mech.speed (max)	3000 rpm	3000 rpm	3000 rpm	3000 rpm	3000 rpm	3000 rpm
Elec. speed (max)	160 / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm
Life (Rotations)	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶

22/28 ERCK



Magnet holder
Interconnection : flat cable

Detailed Datasheet :
www.rotacol.info/22aerck.pdf
www.rotacol.info/22ierck.pdf
www.rotacol.info/22perck.pdf
www.rotacol.info/22yercck.pdf
www.rotacol.info/22wercck.pdf
www.rotacol.info/22cerck.pdf
www.rotacol.info/28aerck.pdf
www.rotacol.info/28ierck.pdf
www.rotacol.info/28perck.pdf
www.rotacol.info/28yercck.pdf
www.rotacol.info/28wercck.pdf
www.rotacol.info/28cerck.pdf

Shaftless Universal : 22 and 28mmØ ERCK Rotary Position Sensor Contactless Hall effect - Magnet on user shaft - No bearings

Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	22/28A ERCK	22/28I ERCK	22/28P ERCK	22/28Y ERCK	22/28W ERCK	22/28C ERCK
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512, (1024 ppr. std)	0 - 360°	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5 VDC
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0-20mA 4-20mA	5V TTL; 5V/24V Open collector	Absolute SPI Single/dual channel 3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer .
Resolution Steps	4096 (12 bit)	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)	4096 (12 bit)
Elec. speed (max)	160 / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm

RotaCol® *Ecoline* 25/30 Ø RS : SPEED CONNECT Bushing (B) / Flange (F) / No Shaft Flange (K) Miniature Connector (OCM), Cable Gland+1m cable (OCG), Axial / Radial Terminal block (OCTA / OCTR)

The RotaCol® 25/30 RS B/F/K Speed Connect series is very similar to RotaCol® ERC series. The outside diameter is 25 and 30 mm. For easy connections the cable gland (OCG) with 1 mtr cable unshielded or shielded (at extra surcharge) multicore cable of 3,5 or 6 cores depending on the interface is available. Also Axial terminal block (OCTA) and Radial terminal block (OCTR) are available. An integrated fixed socket miniature connector (OCM) with 3,5 or 6 pins according to interface together with self latching plug is available. All electrical and mechanical data, except dimensions, are identical to the RotaCol® ERC series. All multiinterface functions are available within short delivery time. Also SPEED CONNECT mechanical features such as cable gland, axial terminal blocks, radial terminal blocks and connector make integration and replacement very easy. Flange versions have polymer sleeve bearings.

25/30 RSB

Bushing Version : 25 and 30 mm Ø RSB SPEED CONNECT (OCG-OCM-OCTR-OCTA) Contactless Hall Effect - Shaft 6mm or 1/4" , Plastic Case - MULTIINTERFACE - Brass Sleeve bearings



Interconnection : Mini connector - OCM

Detailed Datasheet :

www.rotacol.info/25arsb.pdf
www.rotacol.info/25irsb.pdf
www.rotacol.info/25prsb.pdf
www.rotacol.info/25yrsb.pdf
www.rotacol.info/25wrsb.pdf
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www.rotacol.info/30wrsb.pdf
www.rotacol.info/30crsb.pdf

Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	25/30A RSB	25/30I RSB	25/30P RSB	25/30Y RSB	25/30W RSB	25/30C RSB
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512, (1024 ppr std)	0 - 360°	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5 VDC
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0-20mA 4-20mA	5V TTL; 5V / 24V Open Collector	Absolute SPI Single/dual channel 3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer .
Resolution Steps	4096 (12 bit)	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)	4096 (12 bit)
Mech.speed (max.)	800 rpm	800 rpm	800 rpm	800 rpm	800 rpm	800 rpm
Elec. speed (max.)	160 / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm
Life (rotations)	~ 10X10 ⁶	~ 10X10 ⁶	~ 10X10 ⁶	~ 10X10 ⁶	~ 10X10 ⁶	~ 10X10 ⁶

25/30 RSF

Flange Version : 25 and 30 mm Ø RSF SPEED CONNECT (OCG-OCM-OCTR-OCTA) Contactless Hall Effect - Shaft 6mm, Plastic Case - MULTIINTERFACE - Polymer bearings



Interconnection : Axial Terminal block - OCTA

Detailed Datasheet :

www.rotacol.info/25arsf.pdf
www.rotacol.info/25irsf.pdf
www.rotacol.info/25prsf.pdf
www.rotacol.info/25yrsf.pdf
www.rotacol.info/25wrsf.pdf
www.rotacol.info/25crsf.pdf
www.rotacol.info/30arsf.pdf
www.rotacol.info/30irsf.pdf
www.rotacol.info/30prsf.pdf
www.rotacol.info/30yrsf.pdf
www.rotacol.info/30wrsf.pdf
www.rotacol.info/30crsf.pdf

Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	25/30A RSF	25/30I RSF	25/30P RSF	25/30Y RSF	25/30W RSF	25/30C RSF
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512, (1024 ppr std)	0 - 360°	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5 VDC
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0-20mA 4-20mA	5V TTL; 5V / 24V Open Collector	Absolute SPI Single/dual channel,3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer . .
Resolution Steps	4096 (12 bit)	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)	4096 (12 bit)
Mech.speed (max.)	3000 rpm	3000 rpm	3000 rpm	3000 rpm	3000 rpm	3000 rpm
Elec. speed (max.)	160 / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm
Life (rotations)	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶

25/30 RSK

Shaftless Kit Version : 25 and 30 mm Ø RSK SPEED CONNECT (OCG-OCM-OCTR-OCTA) Contactless Hall effect - Magnet on user shaft - MULTIINTERFACE - No bearings



Interconnection : Cable gland+1m cable- OCG



Detailed Datasheet :


www.rotacol.info/25arsk.pdf
www.rotacol.info/25irsk.pdf
www.rotacol.info/25prsk.pdf
www.rotacol.info/25yrsk.pdf
www.rotacol.info/25wrsk.pdf
www.rotacol.info/25crsk.pdf
www.rotacol.info/30arsk.pdf
www.rotacol.info/30irsk.pdf
www.rotacol.info/30prsk.pdf
www.rotacol.info/30yrsk.pdf
www.rotacol.info/30wrsk.pdf
www.rotacol.info/30crsk.pdf


Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	25/30A RSK	25/30I RSK	25/30P RSK	25/30Y RSK	25/30W RSK	25/30C RSK
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512, (1024 ppr std)	0 - 360°	0 - 360°	0-20° to 0 - 360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5 VDC
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0-20mA 4-20mA	5V TTL; 5V/24V Open collector	Absolute SPI Single/dual channel 3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer . .
Resolution Steps	4096 (12 bit)	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)	4096 (12 bit)
Elec. speed (max.)	160 / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm

RotaCol® LoColine 22/30 Ø LOC : Bushing (B) / Flange (F) / No Shaft Flange (K) Cost Effective Analog (A), SPI (P), PWM (W), I²C (C) Multiinterfaces

RotaCol® LoColine LOC is a very economical precision contactless rotary position sensor range available in plastic housings. By reducing the number of interfaces & mechanical types and use of modern lower cost magnetic Hall - microcontrollers, it is possible to reduce the prices substantially. Rugged 30mm Ø plastic housing with Bushing (B) / shaft, Flange (F) / shaft and shaftless universal flange in combination with Analog - SPI - PWM and I²C interface makes rotary position sensing in automation very easy and affordable. A 22mm Ø bushing analog type is available at precision potentiometer prices.

30 LOCB	Very Economical - Bushing Version : 22/30 mm Ø LOCB Rotary Position Sensor Contactless Hall Effect - Shaft 6mm or 1/4" , Plastic Case, Multi - endstop				22 LOCB	
 <p>Connection : Round Cable with rubber grommet -OCR</p> <p>Very Economical plastic case 30mm bushing mount contactless rotary Position sensor Available in 0-5V ratiometric, PWM,SPI and I²C outputs</p> <p>Detailed Datasheet : www.rotacol.info/30alocb.pdf www.rotacol.info/30plocb.pdf www.rotacol.info/30wlocb.pdf www.rotacol.info/30clocb.pdf</p>	Version	Analog (A)	SPI (P)	PWM (W)	I²C (C)	 <p>Connection : 3 leads multistrand round wire 0.15mm</p> <p>Very Economical plastic case 22mm bushing mount contactless rotary position sensor Only available in 0-5V ratiometric, 0-10V, 4-20mA and PWM.</p> <p>Detailed Datasheet : www.rotacol.info/22alocb.pdf www.rotacol.info/22wlocb.pdf</p>
	Type	22A LOCB 30A LOCB	30P LOCB	22W LOCB 30W LOCB	30C LOCB	
	Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)	
	Supply voltage	5V±10% 9-30V DC/ 15-30V DC (Only for 22A LOCB)	3.3V±10% / 5V ± 10%	5V±10%	3.3V±10% / 5V DC	
	Output signal	0-5V ratiometric; Single channel 0-5V; 0-10V; 4-20mA (Only for 22A LOCB)	Absolute SPI 3.3V / 5V Single channel 4 wires	PWM single channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer	
	Resolution Steps	4096 step (12 bit)	16383 steps (14 bit)	4096 steps (12 bit)	4096 steps (12 bit)	
	Mech.speed (max.)	800 rpm	800 rpm	800 rpm	800 rpm	
	Elec. speed (max.)	160 rpm	800 rpm	160 rpm	800 rpm	
	Life (rotations)	~ 10X10 ⁶	~ 10X10 ⁶	~ 10X10 ⁶	~ 10X10 ⁶	

30 LOCF	Very Economical - Flange Version : 30 mm Ø LOCF Rotary Position Sensor Contactless Hall Effect - Shaft 6mm, Plastic Case				
 <p>Connection : Round Cable with rubber grommet -OCR</p> <p>Very Economical plastic case 30mm Flange mount contactless rotary Position sensor Available in 0-5V ratiometric, PWM,SPI and I²C outputs</p> <p>Detailed Datasheet : www.rotacol.info/30alocf.pdf www.rotacol.info/30plocf.pdf www.rotacol.info/30wlocf.pdf www.rotacol.info/30clocf.pdf</p>	Version	Analog (A)	SPI (P)	PWM (W)	I²C (C)
	Type	30A LOCF	30P LOCF	30W LOCF	30C LOCF
	Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
	Supply voltage	5V±10%	3.3V±10% / 5V ± 10%	5V±10%	3.3V±10% / 5V DC
	Output signal	0-5V ratiometric; Single channel	Absolute SPI 3.3V / 5V Single channel 4 wires	PWM single channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer
	Resolution steps	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)
	Mech.speed (max.)	3000 rpm	3000 rpm	3000 rpm	3000 rpm
	Elec. speed (max.)	160 rpm	800 rpm	160 rpm	800 rpm
	Life (rotations)	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶

30 LOCK	Very Economical - Shaftless Universal Flange 30 mm Ø LOCK Rotary Position Sensor Contactless Hall Effect -Magnet on User shaft - Plastic Case- No bearings				
 <p>Connection : Round Cable with rubber grommet -OCR</p> <p>Very Economical plastic case 30mm shaftless kit, Available in 0-5V ratiometric, PWM,SPI and I²C outputs Detailed Datasheet : www.rotacol.info/30alock.pdf www.rotacol.info/30plock.pdf www.rotacol.info/30wlock.pdf www.rotacol.info/30clock.pdf</p>	Version	Analog (A)	SPI (P)	PWM (W)	I²C (C)
	Type	30A LOCK	30P LOCK	30W LOCK	30C LOCK
	Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
	Supply voltage	5V±10%	3.3V±10% / 5V ± 10%	5V±10%	3.3V±10% / 5V DC
	Output signal	0-5V ratiometric; Single channel	Absolute SPI 3.3V / 5V Single channel 4 wires	PWM single channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer
	Resolution Steps	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)
	Elec. speed (max.)	160 rpm	800 rpm	160 rpm	800 rpm

RotaCol® *MiniLine* 12,15 and 22 mm ø : Bushing / Servo & Flange Mount Rotary Position Sensor Analog (A), SPI (P), PWM (W), I²C (C) Multiinterfaces, Metal Case

Miniaturisation in automation requires very small components. All - metal housings with bushings, flange and servomount and many electronic interfaces such as analog, PWM, SPI and I²C are available in MiniLine. 12mm (1/2") housing diameter precision, precision machined with metric and inch shaft fit everywhere.

12 M/Z MCB



Precision Miniature bushing mount, 12 mm metal housing
Metric and Inch shaft Brass silver plated terminals

Detailed Datasheet :
www.rotacol.info/12ammcb.pdf
www.rotacol.info/12azmcb.pdf
www.rotacol.info/12pmmcb.pdf
www.rotacol.info/12pzmcmb.pdf
www.rotacol.info/12wmmcb.pdf
www.rotacol.info/12wzmcmb.pdf
www.rotacol.info/12cmcb.pdf

Miniature 12 mm Ø Bushing - Servo Mount Rotary Position Sensor Contactless Hall Effect - Shaft 3mm or 1/8", Metal case, Ball bearing (12MCS)

Version	Analog (A)	SPI (P)	PWM (W)	I ² C (C)
Type	12A M/Z MCB 12A M/Z MCS	12P M/Z MCB 12P M/Z MCS	12W M/Z MCB 12W M/Z MCS	12C M/Z MCB 12C M/Z MCS
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10%	3.3V±10% / 5V ± 10%	5V±10%	3.3V±10% / 5V DC
Output signal	0-5V ratiometric; Single channel	Absolute SPI 3.3V, 5V SPI Single channel 4 wires	PWM single channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer
Resolution steps	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)
Mech.speed (max)	800 rpm (MCB) 3000 rpm (MCS)	800 rpm (MCB) 3000 rpm (MCS)	800 rpm (MCB) 3000 rpm (MCS)	800 rpm (MCB) 3000 rpm (MCS)
Elec. speed (max)	160 rpm	800 rpm	160 rpm	800 rpm
Life (rotations)	~ 5X10 ⁶ (12MCB) ~15X10 ⁶ (12MCS)	~ 5X10 ⁶ (12MCB) ~15X10 ⁶ (12MCS)	~ 5X10 ⁶ (12MCB) ~15X10 ⁶ (12MCS)	~ 5X10 ⁶ (12MCB) ~15X10 ⁶ (12MCS)

12 M/Z MCS



Precision Miniature servo mount universal rotary position sensor, 12 mm metal housing, two ball bearings, brass silver plated terminals

Detailed Datasheet :
www.rotacol.info/12ammcs.pdf
www.rotacol.info/12azmcs.pdf
www.rotacol.info/12pmmcs.pdf
www.rotacol.info/12pzmcsc.pdf
www.rotacol.info/12wmmcs.pdf
www.rotacol.info/12wzmcsc.pdf
www.rotacol.info/12cmcs.pdf

13M/Z MCB



12 mm metal housing bushing
Precision machined metric / inch shaft

Detailed Datasheet :
www.rotacol.info/13ammcb.pdf
www.rotacol.info/13azmcb.pdf
www.rotacol.info/13pmmcb.pdf
www.rotacol.info/13pzmcmb.pdf
www.rotacol.info/13wmmcb.pdf
www.rotacol.info/13wzmcmb.pdf
www.rotacol.info/13cmcb.pdf

Miniature 12 mm Ø Bushing - Shaftless Flange Rotary Position Sensor Contactless Hall Effect - Shaft 6mm or 1/4", Metal case

Version	Analog (A)	Incremental (I)	SPI (P)	PWM (W)	I ² C (C)
Type	13A M/Z MCB 13A MCK	13I M/Z MCB 13I MCK	13P M/Z MCB 13P MCK	13W M/Z MCB 13W MCK	13C M/Z MC 13C MCK
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	1024 ppr standard	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10%	3.3V DC 5V±10%	3.3V±10% / 5V ± 10%	5V±10%	3.3V±10% / 5V DC
Output signal	0-5V ratiometric; Single channel	3.3V TTL 5V TTL	Absolute SPI 3.3V, 5V SPI Single channel	PWM single channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer .
Resolution steps	4096 (12 bit)	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	16384 (14 bit)
Elec.speed (max)	160 rpm	1600 rpm	800 rpm	160 rpm	800 rpm
Life (rotations)	~ 5X10 ⁶ (13MCB)	~ 5X10 ⁶ (13MCB)	~ 5X10 ⁶ (13MCB)	~ 5X10 ⁶ (13MCB)	~ 5X10 ⁶ (13MCB)

13 MCK



Shaftless kit version,
Magnet holder can be put on the
customer shaft, No bearing

Detailed Datasheet :
www.rotacol.info/13amck.pdf
www.rotacol.info/13imck.pdf
www.rotacol.info/13pmck.pdf
www.rotacol.info/13wmck.pdf
www.rotacol.info/13cmck.pdf

15 MCF



Miniature size flange mount
15 mm metal housing with two
ball bearings

Detailed Datasheet :
www.rotacol.info/15amcf.pdf
www.rotacol.info/15wmcfc.pdf

Miniature Flange 15 mm Ø Metal case Rotary Sensor

Version	Analog (A)	PWM (W)
Type	15A MCF	15W MCF
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	0-20° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10%	5V±10%
Output signal	0-5V ratiometric; Single channel	PWM Single channel
Resolution steps	4096 (12 bit)	4096 (12 bit)
Mech.speed (max)	4000 rpm	4000 rpm
Elec.speed (max)	160 rpm	160 rpm
Life (rotations)	~15X10 ⁶	~15X10 ⁶

Universal Flange 22 mm Ø Metal case Rotary Sensor

Version	Analog (A)	PWM (W)
Type	22A MCF	22W MCF
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	0-20° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10% 9-30V DC ;15-30V DC	5V±10%
Output signal	0-5V ratiometric; Single channel 0-5V; 0-10V;4-20mA	PWM Single channel
Resolution steps	4096 (12 bit)	4096 (12bit)
Mech.speed	4000 rpm	4000 rpm
Elec. speed	160 rpm	160 rpm
Life (rotations)	~15X10 ⁶	~15X10 ⁶

22 MCF



Universal size flange mount
22 mm metal housing with two ball
bearings

Detailed Datasheet :
www.rotacol.info/22amcf.pdf
www.rotacol.info/22wmcfc.pdf

RotaCol® Silverline 22 mm ø Precision Rotary Sensors Contactless Hall Multi-Interface

Silverline precision contactless Hall Rotary position sensors are not only available with the multi interface output signals such as analog, incremental, SPI, SSI, PWM and I²C but also in aluminium housing with stainless steel shafts and precision plain or ball bearings. Different mounting methods such as bushing & servo are available in 22 mm housing diameter. Metric shafts 6 mm (MSL) & Inch 1/4" (ZSL) are standard. A large variety of mechanical & electrical options are available. Default interconnection is OCF - Flat cable 0.15m long. Other interconnections such as terminal block axial (OCTA) & radial (OCTR) are available with price adder. Also available in cable gland (OCG) & miniature connector (OCM) with 25mm housing diameter (25 RS).

22 M/Z SL RCB

Bushing Mount - Plain Bearing : 22 mm ø RCB Precision Rotary Position Sensor Contactless Hall effect - Shaft 6mm / 1/4" , Metal Case



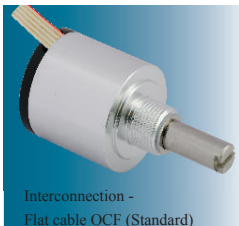
Interconnection - Terminal Block OCTA/OCTR (Price Adder)

Detailed datasheet :
www.rotacol.info/22amslrcb.pdf
www.rotacol.info/22imslrcb.pdf
www.rotacol.info/22pmslrcb.pdf
www.rotacol.info/22ymslrcb.pdf
www.rotacol.info/22wmslrcb.pdf
www.rotacol.info/22zmslrcb.pdf
www.rotacol.info/22zslrcb.pdf
www.rotacol.info/22zslrcb.pdf
www.rotacol.info/22zslrcb.pdf
www.rotacol.info/22zslrcb.pdf

Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	22A M/Z SL RCB	22I M/Z SL RCB	22P M/Z SL RCB	22Y M/Z SL RCB	22W M/Z SL RCB	22C M/Z SL RCB
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512 (1024 ppr std)	0 - 360°	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10% / 9-30VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5 VDC
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0-20mA 4-20mA	5V TTL; 5V / 24V Open Collector	Absolute SPI Single/dual channel 3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirect always slave transmitter or receiver, NXP UN 10204 Prot.Master initiates data transfer
Resolution Steps	4096 (12 bit)	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)	4096 (12 bit)
Mech. speed (Max)	1000 rpm	1000 rpm	1000 rpm	1000 rpm	1000 rpm	1000 rpm
Elec. speed (Max)	160 / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm
Life (rotations)	~ 5X10 ⁶	~ 5X10 ⁶	~ 5X10 ⁶	~ 5X10 ⁶	~ 5X10 ⁶	~ 5X10 ⁶

22 M/Z SL RCBB

Bushing Mount - 1 Ball Bearing : 22 mm ø RCBB Precision Rotary Position Sensor Contactless Hall effect - Shaft 6mm / 1/4" , Metal Case



Interconnection - Flat cable OCF (Standard)

Detailed datasheet :
www.rotacol.info/22amslrcbb.pdf
www.rotacol.info/22imslrcbb.pdf
www.rotacol.info/22pmslrcbb.pdf
www.rotacol.info/22ymslrcbb.pdf
www.rotacol.info/22wmslrcbb.pdf
www.rotacol.info/22zmslrcbb.pdf
www.rotacol.info/22zslrcbb.pdf
www.rotacol.info/22zslrcbb.pdf
www.rotacol.info/22zslrcbb.pdf
www.rotacol.info/22zslrcbb.pdf

Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	22A M/Z SL RCBB	22I M/Z SL RCBB	22P M/Z SL RCBB	22Y M/Z SL RCBB	22W M/Z SL RCBB	22C M/Z SL RCBB
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512 (1024 ppr std)	0 - 360°	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10% / 9-30VDC / 15-30V DC	5V±10% / 9-30V DC	5V ± 10%	5V±10% / 9-30V DC	5V±10%	3.3V±10% / 5V DC
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0-20mA 4-20mA	5V TTL; 5V / 24V Open Collector	Absolute SPI Single/dual channel 3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirect always slave transmitter or receiver, NXP UN 10204 Prot.Master initiates data transfer
Resolution Steps	4096 (12 bit)	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)	4096 (12 bit)
Mech. speed (Max)	4000 rpm	4000 rpm	4000 rpm	4000 rpm	4000 rpm	4000 rpm
Elec. speed (Max)	160 / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm
Life (rotations)	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶

22 M/Z SL RCS

Servo Mount - 2 Ball Bearings : 22 mm ø RCS Precision Rotary Position Sensor Contactless Hall effect - Shaft 6mm / 1/4" , Metal Case



Interconnection - Flat cable OCF (Standard)

Detailed datasheet :
www.rotacol.info/22amslrscs.pdf
www.rotacol.info/22imslrscs.pdf
www.rotacol.info/22pmslrcs.pdf
www.rotacol.info/22ymslrcs.pdf
www.rotacol.info/22wmslrcs.pdf
www.rotacol.info/22zmslrcs.pdf
www.rotacol.info/22zslrcs.pdf
www.rotacol.info/22zslrcs.pdf
www.rotacol.info/22zslrcs.pdf
www.rotacol.info/22zslrcs.pdf

Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	22A M/Z SL RCS	22I M/Z SL RCS	22P M/Z SL RCS	22Y M/Z SL RCS	22W M/Z SL RCS	22C M/Z SL RCS
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512 (1024 ppr std)	0 - 360°	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10% / 9-30VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5 VDC
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0-20mA, 4-20mA	5V TTL; 5V / 24V Open Collector	Absolute SPI Single/dual channel 3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirect always slave transmitter or receiver, NXP UN 10204 Prot.Master initiates data transfer
Resolution Steps	4096 (12 bit)	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)	4096 (12 bit)
Mech. speed (Max)	6000 rpm	6000 rpm	6000 rpm	6000 rpm	6000 rpm	6000 rpm
Elec. speed (Max)	160 / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm
Life (rotations)	~ 25X10 ⁶	~ 25X10 ⁶	~ 25X10 ⁶	~ 25X10 ⁶	~ 25X10 ⁶	~ 25X10 ⁶

RotaCol® Silverline 36/50mm Ø Precision Rotary Sensor Contactless Hall Multi-interface

Silverline product range of Rotacol® precision multi-interface contactless rotary position sensors in 36 & 50 mm housing diameter synchro size 15+20 are available. They have two precision ball bearings and are available in 2 mounting methods; Threaded holes for screw fixing and standardised servo mount size 09, 15 & 20. Multiinterface is possible with Analog, Incremental, PWM, SPI, SSI and I²C outputs. Shaft diameter is available in Metric (M) with 6 mm and inch (Z) with 1/4" & 1/8" (See page 4). Default interconnection is with soldering pins (OCP) for analog outputs. For other interfaces 1 mtr round cable with rubber grommet is default interconnection. Other interconnections cable gland (OCG), miniature connector (OCM), terminal block axial (OCTA) & radial (OCTR) are available in 36 & 50 mm housing diameter with price adder. A large variety of mechanical & electrical options are available.

36 M/Z SL RCS



Interconnection - Pins OCP (Standard)

Detailed Datasheet :
www.rotacol.info/36amslracs.pdf
www.rotacol.info/36azslracs.pdf
www.rotacol.info/36wmslracs.pdf
www.rotacol.info/36wzslracs.pdf

Precision Contactless Hall Effect Rotary Position Sensor : 36/50 mm Ø RCS Analog & PWM Outputs, Servo Mount , 2 Ball Bearings, Shaft 6mm / 1/4"

Version	Analog (A)	PWM (W)
Type	36A M/Z SL RCS 50A MSL RCS	36W M/Z SL RCS 50W MSL RCS
Electrical angle	0-20° to 0-360° in 1° step prog. (standard 360°)	0-20° to 0-360° in 1° step prog. (standard 360°)
Supply voltage	5V±10% / 9-30VDC / 15-30 VDC	
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0-20mA; 4-20mA	PWM single/dual channel
Resolution	4096 steps (12 bit)	
Mech speed (Max)	8000 rpm (36M/Z SL RCS) ; 9000 rpm (50 MSL RCS)	
Elec. speed (Max)	160 / 800 rpm	160 rpm
Life (rotations)	~ 35X10 ⁶ (36 M/Z SL RCS) ; ~ 40X10 ⁶ (50 MSL RCS)	

50 MSL RCS



Interconnection - Pins OCP (Standard)

Detailed Datasheet :
www.rotacol.info/50amslracs.pdf
www.rotacol.info/50wmslracs.pdf

36 M/Z SL RCS



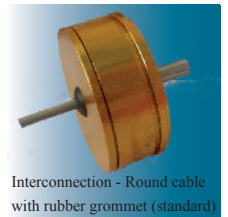
Interconnection - Cable gland OCG (price adder)

Detailed Datasheet :
www.rotacol.info/36pmslracs.pdf
www.rotacol.info/36pzclracs.pdf
www.rotacol.info/36cmslracs.pdf
www.rotacol.info/36czslracs.pdf

Precision Contactless Hall Effect Rotary Position Sensor : 36/50 mm Ø RCS SPI & I²C Outputs, Servo Mount , 2 Ball Bearings, Shaft 6mm / 1/4"

Version	SPI (P)	I ² C (C)
Type	36P M/Z SL RCS 50P MSL RCS	36C M/Z SL RCS 50C MSL RCS
Electrical angle	0 - 360°	0-18° to 0-360° in 1° step prog. (standard 360°)
Supply voltage	5V±10% / 9-30V DC	
Output signal	Absolute SPI ; Single/dual channel; 3 wires	I ² C Bidirect always slave transmitter or receiver NXP UN 10204 Prot.Master initiates data transfer
Resolution	16383 steps (14 bit)	4096 steps (12 bit)
Mech. speed (Max)	8000 rpm (36 M/Z SL RCS) ; 9000 rpm (50 MSL RCS)	
Elec. speed (Max)	800 rpm	
Life (rotations)	~ 35X10 ⁶ (36 M/Z SL RCS) ; ~ 40X10 ⁶ (50 MSL RCS)	

50 MSL RCS



Interconnection - Round cable with rubber grommet (standard)

Detailed Datasheet :
www.rotacol.info/50pmslracs.pdf
www.rotacol.info/50cmslracs.pdf

36 M/Z SL RCS



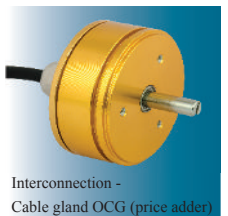
Interconnection - Terminal Block Radial OCTR (price adder)

Detailed Datasheet :
www.rotacol.info/36imslracs.pdf
www.rotacol.info/36izslracs.pdf
www.rotacol.info/36ymslracs.pdf
www.rotacol.info/36yzslracs.pdf

Precision Contactless Hall Effect Rotary Position Sensor : 36/50 mm Ø RCS Incremental & SSI Outputs, Servo Mount , 2 Ball Bearings, Shaft 6mm / 1/4"

Version	Incremental (I)	SSI (Y)
Type	36I M/Z SL RCS 50I MSL RCS	36Y M/Z SL RCS 50Y MSL RCS
Electrical angle	2 to 128, 256 ,512 pulses (1024 ppr std)	0 - 360°
Supply voltage	5V±10% / 9-30V DC	
Output signal	5V TTL; 5V/24V Open Collector	5V/24V SSI
Resolution	4096 steps (12 bit)	
Mech. speed (Max)	8000 rpm (36 M/Z SL RCS) ; 9000 rpm (50 MSL RCS)	
Elec. speed (Max)	1600 rpm	
Life (rotations)	~ 35X10 ⁶ (36 M/Z SL RCS) ; ~40X10 ⁶ (50 MSL RCS)	

50 MSL RCS



Interconnection - Cable gland OCG (price adder)

Detailed Datasheet :
www.rotacol.info/50imslracs.pdf
www.rotacol.info/50ymslracs.pdf

RotaCol® *Diamondline* Precision Heavy Duty Rotary Position Sensors Contactless Hall Multi- interface

For heavy duty applications, the *Diamondline* is the best choice. Large housing diameter 40, 50 and 58 mm with 8 and 10 mm ø stainless steel shaft, Synchro flange (DRCS) or Clamping flange (DRCW) and complex bearings allow the use in construction machines, railways & trucks. Multi-interfaces such as Analog, Incremental, SPI, SSI, PWM and I²C are available. Electrically there is no difference between the Silverline, only the ruggedness is substantially larger. All have 2.5 mtr round cable as interconnection.

40/50 DRCW

40/50 mm ø DRCW Precision Rotary Position Sensor Contactless Hall, Shaft 8mm, Servo Mount, Multi-interface



Detailed Datasheet :
www.rotacol.info/40adrw.pdf
www.rotacol.info/40idrk.pdf
www.rotacol.info/40pdrw.pdf
www.rotacol.info/40ydrw.pdf
www.rotacol.info/40wdrw.pdf
www.rotacol.info/40cdrw.pdf
www.rotacol.info/50adrw.pdf
www.rotacol.info/50idrk.pdf
www.rotacol.info/50pdrw.pdf
www.rotacol.info/50ydrw.pdf
www.rotacol.info/50wdrw.pdf
www.rotacol.info/50cdrw.pdf

Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	40/50A DRCW	40/50I DRKW	40/50P DRCW	40/50Y DRCW	40/50W DRCW	40/50C DRCW
Electrical angle	0-20° to 0-360° in 1°step prog (standard 360°)	2 to 128, 256, 512 (1024 ppr std)	0 - 360°	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1° step prog (standard 360°)
Supply voltage	5V±10% / 9-30VDC / 15-30 VDC	5V±10% / 8-24VDC	5V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5V DC
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0 -20mA; 4-20mA	5V TTL; 5V / 24V OC, PP, Line driver, High Line driver	Absolute SPI Single/dual channel 3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirect always slave transmitter or receiver, NXP UN 10204 Prot.Master initiates data transfer
Resolution	4096 step (12 bit)	4096 step (12 bit)	16383 step (14 bit)	4096 steps (12 bit)	4096 steps (12 bit)	4096 steps (12 bit)
Mech.speed (Max)	5000 rpm	5000 rpm	5000 rpm	5000 rpm	5000 rpm	5000 rpm
Update rate	2 KHz (160 rpm)	lim. freq. 10KHz	5KHz	10 KHz (1600 rpm)	2 KHz (160 rpm)	5KHz
Life rotations	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶

50 DRCH

50 mm ø DRCH Precision Rotary Position Sensor Contactless Hall, Hollow Shaft, Multi-interface



Detailed Datasheet :
www.rotacol.info/50adrch.pdf
www.rotacol.info/50idrkch.pdf
www.rotacol.info/50pdrch.pdf
www.rotacol.info/50ydrch.pdf
www.rotacol.info/50wdrch.pdf
www.rotacol.info/50cdrch.pdf

Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	50A DRCH	50I DRKH	50P DRCH	50Y DRCH	50W DRCH	50C DRCH
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512, (1024 ppr std)	0 - 360°	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-18° to 0-360° in 1° step prog (standard 360°)
Supply voltage	5V±10% / 9-30V DC / 15-30 VDC	5V±10% / 8-24V DC	5V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5V DC
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0 -20mA; 4-20mA	5V TTL; 5V / 24V OC, PP, Line driver, High Line driver	Absolute SPI Single/dual channel 3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirect always slave transmitter or receiver, NXP UN 10204 Prot.Master initiates data transfer
Resolution	4096 step (12 bit)	4096 step (12 bit)	16383 step (14 bit)	4096 step (12 bit)	4096 steps (12 bit)	4096 steps (12 bit)
Mech.speed (Max)	5000 rpm	5000 rpm	5000 rpm	5000 rpm	5000 rpm	5000 rpm
Update rate	2 KHz (160 rpm)	lim. freq. 10KHz	5KHz	10 KHz (1600 rpm)	2 KHz (160 rpm)	5KHz
Life rotations	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶

58 DRCW/S

58 mm ø DRCW/S Precision Rotary Position Sensor Contactless Hall, Shaft 10mm, Clamping flange (DRCW) & Synchro flange (DRCS)



Detailed Datasheet :
www.rotacol.info/58adrw.pdf
www.rotacol.info/58idrk.pdf
www.rotacol.info/58pdrw.pdf
www.rotacol.info/58ydrw.pdf
www.rotacol.info/58wdrw.pdf
www.rotacol.info/58cdrw.pdf
www.rotacol.info/58idrk.pdf
www.rotacol.info/58pdrw.pdf
www.rotacol.info/58ydrw.pdf
www.rotacol.info/58wdrw.pdf
www.rotacol.info/58cdrw.pdf

Version	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	58A DRCW/S	58I DRKW/S	58P DRCW/S	58Y DRCW/S	58W DRCW/S	58C DRCW/S
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512, (1024 ppr std)	0 - 360°	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0-20° to 0-360° in 1°step prog. (standard 360°)
Supply voltage	5V±10% / 9-30V DC / 15-30V DC	5V±10% / 8-24V DC	5V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5V DC
Output signal	0-5V ratiometric; 0-5V ; 0-10V DC Single/dual channel, 0 -20mA; 4-20mA	5V TTL; 5V / 24V OC, PP, Line driver, High Line driver	Absolute SPI Single/dual channel 3 wires	5V / 24V SSI	PWM single/dual channel	I ² C Bidirect always slave transmitter or receiver, NXP UN 10204 Prot.Master initiates data transfer
Resolution	4096 step (12 bit)	4096 step (12 bit)	16383 step (14 bit)	4096 step (12 bit)	4096 steps (12 bit)	4096 steps (12 bit)
Mech.speed (Max)	5000 rpm	5000 rpm	5000 rpm	5000 rpm	5000 rpm	5000 rpm
Update rate	2 KHz(160 rpm)	lim. freq. 10KHz	5KHz	10 KHz(1600 rpm)	2 KHz(160 rpm)	5KHz
Life rotations	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶

RotaSense® RSS Series High Resolution Precision Rotary Sensor Potentiometers

Aluminium housing, ball bearings, precision stainless shafts, servo mount and close electrical tolerances are the outstanding features for this highest class in potentiometric rotary sensors. Because of volume production, prices are reasonable. Because of the analog 0 - 5K ohm output, the interface is easy. Precision potentiometers as rotary position sensing and setting devices are since more than 50 years used in PLC, industrial computers and for other automation applications. Multi sections with rear shaft extensions are available in Synchro size 07, 09, 15 and 20. Conductive plastic resistance elements allow very long rotational life. For applications with shock and utilization of different interfaces we recommend our contactless series RotaCol®.

RSS22



22mm housing, also available in rear shaft extension and tandem.

Detailed datasheet : www.megauto.de/en/rss22.pdf

22 mm Ø Single Turn Conductive Plastic Long Life Sensor Potentiometer Size 09 Metal Housing, 20 Million Shaft Rotations, Continuous Rotation

- Aluminium housing - 2 ball bearings.
- Synchro type 09 + screw fixing.
- Long life, co-moulded element.
- Very good linearity tolerance.
- **Options:** Single, Tandem, Rear shaft.
- **Optional linearity :** 0.05, 0.1, 0.5%

Suitable for all rotary position sensing, speed control & feedback applications in machine automation, navigational equipment or fire guidance system.

Resistance range (Ω)	1K, 5K
Resistance tolerance (%)	± 15
Linearity tolerance (%)	± 0.2
Power rating (Watt)	0.5
Effective electrical angle (°)	340 ± 4
Mechanical angle (°)	360
Rotational life (Rotations)	~ 20 million
Operating temperature (° C)	- 55 to +105

2RSS22



22mm housing dual ganged, also available in rear shaft extension.

Detailed datasheet : www.megauto.de/en/rss22.pdf

RSS36



36mm housing, also available in rear shaft extension and tandem.

Detailed datasheet : www.megauto.de/en/rss36.pdf

36 mm Ø Single Turn Conductive Plastic Long Life Sensor Potentiometer size 15, Tandem Version and Rear Shaft Extension, Continuous Rotation

- Aluminium housing - 2 ball bearings.
- Synchro type 15 + screw fixing.
- Long life, co-moulded element.
- Very good linearity tolerance.
- International standard servo flange 33.4 mm
- **Options:** Single, Tandem, Rear shaft.
- **Optional linearity :** 0.05, 0.1, 0.5%

Suitable for all rotary position sensing, speed control & feedback applications in machine automation, navigational equipment or fire guidance system.

Resistance range (Ω)	1K, 5K, 10K
Resistance tolerance (%)	± 15
Linearity tolerance (%)	± 0.2
Power rating (Watt)	2
Effective electrical angle (°)	90, 180 345 ± 5
Mechanical angle (°)	360
Rotational life (Rotations)	~ 30 million
Operating temperature: (° C)	-55 to +125

2RSS36RA



36mm housing, dual ganged with rear shaft extension.

Detailed datasheet : www.megauto.de/en/rss36.pdf

RSS45



45mm housing, also available in tandem and rear shaft extension.

Detailed datasheet : www.megauto.de/en/rss45.pdf

45/50 mm Ø Single Turn Conductive Plastic Long Life Sensor Potentiometer 30 Million Shaft Revolution Continuous Rotation

- Aluminium housing - 2 ball bearings.
- Synchro type 20
- Long life, co-moulded element.
- Very good linearity tolerance.
- International standard servo flange 47.5 mm
- **Options:** Single, Tandem, Rear shaft.
- **Optional linearity :** 0.05, 0.1, 0.5%

Suitable for all rotary position sensing, speed control & feedback applications in machine automation, navigational equipment or fire guidance system.

Resistance range (Ω)	1K, 5K
Resistance tolerance (%)	± 15
Linearity tolerance (%)	± 0.2
Power rating (Watt)	2
Effective electrical angle (°)	90, 180, 345, 352 ± 5
Mechanical angle (°)	360
Rotational life (Rotations)	~ 30 million
Operating temperature (° C)	-55 to +125

RSS50



50mm housing, also available in tandem and rear shaft extension

Detailed datasheet : www.megauto.de/en/rss50.pdf

RotaCon® Precision Conductive Plastic Single Turn Rotary Potentiometers

RotaCon® range of precision conductive plastic rotary potentiometers offers wide range of low to medium priced potentiometers. The resistance track is manufactured by modern screen printing technology. Special resistive pastes are applied on carrier. After printing the paste is hardened in a special conveying oven. These potentiometers are available in 12, 22,36 & 50 mm housing diameter. 12/22mm \varnothing have bushing as well as servo mounting. Hollow shaft precision conductive plastic pots are available in 24 & 32 mm housing diameters. These RotaCon® type of potentiometers are designed according to IEC60393. These are used in applications where not very close linearity tolerances are required. Dual section hybrid - contactless conductive plastic potentiometers are under development.

CP12B

12 mm \varnothing Precision Conductive Plastic Potentiometer Single Turn Bushing and Servo Mount - Metal Case

CP12S



Detailed datasheet :
www.megauto.de/en/cp12b.pdf

- Miniature type, good lifetime
- 12 mm \varnothing , Metal housing
- Good linearity tolerance
- Bushing - M6 X 0.75 (CP12B)
- Precision bearings (CP12S)
- Operating temperature :
- 40° to +85°C
- Suitable for mobile sensor, medical equipment & industrial applications.

Type	CP12B (Bush)	CP12S (Servo)
Housing diameter (mm)	12	
Shaft dia X length (mm)	3.17 \varnothing x 17	3.17 \varnothing x 12
Resistance range (Ω)	1k,5k,10k	
Resistance tolerance	\pm 20%	
Linearity tolerance (%)	\pm 2 (1.5%)	
Power rating (Watt)	0.7	0.2
Elec./Mech.angle (°)	300 \pm 5 /360	340 \pm 10 /360
Rotary Life (Rotations)	~ 3 million	~ 5 million



Detailed datasheet :
www.megauto.de/en/cp12s.pdf

JSM22B

22 mm \varnothing Precision Conductive Plastic Potentiometer Single Turn Bushing & Servo Mount - Metal Case

JSS22S



Detailed datasheet :
www.megauto.de/en/jsm22b.pdf

- Very Economical, Metal case
- Bushing and Servo type
- Bushing - M10X0.75 (JSM22B)
- Rotational torque : 0.2 - 2 Ncm
- Operating temperature:
-55°C - +105°C
- Optional linearity : 0.5, 1%
- Can be used in feedback application.

Type	JSM22B (Bush)	JSS22S (Servo)
Housing diameter (mm)	22	
Bearing	Sleeve	Ball
Shaft dia X length (mm)	6 \varnothing X 22	3.17 \varnothing X 12.7
Resistance range (Ω)	1k,5k,10k \pm 20%	
Linearity tolerance (%)	\pm 1.5 (\pm 1%)	
Power rating (Watt)	1	
Elec./Mech. angle (°)	340 \pm 5 /360	
Rotary Life (Rotations)	~ 5 million	~ 8 million



Detailed datasheet :
www.megauto.de/en/jss22s.pdf

JSS36S

36/50 mm \varnothing Conductive Plastic Long Life Sensor Potentiometer Servo Mount, 2 Ball Bearings - Metal Case

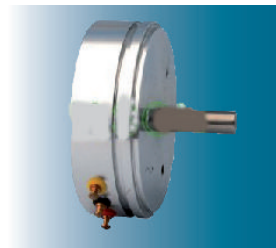
JSS50S



Detailed datasheet :
www.megauto.de/en/jss36s.pdf

- Servo mount
- Operating temp : -55 to +105°C
- Two ball bearings
- Metal housings
- Optional linearity : 0.5%
- Options available: Dual gang and rear shaft.
- Can be used in feedback application.
- Mechanical angle: 360°

Type	JSS36S	JSS50S
Housing diameter (mm)	36	50
Shaft dia X length (mm)	6 \varnothing X 16	6 \varnothing X 20
Resistance range	1K,5K,10 K Ω	1K,2K, 5K,10 K Ω
Resistance tolerance	\pm 20%	\pm 20%
Linearity tolerance (%)	\pm 1 (0.5%)	\pm 1 (0.5%)
Power rating (Watt)	1.5	1.5
Rotary Life (Rotations)	~ 20 million	~ 25 million



Detailed datasheet :
www.megauto.de/en/jss50s.pdf

RH24PC

24/32 \varnothing mm Hollow Shaft Precision Conductive Plastic Setting or Sensing Potentiometer

RH32PC



Detailed datasheet :
www.megauto.de/en/rh24pc.pdf

- Easily assembly with adjustment ring
- Operating temperature:
-55°to+105°C
- Mechanical angle: 360°
- Usable for position detection, speed control and feedback applications
- All engineering plastic case.
- 16mm hollow shaft potentiometers are available.

Type	RH24PC	RH32PC
Housing diameter (mm)	24	32
Hollow shaft dia. (mm)	6 / 3,6 \varnothing - 5 flat, 3 \varnothing - 2.5 flat	8 \varnothing
Resistance range (Ω)	1k, 5k,10k	
Resistance tolerance	\pm 20%	
Linearity tolerance (%)	\pm 2 (1.5%)	
Power rating (Watt)	0.5	2
Eff. Electrical angle (°)	340 \pm 5	
Rotary Life (Rotations)	~2 million	~3 million



Detailed datasheet :
www.megauto.de/en/rh32pc.pdf

RotaSet® Semiprecision / Precision Single Turn Conductive Plastic Potentiometers

Rotary position sensing & setting potentiometers generally require some rotational life and good resolution. Very low cost carbon potentiometers cannot provide the minimum number of rotations. A new Carbonplast formulation gives low cost Semi-Precision potentiometers & improved life performance (~ 500,000 revolutions) at reasonable prices. For longer rotational life (>1 million revolutions) complex formulations & precision precious metal wipers are required. (See precision RotaSet®, RotaCon® or RotaSense® potentiometers).

C16P

16/24 mm Ø Semi - Precision Carbonplast Single Turn Potentiometer

C24P



Detailed Datasheet :
www.megauto.de/en/c16p.pdf

- Very low cost industrial high resolution setting and sensing potentiometer for limited rotational life, with endstops.
- A new Carbonplast paste formulation for improved operating life.
- Resistance value (Ω) : 1K,5K,10K
- Resistance tolerance : ±20%
- Operating temperature : -10° to 85° C
- Options : Special shaft length, Radial terminals, Dual ganged.

Type	C16P	C24P
Housing diameter	16mm Ø	24mm Ø
Bushing size	M6 X 0.75	M9 X 0.75
Shaft dia. X length	3.2mm Ø X 20	6mm Ø X 20
Linearity tolerance	±2%	±2%
Eff.Elec. angle (°)	230±10	270±10
Mechanical angle (°)	260±5	300 ±5
Rated wattage	0.25 Watt	0.5 Watt
Rot. Life (Rotations)	~ 250,000	~ 600,000



Detailed Datasheet :
www.megauto.de/en/c24p.pdf

2C24P

24 mm Ø Semi Precision Carbonplast Potentiometer Dual ganged (2C24P) and with Switch (C24PS)

C24PS



Dual ganged

Detailed Datasheet :
www.megauto.de/en/2c24p.pdf

- Low cost industrial high resolution setting and sensing potentiometer for limited rotational life.
- Switching circuit with Integrated S.P.D.T. switch at starting point (for C24PS).
- A new carbonplast paste formulation for improved operating life.
- Dual ganged (2C24P).

Type	2C24P	C24PS
Housing dia.	24 Ø mm	24 Ø mm
Bushing size	M9 X 0.75	M9 X 0.75
Linearity Tol. (%)	±2	±2
Shaft dia. X length	6mm Ø X 20	
Eff. elec. angle (°)	270±10	230±10
Mech.angle (°)	300±5	300±5
Rated wattage	0.5 Watt	0.5 Watt
Rot. Life (Rotations)	~ 600,000	~ 600,000



Switching circuit with Integrated S.P.D.T switch at starting point.

Detailed Datasheet :
www.megauto.de/en/c24ps.pdf

R22NP/PC

22/23 mm Ø Precision Single Turn Conductive Plastic Potentiometer With Endstop (R22NP/R23NP) & Without Endstop (R22NPC/R23NPC)

R23NP/PC



Detailed Datasheet :
www.megauto.de/en/r22np.pdf
www.megauto.de/en/r22npc.pdf

- Low cost precision potentiometer
- Industrial standard for setting and sensing applications.
- Almost infinite resolution available
- Resistance value(Ω):1K,5K,10K±20%
- Linearity tolerance : 1.5%
- Power rating : 1 Watt
- Operating temperature : -55° to 105°C
- Center tap, special torque.
- Rotational life : ~ 3 million rotations

Type	R22P/PC	R23P/PC
Housing dia. / Material	22mm / Metal	23mm / Plastic
Bushing	3/8" X 32 TPI	3/8" X 32 TPI
Shaft dia. X length	6.35mm Ø X 22	6.35mm Ø X 20
Eff.Electrical angle (°)	340 (R22NP) 340 (R22NPC)	320 (R23NP) 340 (R23NPC)
Mechanical angle (°)	340(R22NP) 360(R22NPC)	330(R23NP) 360 (R23NPC)
Antirotation pin (mm)	1.5 Ø X 1.5	2 Ø X 1.5



Detailed Datasheet :
www.megauto.de/en/r23np.pdf
www.megauto.de/en/r23npc.pdf

JSP22B

22 mm Ø Precision Single Turn Conductive Plastic Potentiometer without Endstop (JSP22B) & with Endstop (JSP23B)

JSP23B



Detailed Datasheet :
www.megauto.de/en/jsp22b.pdf

- 22mm plastic housing
- Resistance value (Ω) : 1K,5K,10K.
- Resistance tolerance : ±20%.
- Operating life : ~ 4 million.
- Rated wattage : 1 Watt
- Operating temperature : -55° to 105°C
- Special shaft lengths
- Optional linearity : 1%

Type	JSP22B	JSP23B
Housing diameter	22 mm	22 mm
Bushing Size	M10 X 0.75	M10 X 0.75
Shaft dia. X length	6mm Ø X 22	6mm Ø X 22
Linearity Tol. (%)	±1.5	±1.5
Eff. elec. angle (°)	340±5	320±5
Mechanical angle (°)	360	320±5
Rot. Life (Rotations)	~ 4 million	~ 4 million



Detailed Datasheet :
www.megauto.de/en/jsp23b.pdf

RotaSet® Industrial Precision Single & 10 Turn Wire Wound Potentiometers

RotaSet® wirewound single & multiturn potentiometers can be used as preset & rotary position sensing devices. Wirewound potentiometers have a long tradition & are mostly used when a higher wiper current is required. Single turn wirewound potentiometers have many options such as special electrical & mechanical angles, endstops etc. Other features are standard. Precision multiturn potentiometers are generally available with 3 turn (1080°), 5 turn (1800°), 10 turn (3600°) electrical & mechanical angles. The advantage is that with special dial (see below) a very accurate setting is possible. They have an excellent electrical and mechanical resolution. Because of the large production in the world, today they are very economical. Especially our Combipot- a combination of Model 22TW & dial such as RLD22-15.

R22W/WC

22/25 mm Ø Wirewound Single Turn Precision Potentiometer

MRT25W/WC



- Wire wound - mandrel winding
- Power rating : 1.5 Watt
- Eff. Electrical angle (°) : 320 ± 5
- Special shaft length, Rear shaft
- 1 - 4 sections (R22W/WC)
- Mechanical angle:
With endstops - 320°(W) or continuous rotations - 360°(WC)
- Optional 270° for R22W

Detailed Datasheet :
www.megauto.de/en/r22w.pdf

Types	R22W/WC	MRT25W/WC
Resistance range (Ω)	100,200,500,1k,2k,5k,10k	
Housing diameter (mm)	22	25
Shaft dia X length (mm)	6 Ø X 22	6 Ø X 20
Bushing	M10 X 0.75	M9 X 0.75
Resistance tolerance (%)	± 5	± 10
Linearity tolerance (%)	± 0.5	± 1
Rot. life (Rotations)	~ 400,000	~ 300,000



Detailed Datasheet :
www.megauto.de/en/mrt25w.pdf

R25W/WC

25/40 mm Ø Wirewound Single Turn Precision Potentiometer

R40W/WC



- Wire wound - card winding
- Resistance tolerance : 10%
- Immediate delivery
- Good Power rating, low cost
- Designed for manual setting
- Electrical angle 270°
- Manual operation 270° with endstop (W) & 360° without endstop (WC)

Detailed Datasheet :
www.megauto.de/en/r25w.pdf

Types	R25W/WC	R40W/WC
Resistance range (Ω)	100, 500, 1K, 2K, 5K, 10K	
Shaft dia X length (mm)	6.35Ø X 25	6.35Ø X 25
Bushing threads	3/8" X 32 TPI	M10 X 0.75
Linearity tolerance (%)	±1.5	
Power rating (Watt)	1	3
Mechanical angle (°)	285(W) 360(WC)	



Detailed Datasheet :
www.megauto.de/en/r40w.pdf

TW22

22 mm Ø Wirewound Precision 10 Turn Potentiometer

R22M



- High resolution
- Resistance tolerance : 10%
- According to industrial standard
- Various mechanical options available
- Combipot - a combination of model TW22 & dial such as RLD22-15 -Very economical

Detailed Datasheet :
www.megauto.de/en/tw22.pdf

Types	TW22	R22M
Resistance range (Ω)	100,500,1k,5k,10k,50k	
Shaft dia X length (mm)	6.35 Ø X 20	4 Ø X 20
Bushing threads	3/8" X 32 TPI	M8 X 0.75
Linearity tolerance (%)	± 0.5	± 1
Power rating (Watt)	2	
Elec. / Mech angle (°)	3600	3600
Rot. life (Rotations)	~ 250,000	~ 100,000



Detailed Datasheet :
www.megauto.de/en/r22m.pdf

RLD22-15

22 mm Ø Dials for Multiturn Potentiometers - 10/15 Turns

RCD22-10



- High resolution setting
- Resolution : 1°
- Used for multiturn potentiometers
- RLD22-15 with set screw shaft fixing.
- RCD22-10 with clamping from the front

Detailed datasheet:
www.megauto.de/en/rlid22.pdf

Types	RLD22-15	RCD22-10
Number of turns	15	10
Resolution/increments	100 / rotations	
Front panel thickness	2 - 6 mm	
Shaft diameter (mm)	3.17, 4 , 6, 6.35 Ø	
Lock system	Brakes	
Nut space (mm)	9.65	

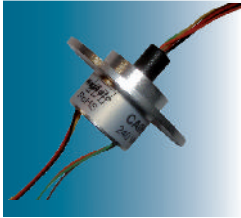


Detailed datasheet:
www.megauto.de/en/rcd22.pdf

RotaContact® Slip Ring Transmitter - Multichannel Analog and Digital Signal Transmission

Slip rings are used in electrical – mechanical systems where an interruptible current or signal transmission from a static to a rotating object has to be processed. The encapsulated slip rings are integrated into a metal (plastic) housing, which avoids influence of interfaces. Different numbers of signals can be transmitted. The special construction of slip rings enlarges the contact surfaces, reduces current noises and improves life time performances. The operational life is depending on the rotating speed, working temperatures, environmental conditions (shock, vibration etc) The slip rings are available for data bus protocols, Ethernet, USB, CAN etc. Typical applications for our slip rings are rotary sensors, robotic systems, process control equipment, indexing tables, camera systems (video TV signals) etc.

CA6X4AL



Detailed datasheet :
www.megauto.de/en/ca6x4al.pdf

6 rings Encapsulated Slip Ring, Metal Flange (CA6X4AL) 12 rings axial feed through Slip Ring for upto 7mm shaft (CA12X4HAL)

- Metal housing with flanges.
 - Power rings with 1A, 2A, 5A & 10A.
 - available in different numbers of rings
 - Low current noise
 - Axial feed through facility CA12X4HAL
 - Rotational speed : 250 rpm
- Applications :
 Rotary indexing table, CCTV pan, tilt video cameras, aviation, instrument & medical equipment, rotary sensors,robotics.

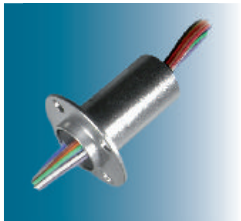
Type	CA6X4AL	CA12X4HAL
Housing diameter	22 mm	25 mm
Voltage	240V AC/DC	240V AC/DC
Noise	< 20 mΩ	
Operating temp.	-40 to 85°C	
Rot. Life (Rotations)	~ 60 million	
Number of rings	6	12

CA12X4HAL



Detailed datasheet :
www.megauto.de/en/ca12x4hal.pdf

MI12X4AL



Detailed datasheet :
www.megauto.de/en/mi12x4al.pdf

12 Rings Miniature Slip Rings (MI) 4 Rings Micro Slip Rings (MC) , Metal Flange

- Voltage : 240V AC/DC
 - Also available in x rings (MI series)
 - Gold to gold contacts
- Applications :
 Rotary indexing table, CCTV pan, tilt video cameras, aviation, instrument & medical equipment, rotary sensors,robotics.

Type	MI12X4AL	MC4X6SS
Rotational Speed	250 rpm	300 rpm
Current/ring	2 A	1A
Housing diameter	15.5	10
Noise	< 20 mΩ	< 5 mΩ
Operating temp.	-40 to +85°C	-25 to 65°C
Rot. Life (Rotations)	~ 60 million	~ 45 million
Number of rings	12	4
Mounting	Flange	Threaded

MC4X6SS



Detailed datasheet :
www.megauto.de/en/mc4x6ss.pdf

CA12XCAL



Detailed datasheet :
www.megauto.de/en/ca12xcal.pdf

12 Rings High Frequency Co-axial Slip Ring, 1 Ring High Frequency Co-axial Slip Ring, Metal Flange,

- Power rings with 1A, 2A, 5A & 10A
 - Transfer of signal over coax cable
 - Gold to gold contacts
 - Precision ball bearings
- Applications :
 Rotary indexing table, CCTV pan, tilt video cameras, aviation, instrument & medical equipment, rotary sensors,robotics.

Type	CA12XCAL	MI01X1CAL
Rotational Speed	50 rpm	
Housing diameter	25 mm	
Voltage	240V AC/DC	380 V AC/DC
Frequency range	3 GHz	
Operating temp.	-20 to 55°C	-20 to 60°C
Rot. Life (Rotations)	~ 45 million	~ 50 million

MI01X1CAL



Detailed datasheet :
www.megauto.de/en/mi01x1cal.pdf

Technical and Commercial informations available from MegAuto KG - Dresden, Germany. List Of Agents and Distributors is available from Distributor Support Center at Sensall - Megauto International Pune, India

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