

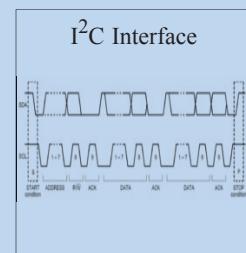
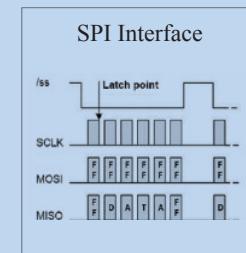
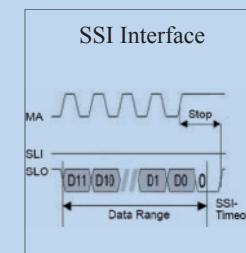
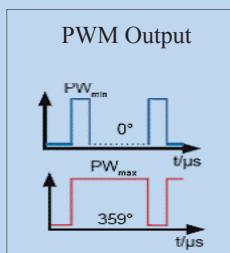
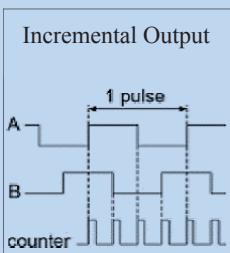
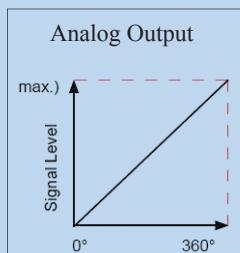
Everything in Rotary Position Sensing ...

RotaCol® : Precision Rotary Contactless Position Sensors with Integrated Analog or Digital Outputs

RotaSense® : Precision Rotary Conductive Plastic Potentiometers
RotaCon® long life for Industrial Position Sensing

Rotaset® : Industrial Controls for Setting/Sensing with Wire wound or Conductive Plastic Resistive Element

RotaCort : RotaCort Contactless TMR Rotary Position Sensors with integrated ARM - Cortex M0 Microcontroller



RotaCol® Contactless Hall & TMR/GMR 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. We use two different magnetic technologies which are Hall effect and TMR/GMR Giant magnetic Technology. There will be available application notes on our website for most of the following interfaces.

RotaCol® Hall-effect Technology

All our contactless Rotary and linear position sensors except the RotaCort family use this technology with integrated RISC processor for MULTIINTERFACE purposes.

RotaCort TMR/GMR Giant Magnetic Technology

Modern TMR sensor chips have very small power requirement and they are prepared or directly combined and freely programmable with Arm Cortex M0 microcontrollers.

RotaCol® MULTIINTERFACE

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, SENT 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, SENT~160 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 (exception Kit version). Supply voltages of 5VDC ± 10% ; 9 - 30 VDC & 15 - 30 VDC and output signals of 0 - 5VDC (ratiometric) ; 0 - 5VDC ; 0-10V DC; 0 - 20 mA & 4 - 20 mA are provided. Two channel output for voltage can also be provided.

PWM Interface

PWM as output is a pulse width modulated signal, based on constant carrier frequency. Frequency for standard configuration is 200 Hz. Optional frequencies - 100Hz, 500Hz, 1KHz. 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.

SENT Interface (Single Edge Nibble Transmission)

SENT is a unique serial interface, output only, not bidirectional. SENT is not limited to one data parameter per transmission. Therefore multiple pieces of additional information can be sent (See our website in Application menu).

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. In many applications, the optical incremental encoders can be directly replaced by magnetic incremental encoder. They provide additional features and can much easier be adjusted to customer requirements. 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.

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. 3 wire half duplex and 4 wire full duplex with independent two signals and two data lines are available.

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.

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 multturn potentiometers of the RotaSet® family use proven designs and in most cases they meet industrial standards. Inspite 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.

RotaCon® 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.

RotaMix® This new product will be available in the future. For very safety critical application and redundancy, two types one independent conductive plastic potentiometer and one contactless sensor are on the same shaft for redundancy.

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 / PWM Versions For Rotacol® Series

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

Electrical options for Effective electrical angle :

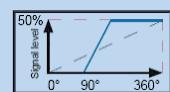
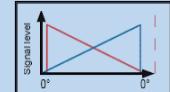
Electrical angle (xxx) : Standard configuration is 360° . As an option, any angle from 0-20° to 0-359° in steps of 1° can be programmed.(Price adder)

Output level or amplitude range : Standard configuration is 0-100%. Output signal can be programmed at any defined lower limit or upper limit in terms of percentage of output. Example : 10% to 90% for S0505 will give output from 0.5V to 4.5V (Price Adder).

Direction of Rotation (CW/CCW)

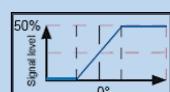
CW : Clockwise when shaft is rotated in CW direction, output increases from minimum to maximum value (standard configuration).

CCW : Counter clockwise when shaft is rotated in CCW direction, output decreases from maximum to minimum value (Price adder).



Zero point Programming (POZ)

Standard configuration is zero point without orientation. At POZ, when we do zero point programming rising ramp will start from marking on encoder housing or from the endstop CCW. Zero point can also be programmed at any defined offset from marking on the housing (Price Adder).



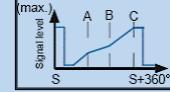
Center Point Programming (POC)

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 also be programmed at any offset (Price Adder).



Multi Point Programming (POM)

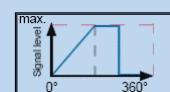
Output characteristics : 3 to 6 rising or falling linear segments. Minimum and maximum signal level can be defined within the total electrical angle. First and last linear segment (min./max.) is always horizontal 1 to 3 setable calibration points. (Price Adder, Not available in 12/22mm **Miniline** and 25/30mm **Locoline**).



Electrical options for Non - Effective electrical angle (Price Adder) :

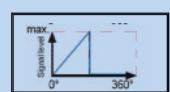
Delta 1/2 (PE1) :

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.



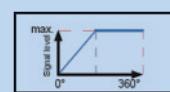
Low level (PE2) :

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



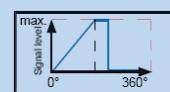
High level (PE3) :

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



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.



PWM frequency : Frequency for standard configuration is 200Hz. Optional - 100 Hz, 500 Hz, 1KHz

Electrical Options For Incremental Versions For Rotacol® Series

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 start-up performance, 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).

Zero Positioning (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).

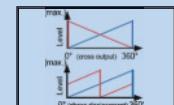
Electrical Options For SPI / SSI / I²C / SENT Versions For Rotacol® Series

Zero Point Programming (POZ) : Standard configuration is zero point without orientation. 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 (Price Adder).

Direction of Rotation (CW / CCW) : The standard configuration of rotation is clockwise (CW). It is also possible to change the direction of turning to counter clockwise mode (CCW) Price Adder - (Note : For SPI full duplex standard configuration direction of rotation is CCW).

2 Channel Redundant Output (2C) - Special type

2 Channel Output (2C) : The sensor provides 2 operating modes: A) Redundancy i.e. channel one and channel two are identical. If one channel fails the other channel remains active.B) It is also possible to have 2 different programs in the 2 channels. For this, additional functions can be obtained. (Valid for analog, PWM outputs and SPI interface)



Standard And Customized Mechanical Options And Accessories

Standard Mechanical Options (SM) (Price Adder)

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
25/30 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 ; Special cable
22 M/Z SL RCBB	OCTA, OCTR [OCG, OCM (Larger housing dia of 25 mm - see 25 RSB)]	Special shaft length ; Special cable
22 M/Z SL RCS	OCTA, OCTR [OCG, OCM (Larger housing dia of 25 mm - see 25 RSB)]	Special shaft length ; Special cable
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 Configuration

22/28 ERC (B) (F) (K) 3,4,5,6 core flat cable 0.15 m. (**Ecoline** ERC 22/28 mm ø with bush, flange, kit)

25/30 RS (B) (F) (K) - Cable gland, miniature connector , terminal block axial & radial (**Ecoline** speed connect 25/30 mm ø with bush, flange, kit)

25/30 LOC (B) (F) (K) - Round cable with rubber grommet 0.15 m (**Locoline** 25/30 mm ø with bush, flange, kit)

12 M/Z MC (B) (S) - 3,4,5 core flat cable 0.15 m (**Miniline** 12 mm ø with Bush and Servomount)

22 M/Z SL RCB / 22 M/Z SL RCBB - 3,4,5,6 core flat cable 0.15 m. (**Silverline** 22 mm ø Bush mounting with sleeve or 1 ball bearing)

22 M/Z SL RCS - 3,4,5,6 core flat cable 0.15 m. (**Silverline** 22 mm ø Servomount)

36 M/Z SL RCS - 3 Pins (Analog) & other interfaces 3,4,5,6 core round cable 1m. (**Silverline** 36 mm ø Servomount)

50 MSL RCS - 3 Pins (Analog) & other interfaces 3,4,5,6 core round cable 1m. (**Silverline** 50 mm ø Servomount)

40/50 DRCW - 3,4,5,6 core round cable 2.5 m. (**Diamondline** 40/50 mm ø Clamping flange with 3 Screws)

50 DRCH - 3,4,5,6 core round cable 2.5 m. (**Diamondline** 50 mm ø Hollow shaft with clamping flange)

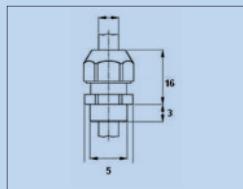
58 DRCW - 3,4,5,6 core round cable 2.5 m. (**Diamondline** 58 mm ø Clamping flange with 3 screws)

58 DRCS - 3,4,5,6 core round cable 2.5 m. (**Diamondline** 58 mm ø Synchro Flange)

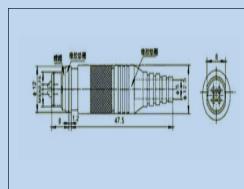
Other Optional SPEED CONNECT Interconnections (With Adder) - More details see datasheet.

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

Cable gland (OCG)
Cable gland with 3,4,5,6 core
cable 1 m long
according to interface

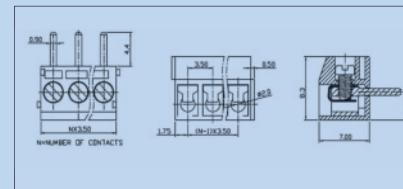


Miniature connector (OCM)
3,4,5,6 pin in integrated
socket with plug according
to interface



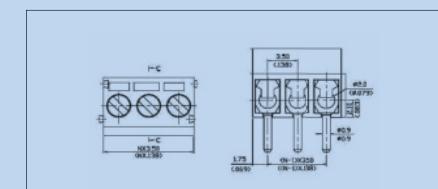
Terminal block - Axial - (OCTA)
Wires leaving axial to shaft axis

3,4,5,6 sockets according to interface



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

3,4,5,6 sockets according to interface

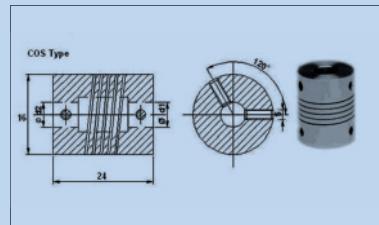


Note: The speed connect surcharge is not applicable for 25/30 **Ecoline** RS series. They are available in all interconnections such as cable gland (OCG), miniature connector (OCM), terminal block axial (OCTA) & radial (OCTR). (Refer Price List).

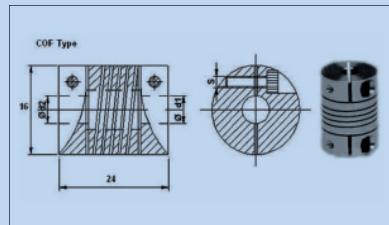
Accessories - Spiral Couplings

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 1/4th 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.

COS Type



COF Type



Set Screw Fitting
6 mm (d1) - 1/4" (d2)
6 mm (d1) - 1/8" (d2)

Flange Clamping
6 mm (d1) - 1/4" (d2)
6 mm (d1) - 1/8" (d2)

RotaCol® Ecoline 22/28 ø ERC : Bushing (B) / Flange (F) / Kit (K) Analog (A), Incremental (I), SPI (P), SSI (Y), PWM (W), I²C (C), SENT (T) MULTIINTERFACE

RotaCol® Ecoline ERC is a very economical **MULTIINTERFACE** precision contactless rotary position sensor range available in plastic housings. **MULTIINTERFACE** = Analog, PWM, Incremental, SPI, SENT, 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, SENT, SSI & 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 (22mm / 28mm ø) are identical for RotaCol® 22ERC & 28ERC. 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. For SENT interface refer to datasheets.

22/28 ERCB



Interconnection : flat cable

Detailed Datasheet :
www.rotacol.info/22aercb.pdf
www.rotacol.info/22iercb.pdf
www.rotacol.info/22percb.pdf
www.rotacol.info/22yercb.pdf
www.rotacol.info/22wercb.pdf
www.rotacol.info/22cercb.pdf
www.rotacol.info/22tercb.pdf
www.rotacol.info/28aercb.pdf
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www.rotacol.info/28yercb.pdf
www.rotacol.info/28wercb.pdf
www.rotacol.info/28cercb.pdf
www.rotacol.info/28tercb.pdf

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

Interface	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	22/28A 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 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V±10% / 3.3V±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 Half Duplex - 5V / Full Duplex - 3.3/5V	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
Mech.Life (Rot.)	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶

22/28 ERCF



Interconnection : flat cable

Detailed Datasheet :
www.rotacol.info/22aercf.pdf
www.rotacol.info/22iercf.pdf
www.rotacol.info/22percf.pdf
www.rotacol.info/22yercf.pdf
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www.rotacol.info/28cercf.pdf
www.rotacol.info/28tercf.pdf

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

Interface	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 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V±10% / 3.3V±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 Half Duplex - 5V / Full Duplex - 3.3/5V	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
Mech.Life (Rot.)	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 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/22yerk.pdf
www.rotacol.info/22werck.pdf
www.rotacol.info/22cerck.pdf
www.rotacol.info/22terck.pdf
www.rotacol.info/28aerck.pdf
www.rotacol.info/28ierck.pdf
www.rotacol.info/28perck.pdf
www.rotacol.info/28yerk.pdf
www.rotacol.info/28werck.pdf
www.rotacol.info/28cerck.pdf
www.rotacol.info/28terck.pdf

Kit version : Shaftless Unassembled : 22 and 28mmØ ERCK Rotary Position Sensor Contactless Hall Pick-up - Magnet on user shaft - No bearings

Interface	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 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V±10% / 3.3V±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 Half Duplex - 5V / Full Duplex - 3.3/5V	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

Data and tolerances for kit version depend very much on customer application.

RotaCol® Ecoline 25/30 Ø RS : SPEED CONNECT Bushing (B) / Flange (F) / Kit (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 3,4,5 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 3,4,5 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 bearing. For SENT interface refer to datasheets.

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 bearing



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

Interface	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 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V±10% / 3.3V±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 Half Duplex - 5V / Full Duplex - 3.3/5V	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
Mech.Life (Rot.)	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 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 bearing



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/25trsfs.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
www.rotacol.info/30trsfs.pdf

Interface	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 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V±10% / 3.3V±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 Half Duplex - 5V / Full Duplex - 3.3/5V	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
Mech.Life (Rot.)	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶

25/30 RSK

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



Interconnection : Cable gland+1m cable- OCG

Detailed Datasheet :

www.rotacol.info/25arsk.pdf
www.rotacol.info/25irsks.pdf
www.rotacol.info/25prsk.pdf
www.rotacol.info/25yrsks.pdf
www.rotacol.info/25wrsks.pdf
www.rotacol.info/25crsk.pdf
www.rotacol.info/30arsk.pdf
www.rotacol.info/30irsks.pdf
www.rotacol.info/30prsk.pdf
www.rotacol.info/30yrsks.pdf
www.rotacol.info/30wrsks.pdf
www.rotacol.info/30crsk.pdf

Interface	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 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0 - 360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30 VDC / 15-30 VDC	5V±10% / 9-30 VDC	5V±10% / 3.3V±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 Half Duplex - 5V / Full Duplex - 3.3/5V	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.)	160 / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm

Data and tolerances for kit version depend very much on customer application.

RotaCol® LoColine 25/30 Ø LOC : Bushing (B) / Flange (F) / Kit (K) Cost Effective Analog (A), SPI (P), PWM (W), I²C (C), SENT (T) MULTIINTERFACE

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 25 / 30mm Ø plastic housings with Bushing (B) & shaft, Flange (F) & shaft and Shaftless unassembled Kit version (K) in combination with Analog - SPI - SENT - PWM and I²C interface makes rotary position sensing in automation very easy and affordable. For SENT interface refer to datasheets.

25/30 LOCB

**Very Economical - Bushing : 22/25/30 mm Ø LOCB Contactless Hall Rotary Position Sensor
Shaft 6mm or 1/4" , Plastic Case, MULTIINTERFACE; For SENT interface refer to datasheets.**



Connection : Round Cable with rubber grommet -OCR

Economical plastic case 25/30mm Bush mount

Detailed Datasheet :
www.rotacol.info/25alocb.pdf
www.rotacol.info/25plocb.pdf
www.rotacol.info/25wlocb.pdf
www.rotacol.info/25clocb.pdf
www.rotacol.info/25llocb.pdf
www.rotacol.info/30alocb.pdf
www.rotacol.info/30plocb.pdf
www.rotacol.info/30wlocb.pdf
www.rotacol.info/30clocb.pdf
www.rotacol.info/30llocb.pdf

22 LOCB



Connection : 3 leads multistrand round wire 0.15m

Very Economical plastic case

22mm bushing mount contactless analog rotary position sensor
Only available in 0-5V ratiometric, 0-10V, 4-20mA and PWM.

Detailed Datasheet :
www.rotacol.info/22alocb.pdf
www.rotacol.info/22wlocb.pdf

25/30 LOCF

**Very Economical - Flange Version : 25/30 mm Ø LOCF Rotary Position Sensor
Contactless Hall Effect - Shaft 6mm, MULTIINTERFACE, Plastic Case**



Connection : Round Cable with rubber grommet -OCR

Very Economical plastic case 25/30mm Flange mount

Detailed Datasheet :
www.rotacol.info/25alocf.pdf
www.rotacol.info/25plocf.pdf
www.rotacol.info/25wlocf.pdf
www.rotacol.info/25clocf.pdf
www.rotacol.info/25llocf.pdf
www.rotacol.info/30alocf.pdf
www.rotacol.info/30plocf.pdf
www.rotacol.info/30wlocf.pdf
www.rotacol.info/30clocf.pdf
www.rotacol.info/30llocf.pdf

25/30 LOCK

**Very Economical - Kit Version : Shaftless Unassembled : 25/30 mm Ø LOCK Rotary Position Sensor
Contactless Hall Pick - up - Magnet on User shaft - Plastic Case- No bearings**



Connection : Round Cable with rubber grommet -OCR

Detailed Datasheet :
www.rotacol.info/25alock.pdf
www.rotacol.info/25plock.pdf
www.rotacol.info/25wlock.pdf
www.rotacol.info/25clock.pdf
www.rotacol.info/25llock.pdf
www.rotacol.info/30alock.pdf
www.rotacol.info/30plock.pdf
www.rotacol.info/30wlock.pdf
www.rotacol.info/30clock.pdf
www.rotacol.info/30llock.pdf

Interface	Analog (A)	SPI (P)	PWM (W)	I ² C (C)	SENT (T)
Type	25/30A LOCF	25/30P LOCF	25/30W LOCF	25/30C LOCF	25/30T 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 - 360°	0 - 360°
Supply voltage	5V±10%	3.3V±10% / 5V ± 10%	5V±10%	3.3V±10% / 5V DC	5V±10%
Output signal	0-5V ratiometric; Single channel	Absolute SPI Single channel Full Duplex - 3.3 / 5V	PWM single channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer	SENT Single channel one way - unidirectional communication
Resolution steps	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
Elec. speed (max.)	160 rpm	800 rpm	160 rpm	800 rpm	160 rpm
Mech.Life (Rot.)	~ 20X10 ⁶	~ 20X10 ⁶	~20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶

Data and tolerances for kit version depend very much on customer application.

RotaCol® Miniline 12,15 and 22 mm ø : Bushing / Servo & Flange Mount Rotary Position Sensor Analog (A), SPI (P), PWM (W), I²C (C), SENT (T) MULTIINTERFACE

Miniaturisation in automation requires very small components. Metal and plastic housings with bushings, flange and servomount and many electronic interfaces such as analog, incremental, PWM, SPI, SENT and I²C are available in Miniline. 12mm (1/2") housing diameter precision, precision machined with metric and inch shaft fit everywhere. Also 15 and 22 mm housing diameters are available. For SENT interface refer datasheet.

12 M/Z MCB

Miniature 12 mm Ø Bushing / Servo Mount Rotary Position Sensor Contactless Hall Effect , Metal case, Ball bearing (12MCS), For SENT interface refer datasheet

12 M/Z MCS



Interface	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 - 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 Single channel Full Duplex - 3.3 / 5V	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)			
Elec. speed (max)	160 rpm	800 rpm	160 rpm	800 rpm
Mech. Life (Rot.)	~ 10X10 ⁶ (12MBC) ~ 15X10 ⁶ (12MCS)			

Precision Miniature servo
mount universal rotary
position sensor, 12 mm metal
housing, two ball bearings,
Flat cable - std interconnection

Detailed Datasheet :
www.rotacol.info/12ammcs.pdf
www.rotacol.info/12azmcs.pdf
www.rotacol.info/12ppmcs.pdf
www.rotacol.info/12pzmcbs.pdf
www.rotacol.info/12wmmcs.pdf
www.rotacol.info/12cmmcbs.pdf
www.rotacol.info/12czmcbs.pdf
www.rotacol.info/12tmmcs.pdf
www.rotacol.info/12tzmcbs.pdf

22 MJF



Miniature Flange Mount : 22 mm Ø Rotary Position Sensor Contactless Hall Effect - Plastic case, Shaft 6 mm

Interface	Analog (A)	Incremental (I)	SPI (P)	PWM (W)	I ² C (C)	SENT (T)
Type	22A MJF	22I MJF	22P MJF	22W MJF	22C MJF	22T MJF
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512, 1024 (1024 ppr std)	0 - 360° (standard 360°)	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°	0 - 360°
Supply voltage	5V±10%	5V±10% 9-30V DC	3.3V±10% / 5V ± 10%	5V±10%	3.3V±10% / 5V DC	5V±10%
Output signal	0-5V ratiometric; Single channel	5V TTL 5V OC 24V OC	Absolute SPI Single channel Full Duplex - 3.3 / 5V	PWM single channel	I ² C Bidirectional SDA, always slave transmitter or receiver, NXP UM 10204 Prot., Master initiates data transfer	SENT Single channel one way - unidirectional communication
Resolution steps	4096 (12 bit)	4096 (12 bit)	16383 (14 bit)	4096 (12 bit)	4096 (12 bit)	4096 (12 bit)
Elec. speed (max)	160 rpm	1600 rpm	800 rpm	160 rpm	800 rpm	160 rpm
Mech. Life (Rot.)	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶	~ 20X10 ⁶

15 MCF

Miniature Flange 15 mm Ø Metal case Rotary Sensor



Universal Flange 22 mm Ø Metal case Rotary Sensor

22 MCF



Interface	Analog (A)	PWM (W)	Interface	Analog (A)	PWM (W)
Type	15A MCF	15W MCF	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°)	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%	Supply voltage	5V±10% 9-30V DC ;15-30VDC	5V±10%
Output signal	0-5V ratiometric; Single channel	PWM Single channel	Output signal	0-5V ratiometric; Single channel 0-5V; 0-10V; 4-20mA	PWM Single channel
Resolution steps	4096 (12 bit)	4096 (12 bit)	Resolution steps	4096 (12 bit)	4096 (12bit)
Mech.speed (max)	4000 rpm	4000 rpm	Mech.speed (max)	4000 rpm	4000 rpm
Elec. speed (max)	160 rpm	160 rpm	Elec. speed (max)	160 rpm	160 rpm
Mech. Life (Rot.)	~20X10 ⁶	~20X10 ⁶	Mech. Life (Rot.)	~20X10 ⁶	~20X10 ⁶

Universal size flange mount
22 mm metal housing with two
ball bearings
Flat cable - std interconnection

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

RotaCol® Silverline 22 mm ø Precision Rotary Sensors Contactless Hall MULTIINTERFACE

Silverline precision contactless Hall Rotary position sensors are not only available with the MULTIINTERFACE output signals such as analog,incremental, SPI,SENT, 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 standard 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 OCG & OCM (with 25 mm ø housing). **For SENT interface refer datasheets.**

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, For SENT interface refer datasheet



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/22csmslrcb.pdf
www.rotacol.info/22azslrcb.pdf
www.rotacol.info/22izslrcb.pdf
www.rotacol.info/22pzsrlrcb.pdf
www.rotacol.info/22yzsrlrcb.pdf
www.rotacol.info/22wzsrlrcb.pdf
www.rotacol.info/22czsrlrcb.pdf
www.rotacol.info/22tzsrlrcb.pdf

Interface	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 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30VDC/ 15-30 VDC	5V±10% / 9-30 VDC	5V ± 10% 3.3V ± 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 Half Duplex - 5V Full Duplex - 3.3/5V	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
Mech. Life (Rot.)	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 ⁶	~ 15X10 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, For SENT interface refer datasheet



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/22csmslrcbb.pdf
www.rotacol.info/22azslrcbb.pdf
www.rotacol.info/22izslrcbb.pdf
www.rotacol.info/22pzsrlrcbb.pdf
www.rotacol.info/22yzsrlrcbb.pdf
www.rotacol.info/22wzsrlrcbb.pdf
www.rotacol.info/22czsrlrcbb.pdf
www.rotacol.info/22tzsrlrcbb.pdf

Interface	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	2Y M/Z SL RCBB	22W M/Z SL RCBB	22C M/Z SLRCBB
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512, 1024 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30VDC/ 15-30V DC	5V±10% / 9-30V DC	5V ± 10% 3.3V ± 10%	5V±10% / 9-30V DC	5V±10%	3.3V±10% / 5 V 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 Half Duplex - 5V Full Duplex - 3.3/5V	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
Mech. Life (Rot.)	~ 25X10 ⁶	~ 25X10 ⁶	~ 25X10 ⁶	~ 25X10 ⁶	~ 25X10 ⁶	~ 25X10 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, For SENT interface refer datasheet



Interconnection - Flat cable OCF (Standard)

Detailed datasheet :
www.rotacol.info/22amslrcs.pdf
www.rotacol.info/22imslrcs.pdf
www.rotacol.info/22pmslrcs.pdf
www.rotacol.info/22ymslrcs.pdf
www.rotacol.info/22wmslrcs.pdf
www.rotacol.info/22csmslrcs.pdf
www.rotacol.info/22azslrcs.pdf
www.rotacol.info/22izslrcs.pdf
www.rotacol.info/22pzsrlrcs.pdf
www.rotacol.info/22yzsrlrcs.pdf
www.rotacol.info/22wzsrlrcs.pdf
www.rotacol.info/22czsrlrcs.pdf
www.rotacol.info/22tzsrlrcs.pdf

Interface	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 SLRCS
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512, 1024 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30VDC/ 15-30 VDC	5V±10% / 9-30 VDC	5V ± 10% 3.3V ± 10%	5V±10% / 9-30 VDC	5V±10%	3.3V±10% / 5 V 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 Half Duplex - 5V Full Duplex - 3.3/5V	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
Mech. Life (Rot.)	~ 35X10 ⁶	~ 35X10 ⁶	~ 35X10 ⁶	~ 35X10 ⁶	~ 35X10 ⁶	~ 35X10 ⁶

RotaCol® Silverline 36/50mm ø Precision Rotary Sensor Contactless Hall MULTIINTERFACE

Silverline product range of Rotacol® precision MULTIINTERFACE 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 15 & 20. MULTIINTERFACE is possible with Analog, Incremental, PWM, SPI, SENT, SSI and I2C outputs. Shaft diameter is available in Metric (M) with 6 mm and inch (Z) with 1/4". 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. **For SENT interface refer datasheets.** (www.rotacol.info/36tmslrcs.pdf)

36 M/Z SL RCS 50 MSL RCS	Precision Contactless Hall Effect Rotary Position Sensor : 36/50 mm ø RCS Servo Mount, 2 Ball Bearings, Shaft 6mm / 1/4", For SENT interface refer datasheets						
	Interface	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	36A M/Z SL RCS 50A MSL RCS	36I M/Z SL RCS 50I MSL RCS	36P M/Z SL RCS 50P MSL RCS	36Y M/Z SL RCS 50Y MSL RCS	36W M/Z SL RCS 50W MSL RCS	36C M/Z SL RCS 50C MSL RCS	
Electrical angle	0-20° to 0-360° in 1°step prog. (standard 360°)	2 to 128, 256, 512, 1024 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°	
Supply voltage	5V±10% / 9-30VDC/ 15-30 VDC	5V±10% / 9-30 VDC	5V ± 10% 3.3V ± 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 Half Duplex - 5V Full Duplex - 3.3/5V	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)	8000 rpm (36mm) 9000 rpm (50mm)	8000 rpm (36mm) 9000 rpm (50mm)	8000 rpm (36mm) 9000 rpm (50mm)	8000 rpm (36mm) 9000 rpm (50mm)	8000 rpm (36mm) 9000 rpm (50mm)	8000 rpm (36mm) 9000 rpm (50mm)	
Elec. speed (Max)	160 / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm	
Mech. Life (Rot.)	~ 40X10 ⁶ (36mm) ~ 45X10 ⁶ (50mm)	~ 40X10 ⁶ (36mm) ~ 45X10 ⁶ (50mm)	~ 40X10 ⁶ (36mm) ~ 45X10 ⁶ (50mm)	~ 40X10 ⁶ (36mm) ~ 45X10 ⁶ (50mm)	~ 40X10 ⁶ (36mm) ~ 45X10 ⁶ (50mm)	~ 40X10 ⁶ (36mm) ~ 45X10 ⁶ (50mm)	

RotaCort TMR Tunnelling Magneto Resistive low power Rotary Position Sensors with direct analog microcontroller Interface or integrated ARM Cortex M0 Microcontroller

Most of our intelligent rotary sensors use the proven Hall effect technology with standardised interface. If low power requirements (Typ. 2 mA) and utmost flexibility is required, the TMR TUNNEL MAGNETO/ RESISTIVE Technology is a possibility. Our RotaCol hall sensors have all a STANDARDISED analog or digital interface. The TMR 360° sensor detects the orientation of a magnetic field. Sine/cosine components are measured and these raw signals are provided as differential bridge outputs with two independent channels. This utmost flexibility requires a microcontroller. Our TAC types already include in the sensor a complete externally programmable ARM-CORTEX M0 microcontroller system.

30TMRF	Contactless TMR Rotary Position Sensor Plastic , Flange, Shaft 6 / 6.35mm	Contactless TMR Rotary Position Sensor Metal, Servo, Shaft 6 / 6.35mm	36TMRs																								
	<p>Tunnelling Magneto Resistive technology (TMR) Low temperature drift Differential bridge output Low power ~ 2 mA @ 5V High sensitivity with high output voltage Two independent channels Must be connected to microcontroller Based on Infineon TLE5501 E0001</p>	<table border="1"> <tr> <td>Type</td><td>30TMRF</td><td>30TMRs</td></tr> <tr> <td>Electrical angle</td><td>0 - 360°</td><td></td></tr> <tr> <td>Output signal</td><td>Analog passive bridge sine / cosine, differential</td><td></td></tr> <tr> <td>Output voltages</td><td>Upto 0.37v/f for direct Microcontroller connection</td><td></td></tr> <tr> <td>Analog error</td><td>Typical ~ 1.0°</td><td></td></tr> <tr> <td>Supply power</td><td>Typical ~ 2mA @ 5V (diff)</td><td></td></tr> <tr> <td>Housing</td><td>Plastic flange 30 mm Ø</td><td>Metal servo 36 mm Ø</td></tr> <tr> <td>Rot. life (rotations)</td><td>~ 20X10⁶</td><td>~ 45X10⁶</td></tr> </table>	Type	30TMRF	30TMRs	Electrical angle	0 - 360°		Output signal	Analog passive bridge sine / cosine, differential		Output voltages	Upto 0.37v/f for direct Microcontroller connection		Analog error	Typical ~ 1.0°		Supply power	Typical ~ 2mA @ 5V (diff)		Housing	Plastic flange 30 mm Ø	Metal servo 36 mm Ø	Rot. life (rotations)	~ 20X10 ⁶	~ 45X10 ⁶	
Type	30TMRF	30TMRs																									
Electrical angle	0 - 360°																										
Output signal	Analog passive bridge sine / cosine, differential																										
Output voltages	Upto 0.37v/f for direct Microcontroller connection																										
Analog error	Typical ~ 1.0°																										
Supply power	Typical ~ 2mA @ 5V (diff)																										
Housing	Plastic flange 30 mm Ø	Metal servo 36 mm Ø																									
Rot. life (rotations)	~ 20X10 ⁶	~ 45X10 ⁶																									

30TACF	RotaCort Contactless TMR Rotary Position Sensors with integrated ARM-CORTEX M0 Microcontroller	36TACS
	<p>Our types 30TACF and 36TACS are actually corresponding to our TMR tunnelling magneto resistive rotary position sensors 30TMRF and 36TMRs, but with an integrated ARMS-CORTEX M0 low power microcontroller system, in the housing. With an available microcontroller development system, the complete sensor can, from outside, be universally customer programmed for interface and particular applications. It can act as a universal intelligent sensor system for general use. Special types of our RotaCol Hall effect Rotary Position Sensors are also available with integrated ARM-Cortex M0 microcontroller.</p>	

Detailed datasheet :
On request

Detailed datasheet :
On request

RotaCol® Diamondline Precision Heavy Duty Rotary Position Sensors Contactless Hall MULTIINTERFACE

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. MULTIINTERFACE such as Analog, Incremental, SPI, SENT, 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. For SENT interface refer datasheets.

40/50 DRCW



Detailed Datasheet :
www.rotacol.info/40adrccw.pdf
www.rotacol.info/40idrcw.pdf
www.rotacol.info/40pdrcw.pdf
www.rotacol.info/40ydrccw.pdf
www.rotacol.info/40wdrcw.pdf
www.rotacol.info/40cdrcw.pdf
www.rotacol.info/40drcw.pdf
www.rotacol.info/50adrccw.pdf
www.rotacol.info/50idrcw.pdf
www.rotacol.info/50pdrcw.pdf
www.rotacol.info/50ydrccw.pdf
www.rotacol.info/50wdrcw.pdf
www.rotacol.info/50cdrcw.pdf
www.rotacol.info/50drcw.pdf

40/50 mm ø DRCW Precision Contactless Hall Rotary Position Sensor Shaft 8 mm, Servo Mount, MULTIINTERFACE, For SENT interface refer datasheets

Interface	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	40/50A DRCW	40/50I DRCW	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 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30VDC/ 15-30 VDC	5V±10% / 9-30VDC	3.3V ± 10% 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 OC; 24V OC	Absolute SPI Single/dual Half Duplex - 5V Full Duplex - 3.3/5V	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
Elec. speed (Max)	160 rpm / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm
Mech. Life (Rot.)	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶

50 DRCH



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

50 mm ø DRCH Precision Contactless Hall Rotary Position Sensor Hollow Shaft, MULTIINTERFACE, For SENT interface refer datasheets

Interface	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	50A DRCH	50I DRCH	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 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30V DC/ 15-30 VDC	5V±10% / 9-30VDC	3.3V ± 10% 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 OC; 24V OC	Absolute SPI Single/dual Half Duplex - 5V Full Duplex - 3.3/5V	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
Elec. speed (Max)	160 rpm / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm
Mech. Life (Rot.)	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶	~ 75X10 ⁶

58 DRCW/S



Detailed Datasheet :
www.rotacol.info/58adrccwpdf
www.rotacol.info/58idrcw.pdf
www.rotacol.info/58pdrcw.pdf
www.rotacol.info/58ydrccw.pdf
www.rotacol.info/58wdrcw.pdf
www.rotacol.info/58cdrcw.pdf
www.rotacol.info/58drcw.pdf
www.rotacol.info/58adrcspdf
www.rotacol.info/58idrcs.pdf
www.rotacol.info/58pdrcs.pdf
www.rotacol.info/58ydrccs.pdf
www.rotacol.info/58wdrcs.pdf
www.rotacol.info/58cdrcs.pdf
www.rotacol.info/58drcsc.pdf

58 mm ø DRCW/S Precision Contactless Hall Rotary Position Sensor, MULTIINTERFACE Shaft 10mm, Clamping flange (DRCW) & Synchro flange (DRCS), For SENT interface refer datasheets

Interface	Analog (A)	Incremental (I)	SPI (P)	SSI (Y)	PWM (W)	I ² C (C)
Type	58A DRCW/S	58I DRCW/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 (1024 ppr std)	0 - 360° (standard 360°)	0 - 360°	0-20° to 0-360° in 1°step prog. (standard 360°)	0 - 360°
Supply voltage	5V±10% / 9-30V DC/ 15-30 VDC	5V±10% / 9-30VDC	3.3V ± 10% 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 OC; 24V OC	Absolute SPI Single/dual Half Duplex - 5V Full Duplex - 3.3/5V	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
Elec. speed (Max)	160 rpm / 800 rpm	1600 rpm	800 rpm	1600 rpm	160 rpm	800 rpm
Mech. Life (Rot.)	~ 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

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

2RSS22



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

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

- 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



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

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

RSS36

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

2RSS36RA



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

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

- 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



36mm housing, dual ganged with rear shaft extension.

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

RSS45

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

RSS50



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

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

- 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



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 Ø have bushing as well as servo mounting. These RotaCon® type of potentiometers are designed according to IEC60393. These are used in applications where not very close independent linearity tolerances are required.

CP12B



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

**12 mm Ø Precision Conductive Plastic Potentiometer
Single Turn Bushing and Servo Mount - Metal Case**

- Miniature type, good lifetime
- 12 mm Ø, 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 ø x 17	3.17 ø x 12
Resistance range (Ω)		1k,5k,10k
Resistance tolerance		± 20%
Linearity tolerance (%)		± 1.5%
Power rating (Watt)	0.7	0.2
Elec./Mech.angle (°)	300±5 /360	340±10 /360
Rotary Life (Rotations)	~ 3 million	~ 5 million

CP12S



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

JSM22B



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

**22 mm Ø Precision Conductive Plastic Potentiometer
Single Turn Bushing & Servo Mount - Metal Case**

- 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%
- Can be used in feedback application.

Type	JSM22B (Bush)	JSS22S (Servo)
Housing diameter (mm)		22
Bearing	Sleeve	Ball
Shaft dia X length (mm)	6 ø X 22	3.17 ø X 12.7
Resistance range (Ω)	1k,5k,10k ± 20%	
Linearity tolerance (%)	±1 (± 0.5%)	
Power rating (Watt)		1
Elec./Mech. angle (°)		340±5 /360
Rotary Life (Rotations)		~ 10 million

JSS22S



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

JSP22B



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

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

- 22mm plastic housing
- Resistance value (Ω) : 1K,5K,10K.
- Resistance tolerance : ±20%.
- Operating life : ~ 4 million.
- Rated wattage : 1 Watt
- Operating temp : -55 to +105°C
- Special shaft lengths
- Optional linearity : ±0.5%

Type	JSP22B	JSP23B
Housing diameter	22 mm	23 mm
Bushing Size	M10 X 0.75	
Shaft dia.X length (mm)	6 Ø X 22	6 Ø X 22
Linearity Tol. (%)	±1 (±0.5%)	±1 (±0.5%)
Eff. elec. angle (°)	340±5	320±5
Mechanical angle (°)	360	320±5
Rot. Life (Rotations)	~ 5 million	~ 5 million

JSP23B



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

JSS36S



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

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

- 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 ø X 16	6 ø X 20
Resistance range	1K,5K,10 KΩ	1K,2K, 5K,10 KΩ
Resistance tolerance	±20%	±20%
Linearity tolerance (%)	± 1 (0.5%)	± 1 (0.5%)
Power rating (Watt)	1.5	1.5
Rotary Life (Rotations)	~ 20 million	~ 25 million

JSS50S



Detailed Datasheet :
www.megauto.de/en/jss50s.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. Hollow shaft precision conductive plastic pots are available in 24 & 32 mm housing diameters. For longer rotational life (>1 million revolutions) complex formulations & precision precious metal wipers are required. (See precision RotaSet®, RotaCon® or RotaSense® potentiometers).

C16P



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

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

- 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 : $\pm 20\%$
- Operating temperature : -10° to 85°C
- Options : Special shaft length, Dual ganged.
- Radial terminals

Type	C16P	C24P
Housing diameter	16mm Ø	24mm Ø
Bushing size	M6 X 0.75	M9 X 0.75
Shaft dia. X length (mm)	3.2 Ø X 20	6 Ø X 20
Linearity tolerance	$\pm 2\%$	$\pm 2\%$
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

C24P



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

2C24P



Dual ganged

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

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

- 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 (mm)	6 Ø X 20	6 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

C24PS



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

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

RH24PC



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

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

- 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.
- 16 mm hollow shaft potentiometers are available.

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

RH32PC



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

Comparison of Precision Potentiometers and Contactless Rotary Sensors

Since more than 60 years, precision Wire wound and Conductive plastic precision potentiometers and expensive optical shaft encoders have been the main solution for rotary position sensing. Today, Contactless MULTIINTERFACE magnetic technology provide long life, low cost Analog AND Digital sensing possibilities.

Technical data	Precision Potentiometers	Contactless Rotary Sensors
Electrical Rotational Life	Limited < 10^6 rotations	Typical 50×10^6 to 100×10^6 rotations
Output Signal	Analog voltage divider resistive (typical 5 K Ω)	Many integrated Analog / Digital
Electrical options	Limited (hardware)	Many selectable (software)
Supply voltages	All ranges	3.3 to 32V DC

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 TW22 & dial such as RLD22-15.

R22W/WC

22/25 mm Ø Wirewound Single Turn Precision Potentiometer

MRT25W/WC



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

- 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
- Shaft & bushing available in non- metric sizes (for R22W)

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



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

- 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°

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	3/8" X 32 TPI
Linearity tolerance (%)	± 1.5	
Power rating (Watt)	1	3
Mechanical angle (°)	285(W) 360(WC)	
Rot. life (Rotations)	~ 100,000	



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

TW22

Precision 10 Turn Potentiometer 7/8" Ø Industrial standard

22 mm Ø Dial for Multiturn Potentiometer

RLD22-15



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

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

Type	RLD22-15
Number of turns	15
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/rld22.pdf

MGBP11

Single Turn Precision Wire wound Potentiometers 27mm Ø Bushing Mount : Ball bearings, Endstop, long life

Single Turn Precision Wire wound Potentiometers 36 mm Ø Servo Mount : Ball bearings, Continuous rotation, long life

MGSP15



Detailed datasheet :
www.megauto.de/en/mgbp11.pdf

- Single turn wire wound
- Housing diameter :
27 mm Ø (MGBP11)
36 mm Ø (MGSP15)
- Mounting methods:
Bushing : M10X 0.75 (MGBP11)
Servo mounting : (MGSP15)
- Mechanical angle:
300° With endstop (MGBP11)
360° continuous rotation (MGSP15)

Type	MGBP11	MGSP15
Resistance range (Ω)	10Ω to 50K	10Ω to 100K
Electrical angle (°)	290 +5/-0	355 +5/-0
Mechanical angle (°)	300 +5/-0	360 continuous
Linearity tolerance (%)	± 0.25 (std)	
Resistance tolerance (%)	±5	
Power rating (Watt)	2	4
Shaft diameterXlength (mm)	3 Ø X 30 mm	6 Ø X 30 mm
Rot. life (Rotations)	~ 5X10 ⁶	



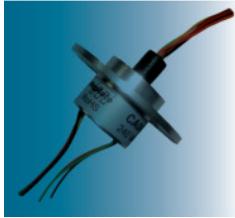
Detailed datasheet:
www.megauto.de/en/mgsp15.pdf

These precision wire wound potentiometers are manufactured by our associate company Megatron France (Megatron Fr).

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

**Sales, Technical and Inventory Information are available at MegAuto KG, Dresden, Germany.
International Distributor Support Center and Sales for certain areas - MegAuto International, Pune, India**

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