

'I2C' Interface Precision Contactless Rotary Position Sensors

Bush Mounting - Sleeve bearing

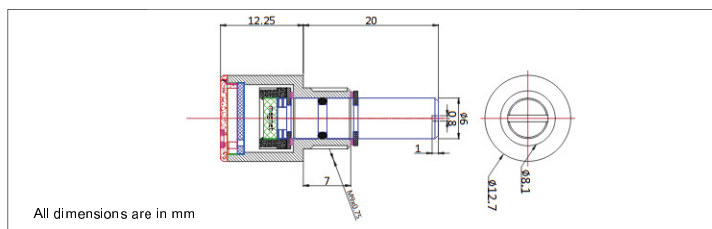
12 mm Ø metal housing

Hall CMOS technology, low cost

Economical - I2C digital - Interface

Bush mounting - Sleeve bearing - 6 mm shaft diameter

1 - Supply (Red) ; 2 - Ground (Grey) ; 3 - Clock (Grey) ; 4 - Data (Grey)



All dimensions are in mm

12C MMPB2



FUNCTION PRINCIPLE

The determination of angular position and signal generation is realised by an intelligent CMOS Hall sensor. A diametrical polarised magnet induces its magnetic field into the sensor. It rotates and provides a conditioned signal to the integrated electronic.

ELECTRICAL CHARACTERISTICS

Electrical angle	0 to 360°	
Electrical speed (max)	800 rpm	
Resolution	4096 steps (12 bit)	
Signal type	Supply voltage	Output signal
S05I2C	5V ±10%	I2C
S33I2C	3.3V ± 10%	I2C
Supply current (mA)	< 10 mA	
Update rate	0.6 ms	

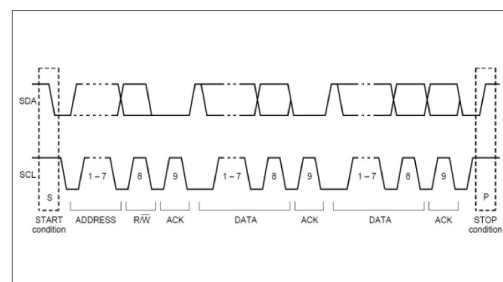
MECHANICAL CHARACTERISTICS

Mechanical angle	0 - 360°(continuous)
Shaft diameter and length (FMS)	6 mm Ø X 20mm
Bushing	M9 X 0.75
Mechanical speed (Max.)	800 rpm
Rotational life	~ 10 million rotations
Operating torque (approx.)	0.1 to 0.3 Ncm
Operating temperature range	- 40 to +85° C
Weight	10 gm
Interconnection	4 core flat cable 0.15 mtr long

MATERIAL

Housing	Aluminium anodized
Shaft	Stainless Steel
Bearing	Sleeve bearing- teflon

I2C INTERFACE



I2C has bidirectional Master- slave communication. The I2C address is fixed. It is „0x36“ or „0110110“. Master initiates data transfer. A change in the state of SDA from high to low while SCL is high defines the START condition. A change in the state of SDA from low to high while SCL is high defines the STOP condition. The SDA signal is the bidirectional data line. The SCL signal is the clock generated by the I2C bus master to synchronize sampling data from SDA. The maximum SCL frequency is 1 MHz. Data is sampled on the rising edge of SCL.

Default Version :

12 mm housing, 6 mm shaft, bush mount, 360° Electrical & Mechanical angle CW, 4 core flat cable 0.15 mtr long.

ORDERING INFORMATION

Refer to electrical and mechanical options on page 2

Housing diameter	I2C Interface	Miniline (Bush Thread M9X0.75 & Shaft 6 mm Ø)	Miniline	Bush mounting M9X0.75	Signal	Electrical angle	Direction of rotation	Programming options	Zero point	Special cable length (default 0.15 m long)	Output connection
12	C	M	MP	B2	S05I2C S33I2C	O360	CW CCW	POx POZ	CVxx	OCF	
12	C	M	MP	B2	SxxI2C	O360	CW / CCW	POx	CVxx	OCF	
Example with description -12C MMPB2 S05I2C 360CW OCF- 2 mm diameter, I2C interface, Miniline, RotaCol bush mount, (Bush Thread M9X0.75 & Shaft 6 mm Ø), 5V I2C interface, 360° clockwise, 4 core flat cable 0.15 mtr long											

Example with description **-12C MMPB2 S05I2C 360CW OCF-** 12 mm diameter, I2C interface, Miniline, RotaCol bush mount, (Bush Thread M9X0.75 & Shaft 6 mm Ø), 5V I2C interface, 360° clockwise, 4 core flat cable 0.15 mtr long

ELECTRICAL OPTIONS FOR I2C VERSION 12 MMPB2

RotaCol® are the latest development in rotational position sensors and contactless devices. Modern Hall IC's in combination with special magnets and RISC processors provide intelligent customizing of output signals and interfacing. Not only precision potentiometer but also optoelectronic incremental and absolute encoders are replaced. The RotaCol® series is divided into 3 groups : analog types with analog output (replacement for precision potentiometer), incremental output (replacement of optoelectronic encoders), absolute digital SPI, SSI and I2C interface. Because of wide variety of mechanical and electrical options it is possible to use them in almost any automation and control application where rotary angular sensing is required. Regardless of the wide variety of existing technical features, the price is relative low.

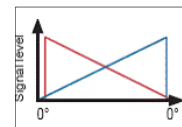
I2C Bus Interface

I2C uses only two wires: SCL (serial clock) and SDA (serial data). Basic I2C communication is using transfers of 8 bits or bytes each byte must be followed by an Acknowledge bit. Each I2C slave device has a 7-bit address that needs to be unique on the bus. The I2C address is fixed. It is "0x36" or "0110110". The master device generates clock, starts communication, sends I2C commands and then stops communication.

Direction of Rotation (CW/CCW) :

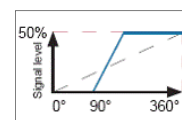
CW (Clockwise) When shaft is viewed from top, and rotated in clockwise direction, output increases from minimum to maximum value (standard configuration).

CCW (Counter clockwise) when shaft is viewed from top, and rotated in counter clockwise direction, output increases from minimum to maximum 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).



MECHANICAL OPTIONS FOR I2C VERSION 12 MMPB2

Type / Series	Customized mechanical options
12C MMPB2	Special cable length

INTERCONNECTIONS

Standard Interconnections - 3 core flat cable 0.15 mtr long

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