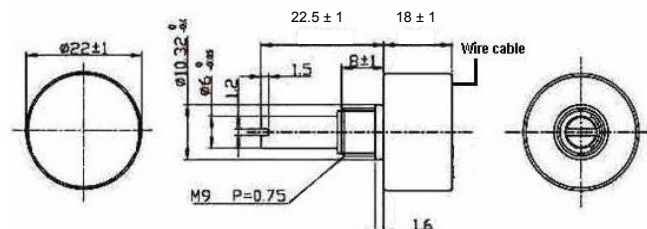


PRECISION SPI DIGITAL CONTACTLESS ROTARY POSITION SENSOR

Metalcase - 1 Ball bearing
Hall effect magnetic
Direct SPI interface to microcontroller
Robust metal aluminium housing with ball bearing
Bush mounting
Shock & vibration proof
Measurement range 0° - 360 °



1 - Supply(red) 2 - Ground(Grey) 3 - Output(Grey) 4 - Clock(Grey) 5 - Chip select(Grey)
 All dimensions in mm

ELECTRICAL CHARACTERISTICS

Electrical angle	0 - 360°
Resolution	14 bit (16383 steps)
Output signal	Absolute SPI
Supply voltage	5V $\pm$ 10%
Supply current	< 30 mA
Update rate	5 KHz

MECHANICAL CHARACTERISTICS

Mechanical angle	360° (continuous)
Starting torque (approx.)	0.5 Ncm
Protection	IP 40
Operating temperature	- 40 to +85° C
Operating life (approx.)	20 million rotations
Mechanical speed (max.)	5000 rpm
Electrical speed (max.)	800 rpm
Weight	22 gm

MATERIAL

Housing	anodized aluminium
Shaft	stainless steel
Cable	5 core flat cable (150 mm)
Bearings	1 precision ball bearing

OPTIONS AND ORDERING REFERENCES

Refer to electrical & mechanical options on page 2

Housing diameter	SPI output	Pewatron Angular Sensor	Bush version with ball bearing, Long housing, Goldline	Signal	5 V	2 Channel redundant output	Rotational direction	Clockwise (CW) Counter clockwise (CCW)	14 bit output	Programming options	Zero point	Output connections	5 Core Flat cable (standard) Terminal block (A - Axial & R - Radial)
22	P	PB	BL	05 SPI	5 V	2C	CW CCW	CW CCW	S 14	POx	POZ	OCx	OCF OCT
22	P	PB	BL	05 SPI	5 V	2C	CW / CCW	CW / CCW	S 14	POx	POZ	OCx	OCF OCT

Example with description - **22P PBBL 05SPI CCW S14 POZ 2C OCF** - 22mm diameter, SPI output, PB Series, Bush version Long housing Goldline, 5V, Counter clockwise, 14 bit output, Zero point, 2 Channel redundant output, Flat cable
Standard Version : 360° CW Electrical & Mechanical angle, OCF - 5 core flat cable

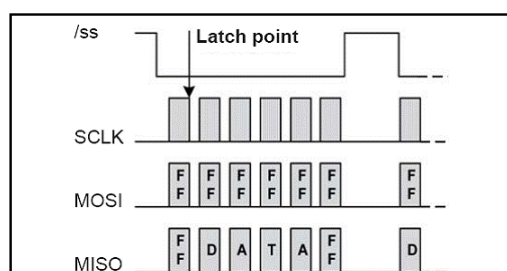
Series 22P PBBL



FUNCTION PRINCIPLE

The angular position and the signal generation is detected by a CMOS Hall sensor over which a parallel diametrically polarized magnet induces a magnetic field. An integrated electronic provides the output of a 2 byte WORD with an SPI interface.

SERIAL PERIPHERAL INTERFACE



The serial peripheral interface (SPI) is a bus system for a serial synchronous data transmission between different integrated circuits. The bus consists of 3 lines 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 all 350 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.

For complete Contactless Rotary Sensor product range refer - sensorsandpower.angst-pfister.com

PB Series 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 PB series is divided into 3 groups : analog types with analog output (replacement for precision potentiometer), incremental output (replacement of optoelectronic encoders), absolute digital SPI and SSI output. Because of wide variety of mechanical and electrical options it is possible to use them in almost any automation and control application where rotary angular sensing is required. Regardless of the wide variety of existing technical features, the price is relative low.

Direction of Rotation (xxxx CW / CCW)

Zero Point Programming (POZ)

2 Channel Output (2C)

MECHANICAL OPTIONS FOR SPI VERSION 22P PBBL

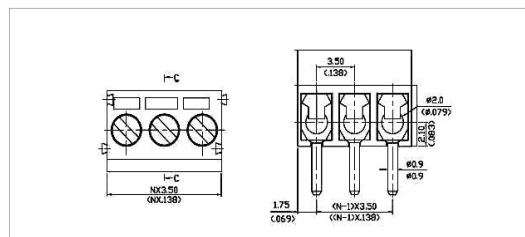
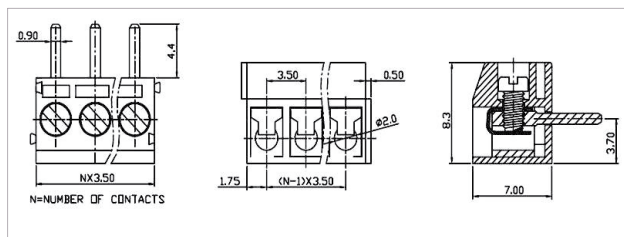
INTERCONNECTIONS

Standard Interconnections - 5 Core flat cable

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

5 sockets

5 sockets



We are here for you. Addresses and Contacts.

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<https://sensorsandpower.angst-pfister.com/en/>
