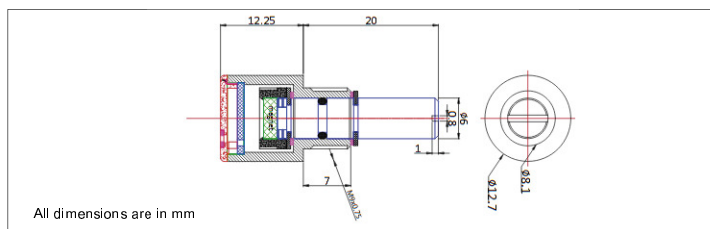


'PWM' Output Precision Contactless Rotary Position Sensors

Bush Mounting - Sleeve bearing

12 mm Ø metal housing
Hall CMOS technology, low cost
Pulse Width Modulated output
Bush mounting - Sleeve bearing - 6 mm shaft diameter

1 - Supply (Red) ; 2 - Output (Grey) ; 3 - Ground (Grey)



ELECTRICAL CHARACTERISTICS

Electrical angle	0 to 360°, any angle from 0-20 to 0-360 programmable in steps of 1°	
Electrical speed (max)	160 rpm	
Resolution	4096 steps (12 bit)	
Signal type	Supply voltage	Output signal
SPWM	5V ±10%	PWM
Independent linearity tolerance	± 0.5%	
Supply current (mA)	< 16 mA	
Update rate	1 ms	
PWM frequency	200 Hz default (500 Hz, 1 KHz, 2KHz optional)	

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	3 core flat cable 0.15 mtr long

MATERIAL

Housing	Aluminium anodized
Shaft	Stainless Steel
Bearing	Sleeve bearing- teflon

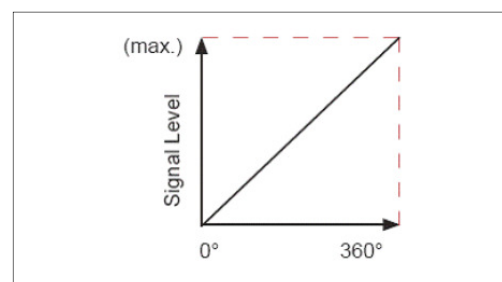
12W MMPB2



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.

PWM OUTPUT



PWM is a pulse width modulated signal based on constant carrier frequency which defines high to low ratio. The ratio between high & low corresponds to the signal characteristics. It is in a fixed relation to the angle. Generally, for further signal processing, no A/D converter is required because many microcontrollers already have PWM input. The contactless sensor electronic guarantees a steady signal level and a very low linearity error of ±0.5%. With supply voltage of 5V ± 10% output signal of 5V PWM at the sensor is provided. Besides this a large variety of electrical options such as Output signal level programming Zero point programming and Centre point programming are provided.

Default Version :

12 mm housing, 6 mm shaft, bush mount, 360° Electrical & Mechanical angle, Output signal level 0 - 100%, Frequency 200 Hz, 3 core flat cable 0.15 mtr long.

ORDERING INFORMATION

Refer to electrical and mechanical options on page 2

Housing diameter	PWM output	Miniline (Bush Thread M9X0.75 & Shaft 6 mm Ø)	Miniline	Bush mounting M9X0.75	Signal	Pulse Width Modulated Output	Electrical angle	Direction of rotation	Programming options for non-effective electrical angle (only if elec angle is < 360°)	Delta 1/2 - (default)	Programming options	Output signal level	Special cable length (default 0.15 m long)	Output connection
12	W	M	MP	B2		SPWM	xxx	CW CCW	PEx	PE1 PE2 PE3 PE4	POx	PO1 PO2 PO3 PO4	CVxx	OCF
12	W	M	MP	B2	SPWM	xxx	xxx	CW / CCW	PEx		POx		CVxx	OCF

Example with description - **12W MMPB2 SPWM 360CW OCF** - 12 mm diameter, PWM output, Miniline, RotaCol bush mount, (Bush Thread M9X0.75 & Shaft 6 mm Ø), Pulse width modulated output, 360° clockwise, 3 core flat cable 0.15 mtr long

ELECTRICAL OPTIONS FOR PWM VERSIONS 12W MMPB2

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 Signal level Programming (POL) : 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 viewed from top, and rotated in clockwise direction, output increases from minimum to maximum value(standard configuration).

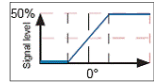
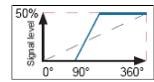
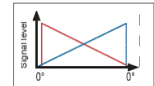
CCW(Counter clockwise) when shaft is viewed from top, and rotated in counter clockwise direction, output increases from minimum to maximum value(Price adder).

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).

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).



Electrical options for Non - Effective electrical angle (Price Adder) : (If electrical angle is < 360°)

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) :

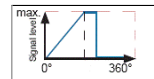
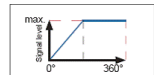
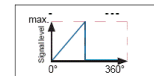
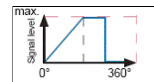
If the electrical effective angle is programmed smaller than 360°, after reaching the maximum, the signal level falls to low level.

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.



MECHANICAL OPTIONS FOR PMW VERSION MMPB2

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

INTERCONNECTIONS

Standard Interconnections - 3 core flat cable 0.15 mtr long

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