

PRECISION ANALOG CONTACTLESS ROTARY POSITION SENSORS - BUSH MOUNTING

Ø25 mm & 30 mm plastic robust housing

With stopper 320°

Analog output - Current / voltage and PWM output

Bush mounting, Shock and vibration proof

Alternative to precision potentiometers

Cable gland output connection

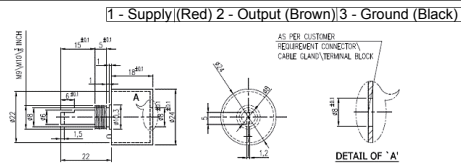
Series 25A PP B
Series 30A PP B



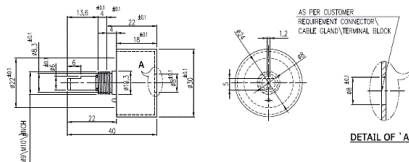
with terminal block

with connector

For 25 mm



For 30 mm



ELECTRICAL CHARACTERISTICS

Electrical angle 0 to 360°, any angle from 0 - 20... 0 - 360 programmable in steps of 1°

Resolution 4096 steps (12 bit)

Independent linearity tolerance ± 0.3%

Signal type	Supply voltage	Output signal
0505	5 V ±10%	0 - 5V ratiometric
DC05	9 - 30 V	0 - 5V
2410	15 - 30 V	0 - 10 V
2442	15 - 30 V	4 - 20 mA
2420	15 - 30 V	0 - 20 mA
PWM	5 V ±10%	PWM

Supply current < 25 mA

MECHANICAL CHARACTERISTICS

Mechanical angle (S) 320° +5° / - 0° with stop

Mechanical speed (max.) 800 rpm (brass) ; 3000 rpm (polymer)

Electrical speed (max.) 160 rpm

Life: with brass sleeve bearings ~ 10 million rotations

Life: with polymer sleeve bearings ~ 15 million rotations

End stop resistance < 80 Ncm

Operating temperature - 40 ... +85 °C

Operating torque (approx.) 1.2 Ncm ± 50%

Output connection Cable gland (with 1 meter cable)

Weight 31 gm (25A RS B) / 47 gm (30A RS B)

MATERIAL

Bearing type: basic type with stop brass bearing with stainless steel shaft

Bearing type: option P polymer sleeve bearing with SS shaft

Housing Nylon 66 Glass fibre reinforced

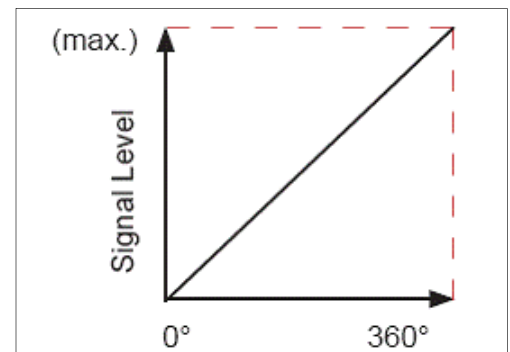
Shaft stainless steel

Cable 3 core round cable

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.

ANALOG INTERFACE



At the output of the sensor a variable voltage or variable current is provided proportional to the position of the shaft / axis over a complete angle range of 360° or a subrange. The contactless sensor electronic guarantees a steady signal level and a very low linearity failure of 0.3%. With supply voltages of 5VDC±10%; 9-30VDC; (24VDC) output signals of 0-5VDC; 0-10VDC; 0-20mA; 4-20mA at the sensor output are provided. A pulse-width modulated (PWM) signal can be generated by the analog interface. This signal can be processed by following connected electronics with PWM input.

OPTIONS AND ORDERING REFERENCE

Refer to electrical & mechanical options on page 2

25 & 30 mm Housing diameter	Analog output	peratron Angular Sensor	Thread M10 / Shaft Ø 6mm Thread M9 / Shaft Ø 6mm Thread 3/8" / Shaft Ø 6.35mm	Signal	2 Channel redundant output (For voltage)	With stop, (std 320°) options 90°, 180°, 270°	Clockwise (CW) Counter clockwise (CCW)	Programming options for non-effective electrical angle	Programming options	Low torque Medium torque (default) High torque	Polymer sleeve bearing (only for B1)	Shaft seal IP65 (not „P“ option)	Special shaft length (std 22 mm)	Special cable length (standard 1m cable)	Output connections	Cable gland (std) Miniature connector Terminal block (A- Axial & R - Radial)
25 / 30	A	PP	B1 B2 B3	S 0505 S PWM S DC05 S 2410 S 2442	2C	S320°	CW CCW	PEX	POX POZ POC POM	LT MT HT	P	D	Axx	CVxx	OCx	OCG OCM OCT
xx	A	PP	Bx	Sxxxx	2C	Sxxx	CW/CCW	PEX	POX	xT	P	D	Axx	CVxx	OCx	

example with description - **25A PP B1 S0505 S90 CW PE1 POZ A18 OCG** - 25 mm housing, analog output, PP Series, Bush mounting - Thread 10mm / 6mm shaft, 5V(ratiometric), with stop 90°, clockwise, delta 1/2, zero point, special shaft 18 mm, cable gland

Standard Version : 360° CW Electrical & Mechanical angle, OCG - Cable gland, MT - Medium torque

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

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ELECTRICAL OPTIONS FOR ANALOG VERSIONS 25/30A PP B

The following options are electrically programmable & are available very cost effective, with short delivery time

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

If the electrical effective angle is programmed smaller than 360°, the remaining electrical non-effective 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 electrical non effective angle can be divided into high and low level in any ratio according to customer request.

Direction of Rotation (CW/CCW)

By default the direction of rotation is clockwise (CW). With this option it is also possible to change the direction from clockwise(CW) to counterclockwise (CCW).

Zero point Programming (POZ)

Mechanical zero point is aligned with marking on the sensor housing. Electrical zero point can be aligned to mechanical zero point. Zero point can be programmed at any offset.

Center Point Programming (POC)

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

Multi Point Programming (POM)

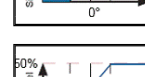
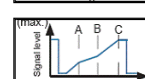
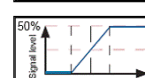
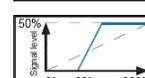
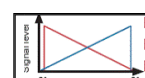
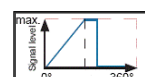
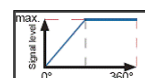
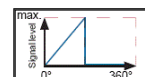
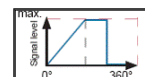
Output characteristics : 3 to 6 rising or falling linear segments. Min and max signal level can be defined within the total electrical angle. First and last linear segment (min/max) is always horizontal. 1 to 3 settable calibration points.

Pulse Width Modulation (PWM)

PWM provides a 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 (valid only for 0505 output).

2 Channel Redundant Output (2C)

This is realized by a Hall sensor chip consisting of 2 galvanically separated sensing elements. One magnet provides a magnetic field simultaneously for both elements. Both elements can be programmed identically, or channel 2 can also be programmed independently from channel1. (Valid only for 0505, DC05, and 2410 outputs).



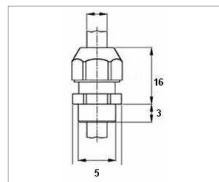
MECHANICAL OPTIONS FOR ANALOG VERSIONS 25/30A PP B

Type / Series	Standard mechanical options	Customized mechanical options
25 / 30A PP B	Low torque (LT) ; High torque (HT) ; Endstop at 90 °, 180 °, 270 °	Special shaft length ; Special endstop angle

SPEEDCONNECT OUTPUT CONNECTIONS FOR ANALOG VERSIONS 25/30A RS B

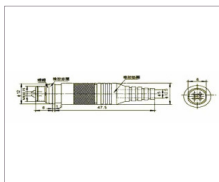
Cable gland (OCG)

3,5,6 core cable of 1 m length according to interface



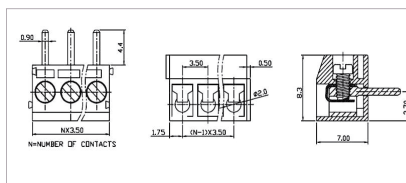
Miniature connector (OCM)

3,5,6 pin in integrated socket with plug according to interface



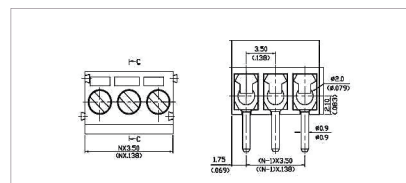
Terminal block - Axial (OCTA) Wires leaving axial to shaft axis

3,5,6 sockets according to interface



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

3,5,6 sockets according to interface



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