

# RPE-2 ROTARY ENCODER

## Features

A rotary position encoder based on contactless magnetic sensors.

Robustly built with two ball bearings. Suitable for speeds up to 7500rpm, with 10 bit accuracy.

- 2 channel incremental quadrature output with index
- 10 bit absolute PWM output
- 8mm or 6.35mm diameter shaft
- Also available in 10 bit absolute analog. See RPE-1



## Typical applications:

- Industrial actuator position
- Servo feedback
- Robotics encoder
- Motor speed readout
- Gearbox speed sensor
- CNC Machine tool position
- Rotary position sensing
- Camera position
- Lever angle sensor
- Handwheel / Jogwheel encoder

## Technical Data

### Electrical

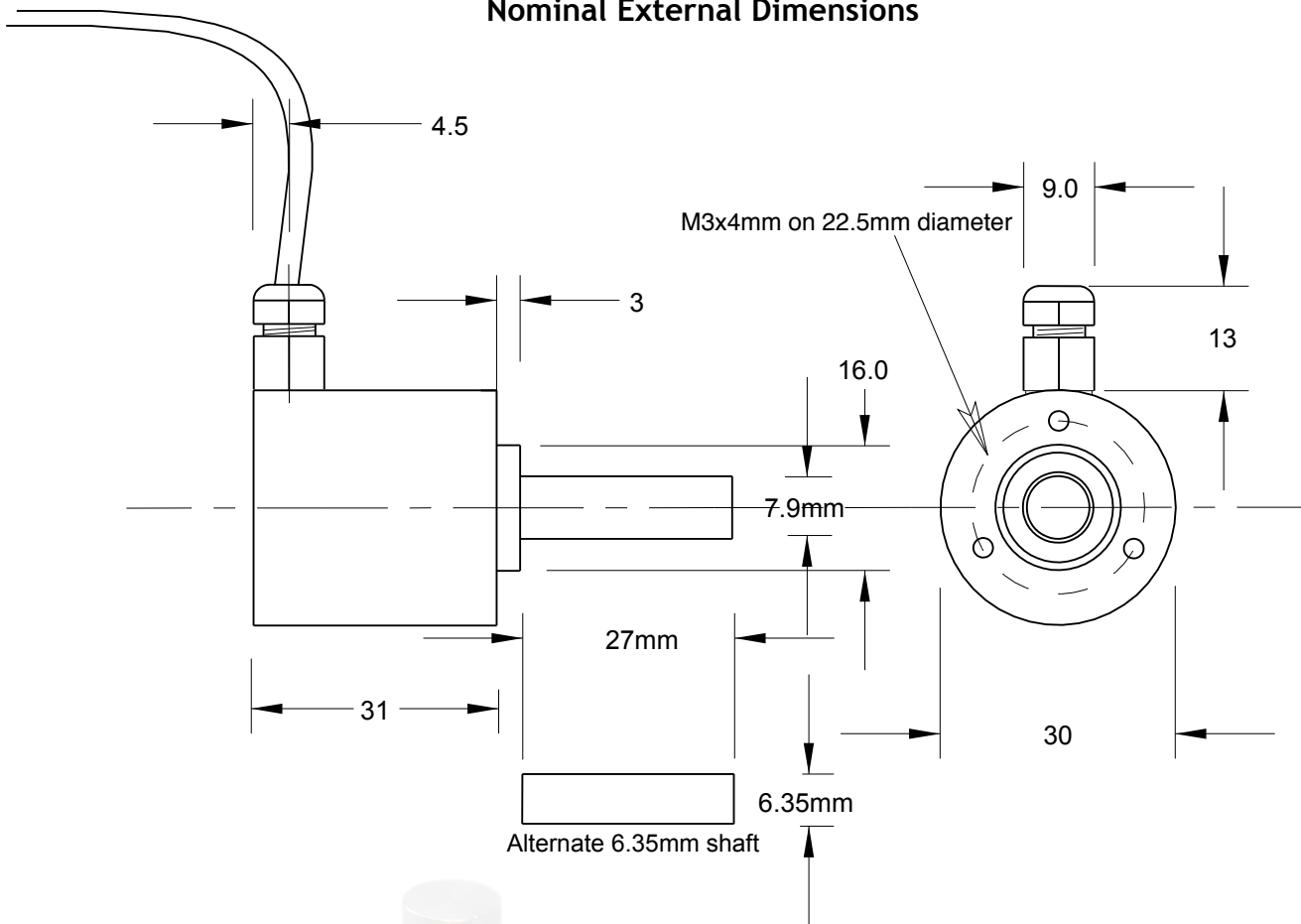
Supply Voltage (VDD)	4.5-5.5V
Supply Current	21mA
Resolution	10 bit
Output 1	10 bit incremental quadrature A/B output (2 x 256ppr) with index pulse. Channel A leads channel B by 90 degrees for a clockwise direction. Channel B leads Channel A for counter-clockwise.
Output 2	10 bit absolute PWM output (1-1024 positions, 0-359.65°)
Output type	CMOS - maximum 4mA
Output level	High VDD - 0.5V Low VSS + 0.4V
RoHS status	Compliant
Sampling rate	10.4k samples per second (ksp/s)

### Mechanical

Operating speed	360° continuous rotation. Maximum speed 3000rpm with v-ring seal, 7500rpm without seal.
Shaft support	Dual 8mm ID ball bearings.
Construction material main body and shaft	6061 Anodized Aluminium.
Ingress Protection	IP50 if v-ring seal is in place.
Mount	16mm flange with 3 x M3 screws 4mm thread on 22mm diameter. (screws supplied).
Weight	75-77g (depending on model).
Termination	Colour coded multicore cable, flying leads. ext.dia 3.3mm, int.dia 0.7mm. 580mm minimum length.

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## Nominal External Dimensions



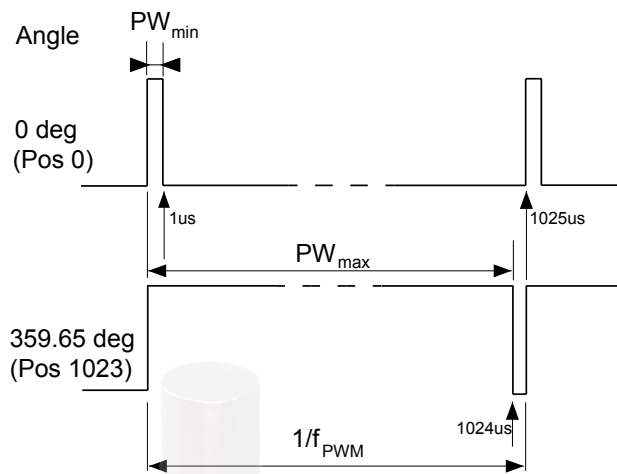
## Wiring

WIRE COLOUR	DESCRIPTION
Red	4.5-5.5V DC
Black	Ground
Blue	10 bit PWM output
Green	Quadrature channel A
Yellow	Quadrature channel B
White	Index Position

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## PWM details

PARAMETER	TYPICAL	NOTES
PWM Frequency	0.9756kHz	Signal period: 1025us
Min pulse width	1us	Position 0 degrees
Max pulse width	1024us	Position 359.65 degrees



**PWM output signal**



Encoders can be purchased directly from  
[sinusoid.com](http://sinusoid.com)

For further enquiries or quantity purchases  
contact

<http://store.sinusoid.com/>