ED-19 Quadrature Output Series Magnetic Encoder

- **Low profile with open collector output**
- **Wide operational temperature range**
- **IP52 sealing**
- **Sleeve or ball bearing**
- **Custom housings, shafts, connectors available, in many cases without additional tooling required**

DESCRIPTION

The ED-19 series magnetic encoder is designed for medium duty feedback applications. Resolutions are available from 200 to 400 counts per revolution. The magnetic technology used in the ED-19 series is plug-in compatible with existing encoder products, with the advantages of an extended temperature range and fully sealed electronics. The ED-19 suffers no LED degradation, as with conventional optical encoders, meaning it has a virtually unlimited life.

FEATURES

- Magnetic sensing technology
- Encapsulated electronics/sealed unit
- Harsh environment compatibility
- Quadrature outputs
- Low profile
- Consistent rotational torque
- Resistant to contamination
- IP52 sealing
- Metallic threaded bushing mounting
- Excellent stability – no optical degradation
- Magnetic sensing technology
- Encapsulated electronics/sealed unit

APPLICATIONS

- Marine, avionics, motor speed and position control
- Marine steering and throttle position control
- Monitor pump speed and direction
- Camera position and control
- XY stage positioning
- Motor feedback
- Medical diagnostic equipment
- Video and sound editing equipment
- Valve position
- Syringe pump
- Marine, avionics, motor speed and position control
- Marine steering and throttle position control

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PERFORMANCE SPECS (NOTE1)

Quadrature outputs:

Parameters	ED-19-XX-XXXX-Q-P
Supply current	18 mA
Operating voltage (Vcc)	5 Vdc ± 0.25 Vdc
Voltage output high (min)	4.75 V
Voltage output low (max)	125 mV
Duty circle	50% ± 25%
Phase angle	90° ± 45°
Output type	Open collector with internal 10k pull-up
Standard resolutions	400, 200 counts per revolution (4 counts = 1 pulse)
Operating temperature	-40°C to +85°C

Bearing:

Parameters	ED-19-SB-XXXX-Q-P	ED-19-BB-XXXX-Q-P
Bearings	Sleeve	Ball
Maximum speed	300 RPM	3000 RPM
Bearing life	3,000,000 cycles	30,000,000 cycles

(NOTE1): All specifications are specified with Vcc @ Nominal input voltage, and Ambient Temperature 25 Degrees Celsius.

MECHANICAL

Parameters	ED-19-XX-XXXX-Q-P
Axial load (max)	20 N
Radial load (max)	10 N
Shaft end play axial (max)	0.13 mm
Shaft radial play (max)	0.25 mm (15.3 mm from thread)
Shaft push-in force	9 N
Shaft pull-out force	1.3 N
Run out (max)	0.25 mm (19 mm from thread)
Bushing mounting torque	1.1 Nm

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DIMENSIONS

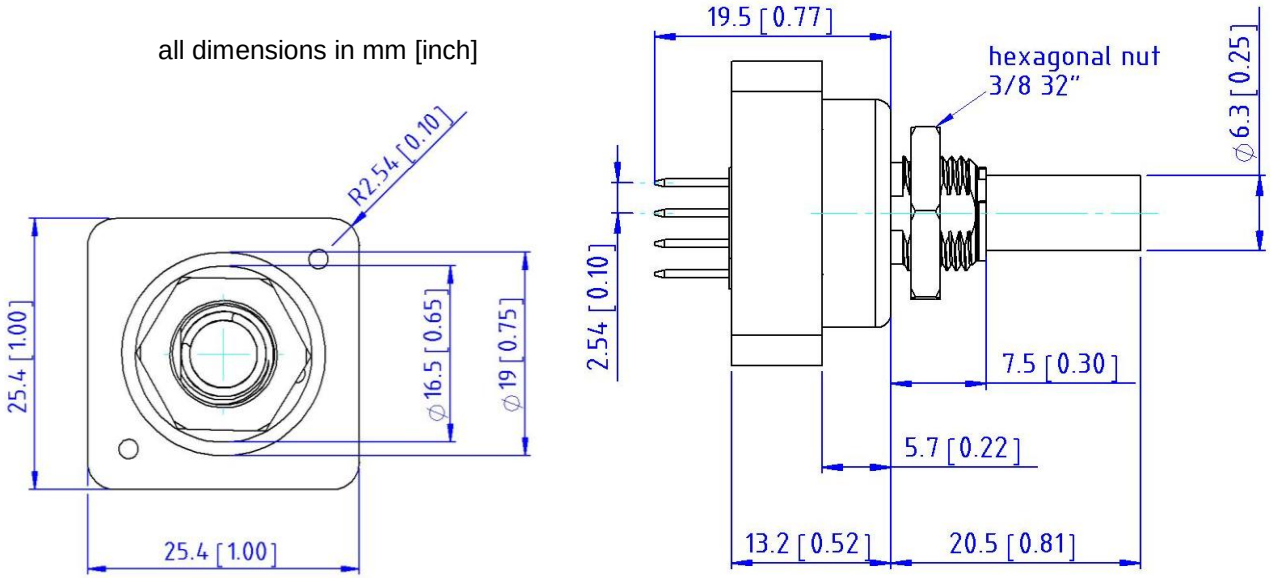

figure 1: Dimensions of the ED-19-SB-XXXX-X-X (top and side view)

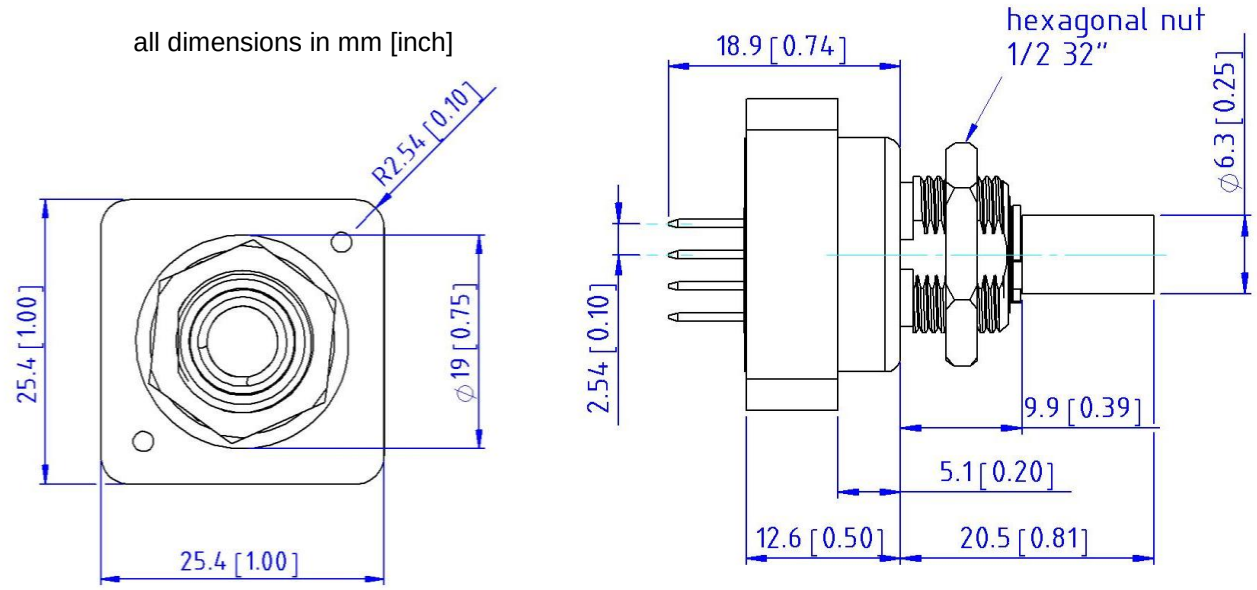

figure 2: Dimensions of the ED-19-BB-XXXX-X-X (top and side view)

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PINNING

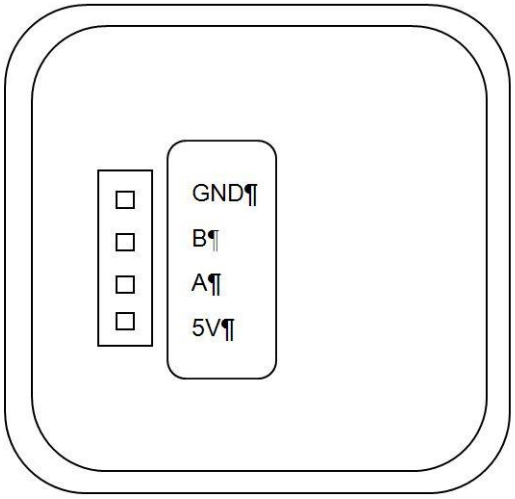
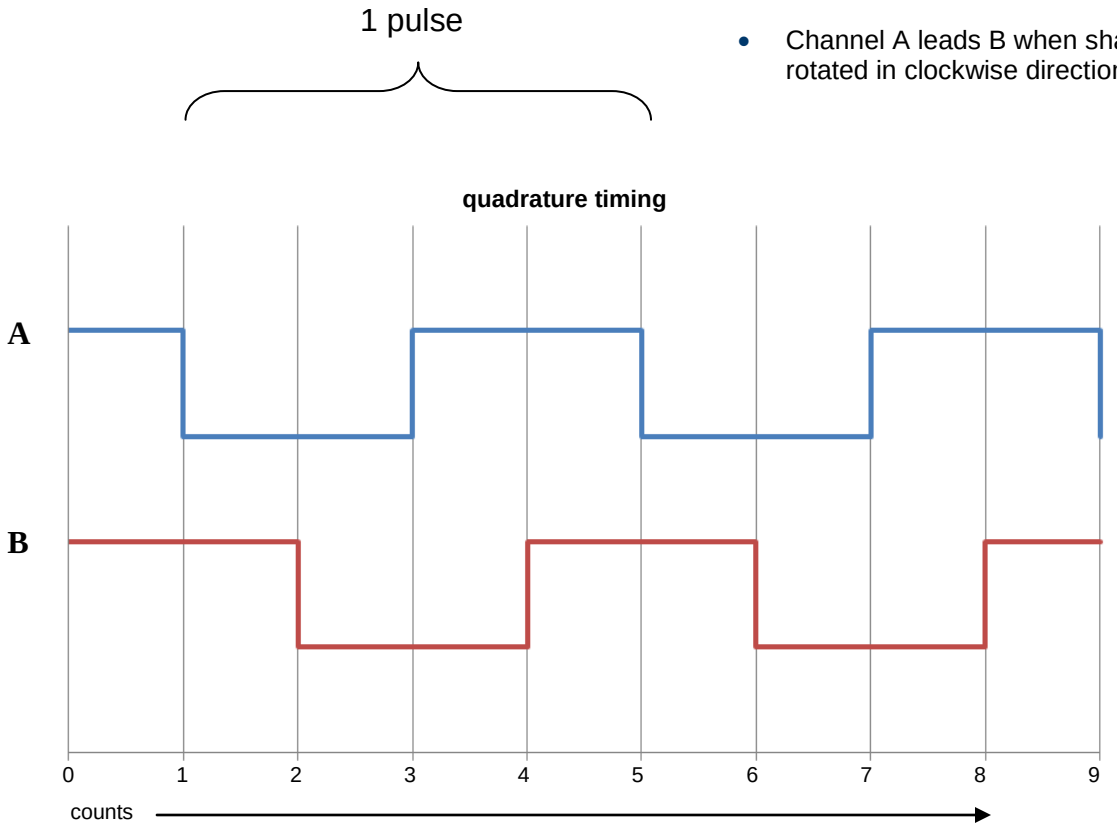


figure 3: Pinning of the ED-19-XX-XXXX-X-X (bottom view)

TYPICAL PERFORMANCE CURVES



- Channel A leads B when shaft is rotated in clockwise direction

figure 3: quadrature timing

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ENVIRONMENTAL

Vibration	MIL-STD-202F Method 204D Test Condition B
Shock	MIL-STD-202F Method 213B Test Condition C
Humidity	MIL-STD-202F Method 103B Test Condition A
Thermal Shock	MIL-STD-202F Method 107G Test Condition A
Operating Temperature	-40 to +85°C
Storage Temperature	-55 to +125°C

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ORDERING INFORMATION

PART NUMBERING: Model Number - Bearing - Standard range - Output type - Connection

ED-19-XX-XXXX-Q-P

- XX — Bearing
- XXXX — Standard range (*)
- Q — Output type
- P — Connection

Options:
P = Pin header
Q = Quadrature
0200 = 200 counts per revolution
0400 = 400 counts per revolution
SB = Sleeve bearing
BB = Ball bearing

(*) = Different ranges available, contact sales department for details

Example: ED-19-SB-0400-Q-P

Model ED-19, quadrature output with open collector, sleeve bearing, 400 counts per revolution, pin header

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