



The Electroswitch 500 Series Magnetic Encoders are built upon a contact free integrated circuit design. This encoder integrates Hall Effect sensing and digital signal processing to provide high-resolution angular measurement solutions.

An important advantage of the 500 Series is the dramatic reduction in package size to 1/2 inch, while still incorporating the performance and output options required to support the widest range of industrial and motion sensing applications.

The 500 Series design leverages its reduced part count and simplified construction to provide extremely robust, high shock and vibration resistant performance, excelling in harsh and dirty environments.

FEATURES

- **Compact, Robust, 1/2" package**
- **High Resolution Encoding up to 1024 PPR**
- **Widest Temperature Range**
- **Absolute and Incremental Outputs**
- **Zero Reference Positioning**
- **Tachometer with Direction Sensing**
- **Quadrature Code Output**
- **RoHS Compliant**
- **Contact Free Magnetic Design**
- **3.3 or 5.0 VDC Options**

BENEFITS

- **Compact Size**
- **Multiple Output Codes Allowing Simpler Integration With a Wider Variety of Receiving Devices**
- **Best Encoder Reliability**
 - **Longest Life**
 - **Excellent Performance in Harsh Environments**
- **Low Power Consumption**

APPLICATIONS

MOTOR CONTROL DEVICES

Control of motor circuits is accomplished by linking encoder to motor shaft

- Material Handling Equipment
- Machine Tools
- Conveyor Belts
- Printing Equipment
- Elevators
- Factory Automation

FLOW CONTROL DEVICES

Fluid flow can be metered by the encoder attached to displacement turbine and other styles of meters and pumps

- Manufacturing Process Controls
- Valve and Flow controls
- Fuel Pumps

AUDIO/ENTERTAINMENT

Frequency Select for Professional and High End Audio Applications

- Mixing Consoles
- High End Amplifiers
- Lighting Controls (intensity select)

AVIONICS

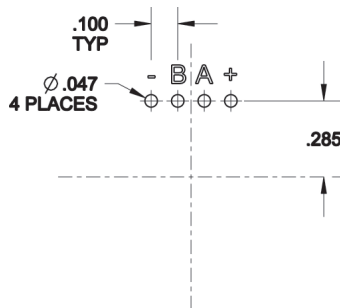
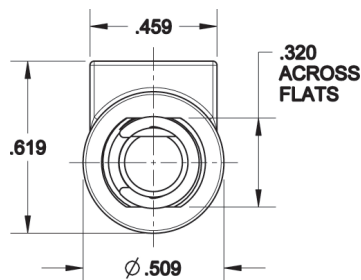
- Altitude Positioning
- Missile Firing and Guidance
- In-flight Refueling
- Auto Pilot Controls

MEDICAL

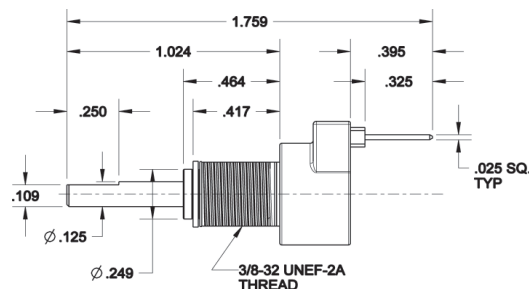
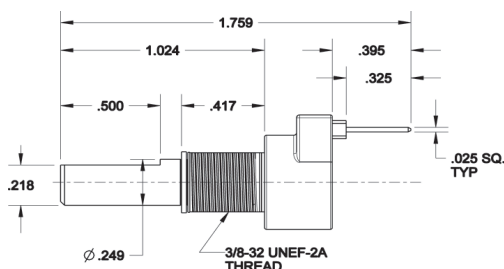
- Infusion Pump Flow
- Dispensing Equipment
- Automated Vial Sampling Equipment
- Dialysis Machines
- Ventilators

INDUSTRIAL POSITION SENSING AND POSITION CONTROL

- Off Road / Construction Equipment
- Lift Trucks
- Welding Machines



MOUNT FOOTPRINT
Quadrature Pinout Shown.
(Consult factory for Additional Pinouts)



Specifications

Electrical Specifications

Operating Voltage 4.7 to 5.7 VDC or 3.3 to 3.8 VDC
Supply Current [30 mA Max]
Logic output VCC High; 0.4 Low
Power Consumption 165mW max.

Codes:

Quadrature 32, 64, 128 or 256 PPR
Tachometer 64, 128, 256, 512 PPR (w/ direction)
Absolute 10 bit PWM (1024 PPR) *
Quadrature 32, 64, 128 or 256 PPR w/ Z channel*

Frequency [fixed] 1 μ s

Environmental Specifications

Operation Temperature -40C to +105C
Storage Temperature -55 C to +125C
Humidity MIL STD 202G Method 103B Condition A or Higher

Mechanical Specifications

Mechanical Vibration

Harmonic motion with amplitude of 15g, varied from 10 to 2000 Hz for 12 hours, per MIL STD 202G Method 204D Condition B or Higher

Mechanical Shock

100g for 6 ms half sine wave with velocity change of 12.3 ft/s, per MIL STD 202G Method 213B Condition C or Higher

Life cycles: 10M w/ sleeve bearing
Operational speed: 200 rpm max w/ sleeve bearing
Weight: 0.5 oz.

Materials:

Housing: Zinc Die Cast Alloy
Shaft: Stainless Steel
Terminal: Tin Plated

NOTE: Mounting Hardware Included

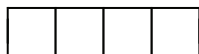
Standard Sealing: Limited Dust and Water Ingress Protection

Ordering Information

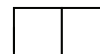
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Voltage:
5= 5 VDC

Output:
Q= Quadrature
T= Tachometer w/ direction

Resolution / PPR:
Quadrature: 0032, 0064, 0128, 0256
Tachometer 0064, 0128, 0256, 0512 (Tachometer)

Sealing:
S=Standard

Shaft Diam:
01 = .250
02 = .125

Termination:
0= Straight Pins

*Additional Options

Voltage:
3= 3.3VDC
Output:
A= Absolute (10 bit PWM)
Z= Quadrature w/ Z channel

Resolution / PPR:
Absolute: 1024
Quadrature w/ Z: 0032, 0064, 0128, 0256

Sealing:
P= Panel Seal
I=IP67

Termination:
4= 4" Cable & Connector

Example Part

505Q-0256-S010 = 500 Series Encoder, 5 volt, Quadrature, 256, no additional sealing, 1/4" diam. shaft, w/ straight pins

*Additional Options: Contact Electroswitch for Lead-times and Minimum Order Requirements

Customization can include: Modified Shaft Lengths and Flats - Cabling Options

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Electroswitch:](#)

[505Q-0256-S010](#) [505Q-0032-S010](#) [505Q-0064-S010](#) [505Q-0128-S010](#)