SERIES 63Q

High Resolution, 20mm

FEATURES

- Miniature Size, 20mm (0.787") Diameter
- Resolutions up to 1024 Lines per Revolution
- Single Ended and Differential Outputs
- 1 Billion Rotational Life Cycles
- Conductive Carbon Fiber Housing
- IP 50 Sealing
- High Noise Immunity
- Low Supply Current Requirements

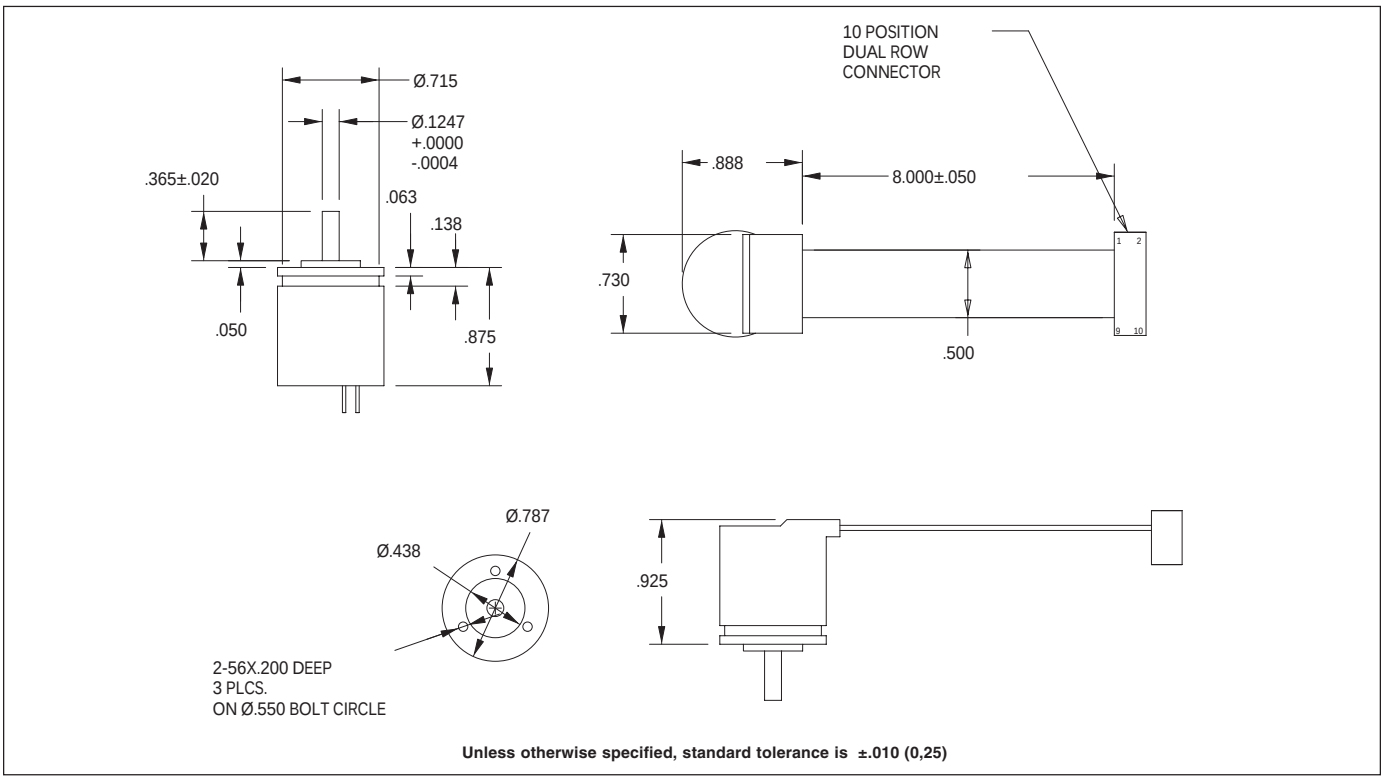
APPLICATIONS

- Steer by Wire
- Fractional Horse Power Motors
- Machine Tool Controls
- Material Handling
- Flow Meters

DESCRIPTION

The Series 63Q is intended for applications requiring high performance, high-resolution digital feedback in a very small package. It provides the resolution of larger encoder packages but in a package only 20mm (0.787") in diameter. Outputs can be configured in either single ended, open collector or internal pull-up resistor, or with an industrial standard RS422A differential line driver. The sensing scheme also embodies a much simplified encoder design, which ultimately results in longer service life, and less down time due to feedback device failure. The encoder housing is constructed of a conductive carbon fiber composite that provides the EMI shielding of an all metal housing and the performance of a lightweight robust assembly.

DIMENSIONS In inches (and millimeters)



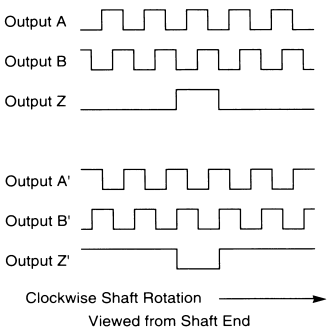
Unless otherwise specified, standard tolerance is ±.010 (0,25)

PIN WIRING, CIRCUITRY, AND WAVEFORM STANDARD

Pin Wiring

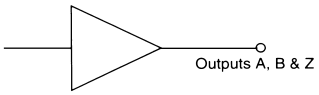
Pin #1	Common
Pin #2	+Vdc
Pin #3	Z
Pin #4	Z'
Pin #5	B
Pin #6	B'
Pin #7	A
Pin #8	A'
Pin #9	N/C
Pin #10	Case

Waveforms

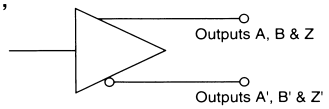


Output Circuits

TTL Output



RS422A Line Driver, OL7272 5-26VDC Line Driver



SPECIFICATIONS

Electrical Ratings

Input Voltage: 5.0 ± 5% Vdc or 5-26 Vdc
Input Current Requirements: 100 mA maximum output option 1 and 2, 50 mA maximum output option 3; plus interface loads
Ripple Current: 2% peak-to-peak @ 5 Vdc
Output Circuits: AM26LS31 RS422A line driver, OL7272 line driver, TTL
Logic Output Characteristics: Output Type: Quadrature with channel A leading channel B for CW rotation with ungated index pulse true over A and B high
Frequency Response: 200 kHz
Symmetry: 180° ±10% typical
Minimum Edge Separation: 54 electrical degrees

Mechanical Ratings

Maximum Shaft Speed: 8,000 RPM
Shaft Diameter: 0.125" (3,175)
Shaft Material: Stainless steel
Bearings: Radial ball bearing, R2 type
Radial Shaft Load: 2 lbs maximum
Axial Shaft Load: 1 lbs maximum
Housing: Carbon fiber composite (case ground via connector)
Housing Volume Resistivity: 10^{-2} ohm-cm
Termination: Two rows of 5 pins on 0.100" centers. 8" ten conductor ribbon cable with 2x5 connector
Mounting: Servo
Moment of Inertia: $9.5x10^{-6}$ oz-in-sec^2
Acceleration: $1x10^5$ radians per second^2

Environmental Ratings

Operating Temperature Range: 0 to 70°C typical; -20°C to 100°C optional (contact Grayhill for more information)
Storage Temperature Range: -40°C to 125°C
Relative Humidity: 98% non-condensing
Vibration: 20G's @ 50-500 CPS
Mechanical Shock: 50G @ 11mS duration

OPTIONS

Contact Grayhill for custom terminations, resolutions, mounting configurations, shaft couplings and configurations, and absolute positioning up to 256 positions.

ORDERING INFORMATION

63QAL-1-P

Series
Resolution: (quadrature cycles per revolution) A = 500, B = 512, C = 1000, D = 1024
Voltage: L = 5 ±5% Vdc, H = 5-26 Vdc

Termination: C = 8" cable with connector, P = pin (no cable)
Output Option: 1 = RS422A line driver; 2 = OL7272 (5-26 Vdc) line driver; 3 = TTL output

Available from your local Grayhill Component Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.