

Quantum Devices, Inc.

"Improving the Quality of Life through the Power in Light"

QPhase™

QD787 20mm (0.787") Diameter Optical Encoder

Design Features:

- Miniature Size, 20mm (0.787") Diameter
- Resolutions up to 2048 lines per revolution direct read
- Single ended and differential outputs
- Patent pending unique sensing system
- Long service life
- Conductive carbon fiber housing
- IP 50 sealing
- High noise immunity
- Low supply current requirements

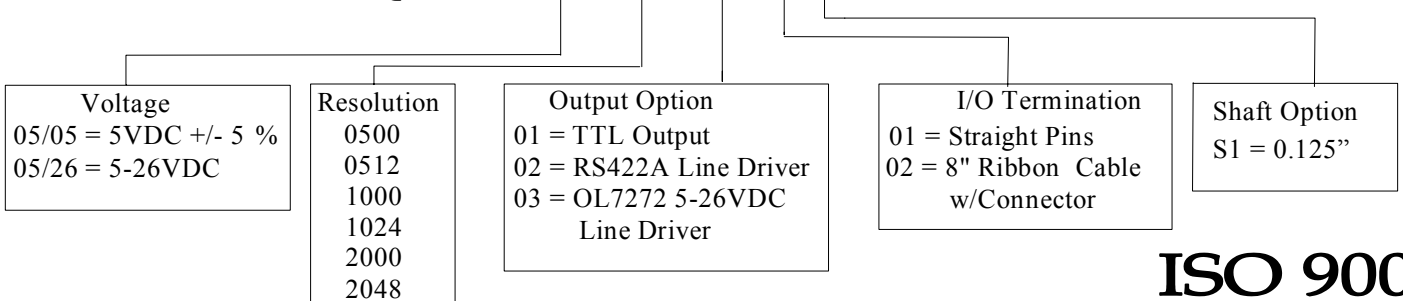


Description:

Quantum Devices, Inc. Model QD787 is intended for applications requiring high performance, high-resolution digital feedback in a very small package. The model QD787 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 RS 422A differential line driver. QDI's patent pending sensing scheme 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 performance of a lightweight robust assembly.

Ordering Information

QD787-05/05-0500-01-01-S1



ISO 9001
 CERT. NO. FM 52711

Quantum Devices, Inc. 112 Orbison St., P.O. Box 100 , Barneveld, WI 53507

Tel: (608) 924-3000 Fax: (608) 924-3007 URL: www.quantumdev.com E-mail: qdisales@quantumdev.com

Electrical Specifications

Input Voltage	5 VDC \pm 5% or 5-26 VDC
Input Current Requirements	100 mA Max. Output Option 01 & 02, 50mA Max Output Option 03; plus Interface Loads
Input Ripple	2% Peak to Peak @ 5 VDC
Output Circuits	AM26LS31 RS 422A line driver TTL Output, OL7272 Line Driver
Output Format	Quadrature with A leading B for CW rotation. Ungated Z index pulse true over A and B High
Frequency Response	200 kHz
Symmetry	180 Degrees \pm 10% Typical
Minimum Edge Separation	54 electrical degrees

Environmental Specifications

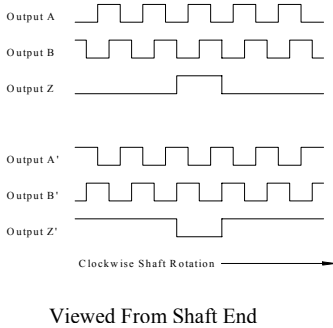
Storage Temperature	-40 to 125° C
Operating Temperature	0 to 70° C Typical -20 to 100° C Optional**
Humidity	98% Non-Condensing
Vibration	20 g's @ 50 to 500 CPS
Shock	50 g's @ 11mS Duration

Mechanical Specification

Maximum Shaft Speed	8000 RPM
Shaft Diameter	0.125"
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	9.5×10^{-6} oz-in-sec ²
Acceleration	1×10^5 Radians per Second ²

** Contact factory for more information

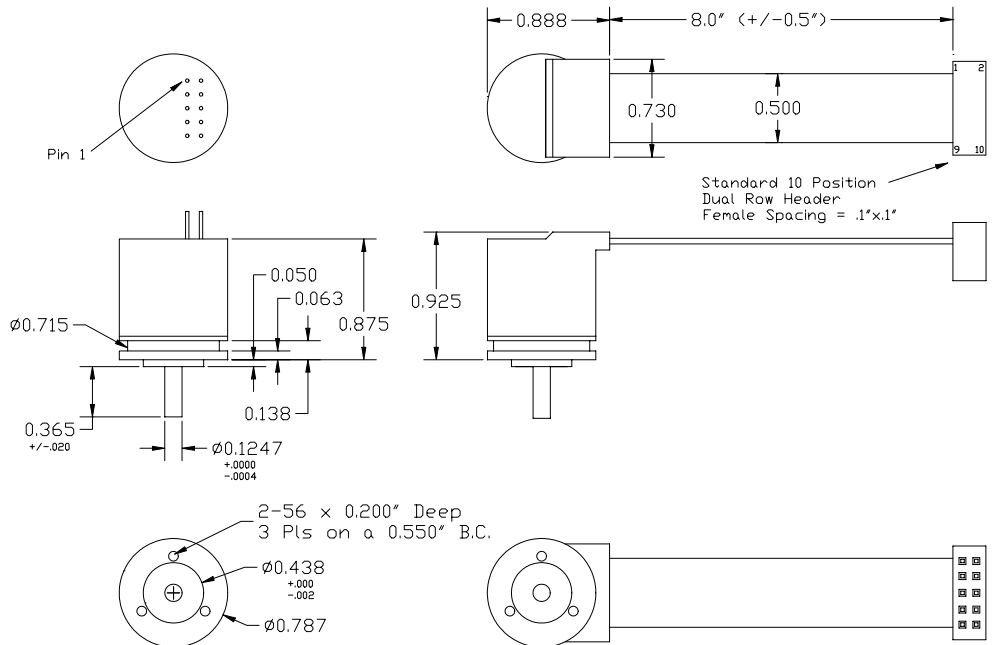
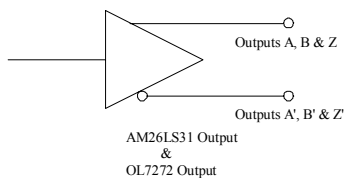
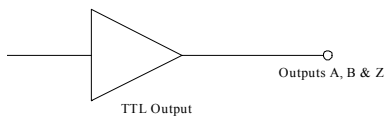
Output Waveforms



QD787 Wiring Information

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

Output Circuits



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*Quantum Devices, Inc. reserves the right to make changes in design, specifications and other information at any time without prior notice. **Rev. 020212**