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TECHNOLOGY GROUP

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Find the *Quantum Devices QD145-05/05-1000-4-01-T1-01-02* at our website: *Click HERE*

Quantum Devices, Inc.

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

QPhase™

QD145 (1.45") Diameter Optical Encoder



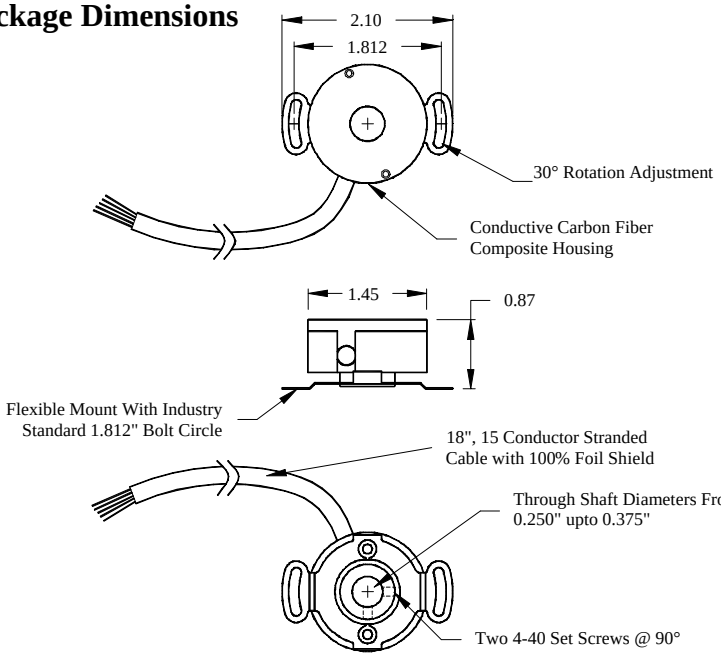
Design Features:

- Low profile, 0.87" assembled height
- Bearing design simplifies encoder attachment
- Resolutions up to 4096 lines per revolution direct read
- 4, 6 or 8 pole commutation
- Conductive carbon fiber housing
- Standard 1.812" Bolt Circle mounting
- Through shaft sizes up to 0.375" Diameter
- High Noise Immunity
- Cost Competitive with Modular Encoders

Description:

Quantum Devices, Inc. Model QD145 provides an improved feedback solution in applications typically using modular encoders. With an over all length of just only 0.87" and the stability of a bearing encoder design, the model QD145 can provide significant performance upgrades in applications limited by traditional modular encoder solutions. Outputs consist of a quadrature with reference pulse and three-phase commutation, which can be configured with either the industrial standard 5 volt RS422A Line Driver or the 5 to 26 volt OL7272 line driver. A flexible member allows for much greater tail shaft run out than can be tolerated by modular encoder designs, plus it provides 30 degrees of rotation for commutation timing. A housing constructed of conductive carbon fiber composite provides the EMI shielding of an all metal housing and the performance of a lightweight robust assembly.

Package Dimensions



Ordering Information

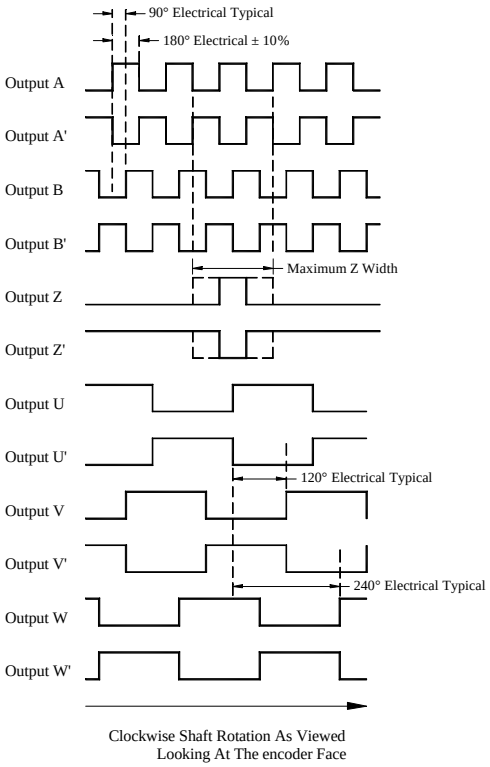
QD145-05/26-1000-6-02-T1

Voltage	*Resolution	*Motor Poles	Output Option	Through Bore Size
05/05 = 5VDC +/-5%	200 2000	4 = 4 Pole	01 = RS422A Line Driver	T1 = 0.250"
05/26 = 5-26VDC	256 2048	6 = 6 Pole	02 = OL7272 5-26VDC	T2 = 0.312"
	500 2500	8 = 8 Pole	Line Driver	T3 = 0.375"
	512 3600	0 = No Commutation	03 = TTL Output	T4 = 6mm
	1000 4096			T5 = 8mm
	1024			T6 = 10mm

ISO 9001

CERT. NO. FM 52711

Consult Factory for Resolution and Pole Count Availability.



Output Waveforms

Note: Outputs A, B & Z only for TTL Output Option

Electrical Specifications

Input Voltage	5 VDC ± 5% or 5-26 VDC
Input Current Requirements	100mA Max. Plus Interface Loads
Input Ripple	2% Peak to Peak @ 5 VDC
Output Currents	AM26LS31 RS 422A line driver OL7272 High Voltage Line Driver TTL Output
Incremental Output Format	Quadrature with A leading B for CW rotation with Index centered over A
Frequency Response	200 kHz
Symmetry	180 Degrees ± 10%
Minimum Edge Separation	54 electrical degrees
Commutation Format	Three Phase 4, 6 or 8 poles
Commutation Accuracy	± 1° mechanical

Environmental Specifications

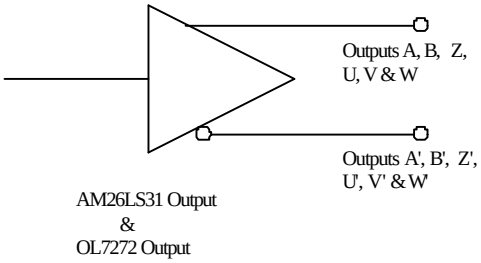
Storage Temperature	-40 to 125° C
Operating Temperature	-20 to 100° C Typical -20 to 120° C Optional**
Humidity	98% Non-Condensing
Vibration	20 g's @ 50 to 500 CPS
Shock	50 g's @ 11mS Duration

Mechanical Specification

Maximum Shaft Speed	8000 RPM
Through Shaft Diameter	0.250", 0.3125", 0.375", 6mm, 8mm, 10mm
Radial Shaft Movement	0.007"
Axial Shaft Movement	± 0.030"
Housing	Carbon Fiber Composite (case ground via cable)
Housing Volume Resistivity	10^{-2} ohm-cm
Termination	15 conductor Cable, 28 AWG 18" long
Mounting	1.812" Bolt Circle
Moment of Inertia	1.5×10^{-4} oz-in-S^2
Acceleration	$1x10^5$ Radians/S^2
Accuracy	.8 arc minutes

** Contact Factory for more information

Output Circuits



Note: TTL Output Option consists of +VDC, Common, Case Ground and Output's A, B & Z wires only

QD145 Wiring Diagram

Red -+VDC
Black – Common
Brown – Output A
White – Output A´
Blue – Output B
Green – Output B´
Orange – Output Z
Yellow – Output Z´
Violet – Output U
Gray – Output U´
Brown/White – Output V
Red/White – Output V´
Orange/White – Output W
Yellow/White – Output W´
Black/White – Case Ground
Drain Wire – Cable Shield

For more information contact…

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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.

Revision date Oct. 3, 2000

ISO 9001
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