

Encoder Innovations



Better Design, Better Performance...

Sensor

The effective sensing area of the A/B incremental channels on the Quantum Devices encoder is larger than most Competitor's ASIC designs. Moreover, the larger A/B array and larger A/B disc tracks yield well over two times the allowable disc runout (TIR) in the Quantum Devices design – that is, the radial distance the disc can travel before it is not aligned with the photodiode.

The Quantum Devices sensor also has an larger commutation sensing area, produced by the combination of diodes and tracks size. The Quantum Devices commutation channels are created by three large tracks allowing or obstructing the light from view by the commutation photodiodes. This is in contrast to the very small commutation disc openings on Competitor's Encoders.

Overall, the larger effective sensing areas across all three channels (incremental, index and commutation) allows for an increased immunity to contamination as well as larger analog signals; this translates to a better signal to noise ratio. The significantly greater allowance for runout across all three channels affords greater flexibility in overall product design.





Light Source

The light source used in all Quantum Devices Encoders is a Light Emitting Diode (LED). The Quantum Devices LED is hermetically sealed with a TO-46 high reliability welded metal package and a glass lens. The metal can acts as a heat sink for the LED, the glass lens provides a consistent and reliable collimation of light, and the welded package ensures the LED is protected in a controlled environment.



QM35

38mm Diameter, Up to 1MHz Frequency Response, Low Profile 11mm Height, High Noise Immunity, -30 to 115°C, Full Complement Output, RoHS

Part Number: M - Resolution - Commutation - Output - Cover - Bore - Mounting - Index - Hardware

Resolution: Comm 256, 360, 500, 512, 0 = N 1000, 1024, 2000, 4 = 4 2048, 2500, 4000, 6 = 6 4096, 5000, 5120, 8 = 8 8000, 8192 10 =	Immutation: = No Comm 12 = 12 pole = 4 Pole 14 = 14 pole = 6 Pole 16 = 16 pole = 8 Pole 18 = 18 pole = 10 Pole 20 = 20 pole	Output: A = Line Driver (All Outputs) B = Line Driver (ABZ) / Open Collector (UVW) C = Dual Votage Line Driver (ABZ)/ Open Collector (UVW)	Cover: A = Hole in Cover B = Closed Cover (shaft < .512") C = Closed Cover (shaft < .450")	Bore: C = 5mm D = 6mm E = 8mm K = .1875" L = .250" M = .3125" N = .375"	Mounting: A = 1.280" B = 1.812"	Index: A = 90° A & B High B = 90° A & B Low	Hardware: See Specifcation Sheet for Selection
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Quantum Devices has been manufacturing optical encoders for over 30 years and has its roots in the semicondutor industry. This background in photo optics forged the path toward the creation of the patented design for the heart of our encoders, an interlaced photo diode. We design and manufacture all of our own sensors in our Class 1000 cleanroom. In this same vein, we have intentionally become vertically integrated to control quality, cost and our supply chain. Injection molding, machining, PCB assembly and precision assembly are a few of the internal processes we do in Barneveld, WI USA. This gives us the advantage to react quickly to our customers' ever changing encoder demands.

Quantum Devices offers a full range of transmissive incremental encoders. Our encoders are used in industrial and commercial motion control, including medical equipment, industrial automation, and autonomous mobile robots (AMR).

Please contact us with any questions, applications or customs at qdisales@quantumdev.com

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