

Quantic BEI

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With over 60 years of industry experience, Quantic BEI is the leading manufacturer of optical encoders, two-axis optical scanners and accelerometers. Critical missions call for advanced precision technology, and Quantic BEI has built a legacy of high-performance products that can withstand the most extreme environments. Headquartered in Maumelle, Arkansas, the company has perfected its craft and dutifully serves military and aerospace segments.

Through methodical development and testing, the company has released components that boast self-calibration, radiation tolerance and industry-leading resolution. Also, units are available in sizes and configurations to meet specific project needs. Land, sea or air, Quantic BEI offers the optimum technology solution for motion sensing and controls. Quantic BEI's optical encoder offerings include housed or unhoused (kit), absolute or incremental, and single-turn or multiturn sensors for any motion-control application. Its proprietary manufacturing processes and test systems deliver accuracy, resolution and production versatility unmatched in today's precision optical encoder market.

Trusted military experts rely on Quantic BEI position feedback solutions for tank turret positioning, carrier landing aids, radar systems, infrared and laser scanners, navigation equipment, fire control systems and fast-response optics. From Bradley and Stryker combat vehicles to Abrams tanks and Next-Generation Combat Vehicles, it has designed precision encoders with potential obstacles in mind.

Quantic BEI products for aviation systems include sensors for pilot controls, advanced optics, valve actuators, pumps and blowers, and

the advanced servo controls required for test systems and training centers. Major defense programs have long depended on these products for their durability in the field.

There is a reason the majority of optical encoders in orbit were manufactured by Quantic BEI. In aerospace applications, they perform leagues above the competition. Quantic BEI's LED-equipped

"pancake" encoders designed for the 1974 NASA space shuttle have reliably helped position the remote manipulator arm on many successful ventures. With a long list of legendary missions, including the Orbiting Astronomical Observatory, Galileo deep-space probe, Hubble Space Telescope and Synchronous Meteorological Satellites, Quantic BEI has proven its ability to excel despite the most challenging conditions. Many of the optical encoders flying in space are either entirely custom or a modification of a Quantic BEI standard design. All Quantic BEI's products are available for customization to meet performance or interface requirements.

Committed from the initial customer contact, Quantic BEI engineers' total involvement begins by formulating customer requirements and continues through design, manufacturing, testing, installation, training, maintenance and field support. To verify performance on high-resolution optical encoders, Quantic BEI tests them with one of its two 29-bit resolution test position tables. Accurate to less than 0.1 arc seconds RMS, these tables set the industry standard for full rotation accuracy. Quantic BEI has built many



position/rate tables over the years for customers and for its own encoder testing.

Quantic BEI engineers pride themselves on their ability to work with customers in a collaborative atmosphere to develop optimum solutions. Their product design expertise blends science and know-how in essential disciplines such as optics, digital and analog electronics, magnetics, metrology, mathematics and computer science. The quality and reliability department ensures that every component meets or exceeds stringent military requirements.

Quantic BEI's technological leadership is the result of being there right from the start. It has searched for newer, better ways to improve its products and found technological solutions before the questions are even asked. Quantic BEI was built on the guiding principles of integrity and excellence. The company has developed a comprehensive family of components and subsystems, plus custom engineering capabilities to create special solutions when no standard ones will do. With a supportive team that values problem-solving and building partnerships, it has demonstrated quality beyond compare in the industry.

Quantic BEI optical encoders, inset, are a component of U.S. Army M1 Abrams tanks.

U.S. ARMY/SPC. ANDREW MCNEIL. INSET: QUANTIC BEI