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Find the *Keysight / Agilent E1711A* at our website: *Click HERE*

The Agilent E1711A Sensor Head is designed for use in high-performance linear and angular encoder systems. When combined with an Agilent scale axis board and an appropriate scale, it forms an encoder with sub-nanometer linear / nanoradian angular resolution. These encoders are ideally suited for high-resolution metrology and precision positioning applications such as hard disk servo-track writing and precision stages.

The Agilent E1711A uses a near-infrared laser diode and a proprietary 90-element photodetector array to interferometrically read the scale. Multiple scale lines are imaged onto the detector to provide immunity to contamination and imperfections in the scale. The optical design makes the measurement insensitive to air turbulence and other atmospheric effects, as well as to variations in the wavelength of the emitted laser radiation.

The output of the Agilent E1711A is a three-phase signal of extremely accurate sine waves. The phases are matched in amplitude and offset to allow a high degree of interpolation without loss of accuracy.

The illuminating laser beam and the read optics are pre-aligned with reference to the E1711A mounting feet and two precision tooling holes machined into the back of the sensor head. This enables rapid installation without need for individual adjustment to achieve the needed system alignment.

- Extremely pure output signals for deep interpolation and high resolution
- Proprietary optical design for immunity to environmental errors
- Mechanically-referenced optics and wide tolerances for easy installation
- Laser Output - Wavelength: 785 nm (nominal), Power: 3 mW maximum
- Electrical Outputs (signal type): Sine wave, three phases 120°apart
- Installation Requirements (relative to the scale)
- Standoff: 20.2 mm ± 0.1 mm. Standoff is defined as the distance from the Sensor Head mounting surface, i.e. the back of the sensor head, to the front surface of the scale
- Pitch/Roll/Yaw: 0 degrees ± 0.25 degrees
- Scale Requirements - Pitch: 10 µm; duty cycle: 50%mark:space, and reflectivity: > 70% @ 785 nm
- Power Requirements - +5 Vdc @ < 200 mA, -5 Vdc @ < 90 mA
- Operating Temperature: 15 - 40°C
- Size - 61 mm x 33 mm x 17.2 mm (2.40 in x 1.30 in x 0.68 in)
- Weight: 65.5 g

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