MA900

Fully Differential, Magnetic Digital Angle Sensor with Stray-Field Immunity



The MA900 is a contactless, precision, magnetic absolute angle position sensor. The angle is extracted from the magnetic field differences at several locations on the sensor IC. This differential method eliminates the contribution of parasitic magnetic field and is well-suited for sensors positioned at the end-of-shaft with a simple target magnet. For fast data acquisition and processing, the MA900 provides accurate angle measurements at speeds from 0rpm to more than 100,000rpm.

The MA900 features magnetic field strength detection with configurable thresholds to sense the magnet proximity, which can be used to sense the knob's axial position or for diagnostics.

On-chip non-volatile memory (NVM) provides storage for setting parameters, such as the reference zero angle position, ABZ encoder settings, and configuration of UVW emulation.

The MA900 is available in a QFN-16 (3mmx3mm) package.

Features & Benefits

- Absolute Angle Encoder
- ±0.02° RMS Noise at 3kHz Bandwidth
- Robust Against Parasitic Stray Fields Exceeding 4kA/m DC or 5mT
- Zero Lag
- Serial Peripheral Interface (SPI) or I^2C Serial Interface for Digital Angle Readout and Chip Configuration
- ABZ Quadrature Encoder Interface with Configurable Pulses-per-Turn (PPT)
- UVW Interface with 1-to-8 Pole Pair Emulation
- Configurable Magnetic Field Strength Detection for Diagnostic Checks
- Dedicated Push-Button Interface
- 5V or 3.3V Supply
- 12mA Operating Current
- -40°C to +150°C Operating Temperature
- Available in a QFN-16 (3mmx3mm) Package with Wettable Flanks

Active Part Numbers:

MA900GQE-S-0000-Z MA900GQE-S-0000-P MA900GQE-S-xxxx-Z MA900GQE-S-xxxx-P
MA900GQE-C-0000-Z MA900GQE-C-0000-P MA900GQE-C-xxxx-Z MA900GQE-C-xxxx-P

Part numbers ending in P and Z are the same parts. P and Z only indicates reel size.

