

A5000: DIGITAL OUTPUT HIGH PRECISION MEMS AHRS ATTITUDE SENSOR



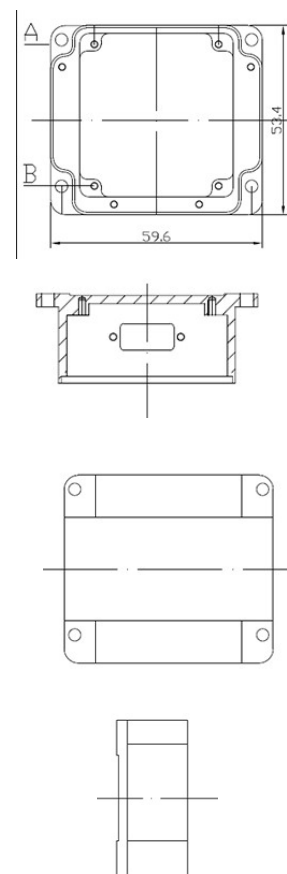
■ PRODUCT DESCRIPTION

The A5000 sensor, launched by MXMW HIGH-TECH Company, is a high-precision strapdown Attitude Heading Reference System (AHRS), with built-in high-precision accelerometers, gyroscopes, and magnetometers. Through multi-sensor fusion algorithms, it provides reliable heading angle, roll angle, pitch angle, angular velocity, acceleration, and other information for the motion carrier. The attitude data deviation is estimated through a 6-state Kalman filter with appropriate gain, which is suitable for navigation, positioning, and dynamic attitude measurement of unmanned vehicles.

■ PRODUCT MAIN SPECIFICATION

| Main parameter | Indication | Unit |
|---------------------------------------|--------------------------------|-------------|
| Attitude angles | | |
| Heading angle | 0.2 | ° RMS |
| Pitch/Roll angle | 0,2 | ° RMS |
| Attitude ranges | | |
| Pitch | ±180 | ° RMS |
| Roll | ±90 | ° RMS |
| Gyroscope | | |
| Measurement range (can be customized) | ±100 | °/s |
| Angle random walk | 0.09 | °/√h |
| Linear scale factor | 0.08 | %FS |
| Zero bias stability (In-Run) | 3 | °/h (Allan) |
| Zero bias repeatability (In-Run) | 3 | °/h(Allan) |
| Accelerometer | | |
| Measurement range (can be customized) | ±10/±20/±40 | g |
| Angle random walk | 0.03 | (m/s)/√h |
| Linear scale factor | 0.1 | %FS |
| Zero bias stability (In-Run) | 0.03 | mg |
| Zero bias repeatability (In-Run) | 0.08 | mg |
| Magnetometer | | |
| Measurement range (can be customized) | ±8 | Gauss |
| Electrical indicators | | |
| Data output interface | RS422 | |
| Data update frequency | 100 | Hz |
| Voltage | DC 5±0.3 | V |
| Power consumption | <0.6 | W |
| Environment | | |
| Operating temperature | -20~+85 | °C |
| Storage temperature | -40~+85 | °C |
| Anti-vibration | 10 | g |
| Impact resistance | 150 | g@15ms |
| Mechanical properties | | |
| Waterproof level | IP67 | |
| Dimension | 59.6*59*23.5mm | |
| Weight | 120g (excluding packaging box) | |

■ PRODUCT DIMENSION



■ PRODUCT APPLICATION

- Autonomous mining or coal vehicles or machines
- Industry automation
- Robotics
- Autonomous agriculture vehicle or machines
- Communication in moving system
- Automated guided vehicle (AGV)
- Unmanned aerial vehicles (UAV)
- Unmanned surface vehicle (USV)
- Engineering dump trucks