

LPMS-NAV3



LPMS Waterproof 6-axis Motion Sensor / IMU with high precision heading measurement

LPMS-NAV3 is a high performance miniature inertial measurement unit (IMU) with multiple communication interfaces. The sensor uses a combination of 3-axis accelerometer/gyroscope and a high-accuracy single axis gyroscope to calculate accurate relative heading information. The sensor is contained in a rugged, IP67-rated aluminium enclosure. We created this unit especially with automotive, mobile robotics and automatic guided vehicle (AGV) application cases in mind.

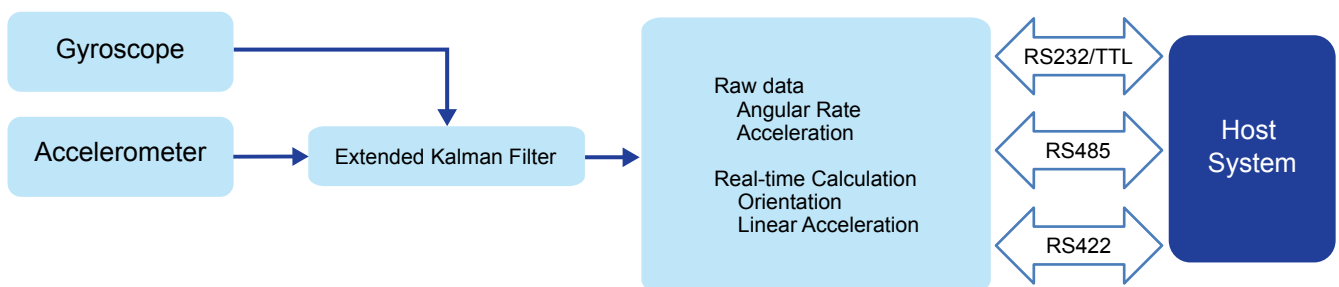


Key Features

- MEMS miniature inertial measurement unit (IMU)
- Integration of 3-axis gyroscope, accelerometer and an additional single axis ultra-low-noise gyroscope for yaw angle calculation
- Precise heading data output
- Data output rates of up to 500Hz
- IP67-rated waterproof enclosure
- Available interface: TTL, RS232, RS422, RS485
- Ideal for autonomous navigation applications

Applications

- AGV/AMR navigation
- Automatic dead reckoning
- SLAM applications

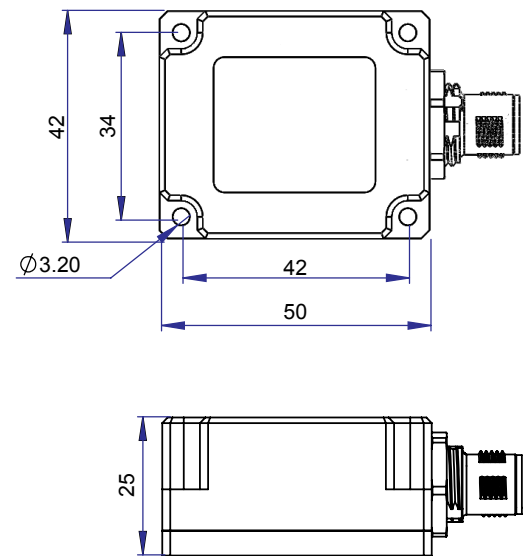


Sensor Specifications

Sensor Model	LPMS-NAV3-TTL / RS232 / RS422 / RS485
Dimensions	50x42x25mm
Weight	74g
Communication Interfaces	TTL / RS232 / RS422 / RS485
Max. Baudrate	TTL/RS232: 921.6Kbps, RS422/485: 230400Kbps
Communication Protocol	LP-BUS
Orientation Range	Roll: $\pm 180^\circ$; Pitch: $\pm 90^\circ$; Yaw: $\pm 180^\circ$
Resolution	0.01°
Accuracy	< 0.5° (Static), < 2°RMS (Dynamic)
Accelerometer	3-axis, $\pm 2 / \pm 4 / \pm 8 / \pm 16$ g, 16bits
Gyroscope	XY-axis, $\pm 125 / \pm 250 / \pm 500 / \pm 1000 / \pm 2000$ dps / ± 4000 dps, 16bits Z-axis ± 400 dps, 24bits
Data Output Format	Raw & Calibrated data, Euler Angle, Quaternion, Linear Acceleration
Data Output Rate	500Hz
Current Draw	~7mA @ 12V
Power Supply	5V ~36V DC
Connector	SACC-DSI-MS-5CON-PG 9/0,5 SCO,M12
Case Material	IP67 rated aluminum alloy
Operating Temperature	-40~+80°C
Software & Driver	LpmsControl2 interface software (Windows), Open source sensor driver for Windows and Linux (OpenZen, supports C, C++, Python, C#, Unity, ROS)



Mechanical Drawing



Package

- LPMS-NAV3 Sensor x 1
- User guide card x1
- Cable x1
- Box x1
- Warranty (1 Year)



Interface Software

