

LPMS-CANAL2



9-Axis Inertial Measurement Unit (IMU) / AHRS with CAN Connectivity with an IP67-Rated Enclosure

The LP-Research Motion Sensor LPMS-CANAL version 2, the latest revision of LPMS-CANAL series, is an inertial measurement unit (IMU) / attitude and heading reference system (AHRS) in a dustproof and waterproof (IP67) enclosure. The unit is very versatile, performing accurate, high-speed orientation measurements. By the use of three separate MEMS sensors (3-axis gyroscope, 3-axis accelerometer and 3-axis magnetometer) low-drift, low-latency orientation data around all three axes is achieved.

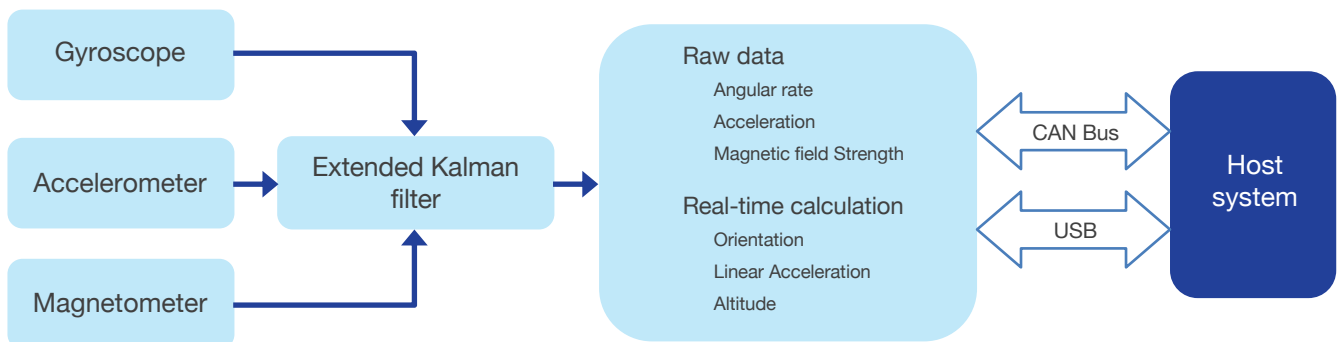


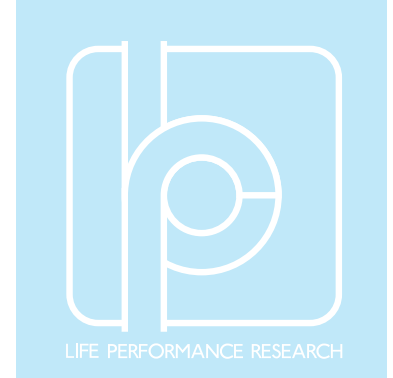
Key Features

- MEMS-based miniature 3D inertial measurement unit (IMU)
- Integration of 3-axis gyroscope, accelerometer, magnetometer, temperature and barometric pressure sensor in one unit
- IP67-rated dustproof and waterproof enclosure
- Real-time, on-device calculation of sensor orientation, linear acceleration and altitude
- Data output rates of up to 400Hz
- USB interface and CAN bus communication
- CANopen protocol support (subset)
- Control application and SDK for Windows, Linux

Applications

- Robotic manipulator forward kinematics control
- Automotive dead reckoning
- Object orientation tracking for VR/AR
- Automatic guided vehicle (AGV) navigation

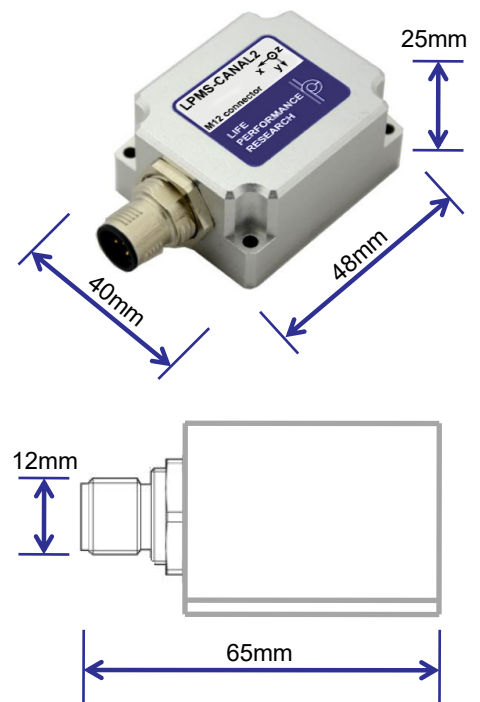




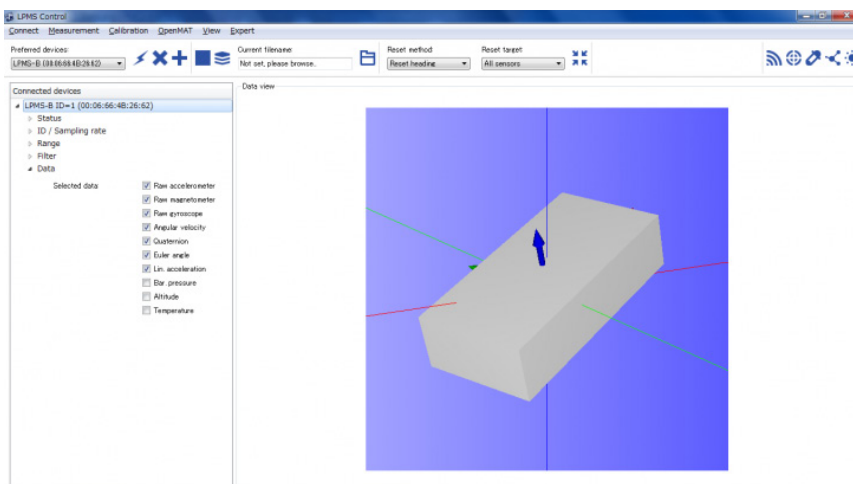
Sensor Specifications

Wired interface	USB	CAN Bus
Max. baudrate	921.6Kbit/s	1Mbit/s
Communication protocol	LP-BUS	LP-CAN / CANopen
Size	48 × 40 × 25 mm	
Weight	66.2g	
Orientation range	Roll: ±180°; Pitch: ±90°; Yaw: ±180°;	
Resolution	< 0.01°	
Accuracy	< 0.5° (static), < 2° RMS (dynamic)	
Accelerometer	3-axis, ±2 / ±4 / ±8 / ±16 g, 16 bits	
Gyroscope	3-axis, ±125 / ±245 / ±500 / ±1000 / ±2000 dps, 16 bits	
Static orientation stability	9 °/hour	
Gyroscope noise density	0.007 dps/√Hz	
Magnetometer	3-axis, ±4 / ±8 / ±12 / ±16 gauss, 16 bits	
Pressure sensor	300-1100 hPa	
Data output format	Raw data / Euler angle / Quaternion	
Data output rate	up to 400Hz	
Power consumption	< 155 mW @ 3.3V	
Power supply	5 V ~15 V DC	
Connector	SACC-DSI-MS-5CON-PG 9/0,5 SCO, M12	
Enclosure	Aluminum, IP67-rated	
Temperature range	- 40 ~ +80°C	
Software	C++ library for Windows, LpmsControl software and Open Motion Analysis Toolkit (OpenMAT) for Windows.	

Mechanical Drawing



LpmsControl Utility Software



Package

- LPMS-CANAL2 sensor x 1
- User guide card x 1
- Cable x 1
- Box x 1
- Warranty (1 year)