



IMU330RA-H

ASIL-B, Automotive Grade 6DOF IMU



The ACEINNA IMU330RA-H is an easy-to-use high-performance 6-DOF automotive grade inertial measurement unit and enclosed with durable and sealed metal housing at IP67 level. The IMU330RA-H features a 3-Axis Accelerometer and a 3-Axis Rate Gyroscope for excellent accuracy and reliability. It supports CAN(FD) communication interface. The IMU330RA-H has been developed in accordance with the ISO26262:2018 Functional Safety standard, and fulfills the requirements of ASIL-B.

IMU330RA-H – Automotive Grade 6DOF IMU

The ACEINNA IMU330RA-H is designed for use in high volume automotive Level 3 autonomous vehicles and ADAS systems requiring calibrated inertial measurement data. The IMU330RA-H combines high-performance 6DOF IMU functionality with the durable and sealed metal packaging to meet the challenging performance, reliability and cost requirements of the automotive market.

Applications

- Autonomous Vehicles
- Self-Driving Taxis/Delivery Vehicles
- ADAS systems
- Precise Localization



Features

- Automotive Qualified Components– AEC-Q
- ASIL-B assessment by ACEINNA
- Calibrated 3 axis MEMS Accelerometer with ± 6 g full scale range
- Calibrated 3 axis MEMS Angular Rate sensor with ± 300 dps full scale range
- CAN(FD) communication interface
- IP67, durable, sealed metal package.
- Wide Operating Temp Range, -40°C to $+105^{\circ}\text{C}$

This product has been developed exclusively for commercial applications. It has not been tested for, and makes no representation or warranty as to conformance with any military specifications or its suitability for any military application or end-use. Additionally, any use of this product for nuclear, chemical or biological weapons, or weapons research, or for any use in missiles, rockets, and/or UAV's of 300km or greater range, or any other activity prohibited by the Export Administration Regulations, is expressly prohibited without the written consent and without obtaining appropriate US export license(s) when required by US law. Diversion contrary to U.S. law is prohibited. Specifications are subject to change without notice.

Technical Characteristics

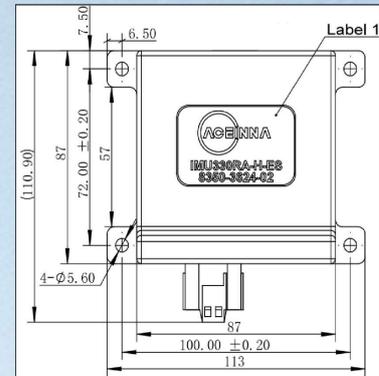
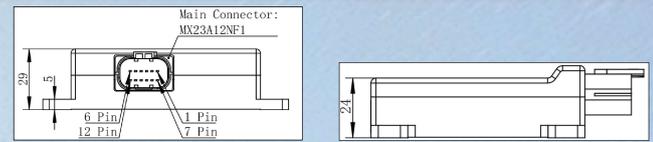
Ta = 25°C, VDC = 12V, unless otherwise stated

Ready-to Use Algorithms	Outputs		
IMU	Calibrated Accel, Gyro		
Angular Rate	MIN	TYP ²	MAX
Range (°/s)	-300		300
Bias Instability (°/hr) ¹		1.4	
Bias Stability over Temp (°/s)		0.2	
Scale Factor Error (%FSR)		0.1	
Angle Random Walk (°/√hr) ¹		0.1	
Cross-Axis Error (%FSR)		0.1	
Nonlinearity (%FSR) ³		0.1	
Acceleration	MIN	TYP ²	MAX
Range (g)	-6		6
Bias Instability (μg) ¹		20	
Bias Stability over Temp (mg)		1.7	
Scale Factor error (%FSR)		0.1	
Velocity Random Walk (m/s/√hr) ¹		0.03	
Cross Axis Error (%FSR)		0.1	
Nonlinearity (%FSR) ³		0.1	
Electrical	MIN	TYP	MAX
Input Voltage (V)	9	12	16
Current Consumption (mA)		100	
Interface	CAN(FD)		
Output Data Rate	10	100	1000
Environment			
Calibrated Temperature (°C)	-40 °C to 85°C		
Operating Temperature (°C)	-40 °C to 105°C		
Storage Temperature (°C)	-40 °C to 105°C		
Physical			
Size (mm)	113 x 110.9 x 29		
Weight (g)	227		
Interface Connector	MX23A12NF1(JAE)		

Note 1: Allan variance curve, constant temperature

Note 2: Typical values are 1 sigma values unless otherwise noted

Note 3: Best line straight fit



EVALUATION KIT HARDWARE

- Evaluation Kit Includes an IMU330RA-H and interface cable.

EVALUATION SOFTWARE

- IMU330RA-H software provides an easy-to-use graphical interface to configure, display, record, playback, and analyze all the IMU330RA-H system parameters.

Ordering Information

Part Ordering Information	
Model Number	Description
IMU330RA-H	Automotive Grade (ASIL B): Contact ACEINNA
IMU330RA-H EVK	IMU330RA-H with Cable