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.

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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°C

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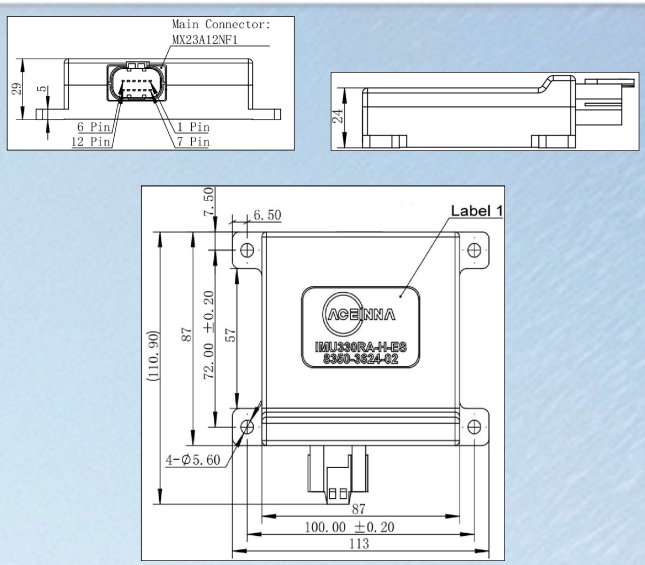
Technical Characteristics

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**