

MICRO-MINIATURE INERTIAL NAVIGATION SYSTEM

FEATURES

- Extended Kalman Filter
- Low Power and Cost Effective
- High performance MEMS gyro
- Miniature in size
- Weight: 80 gms
- Qualified to MIL-STD-810G
- Accepts External Aiding Data
- Supports Multi-Constellation



APPLICATIONS

- Drone and UAV Navigation
- Autonomous Control and ADAS
- Autopilot
- Unmanned Ground Vehicles (UGV)

DESCRIPTION

Aeron's Pollux 2 is a family of highly compact MEMS-based Inertial Navigation Systems. The system runs a Extended Kalman Filter (EKF) offering near-tactical performance and providing the best estimates of navigation parameters including position, velocities, attitude, and heading. PLX2-NS10 features tri-axial MEMS solid state accelerometers, tri-axial gyroscopes, tri-axial magnetometer for heading measurement and an integrated multi-constellation GNSS.

Pollux 2 is a miniature INS that is low-powered and can fit in applications where size is a constraint. Due to its small size, it can be used in UAVs, UGVs, and other unmanned systems for navigation and control applications.

This strap-down system is very well suited for applications requiring precise positioning and is designed to perform in highly dynamic situations. The device can control aerial and ground vehicles by using its precise attitude, heading, and position information. Aeron's PLX2-NS10 inertial navigation system gives an output refresh rate of 100 Hz and can be interfaced over a serial or USB port making data acquisition and analysis easy.



TECHNICAL SPECIFICATIONS

Parameter Name	Parameter Value		
	POLLUX 2		
	NS10		
	Parameter Value	Unit	Precondition
Acceleration			
Range	±16	g	
Bias Stability	3	mg	Repeatability
Angular Rate			
Range ⁴	±250/500/1000/2000	°/s	-
Bias Instability	3	°/hr	Short term/AV*
Magnetometer			
Range	±8	guass	-
Position / Velocity Accuracy			
Horizontal Position ¹	1.5	m	CEP with GNSS
Vertical Position ¹	2	m	CEP with GNSS
Velocity ¹	0.1	m/s	RMS ³
Attitude			
Roll Range	±180	deg	-
Pitch Range	±90	deg	-
Roll, Pitch Accuracy	0.1 (static), 0.2 (dynamic)	deg	RMS
Heading Range	±180	deg	-
Heading Accuracy	<0.3	deg	RMS with GNSS in dynamic conditions ¹
	<0.5		RMS with magnetometer ²
Angle Resolution	0.01	deg	-
GPS / GNSS			
Type	GPS L1, GLONASS, Galileo, BeiDou, NavIC		
Cold Start	37	seconds	-
Barometer			
Range	300 - 1200	hPa	-
Accuracy	±0.5	hPa	-
Electrical			
Input Voltage	5 to 28	V DC	-
Power Consumption	<2	W	-
Communication			
Update rate	Up to 100	Hz	(Navigation Data)
	Up to 400		(IMU Data)
Outputs	Euler Angles (Yaw, Pitch, Roll), Quaternion, Position, Velocity, Acceleration, Angular Rate and Time	-	-
Interface	RS232, RS422, USB and 1PPS	-	-
Data Format	Binary and ASCII NMEA	-	-
Physical and Environmental			
Weight	~ 80	gms	-
Size	45 (L) x 45 (W) x 20 (H)	mm	-
Operating Temperature	-40 to +71	°C	-
Storage Temperature	-40 to +85	°C	-
IP Protection	IP65	-	-
Environmental Test	MIL-STD-810G	-	-

1 - Under good GNSS availability

2 - After magnetic calibration for Hard Iron and Soft Iron disturbances, and in static magnetic field

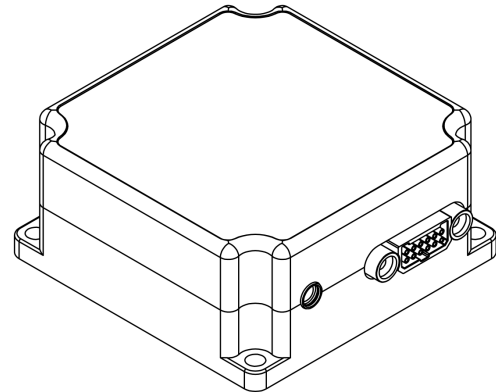
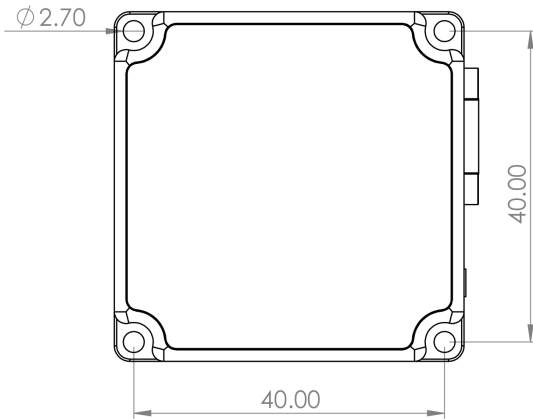
3 - 50% at 30 m/s for dynamic operation

4 - 1000°/s and 2000°/s rate range will be configurable on demand.

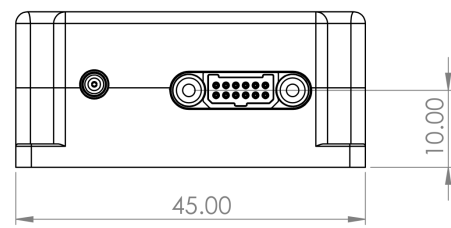
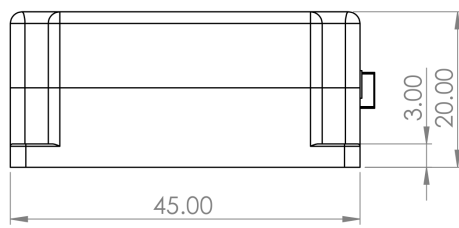
* - Short Term / Allan Variance

MECHANICAL DIMENSIONS

All the dimensions in mm.



ISOMETRIC VIEW FOR REFERENCE



ORDERING INFORMATION

PLX2 - NS10 (Product code: 17004)