

## MICRO-MINIATURE INERTIAL NAVIGATION SYSTEM

### FEATURES

- Extended Kalman Filter
- Shock Survival up to 40 g
- Low Power and Cost Effective
- High performance MEMS gyro
- CAN Interface
- Miniature size
- Weight: 80 gms
- MIL-STD-810 compliant

### APPLICATIONS

- Autonomous Ground Vehicles (AGV)
- Unmanned Ground Vehicles (UGV)
- Driverless Tractors
- Autonomous Control and ADAS
- Precision Agriculture
- Smart off-road Vehicles
- Autonomous Navigation and Tracking

### DESCRIPTION

Aeron's Micro-miniature Pollux 2 INS is a family of extremely compact Inertial Navigation Systems. The systems run extended kalman filter offering near tactical performance providing best estimates of navigation parameters including position, velocities, attitude and heading. Pollux 2 features tri-axial MEMS solid state accelerometers, tri-axial gyroscopes, magnetometer for heading measurement and an integrated multi-constellation GNSS.

PLX2-NS30 has a compact size, high performance and comes with CAN interface making it suitable for autonomous ground vehicles, driverless tractors, robots and UGV applications. The PLX2-NS30 model (Product Code: 17006) offers 2 m CEP position accuracy and 0.2 m/s velocity accuracy.

PLX2 - NS30



MADE IN INDIA

Datasheet Ver. 1.0.3, Oct 2020

**TECHNICAL SPECIFICATIONS**

Parameter Name	Parameter Value
	PLX2 NS30
<b>Acceleration</b>	
Range	±16 g
<b>Angular Rate</b>	
Range	±450 °/s
<b>Magnetometer</b>	
Range	±8 gauss
<b>Position / Velocity Accuracy</b>	
Horizontal Position <sup>1</sup>	2 m CEP with GNSS 1.5 m CEP with SBAS
Vertical Position <sup>1</sup>	5 m (1σ) with GNSS
Velocity <sup>1</sup>	0.2 m/s RMS
<b>Attitude</b>	
Roll Range	±180°
Pitch Range	±90°
Roll, Pitch Accuracy	0.1° RMS (static), 0.2° RMS (dynamic)
Heading Range	±180°
Heading Accuracy	<0.3° RMS with GNSS in dynamic conditions <sup>1</sup> <0.5° RMS with magnetometer <sup>2,3</sup>
Angle Resolution	0.01°
<b>GPS / GNSS</b>	
Type	72 Channels - GPS/QZSS L1, GLONASS L1OF, Galileo E1B/C, BeiDou B1, SBAS L1
Cold Start	26 s
<b>Barometer</b>	
Range	300 - 1200 hPa
Accuracy	±0.5 hPa
<b>Electrical</b>	
Input Voltage	5 V to 28 V DC
Power Consumption	<2 W
<b>Communication</b>	
Update rate	Up to 50 Hz (Navigation Data) Up to 200 Hz (IMU Data)
Outputs	Euler Angles (Yaw, Pitch, Roll), Quaternion, Position, Velocity, Acceleration, Angular Rate and Time
Interface	RS232, CAN (CAN Open), USB and 1PPS
Serial Protocol	ASCII NMEA, Binary
<b>Physical and Environmental</b>	
Weight	~ 80 gms
Size	45 mm (L) x 45 mm (W) x 20 mm (H)
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Survival Shock	40 g
Operating Vibration	0.04 g <sup>2</sup> /Hz
IP Protection	IP65

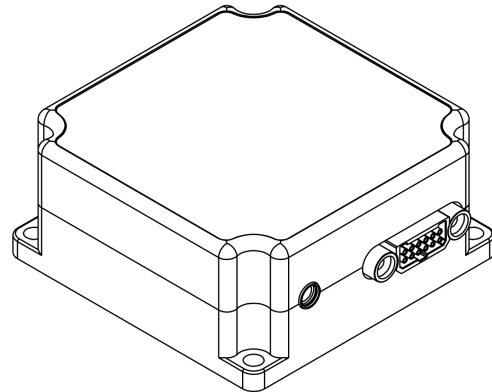
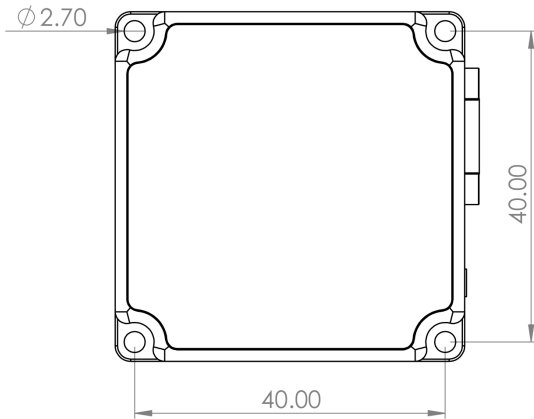
1 - Under good GNSS availability

2 - Accuracy after magnetic calibration and setting correct declination / offset angle

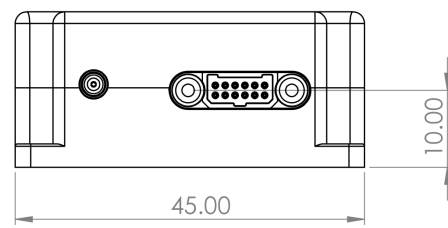
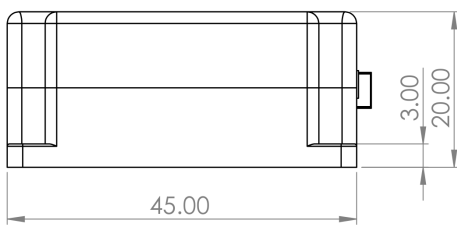
3 - After magnetic calibration for Hard Iron and Soft Iron disturbances, and in static magnetic field

## MECHANICAL DIMENSIONS

All dimensions in mm.



ISOMETRIC VIEW FOR REFERENCE



## ORDERING INFORMATION

PLX2 - NS30 (Product code: 17006)