

CLIP-A Specifications



Performance

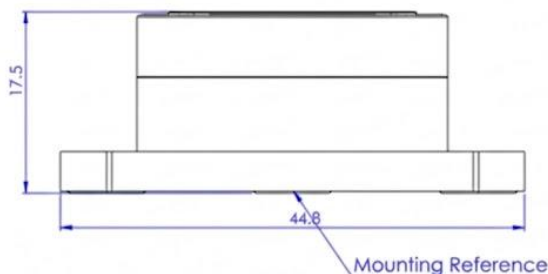
- Specific flexibility with on-demand customization of measurement ranges across all axes.
- Cost to effective solution.

Key features

- Withstands extreme physical shocks and harsh environmental conditions
- Precision Heading Magnetic north and barometric altitude tracking
- Dynamic Stabilization High-bandwidth line-of sight payload control

Key apps

- Missile guidance and artificial horizon reference
- Flight control for UAVs, drones, and aircraft
- Dynamic platform and payload stabilization



System Overview

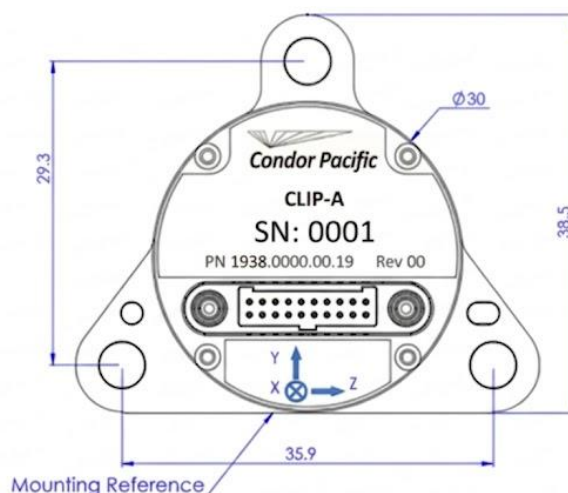
Evolving from Condor Pacific's battle-proven and widely integrated CLIP family, the new CLIP-A introduces a miniature, high-performance Attitude and Heading Reference System (AHRS).

This 13-axis sensor fusion solution upgrades the core architecture by integrating a precision 3-axis gyroscope, configurable 6-axis accelerometer (multiple range option), advanced 3-axis fluxgate magnetometer, and 1-axis pressure altimeter, delivering continuous, accurate orientation and heading data in dynamic environments.

System & Operating Parameters

Optimized for minimal payload impact, the CLIP-A features an ultra-compact footprint and a low-power (at 3.3–5V). It ensures immediate system readiness with a rapid start-up time of just 0.3 seconds.

To accommodate diverse host systems, it offers highly flexible integration through a configurable UART RS422 interface (SPI opt.), easily supporting high-speed baud rates up to 1.25 MHz and data sampling up to 2 KHz.



CLIP-A Specifications

| Inertial Measurement Unit (IMU) Sensor Outputs | | | | |
|------------------------------------------------|-----------------------|-----------------------|--------------|------|
| Parameter | Gyroscope | Accelerometer | Magnetometer | Note |
| Range | ±300 °/sec | ±90 g | ±2 mT | Opt. |
| Resolution | 2e-12 °/sec | 2e-15 g | <0.1 nT | Opt. |
| Bias Over | | | | |
| Temperature (OTR) | 0.05 °/sec | 1 mg | -- | (1σ) |
| Random Walk | 0.16 °/√Hr | 0.05 (m/s)/√h | 1.5 nT/√Hz | (1σ) |
| In Run Bias Stability | 9 °/Hr max | 0.03 mg | -- | (1σ) |
| Scale Factor Error (OTR) | 150 ppm | 150 ppm | -- | (1σ) |
| G-Sensitivity | 4 °/ Hr /g | -- | -- | (1σ) |
| Vibration Rectification | 1 °/Hr/g ² | 0.01mg/g ² | -- | (1σ) |
| Axis Misalignment | 1 mrad | 1 mrad | 1 mrad | Max |
| Bandwidth | 200 Hz | 400 Hz | -- | -3dB |
| Pressure Altimeter | | | | |
| Parameter | Values | | Note | |
| Range | 10 to 1200 mbar | | Operating | |
| Altitude Resolution | ~20 cm (0.024 mbar) | | Opt. | |
| Long Term Stability | ±1 mbar/yr | | (1σ) | |

| Environments Tests | | |
|-----------------------------------------|---------------------------------------|------------------------------------------------------|
| Parameter | Values | Standard |
| High Operating Temperature | +80°C | MIL-STD-810H, METHOD 501.7 |
| High Non – Operating Temperature | +85°C | MIL-STD-810H, METHOD 501.7 |
| Low Operating Temperature | -40°C | MIL-STD-810H, METHOD 502.7 |
| Low Non – Operating Temperature | -55°C | MIL-STD-810H, METHOD 502.7 |
| Transportation | 4.4 g RMS | MIL-STD-810H, method 514.8 |
| Vibration random | 15 g RMS | MIL-STD-810H, method 514.8 |
| Linear Acceleration all axis | 60 g± | MIL-STD-810H, METHOD 513.8 Procedure II (centrifuge) |
| Shock | 1000 g SRS | MIL-STD-810H, METHOD 516.8 |
| Mechanical shock | 60 g | MIL-STD-810H, METHOD 516.8 |
| Altitude | 105Kft, 131Kft, 184Kft @-30°C & +60°C | MIL-STD-810H, METHOD 500.6 |
| Acoustic Noise | Up to 20 kHz | Full damping |
| Humidity | 95% @ +30 to 50°C | MIL-STD-810H, METHOD 507.6 |
| He sensitivity | Non | |
| EMI | 200 V/m | RS 103 (MIL-STD 461 G, 12M-18G Hz) |
| | Aircraft external | RE 102 (MIL-STD 461 G, 12M-18G Hz) |



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