

Micro INS®



Micro INS® for experimental aircraft – all the options you want in one smaller package.

The Micro INS is an advanced integrated inertial sensor suite that offers complete and accurate flight data for experimental aircraft.

Weighing only 4 oz. and with a volume of 4.5 x 2 x 1 cu-in. the Micro INS meets demanding environmental requirements for shock, vibration, temperature and humidity.

The Micro INS uses highly reliable MEMS sensors, including accelerometers, rate gyros, magnetometer, air data pressure sensors, along with a differential ready, WAAS-enabled GPS receiver.

The suite includes all of the analog and digital I/O interface hardware required to accommodate a variety of vehicle configurations and EFIS systems. Once you receive the Micro INS, your aircraft is flight ready within 24 hours.

The Micro INS offers much more than purely gravity based AHRS systems. The embedded Kalman filter factors data from multiple sensors, providing a complete and accurate picture even in GPS denied conditions and dynamic flight environments.

KEY BENEFITS

- › Accurate roll, pitch, heading in dynamic environments and sustained turns
- › Solid-state sensors
- › Continues to perform in GPS outage conditions
- › Auto magnetometer calibration
- › Installs easily anywhere in the aircraft
- › Utilizes core technology with over 600,000 flight hours
- › Optimum performance and value
- › Product documentation and customer support

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Micro INS® provides seamless data for primary, secondary, stand-by and multifunction display systems.

- Attitude
- Heading
- Altitude
- Air speed
- Vertical speed
- Indicated air speed
- True air speed
- Ground speed
- Angular rates
- Accelerometer
- Baro setting
- Lat/long
- Aiding sensor health monitoring
- Magnetometer



SPECIFICATIONS

INS/GPS performance

Update rate	100 Hz standard
Start-up time	10 sec (initial attitude); 1 min (full alignment)
Altitude range	-1,000 ft to 50,000 ft
Altitude accuracy	45 ft at S.L., <200 ft at 40,000 ft altitude
Lat/long position accuracy	GPS C/A code; differential ready, WAAS-enabled
GPS antenna power	5 V
Airspeed accuracy	<2 knots @ 40 knots, <1 knot @ 60 knots
Maximum airspeed	200 knots standard, up to 400 knots optional

IMU performance

Maximum angular rates	+/- 200°/s
Maximum g range	+/-8 g

Attitude heading accuracy (1 sigma) with GPS

Pitch/roll accuracy	0.2°
Heading accuracy	0.6° *

Extended GPS outage

Pitch/roll accuracy	0.6° *
Heading accuracy	1° *

*Using adequate external magnetic field measurement.

Position and Velocity Accuracies with GPS Aiding

Horizontal velocity accuracy ²	0.1 m/sec rms in each direction
Vertical velocity accuracy ²	0.15 m/sec rms
Horizontal position accuracy ²	2.5 m CEP ³ typical standalone 2.0 m CEP typical with SBAS or local area DGPS ⁴

3D position accuracy²

5.0 m SEP⁵ typical standalone
3.0 m SEP typical with SBAS
or local area DGPS⁴

2. When operating with GPS aiding (in Modes 1, 2 or 5) from a C/A code receiver.
3. CEP = Circular Error Probable. The radius of a horizontal circle, centered at the antenna's true position, containing 50% of the fixes.
4. Depends on the accuracy of the correction data of the DPGS or SBAS service.
5. SEP = Spherical Error Probable. The radius of the sphere, centered at the true position, contains 50% of the fixes.

Overview

Size	4.5 x 2 x 1 in
Weight	0.25 lbs
Enclosure	Aluminum
Power	3.5 W (nominal) @ 9-18 VDC

Environmental

Operating temperature	-40 to 70°C
Non-operating temperature	-54 to 85°C
Operating vibration/shock	MIL-STD-810
Humidity	95%, non-condensing

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Building trust every day.

Rockwell Collins delivers smart communication and aviation electronic solutions to customers worldwide. Backed by a global network of service and support, we stand committed to putting technology and practical innovation to work for you whenever and wherever you need us. In this way, working together, we build trust. Every day.

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