Honeywell

GYRO COMPASSING AHRS FAMILY

Gyro Compassing AHRS Family

Industry Challenges

The industry is challenged with providing higher performance inertial attitude and heading referenced products to meet the growing marketplace needs at a reasonable price. Growing needs in the area of RNP AR approaches, fly-by-wire flight control systems, stability to support high bandwidth SATCOMs, Head-Up-Display, Synthetic and Combined Vision systems. The industry is also looking for a solution that eliminates magnetometers, which need periodic recalibration and can cause heading splits in the cockpit.

Honeywell's Response

Honeywell provides a family of gyro compassing AHRS to meet the growing need of the industry that were designed to serve both fixed and rotary wing applications. This technology based on the de-facto industry standard Laseref VI IRU with lower performance gyro compassing sensors, called the Super AHRS family.

The Super AHRS family of products provides capabilities to support HUD, SVS, CVS, L Band SATCOM systems. Options include on-aircraft data loading capability and integration with GNSS to provide a blended AHRS/GNSS high integrity solution that has the ability to coast integrity during GNSS denied scenarios.

Honeywell Gyro Compassing AHRS provides:

- Super AHRS–a standard gyrocompassing AHRS product that is data load capable on the aircraft with hybrid GPS/inertial outputs
- Select AHRS–an AHR S without GPS that provides additional inertial signals used for HUD applications.
- Enhanced AHRS–an AHRS with all inertial signals,navigation position and velocity signals, and the added benefit of providing a GNSS/inertial blended high integrity solution that has the capability to coast in GNSS denied environments.

Why Honeywell?

Honeywell's Gyro Compassing Sensors deliver:

- *The same form factor, installation methods and connector as Laseref VI IRS, therefore easily upgradable when missionization requires an IRS.*
- *Proven high reliability and lowest cost of ownership with actual MTBF exceeding 50,000 Flight Hours demonstrated.*
- *Flexible installation with customizable filters and lever arms.*

	SELECT AHRS (HG2112)	ENHANCED AHRS (HG2113)
Position	Not Available	2 nm / 15 minutes R95 <5Hrs 40 nm R95 upto 18 Hrs
Ground Speed	18 kts R95, Flight duration <12 hours	14 knots R95
True Heading	0.6 degrees	0.6 degrees
Pitch / Roll Angle	0.14 degrees	0.14 degrees
Attitude Rates	0.02 deg/sec or 0.5% of output, whichever is greater	0.02 deg/sec or 0.5% of output, whichever is greater
Body Accelerations	0.005 Gs or 0.5% of output, whichever is greater	0.005 Gs or 0.5% of output, whichever is greater
Hybrid True Heading	Not Available	0.6 degrees
Hybrid Position	Not Available	25 Meters
Hybrid Altitude	Not Available	150 feet
Certification	DO-178B Level A, DO-254 Level A	DO-178B Level A, DO-254 Level A
TSO	C3e, C4c, C5f, C6e	C201 and C196b
Reliability	Demonstrated >50000 Flight Hrs	Demonstrated >50000 Flight Hrs
Size (Maximum)	6.450 in x6.540 in x 6.300 in (L,W,H)	6.450 in x 6.540 in x 6.300 in (L,W,H)

	SELECT AHRS (HG2112)	ENHANCED AHRS (HG2113)
Weight	**AHRU:** 9.30 lbs (4.2Kg) **Tray:** 0.550 lbs (249.48g) **APM:**3.20 ounce (90.7g)	**AHRU:** 9.30 lbs (4.2Kg) **Tray:** 0.550 lbs (249.48g) **APM:**3.20 ounce (90.7g)
Power	20 W Typical	20 W Typical
Cooling	Passive Cooling	Passive Cooling
Interfaces	4 ARINC 429 Outputs 7 ARINC 429 Inputs (GPS, ADR,FMS) 2 RS-422 GPS Receiver Time mark inputs	4 ARINC 429 Outputs 7 ARINC 429 Inputs (GPS, ADR,FMS) 2 RS-422 GPS Receiver Time mark inputs
Coasting Performance (95%)	Not Available	Time for loss Satellites 10 Minutes 525 ft (160 meters) 20 Minutes 1607.7 ft (490 meters) 30 Minutes 3018.5 ft(920 meters) 60 Minutes 5905.8 ft (1800 meters)
Coasting Performance (Integrity)	Not Available	DO-316 Appendix R; RNP AR 0.1 nm 100% availability

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