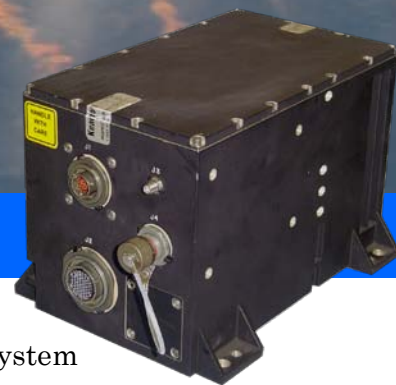




KN-4074E/EB Airborne SAASM INS/GPS



KN-4074E/EB was designed as a small and lightweight Navigation System for the Unmanned Air Vehicles (UAV) and Manned Aircraft markets.

Featuring Kearfott's T-16B Monolithic Ring Laser Gyro (MRLG) and accelerometer triad the KN-4074E/EB inertial sensors are tightly coupled with an embedded SAASM P(Y) Code GPS to give best performance in its class. RQ-4B Global Hawk and MQ-4C BAMS UAVs use two KN-4074E/EB's (each) as their prime navigators and input providers to the flight control systems.

KN-4074E/EB Main Features and Capabilities:

- SAASM P(Y) and C/A Code GPS
- C/A Code DGPS Corrections (requires DGPS receiver)
- Inputs:
 - Air Data: Baro Altitude
- Navigation Outputs:
 - Position and Altitude
 - Ground Speed
 - True Heading, Roll and Pitch
 - Magnetic Heading
- Flight Control Outputs:
 - Angular rates ($\Delta\theta$)
 - Linear Accelerations (Δv)
- Communication Interfaces:
 - MIL-STD-1553B (Muxbus), RS-422 and RS-232
- Recalibration NOT required

Navigation Performance*

	P(Y) GPS	With C/A DGPS
Position Accuracy (CEP)	2 m (6.4 ft)	1 m (3.2 ft)
Altitude Accuracy (1 σ)	4 m (13 ft)	2 m (6.4 ft)
Heading Accuracy (1 σ)	1 mrad	1 mrad
Pitch/Roll Accuracy (1 σ)	0.5 mrad	0.5 mrad
Velocity Accuracy (1 σ), each axis	0.05 m/s (0.2 ft/s)	0.05 m/s (0.2 ft/s)

* Performance may vary according to application

KN-4074E/EB System Characteristics

Modes of Operation:	<ul style="list-style-type: none"> • Hybrid INS/GPS Navigation: <ul style="list-style-type: none"> – GPS Data is Tightly Coupled with Inertial Measurements – When keyed GPS operates in P(Y) Code and when not keyed operates in C/A Code – DGPS Corrections are applied when available from an external DGPS Receiver (via RTCM-104) • Free Inertial: <ul style="list-style-type: none"> – Baro Altitude is incorporated in the Vertical Loop in absence of valid GPS data • Alignment: <ul style="list-style-type: none"> – Ground Alignment (Self Gyro Compassing) – In-Air Initialization
Embedded GPS:	<ul style="list-style-type: none"> • SAASM 24 Channels P(Y) Code Receiver, all in view • Time Mark: 1 PPS (UTC), 2 signals • Keys Zeroize Command: External Discrete and I/O Message • Supports 5 VDC Active GPS Antenna
Operating Range:	<ul style="list-style-type: none"> • Attitude: Unlimited • Angular Rate: Up to 400 deg/sec. (all axis) • Acceleration: Up to 30g's (all axis), IMU • Altitude: Up to 70,000 ft.
Environmental:	<ul style="list-style-type: none"> • Temperature : -45°C to +71°C • EMI/RFI: per MIL-STD-461E • Shock and Vibration: per MIL-STD-810E/F
Data Communication:	<ul style="list-style-type: none"> • MIL-STD-1553B Muxbus: 1 Dual Redundant RT Channel • RS-422: 1 Channel • RS-232: 1 Channel
Power:	28 VDC per MIL-STD-704
Cooling:	Free Convection
Weight:	10 lb. (4.5 Kg)
Dimensions:	9.1 (L) x 5.4 (W) x 6.0" (H) (231 x 137 x 152 mm)

Note: The KN-4074/E INS/GPS has been granted the NAVSTAR Global Positioning System Joint Program Office Security Approval

This datasheet is for reference only, Specifications are subject to change

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