

Atlans A7

Navigation grade INS
for land and air georeferencing
applications

Atlans A7 is a high performance all-in-one position & orientation system for both land and air applications. It benefits from smart coupling techniques between Exail Inertial Navigation Systems (INS) based on FOG (Fiber-Optic Gyroscope) and Septentrio GNSS receiver embedded. Atlans A7 is a robust and cost-effective north-finding inertial navigation solution that provides continuous data even in the most challenging applications.



FEATURES & BENEFITS

- Simplified integration with its all-in-one housing and single GNSS antenna setup
- Predefined vehicle modes: plane, car, train
- North-finding even in GNSS-denied environment
- Dynamic alignment with GNSS
- INS/GNSS smart coupling
- Compatible with Exail Delph INS post-processing software
- ROS driver available
- 24/7 worldwide technical assistance
- Free of ITAR Component

APPLICATIONS

- Asset management
- Land mobile mapping
- Aerial mobile mapping
- Pavement condition survey
- Tunnel mapping
- Railway survey
- Vehicle control and guidance
- Autonomous vehicles
- Ground truth
- Automotive
- Precision pointing

TECHNICAL SPECIFICATIONS

Performance⁽¹⁾ | LAND APPLICATIONS (WITH DMI)

With GNSS

Correction type	SPS / Natural	SBAS	RTK*	PPK**
Position Horizontal (X,Y) (m)	1.200	0.600	0.006 + 0.5 ppm	0.006 + 0.5 ppm
Position Vertical (Z) (m)	1.900	0.800	0.010 + 1 ppm	0.010 + 1 ppm
Heading (deg)	0.050	0.030	0.015	0.012
Roll & Pitch (deg)	0.020	0.015	0.008	0.005

During GNSS outage (1 min / 2 min)

Correction type	SPS / Natural	SBAS	RTK*	PPK**
Horizontal position drift (m)	0.70 / 1.40	0.70 / 1.40	0.40 / 0.80	0.08 / 0.20
Vertical position drift (m)	0.50 / 1.00	0.50 / 1.00	0.40 / 0.80	0.06 / 0.15

AIR APPLICATIONS

With GNSS

Correction type	SPS / Natural	SBAS	RTK*	PPK**
Position Horizontal (X,Y) (m)	1.200	0.600	0.006 + 0.5 ppm	0.006 + 0.5 ppm
Position Vertical (Z) (m)	1.900	0.800	0.010 + 1 ppm	0.010 + 1 ppm
Heading (deg)	0.050	0.030	0.015	0.012
Roll & Pitch (deg)	0.020	0.015	0.008	0.005
Heading drift 10min straight line (deg)	0.008	0.008	0.008	0.008

During GNSS outage (1 min / 2 min)

Correction type	SPS / Natural	SBAS	RTK*	PPK**
Horizontal position drift (m)	1.80 / 3.60	1.80 / 3.60	1.10 / 2.20	0.15 / 0.50
Vertical position drift (m)	1.00 / 2.00	1.00 / 2.00	0.60 / 1.20	0.10 / 0.30

Characteristics

Weight	2.9 kg
Material	Aluminium
Dimensions (L x W x H)	160 mm x 160 mm x 113 mm
Power supply / consumption	24VDC (12 – 33V) / <22W
Operating temperature	-20°C to 55°C
Storage temperature	-40°C to 80°C
Logging capacity	48 hours (INS and GNSS data)
MTBF	Environmental 100,000 hours
Standard	IP 66
GNSS supported signals	GPS (L1, L2, L3, L5), GLONASS (L1, L2, L3), GALILEO (E1, E5a, E5b, AltBOC, E6), BEIDOU (B1, B2, B3), SBAS (EGNOS, WAAS, GAGAN, MSAS, SDCM) (L1, L5), IRNSS (L5), QZSS (L1, L2, L3, L5, L6)
RTCM Support	RTCM v2.2, 2.3, 3.0, 3.1 – NTRIP

Interfaces

Data output rate	0.1 Hz to 200 Hz
Latency	< 3ms
Serial	RS422 or RS232
Ethernet	UDP / TCP Client / TCP server
Inputs / outputs	Configurable 2i / 2o – predefined 2o – configuration port
Pulses	3i + PPS in*** / 2o + PPS out
Options & accessories	DMI (odometer) Delph INS (post processing software)
GNSS interface embedded	
Serial or Ethernet link to the embedded GNSS	

(1) Typical RMS performance

* RTK: Real-Time Kinematic, up to 40km from base stations

** PPK: Post processing Kinematic using Delph INS post-processing software (smart coupling of INS with GNSS in forward/backward)

*** PPS input for <100µs time synchronisation

All specifications subject to change without notice