FREEFLIGHT SYSTEMS

WAAS/GPS SENSOR SYSTEMS

FREEFLIGHT SYSTEMS FAMILY OF WAAS/GPS SENSORS PROVIDE A HIGHLY COST EFFECTIVE WAY TO ADD GPS CAPABILITY TO ANY AIRCRAFT - AND PROVIDE GLOBAL ADS-B AND OTHER NEXTGEN CAPABILITIES

The global airspace system is transitioning from Ground Radar based air traffic management (ATM) to Satellite or Space Based ATM. The FreeFlight Family of WAAS GPS receivers provide all of the data that aircraft need to operate in these new ATM environments.

Whether you need an ADS-B position source that is approved for all ICAO Jurisdictions, a timing source for Datalinks such as CPDLC, or a data source for your TAWS system, we have a low cost, high performance Sensor that will meet your needs.

For light aircraft, the Model 1201 12 Channel Sensor provides a compact, lightweight package with a straightforward RS-232 interface through a D-Sub connector. As with all of our GPS sensors, there are no pilot controls. Once the unit is installed and configured to your aircraft it starts outputting data as soon as power is applied. The 1201 has been in service for many years as an approved ADS-B position source and as a TAWS position sensor on multiple platforms. The 1201 has the proud distinction of being the first WAAS GPS receiver to receive FAA TSO Authorization, and had been the position source on multiple ADS-B "firsts".

For mid size aircraft such as VLJ's we offer the model 1204 – it uses the same high performance 12 Channel GPS engine as the 1201 with a more robust package, and it sports a high performance circular connector. The data output is in the more robust RS-422 format, allowing longer aircraft cable runs.

1203C Product Model

1201 Product Model

Our flagship GPS Sensor is the model 1203C. Designed for Business, Airline Transport and heavy rotary wing aircraft, this unit contains a high performance 15 Channel GPS Engine, with improved interference protection and faster update rates than its small aircraft cousins. The unit is housed in a sealed, environmentally robust package (ARINC 743A Alternative Mounting Scheme) allowing it to be located either in

WAAS/GPS SENSOR SYSTEMS – 1201, 1203C, 1204

the aircraft equipment bay or under the aircraft skin - close to the antenna location to minimize expensive coaxial cable runs. The data interface makes the unit compatible with most transponders - important for ADS-B applications. The 1203C is in service worldwide as an ADS-B position source, as a navigation sensor and as a timing source for datalinks.

Because all of these units are self contained, self starting GPS position sources, they can be added to existing aircraft systems with little aircraft integration. This is particularity useful for ADS-B retrofits. Because of the high quality of these Sensors, when they are used as an ADS-B position source they do not need to be connected to the aircraft navigation system. Installation is simple and ADS-B compliance is within reach without expensive modification to existing Navigation or Flight Management Systems.

As with all FreeFlight Systems products, the GPS WAAS family are fully approved for helicopter operations are are in service in harsh environments such as the Gulf Of Mexico and desert regions.

For larger aircraft, the Model 1203C offers additional benefits. The unit meets the standards for advanced Required Navigation Performance (RNP) operations. Is currently operating in certified RNP(0.3) systems on Airline Transport aircraft with no other GPS equipment. These aircraft the unit also acts as the ADS-B position source - and in some cases as a Datalink (CPDLC) timing source. These aircraft have achieved full compliance with all key NextGen ATM requirements using the simple and affordable 1203C sensor as the key system sensor.

The FreeFlight Family of high performance, WAAS GPS receivers are inexpensive, easy to install and meet all global requirements for NextGen applications such as ADS-B, TAWS, RNP and datalink. There is a packaging option tailored for each aircraft class. The Sensors have several firsts in the challenging NextGen arena and are in service worldwide delivering robust, high reliability performance. It is FreeFLight Systems Goal to provide high quality systems at reasonable prices and these values are exemplified in this family of GPS receivers

	1201	1203C	1204
SPECIFICATIONS			
Type	12 channel GPS receiver	15 channel GPS receiver	12 channel GPS receiver
Position Update Rate	2 times per second output at one/second	5 times per second output at one/second	2 times per second output at one/second
Velocity	1000 knots, steady-state		
Performance	Complies with RTCA/ DO-229C	Complies with RTCA/ DO-229D	Complies with RTCA/ DO-229C
Cooling	Ambient air	Ambient air	Ambient air
PHYSICAL CHARACTERISTICS			
Size (Includes Mounting Flanges)	5.13″ W 6.50″ D 1.60″ H	4.70″ W 8.70″ D 1.95″ H	4.70″ W 8.70″ D 1.50″ H
Antenna	3.00″ W 4.70″ D 0.75″ H	3.00″ W 4.70″ D 0.75″ H *DO-301 Antenna Needed	3.00″ W 4.70″ D 0.75″ H
Weight	1.4 lbs.	1.9 lbs.	1.75 lbs.
Antenna	0.5 lbs. (.226 kg)	0.5 lbs. (.226 kg)	0.5 lbs. (.226 kg)
Interface	RS-232	ARINC429	RS-232/RS-422
Transponder Capability	GTX-330ES TRIG TT22/TT31	GTX-330ES TRIG TT22/TT31	
	ANY ARINC 743A COMPLIANT ADS-B TRANSPONDER*		
Input Voltage (Steady State)	14 - 28 VDC	10-32 VDC	28 VDC
Input Current (Steady State)	0.25A at 28V and 0.5A at 14V	.30 A @ 14 VDC .15 A @ 28 VDC	0.30A at 28V
Operating Temp +55oC Continuous	-55 to +70oC	-40 to +70	-55 to +70oC
Antenna	-55 to +85oC	-55 to +85	-55 to +85oC
Operating Humidity	95% @ 65oC	95% @ 50oC	95% @ 65oC
ENVIRONMENTAL	DO-160E	DO-160F	DO-160D
CERTIFICATIONS			
System	TSO-C145a	TSO-C145c	TSO-C145a
Software Assurance	DO-178B, Level C	DO-178B, Level C	DO-178B, Level C
Installation Approvals	Approved as ADS-B position source as defined in AC 20-165A		

***STC's available for multiple ADS-B compliant transponder types. Contact Sales for additional details.**

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