Innovative
Solutions & Support

Prodigy 3ATI

Integrated Standby Unit

IS&S Prodigy 3ATI Integrated Standby Unit

Technical Overview

The IS&S Prodigy 3ATI Integrated Standby Unit (ISU) calculates, processes and displays altitude, attitude, airspeed, slip/skid, and navigation display information in a logical and concise single instrument display. The unit is designed to support additional enhancements for Radio Management and Alternate Navigation functionality.

Prodigy incorporates an integral Inertial Measurement Unit (IMU) which includes accelerometer, gyro and magnetometer triads. The IMU is adaptable to include an integral air data module to measure static and total pressure for independent display of altitude, airspeed and Mach number. Through a proprietary algorithm, Prodigy compensates for soft iron effects on the internal magnetometer.

Using an Installation Configuration Module (ICM) the Prodigy installation is calibrated to the specific aircraft and the ICM stores data such as static source error correction, Vmo and Mmo.

The 3ATI form factor makes Prodigy ideally suited for a variety of fixed wing and rotary aircraft and the ICM is provided to support installation on a multiple airframes.

Prodigy utilizes MEMS Gyro technology coupled with the unparalleled history of IS&S air data, RVSM and Flat Panel Display System (FPDS) product experience, resulting in a highly reliable and accurate standby display system for retrofit and OEM applications.

The Prodigy display format uses a familiar Primary Flight Display (PFD) format to enhance situational awareness and reduce pilot workload. The standby indicator's solid-state design offers increased reliability over legacy electrical mechanical instruments with savings in maintenance and logistics due to the reduction in component parts. Prodigy features a high resolution LCD display with full LED backlighting improving reliability and readability to the pilot. The graphics are fully anti-aliased with unprecedented accuracy and detail. Prodigy provides full sunlight readability. The display brightness adapts to the cockpit lighting conditions via an integrated ambient light sensor thereby reducing the pilot's workload.

IS&S Prodigy 3ATI ISU
Part Number: 9D-80196-1

IS&S Prodigy 3ATI ISU replaces 2-3 standby instruments:

- Air Speed Indicator
- Altitude Indicator
- Attitude or Horizon Indicator

Features & Options

- Advanced display technology
- Versatile interface capability
- Highly accurate data sensors
- DG Mode
- Software RTCA DO-178C Level A
- Complex Electronic Hardware: RTCA DO-254 Level B
- Hardware Qualification: RTCA DO-160G
- Configurable ARINC 429 inputs
- Reduced pilot workload
- Increased safety
- Logistics and maintenance benefits by integrating multiple functions into one LRU
- Options:
  - -NVIS
  - -External magnetometer interface
  - -Standby Radio Management Unit (RMU)
  - -Alternate Navigator Functionality
  - -RVSM Compliance

System Specifications

Operating Specifications

Weight:	1.9 lbs.
Dimensions:	3.26”W x 3.26”H x 7.4”D
Mounting:	3-ATI Clamp Mount Optional Panel Mount
Power:	28 VDC, 9.8 watts
Reliability:	18,500 hours MTBF
Display:	2.38” x 2.38”
Sensors:	Solid State
Qualifications:	DO-160G, DO-178C Level A, DO-254 Level B

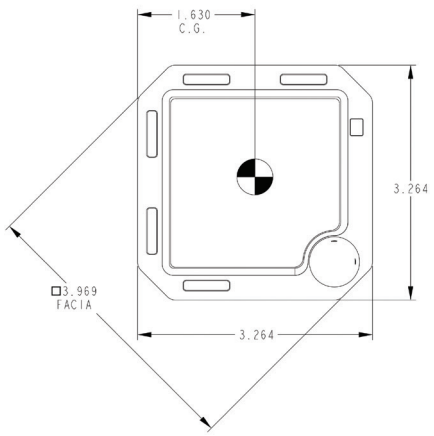
Certifications

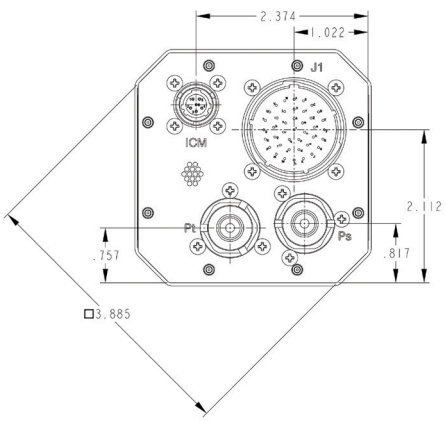
TSO C2d	Airspeed Instruments
TSO C3e	Turn and Slip
TSO C4c	Bank and Pitch
TSO C6e	Direction Instrument Magnetic
TSO C8e	Vertical Speed
TSO C10b	Altimeter, Pressure Actuated Sensitive Type
TSO C34e	ILS Glideslope
TSO C36e	ILS Localizer
TSO C40C	VOR Receiving Equipment
TSO C46A	Max Allowable Airspeed Indicator
TSO C66C	Distance Measuring Equipment
TSO C95a	Mach Meters
TSO C106	Air Data Computer
TSO C113a	Airborne Multipurpose Displays
TSO C201	Attitude and Heading Reference System

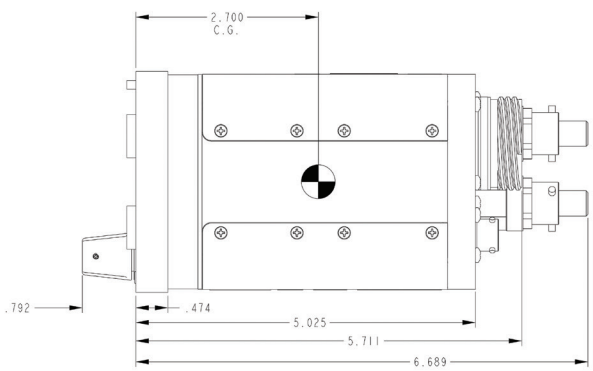
Signal Inputs/Outputs

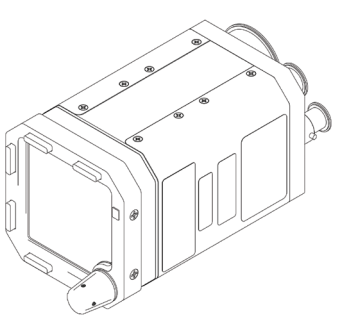
RS422 / 232 :	3 Channels Input / Output
ARINC 429:	6 inputs (Configurable for VOR, ILS, DME, FMS, GPS) 2 Outputs, High Speed / Low Speed SW Configurable 2 outputs (Configurable)
Analog:	3 DC Inputs (ILS/ GS duration, TAT probe)
Discretes:	5 configurable input discretes 1 configurable output discrete

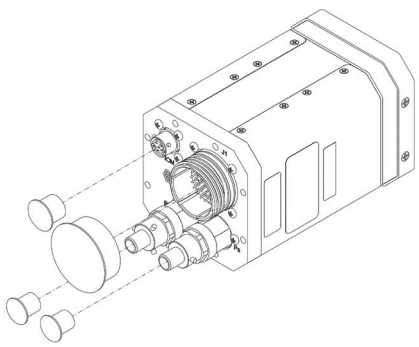
Outline Dimensions











Performance

Altitude Range: -1000 to 55,000 ft, (-300 to + 16,760 M)

Altitude Scale Error:	0 ft	±20 ft
	1000 ft	±20 ft
	2000 ft	±25 ft
	3000 ft	±25 ft
	4000 ft	±25 ft
	5000 ft	±25 ft
	8000 ft	±30 ft
	11000 ft	±35 ft
	14000 ft	±40 ft
	17000 ft	±45 ft
	20000 ft	±50 ft
	30000 ft	±75 ft
	40000 ft	±100 ft
	50000 ft	±125 ft
Airspeed Range:	40 to 500 knots	
Airspeed Scale Error:	40 Kts - 60 Kts	±4 Kts
	70 Kts – 500Kts	±2 Kts

Pitch Range:	±90 Degrees	**Pitch/ Roll Range:**	300 Degrees/Second
Roll Range:	±180 Degrees	**Baro Setting Input Range:**	22.00 to 32.00 InHg (745 to 1084 MB)
Pitch/ Roll Accuracy:	±0.5 Degrees	**Brightness:**	0.1 – 140 Foot Lamberts, Dimmable
		Viewing Angle:	±45 Degrees

IS&S is the world's leading supplier of RVSM systems and integrator of Cockpit Information Systems (Cockpit/IP®) for the Commercial Air Transport, Military, and Business Aviation Markets. IS&S incorporates leading edge technologies into sophisticated, cost-effective solutions for the aerospace industry.

Innovative Solutions & Support

Corporate Headquarters:
720 Pennsylvania Drive
Exton, PA 19341 USA
+1 610 646 9800 phone
+1 610 646 0146 fax
www.innovative-ss.com

IS&S products identified in this document are covered by one or more Patents identified on innovative-ss.com