

Horizontal Situation Indicator

Model HSI-323A

TYPICAL APPLICATIONS

The HSI-323A is an ideal choice for both fixed and rotary wing aircraft where a rugged, highly reliable instrument is required. This newly designed 3ATI HSI incorporates the latest advances in device and embedded processor technology, while retaining the advantages afforded by traditional hard-presentation display elements preferred by many pilots.

FEATURES

- Servo-driven heading display card with warning flag for invalid heading data
- Two servo-driven bearing pointers, each with a parking feature for invalid bearing data
- Selected course pointer that supports servo-driven and manually actuated modes of operation
- Lateral deviation bar, TO-FROM pointer and warning flag for invalid navigation data
- Manually actuated selected heading marker
- Digital distance display
- Digital selected course display
- Accepts data in ARINC 582 and ARINC 407 formats for operation in TACAN, VOR, Inertial Reference Systems and Localizer modes
- Master/Slave Mode Selection to display student's course selection on instructor's HSI for tandem trainer configurations such as the Alpha-Jet and Tucano aircraft
- Bearing pointer #1 processes and displays navigation data selected from either of two independent sensors. Selection is accomplished using an external mode-switch or hard wired where dual inputs are not required. One digital input (ARINC 582) and one analog synchro input (ARINC 407) are provided to accommodate a variety of equipment configurations.
- Bearing pointer #2 processes and displays digital navigation data conforming to ARINC 582
- Deviation from the selected course is calculated within the HSI and displayed using data from any of the three possible bearing inputs. Selection of the data source is accomplished using an external mode-switch or hard wired where multiple inputs are not required.
- Localizer mode (ILS Energize) provides access to drive the lateral deviation bar and warning flag from the unit's rear connector, using standard DC analog signals



The HSI-323A is a 3ATI panel-mounted, internally lighted Horizontal Situation Indicator that provides a pictorial display of the horizontal navigation situation, plus manual controls for course and heading selection.

The Model 323A is an excellent choice for tandem training missions that are directed to prepare student pilots to step into one of thousands of current high performance aircraft. Its conventional fixed-format display elements avoid the confusion that can be created when training is conducted on menu-selected, multi-function displays, which at best, merely simulate the instrumentation in the target aircraft. Sunlight readability is not an issue with the Model 323A.

The Model 323A was originally designed for the Alpha-Jet tandem trainer and features Master/Slave modes which allow the instructor to monitor the student's course selections. However, the design features multiple embedded processors that can be combined with custom firmware to facilitate customer specified operation for a variety of input signal formats from both the analog and digital domains.

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ELECTRICAL INTERFACE

- Connectors: Electrical interface (power and signal) 37-pin circular connector, type JTP02RE-14-35P, conforming to MIL-C-38999 Series II. Mating connector (part of aircraft harness) type JT06RE-14-35S (SR).
- Integral Lighting: Operating voltage 0 to 5 volts DC
- Primary Power: 28 VDC bus in accordance with MIL-STD-704 Current consumption less than 0.5 amp

ENVIRONMENTAL CONDITIONS

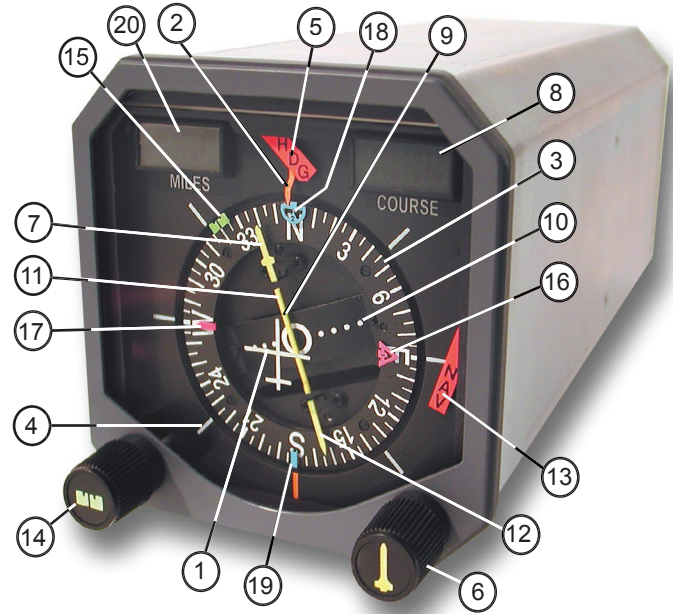
- Storage Temperature -40° C to +85° C
- Operating Temperature -40° C to +55° C
- Altitude: Sea level to 55,000 feet (16,764 meters)
- Shock: 15 g
- Vibration:
 - (a) Sine Vibration 0 to 15 Hz: 2.0 mm amplitude
 - (b) Sine Vibration 15 to 2000 Hz: 2.0 g acceleration
- Acceleration: MIL-STD-810D, method 513.3
- Crash Safety: 30 g
- Power Input: MIL-STD-704A
- EMI / EMC: MIL-STD-461A
- Magnetic Effect: DO-160D, Category A
- Fungus: DO-160D, Category F
- Salt Fog: MIL-STD-810D, method 509.2
- Sand and Dust: DO-160D, Category D

PHYSICAL CHARACTERISTICS

- Size: 3ATI in accordance with ARINC 408

	Case Height	Case Width	Case Depth	Bezel Height	Bezel Width	Bezel Thickness
Metric:	80.8 mm	80.8 mm	195 mm	82.9 mm	82.9 mm	5.97 mm
English:	3.180"	3.180"	7.677"	3.265"	3.265"	.235"

- Weight: 4.5 lb (2.04 kg)



REF #	DISPLAY / CONTROL	FUNCTION
1	Symbolic Aircraft	Represents the relationship of the aircraft with respect to the display.
2	Lubber Line	A fixed index against which the compass card is read.
3	Compass Card	Rotates to display aircraft azimuth information beneath the lubber line.
4	Index Mask	Provides fixed indices at 45° intervals against which the compass card is read.
5	Heading Warning Flag	Is in view when the compass reference is not operating correctly, or when system power is removed.
6	Course Select Knob	Manually positions the course pointer as desired with respect to the compass card.
7	Course Pointer	Indicates the selected course against the compass card.
8	Digital Course Display	Indicates the selected course numerically in degrees.
9	Lateral Deviation Bar	Indicates displacement from the selected VORTAC course when in NAV (en route) mode. The lateral deviation bar indicates Localizer displacement when in the ILS (approach) mode.
10	Lateral Deviation Scale	Provides fixed reference points against which the Lateral Deviation Bar is read.
11	To-From Indicator	Displays direction "TO" or "FROM" the VORTAC station along the selected course.
12	Reciprocal Course Pointer	Indicates the reciprocal of the selected course.
13	NAV Warning Flag	Is in view in the absence of usable VORTAC or Localizer signal.
14	Heading Select Knob	Manually positions the heading marker (heading "bug") as desired on the compass card.
15	Selected Heading Marker	Indicates the selected heading against the compass card.
16	Bearing Pointer #1	Rotates to display bearing to the selected navigation aide in relation to the lubber line.
17	Reciprocal Bearing Pointer #1	Indicates the reciprocal of its associated pointer.
18	Bearing Pointer #2	Rotates to display bearing to the selected navigation aide in relation to the lubber line.
19	Reciprocal Bearing Pointer #2	Indicates the reciprocal of its associated pointer.
20	Digital Distance Display	Indicates numerical distance in nautical tenths of miles to a selected station or waypoint.