



## **Horizon HX Wiring Supplement**

**Revision A3 - 8/2/2016**

**For units shipped after January 8, 2013**

Applies to single or multi-display systems with single or dual AHRS and the following Wiring Harness Part Numbers:

CAB-HX-KIT-01 (CAB-HXA-01, CAB-HXB-01 and CAB-ARINC-HX)

CAB-AHRS-01

## Connector A Pinout Diagram

Connector A is a 25-Pin D-Sub female connector that attaches to the male EFIS 25-pin D-sub. Pins that are most likely to be used are pre-installed in the connector at GRT. Commonly used optional wires are supplied as loose wires. Wire colors and devices assigned to serial ports are suggestions only. See HXr Interconnect Diagram for suggested system connections. NC denotes No Connection inside display unit.

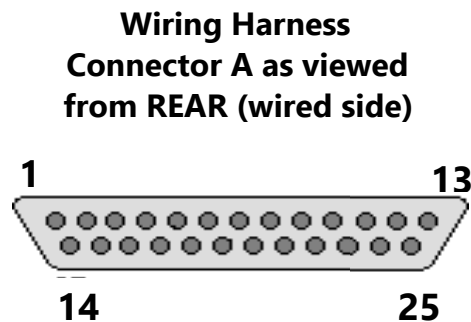
Pin		Function	Wire Color
A1		Serial 6 OUT	
A2		Serial 1 OUT	
A3	▽	Serial 5 OUT	BLU
A4		Serial 2 OUT- AHRS 1 OUT (Note 2)	BRN
A5	▽	Serial 4 OUT	YEL/WHT
A6		Localizer Deviation + Left Input	
A7		Localizer Deviation + Right Input	
A8		Glideslope Deviation + Down Input	
A9		Glideslope Deviation + Up Input	
A10		Localizer Valid - Input	
A11		Localizer Valid + Input	
A12		Glideslope Valid - Input	
A13		Glideslope Valid + Input	
A14	⇒	Primary Power IN	RED
A15		Secondary Power IN	
A16		Third Power IN	
A17	⇒	Ground	BLK
A18	▽	GPS Memory (Note 1)	RED/WHT
A19		Serial 2 IN- AHRS 1 IN (Note 2)	YEL
A20		Serial 1 IN	
A21	⇒	Serial 4 IN - EIS IN (Note 3)	GRN/BLK
A22	▽	Serial 5 IN - GPS	YEL/BLU
A23	▽	Serial 3 IN	GRY/RED
A24		Serial 6 IN- Redundant AHRS (Note 2)	YEL/GRY
A25	▽	Serial 3 OUT	GRY/BLK

- ⇒ Connected to wiring harness
- ▽ Supplied as loose pinned wires

Note 1: See Section 3.7 of HXr Installation Manual for important information about aircraft battery depletion.

Note 2: Suggested AHRS connections. Wires provided with each AHRS wiring harness. A24/Serial 6 IN Redundant AHRS connection does not apply in Single AHRS/Single Display systems. See AHRS Interconnect Diagram for details.

Note 3: Connector A harness is 4 feet long with the exception of the EIS wire, which is 2 feet. Longer harnesses are available by special order.



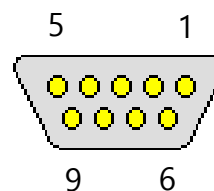


## Connector C: ARINC 429 Pinout Diagram

The ARINC 429 connector, or Connector C, plugs into a 9-pin female D-sub receptacle located on the back of the HXR display unit underneath Connector A and Connector B.

A male 9-pin D-sub connector, along with eight male pins and a backshell, are included with the display unit. No wires are included because most devices that use ARINC 429 already have a wiring harness.

Pin	Function
C1	ARINC 429 IN 1- A
C2	ARINC 429 IN 1- B
C3	ARINC 429 IN 2- A
C4	ARINC 429 IN 2- B
C5	ARINC 429 OUT- A
C6	Spare Ground*
C7	Spare Ground*
C8	Spare Ground*
C9	ARINC 429 OUT- B
* May be used for shield ground	

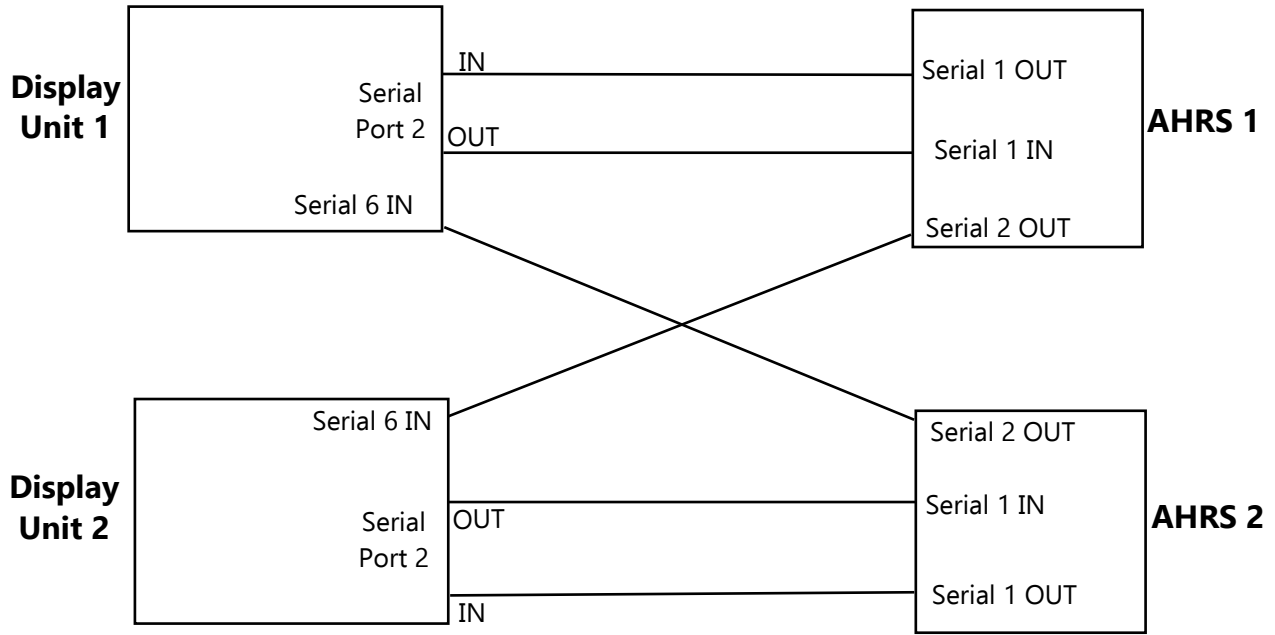


**ARINC 429 Wiring Harness  
Connector as viewed from REAR  
(wired side)**

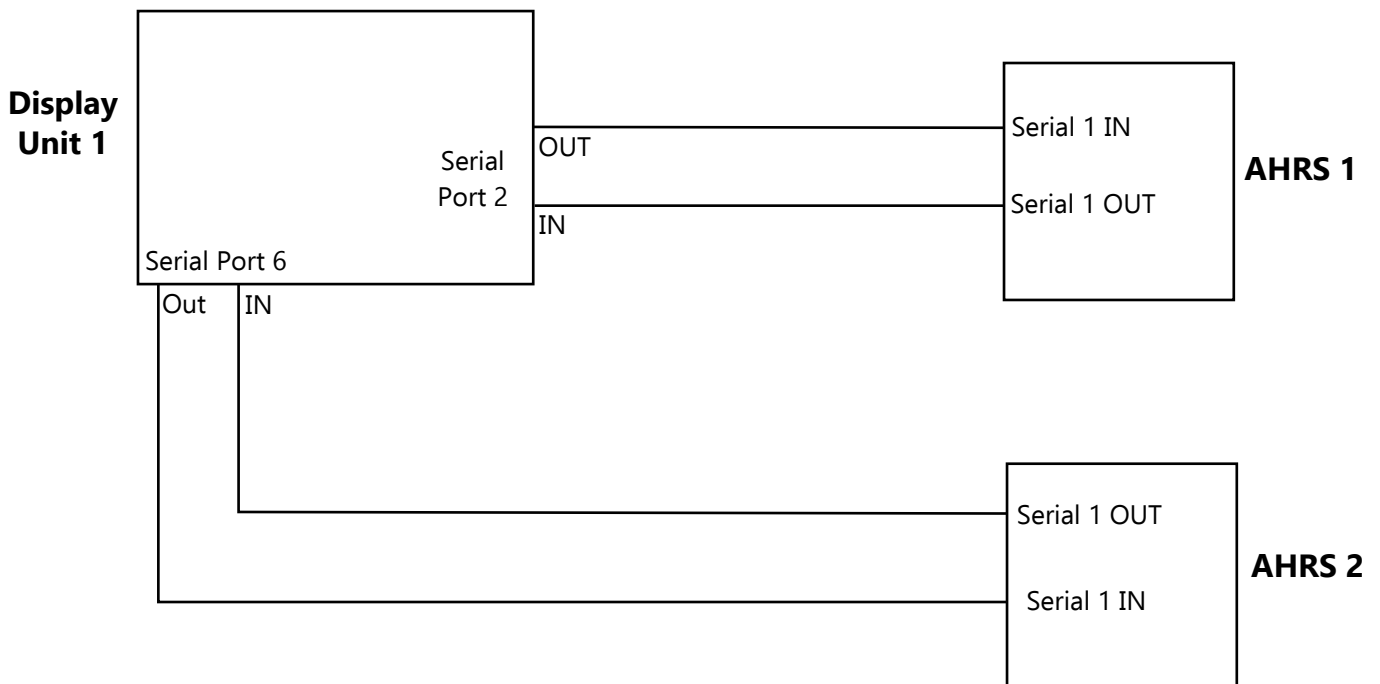
## AHRS Interconnect Diagram

Each AHRS unit can be controlled only by one Display Unit. However, each AHRS can feed information to multiple display units.

### Dual Display Units - Dual AHRS



### Single Display Unit - Dual AHRS



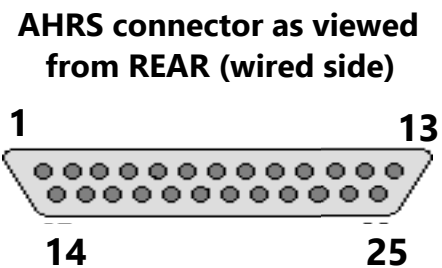
## AHRS Connector Pinout Diagram (All AHRS Shipped on or before February 2015)

The AHRS can only receive input from one Display Unit, however, it can send information to multiple display units for redundancy. Most dual display unit systems have a dual AHRS (one box containing two AHRS units). In dual display/dual AHRS systems, each AHRS uses two serial outputs and one input from its controlling Display Unit. AHRS 1 is controlled by Display Unit 1 and AHRS 2 is controlled by Display Unit 2. See AHRS Interconnect Diagram on page A10 for more information. The AHRS harness is 4 feet long except for the magnetometer wires, which are 20 feet long.

Pin		Function	Wire Color
1	⇒	Serial Out 1	YEL
2		Serial Out 1 (Note 1)	
3	⇒	Serial Out 2 (dual display only)	YEL/GRY
4		Serial Out 2 (Note 1)	
5	⇒	Serial In 1	BRN
6		Serial In 2 (do not use)	
7	⇒	Magnetometer Z IN	WHT
8	⇒	Magnetometer Y IN	WHT/BRN
9	⇒	Magnetometer X IN	WHT/GRN
10	⇒	Outside Air Temperature IN	Gray
11		NC	
12		NC	
13	⇒	Ground	BLK
14	⇒	Magnetometer Ground	BLK
15		NC	
16		NC	
17		NC	
18	⇒	Magnetometer Control OUT	WHT/BLU
19		NC	
20		NC	
21		NC	
22	⇒	Magnetometer Power OUT	WHT/RED
23	⇒	Aircraft Power Input A	RED
24	⇒	Aircraft Power Input B	RED/BLU
25	⇒	Aircraft Power Input C	RED/GRN

⇒ Connected to wiring harness

Note 1: Extra serial port; use only in systems with more than two display units.



### Adaptive AHRS Connector Pinout Diagram (All AHRS Shipped After February 2015)

The AHRS connector is a 25-pin female d-sub connector. Serial data to the AHRS is not required for normal operation, but is required to change the mounting orientation from the default, to view maintenance data, and store other user calibration data such as altimeter, fine magnetometer calibration and roll/pitch/yaw orientation adjustments. The AHRS harness provided with the an EFIS system is 4 feet long except for the magnetometer wires, which are 20 feet long.

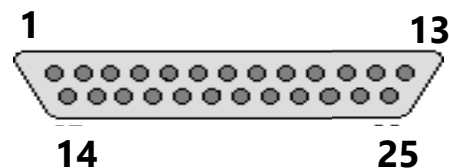
Pin		Function	Wire Color
1	⇒	AHRS1 Serial Out 1	YEL
2		AHRS1 Serial Out 1 (Note 1)	
3		AHRS1 Serial Out 2	YEL/GRY
4		AHRS1 Serial Out 2 (Note 1)	
5	⇒	AHRS1 Serial In 1	BRN
6		Reserved - Do Not Connect	
7		Reserved - Do Not Connect	
8	⇒	Magnetometer Serial In IN	WHT/BRN
9		AHRS2 Power In (9-30 Vdc, 0.1A)	RED/BRN
10	⇒	Outside Air Temperature IN	Gray
11		Reserved - Do Not Connect	
12		Reserved - Do Not Connect	
13	⇒	Ground	BLK
14		Magnetometer Ground	BLK
15		GPS Serial Out	Orange
16		GPS Serial In (Optional)	Blue
17		AHRS2 Power In B (9-30Vdc 0.1A)	
18		AHRS2 Serial Input	WHT/BLU
19		AHRS2 Serial Output	
20		AHRS2 Serial Output	
21		AHRS2 Serial Output	
22		Magnetometer Power OUT (4.3-5.0Vdc)	WHT/RED
23	⇒	AHRS1/GPS Power In A (9-30Vdc 0.15A)	RED
24		AHRS1/GPS Power In B (9-30Vdc 0.15A)	RED/BLU
25		AHRS1/GPS Power In C (9-30Vdc 0.15A)	RED/GRN

⇒ Connected to wiring harness

Note 1: Extra serial port; use only in systems with more than two display units.

Note 2: Case is electrically connected to ground. Do not allow 12V to touch AHRS case.

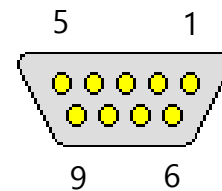
**AHRS connector as viewed from REAR (wired side)**



## Magnetometer Connector Pinout Diagram

All electrical connections for the magnetometer are made to the AHRS/Air Data Computer via 9-pin D-sub connectors. The AHRS connector has these wires pre-installed, but the magnetometer cable is provided without the connector attached for easier routing through the airframe. Use the following diagram to attach the connector to the cable after running the wires. Be sure to inspect the pins before inserting them into the D-sub, as damage can occur from pulling them through holes in the airframe.

Pin	Function	Wire Color
1	MAG Y	WHT/BRN
2	MAG Z	WHT
3	MAG X	WHT/GRN
4	MAG PWR	WHT/RED
5	MAG GND	BLK
6	MAG CNTRL	WHT/BLU
7	NC	
8	NC	
9	NC	



**Wiring Harness Connector as viewed from REAR (wired side)**