



# **AIS-360 ARINC LS/HS ADAPTER**

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**P/N: 833610-01**

## **INSTALLATION MANUAL**

**REV A**

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**MANUAL P/N: IM833610-01**

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N/A	Installation Dwg, AIS 833610-01	A
N/A	Install Kit, P/N 833610	A

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**REVISION LOG**

REV.	DATE	APP'D	ERN#	CHANGE
-	08-25-2010	ZK	1008/006	Baseline Release
A	09-22-2014	ZK	1409/004	Updated Vibration Test categories, Installation Dwg and Install Kit Parts List

The information in this manual is subject to change without notification. To ensure complete and current updates, note the Revision Log above and call Technical Assistance for updated information.

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**1. OVERVIEW**

**1.1 THE MANUAL**

This manual is intended to guide the proper installation of the AIS-360 ARINC LS/HS Adapter. Installation instructions should be read and followed.

**1.2 PRODUCT DESCRIPTION**

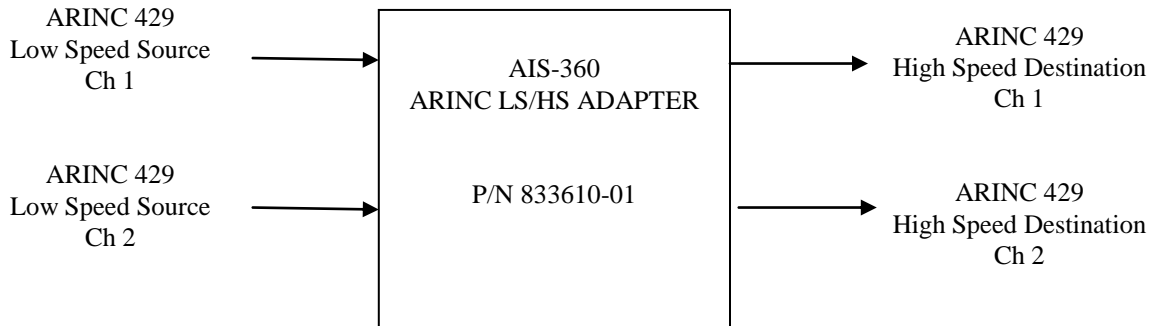
The AIS-360 ARINC LS/HS Adapter (P/N 833610-01) has two ARINC 429 Low speed input channels and two ARINC 429 High speed output channels.

This unit receives any label on the ARINC 429 Low Speed input and outputs it on an ARINC 429 High Speed bus with up to 440µsec delay.

All label data is unchanged and the update rate remains identical in the conversion.  
(See example below).

Receive Low Speed ARINC 429				Output High Speed ARINC 429		
Label	Rate	Description	Data	Label	Rate	Delay
314	50msec	True Heading	Unchanged	314	50msec	≤440µsec

The Block Diagram below depicts the intended use of the converter in the aircraft installation.



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**1.3 SPECIFICATIONS****Physical Specifications**

Dimensions: 8.50”L x 4.00”W x 1.59”H

Weight: 0.9 lbs

Mounting: Screw size #8

Mounting Locations: 7.878”L x 1.752”W

**Electrical and Functional**

Power Supply Voltage: +18VDC to +33VDC

Supply Current: 100mA Max

Protection: Not internally fused

**Inputs:** ARINC 429: Low Speed, 12-14.5Kbps±1%**Outputs:** ARINC 429: High Speed, 100Kbps±1%**Environmental**

RTCA/DO-160F Categories:

A2-CAB[R(B, B1) U2(F, F1)]XXXXXXXXZ[AXX]AR[CC][WW]M[A3J33]XXAX

Operating Temperature: -15°C to +70°C

Storage Temperature: -55°C to +85°C

Operating Altitude: Up to 50,000ft

In-Flight loss of Cooling: Equipment can run indefinitely with no cooling

MIL-HDBK-217 MTBF 30,000 hours

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## 2. INSTALLATION PROCEDURE

### 2.1 MOUNTING

The AIS-360 ARINC LS/HS Adapter (P/N 833610-01) should be mounted in a partially controlled temperature, and pressurized or un-pressurized locations.

The converter should be mounted according to Installation Dwg, P/N ID833610-01.

### 2.2 ELECTRICAL CONNECTIONS

Connection to Power Supply +28 VDC

833610-01		Description
J1:3, 22	To	+28VDC-IN
J1:2, 21	To	Power GND-IN

Inputs

833610-01		Description
J1:27	To	ARINC-429-RXA-1
J1:28	To	ARINC-429-RXB-1
J1:29	To	ARINC-429-RXA-2
J1:30	To	ARINC-429-RXB-2

Outputs

833610-01		Description
J1:8	To	ARINC-429-TXA-1
J1:9	To	ARINC-429-TXB-1
J1:10	To	ARINC-429-TXA-2
J1:11	To	ARINC-429-TXB-2

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### 3.0 ENVIRONMENTAL QUALIFICATION FORM (EQF)

This Environmental Qualification Form describes qualification testing performed on the 833610-00 Data Converter. The 833610-01 is qualified by similarity to the 833610-00 converter. The 833610-01 is therefore qualified to RTCA/DO-160F standards.

**NOMENCLATURE:** AIS-360 ARINC LS/HS ADAPTER

**TYPE/MODEL/PART NO:** 833610-01      **TSO NUMBER:**

**MANUFACTURER'S SPECIFICATION AND/OR OTHER APPLICABLE SPECIFICATION:**  
 RTCA/DO-160F

**MANUFACTURER:** Shadin Avionics

**ADDRESS:** 6831 Oxford Street, St. Louis Park, Minnesota 55426-4412

<u>CONDITIONS</u>	<u>SECTION</u>	<u>DESCRIPTION OF TESTS CONDUCTED</u>
Temperature and Altitude	4.0	Tested to Category A2.
Low Temperature		-15°C
High Temperature		+70°C
Altitude		50,000ft
Decompression		55,000ft
Overpressure		-15,000ft
Temperature Variation	5.0	Tested to Category C.
Humidity	6.0	Tested to Category A.
Operational Shock and Crash Safety	7.0	Tested to Category B.
Vibration	8.0	Tested to Category R (B, B1). Tested to Category U2 (F, F1)
Explosion	9.0	Identified as Category X. Not tested.
Waterproofness	10.0	Identified as Category X. Not tested.
Fluids Susceptibility	11.0	Identified as Category X. Not tested.

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**ENVIRONMENTAL QUALIFICATION FORM (Cont.)**

<b><u>CONDITIONS</u></b>	<b><u>SECTION</u></b>	<b><u>DESCRIPTION OF TESTS CONDUCTED</u></b>
Sand and Dust	12.0	Identified as Category X. Not tested.
Fungus	13.0	Identified as Category X. Not tested.
Salt Spray	14.0	Identified as Category X. Not tested.
Magnetic Effect	15.0	Tested to Category Z.
Power Input	16.0	Tested to Category AXX.
Voltage Spike	17.0	Tested to Category A.
Audio Frequency Susceptibility	18.0	Tested to Category R.
Induced Signal Susceptibility	19.0	Tested to Category CC.
Radio Frequency Susceptibility	20.0	Tested to Category WW.
Radio Frequency Emission	21.0	Tested to Category M.
Lightning Induced Transient Susceptibility	22.0	Tested to Category A3J33.
Lightning Direct Effects	23.0	Identified as Category X. Not tested.
Icing	24.0	Identified as Category X. Not tested.
Electrostatic Discharge	25.0	Tested to Category A.
Fire, Flammability	26.0	Identified as Category X. Not tested.



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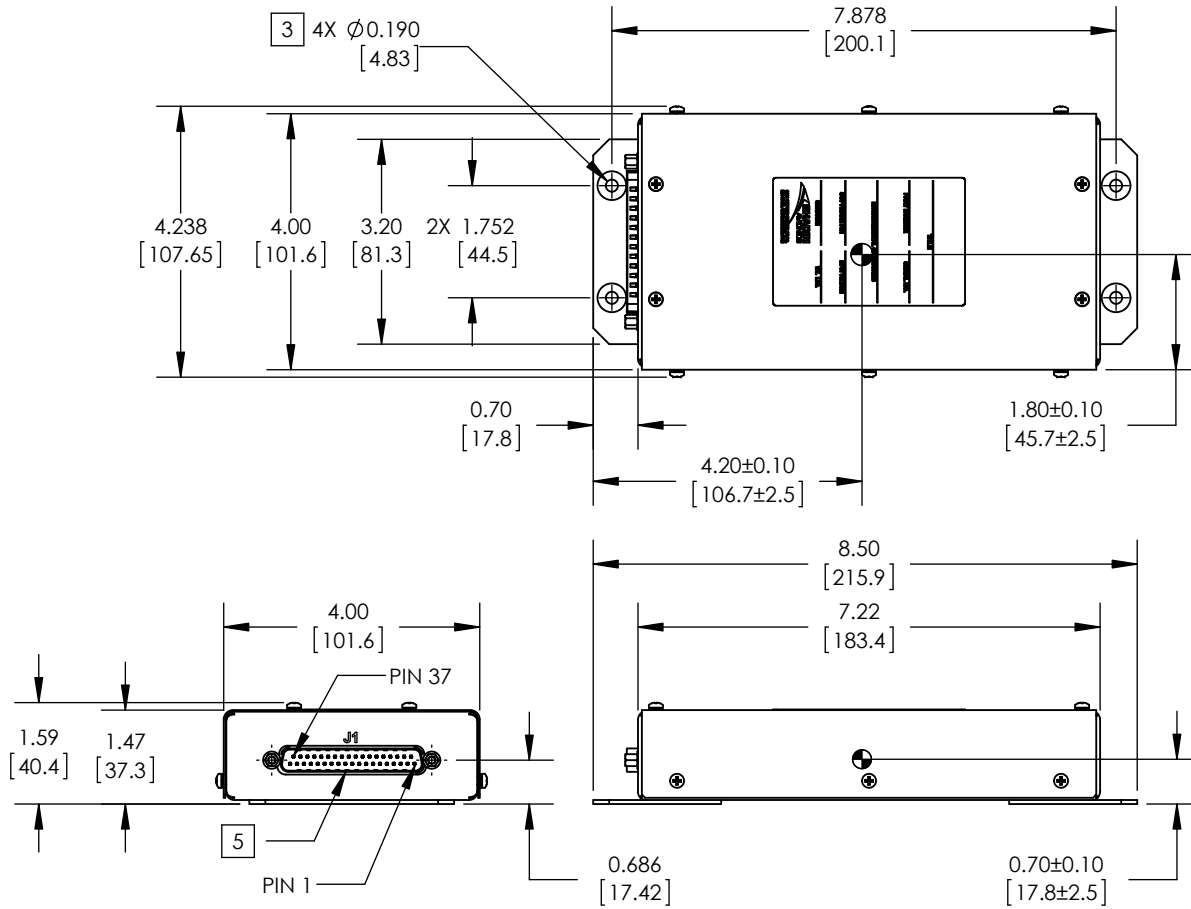
**SECTION 4.0**

**INSTALLATION DRAWINGS AND  
INSTALL KIT PARTS LISTS**

The following drawings are arranged in the sequence specified on page i of the Page Control Chart.

WHERE USED	
NEXT ASSEMBLY	USED ON
IM833610-01	833610-01

REVISIONS					
ERN #	REV.	DATE	BY	APP'D	DESCRIPTION
1008/006	-	8/24/2010	HWL	ZK	BASELINE RELEASE
1409/004	A	9/12/2014	EG	ZK	ADDED CHASSIS-GND, REDRAWN



5 J1 CONNECTOR PIN OUT				
PIN	SIGNAL NAME	DESCRIPTION	TYPE (REF)	PAIR (REF)
1	CHASSIS-GND	CHASSIS GROUND	N/A	N/A
2	POWER-GND-IN	POWER RETURN	SINGLE	N/A
3	+28V-IN	28 VDC POWER POSITIVE	SINGLE	N/A
4	RESERVED	N/A	N/A	N/A
5	RESERVED	N/A	N/A	N/A
6	RESERVED	N/A	N/A	N/A
7	RESERVED	N/A	N/A	N/A
8	ARINC-429-TXA-1	ARINC 429 OUTPUT #1 (LINE A)	STP	PIN 9
9	ARINC-429-TXB-1	ARINC 429 OUTPUT #1 (LINE B)	STP	PIN 8
10	ARINC-429-TXA-2	ARINC 429 OUTPUT #2 (LINE A)	STP	PIN 11
11	ARINC-429-TXB-2	ARINC 429 OUTPUT #2 (LINE B)	STP	PIN 10
12	RESERVED	N/A	N/A	N/A
13	RESERVED	N/A	N/A	N/A
14	RESERVED	N/A	N/A	N/A
15	RESERVED	N/A	N/A	N/A
16	RESERVED	N/A	N/A	N/A
17	RESERVED	N/A	N/A	N/A
18	RESERVED	N/A	N/A	N/A
19	RESERVED	N/A	N/A	N/A
20	SPARE 1	UNUSED PIN	N/A	N/A
21	POWER-GND-IN	POWER RETURN	SINGLE	N/A
22	+28V-IN	28 VDC POWER POSITIVE	SINGLE	N/A
23	RESERVED	N/A	N/A	N/A
24	RESERVED	N/A	N/A	N/A
25	RESERVED	N/A	N/A	N/A
26	RESERVED	N/A	N/A	N/A
27	ARINC-429-RXA-1	ARINC 429 INPUT #1 (LINE A)	STP	PIN 28
28	ARINC-429-RXB-1	ARINC 429 INPUT #1 (LINE B)	STP	PIN 27
29	ARINC-429-RXA-2	ARINC 429 INPUT #2 (LINE A)	STP	PIN 30
30	ARINC-429-RXB-2	ARINC 429 INPUT #2 (LINE B)	STP	PIN 29
31	RESERVED	N/A	N/A	N/A
32	RESERVED	N/A	N/A	N/A
33	RESERVED	N/A	N/A	N/A
34	RESERVED	N/A	N/A	N/A
35	RESERVED	N/A	N/A	N/A
36	RESERVED	N/A	N/A	N/A
37	RESERVED	N/A	N/A	N/A

NOTES:

- DIMENSIONS SHOWN IN INCH [mm] FOR REFERENCE ONLY.
- PHYSICAL SIZE, EXCLUDING SCREW HEADS:  
- 8.50" (L) X 4.00" (W) X 1.47" (H)
- MOUNTING SCREW SIZE IS NO. 8.
- WEIGHT = 0.9 LBS
- J1 CONNECTOR  
- 37 PIN D-SUB, MALE  
- WIRE TYPE "STP" IS SHIELDED TWISTED PAIR
- MATING CONNECTOR IS A STANDARD 37 PIN FEMALE D-SUB.  
- STP WIRE SHIELDS SHOULD BE TIED TO MATING CONNECTOR SHELL.

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UNLESS OTHERWISE SPECIFIED:  
DRAWN PER ASME Y14.5M-2009  
DIMENSIONS ARE IN INCHES

THIRD ANGLE PROJECTION	TOLERANCES: X/X ±1/64 X.X* ±0.1 X.XX ±0.01 X.XXX ±0.005
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ST. LOUIS PARK, MN 55426

DRAWN	HWL	8/24/2010
CHECKED	ZK	8/24/2010
ENG APPR.	ZK	8/24/2010

FINISH	N/A
MATERIAL	N/A

SIZE	CAGE CODE: <b>OZ5P5</b>
<b>A</b>	F/N ID833610-01A.PDF
SCALE: N/A SHEET 1 OF 1	

INSTALLATION DWG,  
AIS 833610-01

P/N	REV
<b>ID833610-01</b>	<b>A</b>

**PARTS LIST**

Part #: **IK833610**

Drawing #: NA

Description: **INSTALL KIT, P/N 833610**

<u>FN</u>	<u>P/N</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>MFG.</u>	<u>MFG.#</u>	<u>DESIGNATION</u>	<u>COMMENTS</u>
5	230055	20	CONTACT, Crimp D-Sub, Fem, 20-24, M39029/63-368	POS	M39029/63-368 (FC6020D)		12 pcs needed, 8 pcs are spares.
10	230082	1	CONN HOOD, 37 Pin D-Sub ST	CIN	DC-24660		
15	232002	1	CONN SHELL, 37 Pin D-Sub, Fem Crimp	AMP	205167-1		
20	239001	1	TOOL, Insertion/Extraction	DAN	M81969/1-02		
25	512101	2	RETAINER CLIP, "Bow Tie" Style	KEY	2061K		
30	753217	1	Thermal Label, 4"x 1"	ULI	S-8601		
35	PK1001	1	BAG, 2.5 x 3, 4 MIL Zip Lock				
40	PK1007	1	BAG, 6 x 8, 4 MIL				

28 items