

Model ATT-500, P/N 500-8510
DIGITAL TO ANALOG ADAPTER
DESIGN SPECIFICATION

Skylight Avionics
38629 6th Street East
Palmdale, California
(661) 265-0497

SKYLIGHT AVIONICS
MODEL: ATT-500, P/N 500-8510
DESIGN SPECIFICATION

INDEX

Section	Title	Page
i.	OPERATING INSTRUCTIONS	1
ii.	EQUIPMENT LIMITATIONS	1
iii.	INSTALLATION PROCEDURES	2
iv.	INSTALLATION MECHANICAL	3
v.	INSTALLATION ELECTRICAL	4
vi.	SPECIFICATIONS	5
vii.	MAJOR COMPONENTS	6
viii.	ENVIRONMENTAL QUALIFICATION FORM	7
ix.	BENCH CHECK AND ALIGNMENT	8
x.	LABEL	9

ILLUSTRATIONS

Illustration	Title	Page
(iv-1)	MECHANICAL DRAWING	3
(v-1)	INSTALLATION DRAWING	4
(vii-1)	INTERCONNECT BLOCK DIAGRAM	6

SKYLIGHT AVIONICS
MODEL: ATT-500, P/N 500-8510
DESIGN SPECIFICATION

i. OPERATING INSTRUCTIONS

The Model ATT-500, being a data format converter has no independent operating instructions. Being an integral part of the on board attitude system, the operating instructions for that system will need to be followed.

ii. EQUIPMENT LIMITATIONS

The ATT-500 Adapter, is limited to only being a adapter of the ARINC 429, Label 121 to an AC Referenced Analog signal and flag.

The design of the ATT-500, is such as to cause minimal degradation of the input signal and to convert the data in the fastest and most accurate means possible.

SKYLIGHT AVIONICS
MODEL: ATT-500, P/N 500-8510
DESIGN SPECIFICATION

iii. INSTALLATION PROCEDURES

1. INTRODUCTION

This section contains information relative to the installation of the, ATT-500 Adapter, to assure satisfactory performance of the unit. (See Sections "6" and "7" for detailed mechanical and wiring diagrams.)

2. UNPACKING AND INSPECTING EQUIPMENT

After unpacking the unit, make a visual inspection of the unit for evidence of damage incurred during shipment. If claim for damage is to be made, save the shipping container to substantiate the claim.

3. PREINSTALLATION CHECK

Perform a continuity and power check on the wiring harness before connecting equipment.

4. POWER REQUIREMENTS

The ATT-500 operates from a standard 27.5 Volt DC aircraft power source, Provide circuit protection with an in line 1 AMP breaker on the 27.5 VDC. Aircraft AC is used for reference only.

5. POST INSTALLATION CHECK

There is no in-aircraft adjustment required for the ATT-500. All alignment and adjustment procedures are accomplished during bench maintenance.

6. PREFLIGHT CHECK

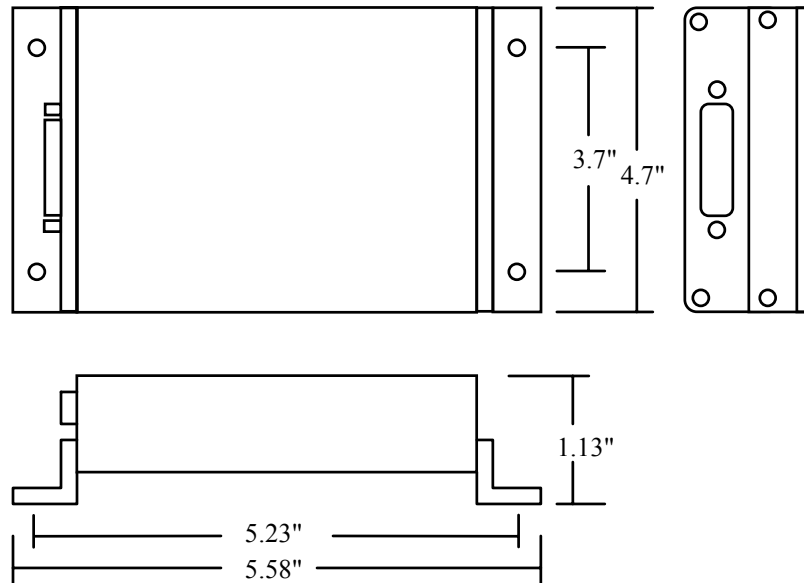
Follow the manufactures check out procedures of the on board systems, to determine indications being driven by the ATT-500 are accurate.

SKYLIGHT AVIONICS
MODEL: ATT-500, P/N 500-8510
DESIGN SPECIFICATION

iv. INSTALLATION MECHANICAL DIAGRAMS

The ATT-500 is designed for flat mounting anywhere on board the aircraft, pressurized or unpressurized compartments. The unit has four (4) mounting holes for number (6) size screws.
NOTE: Screws and other miscellaneous mounting hardware are NOT included with the ATT-500.

MECHANICAL DRAWING



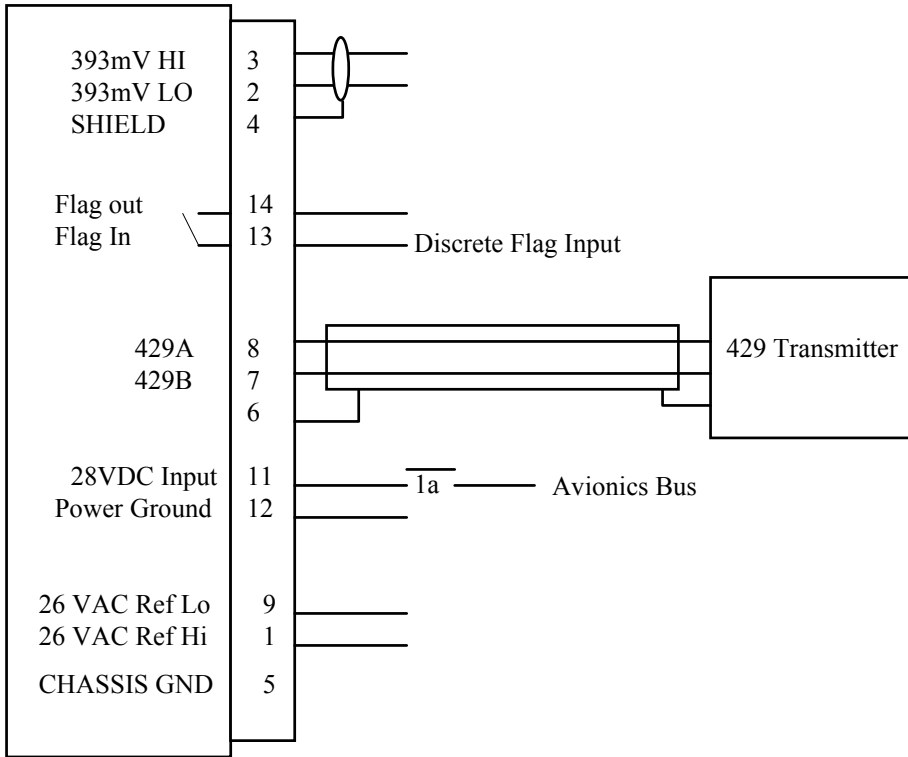
Unit Connector - DA-15P, Mate - DA-15S

Mechanical Drawing of ATT-500 (Illustration iv-1)

SKYLIGHT AVIONICS
 MODEL: ATT-500, P/N 500-8510
 DESIGN SPECIFICATION

v. INSTALLATION ELECTRICAL

MODEL: ATT-500, P/N 500-8510



ATT-500, P/N 500-8510 Pinout (Illustration v-1)

NOTE: FLAG CIRCUIT, contacts of a normally open relay. Closed with a valid digital input.

SKYLIGHT AVIONICS
 MODEL: ATT-500, P/N 500-8510
 DESIGN SPECIFICATION

vi. SPECIFICATIONS

SPECIFICATION	CHARACTERISTICS
Physical Dimensions:	
Height	1.15"
Length	5.59"
Width	4.7"
Weight	1.00 lbs
Temperature Range	
Operational	-20 C to +70 C
Storage	-55 C to +85 C
Altitude	50,000'
Power Requirements	28 VDC @ .5AMP Peak .3 AMP AC (REFERENCE ONLY)
Digital Inputs	ARINC 429, LABEL 121
Accuracy	.3 deg of the Digital Input
Outputs	
Roll Angle	Range +/- 45 Deg. Scale 393 mv AC / 1 deg
ATT FLG	Valid = Closed circuit.

Attitude Flag is a normally open relay and will close with valid digital input.
 (Invalid > 1 MEG OHM Min , Valid < 1 Ohm Max.)

Limitations Limited to the Manufactures specifications of the units making up
 the Warning System.

SKYLIGHT AVIONICS
MODEL: ATT-500, P/N 500-8510
DESIGN SPECIFICATION

vii. MAJOR COMPONENT

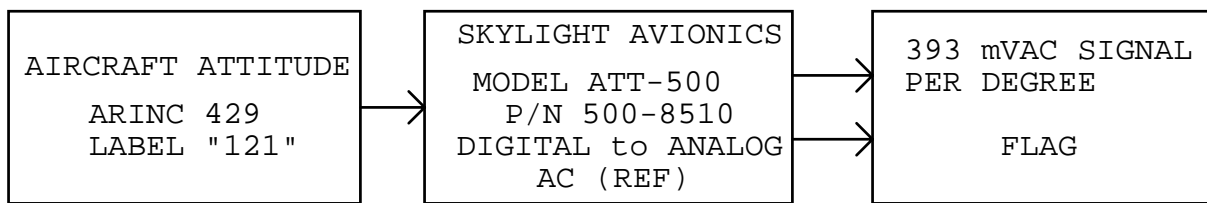
Equipment Supplied

1. Model ATT-500 ARINC 429 to Analog (AC Ref.) Adapter, Part Number 500-8510.

Equipment Required But Not Supplied

- | | |
|-----------------------------|---|
| 4 Standard Mounting Screws | Determined By Install |
| 1 Connector Standard DA 15S | (Standard 15 pin male screw retainer.) |

Interconnect Block Diagram



(Illustration vii-1)

SKYLIGHT AVIONICS
 MODEL: ATT-500, P/N 500-8510
 DESIGN SPECIFICATION

viii. ENVIRONMENTAL QUALIFICATION FORM

Nomenclature : ATT-500 Digital to Analog Adapter
 Manufacturer's Specification :

Conditions	Section/ Paragraph	Test Conducted
Temperature & Altitude	4.0	Equipment tested to Categories A1 & D1
Low Temperature	4.5.1	Equipment tested to Categories A1 & D1
High Temperature	4.5.2/3	Equipment tested to Categories A1 & D1
Altitude Tests	4.6.1	Equipment tested to Categories A1 & D1
Decompression Test	4.6.2	Equipment tested to Categories A1 & D1
Overcompression Test	4.6.3	Equipment tested to Categories A1 & D1
Temperature Variation	5.0	Equipment tested to Categories B
Humidity	6.0	Equipment tested to Categories A
Shock	7.0	Equipment Tested per DO-160C
Operational	7.2	Paragraph 7.1.1
Crash Safety	7.3	
Vibration	8.0	Equipment tested without shock mounts to categories Y and R. (DO-160C, Table 8-1))
Explosion Proofness	9.0	Equipment identified as "X" no test required
Waterproofness	10.0	Equipment identified as "X" no test required
Fluids Susceptibility	11.0	Equipment identified as "X" no test required
Sand & Dust	12.0	Equipment identified as "X" no test required
Fungus Resistance	13.0	Equipment identified as "X" no test required
Salt Spray	14.0	Equipment identified as "X" no test required
Magnetic Effect	15.0	Equipment tested as Class "A"
Power Input	16.0	Equipment tested as Class "B"
Voltage Spike	17.0	Equipment tested as Class "A"
Audio Frequency Conducted Susceptibility	18.0	Equipment tested as Class "B"
Induced Signal Susceptibility	19.0	Equipment tested as Class "B"
Radio Frequency Susceptibility	20.0	Equipment tested as Class "U"
Radio Frequency Emission	21.0	Equipment tested As Class "B"

Sections 4 thru 8, Test Report #

SKYLIGHT AVIONICS
 MODEL: ATT-500, P/N 500-8510
 DESIGN SPECIFICATION
 Sections 15 thru 21, Test Report #

ix. BENCH CHECK AND ALIGNMENT.

GENERAL

This section provides all the instructions required to perform the alignment and check out of the ATT-500. The terminology used for the operation of the ARINC 429 Transmitter reference the GP-429 Receiver/Transmitter used by Skylight Avionics.

Equipment Required for Bench Check and Alignment

- 28 Volt Power Supply
- 26VAC 400HZ Reference Power Supply
- ARINC 429 Transmitter
- DVM 4 1/2 digit
- Interconnect Cable (Fabricate locally)

Bench Check & Alignment (Roll Steering Label 121)

1. Connect unit to the test rig and apply the proper power and required input signals.
2. Initiate the GP-429 and Restore the ATT-500.CNF file.
3. With the meter in OHM's function verify continuity between Pins 13 and 14. Edit Label 121 to an invalid SSM, verify meter indication of an open circuit.
4. Check and adjust as required the 26VAC Reference 26.000 +/- 0.005VAC. Monitor the AC voltage output of the ATT-500, Pins 3 & 2. Edit Label 121 to perform the required alignment.

Angle Input	Indication	Adjust
a. 30 DEG.	11.790 VAC +/- .015	VR-101
b. -30 DEG.	11.790 VAC +/- .015	VR-101 (If required repeat a.) Repair required if out of tolerance.

5. Edit Label 121 as indicated below, verify outputs meet tolerance levels.

Angle Input	Indication
a. 1 Deg.	0.393 VAC +/- .015
b. -1 Deg.	0.393 VAC +/- .015
c. 5 Deg.	1.965 VAC +/- .015
d. -5 Deg.	1.965 VAC +/- .015
e. 7.5 Deg.	2.947 VAC +/- .015
f. -7.5 Deg.	2.947 VAC +/- .015
g. 10 Deg.	3.930 VAC +/- .015
h. -10 Deg.	3.930 VAC +/- .015
i. 25 Deg.	9.825 VAC +/- .015
j. -25 Deg.	9.825 VAC +/- .015
k. 30 Deg.	11.79 VAC +/- .015
l. -30 Deg.	11.79 VAC +/- .015

SKYLIGHT AVIONICS
MODEL: ATT-500, P/N 500-8510
DESIGN SPECIFICATION

MODEL ATT-500 DIGITAL TO AC ANALOG
P/N 500-8510 S/N MODS: A B C D E
SKYLIGHT AVIONICS PALMDALE, CA Made in U.S.A.

MODEL ATT-500 DIGITAL TO AC ANALOG
P/N 500-8510 S/N MODS: A B C D E F
RTCA DO-160C A1D1/B/A/7/YR/X/X/X/X/X/A/B/A/B/U/B
FAA PMA BOEING 747-200 (E4A/E4B)
SKYLIGHT AVIONICS PALMDALE, CA Made in U.S.A.

Revision 1, 11/05/01
Label revised to incorporate RTCA and FAA PMA data.