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INSTALLATION & OPERATION MANUAL

for

Model AK-350

FAA TSO C88a approved

AMERI-KING CORPORATION

17881 Sampson Lane
Huntington Beach, CA 92648
Tel: (714) 842-8555
Fax: (714) 842-4235
Web Site: www.ameri-king.com
Email: sales@ameri-king.com

IMPORTANT NOTES:

The followings are General Specifications for different Part Nº:

* Model AK-350, Part Nº AK-350:
  Altitude Range: -1,000 ft to +30,000 ft
  Temp. Range: -20°C to +55°C

* Model AK-350, Part Nº AK-350035:
  Altitude Range: -1,000 ft to +35,000 ft
  Temp. Range: -40°C to +55°C

* Model AK-350, Part Nº AK-350040:
  Altitude Range: -1,000 ft to +40,000 ft
  Temp. Range: -40°C to +55°C

* Model AK-350, Part Nº AK-350050:
  Altitude Range: -1,000 ft to +50,000 ft
  Temp. Range: -50°C to +55°C

* Model AK-350, Part Nº AK-350060:
  Altitude Range: -1,000 ft to +62,000 ft
  Temp. Range: -50°C to +55°C

* Model AK-350, Part Nº AK-350080:
  Altitude Range: -1,000 ft to +80,000 ft
  Temp. Range: -50°C to +55°C

The following pages are applicable to all Part Nº, for 35,000 ft; 40,000 ft; 50,000 ft; 60,000 ft and 80,000 ft Configurations:

* Page 8A: Connector Pin Function Interface with Strobe and Non-Strobe type ATC Transponder.

* Page 22A: Data Correspondence Test Point Table.

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SECTION I
GENERAL INFORMATION

1.1 SCOPE

This manual contains information necessary for the installation, calibration, test and operation of the Altitude Reporter, model AK-350, manufactured by Ameri - King Corporation, California, U.S.A.

1.2 DESCRIPTION

The AK-350 Altitude Reporter is an integrated circuit technology based equipment. It is a highest standards of quality and extremely reliable equipment, equipment rack mounted, designed to meet TSO-C88a requirements.

The AK-350 Altitude Reporter is connected to the aircraft pneumatic static system and output to the ATC Transponder. It converts altitude pressure into altitude digital data output to ATC Transponder. When the ground station requests for reporting the altitude, the Transponder will transmit the altitude digital data to ground station, set forth in the International Standard Code for SSR Pressure Altitude Transmission.

The AK-350 model has an altitude range from - 1,000 feet to + 30,000 feet.

1.3 TECHNICAL CHARACTERISTICS

SPECIFICATIONS:	CHARACTERISTICS:
TSO COMPLIANCE:	TSO - C88a
PHYSICAL CHARACTERISTICS:	
* Width:	3.50 inches
* Height:	2.00 inches
* Length:	4.75 inches
* Weigth:	0.40 lbs
* Mounting:	Equipment Rack Mounting type
ALTITUDE RANGE:	from -1,000 ft to +30,000 ft
GENERAL SPECIFICATIONS:	
* Operating Temperature:	- 20 deg. C to +55 deg. C
* Storage Temperature:	- 55 deg. C to +85 deg. C
* Power Input:	(10 - 32) Vdc
- After Warm Up:	13.8 Vdc, 0.20 Amp typical 27.5 Vdc, 0.17 Amp typical
- During Warm Up:	13.8 Vdc, 0.60 A for 1 minute 27.5 Vdc, 0.59 A for 1 minute
BLIND ENCODER OUTPUT:	Per the International Civil Aviation Organization altitude transponder code. Referenced to 29.921 in hg at all times. (Mode C). Compatible with most of transponders in use today.

SPECIFICATIONS:	CHARACTERISTICS:
ENVIRONMENTAL TEST SPECIFICATIONS:	
RTCA DO-160B ENV. CAT.:	C1BA/SLM/XXXXXXZBBXXXX
* Temp. and Altitude:	Category C1
* Low Operating Temp:	- 20 deg. C
* High Operating Temp:	+55 deg. C
* High Short Op. Temp:	+70 deg. C
* Low Survival Temp:	- 55 deg. C
* High Survival Temp:	+85 deg. C
* Altitude:	+35,000 ft
* Decompression:	Equipment mounted in Pressurized or Non-Pressurized cabin area.
* Overpressure:	- 15,000 ft
* Temp. Variation:	Category B Internal section of aircraft. 2 deg. C minimum per minute.
* Humidity:	Category A Standard humidity of 50 deg. C at 95% RH, reduced to +38 deg. C, 48 hours exposure.
* Vibration:	Categories SLM Equipment mounted on equipment rack or fuselage or inst. panel, for fixed wing, turbojet / reciprocating, turbopropeller / turbojet engine aircraft.
* Shock:	Half sine wave, 6 Gn, total duration of 11 +/- 2 msec.

SPECIFICATIONS:	CHARACTERISTICS:
* Magnetic Effect:	Category Z
* Power Input:	Catefory B Equipment for use on aircraft electrical systems supplied by engine driven alternator / rectifiers or DC generators where battery is floating on the DC bus at all times.

Normal operating condition:

	14 Vdc System	28 Vdc System
Maximum:	15.1	30.3
Nominal:	13.8	27.5
Minimum:	12.4	24.8
Emergency:	10.0	20.0

* Voltage Spike:	Category B Equipment designed to withstand the transient voltage characteristics specified by RTCA DO-160B.

1.4 ACCESSORIES SUPPLIED

1.4.1 Installation Kit:

Part No.:	Description:
IK-3502001	Connector Socket, 15 Pin, with Wiring Harness Assembly.
IK-3502002	Pneumatic Hose
IK-3502003	Pneumatic Fitting, T type
IK-3502004	Pneumatic Fitting, Straight type
IK-3502005	Placarding
IK-3502006	Mounting Tray

SECTION II
INSTALLATION AND TEST

2.1 UNPACKING AND INSPECTING EQUIPMENT

The Altitude Reporter should be unpacked with extremely care. Visual inspection of the equipment for evidence of damage incurred during shipment. Any claim should be promtly filed with the transportation company. Save the shipping container to subtantiate the claim.

2.2 MECHANICAL INSTALLATION

The AK-350 Altitude Reporter is normally mounted in the equipment rack, or cabin area, or beneath the instrument panel, which is the temperature controlled environment, either pressurized or non-pressurized area. It should be located away from heater vents and fresh air vents temperature. Its mounting base should be adequately secured in accordance with all applicable FARs. The mounting location should allow a short pressure line from the digitizer to the same static line as the flight altimeter.

See fugure 2.1 for Installation drawing.

During installation, the installation must provide provisions for access to the two adjustment screws for Calibration purpose.

2.3 ELECTRICAL INSTALLATION

The AK - 350 Altitude Reporter is designed to operate on a +14 Vdc or +28 Vdc aircraft bus.

See Figures 2.2, 2.3 for Connector Pin Function interface with Strobe type Transponder and Non-Strobe type Transponder, repectively.

See Figures 2.4, 2.5 for Power pins interface with Switched power output type Transponder and Non-Switched power output type Transponder, respecttively.

See Figures 2.6 thru 2.20 for Interconnect Schematic Diagrams.

It is recommended that all wires are 22 AWG.

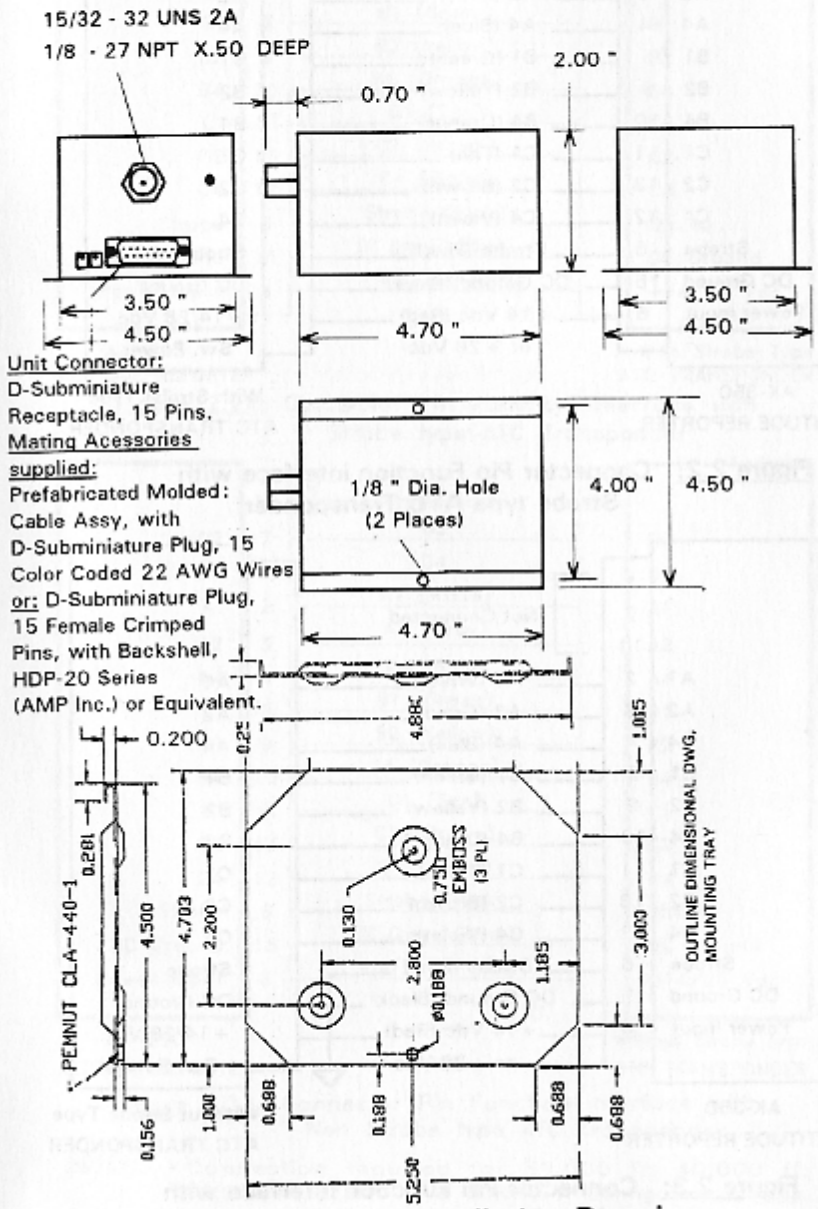


Figure 2.1: Installation Drawing

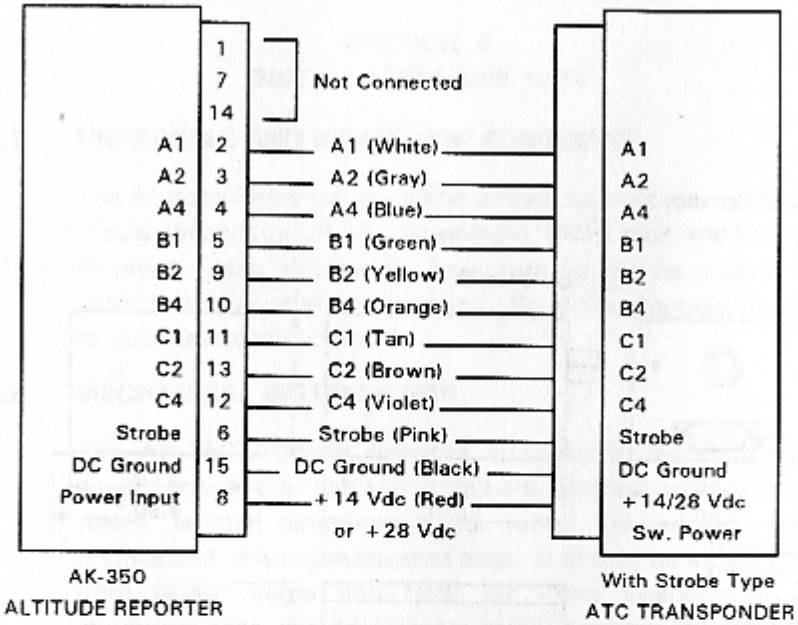


Figure 2.2: **Connector Pin Function interface with Strobe type ATC Transponder**

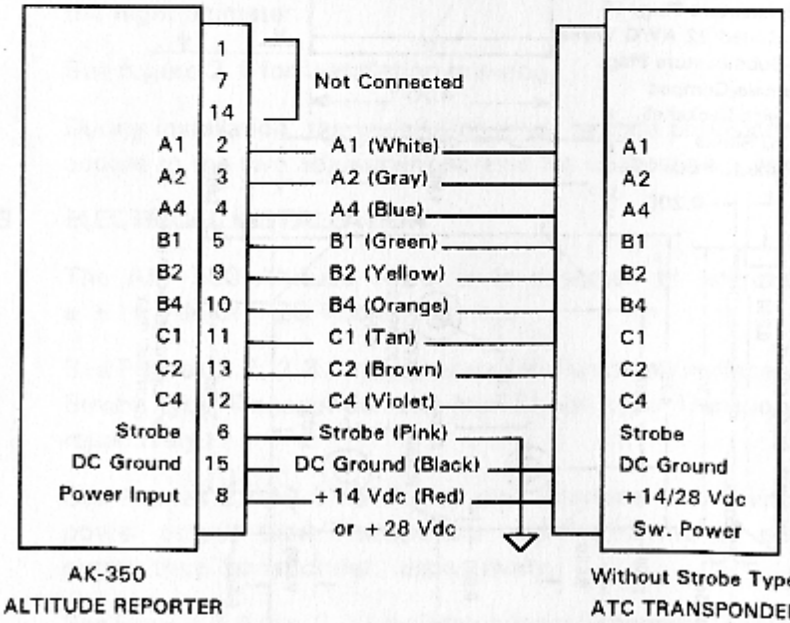


Figure 2.3: **Connector Pin Function interface with Non-Strobe type ATC Transponder**

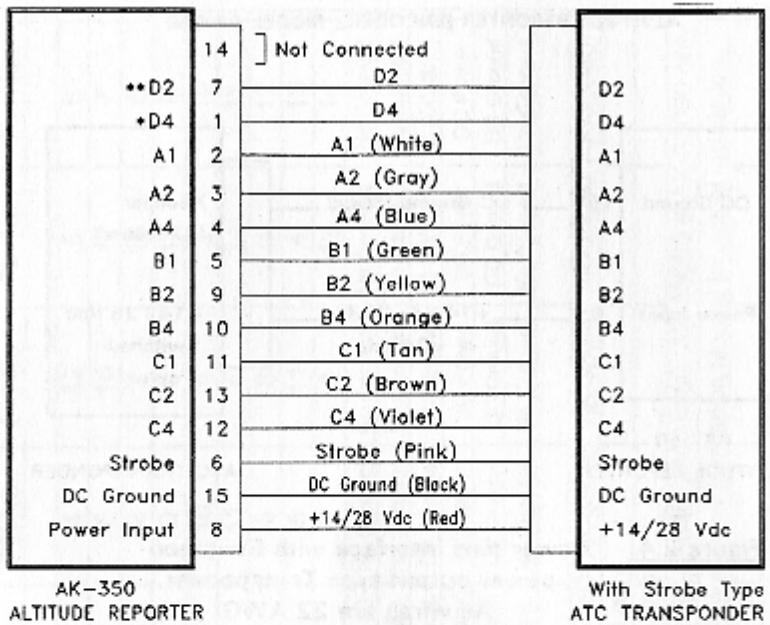


Figure 2.2A: Connector Pin Function interface with Strobe type ATC Transponder

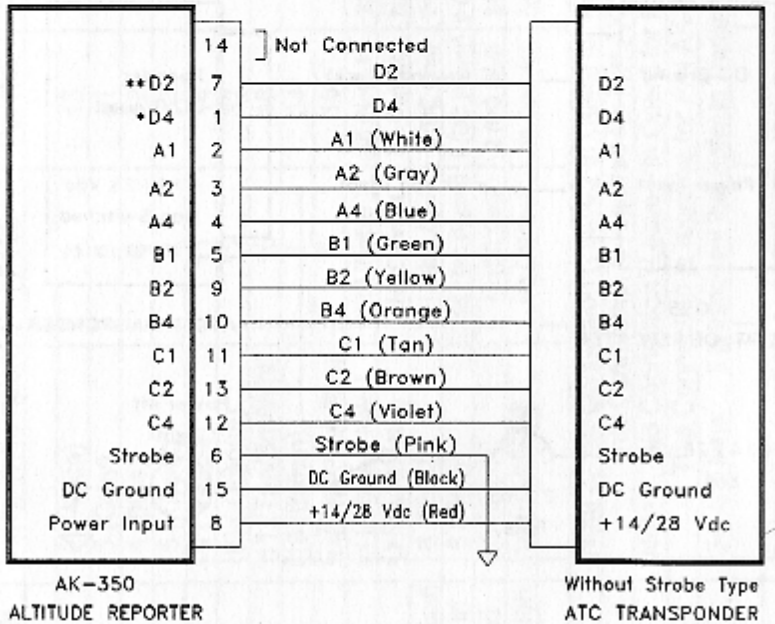


Figure 2.3A: Connector Pin Function interface with Non Strobe type ATC Transponder

NOTES:
- * Connection required for 35,000 ft; 40,000 ft; 50,000 ft; 62,000 ft & 80,000 ft Configurations only.
- ** Connection required for 80,000 ft Configuration only.

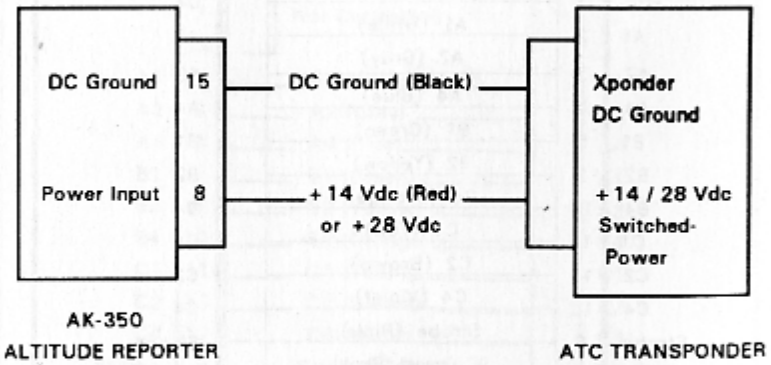


Figure 2.4: Power pins interface with Switched-power output type Transponder. All wires are 22 AWG

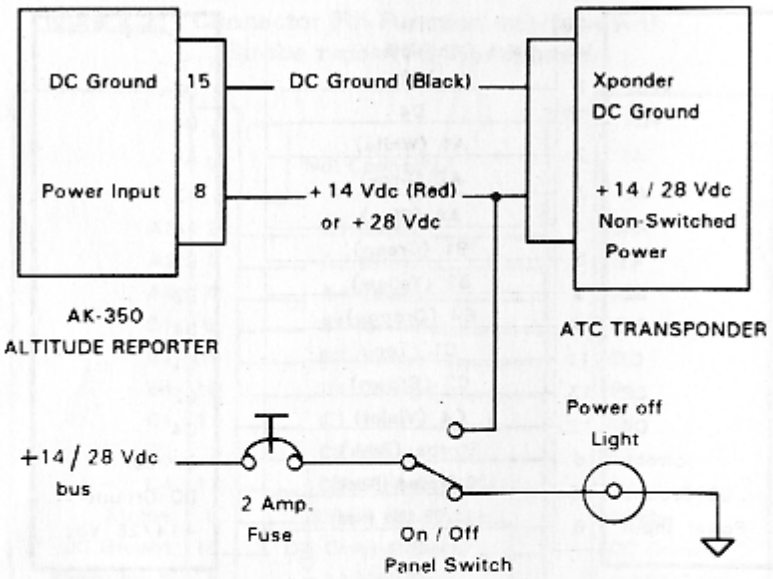


Figure 2.5: Power pins interface with Non-Switched-power output type Transponder. All wires are 22 AWG

ALT ENCODER SIGNAL / FUNCTION	AMERI-KING AK-350 Pin No.(Wire Color)	Transponder GARMIN GTX 320/327 P102	Transponder UPS TECH SL 70 Pin No.:	Transponder BECKER ATC 2000 Pin No.:	Transponder BENDIX TPR-2060/660 Pin No.:	Transponder COLLINS TDR-950/950L Pin No.:	Transponder TERRA TRT 250 Pin No.:	Transponder KING KT-75 Pin No.:
A 1	2 (White)	3	13	16	4	12	5	6
A 2	3 (Grey)	5	31	15	6	10	17	7
A 4	4 (Blue)	6	12	14	8	7	16	8
B 1	5 (Green)	9	33	17	9	6	15	9
B 2	9 (Yellow)	11	14	19	10	5	2	10
B 4	10 (Orange)	12	32	18	11	4	14	11
C 1	11 (Tan/Brn/Wht)	10	16	22	3	8	3	12
C 2	13 (Brown)	4	34	21	5	11	4	13
C 4	12(Violet/Purple/Blue)	7	15	20	7	9	18	14
D 4	1 (Lt Green) Note 1.	18 (Note 1.)	35 (Note 1.)	23 (Note 1.)	No Connect.	No Connect.	No Connect.	No Connect.
D 2	7 (Blk/Wht) Note 2.	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.
Strobe(DC Ground)	6 (Pink)	13 (DC Gnd)	2 (DC Gnd)	24 (DC Gnd)	DC Ground	DC Ground	12 (DC Gnd)	5 (DC Gnd)
DC Power In	8 (Red)	15 (DC Power)	1 (DC Power)	6 (DC Power)	DC Power	DC Power	DC Power	DC Power
DC Ground	15 (Black)	13 (DC Gnd)	2 (DC Gnd)	24 (DC Gnd)	DC Ground	DC Ground	DC Ground	DC Ground
No Connection	14 (Red/Wht)	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.

Note 2. No Connection (Leave Pin Open) for P/N AK-350; AK-35035; AK-35040; AK-35050; AK-35060.
This Connection is required for P/N AK-35080 only.

Note 1. No Connection (Leave Pin Open) for P/N AK-350.
This Connection is required for P/N AK-35035; AK-35040; AK-35050; AK-35060 & AK-35080 only.

General Note: It is important that Refer to Transponder Manufacturer Installation Manual for Actual Installation.

FIGURE 2.6 ALTITUDE ENCODER INTERCONNECT SCHEMATIC DIAGRAM WITH NON-STROBE TRANSPONDERS.

ALT ENCODER	AMERI-KING	Transponder BENDIX	Transponder EDO-AIRE	Transponder CESSNA
SIGNAL /	AK-350	TR-641A/B	RT-777	RT-359A/459A/859A
FUNCTION	Pin No.(Wire Color)	Pin No.:	Pin No.:	Pin No.:
A 1	2 (White)	A	7	14
A 2	3 (Gray)	B	5	13
A 4	4 (Blue)	C	3	15
B 1	5 (Green)	D	12	19
B 2	9 (Yellow)	E	13	17
B 4	10 (Orange)	F	14	16
C 1	11 (Tan/Brn/Wht)	H	8	21
C 2	13 (Brown)	J	6	18
C 4	12(Violet/Purple/Blue)	K	4	20
D 4	1 (Lt Green) Note 1.	No Connect.	No Connect.	No Connect.
D 2	7 (Blk/Wht) Note 2.	No Connect.	No Connect.	No Connect.
Strobe	6 (Pink)	S	2	11
DC Power In	8 (Red)	DC Power	9 (DC Power)	9 (DC Power)
DC Ground	15 (Black)	DC Gnd	1 (DC Gnd)	(DC Gnd)
No Connection	14 (Red/Wht)	No Connect.	No Connect.	No Connect.

Note 2. No Connection (Leave Pin Open) for P/N AK-350; AK-35035; AK-35040; AK-35050; AK-35060.
This Connection is required for P/N AK-35080 only.
Note 1. No Connection (Leave Pin Open) for P/N AK-350.
This Connection is required for P/N AK-35035; AK-35040; AK-35050; AK-35060 & AK-35080 only.
General Note: It is important that Refer to Transponder Manufacturer Installation Manual for Actual Installation.

FIGURE 2.7 ALTITUDE ENCODER INTERCONNECT SCHEMATIC DIAGRAM WITH STROBED TRANSPONDERS.

ALT ENCODER	AMERI-KING	GPS/COMM	GPS/RNAV	GPS/RNAV	GPS NAV	GPS/GNC/GN	GPS/GNC/GN	GPS NAV
		Honeywell	Honeywell	Honeywell	Honeywell	Garmin	Garmin	Trimble
SIGNAL /	AK-350	KLX 135/135A	KLN 89B/94	KLN 90B	KLN 900	400/420/430	500/520/530	2000
FUNCTION	Pin No.(Wire Color)	Pin No.:	P892	P901	P9001	P4001	P5001	P3
A 1	2 (White)	5	22	42	34	69	69	1
A 2	3 (Gray)	22	23	43	35	68	68	14
A 4	4 (Blue)	21	24	44	49	67	67	2
B 1	5 (Green)	19	25	45	17	66	66	15
B 2	9 (Yellow)	18	26	46	54	65	65	3
B 4	10 (Orange)	17	27	47	53	64	64	16
C 1	11 (Tan/Brn/Wht)	14	28	48	45	63	63	4
C 2	13 (Brown)	13	29	49	18	62	62	17
C 4	12(Violet/Purple/Blue)	12	30	50	31	61	61	5
D 4	1 (Lt Green) Note 1.	6(Note 1.)	21(Note 1.)	41(Note 1.)	13(Note 1.)	70(Note 1.)	70(Note 1.)	13(Note 1.)
D 2	7 (Blk/Wht) Note 2.	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.
Strobe(DC Ground)	6 (Pink)	DC Gnd	DC Gnd	DC Gnd	DC Gnd	60 (DC Gnd)	60 (DC Gnd)	18 (DC Gnd)
DC Power In	8 (Red)	DC Power	DC Power	DC Power	DC Power	DC Power	DC Power	DC Power
DC Ground	15 (Black)	DC Gnd	DC Gnd	DC Gnd	DC Gnd	DC Gnd	DC Gnd	DC Gnd
No Connection	14 (Red/Wht)	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.	No Connect.

Note 2. No Connection (Leave Pin Open) for P/N AK-350; AK-35035; AK-35040; AK-35050; AK-35060.
This Connection is required for P/N AK-35080 only.
Note 1. No Connection (Leave Pin Open) for P/N AK-350.
This Connection is required for P/N AK-35035; AK-35040; AK-35050; AK-35060 & AK-35080 only.
General Note: It is important that Refer to GPS Manufacturer Installation Manual for Actual Installation.

FIGURE 2.8 ALTITUDE ENCODER INTERCONNECT SCHEMATIC DIAGRAM WITH NON STROBE GPS.

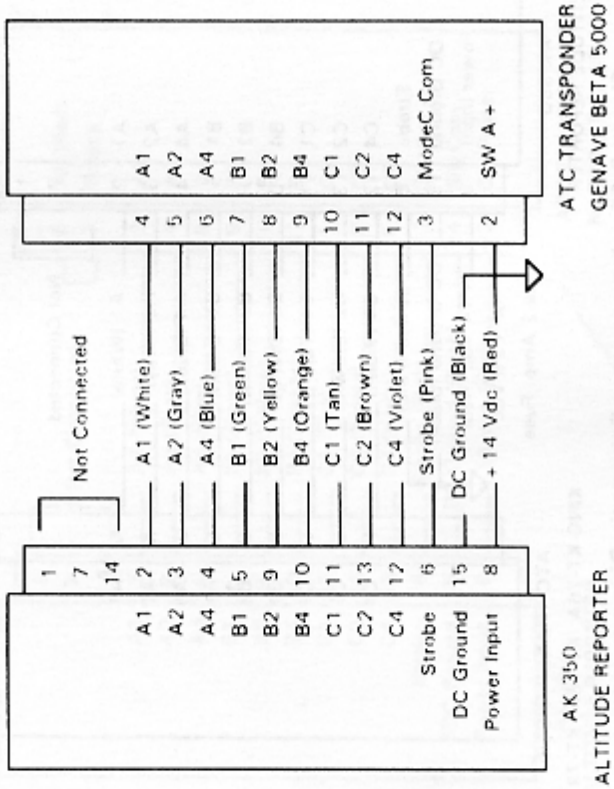


Figure 2.13: Interconnect Schematic Diagram
All wires are 22 AWG

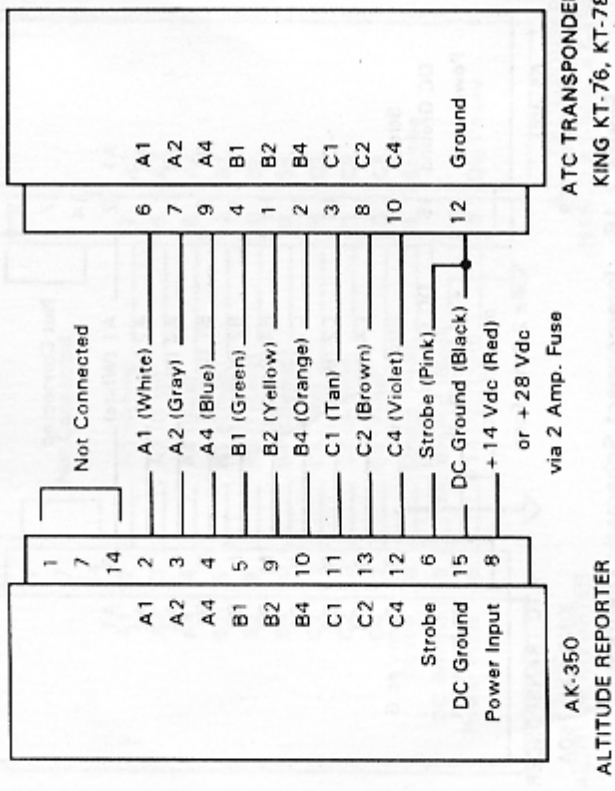


Figure 2.14: Interconnect Schematic Diagram
All wires are 22 AWG

ALT ENCODER SIGNAL / FUNCTION	AMERI-KING AK-350 Pin No.(Wire Color)	EGPWS Honneywell KGP 560 J1
A 1	2 (White)	12
A 2	3 (Gray)	52
A 4	4 (Blue)	33
B 1	5 (Green)	14
B 2	9 (Yellow)	34
B 4	10 (Orange)	73
C 1	11 (Tan/Brn/Wht)	32
C 2	13 (Brown)	13
C 4	12(Violet/Purple/Blue)	72
D 4	1 (Lt Green) Note 1.	No Connect.
D 2	7 (Blk/Wht) Note 2.	No Connect.
Strobe(DC Ground)	6 (Pink)	DC Gnd
DC Power In	8 (Red)	DC Power
DC Ground	15 (Black)	DC Gnd
No Connection	14 (Red/Wht)	No Connect.

Note 2. No Connection (Leave Pin Open) for P/N AK-350; AK-35035; AK-35040; AK-35050; AK-35060.
This Connection is required for P/N AK-35080 only.
Note 1. No Connection (Leave Pin Open) for P/N AK-350.
This Connection is required for P/N AK-35035; AK-35040; AK-35050; AK-35060 & AK-35080 only.
General Note: It is important that Refer to EGPWS/TAWS Manufacturer Installation Manual for Actual Installation.

FIGURE 2.9 ALTITUDE ENCODER INTERCONNECT SCHEMATIC DIAGRAM WITH NON STROBE EGPWS/TAWS .

ALT ENCODER SIGNAL / FUNCTION	AMERI-KING AK-350 Pin No.(Wire Color)	Transponder GENEVA BETA 5000	Transponder NARCO AT-5 AT-6A	Transponder NARCO AT-50A AT-150	Transponder RADAIR 250
A1	2 (White)	4	2	7	7
A2	3 (Gray)	5	4	6	6
A4	4 (Blue)	6	8	8	13
B1	5 (Green)	7	9	12	9
B2	9 (Yellow)	8	10	10	10
B4	10 (Orange)	9	11	9	11
C1	11 (Tan/Brn/Wht)	10	1	14	14
C2	13 (Brown)	11	3	11	16
C4	12 (Violet/Purple/Blue)	12	5	13	12
D4	1 (Lt Green) Note 1.	No. Connect.	No. Connect.	No. Connect.	No. Connect.
D2	7 (Blk/Wht) Note 2.	No. Connect.	No. Connect.	No. Connect.	No. Connect.
Strobe(DC Ground)	6 (Pink)	3	12	8	19
DC Power In	8 (Red)	2	13	18	22
DC Ground	15 (Black)	DC Ground	14	DC Ground	19
No Connection	14 (Red/Wht)	No. Connect.	No. Connect.	No. Connect.	No. Connect.

Note 2. No Connection (Leave Pin Open) for P/N AK-350; AK-35035; AK-35040; AK-35050; AK-35060
This Connection is required for P/N AK-35080 only.

Note 1. No Connection (Leave Pin Open) for P/N AK-350.
This Connection is required for P/N AK-35035; AK-35040; AK-35050; AK-35060 & AK-35080 only.

General Note: It is important that Refer to Transponder Manufacturer Installation Manual for Actual Installation.

FIGURE 2.11 ALTITUDE ENCODER INTERCONNECT SCHEMATIC DIAGRAM WITH STROBED TRANSPONDERS.

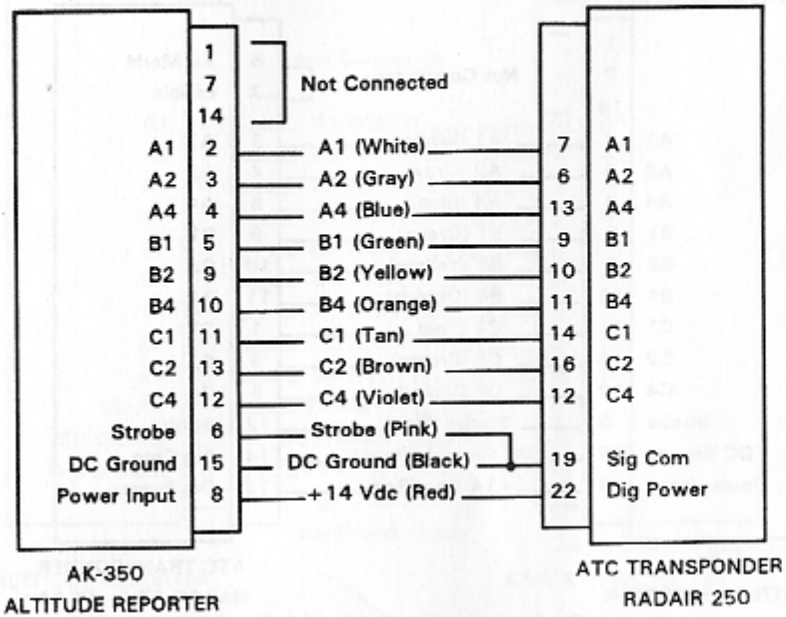


Figure 2.19: Interconnect Schematic Diagram
All wires are 22 AWG

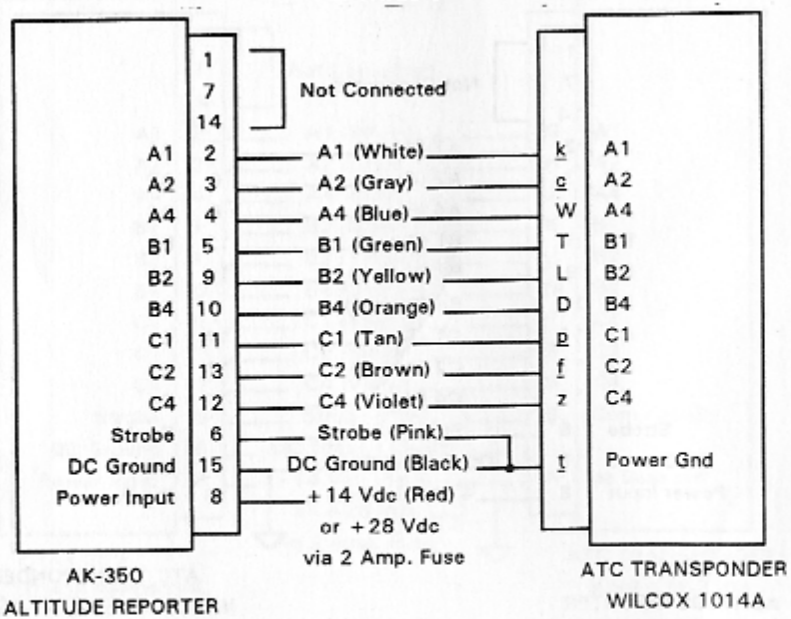


Figure 2.20: Interconnect Schematic Diagram
All wires are 22 AWG

2.4 LIST OF MAJOR COMPONENTS

In addition to the Altitude Reporter AK-350, followings are list of the major components (List of some compatible transponders) which make up the equipment system:

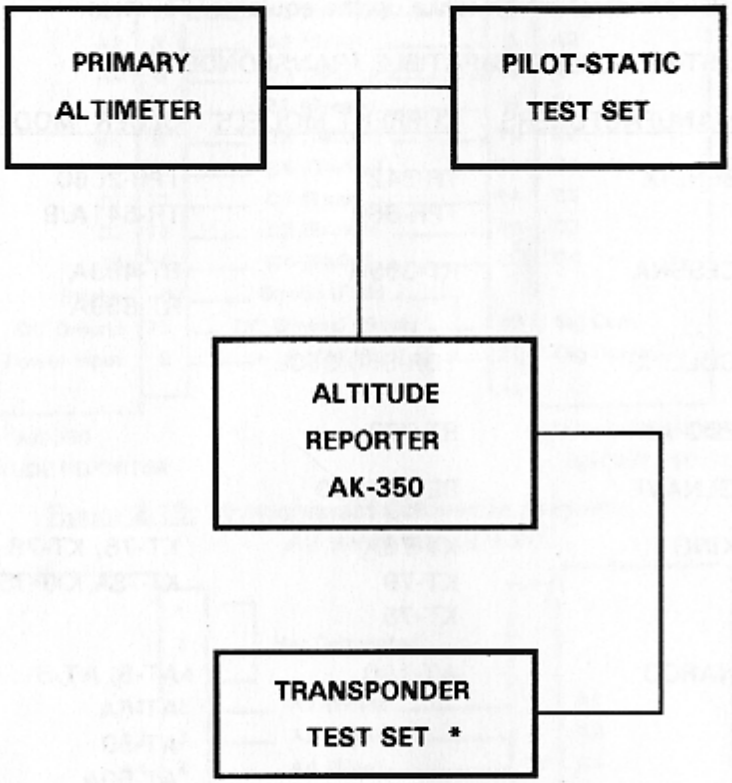
LIST OF SOME COMPATIBLE TRANSPONDERS

MANUFACTURERS	CURRENT MODELS	OLDER MODELS
BENDIX	TR-542 TPR-660	TPR-2060 TR-641A/B
CESSNA	RT-359A	RT-459A RT-859A
COLLINS	TDR-950/950L	
EDO AIR	RT-777	
GENAVE	BETA 5000	
KING	KT-76A KT-79 KT-75	KT-76, KT-78 KT-78A, KXP-750A
NARCO	AT-150	AT-5, AT-6 AT-6A AT-50 AT-50A
RADAIR	250	
TERRA	TRT 250	
WILCOX	1014A	

2.5 CALIBRATION

The AK-350 Altitude Reporter is calibrated at the factory to a pressure data traceable to the National Bureau of Standards

When the AK-350 is installed in the aircraft, it must be calibrated to the primary flight altimeter per Advisory Circular 43-6A so as to comply with FAR 91.36(b) and FAR 91.177.



* Transponder Test Set IFR ATC600A or MICHAEL 730 or Altitude Read-out or equivalent.

Figure 2.21: Test Set Up

2.5.1 Calibration Procedure:

See Figure 2.21 for Test Set Up.

Step 1: Connect a static pressure system tester to the airplane. The AK-350 Altitude Reporter must be connected to the aircraft static line near the flight altimeter and the two altitude adjustment screws must be accessible.

Step 2: Apply power to the AK-350 Altitude Reporter, and the ATC Transponder Test Set. Set primary flight altimeter to 29.92 in hg.

Step 3: Allow a minimum of 15 minutes warm up time.

Step 4: Apply static pressure system tester to obtain a flight altimeter reading of 29,900 ft. Slowly decrease pressure and read the flight altimeter at transition point (29,900 - 30,000 feet). Transition point is indicated on the Transponder Test Set.

If necessary, adjust the "HI" pot of the AK-350, until the transition point at decreasing pressure is 29,950 +/- 20 feet, as read on the primary flight altimeter.

Note 1: The Transponder Test Set reading should match with flight altimeter reading, not with the static pressure system tester.

Note 2: Because mechanical primary flight altimeter pointers are not totally frictionless, therefore tap lightly on the primary flight altimeter with a screwdriver handle to eliminate friction before taking any reading.

Note 3: A leaky static system will make calibration difficult if not possible.

If the aircraft ceiling altitude is less than 30,000 feet, perform the same above procedure for its ceiling altitude, i.e. for a maximum aircraft operating altitude of 20,000 feet, the flight altimeter shall indicate 19,950 +/- 20 feet, at the transition point (19,900 - 20,000 feet).

Step 5: Apply static pressure system tester to obtain a flight altimeter reading of +100 feet. Slowly increase pressure and read the flight altimeter at transition point (+100 - 0 feet). Transition point is indicated on the Transponder Test Set).

If necessary, adjust the "LO" pot of the AK-350, until the transition point at increasing pressure is +50 +/- 10 feet, as read on the primary flight altimeter.

Step 6: Check the transition points, at flight altitude reading of 30,000 feet, for both decreasing and increasing pressure.

The transition point for decreasing pressure should be 29,950 +/- 50 feet.

The transition point for increasing pressure should be 30,050 +/- 50 feet.

Step 7: Check the transition points, at flight altitude reading of 0 feet, for both decreasing and increasing pressure.

The transition point for increasing pressure should be +50 +/- 50 feet.

The transition point for decreasing pressure should be - 50 +/- 50 feet.

Repeat the above procedures until interaction is eliminated.

2.6 DATA CORRESPONDENCE TEST

Reference: FAR 91.36, Appendix E, FAR 43 and Advisory Circular 43-6A.

Set the primary flight altimeter barometric to 29.92 in Hg.

Select several of the following Correspondence test points (chosen by the Calibrating Technician), from - 1,000 feet to the maximum operating altitude of the aircraft or 30,000 feet, for both increasing pressure and decreasing pressure:

Correspondence Test Point	Transition for Decreasing Pressure	Transition for Increasing Pressure
- 1,000 ft	- 1,050 +/- 125 ft	- 950 +/- 125 ft
0 ft	- 50 +/- 125 ft	+50 +/- 125 ft
2,000 ft	1,950 +/- 125 ft	2,050 +/- 125 ft
6,000 ft	5,950 +/- 125 ft	6,050 +/- 125 ft
10,000 ft	9,950 +/- 125 ft	10,050 +/- 125 ft
14,000 ft	13,950 +/- 125 ft	14,050 +/- 125 ft
20,000 ft	19,950 +/- 125 ft	20,050 +/- 125 ft
25,000 ft	24,950 +/- 125 ft	25,050 +/- 125 ft
30,000 ft	29,950 +/- 125 ft	30,050 +/- 125 ft

Maximum Correspondence Error shall be +/- 125 feet, as read on the primary flight altimeter.

NOTE 1: If the aircraft ceiling altitude is less than 30,000 feet, perform the same above procedure for its ceiling altitude, i.e. from -1,000 feet to maximum aircraft ceiling altitude.

NOTE 2: Because mechanical primary flight altimeter pointers are not totally frictionless, therefore tap lightly on the primary flight altimeter with a screwdriver handle to eliminate friction before taking any reading.

NOTE 3: A leaky static system will make calibration and data correspondence test difficult if not possible.

NOTE 4: If the altimeter correspondence error exceeds +/- 125 ft, flight altimeter calibration should be suspected.

Correspondence Test Point	Transition for Decreasing Pressure	Transition for Increasing Pressure
- 1,000 ft	- 1,050 +/- 125 ft	- 950 +/- 125 ft
0 ft	- 50 +/- 125 ft	+50 +/- 125 ft
2,000 ft	1,950 +/- 125 ft	2,050 +/- 125 ft
6,000 ft	5,950 +/- 125 ft	6,050 +/- 125 ft
10,000 ft	9,950 +/- 125 ft	10,050 +/- 125 ft
14,000 ft	13,950 +/- 125 ft	14,050 +/- 125 ft
20,000 ft	19,950 +/- 125 ft	20,050 +/- 125 ft
25,000 ft	24,950 +/- 125 ft	25,050 +/- 125 ft
30,000 ft	29,950 +/- 125 ft	30,050 +/- 125 ft
35,000 ft	34,950 +/- 125 ft	35,050 +/- 125 ft
40,000 ft	39,950 +/- 125 ft	40,050 +/- 125 ft
50,000 ft	49,950 +/- 125 ft	50,050 +/- 125 ft
60,000 ft	59,950 +/- 125 ft	60,050 +/- 125 ft
70,000 ft	69,950 +/- 125 ft	70,050 +/- 125 ft
80,000 ft	79,950 +/- 125 ft	80,050 +/- 125 ft

Maximum Correspondence Error shall be +/- 125 feet, as read on the primary flight altimeter.

NOTE 1: If the aircraft ceiling altitude is less than 80,000 feet, perform the same above procedure for its ceiling altitude, i.e. from -1,000 feet to maximum aircraft ceiling altitude.

NOTE 2: Because mechanical primary flight altimeter pointers are not totally frictionless, therefore tap lightly on the primary flight altimeter with a screwdriver handle to eliminate friction before taking any reading.

NOTE 3: A leaky static system will make calibration and data correspondence test difficult if not possible.

NOTE 4: If the altimeter correspondence error exceeds +/- 125 ft, flight altimeter calibration should be suspected.

2.7 PLACARDING

The altimeter used for flight reference and the Model AK-350, shall be placarded the following information:

(Placard is included with the Installation Kit)

" Replacement or re-calibration of the altimeter used for flight reference requires re-calibration of Model AK-350 Altitude Reporter "

" Altitude encoded to _____ feet "

SECTION III
OPERATION

3.1 GENERAL

This section describes the operation of the AK-350 Altitude Reporter (Altitude Encoder).

3.2 OPERATION

The AK-350 Altitude Reporter is an integrated circuit technology based equipment. It is a highest standards of quality and extremely reliable equipment, equipment rack mounted, designed to meet TSO-C88a requirements.

The AK-350 Altitude Reporter is connected to the aircraft pneumatic static system and output to the ATC Transponder. It converts altitude pressure into altitude digital data output to ATC Transponder. When the ground station requests for reporting the altitude, the Transponder will transmit the altitude digital data to the ground station, set forth in the International Standard Code for SSR Pressure Altitude Transmission.

The AK-350 model has an altitude range from - 1,000 feet to + 30,000 feet.

The Altitude Reporter AK-350 is a remote mounted equipment that is fully automatic in operation. The companion ATC Transponder normally controls the operation of the Altitude Reporter by automatically enabling or disabling its operation.

This is done by pulling-up to logic LOW (to enable) or pulling-down to logic HIGH (to disable) the STROBE (Pin 6) line of the Altitude Reporter.

It is in operation (enabled) any time the Transponder is set to the Altitude mode (Mode C) of operation.

The digital altitude data is inhibited (disabled) any time the Altitude mode is turned off or to the Ident mode (Mode A).

Power to the Altitude Reporter is automatically turned on, whenever the companion Transpoder is switched to STANBY mode, or ON mode, or ALTITUDE mode.

IMPORTANT OPERATION NOTE:

During in flight operation, if the altitude information is requested to turned off by the ATC Controller, the companion Transponder should be switched to the STANBY mode, not to the OFF mode. When the power is re-activated, a warm-up time is required in order for the Altitude Reporter to function properly.

If the companion Tranponder does not have switched-power output pin to the Altitude Reporter, an ON / OFF Switch and a Power Off Light may be incorporated (See Figure 2.5 above).

SECTION IV
WARRANTY

4.1 LIMITED WARRANTY

All equipments manufactured by Ameri-King Corp. are guaranteed against defective materials and workmanship for a period of one and a half years after purchase.

Any equipment found to be defective due to material and workmanship during this limited warranty will be repaired and put in original manufactured operating condition.

An option of extended three years limited warranty will become valid at the end of the first one and a half years, which will warrant to the original owner.

This Ameri-King Corp. warranty is void unless the Warranty Registration Card is filled out and returned to Ameri-King Corp. within 10 days after original purchase.

Ameri-King Corp.'s liability under this warranty is limited to servicing, repairing, replacing or adjusting any equipment returned prepaid to the factory by express written or oral authorization for that purpose and to repair or replace defective parts thereof. Repaired equipment will be returned to the equipment user freight pre-paid. Shipping charge will be paid one way only by Ameri-King Corp.

Upon discovery of a condition believed to be caused by a defect in manufacturing, Ameri-King Corp. must be notified. No equipment to be shipped to Ameri-King Corp. without prior authorization. Any equipment returned to Ameri-King Corp. should be accompanied by a failure report, in writing, giving full particulars in support of the claim.

This limited warranty does not cover or apply to any of the followings, including: misuse of the equipment; installation or operation not in accordance with factory instructions; accidents or negligent damage; alterations of any manner; repair by other factory; changes in calibration occuring as a result of normal use of the equipment; the cost of labor, material, or other expense incidental to the repair, installation,

removal from the aircraft or replacement of the equipment; damaged during shipment or installation; any personal injuries or damage to property resulting from the installation or the operation of the equipment or the failure of the equipment or any part thereof, the equipment user assumes the risks of all such injuries or damage. In such cases, the repair will be billed at cost. An estimate will be submitted for approval before repair is initiated.

Any equipment which is returned for warranty and found not to be defective shall be charged a minimum handling and service charge and returned C.O.D.

No warranty will be activated for Ameri-King Corp. products unless the installation is approved by an FAA Certified Installer and the warranty card is completed by the supplying dealer or upon receipt by Ameri-King Corp. of form(s) 337 or 8130-(}.

THE IMPLIED WARRANTY AND ALL OTHER IMPLIED WARRANTIES ARE HEREBY EXCLUDED. AMERI - KING CORP. MAKES NO OTHER WARRANTY OR REPRESENTATION OF ANY KIND WHATSOEVER EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

AMERI - KING CORP.'S MAXIMUM LIABILITY HEREUNDER IS LIMITED TO THE PURCHASED PRICE OF THE PRODUCT. IN NO EVENT SHALL AMERI- KING CORP. BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL OR SPECIAL DAMAGES OF ANY NATURE ARISING FROM THE SALE OR USE OF THE PRODUCT, WHETHER BASED IN CONTRACT, TORT, STRICT LIABILITY OR OTHERWISE.

4.2 REPAIR SERVICE

All equipments manufactured by Ameri-King Corp. must be repaired at the facility of Ameri-King Corp.

All the repair services shall be performed and completed within 3 days upon repairing estimate is approved by equipment user or installation dealers.