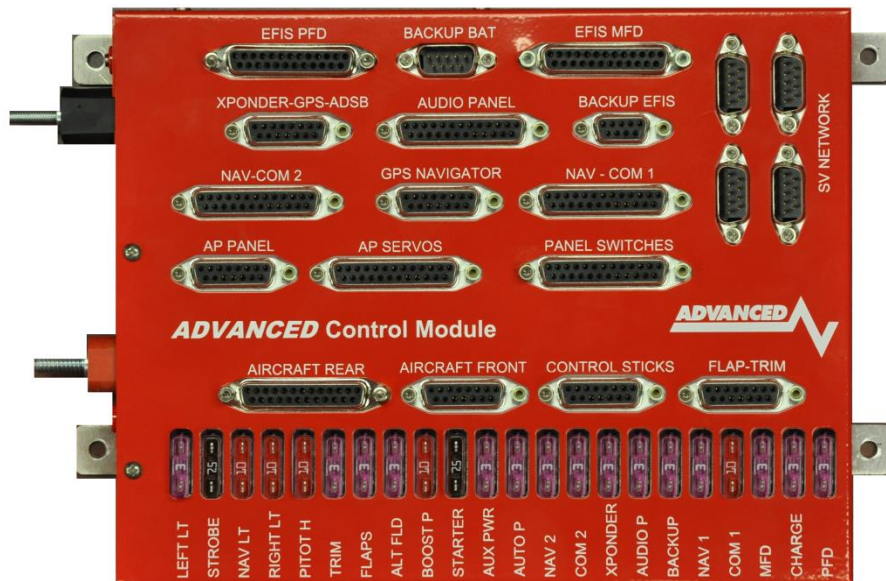


ADVANCED Quick Panel Installation Manual



LIMITED WARRANTY / AGREEMENT

Advanced Flight Systems Inc. ("AFS") warrants its aircraft monitoring system instrument and system components to be free from defects in materials and workmanship for a period of one year commencing on the date of the first flight of the instrument or one year after the invoice date, whichever comes first. AFS will repair or replace any instrument or system components under the terms of this Warranty provided the item is returned to AFS prepaid.

This Warranty shall not apply to any unit or component that has been repaired or altered by any person other than AFS, or that has been subjected to misuse, abuse, accident, incorrect wiring, or improper or unprofessional installation by any person. THIS WARRANTY DOES NOT COVER ANY REIMBURSEMENT FOR ANYONE'S TIME FOR INSTALLATION, REMOVAL, ASSEMBLY OR REPAIR. AFS reserves the right to determine the reason or cause for warranty repair.

1. This Warranty does not extend to any engine, machine, aircraft, boat, vehicle or any other device to which the AFS monitoring system may be connected, attached, or used with in any way.
2. THE REMEDIES AVAILABLE TO THE PURCHASER ARE LIMITED TO REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE OF THE PRODUCT, AT THE SOLE DISCRETION OF AFS. CONSEQUENTIAL DAMAGES, SUCH AS DAMAGE TO THE ENGINE OR AIRCRAFT, ARE NOT COVERED, AND ARE EXCLUDED. DAMAGES FOR PHYSICAL INJURY TO PERSON OR PROPERTY ARE NOT COVERED, AND ARE EXCLUDED.
3. AFS is not liable for expenses incurred by the customer or installer due to AFS updates, modifications, improvements, upgrades, changes, notices or alterations to the product.
4. The pilot must understand the operation of this product before flying the aircraft. Do not allow anyone to operate the aircraft that does not understand the operation of the monitoring system. Keep the operating manual in the aircraft at all times.
5. AFS is not responsible for shipping charges or damages incurred during shipment.
6. No one is authorized to assume any other or additional liability for AFS in connection with the sale of AFS products.
7. IF YOU DO NOT AGREE TO ACCEPT THE TERMS OF THIS WARRANTY, YOU MAY RETURN THE PRODUCT FOR A FULL REFUND. IF YOU DO NOT AGREE TO ACCEPT THE TERMS OF THIS WARRANTY, DO NOT INSTALL THE PRODUCT.
8. This warranty is made only to the original purchaser and is not transferable. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES OR OBLIGATIONS, EXPRESS OR IMPLIED, ORAL OR WRITTEN. AFS EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER AGREES THAT IN NO EVENT SHALL AFS BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING DAMAGES TO THE ENGINE OR AIRCRAFT, LOST PROFITS, LOSS OF USE, OR OTHER ECONOMIC LOSS. EXCEPT AS EXPRESSLY PROVIDED HEREIN, AFS DISCLAIMS ALL OTHER LIABILITY TO THE PURCHASER OR ANY OTHER PERSON IN CONNECTION WITH THE USE OR PERFORMANCE OF AFS' PRODUCTS, INCLUDING BUT NOT LIMITED TO STRICT PRODUCTS LIABILITY IN TORT.

IMPORTANT PRE-INSTALLATION NOTICE

Before installing the monitoring system, READ THE LIMITED WARRANTY / AGREEMENT. There is information in the Limited Warranty / Agreement that may alter your decision to install this product. IF YOU DO NOT ACCEPT THE TERMS OF THE LIMITED WARRANTY / AGREEMENT DO NOT INSTALL THE PRODUCT. The product may be returned for a refund if you do not accept the terms of the Limited Warranty / Agreement.

Before starting the installation, make sure that your planned installation will not interfere with the operation of any controls. The installer should use current aircraft standards and practices to install this product. Refer to AC 43.13-2A, *Acceptable Methods, Techniques, and Practices - Aircraft Alterations* and AC 43.13-1B, *Acceptable Methods, Techniques, and Practices--Aircraft Inspection and Repair*.

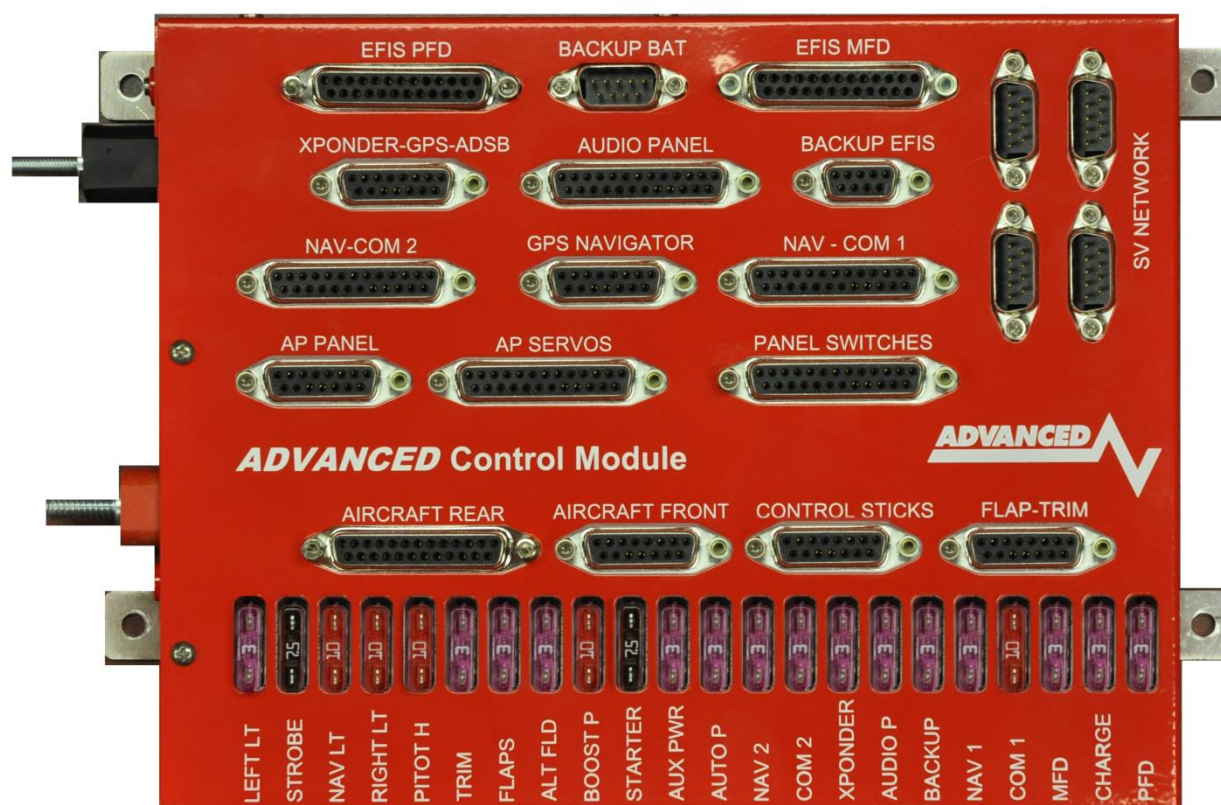
Table of Contents

ADVANCED Control Module (ACM) Mounting	7
Getting Started	9
DSUB Pin Crimper Tools	11
EFIS Software Configuration	12
Quick Panel Post Installation Check	13
ACM EFIS Serial Port Mapping	14
IFR Panel Configuration Checklist	15
EFIS (PFD and MFD) Tests.....	21
RADIO and Audio Panel Tests.....	21
Trim Servo Tests	21
Panel Dimming	22
Aircraft Lights	22
Auto Pilot Tests	22
ELT Tests	22
D6 EFIS Tests	22
Pitot Tube Tests.....	22
+12V Power Plug	22
Backup EFIS PFD and MFD to Customer Panel Folder	22
Verify Switch Modules Switch Color Mounting Screw Master Relay Screws All Lences intact	22
Take Photo of completed running panel	23
Verify All Components have screws and are tight	23
IFR Panel ACM Fuse Sizes	24
IFD-540/440 Configuration.....	25
GTN-650 Configuration	27
VFR Panel Configuration Checklist	28
VFR Panel Fuse Sizes	28
RADIO and INTERCOM Tests	29
Trim Servo Tests	29
Panel Dimming	29
Aircraft Lights	29
Auto Pilot Tests	30
ELT Tests	30
Pitot Tube Tests.....	30

Remote Component Mounting	31
RV-7 Slider Panel	31
RV-10 Standard Panel	32
57840 Aircraft Front Harness	33
57850 AIRCRAFT REAR HARNESS	34
EFIS Inputs	35
73102 AF-GPS Wiring	36
72200 ADAHRS 200/201 Wiring	37
Advanced SV Network Wiring	38
71320 SV EMS Wiring	39
53914 SV EMS Engine Sensor Harness Diagram	40
53847 SV EMS EGT-CHT Harness Diagram	41
ACM FUSE Power Chart	42
ACM-ECB Electronic Circuit Breakers	43
ACM Power Diagram	44
57475 AP Servo Harness	46
57860 Control Stick Harness	47
57870 Trim and Flap Servo Harness	49
57302 D10 Backup Harness with CO and TCW Battery	50
Aircraft Antennas	51
FLARM TRX-1500 Interface	52
FLARM TRX-1500 Configuration	53
RV-14 Panel Install	54
RV-14 Remote Component Mounting	54
Avidyne IFD-540 Tray Mounting	54
RV-14 EMS-220 Module Install	54
RV-14 SV-ADSB-470/472 ADS-B Module Install	54
Advanced Control Module (ACM)	58
RV-14 ADAHRS Mounting and Wiring	59
RV-14 Aircraft Front Wiring (P/N: 57842)	60
57842 RV-14 Front Harness	61
RV-14 Airframe Harnesses (P/N: 57852)	62
57843 RV-14 Canopy Harness	64
57851 RV-14 Aircraft Rear / Trim Harness 57476 RV-14 Servo Harness	65
RV-14 Pitch Servo Wiring	67

RV-14 Roll Servo Wiring	67
RV-14 Heated Pitot Tube.....	69
RV-14 Optional TruTrak Autopilot Wiring	70
RV-14 Van's Tailcone Left Wiring.....	72
RV-14 AFS P/N: 57481 Rear Servo Harness.....	73
RV-14 EMS Harness Install (P/N: 53914)	74
RV-14 SV-Network Wiring (P/N: 57853).....	75
RV-14 Control Stick Wiring (P/N: 57860).....	76
RV-14 Input Wiring and Configuration (AF-5000)	77
RV-14 Antenna Locations	80
<i>ACM Flap Control</i>	81
<i>SV Autopilot Setup</i>	82
<i>System Wiring Table</i>	83
<i>Registration Information</i>	84

ADVANCED Control Module (ACM) Mounting



- Connect the #8 main power wire from the battery master relay to the red power lug on the ACM. The main power wire should have a ¼" (0.250") ring terminal with a molded plastic cover.
- Connect the #10 airframe ground wire from the airframe ground to the black power lug on the ACM. The ACM main ground wire should have a #10 ring terminal with a molded plastic cover.

Do not over-torque the power terminal nuts, they are soft copper and will break if over-torqued.

Red Main Power Terminal Nut Torque: 36 in-lbs

Black Main Ground Terminal Nut Torque: 20 in-lbs

Getting Started

The following is a general recommendation on the steps required to install the Advanced Quick Panel:

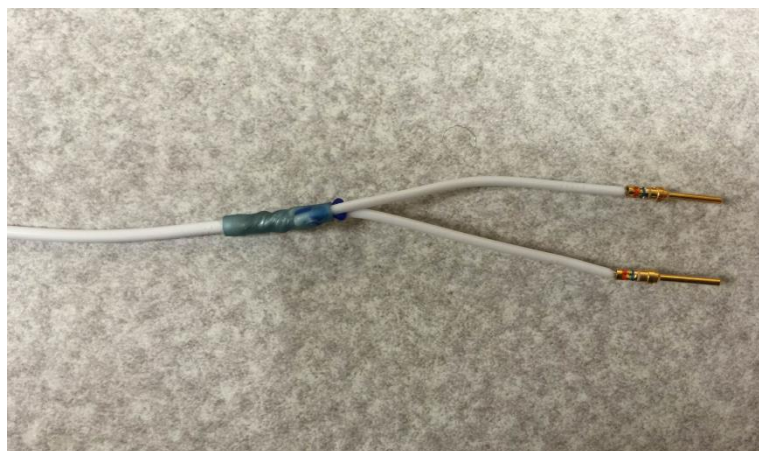
1. Disconnect the Aircraft Battery
2. Remove the old panel from the aircraft (if upgrading). Label each wire as you disconnect them from the old panel switches and components.
3. Mark all remote component locations and drill mounting holes using the information from the Remote Component Mounting section of this manual or supplied layout drawings.
4. Cut any required clearance holes in the sub-panel.
5. Remove EFIS screens from the new Panel for sub panel access. You will need to press the release buttons on the side of the USB data connector to get the cable to release
6. Test fit new panel and trim panel ribs for clearance if required.
7. Mount the ACM module to the sub panel using 6-32 mounting screws, washers and lock nuts.
8. Connect the Aircraft Master relay to the ACM Red power input post using size #8 Wire and the supplied 1/4"-20 nuts and washers.
9. Connect the Aircraft Ground to the ACM Black ground post using size #10 Wire and the supplied 10-32 nuts and washers.
10. Connect your existing aircraft Landing Lights, Nav Lights, Strobe Lights, Pitot Heat, and ELT to the supplied P/N: 57850 Aircraft Rear Harness ACM connector. You must limit the power on each D-Sub pin to less than 5 amps by using multiple pins at the connector. The recommended procedure is to use 18ga wire for each pin and then use a Solder Sleeve to connect the multiple wires to the larger gage wire going to the device.



SOLDER SLEEVE 1/4", Outside diameter: .050" - .200"

EDMO #: L-C-3
MFR #: STS L-C-3

Termination jackets consist of a heat-shrinkable, transparent, polyvinylidene fluoride jacket with an inner, pre-fluxed, solder preform and two thermoplastic sealing inserts. When heat is applied, the solder melts and flows to provide a superior connection between the ground lead and the shield. At the same time, the two thermoplastic sealing inserts melt and the outer sleeve shrinks to provide an environmentally protected termination. This L-C series of solder jackets does not have a ground lead.



11. Connect your existing aircraft Fuel Pump, Alternator, and Starter Switch to the supplied P/N: 57840 Aircraft Front Harness ACM connector.
12. Connect your existing aircraft Control Stick switches to the supplied P/N: 57860 Aircraft Control Stick ACM connector.
13. Connect your existing aircraft flap and trim motor wiring to the supplied P/N: 57870 Flap and Trim motor ACM connector.
14. Mount the SV-200 and SV-201 ADAHRS units in the aircraft using the instructions from the AF-5000 manual.
15. Mount the OAT sensor to the bottom of the wing. Wire the OAT sensor to the ADAHRS
16. Plump Pitot, Static and AOA to the mounted ADAHRS
17. Wire the ADAHRS to the spare SV Network DSUB-9 connector on the ACM module
18. Wire the Autopilot servos to the ACM AP Servo connector
19. Mount the remote components to the sub panel.
20. Mount the AF-GPS module and connect to the ACM harness
21. Connect aircraft Antennas to the remote radios (Transponder, Com, ADS-B in, ...)
22. Install the Engine Sensors
23. Connect the Engine Sensors to the EMS and CHT/EGT Harness. The Engine Harnesses should route to the Left PFD EFIS display in the panel. BE sure to leave service loop of cable to make installing the EFIS PFD easier.
24. Mount the Panel using the supplied mounting screws.
25. Connect the aircraft Master relay to the screw terminals on the back of the Master Switch PCB board.
26. Verify that you have protection diodes installed in your master and starter relay.
27. Wire Aircraft Magneto P-Leads to the Key Switch.
28. Carefully connect and route all the supplied panel harnesses to the ACM module.
29. Double check that all ACM harnesses are connected to the correct DSUB connector.
30. Install the EFIS PFD connecting the EFIS Main Connector, EFIS AUX connector, Ethernet, and USB data port wire.
31. Install the EFIS MFD and connectors
32. Connect the Aircraft Battery, verify that it is charged
33. Turn on the Panel Master Switch and verify that the EFIS PFD powers up
34. Turn on the Panel Avionics Switch and verify that the EFIS MFD and Radios power up.
35. Turn on the Autopilot Switch.

DSUB Pin Crimper Tools

Daniels Mil Spec Crimper AFM8

Part Number: M22520/2-01



AFM8 Positioner for Standard D-Sub Connectors

DMC Part Number: K13-1



Less expensive crimpers are available from a number of sources.

Crimper, D-Sub, Closed Barrel Contacts, 4-Way Indent AWG 26-20



EFIS Software Configuration

- Enter the EFIS instrument calibration menu by pressing the [SET] button followed by holding the [CAL] button on both EFIS screens.
- Scan for Network devices using the 2. SV-NETWORK Menu
- Press the Update Button in the SV-Network Menu if any devices indicate they need updating.
- Verify that both EFIS screens are getting ADAHRS and Engine Data.
- Calibrate Trim Positions
- Calibrate Flap Positions
- Calibrate Autopilot servos
- Test Autopilot servos
- Verify that the Engine parameters are correct on both EFIS screens
- Verify that all transponder settings are correct in both EFIS screens.
- Get a Pitot/Static and Transponder Test before the first flight.

Quick Panel Post Installation Check



CAUTION: Do not fly the aircraft until the following check list has been completed.

Never Power the system with an automotive battery charger and the aircraft battery disconnected.

Before Power is applied for the First Time

- Aircraft Master Relay is properly connected to the ACM Module **RED** Terminal
- Aircraft ground is properly connected to the ACM Module **BLACK** Terminal Verify relay protection diodes are installed on all large aircraft relays (Master, Starter, Avionics...etc)
- Pitot/Static and AOA plumbing is secured to the correct ports on the ADAHRS
- All Component Harnesses have been properly connected to the correct ports on the ACM module.

Applying Power for the First Time

- The **RED** Master Switch controls power to the Pilot PFD EFIS screen.
- The **BLACK** Avionics switch controls power to the MFD EFIS and all radios
- The **BLACK** Autopilot switch controls power to the autopilot servos.

First Engine Start

- With relay protection diodes installed, your AFS screen(s) can be turned on before the engine is started.
- After the engine has started, verify oil pressure and temperature. If none is indicated **SHUT DOWN** the engine. Verify all wiring and consult your local A&P, the engine manufacturer, and/or AFS technical support.
- Verify all engine indications are correct per your **engine manufacturers** manual

Before First Flight

- Verify you have the latest system software and mapping data (if applicable) - Visit the AFS Website for latest software and map data
- Weight & Balance page updated with **your** aircrafts data
- Checklist pages updated with information from your **aircraft manufacturer**
- Magnetometer ADAHRS Alignment completed
- Pitot/Static check completed from an authorized FAA Repair Station.

ACM EFIS Serial Port Mapping

Advanced IFR with GTN-650

Serial Port	EFIS PFD	NOTES	EFIS MFD	NOTES
0	ACM		NMEA 9600	D6 GPS Signal
1	PAC15		ELT/SL30	
2	Transponder		*CO	CO Detect Option
3	NONE		ADS-B	
4	AVTN/FADC1		AF-GPS	

Advanced IFR with IFD540

Serial Port	EFIS PFD	NOTES	EFIS MFD	NOTES
0	70050 AFS ACM		NMEA/AVTN	D6 GPS Signal
1	74126 Audio Panel		ACK ELT/SL30	
2	74109 AFS XPNDR		*CO	CO Detect Option
3	GTR/GNC-2xx		74112 AFS-ADSB	IFD Radio Tuning
4	AVTN/RNAV		73102 AF-GPS	

Skyview Serial Ports

Serial Port	EFIS PFD	NOTES	EFIS MFD	NOTES
1	ACM		ACM	
2	NMEA 9600		NMEA 9600	ELT Signal
3	TRANSPONDER		TRANSPONDER	
4	ADS-B		ADS-B	
5	GPS Puck		GPS Puck	

IFR Panel Configuration Checklist

(Completed by AFS before panel shipment)

N Number:_____ ICAO:_____ Customer:_____

Aircraft:_____ Tank Size:_____ INJ or Carb:_____ Float or CAP:_____

<http://avionictools.com/>

1. Verify Fuse Sizes
2. Verify ELT Panel Battery (green sticker with date)
3. Set PAC15 Audio Panel Jumpers for high noise. Mark **HN** on Model Number

	J4	J5
1	OFF	OFF
2	ON	ON
3	OFF	OFF
4	ON	ON

4. Configure EFIS ADMIN Settings

PFD

MFD

- a. Serial Ports Functions

Serial Port Functions	
3. Port 0	70050 AF-ACM
4. Port 1	74126 PAC15EX AUDIO
5. Port 2	74109 AF-XPNDR-261
6. Port 3	DISABLED
7. Port 4	AVTN/ARNAV

Serial Port Functions	
3. Port 0	NMEA/AVTN
4. Port 1	DISABLED
5. Port 2	DISABLED
6. Port 3	74112 AF-ADSB-470
7. Port 4	73102 AF-GPS-250

- b. Navigation Source Selection

Navigation Source Selection	
8. GPS/NAV 1 Data Source	SV-ARINC
9. GPS/NAV 2 Data Source	Remote GPS
10. GPS/NAV 3 Data Source	NONE

Navigation Source Selection	
8. GPS/NAV 1 Data Source	SV-ARINC
9. GPS/NAV 2 Data Source	Serial Port #4
10. GPS/NAV 3 Data Source	NONE

- c. Configure EMS, Airdata, AOA, ADAHRS Settings

Module Configuration	
11. Engine Module Config	HW:AF-SV, NET:OFF
12. Air Module Config	HW:AF-SV, NET:OFF
13. AOA Module Config	HW:AF-SV, NET:OFF
14. AHRS Module Config	HW:AF-SV, NET:OFF

Module Configuration	
11. Engine Module Config	HW:AF-SV, NET:OFF
12. Air Module Config	HW:AF-SV, NET:OFF
13. AOA Module Config	HW:AF-SV, NET:OFF
14. AHRS Module Config	HW:AF-SV, NET:OFF

- d. Display Assignments

Display Assignments	
16. This Display Useage	PRIMARY/PILOT
17. Remote Data Source	BACKUP/CO-PILOT

Display Assignments	
16. This Display Useage	BACKUP/CO-PILOT
17. Remote Data Source	PRIMARY/PILOT

5. SV Network Configuration
Verify all green with the following 7 devices:
ACM, AF-5000, AF-5000, ADAHRS-200, ADAHRS-201, AF-COM, SV-AP
6. Verify Altitude, Airspeed, AOA working on ADAHRS-200 and ADAHRS-201
7. Verify Primary and Backup Volts settings
8. Verify ADAHRS OAT (use test OAT Sensor)
9. Configure Aircraft Info
10. Verify RPM set to 2 Pulses for 4 Cylinder and 3 Pulses for 6 Cylinder

Instrument Calibration		Configure RPM	
1. Max		3000	
2. Red High At		2800	
3. Yellow High At		2700	
4. Yellow Mid-Band Top		2100	
5. Yellow Mid-Band Bottom		2100	
6. Audio On/Off		OFF	
7. Instrument On/Off		ON	
8. Pulses Per 2 Revolutions		3	

11. Verify Manifold Sensor Configuration

Instrument Calibration		Configure Manifold Pressure	
1. Max (Top of Gauge)		35.0	
2. Red High At		32.0	
3. Yellow High At		31.0	
4. Yellow Low At		0.0	
5. Red Low At		0.0	
6. Min (Bottom of Gauge)		0.0	
7. Audio OFF/ON/etc		OFF	
8. Instrument OFF/ON		ON	
9. Display Units		INHG	
10. Shift Adjust		0.0	
11. Sensor Type		AD_VAL: 3909	
		MANIFOLD 45 TURBO (AFS 41401)	
12. Pin Select		C37_P26	

12. Verify Fuel Flow Settings

Instrument Calibration		Configure Fuel Flow
1. Max (Top of Gauge)	30.0	
2. Red High At	26.0	
3. Yellow High At	24.0	
4. Yellow Low At	0.0	
5. Red Low At	0.0	
6. Min (Bottom of Gauge)	0.0	
7. Audio OFF/ON/etc	OFF	
8. Instrument OFF/ON	ON	
9. Fuel Units	GALLONS	
10. Sensor Type	FLOW SENSOR	
11. K Factor	650	

13. Verify Fuel Computer settings

14. Configure Fuel Pressure Sensor and Ranges

	Carburated 41201 (0-15PSI)	Injected 41301 (0-50PSI)
Sensor		
Max	15	40
Red High	10	35
Yellow High	8	30
Yellow Low	3	15
Red Low	2	12
Min	0	0

Instrument Calibration		Configure Fuel Pressure
1. Max (Top of Gauge)	45.0	
2. Red High At	40.0	
3. Yellow High At	35.0	
4. Yellow Low At	15.0	
5. Red Low At	12.0	
6. Min (Bottom of Gauge)	0.0	
7. Audio OFF/ON/etc	ON	
8. Instrument OFF/ON	ON	
9. Display Units	PSI	
10. Shift Adjust	0.0	
11. Sensor Type	AD_VAL: 0482 KAVLICO 50PSI FLUID PRESS (101716-000)	
12. Pin Select	C37_P8	

15. Amperage Shunt PRIMARY

16. Amperage Hall OFF

17. Configure Oil Pressure 41101 (0-150) Kavlico

Instrument Calibration		Configure Oil Pressure	
1. Max (Top of Gauge)	115.0		
2. Red High At	105.0		
3. Yellow High At	95.0		
4. Yellow Low At	40.0		
5. Red Low At	25.0		
6. Min (Bottom of Gauge)	0.0		
7. Audio OFF/ON/etc	ON		
8. Instrument OFF/ON	ON		
9. Display Units	PSI		
10. Shift Adjust	0.0		
11. Sensor Type	AD_VAL: 0444 KAVLICO 150PSI FLUID PRESS (101693-000)		
12. Pin Select	C37_P6		

18. Configure Oil Temp 40405 VDO

Instrument Calibration		Configure Oil Temperature	
1. Max (Top of Gauge)	250.0		
2. Red High At	235.0		
3. Yellow High At	220.0		
4. Yellow Low At	140.0		
5. Red Low At	40.0		
6. Min (Bottom of Gauge)	70.0		
7. Audio OFF/ON/etc	ON		
8. Instrument OFF/ON	ON		
9. Display Units	FAHRENHEIT		
10. Shift Adjust	0.0		
11. Sensor Type	AD_VAL: 2088 1/8"-27 NPT FLUID TEMP (100409-001)		
12. Pin Select	C37_P7		

19. Configure HP Engine Type and Horse Power

Instrument Calibration		Configure Horsepower	
1. Rated Horsepower	195		
2. Engine Manufacturer	LYCOMING		
3. Instrument OFF/ON	ON		

20. Configure Carb Temp Carb = ON INJ = OFF

21. Configure Tank 1 and Tank 2

Instrument Calibration		Configure Fuel Tank 1
1. Tank Size	15.0	
2. Yellow Low At	4.0	
3. Red Low At	2.0	
4. Audio OFF/ON/etc	ON	
5. Instrument OFF/ON	ON	
6. Fuel Units	GALLONS	
7. Sensor Type	AD_VAL: 2255 FUEL LEVEL (RESISTIVE)	
8. Pin Select	C37_P20	

Instrument Calibration		Configure Fuel Tank 2
1. Tank Size	15.0	
2. Yellow Low At	4.0	
3. Red Low At	2.0	
4. Audio OFF/ON/etc	ON	
5. Instrument OFF/ON	ON	
6. Fuel Units	GALLONS	
7. Sensor Type	AD_VAL: 2257 FUEL LEVEL (RESISTIVE)	
8. Pin Select	C37_P21	

22. Set Tank 3 and Tank 4 to Zero Gallons and OFF

23. Configure Elevator Trim to ACM

Instrument Calibration		Configure Elevator Trim
1. Enable/Disable	ALWAYS ON	
2. Position Source	ACM/VPX	
Position Calibration		
3. FULL UP	5	
4. CENTER	175	
5. FULL DOWN	255	
Trim Motor		
6. Auto Trim Enable/Disable	ENABLED	
7. Auto Trim Motor Polarity	STANDARD	
8. Auto Trim Motor Test	COMPLETE	
9. Rapid Travel Motor Speed (%)	100	
10. Rapid Travel Below IAS (KTS)	50	
11. Slow Travel Motor Speed (%)	60	
12. Slow Travel Above IAS (KTS)	125	

24. Configure Aileron Trim to ACM

25. Configure Flaps

Position Source ACM
Operation Mode Momentary
End Point Slop Timeout 3

26. Configure SVN Menu

27. Electrical Configuration

Instrument Calibration	Electrical Configuration
1. Enable/Type	ADV CTRL MOD
2. Audio ON/OFF	OFF

Panel Settings

28. Landing Gear Configuration

Gear Down Input NONE

29. Configure Transponder Settings

N Number

MODE S Code

GPS Input Type (AFS Direct for no Navigator; TRIG ADS-B for IFD)

GPS Certification (Uncertified for AF-GPS; Level C for IFD)

Enable TIS

ADS-B input Frequency UAT ONLY

30. Com Radio Setup

Primary S/N (from SV-NET Scan)

Radio Type SV-COM

Squelch 70

Side Tone 25

Mic Gain 50

31. NAV Radio Configuration DISABLED

32. Configure Audio Panel

33. Configure Inputs (1-3)

RV-14 Input Configuration

Instrument Calibration	Configure Inputs
BACK	
INPUT 1	
1. Label	CANOPY
2. Usage	CANOPY
3. Logic	Norm Closed
4. Timeout (mm:ss)	0:00
5. Audio OFF/ON/etc	ABOVE 1500 RPM
LOCAL STATUS	
EFIS 1	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
REMOTE STATUS	
EFIS 2	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
INPUT 2	
6. Label	PITOT
7. Usage	GENERIC
8. Logic	Norm Open
9. Timeout (mm:ss)	0:00
10. Audio OFF/ON/etc	OFF
INPUT 3	
11. Label	STALL
12. Usage	GENERIC
13. Logic	Norm Open
14. Timeout (mm:ss)	0:00
15. Audio OFF/ON/etc	ON
SAVE SEL	
PREV NEXT SEL	

34. Configure Test Audio to 75

EFIS (PFD and MFD) Tests

- ADAHRS 1 and 2 working
- Verify all buttons
- Verify Knobs
- Verify Joystick
- Set SD card
- Test Dimmer
- Verify Ethernet (EMS and Bugs work on both screens)
- Test AP Panel FD Button
- Verify Map Database is current and High Res Terrain from USB sticks
- Verify ADAHRS cross check is working
- Verify Bugs are turned ON (Heading, ALT, Speed)
- Verify Backup Battery (Shutdown and Button 1 Power Up)

RADIO and Audio Panel Tests

- Pilot PTT – Radio TX is displayed on the AF-COM Panel and radio transmits.
- Copilot PTT – Radio TX is displayed on the AF-COM Panel and radio transmits.
- Radio receives from handheld
- Intercom works between headsets, verify squelch and volume work.
- Music input works
- EFIS PFD sets and displays radio freq
- EFIS MFD sets and displays radio freq.
- Radio displays airport data from EFIS
- EFIS audio works, test using EFIS timer
- EFIS PFD and MFD screens can flip-flop radio

Trim Servo Tests

- Trim and Flap motors work from control sticks
- Flap motor works from panel flap switch
- Trim and Flap positions change on EFIS PFD and MFD.
- Program and test flap positions

Panel Dimming

- Panel buttons dim with EFIS screens
- AP Panel Module buttons dim with EFIS screens
- Radio dims with EFIS screens

Aircraft Lights

- Left Landing light turns on
- Right Landing light turns on
- Landing lights flash in Pulse Mode
- Nav lights turn on
- Strobe lights turn on

Auto Pilot Tests

- AF-SV Scan for Servos
- Set Travel Limits
- Motors turn ON and OFF

ELT Tests

- Test GPS Signal to ELT using scope on pin 4.

D6 EFIS Tests

- Compass Wiring?
- D6 Receiving GPS data?

Pitot Tube Tests

- Pitot Status line

+12V Power Plug

- Verify Power

Backup EFIS PFD and MFD to Customer Panel Folder

Verify Switch Modules Switch Color Mounting Screw

Master Relay Screws
All Lences intact

Panel Shipping Checklist

Take Photo of completed running panel

Verify All Components have screws and are tight

- 1 Verify all Cables have a Description and Part Number Label
- 2 Check EFIS Seral Number Labels
- 3 Use BOM to check off every item going into the box and serial number
- 4 Take photo of components in box
- 5 Verify Panel Mounting Hardware included.
- 6 Check Starter Switch Key and Terminal screws

IFR Panel ACM Fuse Sizes

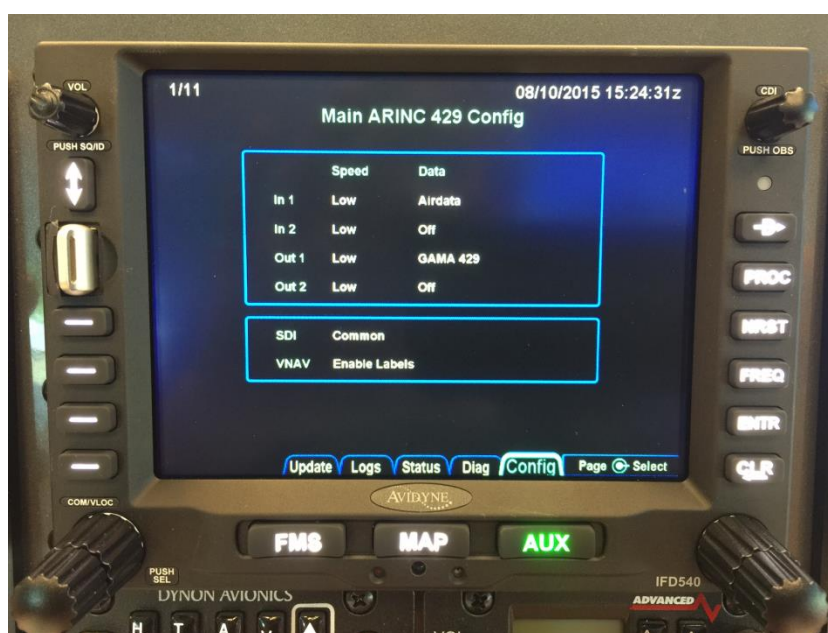
LABEL	SIZE	DESCRIPTION
LEFT LT	10	Left Landing Light
STROBE	7.5	Strobe Lights
NAV LT	10	Nav Lights
RIGHT LT	10	Right Landing Light
PITOT H	10	Pitot Heat
TRIM	2	Trim Motors
FLAPS	5	Flap Motor
ALT FLD	5	Alternator Field Power
BOOST P	10	Boost Pump
STARTER	7.5	Starter contactor
AUX PWR	5	Auxiliary power plug
AUTO P	5	Autopilot Servos
NAV 2		Nav 2 Radio
COM 2	5	Com 2 Radio
XPONDER	3	Transponder and ADS-B Power
AUDIO P	3	Remote Audio Panel Power
BACKUP	3	Dynon D6 EFIS, ELT, CO Detector
NAV 1	7.5	Navigator NAV Power
COM 1	10	Navigator Com Power
MFD	5	Copilot EFIS Screen
CHARGE	10	TCW Battery, Charge and Pass through power
PFD	5	Pilot EFIS Screen

IFD-540/440 Configuration



To enter configuration mode you will need to power up the IFD with a USB memory stick.

ARINC configuration



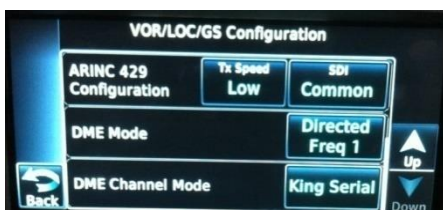
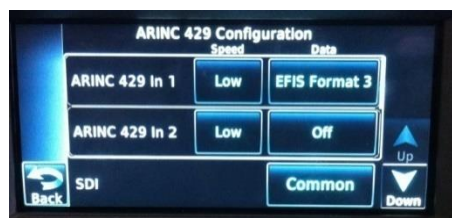
Serial Port Configuration



VOR / LOC / GS ARINC 429 Configuration



GTN-650 Configuration



VFR Panel Configuration Checklist

VFR Panel Fuse Sizes

LABEL	SIZE	DESCRIPTION
LEFT LT	10	Left Landing Light
STROBE	7.5	Strobe Lights
NAV LT	10	Nav Lights
RIGHT LT	10	Right Landing Light
PITOT H	10	Pitot Heat
TRIM	2	Trim Motors
FLAPS	5	Flap Motor
ALT FLD	5	Alternator Field Power
BOOST P	10	Boost Pump
STARTER	7.5	Starter contactor
AUX PWR	5	Auxiliary power plug
AUTO P	5	Autopilot Servos
NAV 2	3	Nav 2 Radio
COM 2	5	Com 2 Radio
XPONDER	3	Transponder and ADS-B Power
AUDIO P	2	Intercom
BACKUP	3	Backup EFIS
NAV 1	3	Nav 1 Radio
COM 1	5	Com 1 Radio
MFD	5	Copilot EFIS Screen
CHARGE	10	TCW Battery, Charge and Pass through power
PFD	5	Pilot EFIS Screen

RADIO and INTERCOM Tests

- ADVANCED-SV SCAN for Radio SN
- Configure COM Radio Setup on EFIS using Radio S/N from SCAN

Instrument Calibration		COM Radio Setup
1. Enable/Disable	ENABLED	
2. Radio Type	SV-COM-PANEL	
3. Squelch Level (%)	60	
4. Sidetone Level (%)	25	
5. Mic Gain	50	
6. Primary SN	107	

- Pilot PTT – Intercom LED turns yellow, radio TX is displayed on the AF-COM Panel and radio transmits.
- Copilot PTT – Intercom LED turns yellow, radio TX is displayed on the AF-COM Panel and radio transmits.
- Radio receives from handheld
- Intercom works between headsets, verify squelch and volume work.
- Music input works
- EFIS PFD sets and displays radio freq
- EFIS MFD sets and displays radio freq.
- Radio displays airport data from EFIS
- EFIS audio works, test using EFIS timer
- EFIS PFD and MFD screens can flip-flop radio

Trim Servo Tests

- Trim and Flap motors work from control sticks
- Flap motor works from panel flap switch
- Trim and Flap positions change on EFIS PFD and MFD.
- Program and test flap positions

Panel Dimming

- Panel buttons dim with EFIS screens
- AP Panel Module buttons dim with EFIS screens
- Radio dims with EFIS screens

Aircraft Lights

- Left Landing light turns on
- Right Landing light turns on
- Landing lights flash in Pulse Mode
- Nav lights turn on
- Strobe lights turn on

Auto Pilot Tests

- AF-SV Scan for Servos
- Set Travel Limits
- Motors turn ON and OFF

ELT Tests

- Install Battery in ELT Remote on Panel
- Install Battery in ELT buzzer
- Configure MFD Serial Port #1 to ACK ELT
- Test GPS Signal to ELT using scope on pin 4.

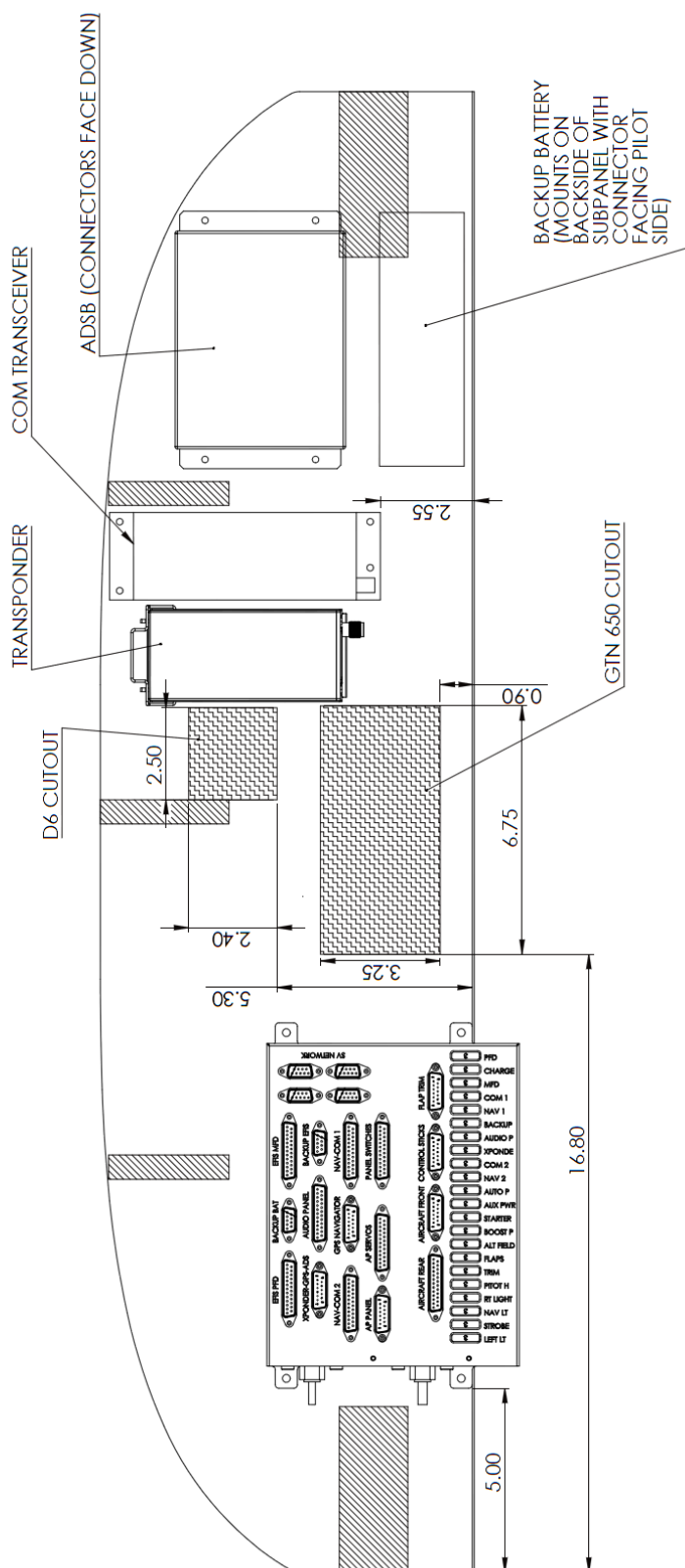
Pitot Tube Tests

- Pitot Status line

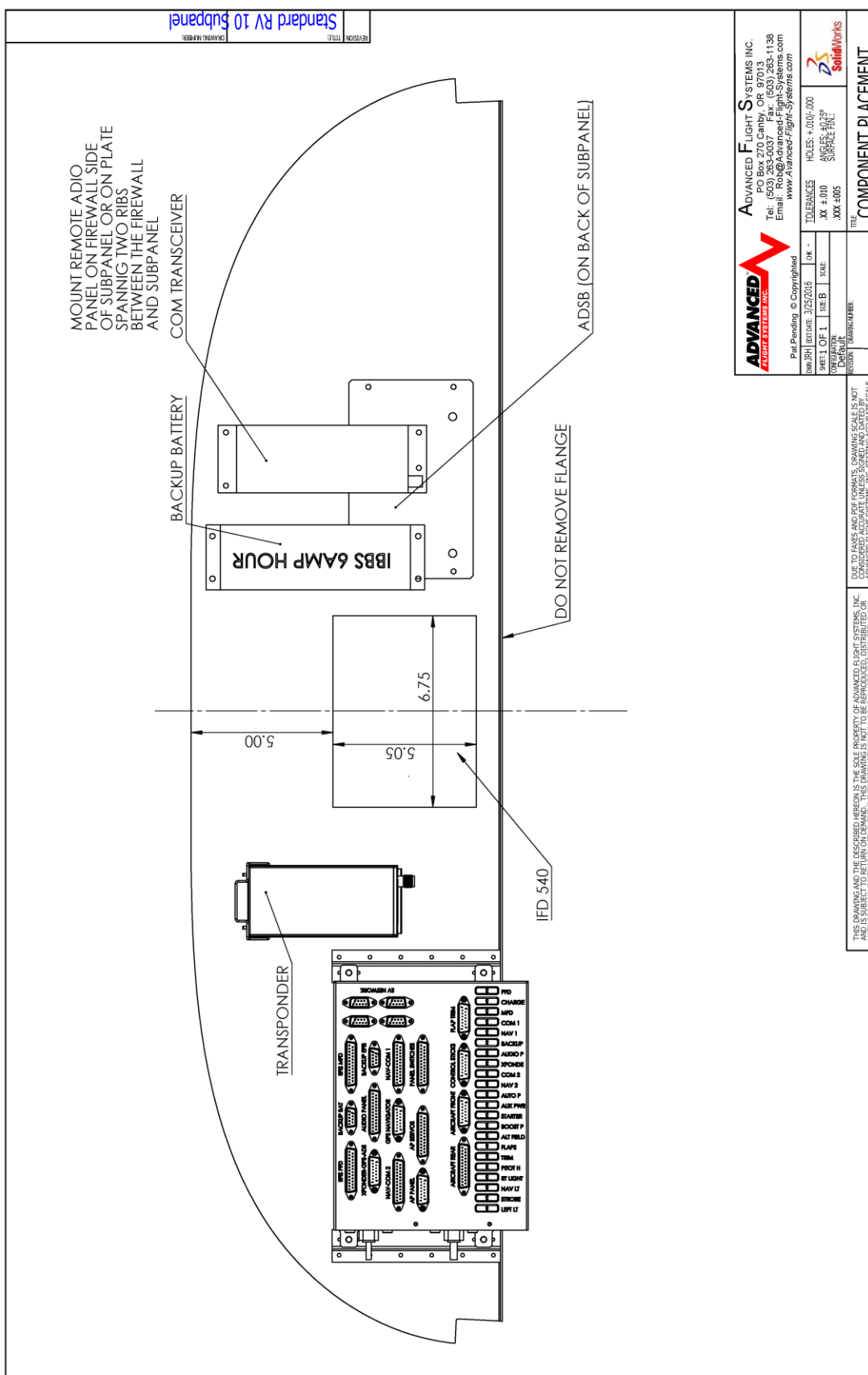
Remote Component Mounting

RV-7 Slider Panel

AUDIO PANEL CAN BE MOUNTED ON THE BACK OF THE SUBPANEL USING THE SUPPLIED FLANGES OR BETWEEN THE FIREWALL AND SUBPANEL ON A PLATE SPANNING THE CENTER AND COPILOT SIDE RIBS.

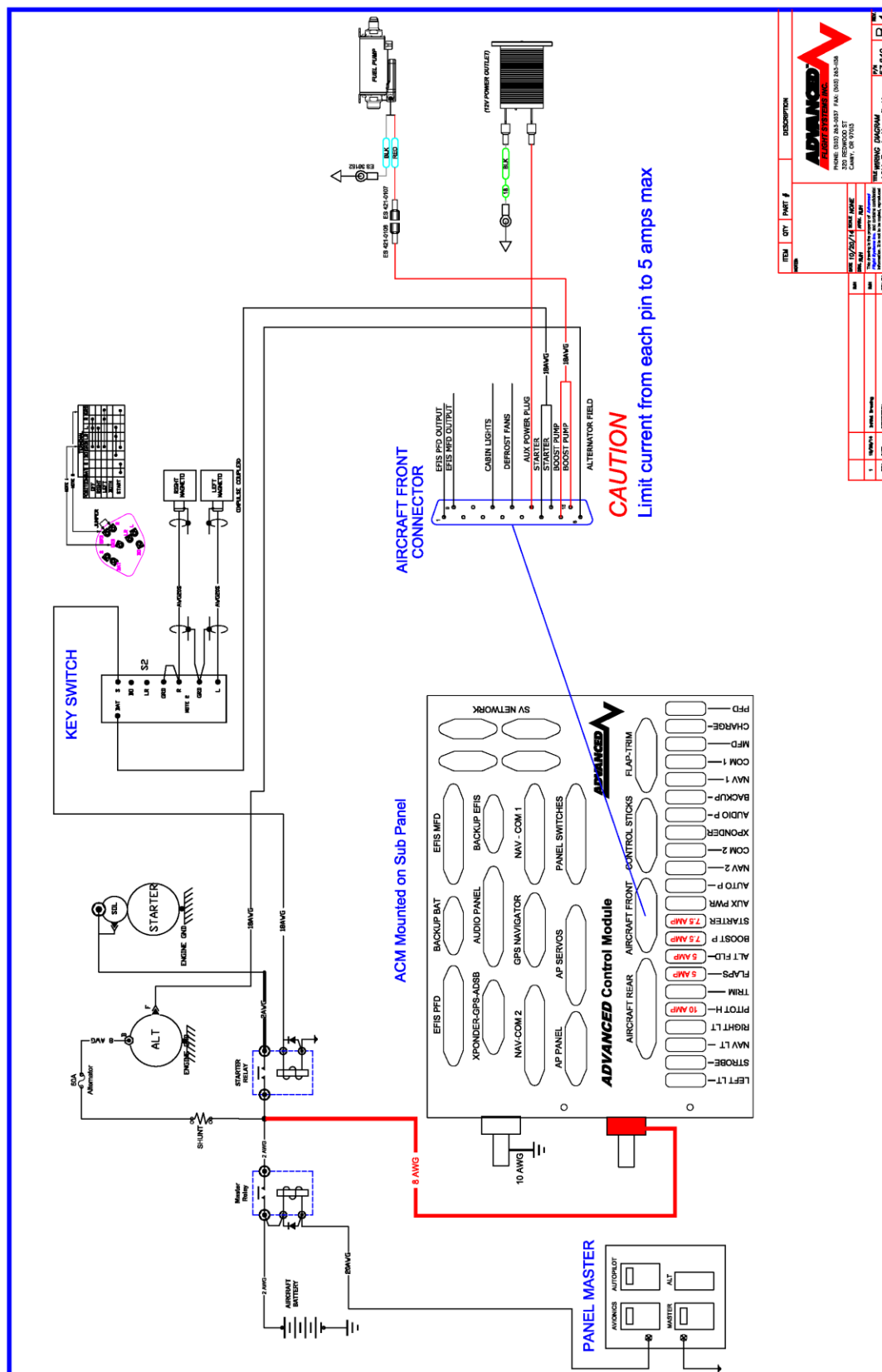


RV-10 Standard Panel



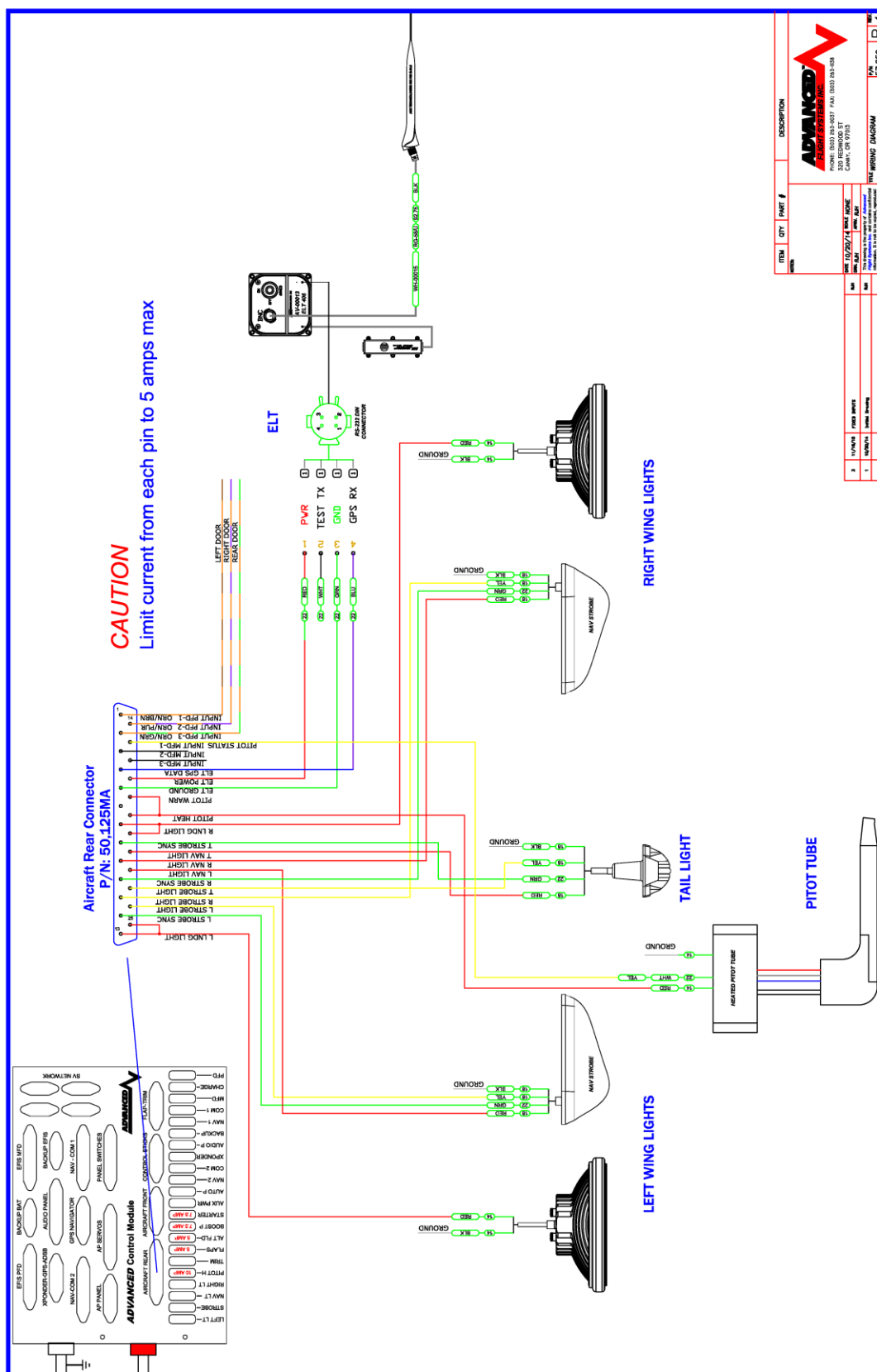
57840 Aircraft Front Harness

Use the supplied DSUB 15 Pin male connector assembly P/N: 50115MA and schematic to wire the aircraft front connector. Verify wire sizes from this drawing.



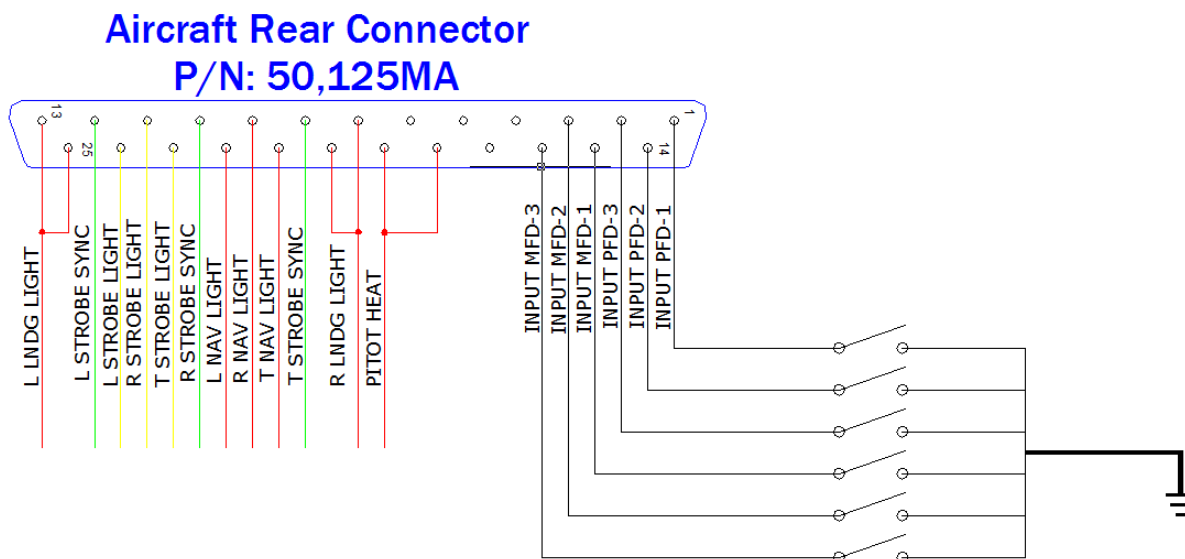
57850 AIRCRAFT REAR HARNESS

Use the supplied DSUB 25 Pin male connector assembly P/N: 50125MA and schematic to wire the aircraft front connector. Verify wire sizes from this drawing.



EFIS Inputs

The PFD and MFD EFIS screen digital inputs (1,2,3) are wired to the ACM Aircraft Rear Connector and configured in the EFIS calibration menu. The EFIS inputs are designed to activate when connected to ground.



Instrument Calibration
Configure Inputs
BACK

INPUT 1

1. Label: CANOPY

2. Usage: CANOPY

3. Logic: Norm Closed

4. Timeout (mm:ss): 0:00

5. Audio OFF/ON/etc: ABOVE 1500 RPM

INPUT 2

6. Label: PITOT

7. Usage: GENERIC

8. Logic: Norm Open

9. Timeout (mm:ss): 0:00

10. Audio OFF/ON/etc: OFF

INPUT 3

11. Label: STALL

12. Usage: GENERIC

13. Logic: Norm Open

14. Timeout (mm:ss): 0:00

15. Audio OFF/ON/etc: ON

LOCAL STATUS

EFIS 1

1 ☒ 2 ☐ 3 ☐

REMOTE STATUS

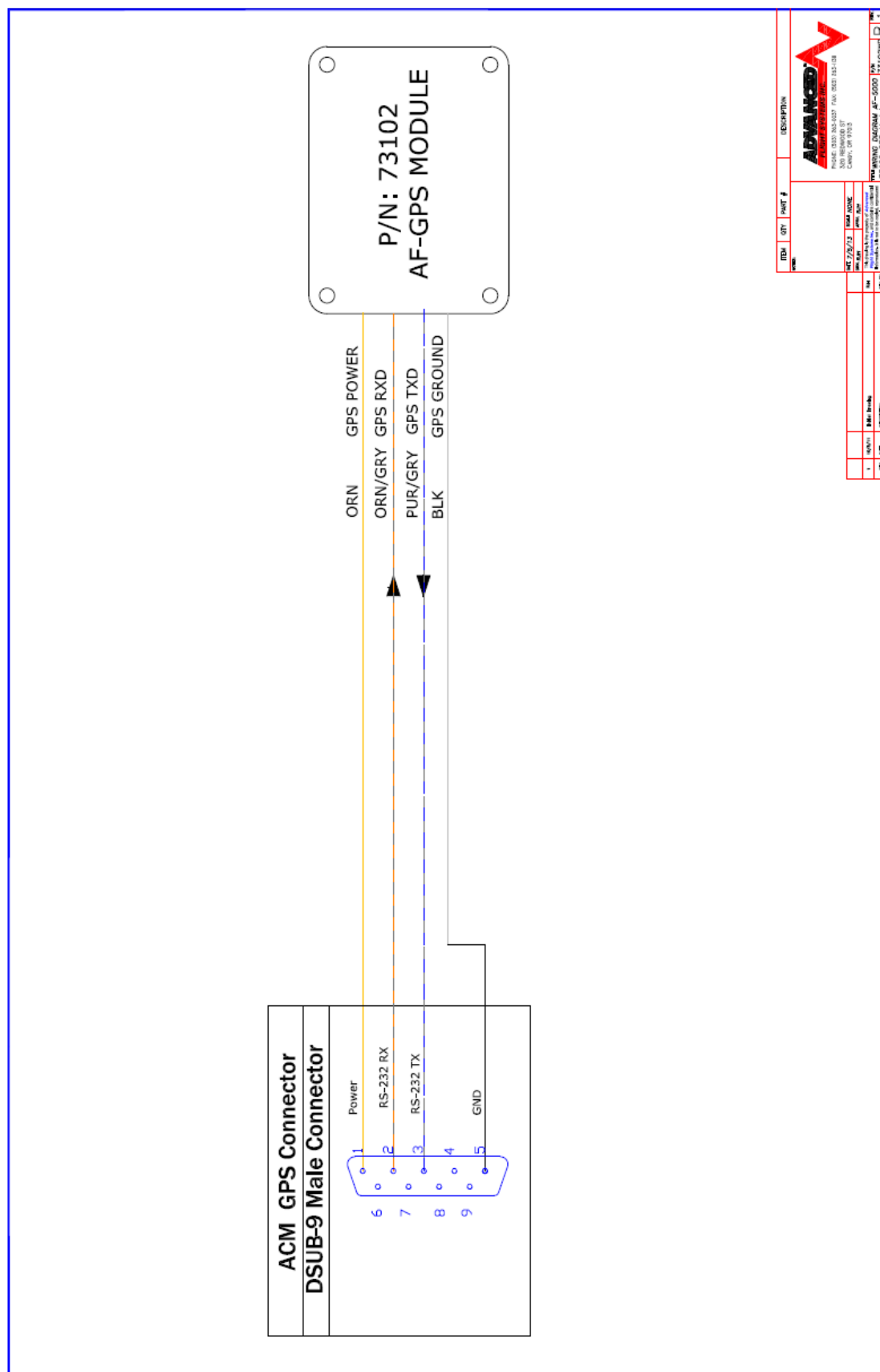
EFIS 2

1 ☐ 2 ☐ 3 ☐

PREV
NEXT
SEL
SAVE
SEL

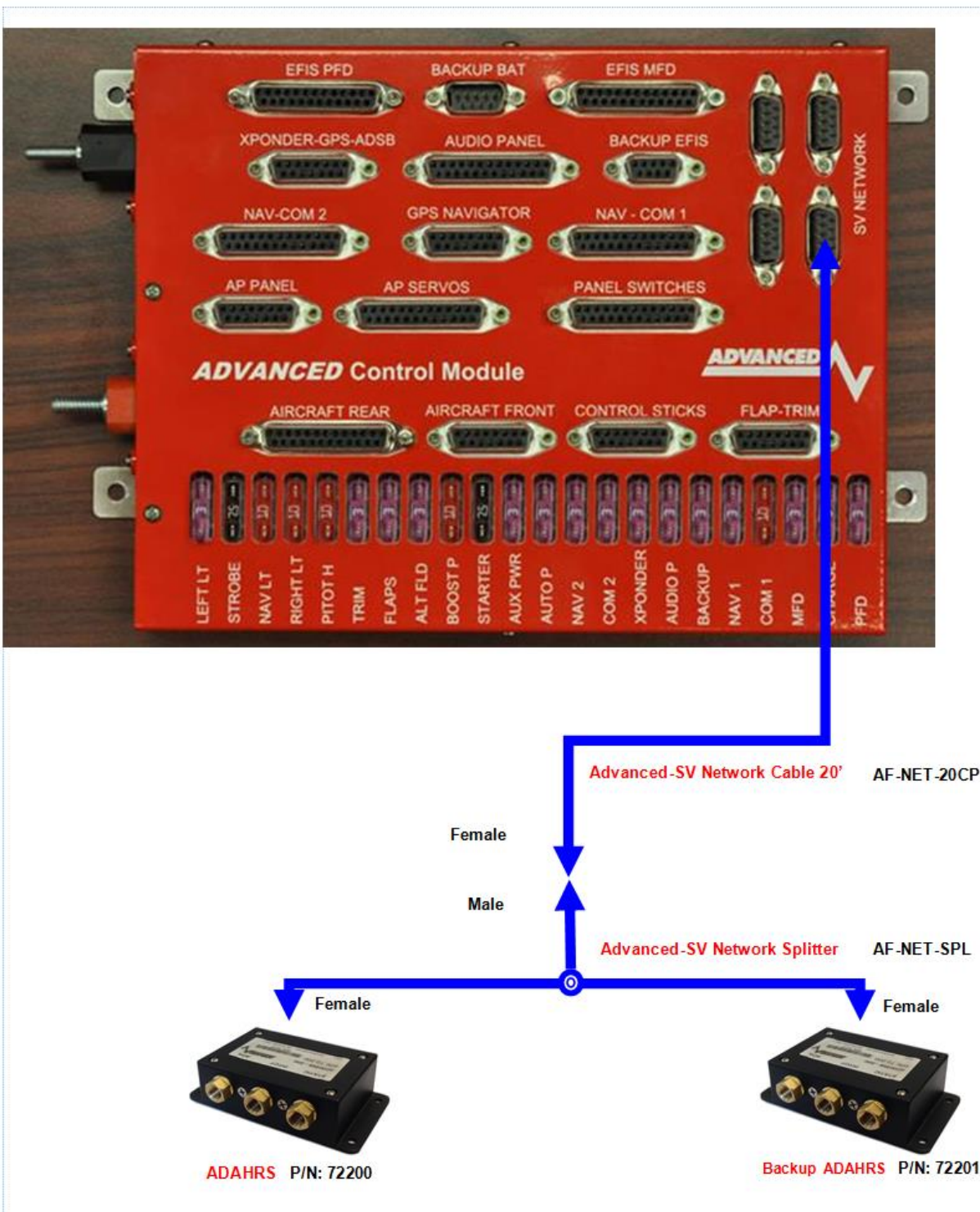
73102 AF-GPS Wiring

After routing the AF-GPS wires through the fuselage install the supplied DSUB-9 Male connector and plug into the Female AF-GPS harness from the ACM Module.



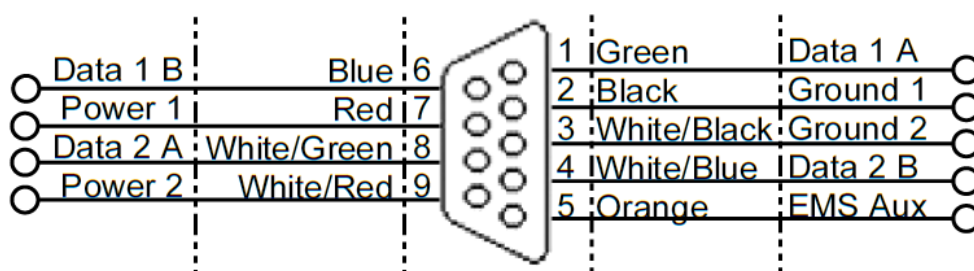
72200 ADAHRS 200/201 Wiring

After mounting the ADAHRS in the rear fuselage you should connect it to the spare SV-NETWORK port on the ACM module. The ADAHRS uses the standard SV-NETWORK DSUB-9 Female cables and should be wired using the following:

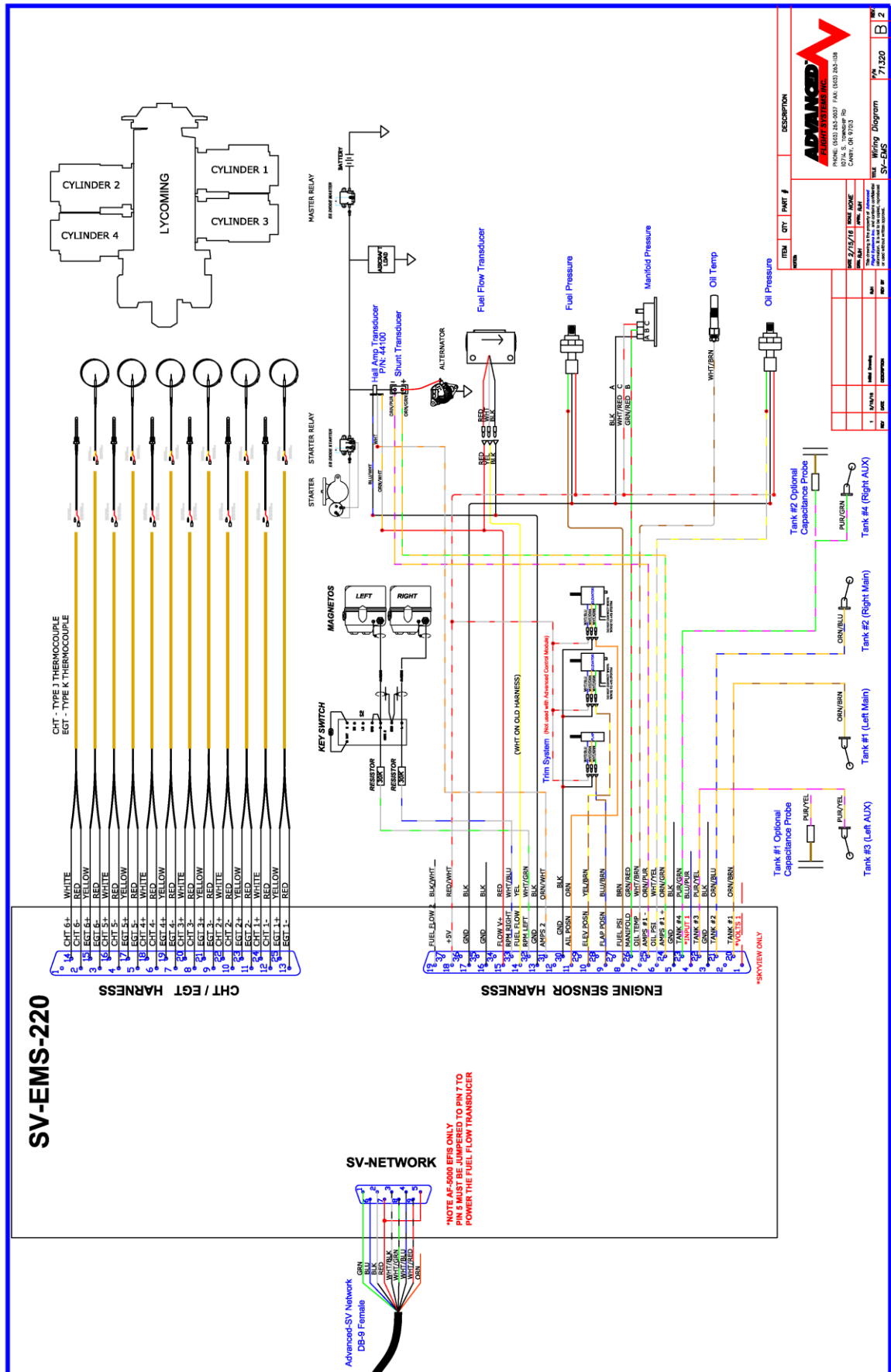


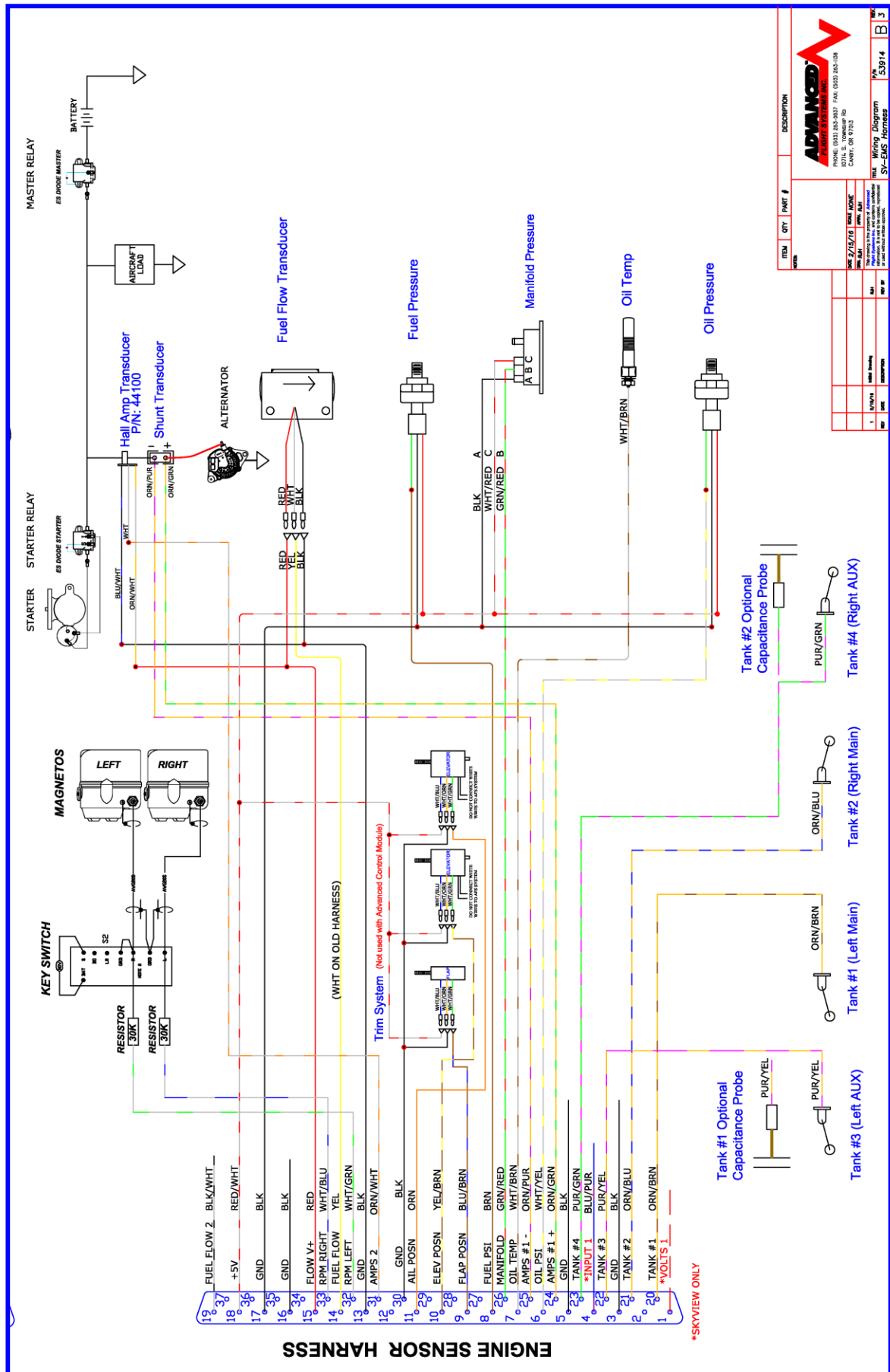
Advanced SV Network Wiring

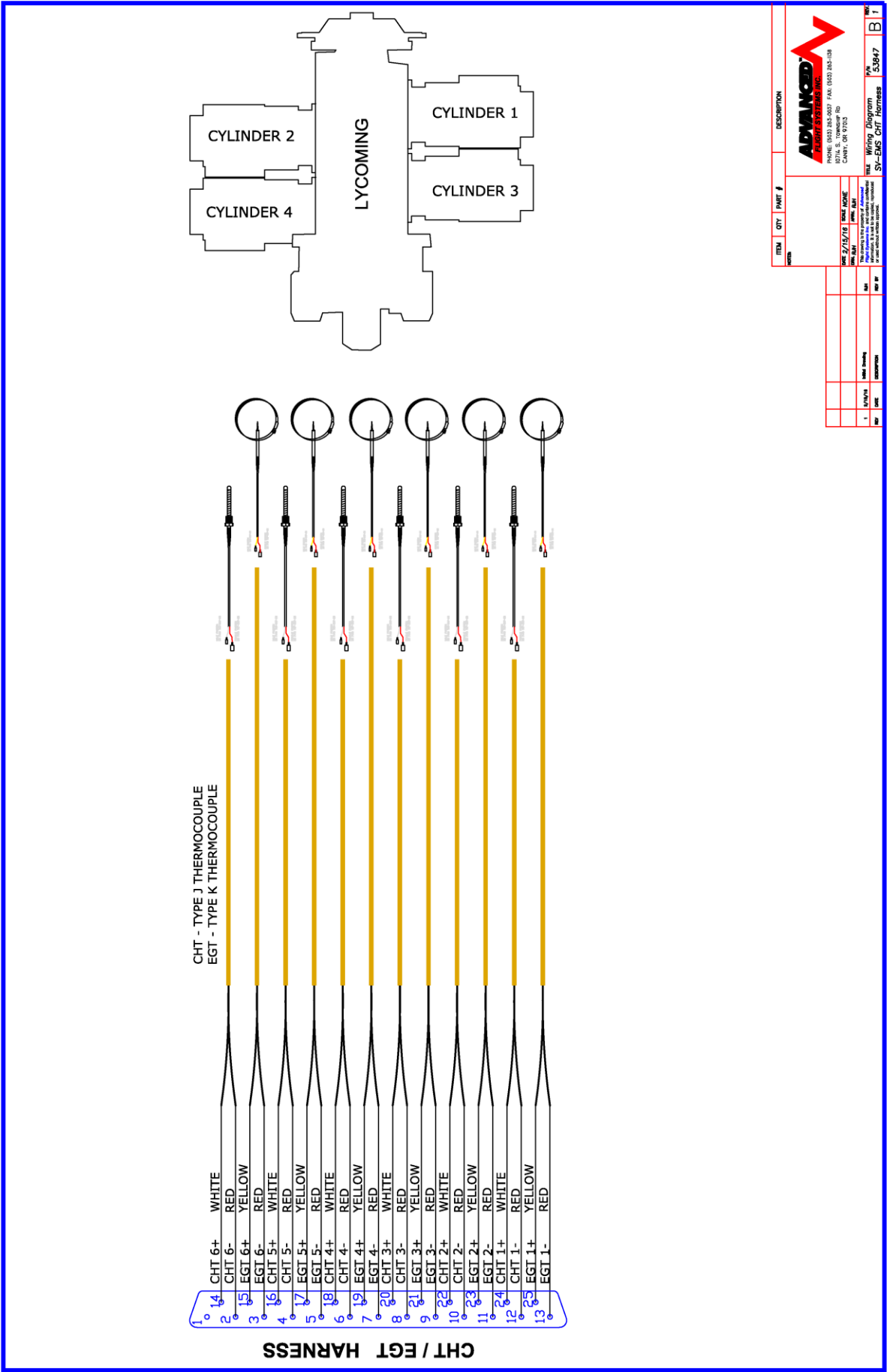
Advanced-SV Network Female D9 Pin	Advanced-SV Network Cable Wire Color	Description
1	Green	Network Data 1 A
2	Black	Network Ground 1
3	White with Black Stripe	Network Ground 2
4	White with Blue Stripe	Network Data 2 B
5	Orange	EMS Auxiliary Voltage
6	Blue	Network Data 1 B
7	Red	Network Power 1
8	White with Green stripe	Network Data 2 A
9	White with Red stripe	Network Power 2



Network Female D9 Pin Insertion View (Rear)







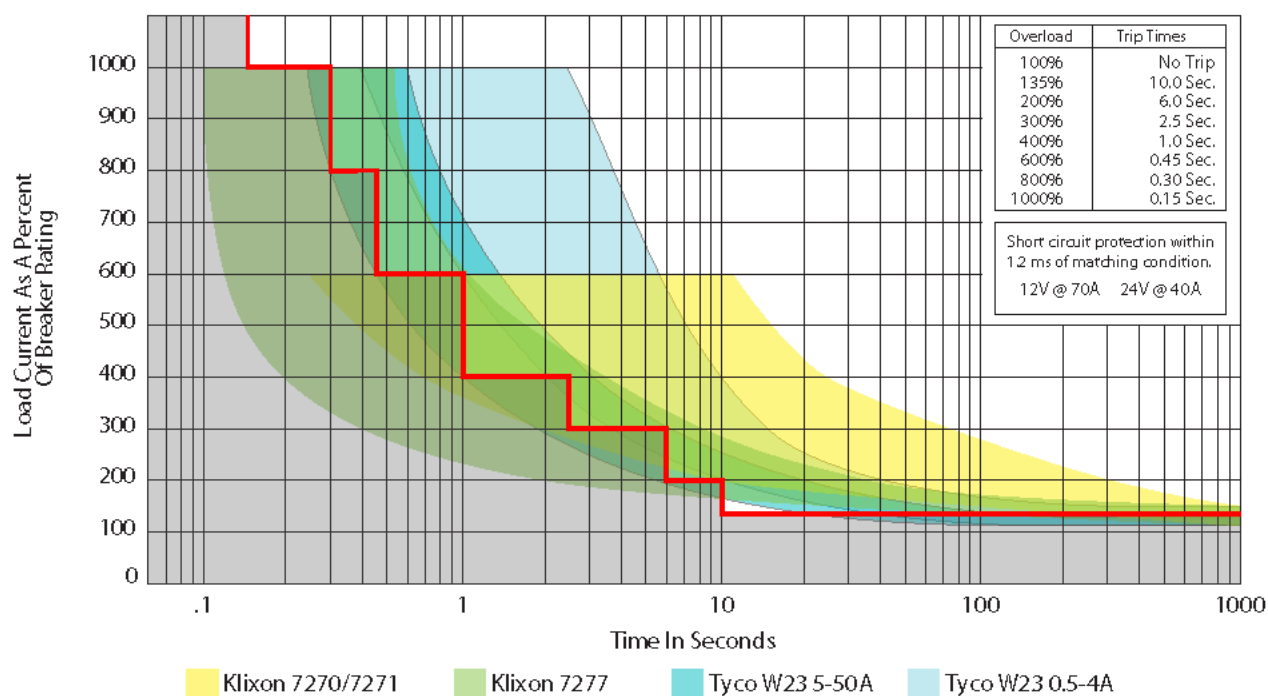
ACM FUSE Power Chart

Advanced Control Module Fuses				
Fuse	Description	Max Amps	Connector (Pins)	Control
1	Left wing landing light	10	AIRCRAFT REAR (13,25)	CPU
2	Strobe Lights	10	AIRCRAFT REAR (11,23,24)	CPU
3	Nav Lights	10	AIRCRAFT REAR (9,21,22)	CPU
4	Right wing landing light	10	AIRCRAFT REAR (7,20)	CPU
5	Pitot Heat	15	AIRCRAFT REAR (18,19)	Switch
6	Trim Servos	5	AP PANEL (9)	Vin-Power
7	Flap Motor	10	FLAP-TRIM	CPU
8	Alternator Field	5	AIRCRAFT FRONT (8)	Switch
9	Boost Pump	10	AIRCRAFT FRONT (7,15)	Switch
10	Starter Contactor	10	AIRCRAFT FRONT (6,14)	Vin-Power
11	AUX Power (Defrost, AUX Plug)	5+5	AIRCRAFT FRONT (12,13)	Switch
12	Autopilot servos	10	AP SERVOS (1,5,13)	Switch
13	Nav 2 Radio	10	NAV-COM 2 (12,13)	AV2 Relay
14	Com 2 Radio	10	NAV-COM 2 (1,2,3)	AV2 Relay
15	Transponder + ADS-B	5	XPONDER-GPS-ADSB (1,6)	AV2 Relay
16	Audio Panel	5	AUDIO PANEL (1,2)	AV2 Relay
17	Backup EFIS - CO Detector	5	BACKUP EFIS (1,5)	AV2 Relay
18	NAV 1 Radio + GPS	10	NAV-COM 1 (12,13) GPS NAVIGATOR (1,2)	AV1 Relay
19	Com 1 Radio	10	NAV-COM 1 (1,2,3)	AV1 Relay
20	MFD EFIS	5	EFIS MFD (1,2)	AV1 Relay
21	Backup Battery Charger	10	BACKUP BAT (2,3)	AV1 Relay
22	PFD EFIS	5	EFIS PFD (1,2)	Vin-Power

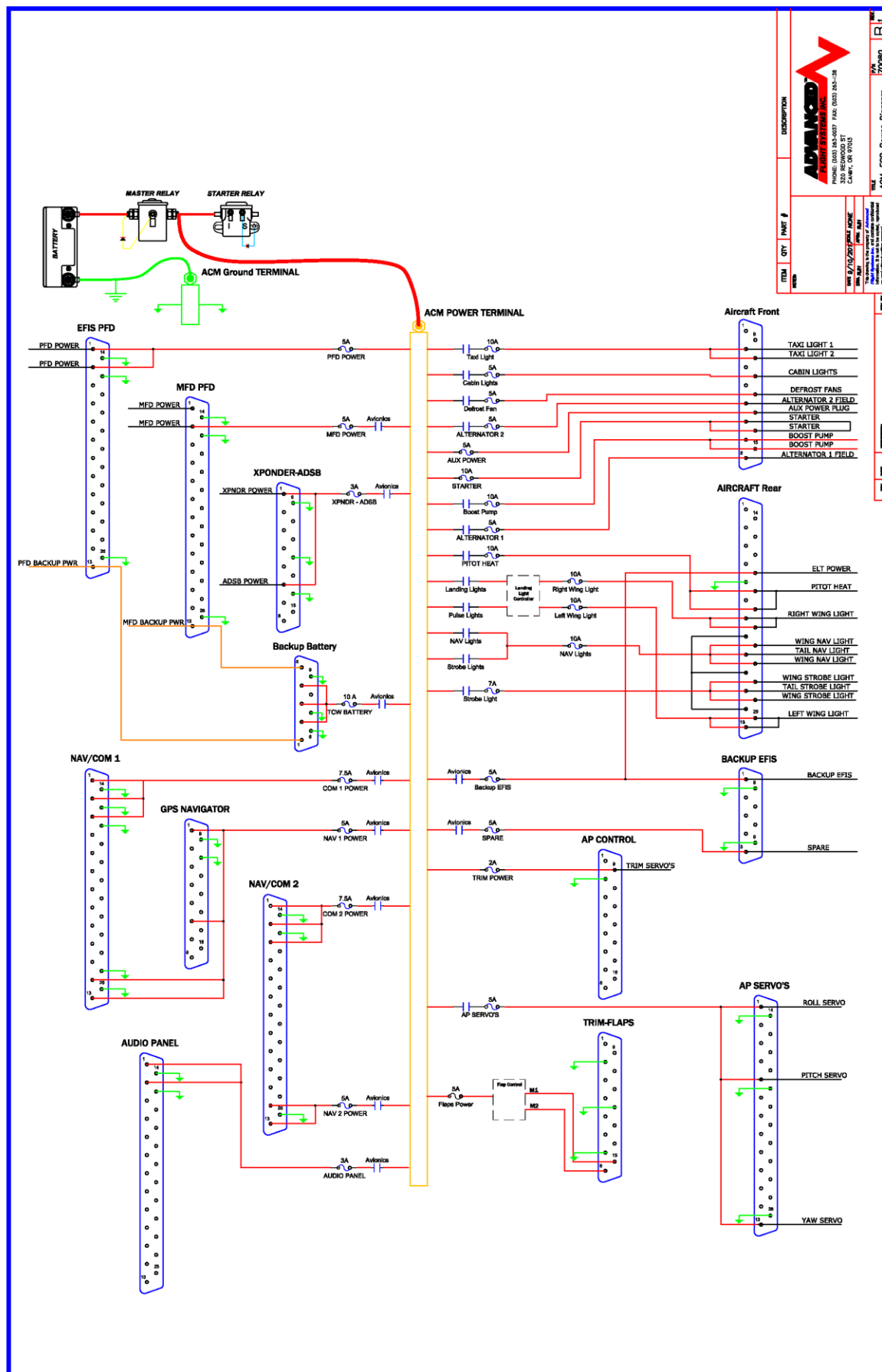
ACM-ECB Electronic Circuit Breakers

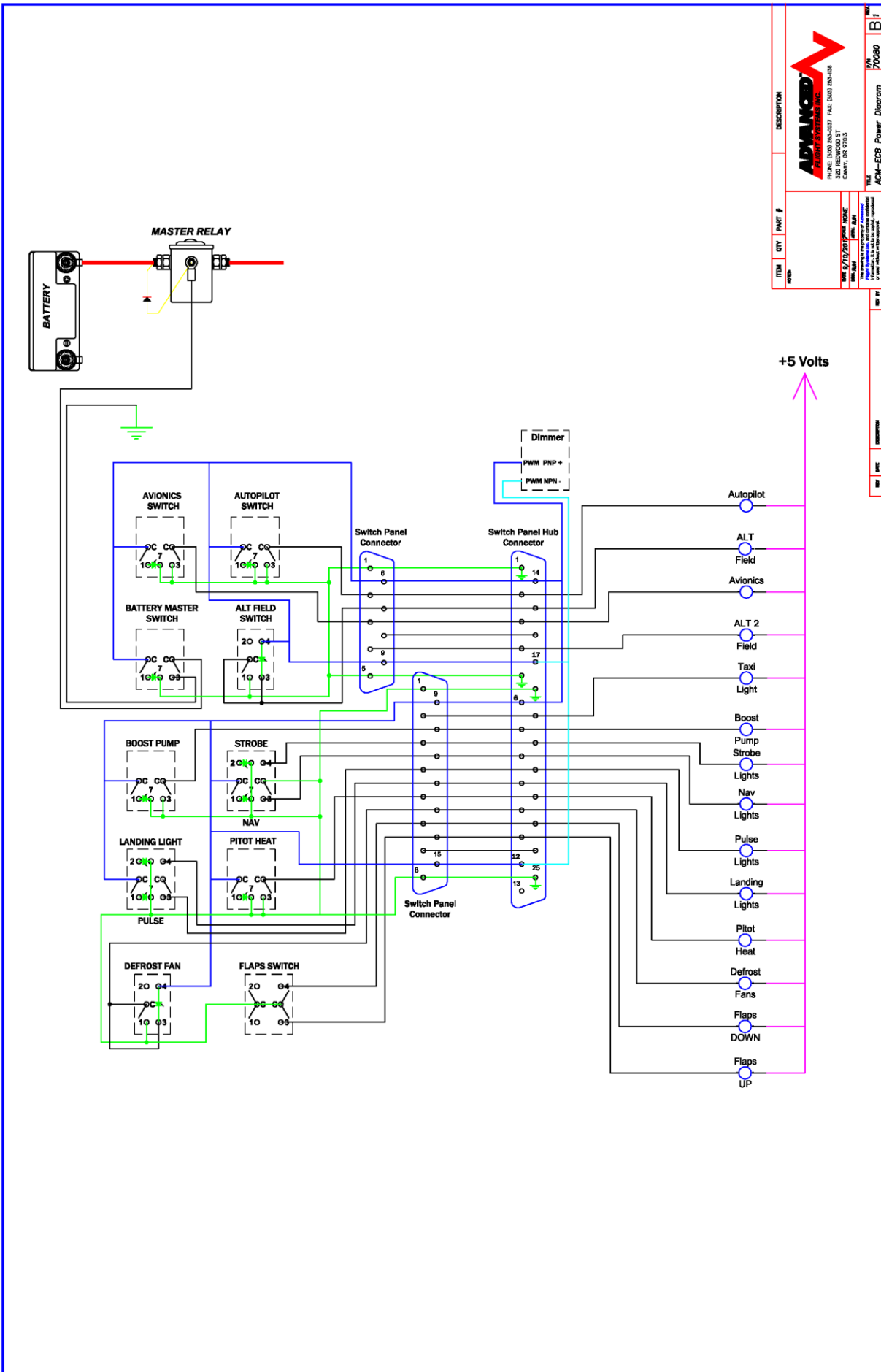
The ACM-ECB module uses electronic circuit breakers that can be reset or shut off from the EFIS screen.

Operating Range of ACM Electronic Circuit Breakers

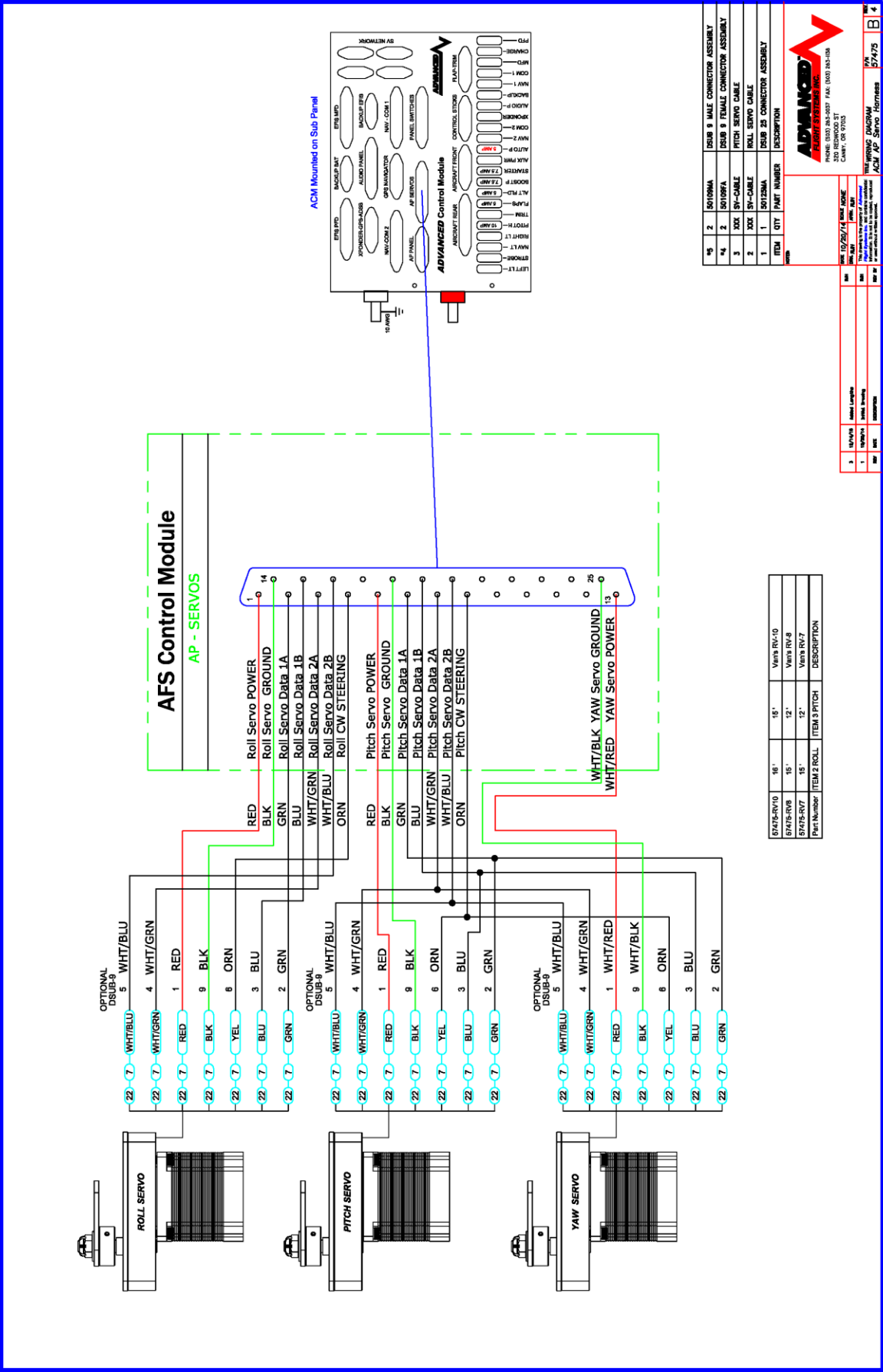


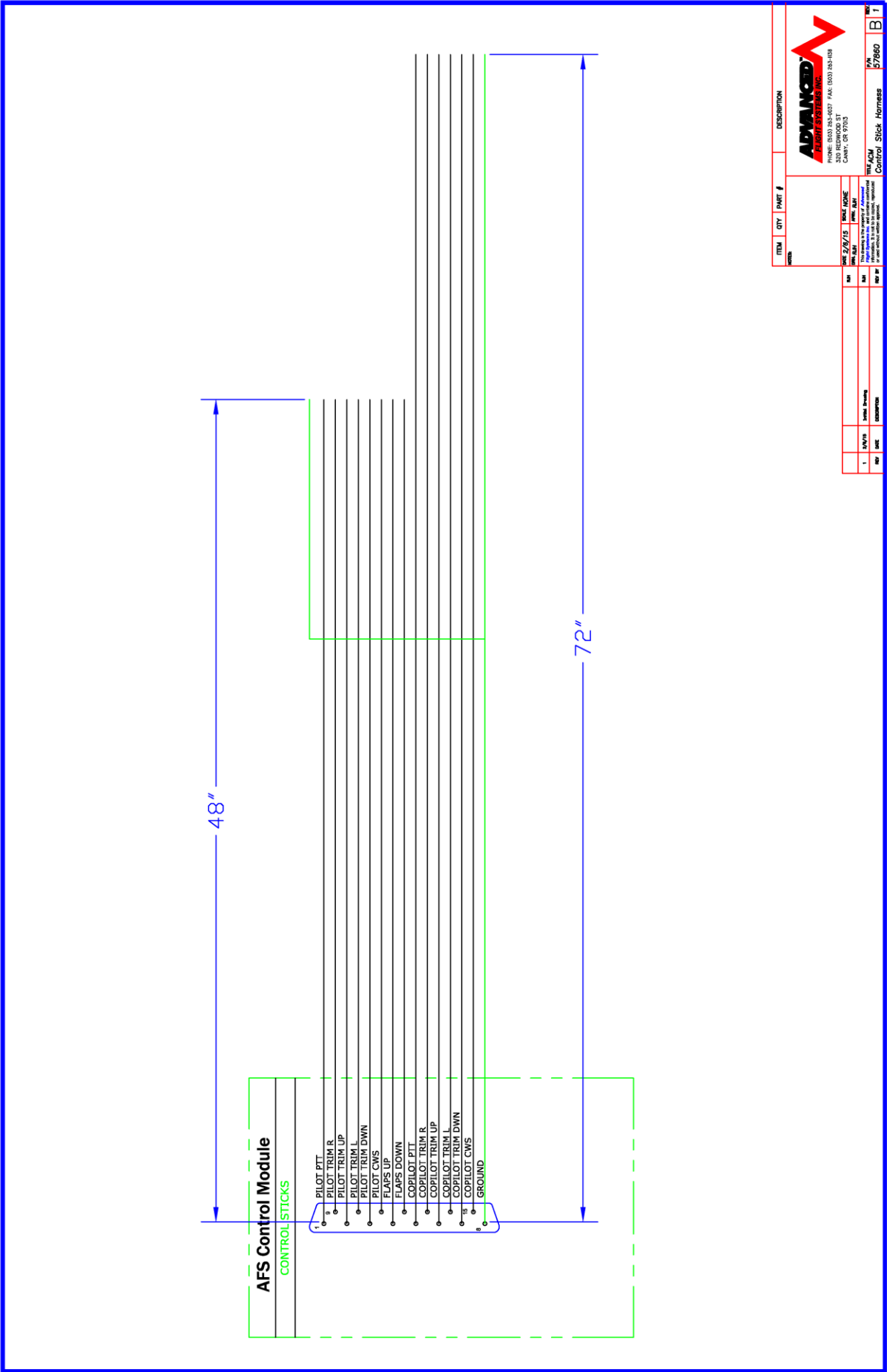
ACM Power Diagram





ITEM	QTY	PART #	DESCRIPTION
1	1	ADV-ECB	Power Diagram
2	1	ADV-ECB	Power Diagram
3	1	ADV-ECB	Power Diagram
4	1	ADV-ECB	Power Diagram
5	1	ADV-ECB	Power Diagram
6	1	ADV-ECB	Power Diagram
7	1	ADV-ECB	Power Diagram
8	1	ADV-ECB	Power Diagram
9	1	ADV-ECB	Power Diagram
10	1	ADV-ECB	Power Diagram
11	1	ADV-ECB	Power Diagram
12	1	ADV-ECB	Power Diagram
13	1	ADV-ECB	Power Diagram
14	1	ADV-ECB	Power Diagram
15	1	ADV-ECB	Power Diagram
16	1	ADV-ECB	Power Diagram
17	1	ADV-ECB	Power Diagram
18	1	ADV-ECB	Power Diagram
19	1	ADV-ECB	Power Diagram
20	1	ADV-ECB	Power Diagram
21	1	ADV-ECB	Power Diagram
22	1	ADV-ECB	Power Diagram
23	1	ADV-ECB	Power Diagram
24	1	ADV-ECB	Power Diagram
25	1	ADV-ECB	Power Diagram
26	1	ADV-ECB	Power Diagram
27	1	ADV-ECB	Power Diagram
28	1	ADV-ECB	Power Diagram
29	1	ADV-ECB	Power Diagram
30	1	ADV-ECB	Power Diagram
31	1	ADV-ECB	Power Diagram
32	1	ADV-ECB	Power Diagram
33	1	ADV-ECB	Power Diagram
34	1	ADV-ECB	Power Diagram
35	1	ADV-ECB	Power Diagram
36	1	ADV-ECB	Power Diagram
37	1	ADV-ECB	Power Diagram
38	1	ADV-ECB	Power Diagram
39	1	ADV-ECB	Power Diagram
40	1	ADV-ECB	Power Diagram
41	1	ADV-ECB	Power Diagram
42	1	ADV-ECB	Power Diagram
43	1	ADV-ECB	Power Diagram
44	1	ADV-ECB	Power Diagram
45	1	ADV-ECB	Power Diagram
46	1	ADV-ECB	Power Diagram
47	1	ADV-ECB	Power Diagram
48	1	ADV-ECB	Power Diagram
49	1	ADV-ECB	Power Diagram
50	1	ADV-ECB	Power Diagram
51	1	ADV-ECB	Power Diagram
52	1	ADV-ECB	Power Diagram
53	1	ADV-ECB	Power Diagram
54	1	ADV-ECB	Power Diagram
55	1	ADV-ECB	Power Diagram
56	1	ADV-ECB	Power Diagram
57	1	ADV-ECB	Power Diagram
58	1	ADV-ECB	Power Diagram
59	1	ADV-ECB	Power Diagram
60	1	ADV-ECB	Power Diagram
61	1	ADV-ECB	Power Diagram
62	1	ADV-ECB	Power Diagram
63	1	ADV-ECB	Power Diagram
64	1	ADV-ECB	Power Diagram
65	1	ADV-ECB	Power Diagram
66	1	ADV-ECB	Power Diagram
67	1	ADV-ECB	Power Diagram
68	1	ADV-ECB	Power Diagram
69	1	ADV-ECB	Power Diagram
70	1	ADV-ECB	Power Diagram
71	1	ADV-ECB	Power Diagram
72	1	ADV-ECB	Power Diagram
73	1	ADV-ECB	Power Diagram
74	1	ADV-ECB	Power Diagram
75	1	ADV-ECB	Power Diagram
76	1	ADV-ECB	Power Diagram
77	1	ADV-ECB	Power Diagram
78	1	ADV-ECB	Power Diagram
79	1	ADV-ECB	Power Diagram
80	1	ADV-ECB	Power Diagram
81	1	ADV-ECB	Power Diagram
82	1	ADV-ECB	Power Diagram
83	1	ADV-ECB	Power Diagram
84	1	ADV-ECB	Power Diagram
85	1	ADV-ECB	Power Diagram
86	1	ADV-ECB	Power Diagram
87	1	ADV-ECB	Power Diagram
88	1	ADV-ECB	Power Diagram
89	1	ADV-ECB	Power Diagram
90	1	ADV-ECB	Power Diagram
91	1	ADV-ECB	Power Diagram
92	1	ADV-ECB	Power Diagram
93	1	ADV-ECB	Power Diagram
94	1	ADV-ECB	Power Diagram
95	1	ADV-ECB	Power Diagram
96	1	ADV-ECB	Power Diagram
97	1	ADV-ECB	Power Diagram
98	1	ADV-ECB	Power Diagram
99	1	ADV-ECB	Power Diagram
100	1	ADV-ECB	Power Diagram





ITEM	QTY	UNIT	DESCRIPTION
1	1	EA	AFS Control Module
2	1	EA	AFS Control Stick
3	1	EA	AFS Control Stick Harness
4	1	EA	AFS Control Stick Mounting Bracket
5	1	EA	AFS Control Stick Mounting Bracket
6	1	EA	AFS Control Stick Mounting Bracket
7	1	EA	AFS Control Stick Mounting Bracket
8	1	EA	AFS Control Stick Mounting Bracket
9	1	EA	AFS Control Stick Mounting Bracket
10	1	EA	AFS Control Stick Mounting Bracket
11	1	EA	AFS Control Stick Mounting Bracket
12	1	EA	AFS Control Stick Mounting Bracket
13	1	EA	AFS Control Stick Mounting Bracket
14	1	EA	AFS Control Stick Mounting Bracket
15	1	EA	AFS Control Stick Mounting Bracket
16	1	EA	AFS Control Stick Mounting Bracket
17	1	EA	AFS Control Stick Mounting Bracket
18	1	EA	AFS Control Stick Mounting Bracket
19	1	EA	AFS Control Stick Mounting Bracket
20	1	EA	AFS Control Stick Mounting Bracket
21	1	EA	AFS Control Stick Mounting Bracket
22	1	EA	AFS Control Stick Mounting Bracket
23	1	EA	AFS Control Stick Mounting Bracket
24	1	EA	AFS Control Stick Mounting Bracket
25	1	EA	AFS Control Stick Mounting Bracket
26	1	EA	AFS Control Stick Mounting Bracket
27	1	EA	AFS Control Stick Mounting Bracket
28	1	EA	AFS Control Stick Mounting Bracket
29	1	EA	AFS Control Stick Mounting Bracket
30	1	EA	AFS Control Stick Mounting Bracket
31	1	EA	AFS Control Stick Mounting Bracket
32	1	EA	AFS Control Stick Mounting Bracket
33	1	EA	AFS Control Stick Mounting Bracket
34	1	EA	AFS Control Stick Mounting Bracket
35	1	EA	AFS Control Stick Mounting Bracket
36	1	EA	AFS Control Stick Mounting Bracket
37	1	EA	AFS Control Stick Mounting Bracket
38	1	EA	AFS Control Stick Mounting Bracket
39	1	EA	AFS Control Stick Mounting Bracket
40	1	EA	AFS Control Stick Mounting Bracket
41	1	EA	AFS Control Stick Mounting Bracket
42	1	EA	AFS Control Stick Mounting Bracket
43	1	EA	AFS Control Stick Mounting Bracket
44	1	EA	AFS Control Stick Mounting Bracket
45	1	EA	AFS Control Stick Mounting Bracket
46	1	EA	AFS Control Stick Mounting Bracket
47	1	EA	AFS Control Stick Mounting Bracket
48	1	EA	AFS Control Stick Mounting Bracket
49	1	EA	AFS Control Stick Mounting Bracket
50	1	EA	AFS Control Stick Mounting Bracket
51	1	EA	AFS Control Stick Mounting Bracket
52	1	EA	AFS Control Stick Mounting Bracket
53	1	EA	AFS Control Stick Mounting Bracket
54	1	EA	AFS Control Stick Mounting Bracket
55	1	EA	AFS Control Stick Mounting Bracket
56	1	EA	AFS Control Stick Mounting Bracket
57	1	EA	AFS Control Stick Mounting Bracket
58	1	EA	AFS Control Stick Mounting Bracket
59	1	EA	AFS Control Stick Mounting Bracket
60	1	EA	AFS Control Stick Mounting Bracket
61	1	EA	AFS Control Stick Mounting Bracket
62	1	EA	AFS Control Stick Mounting Bracket
63	1	EA	AFS Control Stick Mounting Bracket
64	1	EA	AFS Control Stick Mounting Bracket
65	1	EA	AFS Control Stick Mounting Bracket
66	1	EA	AFS Control Stick Mounting Bracket
67	1	EA	AFS Control Stick Mounting Bracket
68	1	EA	AFS Control Stick Mounting Bracket
69	1	EA	AFS Control Stick Mounting Bracket
70	1	EA	AFS Control Stick Mounting Bracket
71	1	EA	AFS Control Stick Mounting Bracket
72	1	EA	AFS Control Stick Mounting Bracket
73	1	EA	AFS Control Stick Mounting Bracket
74	1	EA	AFS Control Stick Mounting Bracket
75	1	EA	AFS Control Stick Mounting Bracket
76	1	EA	AFS Control Stick Mounting Bracket
77	1	EA	AFS Control Stick Mounting Bracket
78	1	EA	AFS Control Stick Mounting Bracket
79	1	EA	AFS Control Stick Mounting Bracket
80	1	EA	AFS Control Stick Mounting Bracket
81	1	EA	AFS Control Stick Mounting Bracket
82	1	EA	AFS Control Stick Mounting Bracket
83	1	EA	AFS Control Stick Mounting Bracket
84	1	EA	AFS Control Stick Mounting Bracket
85	1	EA	AFS Control Stick Mounting Bracket
86	1	EA	AFS Control Stick Mounting Bracket
87	1	EA	AFS Control Stick Mounting Bracket
88	1	EA	AFS Control Stick Mounting Bracket
89	1	EA	AFS Control Stick Mounting Bracket
90	1	EA	AFS Control Stick Mounting Bracket
91	1	EA	AFS Control Stick Mounting Bracket
92	1	EA	AFS Control Stick Mounting Bracket
93	1	EA	AFS Control Stick Mounting Bracket
94	1	EA	AFS Control Stick Mounting Bracket
95	1	EA	AFS Control Stick Mounting Bracket
96	1	EA	AFS Control Stick Mounting Bracket
97	1	EA	AFS Control Stick Mounting Bracket
98	1	EA	AFS Control Stick Mounting Bracket
99	1	EA	AFS Control Stick Mounting Bracket
100	1	EA	AFS Control Stick Mounting Bracket

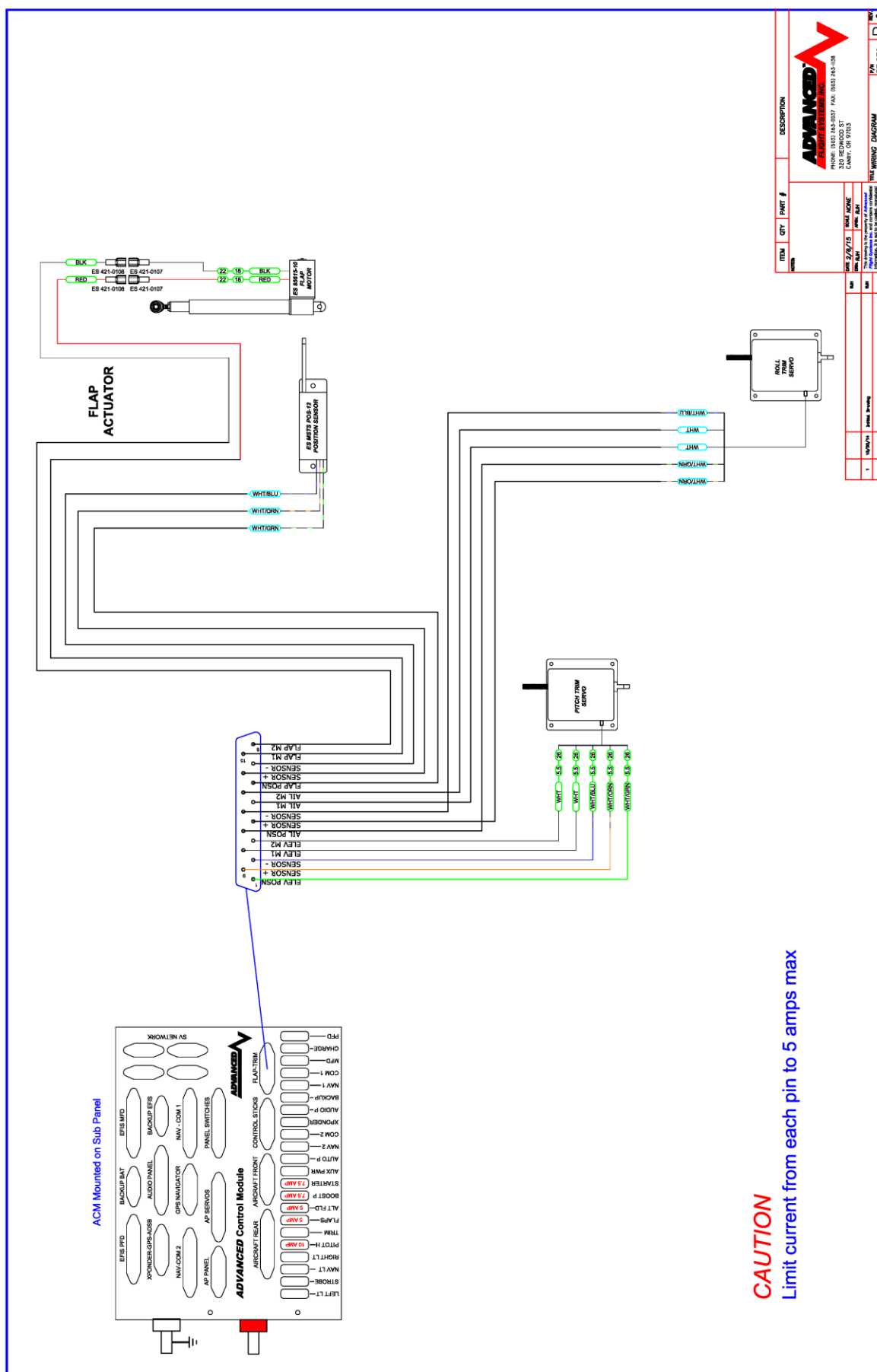


PHONE: (800) 283-4027 FAX: (800) 283-4028
E-MAIL: SALES@AFSINC.COM
WWW.AFSINC.COM

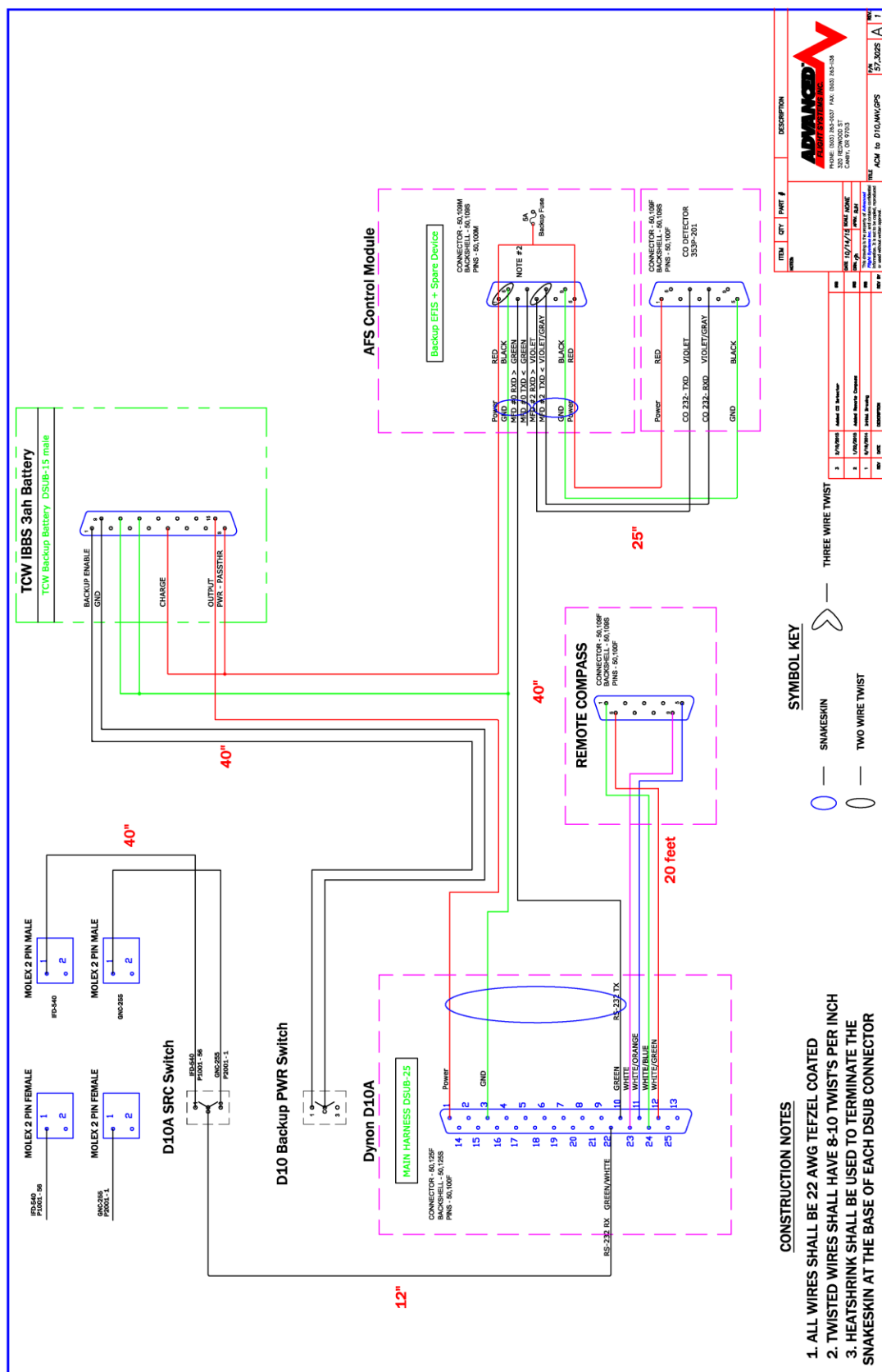
Control Stick Harness

57860

BT

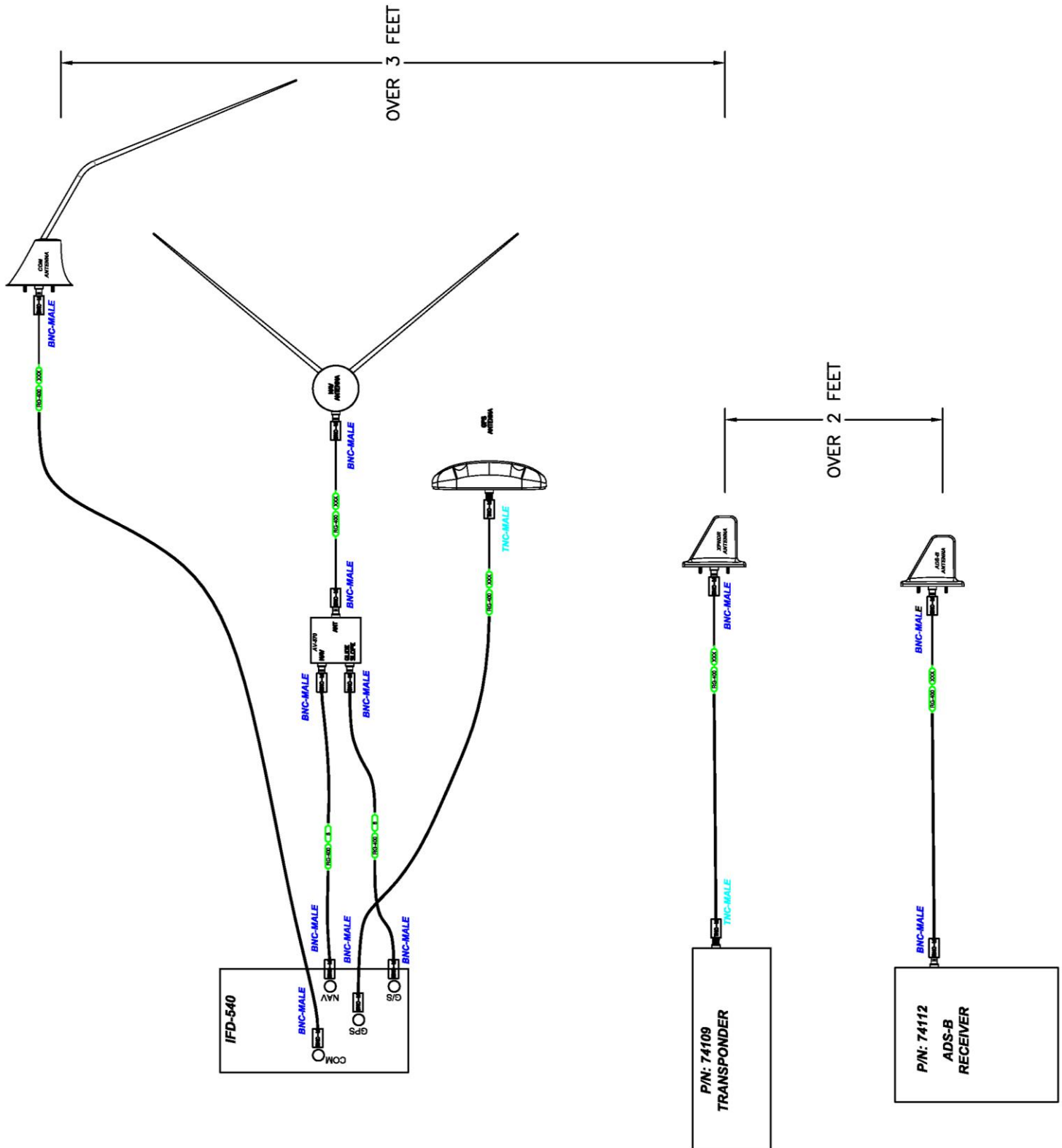


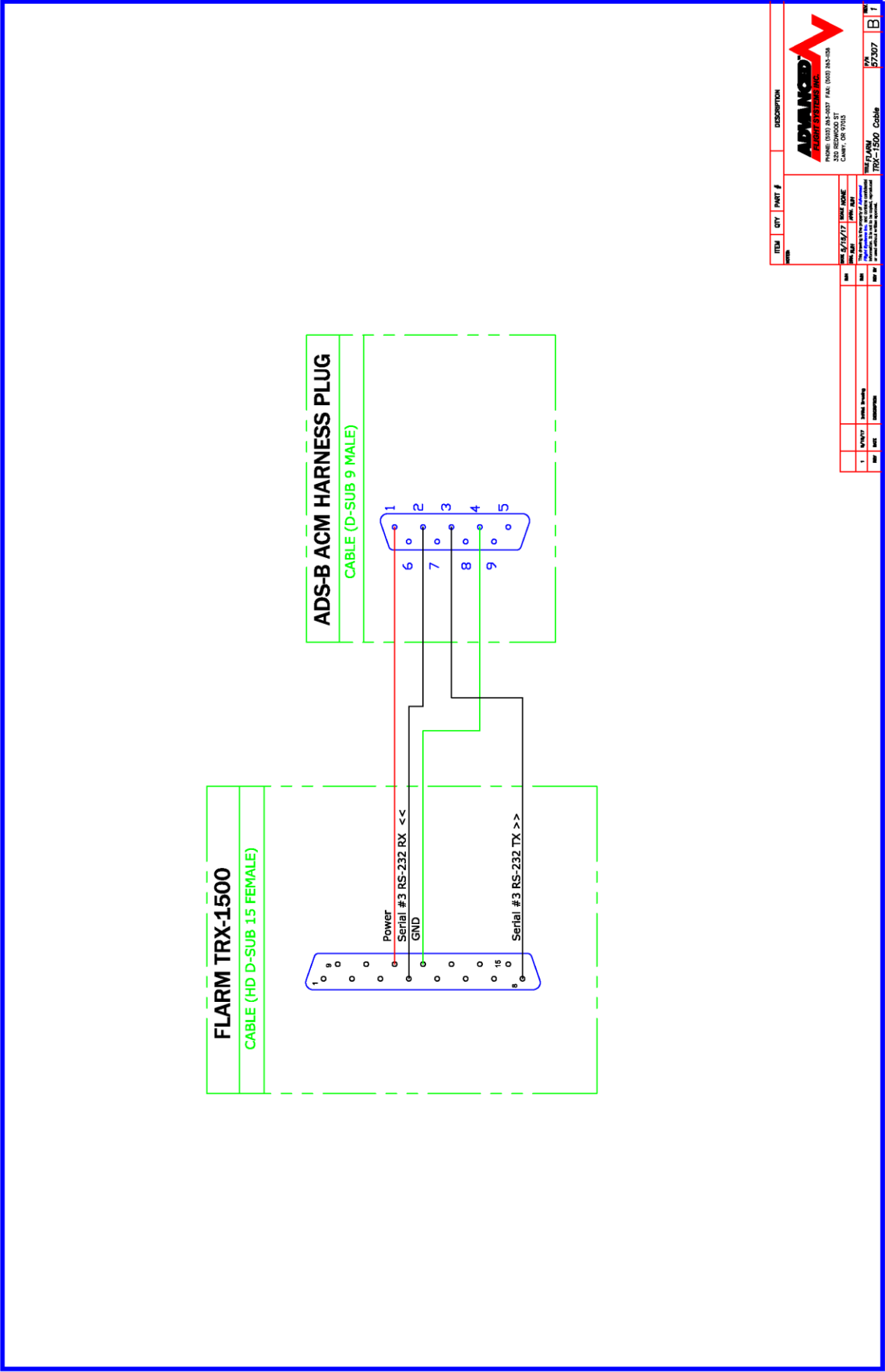
57302 D10 Backup Harness with CO and TCW Battery



Aircraft Antennas

Use RG400 Cable and Contact airframe manufacturer for recommended mounting locations.





FLARM TRX-1500 Configuration

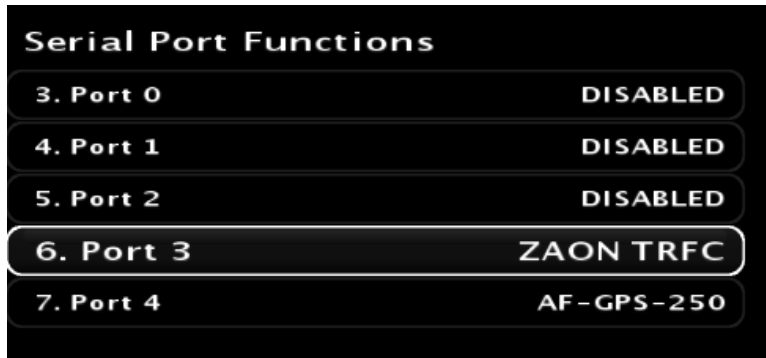
Use the TRX PC configuration software set the TRX-1500 to:

Serial Port 3 Output format: GARMIN TIS

Baud Rate: 9600

On the MFD EFIS screen:

Calibration->Admin Settings. Set item, '6. Port 3' to 'ZAON TRFC'



RV-14 Panel Install



RV-

14 Remote Component Mounting

The remote radio transceiver, backup battery and audio panel mount on new ribs mounted in the glove compartment area. The following modifications need to be done:

- Remote glove compartment ring from the RV-14 sub panel P/N: F-01455B
- Install new ribs to the RV-14 sub panel P/N:68102 and P/N:68103
- Install new center console cover plate with Alternator Circuit breaker and Alternator Shunt P/N: 68101

Avidyne IFD-540 Tray Mounting

The IFD Tray mounts to the RV-14 airframe panel ribs. You will need to use the IFD tray as a template to mark the side hole locations on the airframe panel ribs. After marking the 8 hole locations, 4 on each side you will need to drill for 6-32 screws. Mount the tray to the airframe panel ribs using qty 8 6-32 x 3/8" counter sunk screws and nylon lock nuts.

RV-14 EMS-220 Module Install

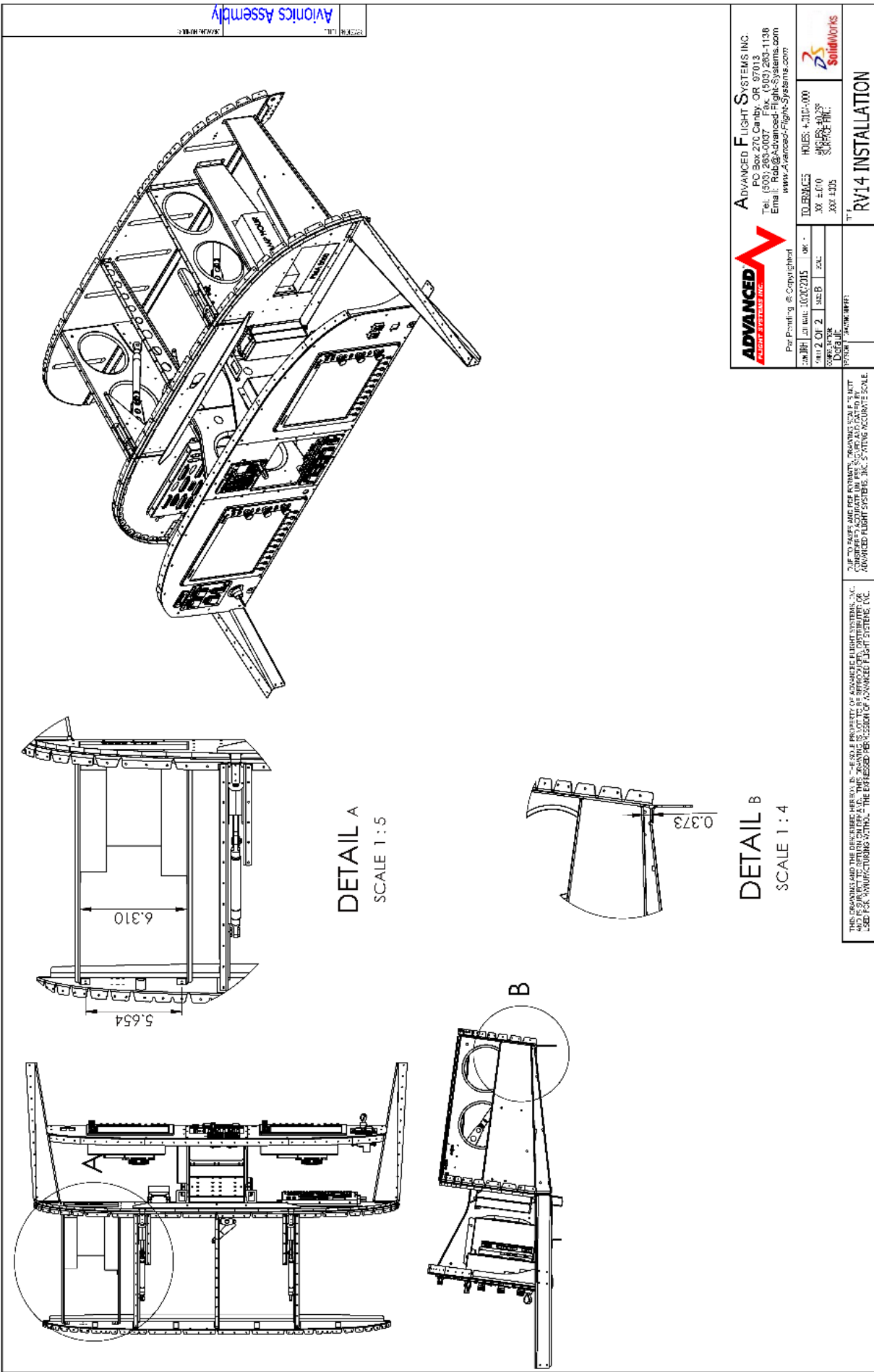
Mount the EMS-220 to the left side panel mounting rib, see P/N: 25014 RV-14 remote component mounting drawing.

RV-14 SV-ADSB-470/472 ADS-B Module Install

Mount the ADSB receiver to the right side panel mounting rib, see P/N: 25014 RV-14 remote component mounting drawing.



TITLE 14 COMPONENTS



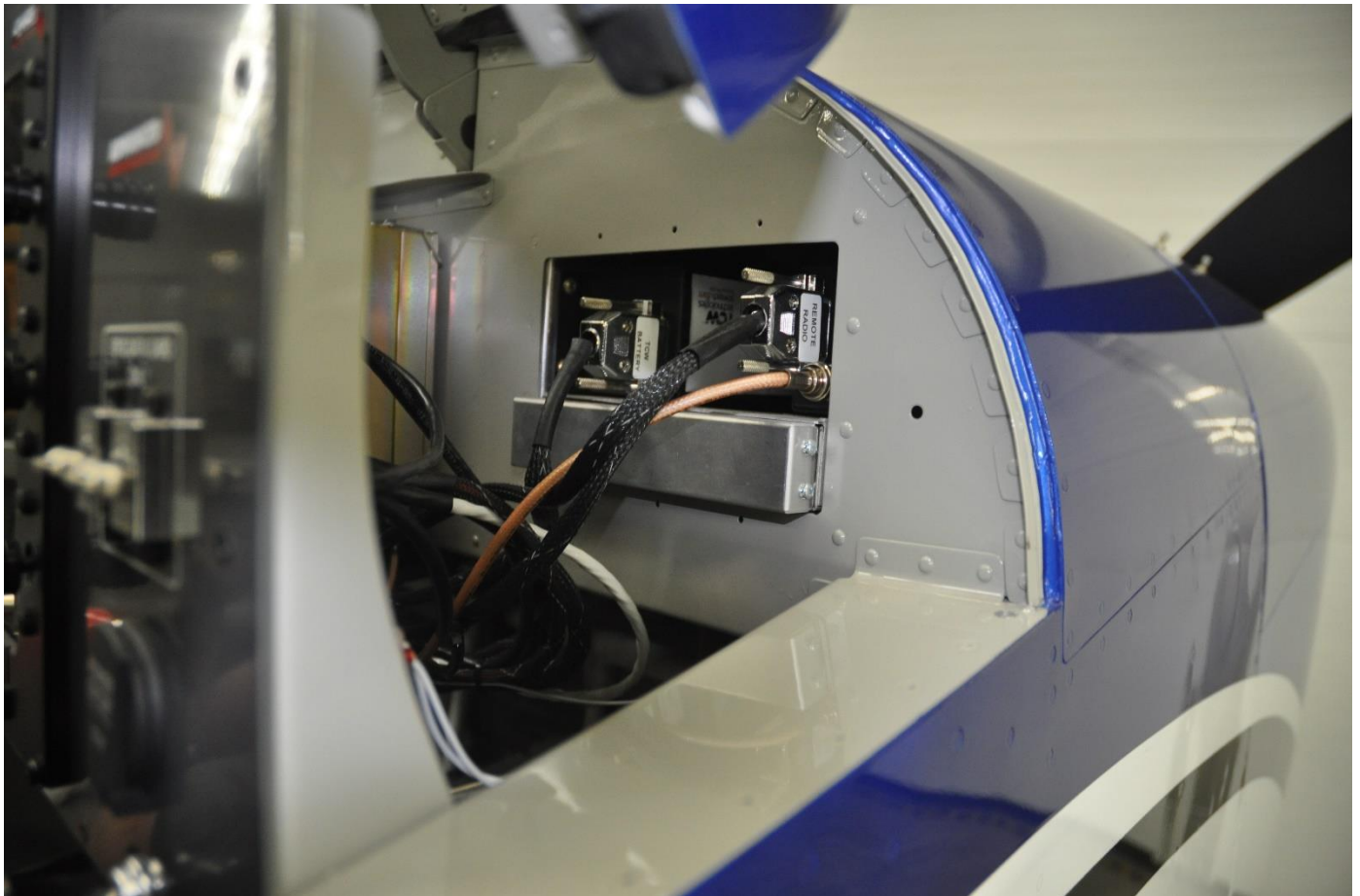
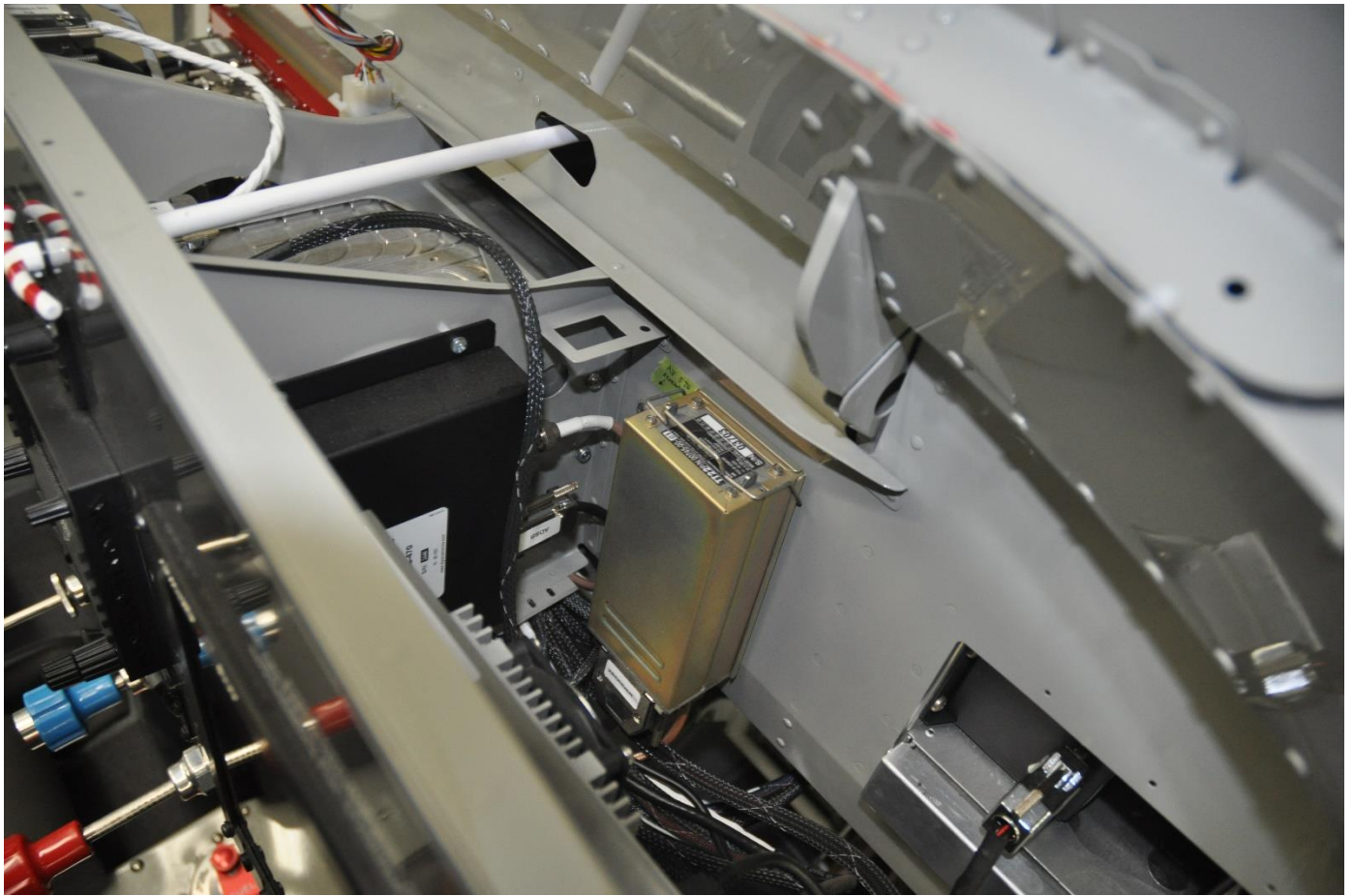
Avionics Assembly

ADVANCED FLIGHT SYSTEMS INC.
 PO Box 270 Canby, OR 97013
 Tel: (503) 263-0037 Fax: (503) 263-1138
 Email: Rad@Advanced-Flight-Systems.com
www.Advanced-Flight-Systems.com

Per Drawing & Copyrighted
 2010/11/11 10/20/2015 OK -
 2010/11/11 10/20/2015 OK -
 2010/11/11 10/20/2015 OK -
 2010/11/11 10/20/2015 OK -

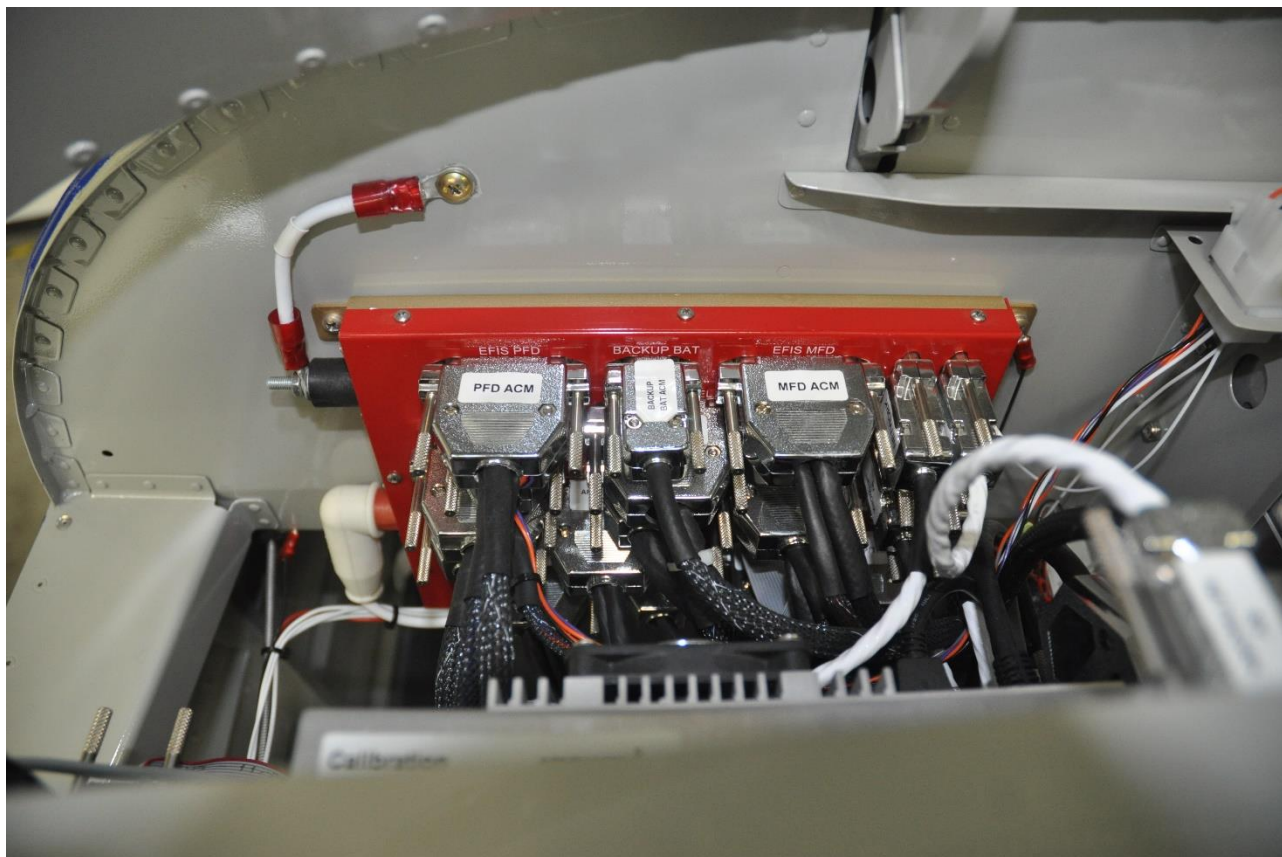
TO: BRACCS HOLE: 1.110-1.000
 XX: 4.010 HOLE: 40.358
 XXX: 1.025 HOLE: 40.358
 XXX: 1.025 HOLE: 40.358

RV14 INSTALLATION



Advanced Control Module (ACM)

The P/N: 70050 ACM module mounts on the sub panel behind the EFIS PFD. You will need to drill the sub-panel using the ACM module as a template. The ACM module should be connected using QTY:4 10-32 x .5" screw, washer and nylon lock nut. You will also need to drill the sub-panel for the ACM ground wire, make sure you remove the paint for a good electrical contact using a 10-32 x .5" screw, washer and nylon lock nut.



- Connect the main power wire from the battery master relay to the red power lug on the ACM. The Van's supplied main power wire should have a 1/4" (0.250") ring terminal with a molded plastic cover.
- Connect the ground power wire from the airframe ground to the black power lug on the ACM. The ACM main ground wire should have a #10 ring terminal with a molded plastic cover.

Do not over-torque the power terminal nuts, they are soft copper and will break if over-torqued.

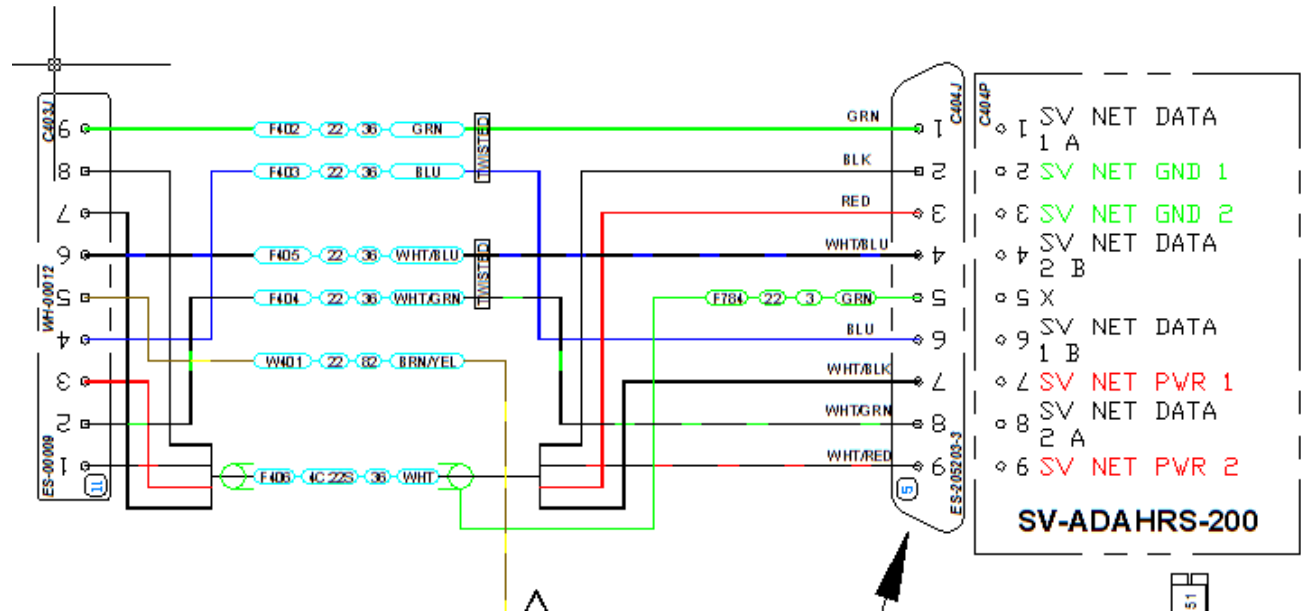
Red Main Power Terminal Nut Torque: 36 in-lbs

Black Main Ground Terminal Nut Torque: 20 in-lbs

RV-14 ADAHRS Mounting and Wiring

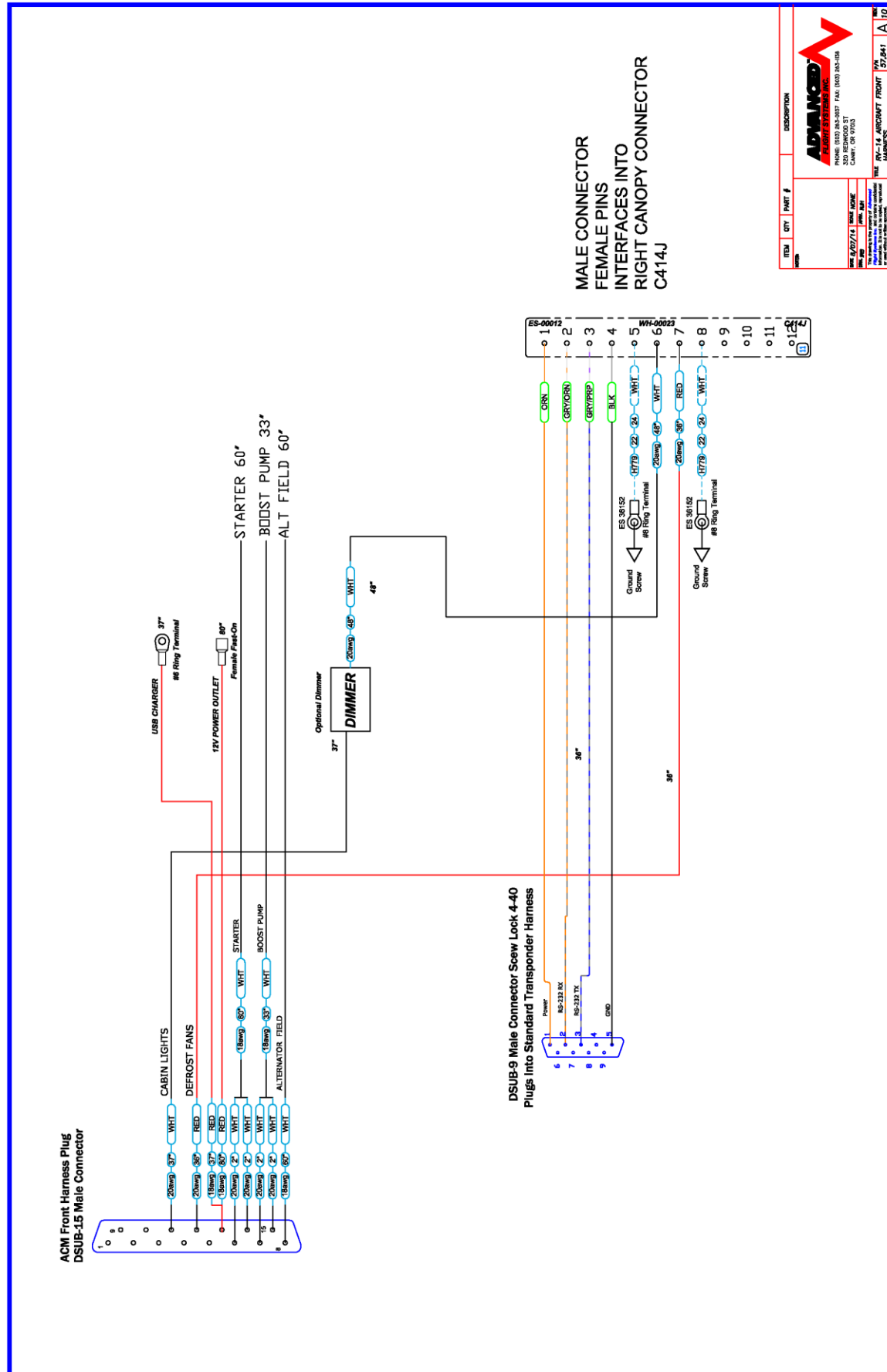
The RV-14 ADAHRS mounts in the left wing using the Van's supplied slide in mounting bracket. The Van's ADAHRS bracket has a built-in tab that will hold the ADAHRS into the slide in mounting bracket. The ADAHRS should slide into the bracket slots and not have any slop or looseness. If the ADAHRS is loose in the bracket you will need to shim the ADAHRS with UHMW tape. If you are using a dual ADAHRS system you should bolt the backup ADAHRS to the primary ADAHRS using the AFS supplied Dual ADAHRS mounting kit and instructions. When the ADAHRS is properly installed the PITOT/STATIC ports should point forward.

The ADAHRS wires are supplied in the Van's wing kit, you will need to insert the pre-wired female pins into the AFS supplied DSUB 9 female connector and connector Shell.



Complete the aircraft front wiring using the following drawing and items.

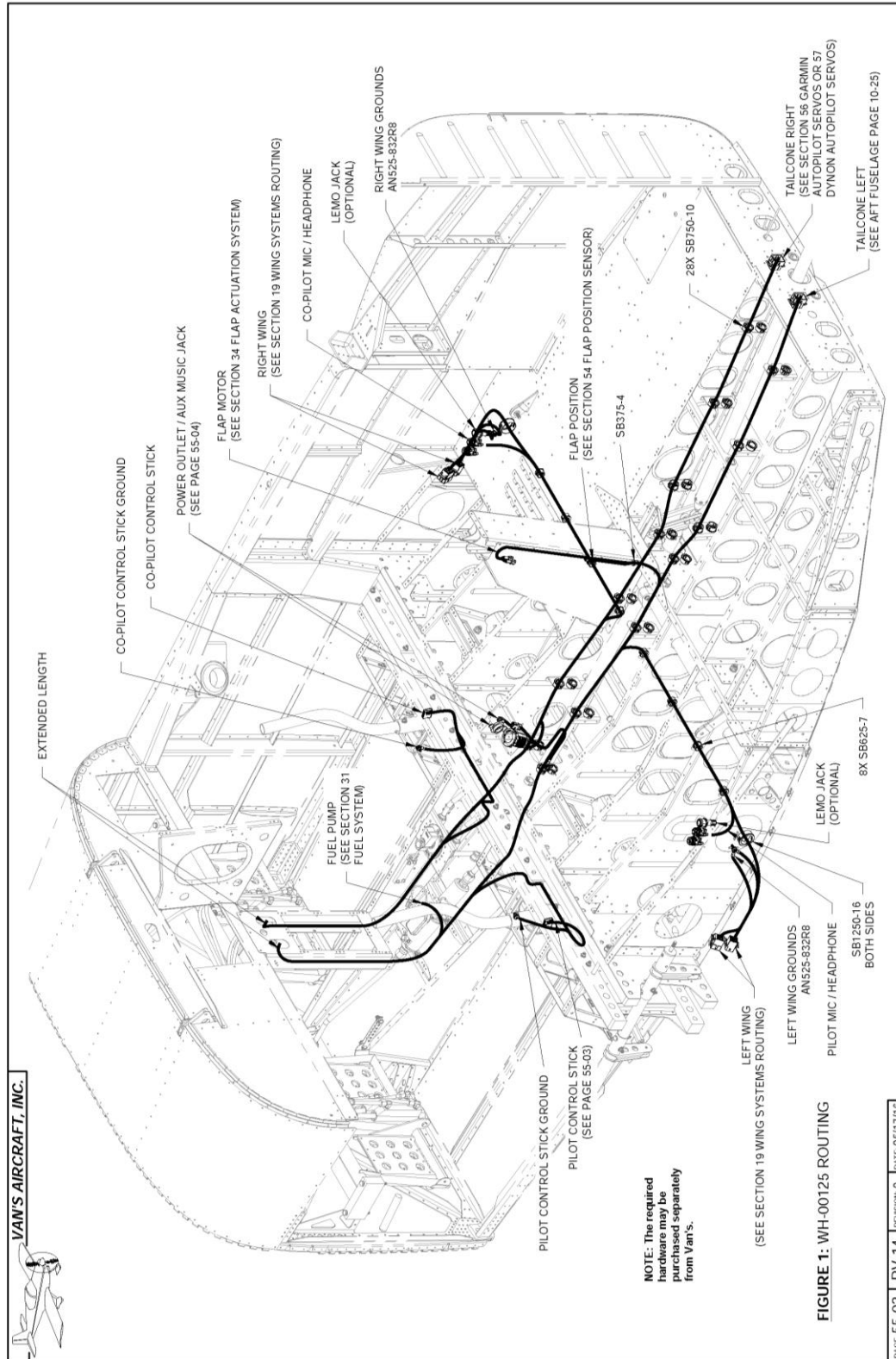




RV-14 Airframe Harnesses (P/N: 57852)

Install the supplied RV-14 airframe harness:

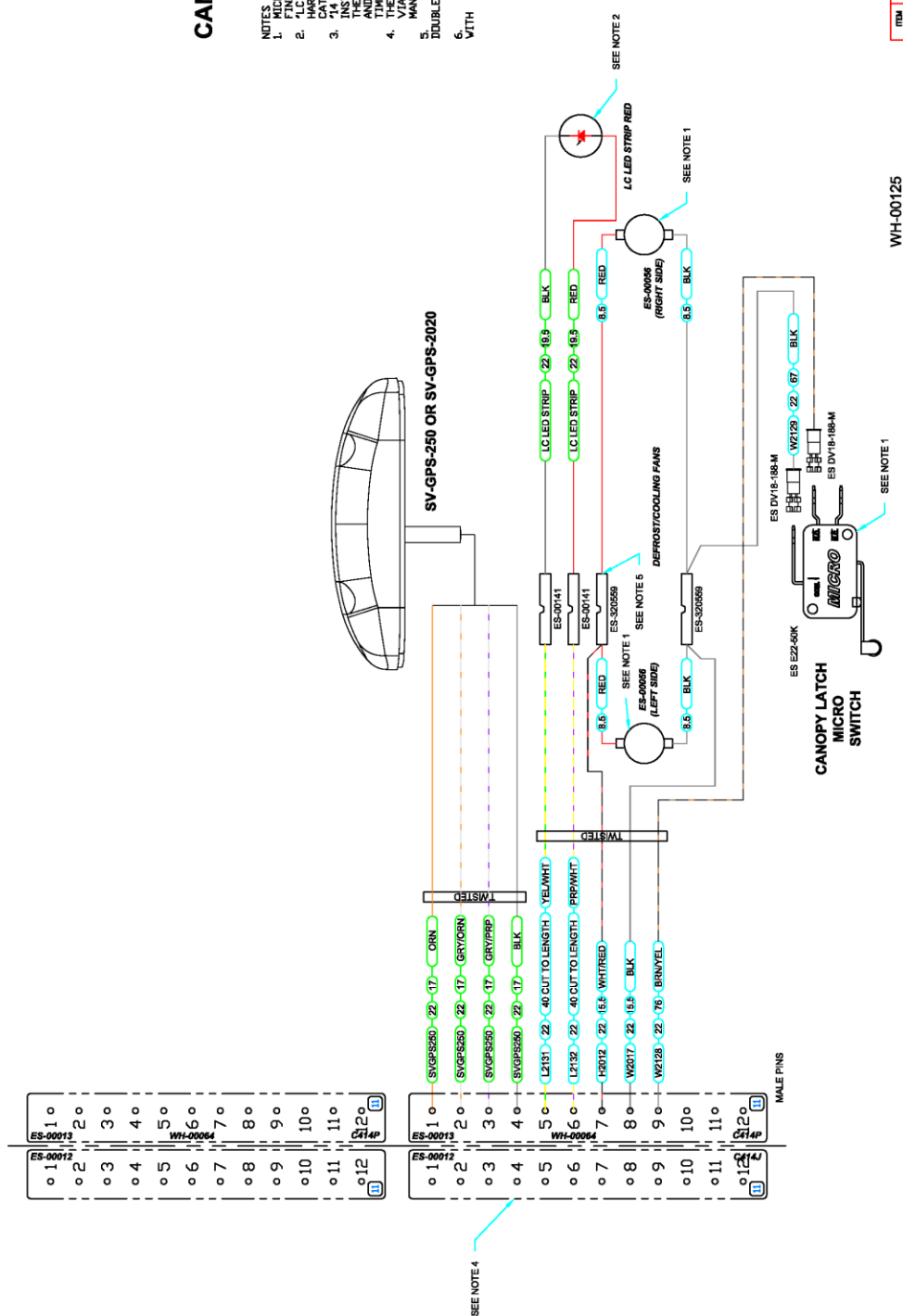
P/N: 57852AFS for AF-5600 install or P/N: 57852HDX for a Skyview HDX install. Start in the middle of the fuselage and work toward the ACM connector end (Aircraft Rear, AP Servo, Flap Trim, ADAHRS SVN-Net) routing the harness using Van's instructions Section 55-02 RV-14 Harness install. You will need to use the supplied Van's airframe harness bushing kit **P/N: xxxxx**



CANOPY AFS-DYNON

- NOTES
1. MICRO-SWITCH AND FANS ARE PROVIDED IN FINISH KIT.
 2. MICRO-SWITCH KIT NOT INCLUDED WITH HARNESS ORDER FROM THE VAN'S AIRCRAFT CATALOG.
 3. 14 CANOPY HARNESS KIT, INCLUDES MICRO-SWITCH, MICRO-SWITCH KIT, MICRO-SWITCH KIT AND LED STRIP. KIT NOT AVAILABLE AT THIS TIME.
 4. THE CANOPY HARNESS CONNECTS TO THE EFIS VIA A HARNESS SUPPLIED BY THE EFIS MANUFACTURER.
 5. THE STRIPPED WIRE END MUST BE DOUBLED THIS AREA TO ENSURE A TIGHT FIT.
 6. WIRING FOR DYNON UNITS NOT SUPPLIED WITH

WH-00126

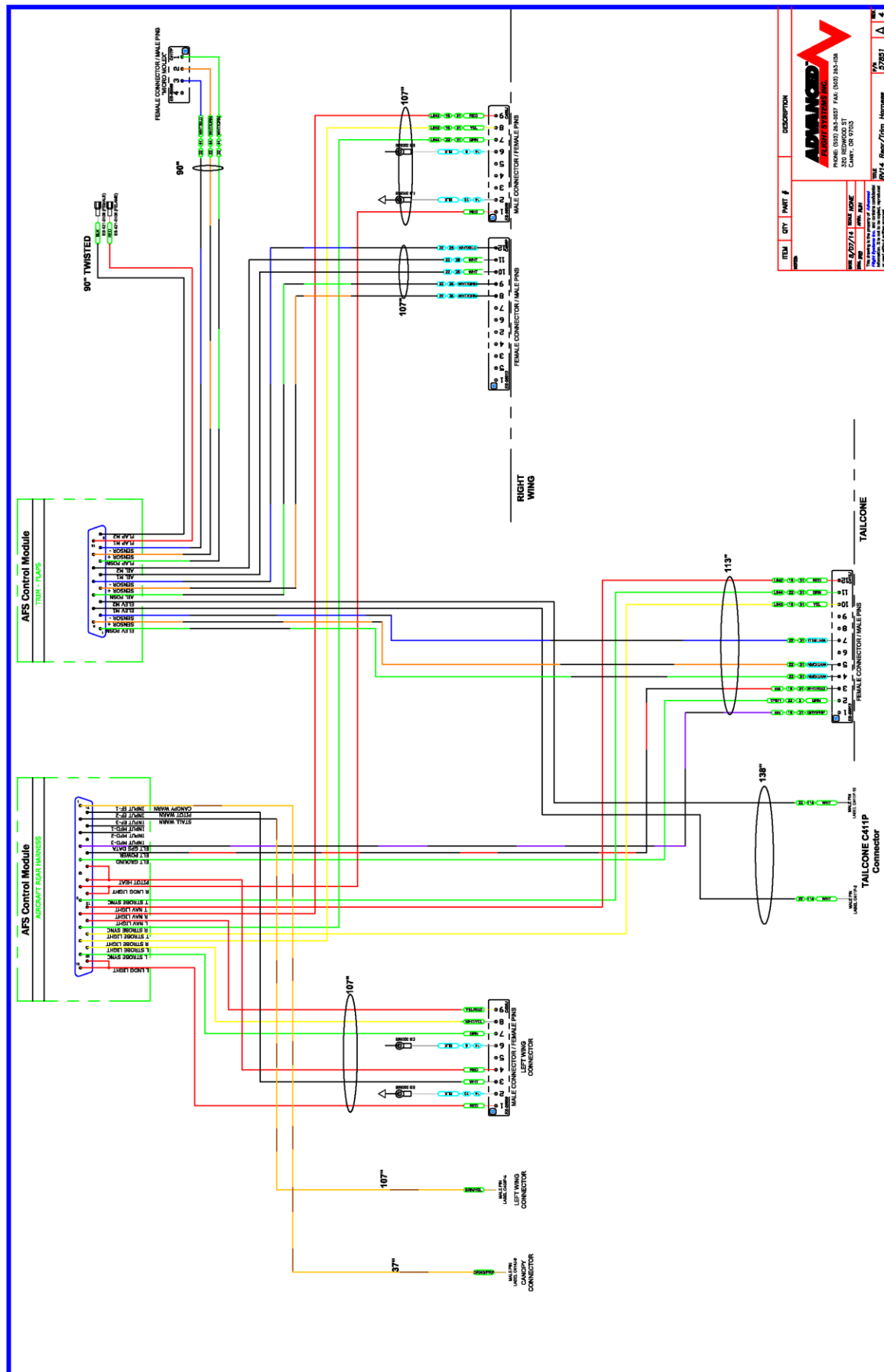


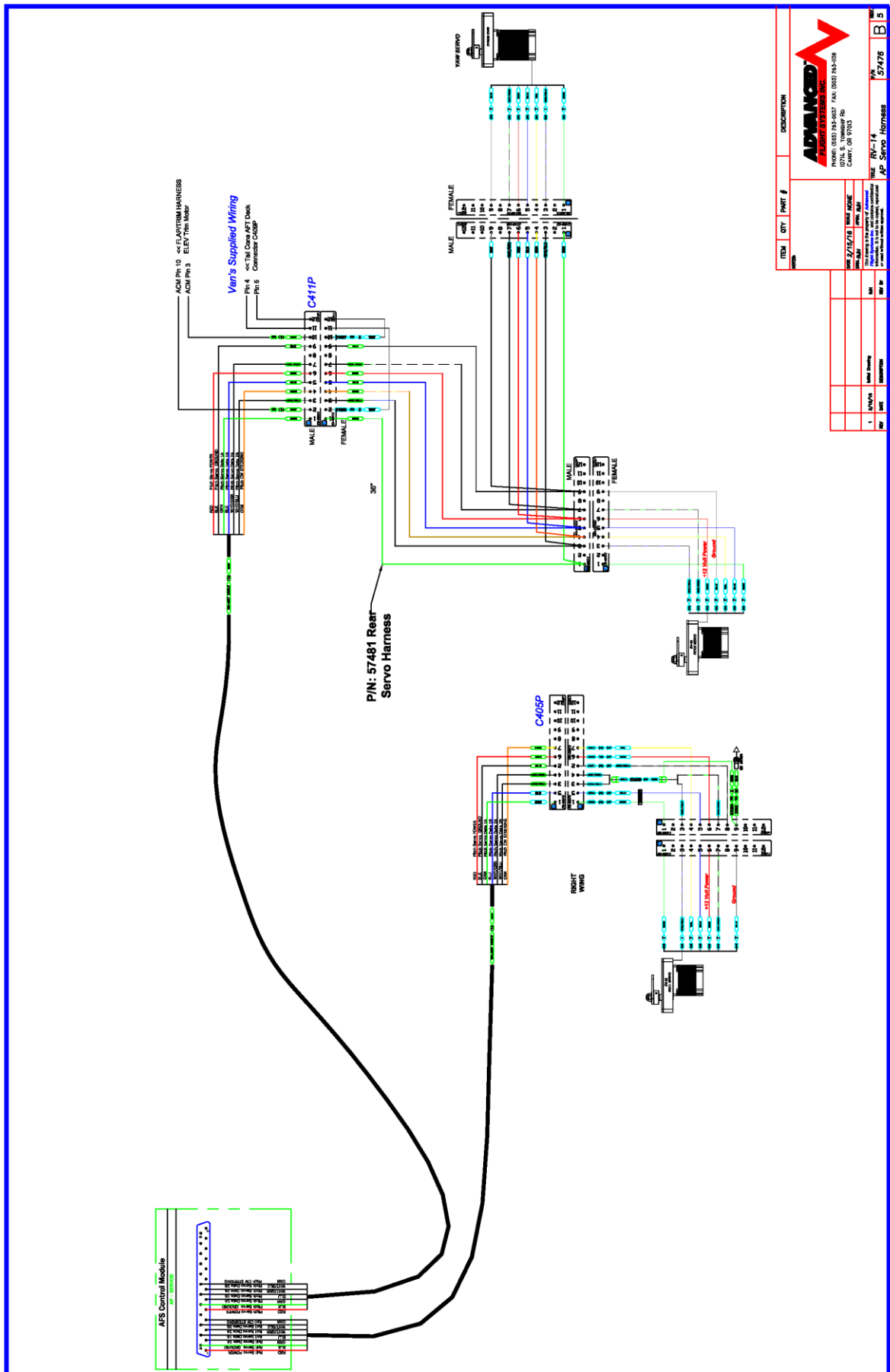
WH-00125

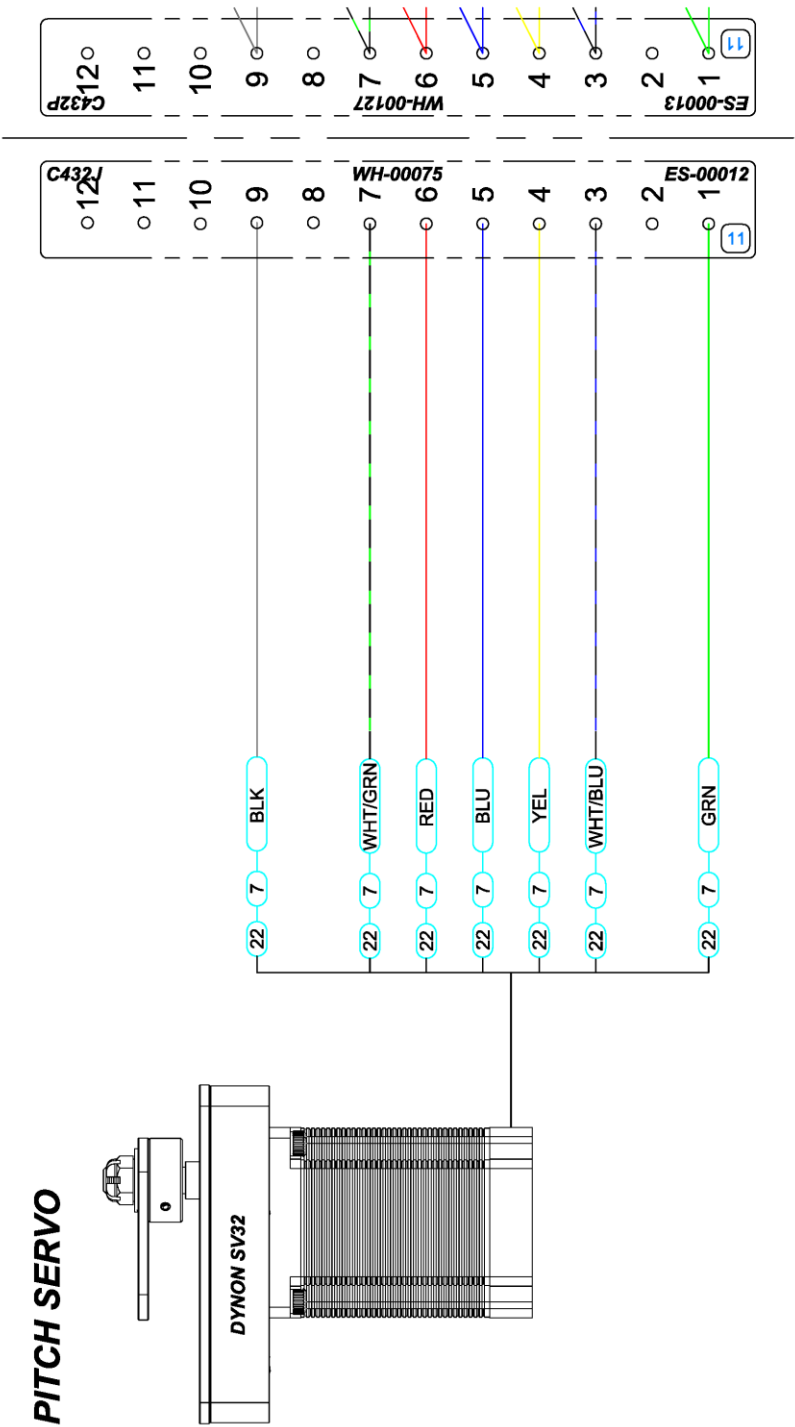
ITEM	QTY	PART #	DESCRIPTION
1	1	WH-00125	Canopy Harness
2	1	WH-00126	Canopy Harness



REV	DATE	DESCRIPTION	BY	CHKD
1	10/17/11	Original Data Sheet and revised pin up		
2	10/17/11	Revised Data Sheet and revised pin up		
3	10/17/11	Revised Data Sheet and revised pin up		
4	10/17/11	Revised Data Sheet and revised pin up		
5	10/17/11	Revised Data Sheet and revised pin up		
6	10/17/11	Revised Data Sheet and revised pin up		
7	10/17/11	Revised Data Sheet and revised pin up		
8	10/17/11	Revised Data Sheet and revised pin up		
9	10/17/11	Revised Data Sheet and revised pin up		
10	10/17/11	Revised Data Sheet and revised pin up		
11	10/17/11	Revised Data Sheet and revised pin up		
12	10/17/11	Revised Data Sheet and revised pin up		
13	10/17/11	Revised Data Sheet and revised pin up		
14	10/17/11	Revised Data Sheet and revised pin up		
15	10/17/11	Revised Data Sheet and revised pin up		
16	10/17/11	Revised Data Sheet and revised pin up		
17	10/17/11	Revised Data Sheet and revised pin up		
18	10/17/11	Revised Data Sheet and revised pin up		
19	10/17/11	Revised Data Sheet and revised pin up		
20	10/17/11	Revised Data Sheet and revised pin up		
21	10/17/11	Revised Data Sheet and revised pin up		
22	10/17/11	Revised Data Sheet and revised pin up		
23	10/17/11	Revised Data Sheet and revised pin up		
24	10/17/11	Revised Data Sheet and revised pin up		
25	10/17/11	Revised Data Sheet and revised pin up		
26	10/17/11	Revised Data Sheet and revised pin up		
27	10/17/11	Revised Data Sheet and revised pin up		
28	10/17/11	Revised Data Sheet and revised pin up		
29	10/17/11	Revised Data Sheet and revised pin up		
30	10/17/11	Revised Data Sheet and revised pin up		
31	10/17/11	Revised Data Sheet and revised pin up		
32	10/17/11	Revised Data Sheet and revised pin up		
33	10/17/11	Revised Data Sheet and revised pin up		
34	10/17/11	Revised Data Sheet and revised pin up		
35	10/17/11	Revised Data Sheet and revised pin up		
36	10/17/11	Revised Data Sheet and revised pin up		
37	10/17/11	Revised Data Sheet and revised pin up		
38	10/17/11	Revised Data Sheet and revised pin up		
39	10/17/11	Revised Data Sheet and revised pin up		
40	10/17/11	Revised Data Sheet and revised pin up		
41	10/17/11	Revised Data Sheet and revised pin up		
42	10/17/11	Revised Data Sheet and revised pin up		
43	10/17/11	Revised Data Sheet and revised pin up		
44	10/17/11	Revised Data Sheet and revised pin up		
45	10/17/11	Revised Data Sheet and revised pin up		
46	10/17/11	Revised Data Sheet and revised pin up		
47	10/17/11	Revised Data Sheet and revised pin up		
48	10/17/11	Revised Data Sheet and revised pin up		
49	10/17/11	Revised Data Sheet and revised pin up		
50	10/17/11	Revised Data Sheet and revised pin up		
51	10/17/11	Revised Data Sheet and revised pin up		
52	10/17/11	Revised Data Sheet and revised pin up		
53	10/17/11	Revised Data Sheet and revised pin up		
54	10/17/11	Revised Data Sheet and revised pin up		
55	10/17/11	Revised Data Sheet and revised pin up		
56	10/17/11	Revised Data Sheet and revised pin up		
57	10/17/11	Revised Data Sheet and revised pin up		
58	10/17/11	Revised Data Sheet and revised pin up		
59	10/17/11	Revised Data Sheet and revised pin up		
60	10/17/11	Revised Data Sheet and revised pin up		
61	10/17/11	Revised Data Sheet and revised pin up		
62	10/17/11	Revised Data Sheet and revised pin up		
63	10/17/11	Revised Data Sheet and revised pin up		
64	10/17/11	Revised Data Sheet and revised pin up		
65	10/17/11	Revised Data Sheet and revised pin up		
66	10/17/11	Revised Data Sheet and revised pin up		
67	10/17/11	Revised Data Sheet and revised pin up		
68	10/17/11	Revised Data Sheet and revised pin up		
69	10/17/11	Revised Data Sheet and revised pin up		
70	10/17/11	Revised Data Sheet and revised pin up		
71	10/17/11	Revised Data Sheet and revised pin up		
72	10/17/11	Revised Data Sheet and revised pin up		
73	10/17/11	Revised Data Sheet and revised pin up		
74	10/17/11	Revised Data Sheet and revised pin up		
75	10/17/11	Revised Data Sheet and revised pin up		
76	10/17/11	Revised Data Sheet and revised pin up		
77	10/17/11	Revised Data Sheet and revised pin up		
78	10/17/11	Revised Data Sheet and revised pin up		
79	10/17/11	Revised Data Sheet and revised pin up		
80	10/17/11	Revised Data Sheet and revised pin up		
81	10/17/11	Revised Data Sheet and revised pin up		
82	10/17/11	Revised Data Sheet and revised pin up		
83	10/17/11	Revised Data Sheet and revised pin up		
84	10/17/11	Revised Data Sheet and revised pin up		
85	10/17/11	Revised Data Sheet and revised pin up		
86	10/17/11	Revised Data Sheet and revised pin up		
87	10/17/11	Revised Data Sheet and revised pin up		
88	10/17/11	Revised Data Sheet and revised pin up		
89	10/17/11	Revised Data Sheet and revised pin up		
90	10/17/11	Revised Data Sheet and revised pin up		
91	10/17/11	Revised Data Sheet and revised pin up		
92	10/17/11	Revised Data Sheet and revised pin up		
93	10/17/11	Revised Data Sheet and revised pin up		
94	10/17/11	Revised Data Sheet and revised pin up		
95	10/17/11	Revised Data Sheet and revised pin up		
96	10/17/11	Revised Data Sheet and revised pin up		
97	10/17/11	Revised Data Sheet and revised pin up		
98	10/17/11	Revised Data Sheet and revised pin up		
99	10/17/11	Revised Data Sheet and revised pin up		
100	10/17/11	Revised Data Sheet and revised pin up		

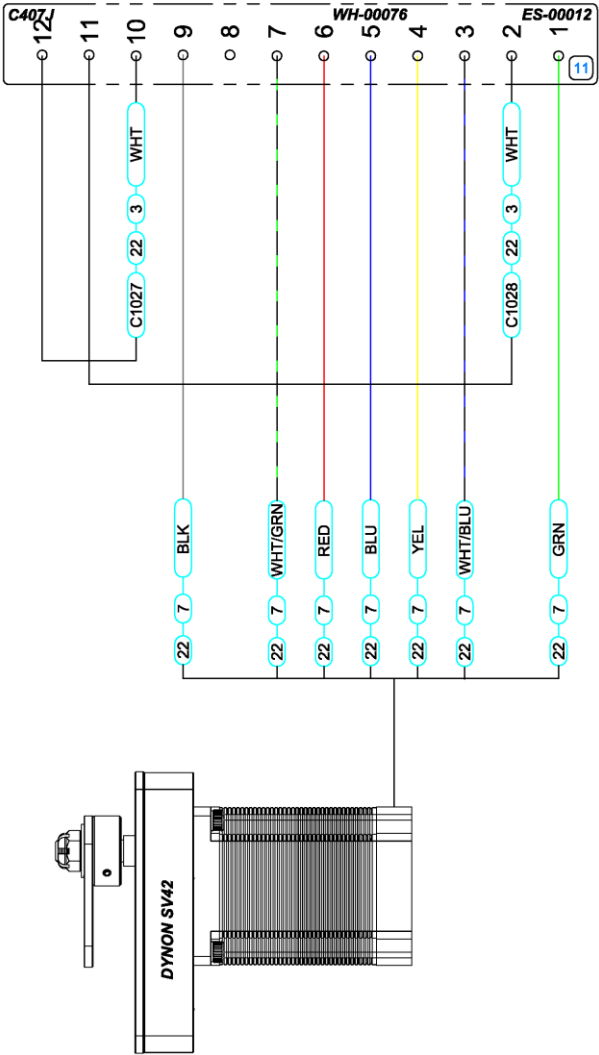






DYNON/AFS ROLL SERVO

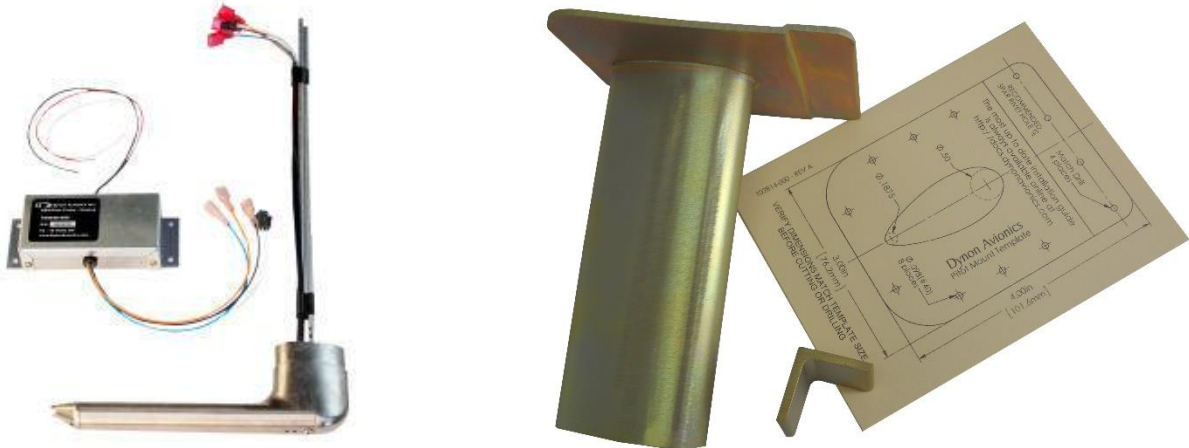
- NOTES
- 1. MOLEX PINS PROVIDED IN "14 SV AFS AP SERVO INSTALL KIT"
 - 2. CONNECTOR ES-00012 MOLEX RECEPTACLE, 12 POSITION (.083" SOCKETS) SUPPLIED IN THE WING KIT.
 - 3. PURCHASE SERVO FROM YOUR AVIONICS SUPPLIER.



RV-14 Heated Pitot Tube

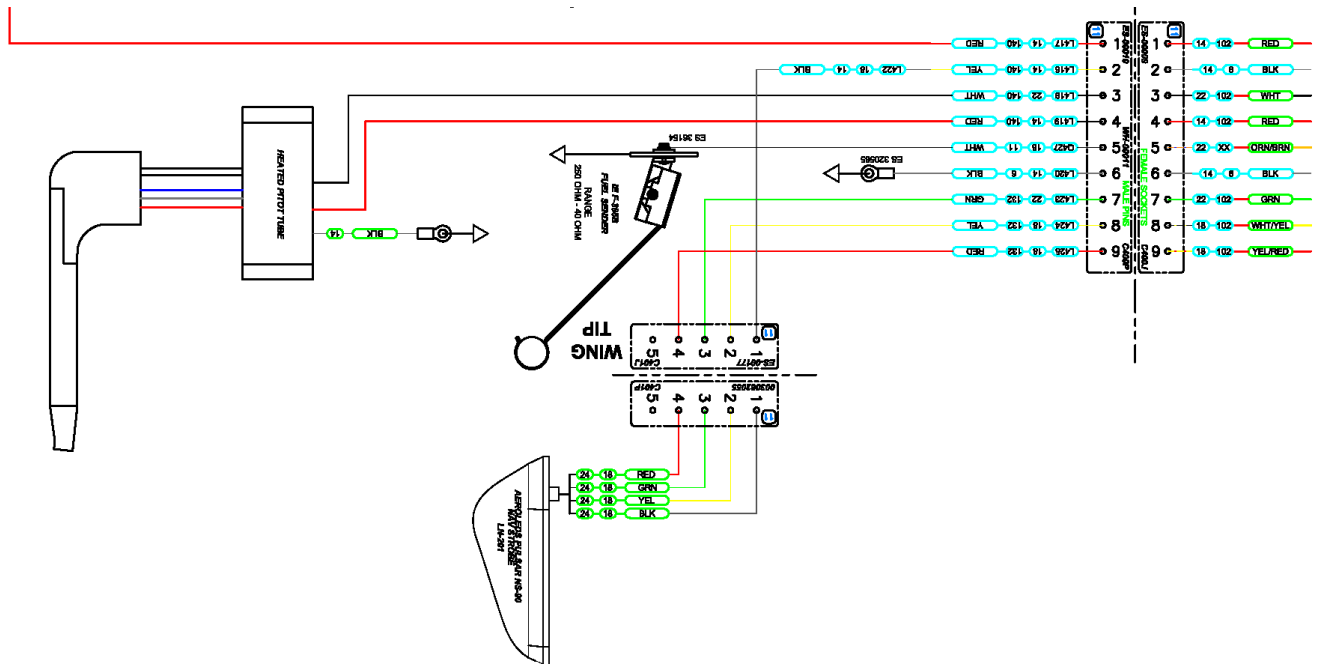
The Dynon heated pitot tube is mounted in the left wing using the Dynon Pitot Mast P/N: 102813-000

- Mount the controller box to one of the wing ribs near the pitot tube mounting location.



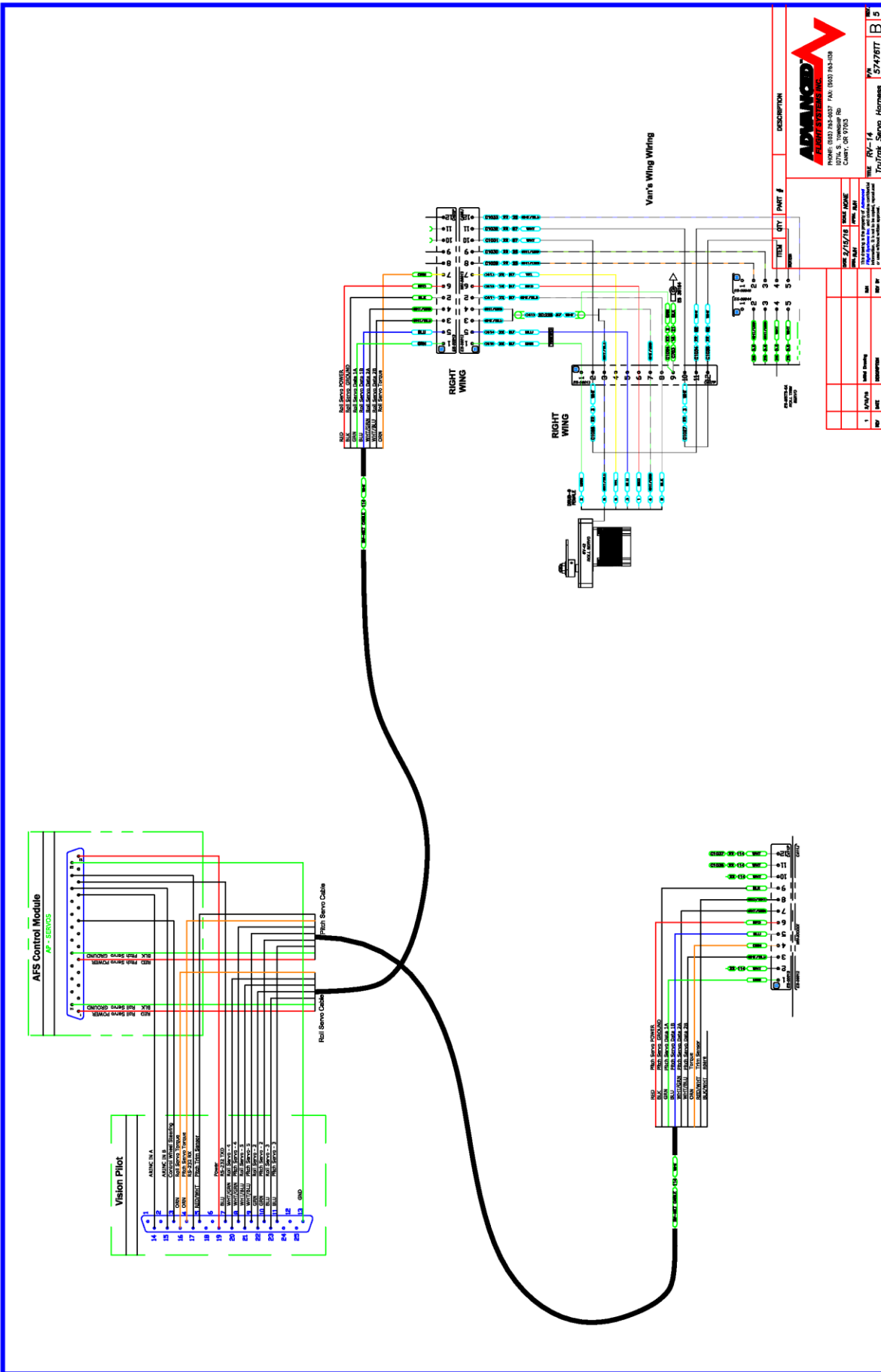
- Extend the Pitot Tube controller wires and connect to the Left Wing C400P Molex connector using the following:

Pitot Controller	Description	Wire Size	C400P Male Pin
Red	+12V Power	#14	4
Black	Ground	#14	Locally grounded using ring terminal
White	Signal	#22	3



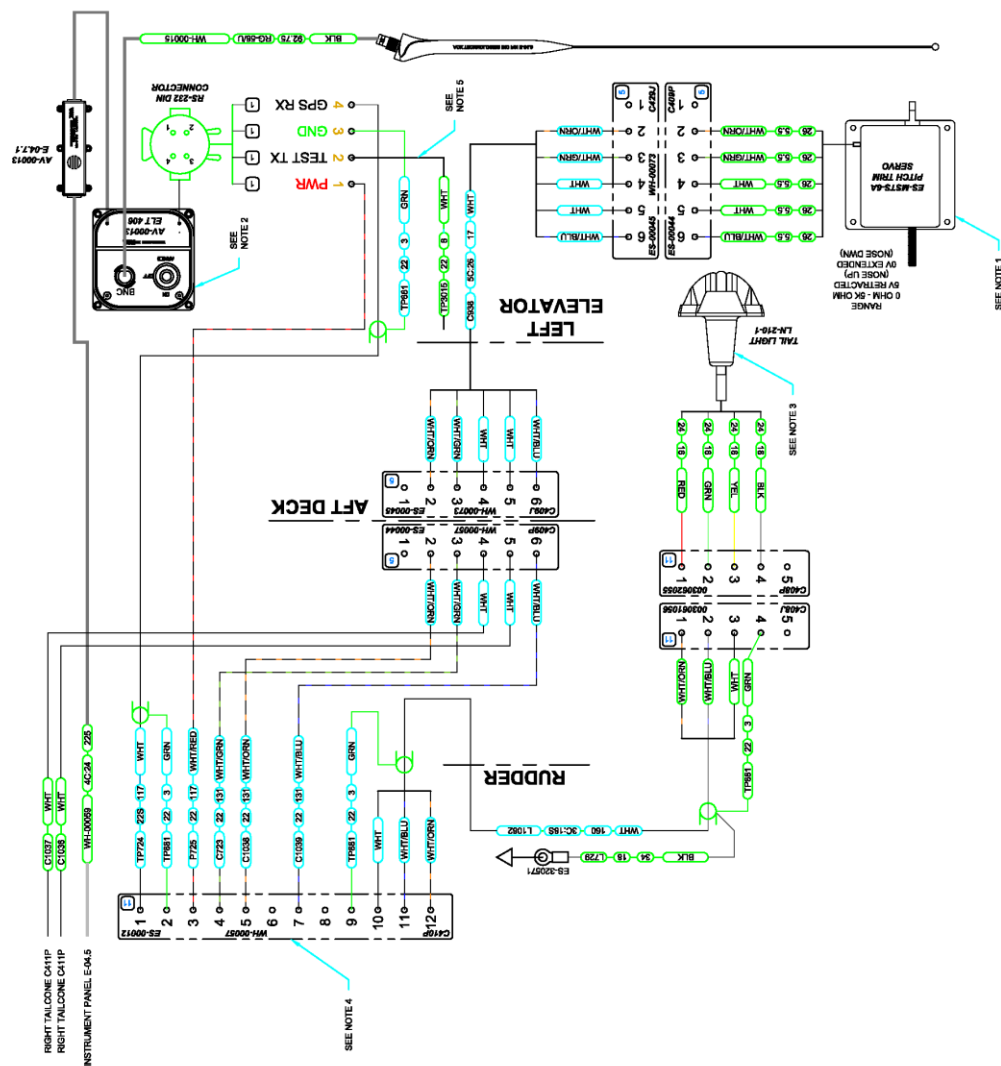
The Pitot line and AOA line should be connected to the Dynon ADAHRS using the Dynon Pitot/Static Plumbing Kit P/N: 102628-000

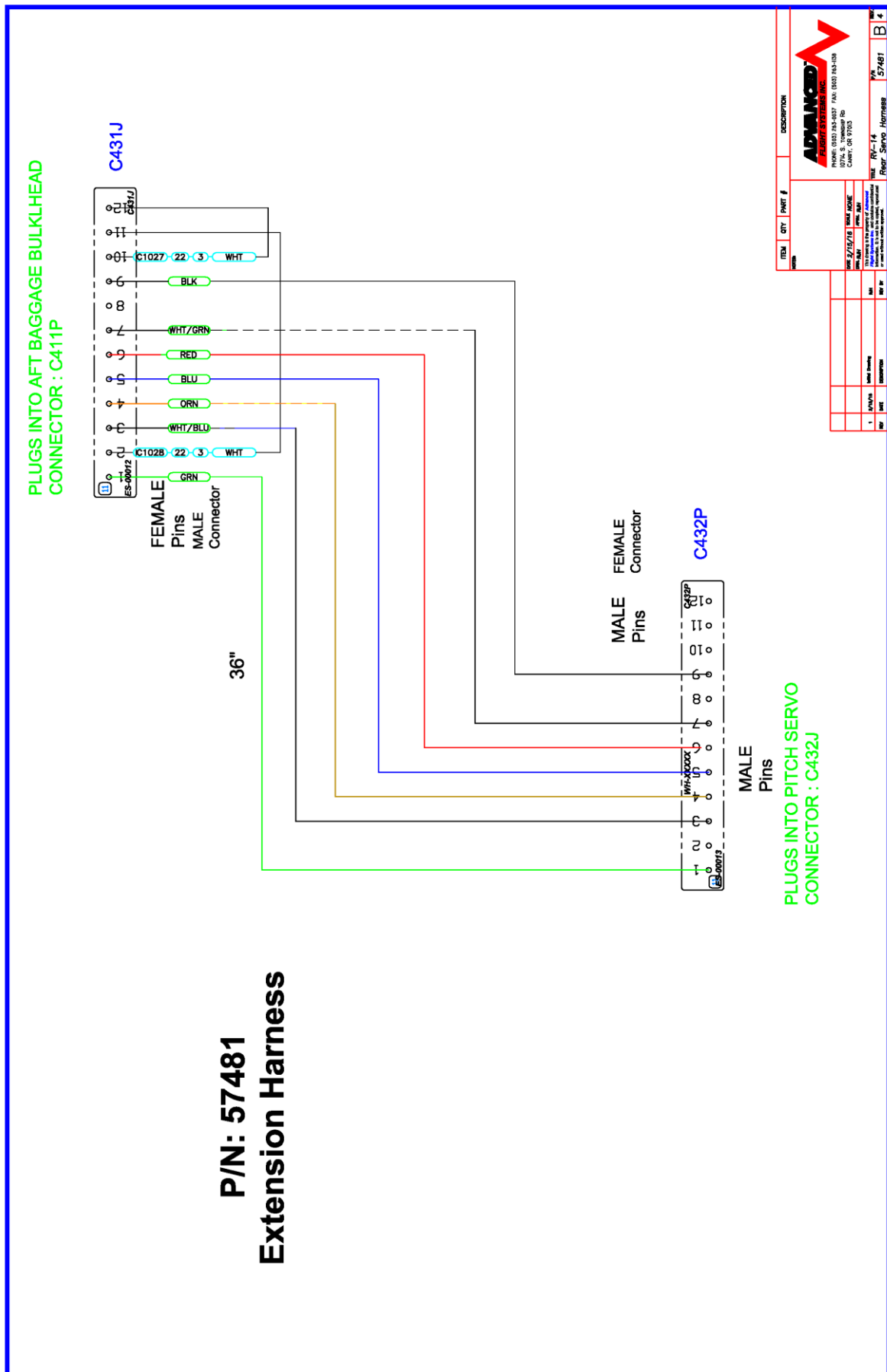




TAILCONE LEFT

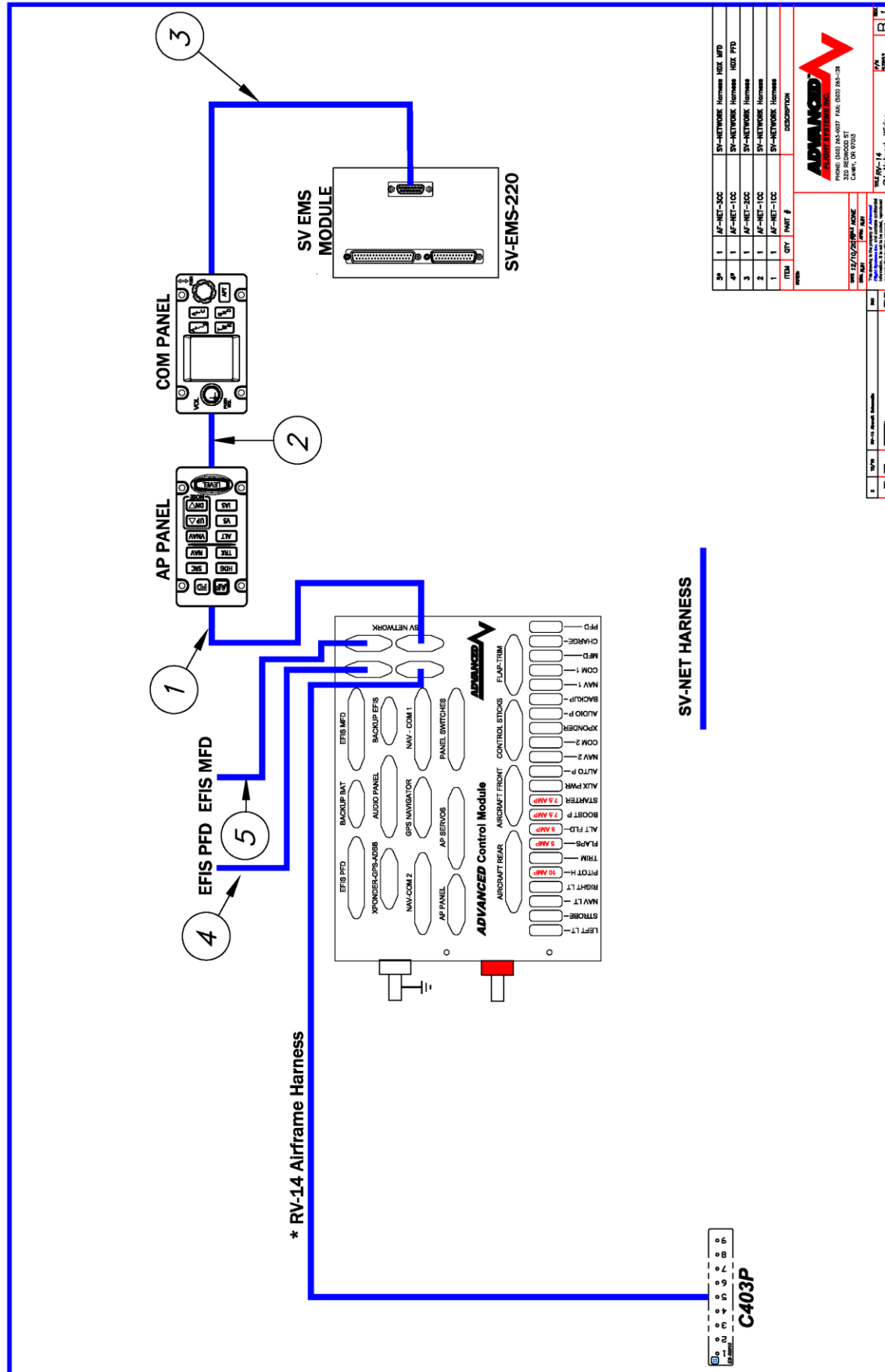
- NOTES
1. PITCH SERVO AND HARDWARE PROVIDED IN EMPENNAGE KIT.
 2. ACK ELT IS AVAILABLE AS AN OPTIONAL "14 ELT ACK-04 KIT".
 3. TAIL LIGHT IS AVAILABLE AS AN OPTIONAL "14-TAIL LIGHT KIT".
 4. WH-00087 IS SUPPLIED IN THE TAILCONE KIT.
 5. WIRE SUPPLIED AND ADDED IN ELT KIT.





If you are installing a Skyview EFIS you will need to wire the SV-EMS input pins (9,10,11) to the RV-14 airframe harness near the ACM connectors. An AF-5600 system uses the EFIS inputs for (Canopy, Stall Tab, and Pitot Heat warning).





RV-14 Input Wiring and Configuration (AF-5000)

The RV-14 uses the EFIS PFD inputs to monitor the Canopy Latch, Pitot Heat and wing mounted stall tab. The inputs are wired to the ACM aircraft rear harness and can be tested in the EFIS PFD Configure Inputs page in calibration.

Instrument Calibration

Configure Inputs

BACK

INPUT 1

1. LabelCANOPY

2. UsageCANOPY

3. LogicNorm Closed

4. Timeout (mm:ss)0:00

5. Audio OFF/ON/etcABOVE 1500 RPM

INPUT 2

6. LabelPITOT

7. UsageGENERIC

8. LogicNorm Open

9. Timeout (mm:ss)0:00

10. Audio OFF/ON/etcOFF

INPUT 3

11. LabelSTALL

12. UsageGENERIC

13. LogicNorm Open

14. Timeout (mm:ss)0:00

15. Audio OFF/ON/etcON

LOCAL STATUS

EFIS 1123

☒☐☐

REMOTE STATUS

EFIS 2123

☐☐☐

SAVE

SEL

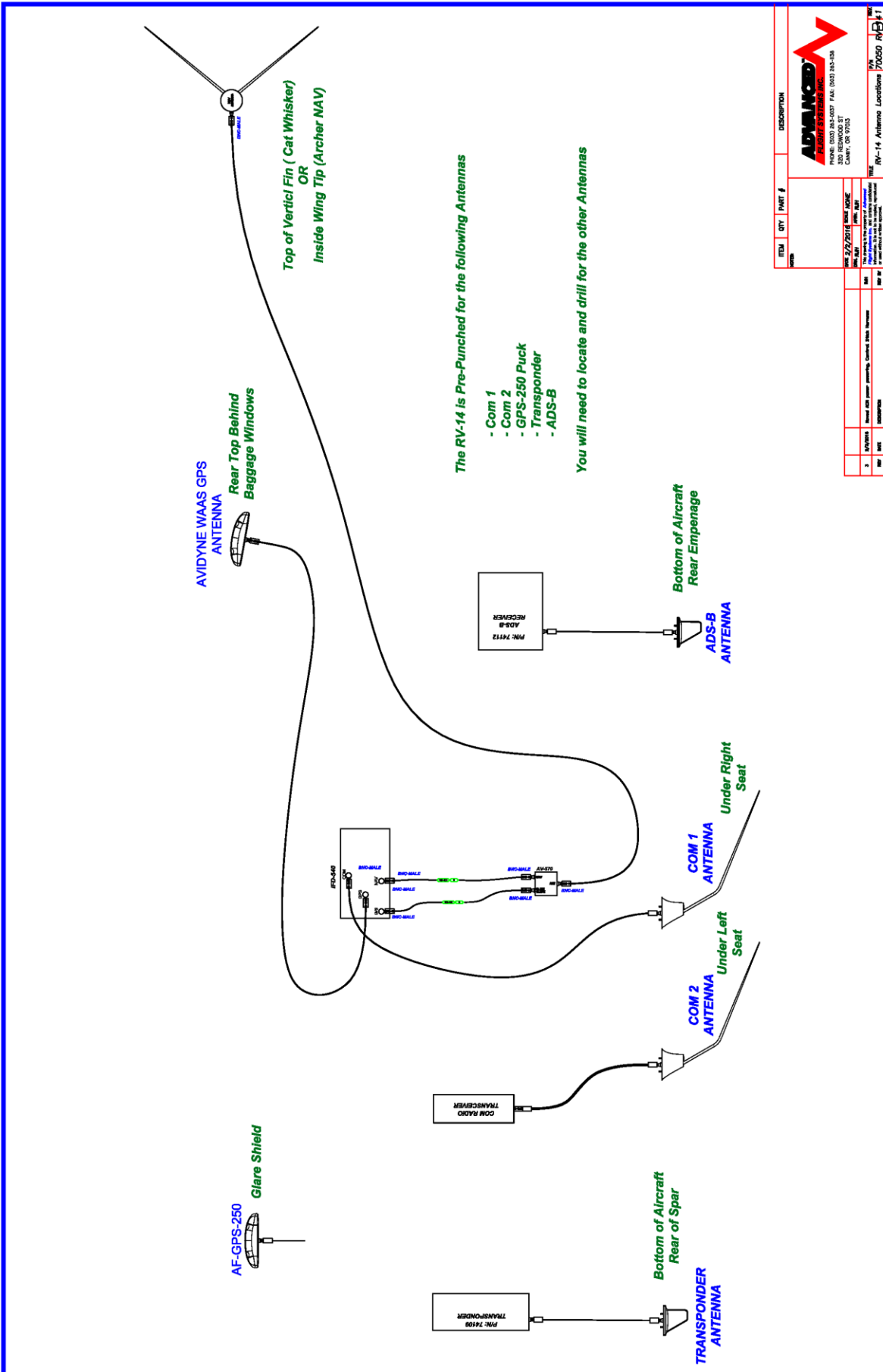
PREVNEXTSEL

RV-14 Input Wiring and Configuration (Skyview)

The Skyview EFIS inputs cannot be used to monitor the Canopy, Pitot Heat or Stall Tab so you will need to connect the inputs from the RV-14 airframe harness to the SV-EMS harness. The RV-14 airframe harness should have three labeled wires to connect to the same color wires in the SV-EMS harness.

Function	Pin	Color	Input #	RV-14 Connector	Pin
Canopy Latch	10	Brown/Yellow	GP6	C414J	9
Stall Tab	11	Orange	GP7	C403P	5
Pitot Warning	9	Brown/Blue	GP5	LC400J	3

Using the Skyview Inputs Configuration menu you will need to configure the inputs



ACM Flap Control

The ACM flap control can be configured from the PFD EFIS calibration menu:

SET > CAL > 44. Flap Position

7. Operation Mode:

POSITION

Flaps will stop at the programed Position Calibration points (FULL UP, POSITION 1, POSITION 2, FULL DOWN). You must have a POS-12 position sensor installed and working to use position mode. Move the flaps to each position and use the COPY and SAVE buttons to record the position. *If the AD_VAL in the upper right hand EFIS screen corner does not change when you move the flaps you do not have the POS-12 correctly wired.*

MOMENTARY

Flaps will only move when you hold the Flap Up or Flap Down button. Momentary mode does not require a flap sensor.



8. Retract Mode:

MULTI-STEP

Flaps will move to the next position when the Flaps Up button is pressed

CONTINUOUS

Flaps will move to fully retracted position when the Flaps Up button is pressed

MOMENTARY

Flaps will only move when you hold the Flap Up button.

9. **Motor Polarity (NORMAL or REVERSED)** Verify that the Flaps move in the correct direction using the EFIS **CHECK > ELEC** menu buttons. If the Stick mounted buttons are backwards you will need to swap the stick Up and Down button wiring.

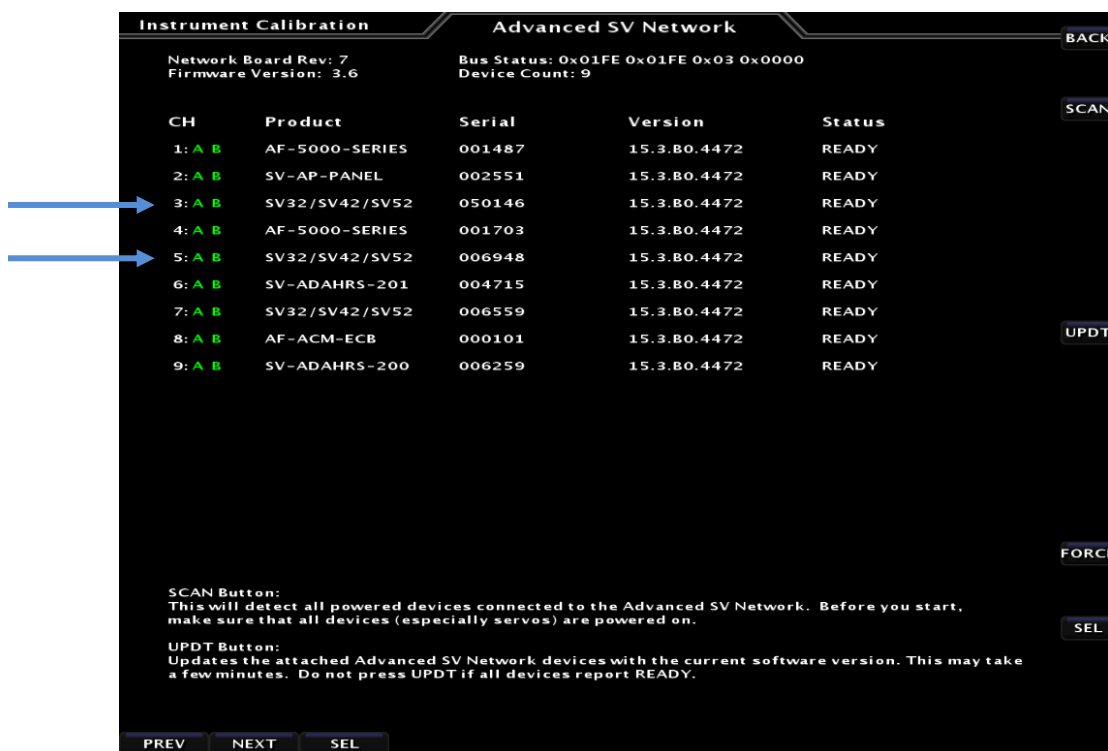


10. **Endpoint Slop Timeout** The Flap Motor will continue to run for this number of seconds to make sure the flaps are fully retracted or extended. The flap positioning system should not be used to provide an accurate position stop for full flap up or down settings.

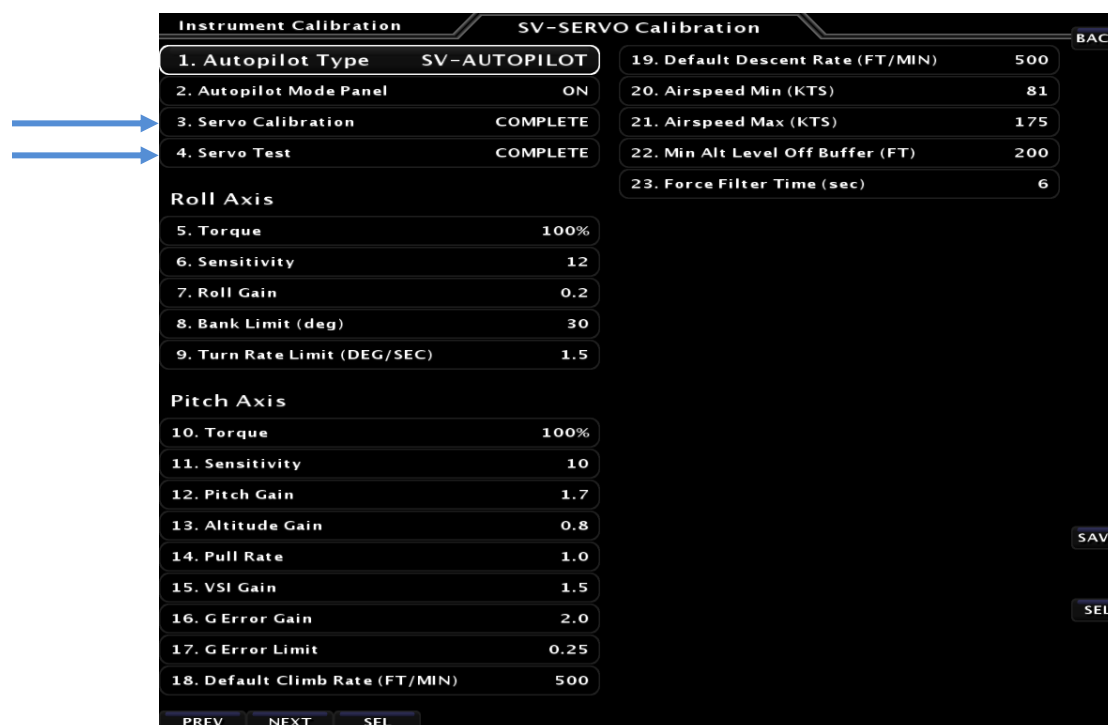
SV Autopilot Setup

To configure the SV Autopilot you will need to do the following:

1. Verify that the ROLL and Pitch AP Servo Status is READY in the SV-NETWORK PFD EFIS Menu. If the Status shows needs update press the **UPDT** button



2. Perform the **3. Servo Calibration** and **4. Servo Test** following the PFD EFIS on screen directions. After completing these steps both items **MUST** show **COMPLETE** before the Autopilot can be used. The following settings are from a Van's RV-14 and RV-10.



System Wiring Table

Advanced Control Module AF-GPS Routing Table

AFS GPS	Cable Color	DSUB-9	ACM 15 Pin	ACM 25 Pin	EFIS MFD
			ACM: XPND,GPS,ADSB	ACM: MFD	AUX 15 Pin
PWR +5V	Orange	1	4	12	1
Ground	Black	5	12	24	9
RS-232 TXD	Blue/Gray	3	5	22	10
RS-232 RXD	Orange/Gray	2	13	9	2

Advanced Control Module Skyview EFIS Audio Routing Table

Skyview PFD	Cable Color	Skyview	ACM 25 Pin	ACM 25 Pin	SV-INTERCOM
		DSUB-37	ACM: PFD	Audio Panel	DSUB-25
Audio Left	Brown	13	11	11	19
Audio Right	Gray	31	10	10	6
Audio Ground	Black	30	23	23	20

Advanced Control Module ADS-B Routing Table

AFS ADS-B	Cable Color	DSUB-9	ACM 15 Pin	ACM 25 Pin	EFIS MFD Serial #3
			ACM: XPND,GPS,ADSB	ACM: MFD	DSUB 25 Pin
PWR +12V	Red	1	6	nc	nc
Ground		4	14	nc	nc
RS-232 TXD		3	7	21	5
RS-232 RXD		2	15	8	4

Advanced Control Module CO Detector Routing Table

CO Guardian	Cable Color	CO	ACM 9 Pin	ACM 25 Pin	EFIS MFD Serial #2
		DSUB-9	ACM: BACKUP EFIS	ACM: MFD	DSUB 25 Pin
PWR +12V	Red	1	5	nc	nc
Ground	Black	5	9	nc	nc
RS-232 TXD >>		7	3	20	25
RS-232 RXD <<		8	8	7	13

Registration Information

To receive important notification of Service Bulletins, and service difficulty reports, please EMAIL the following information to:

Info@Advanced-Flight-Systems.com

Or Mail to:

Advanced Flight Systems Inc.
320 S. Redwood St.
Canby OR 97013 USA

Owner's Name: _____

Address: _____

City: _____

State: _____ Postal Code ZIP: _____

Country: _____

Home telephone: _____

Business Telephone: _____

E-mail: _____

Aircraft Model and N#: _____

Engine Model : _____

System Model #: _____ Serial Number: _____

Installer: _____