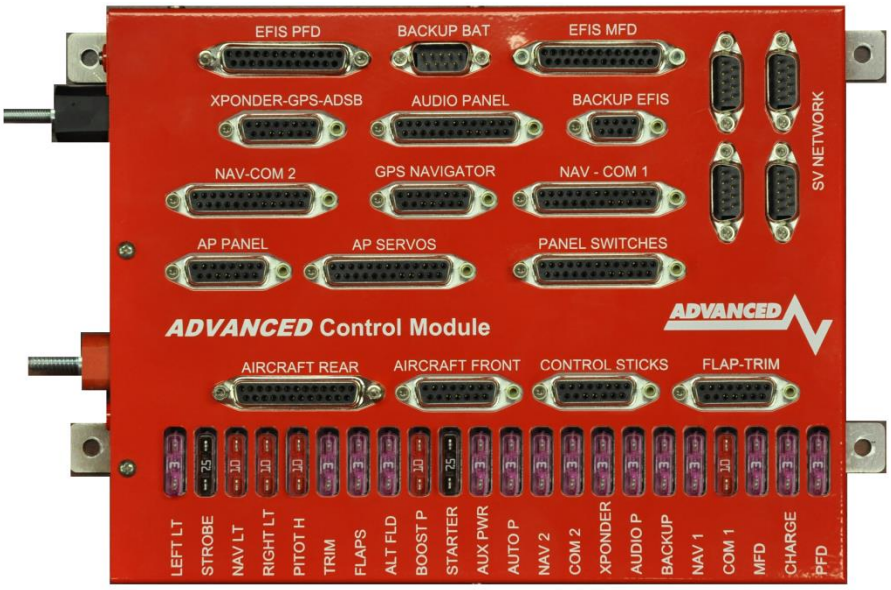
ADVANCED Quick Panel Installation Manual



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.

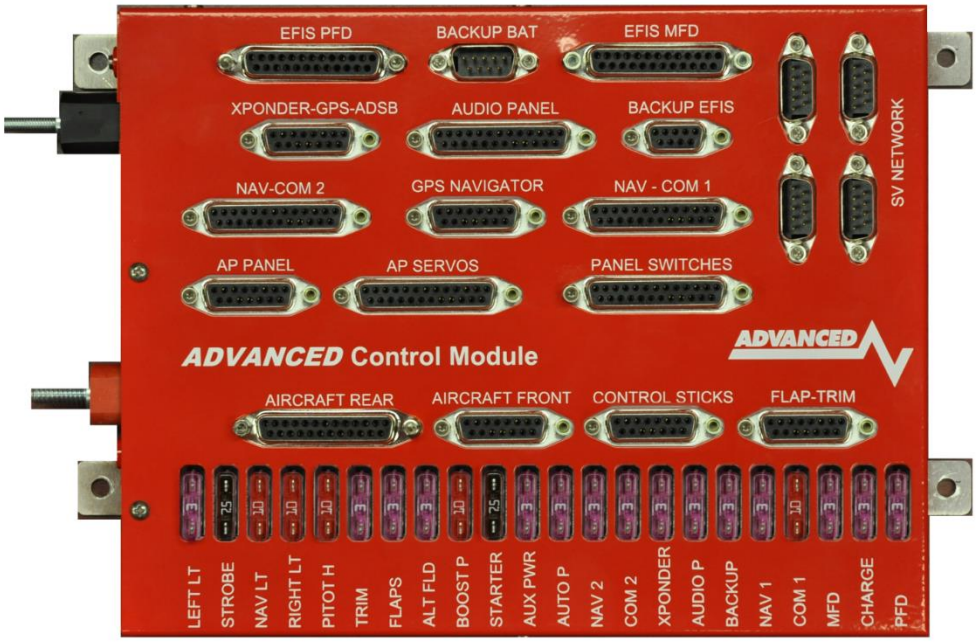
Before starting the installation, make sure that your planned installation will not interfere with the operation of any controls. The installer should use current aircraft standards and practices to install this product. Refer to AC 43.13-2A, *Acceptable Methods, Techniques, and Practices - Aircraft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

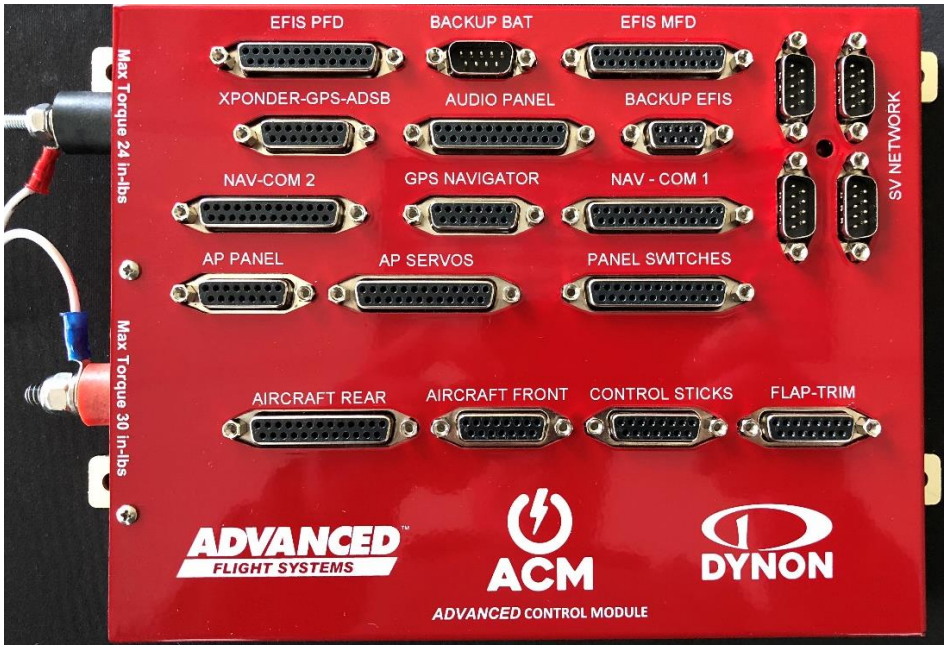
Table of Contents

MANUAL REVISION HISTORY

REVISION	DATE	DESCRIPTION
1.0	12/31/2014	Original Release
2.0	4/9/2015	Updates
2.4	11/5/2015	IFD540 Configuration, Crimpers
2.5	12/23/2015	Updates
2.7	10/11/2016	SV EMS
3.0	12/16/2016	RV-14 Data, ACM Torque
4.0	9/1/2017	ACM-ECB
4.4	1/2/2018	Updated RV-14 Canopy and Harness Drawings
4.5	2/21/2018	Updated test procedure and CHT setup
4.6	2/23/2018	Updated IFR/VFR Testing
4.7	3/8/2018	Added Serial Port to plug chart

ADVANCED Control Module Mounting





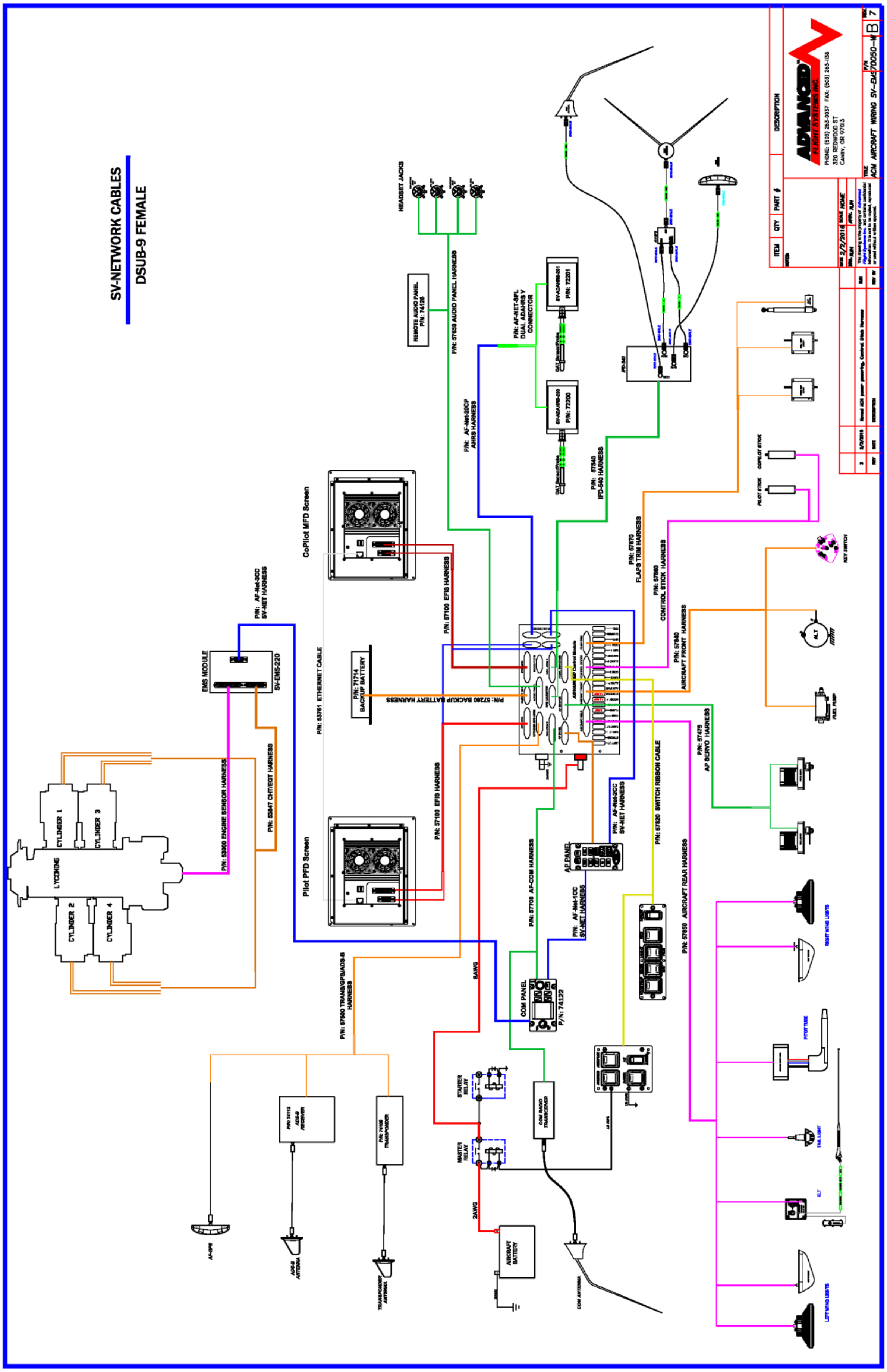
- Connect the #8 main power wire from the battery master relay to the red power lug on the ACM. The main power wire should have a ¼" (0.250") ring terminal with a molded plastic cover.

- 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: 30 in-lbs

Black Main Ground Terminal Nut Torque: 24 in-lbs


SV-NETWORK CABLES
DSUB-9 FEMALE
CoPilot MFD Screen
Pilot PFD Screen
EMS MODULE
SV-EMS-220
LYCOMING
CYLINDER 1
CYLINDER 2
CYLINDER 3
CYLINDER 4
P/N: 53800 ENGINE SENSOR HARNESS
P/N: 53847 CHT/EGT HARNESS
P/N: 53761 ETHERNET CABLE
P/N: 57100 EFIS HARNESS
P/N: 57650 AUDIO PANEL HARNESS
REMOTE AUDIO PANEL P/N: 74126
HEADSET JACKS
P/N: 57700 AF-COM HARNESS
P/N: 57820 SWITCH RIBBON CABLE
P/N: 57850 AIRCRAFT REAR HARNESS
P/N: 57475 AP SERVO HARNESS
P/N: 57840 AIRCRAFT FRONT HARNESS
P/N: 57870 FLAPS TRIM HARNESS
P/N: 57860 CONTROL STICK HARNESS
P/N: 57500 TRANS/GPS/ADS-B HARNESS
COM PANEL
P/N: 74122
AP PANEL
COM ANTENNA
AIRCRAFT BATTERY
MASTER RELAY
STARTER RELAY
2AWG
8AWG

Getting Started

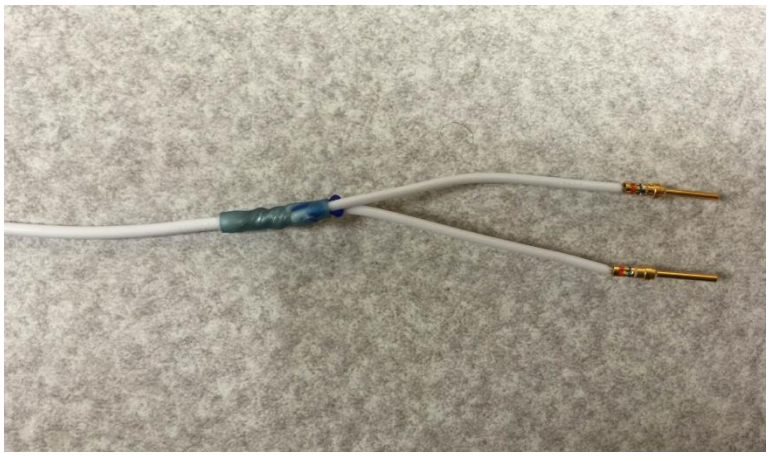
The following is a general recommendation on the steps required to install the Advanced Quick Panel:

- Disconnect the Aircraft Battery
- Remove the old panel from the aircraft (if upgrading). Label each wire as you disconnect them from the old panel switches and components.
- 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.
- Cut any required clearance holes in the sub-panel.
- 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
- Test fit new panel and trim panel ribs for clearance if required.
- Mount the ACM module to the sub panel using 6-32 mounting screws, washers and lock nuts.
- Connect the Aircraft Master relay to the ACM Red power input post using size #8 Wire and the suppled ¼"-20 nuts and washers.
- Connect the Aircraft Ground to the ACM Black ground post using size #10 Wire and the suppled 10-32 nuts and washers.
- 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.



- Connect your existing aircraft Fuel Pump, Alternator, and Starter Switch to the supplied P/N: 57840 Aircraft Front Harness ACM connector.
- Connect your existing aircraft Control Stick switches to the supplied P/N: 57860 Aircraft Control Stick ACM connector.
- Connect your existing aircraft flap and trim motor wiring to the supplied P/N: 57870 Flap and Trim motor ACM connector.
- Mount the SV-200 and SV-201 ADAHRS units in the aircraft using the instructions from the AF-5000 manual.
- Mount the OAT sensor to the bottom of the wing. Wire the OAT sensor to the ADAHRS
- Plump Pitot,Static and AOA to the mounted ADAHRS
- Wire the ADAHRS to the spare SV Network DSUB-9 connector on the ACM module
- Wire the Autopilot servos to the ACM AP Servo connector
- Mount the remote components to the sub panel.
- Mount the AF-GPS module and connect to the ACM harness
- Connect aircraft Antennas to the remote radios (Transponder, Com, ADS-B in, …)
- Install the Engine Sensors
- 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.
- Mount the Panel using the supplied mounting screws.
- Connect the aircraft Master relay to the screw terminals on the back of the Master Switch PCB board.
- Verify that you have protection diodes installed in your master and starter relay.
- Wire Aircraft Magneto P-Leads to the Key Switch.
- Carefully connect and route all the supplied panel harnesses to the ACM module.
- Double check that all ACM harnesses are connected to the correct DSUB connector.
- Install the EFIS PFD connecting the EFIS Main Connector, EFIS AUX connector, Ethernet, and USB data port wire.
- Install the EFIS MFD and connectors
- Connect the Aircraft Battery, verify that it is charged
- Turn on the Autopilot Panel Power Switch (should always be on before EFIS power up)
- Turn on the Panel Master Switch and verify that the EFIS PFD powers up
- Turn on the Panel Avionics Switch and verify that the EFIS MFD and Radios power up.

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 (Must be done before first engine start and flight)

- 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 is 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. Configure the engine sensor types and range markings for your engine. (CHT – J type, EGT K-type, Oil Pressure, Fuel Pressure, …._
- Verify that all transponder settings are correct in both EFIS screens, including aircraft N Number
- Calibrate and verify the Fuel Tank sensors.
- 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 **BLACK** Autopilot switch controls power to the autopilot servos. The Autopilot switch should be ON before powering up the EFIS screens.
- 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

First Engine Start

- With relay protection diodes installed, your EFIS screens 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 Dynon/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.
- **Verify that both aircraft ignition system are properly wired and functioning**
- **Verify that Aircraft fuel system (Flow Meter, Pressure Transducer) is properly plumbed and not leaking.**
- **Perform a minimum fuel flow test and verify each tanks unusable fuel quantity.**

Verify that the RPM, Oil Pressure, Fuel Pressure, Fuel Flow, Manifold Pressure, Oil Temperature, CHT and EGT temperatures are correct and reasonable during a high-power run-up. ***Never take-off with high temperatures or abnormal readings.***

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	PDA360R	Audio P	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	IFD Tuning	74112 AFS-ADSB	
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 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

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

Panel Configuration Checklist

(Completed by AFS before panel shipment)

N Number:_____ ICAO:_____ Customer:_____

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

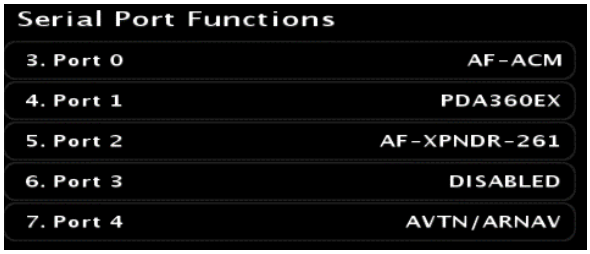
Verify Fuse or Circuit Breaker Sizes

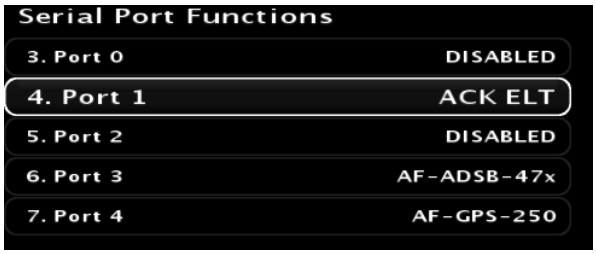
1. Verify ELT Panel Battery (green sticker with date)
2. Configure EFIS ADMIN Settings

IFR Settings

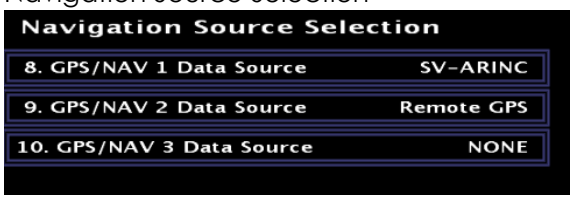
PFD **MFD** .

Serial Ports Functions





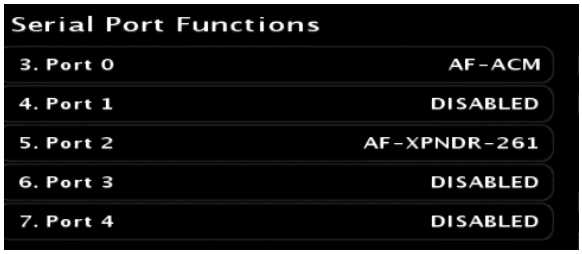
Navigation Source Selection

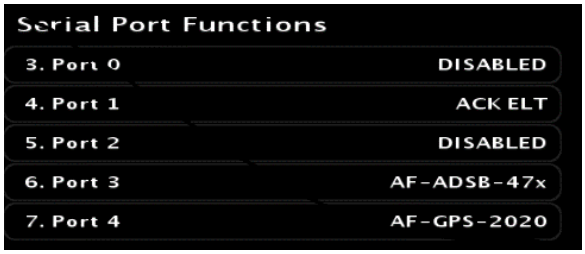


VFR Settings

PFD **MFD** .

Serial Ports Functions





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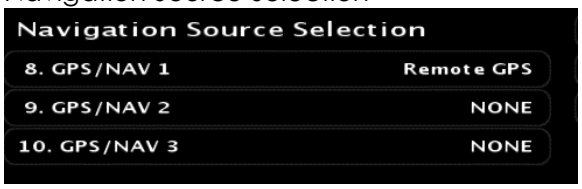
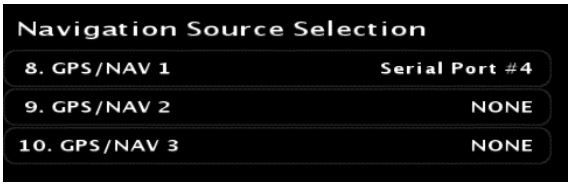
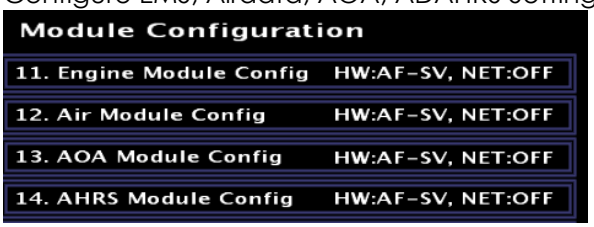
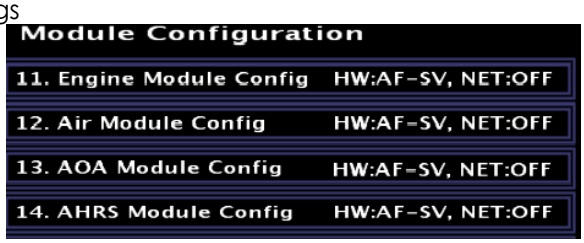


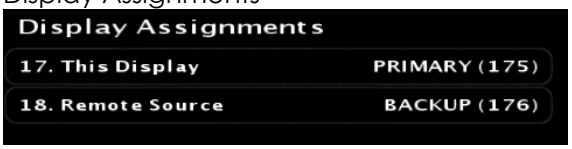


a. Configure EMS, Airdata, AOA, ADAHRS Settings



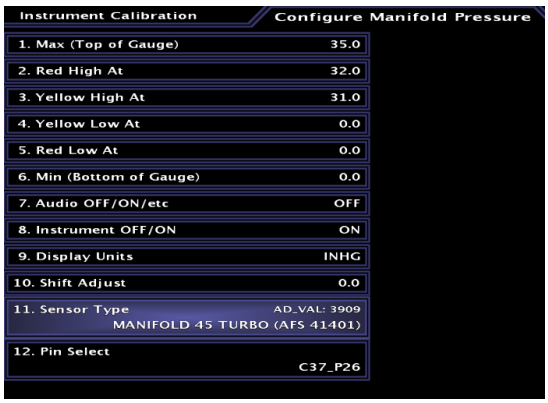


b. Display Assignments

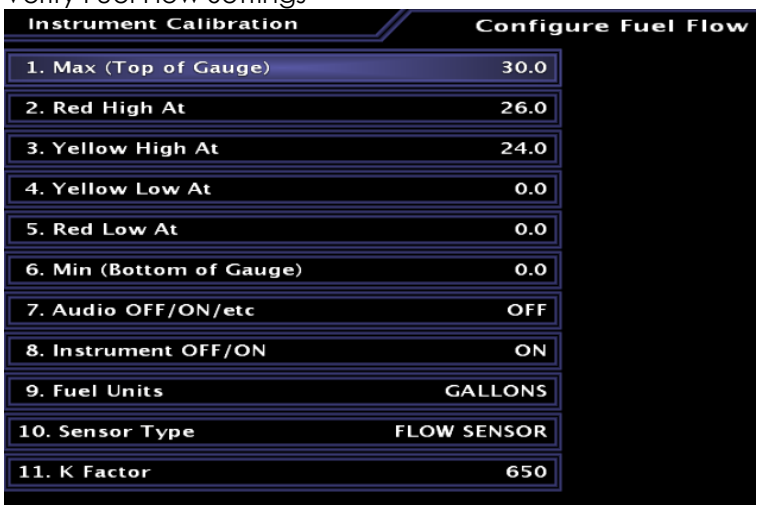


3. SV Network Configuration
   Verify all green with the following 7 devices:
   ACM, AF-5000,AF-5000, ADAHRS-200,ADAHRS-201, AF-COM,SV-AP
4. Verify Altitude, Airspeed, AOA working on ADAHRS-200 and ADAHRS-201
5. Verify Primary and Backup Volts settings
6. Verify ADAHRS OAT (use test OAT Sensor)
7. Configure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

9. Verify Manifold Sensor Configuration



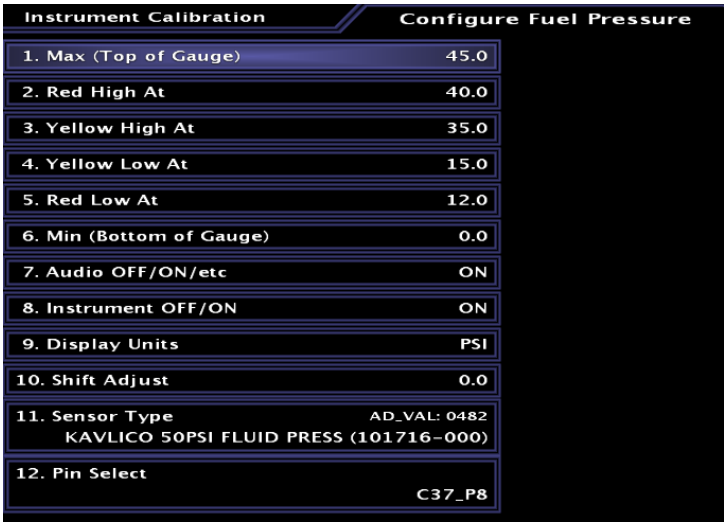
10. Verify Fuel Flow Settings



11. Verify Fuel Computer settings

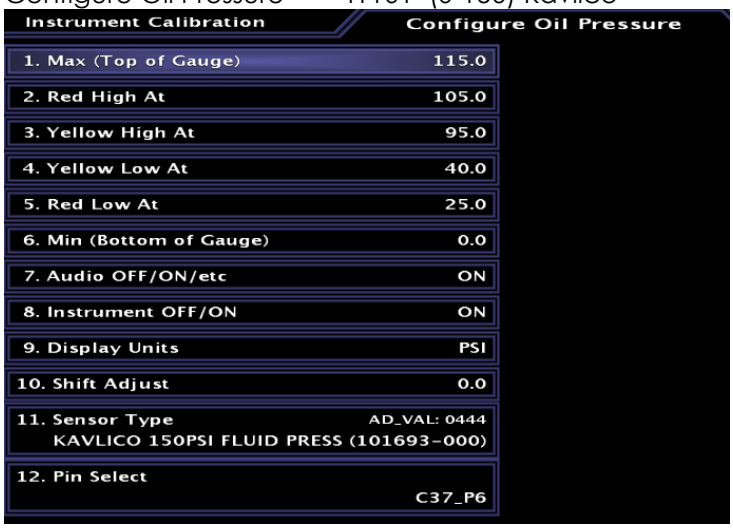
12. Configure Fuel Pressure Sensor and Ranges

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

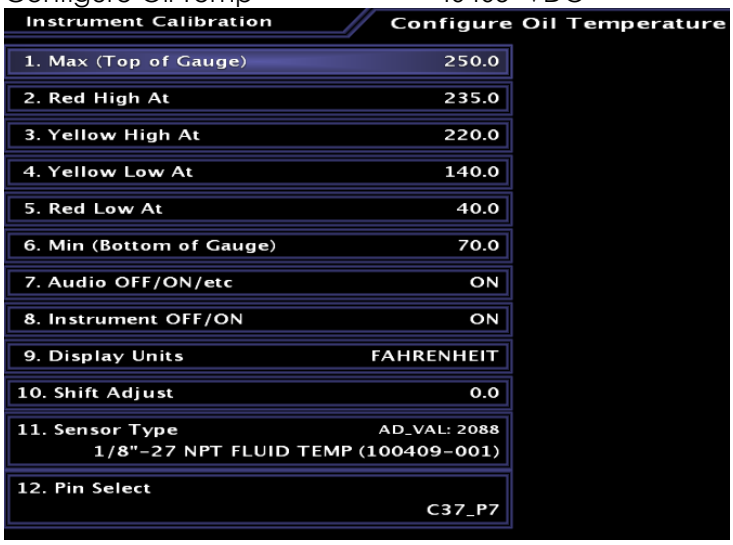


13. Amperage Shunt PRIMARY
14. Amperage Hall OFF

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



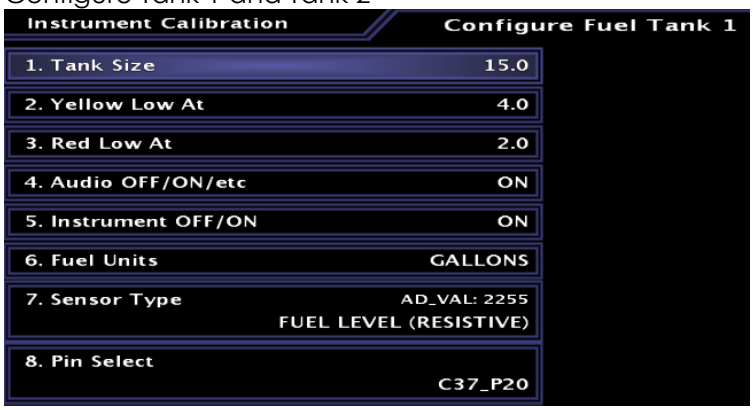
16. Configure Oil Temp 40405 VDO

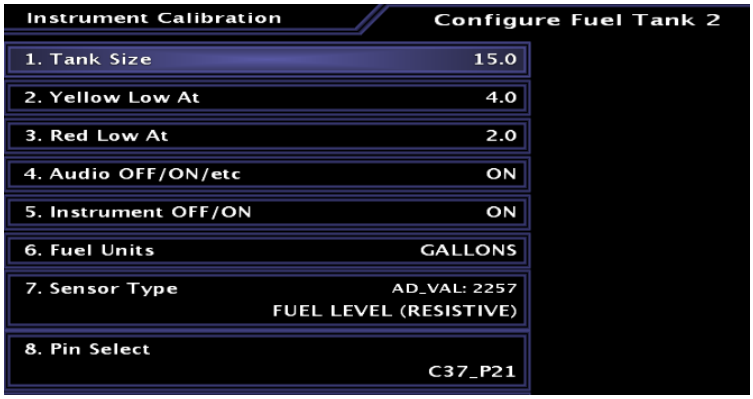


17. Verify that CHT Sensor type is J
18. Verify that EGT Sensor Type is K
19. Configure HP Engine Type and Horse Power

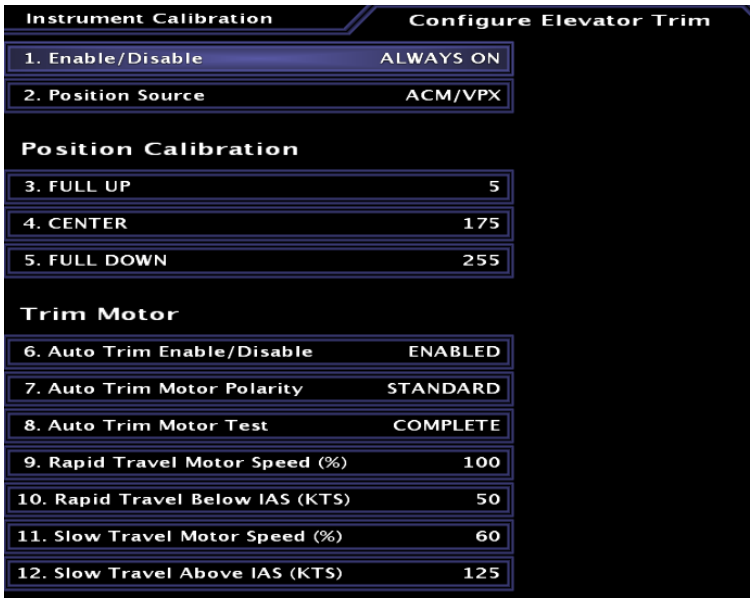
20. Configure Carb Temp Carb = ON INJ = OFF

21. Configure Tank 1 and Tank 2





22. Set Tank 3 and Tank 4 to Zero Gallons and OFF
23. Configure Elevator Trim to ACM



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

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 1090 & UAT

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 (IFR)
33. Configure Inputs (1-3)

RV-14 Input Configuration

34. Configure Test Audio to 75
35. Configure IFR Navigator (see IFD or GTN section)

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.

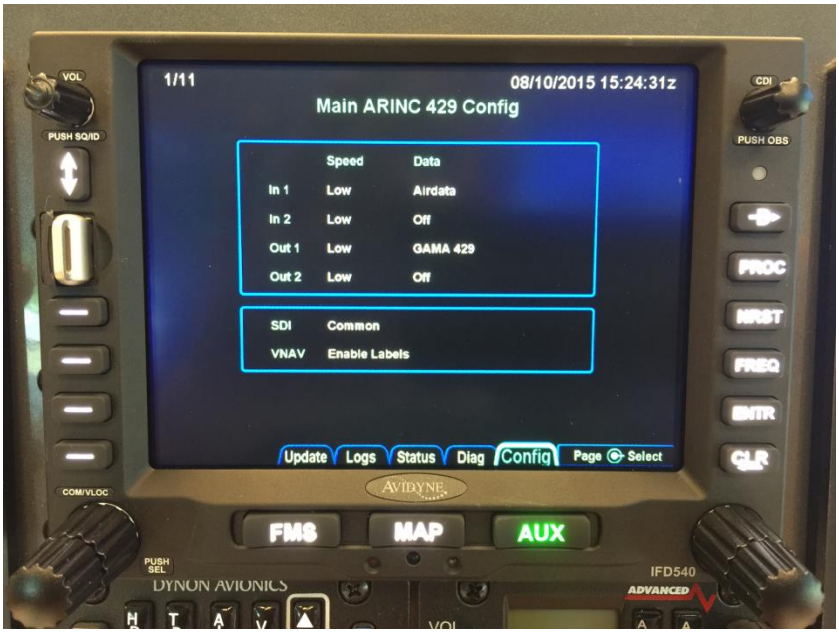
6 Check Starter Switch Key and Terminal screws

IFD-540/440 Configuration

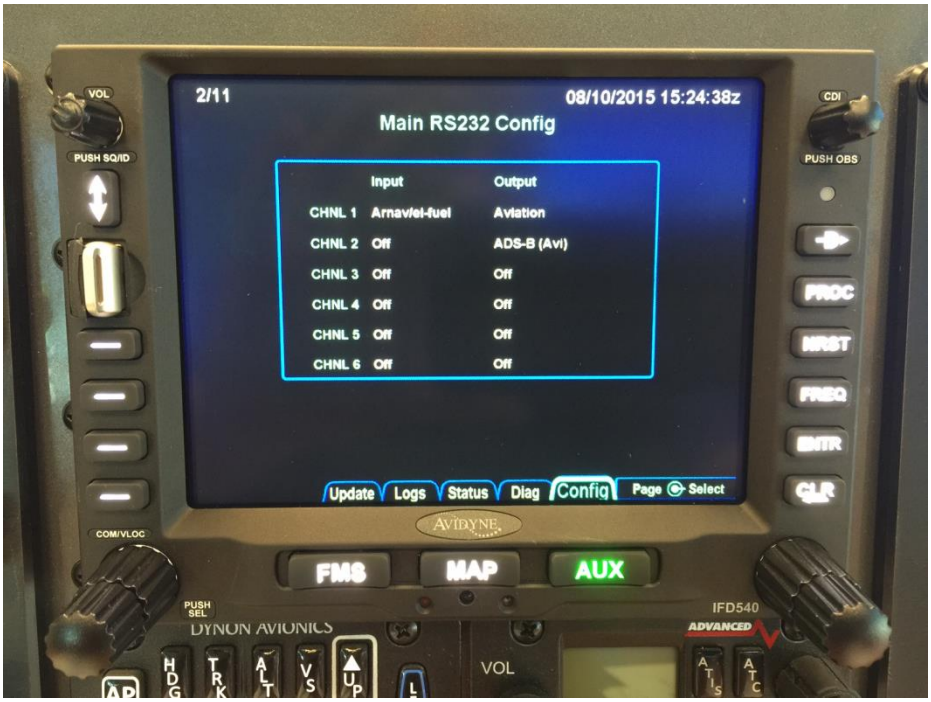
USB Slot

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

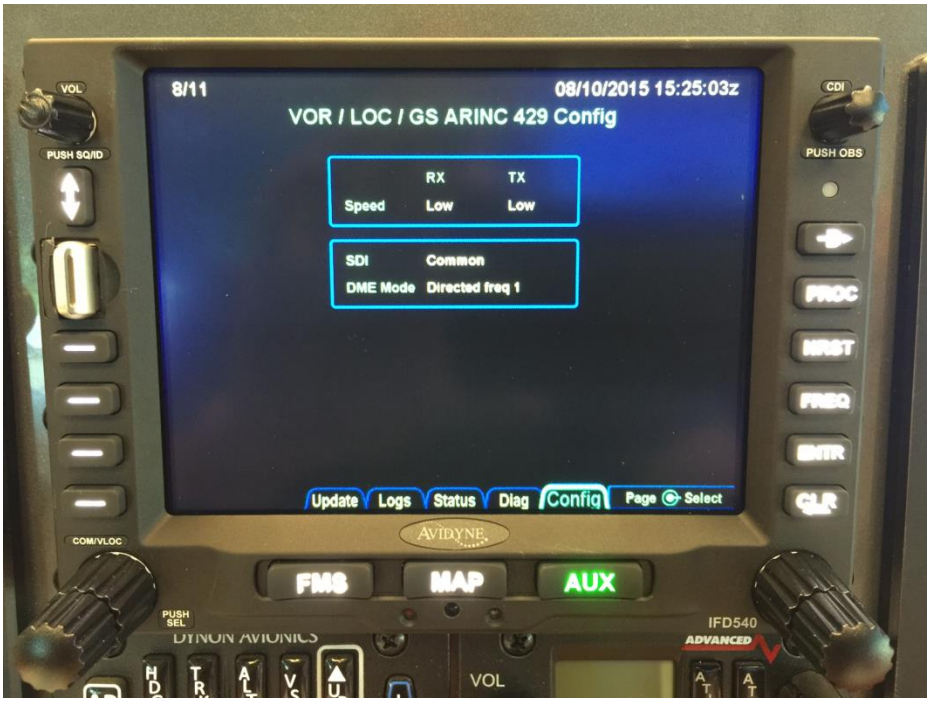
ARINC configuration



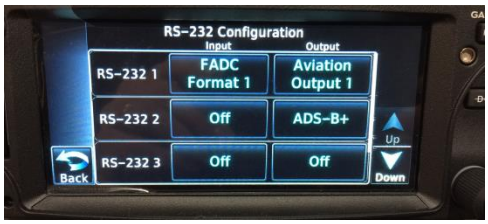
Serial Port Configuration



VOR / LOC / GS ARINC 429 Configuration

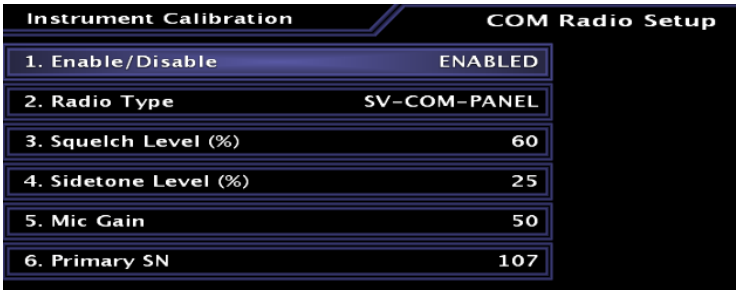


GTN-650 Configuration



RADIO and INTERCOM Tests

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



- 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

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- Flap motor works from panel flap switch
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- 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

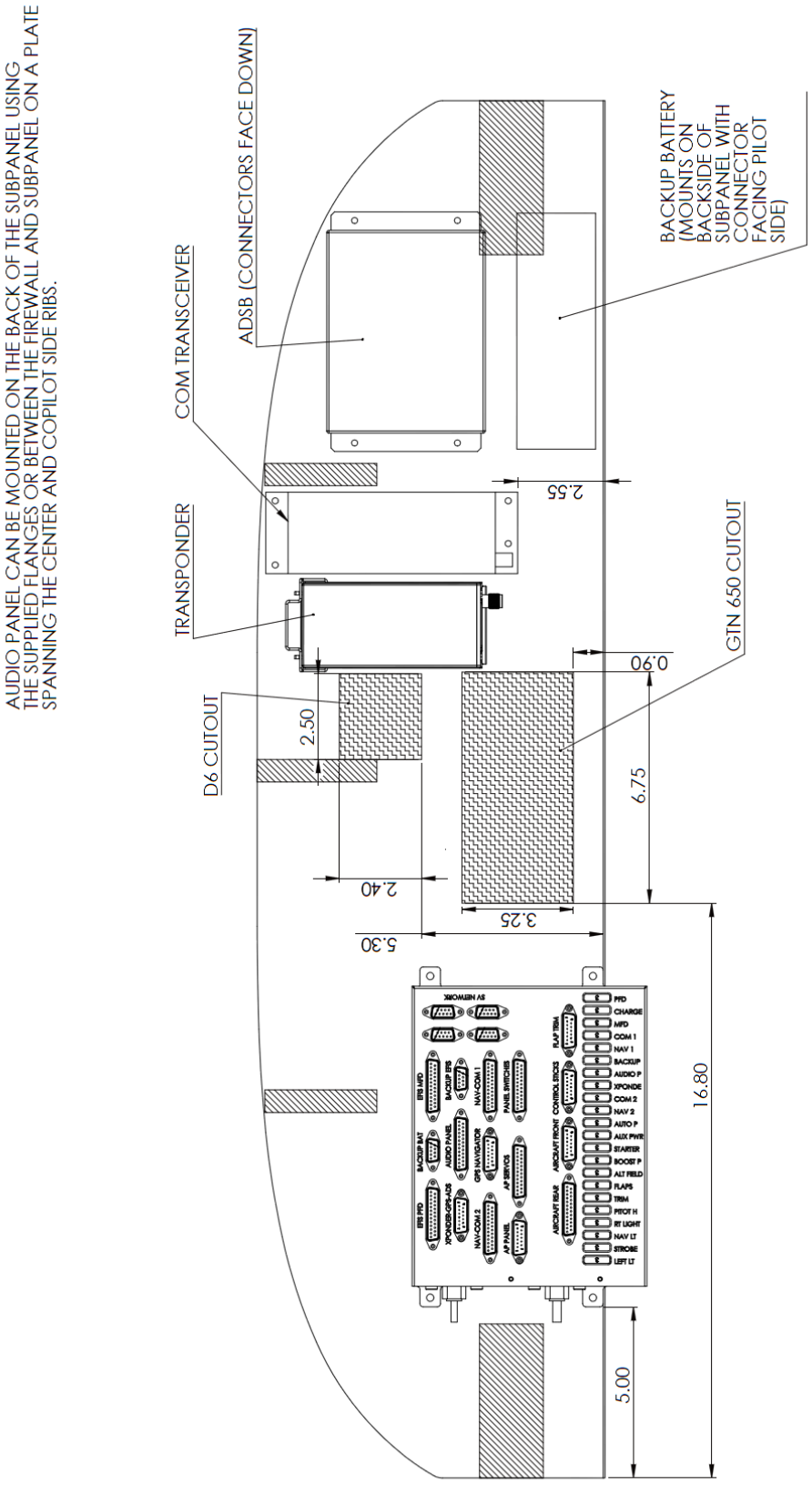
ELT Tests

- 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.

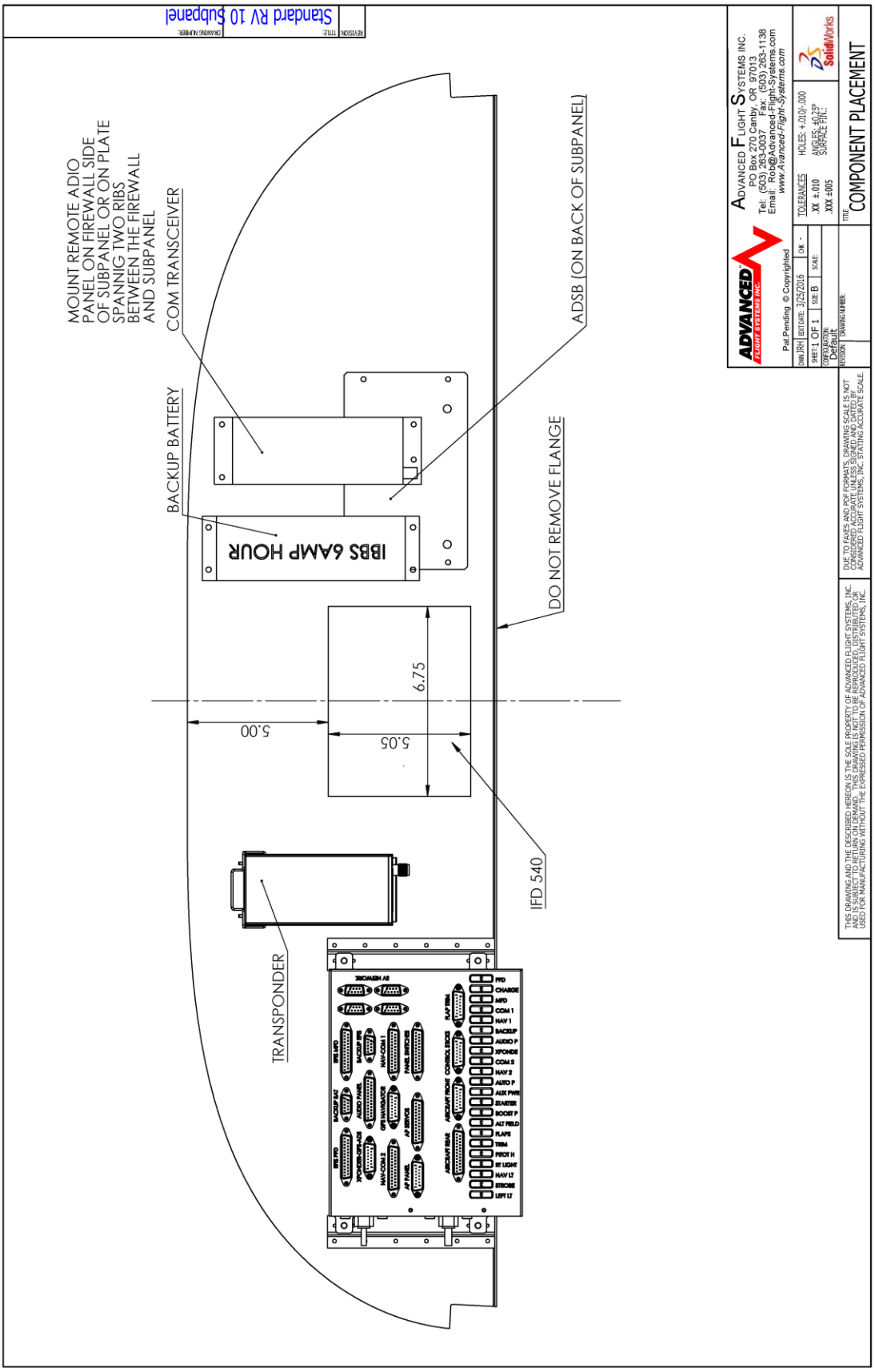
Pitot Tube Tests

- Pitot Status line

RV-7 Slider Panel

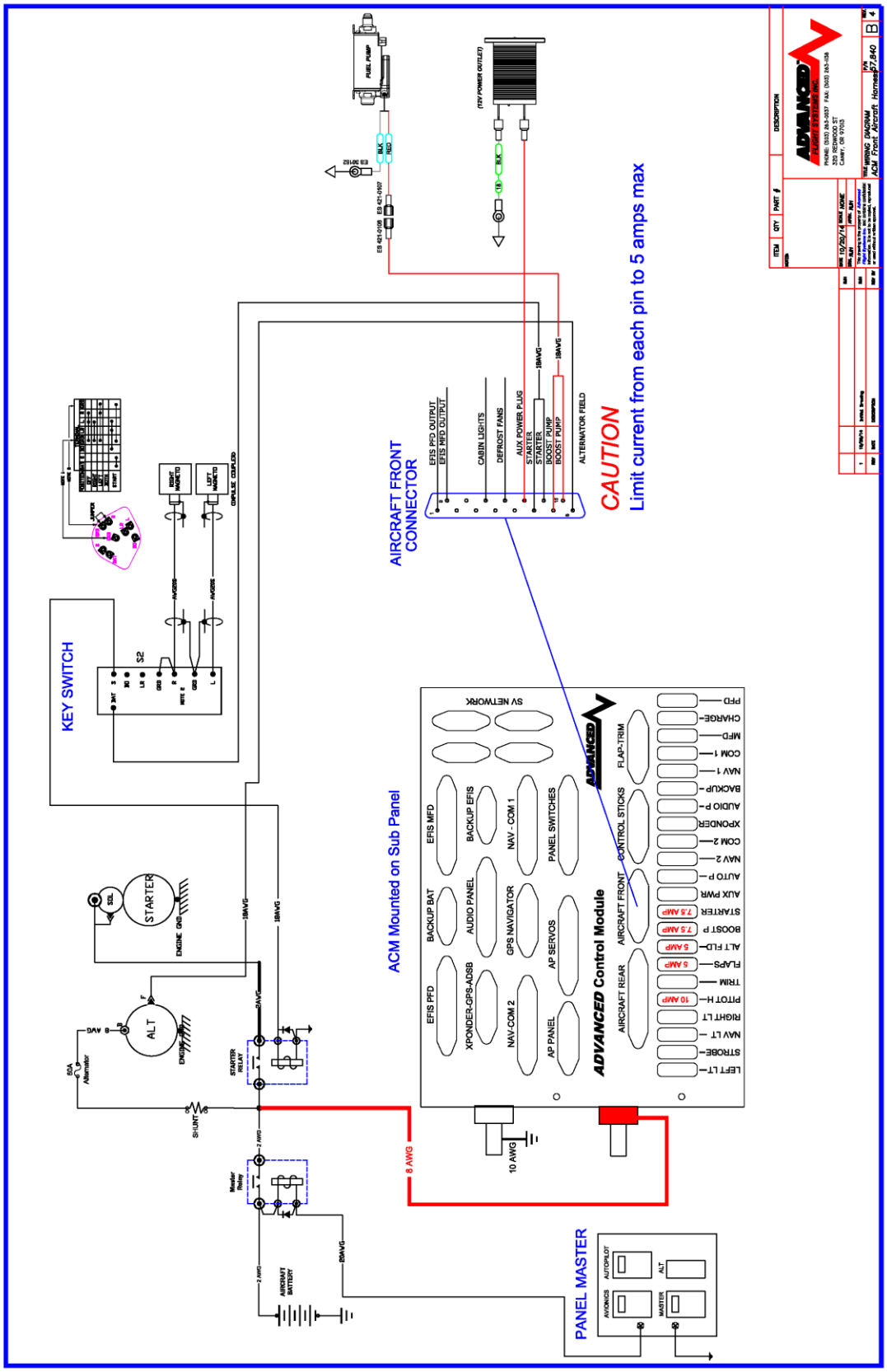


RV-10 Standard Panel



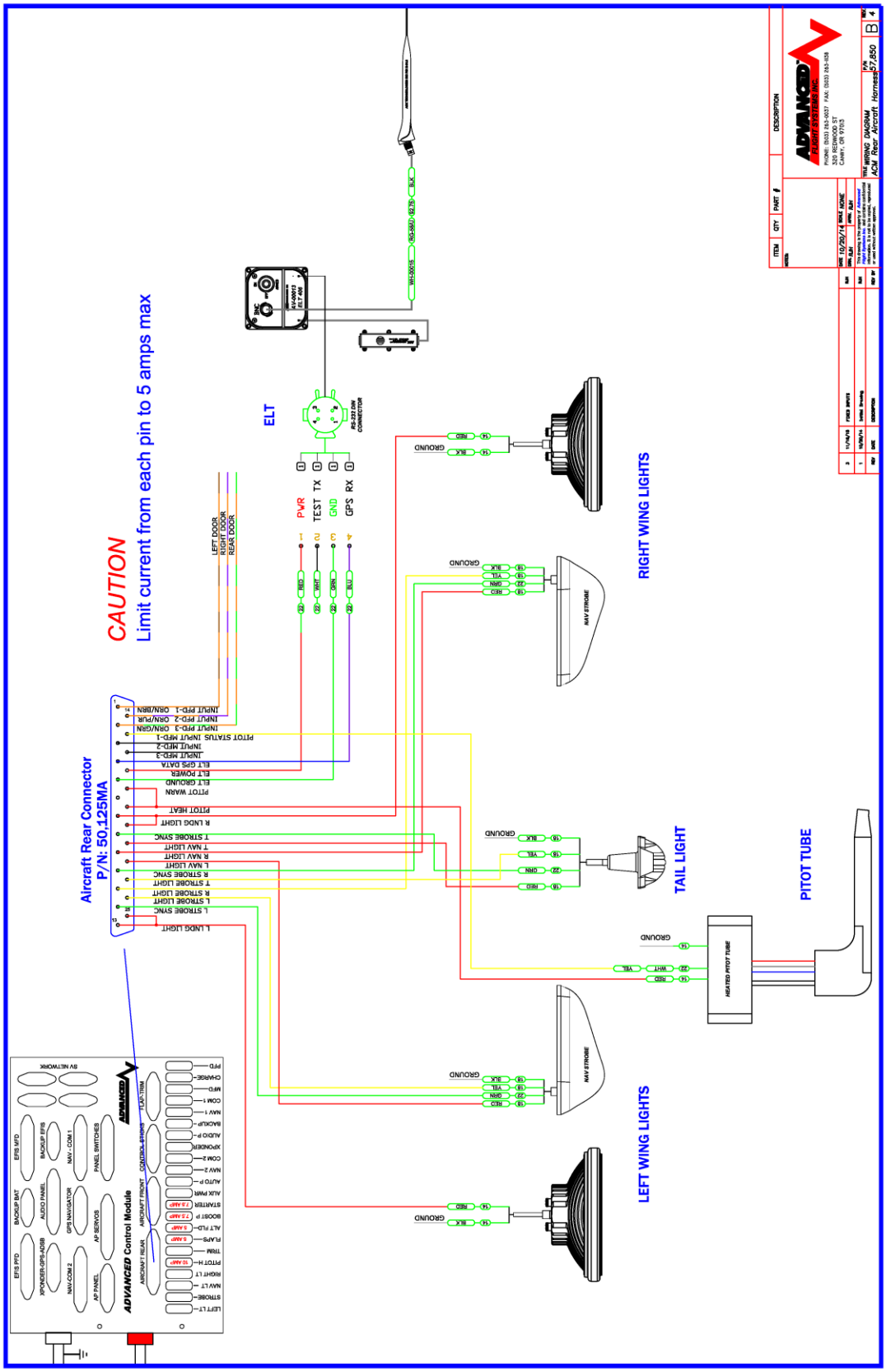
57840 Aircraft Front Harness

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.



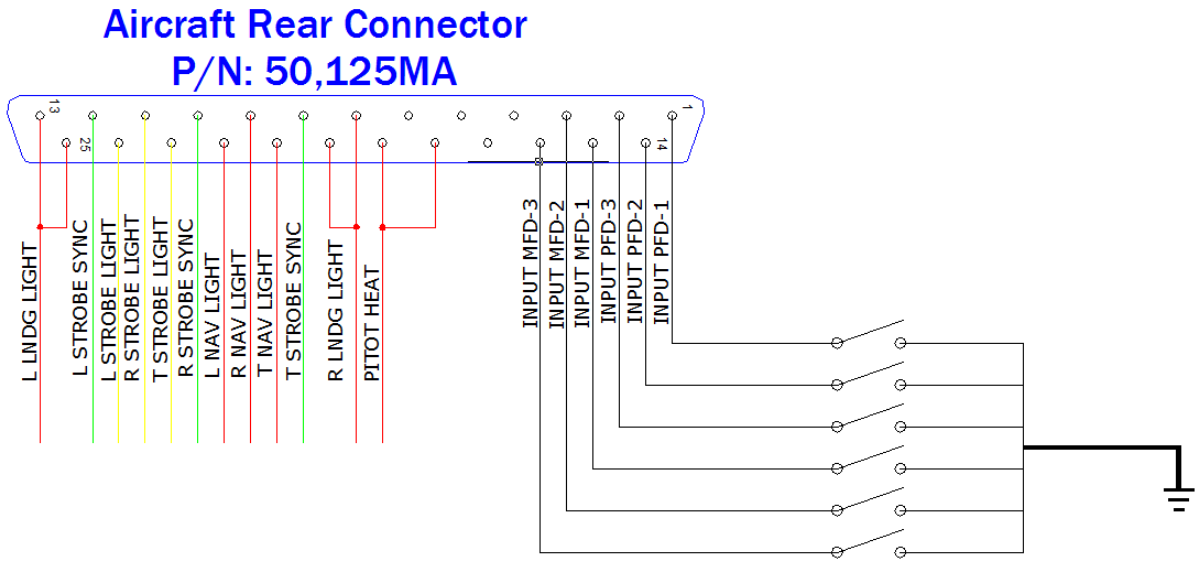
57850 AIRCRAFT REAR HARNESS

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.



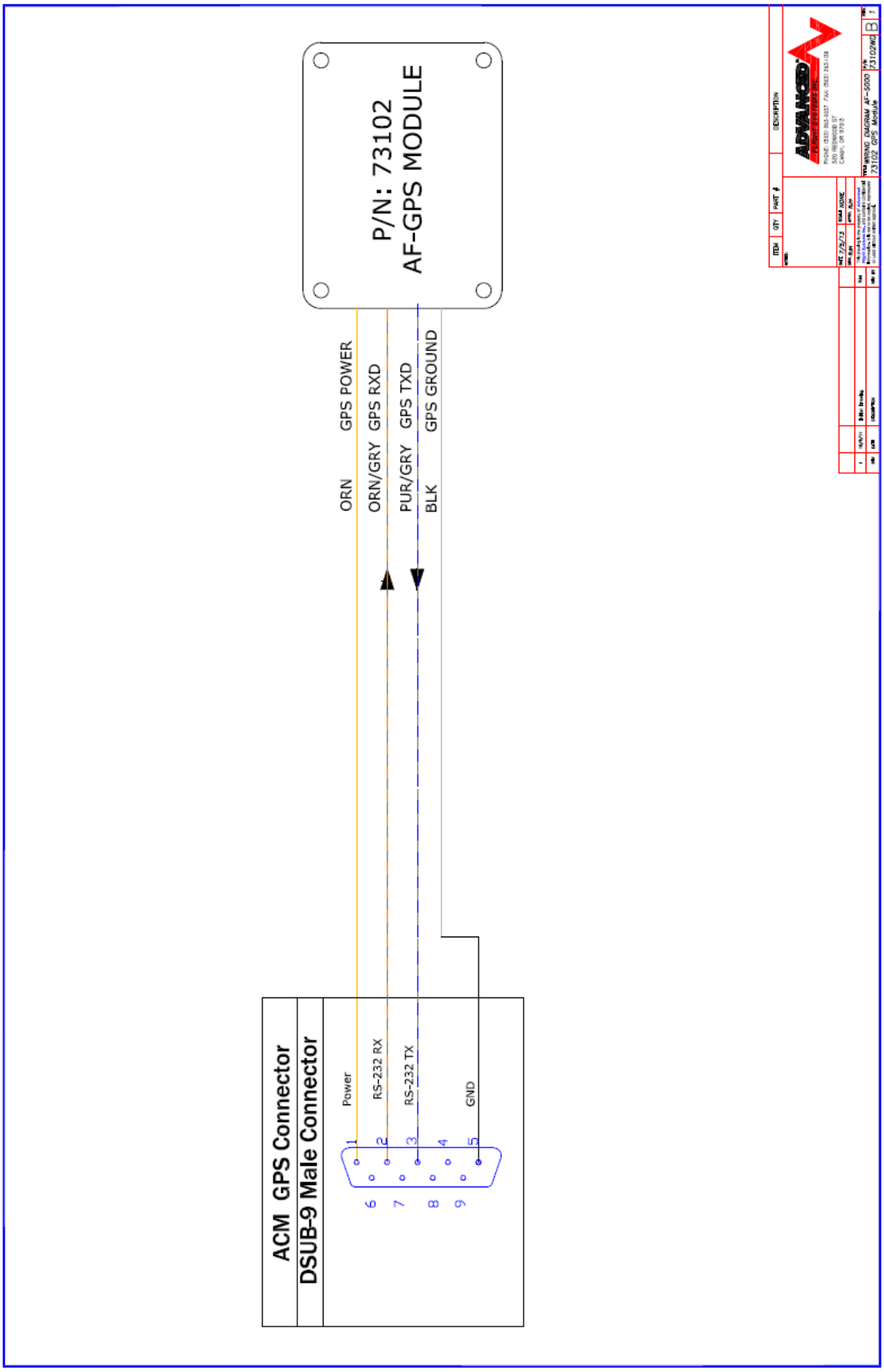
EFIS Inputs

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.



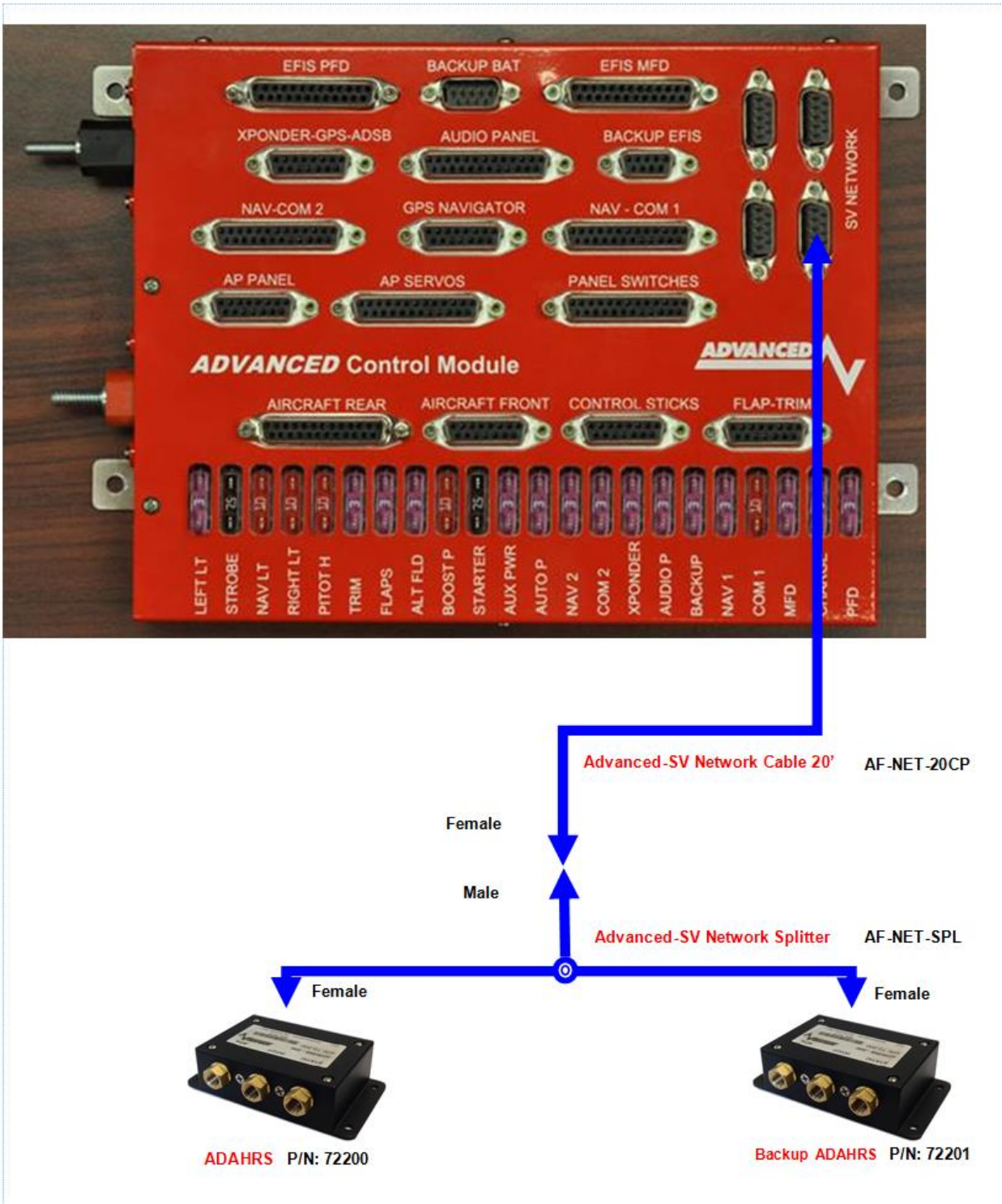
73102 AF-GPS Wiring

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.

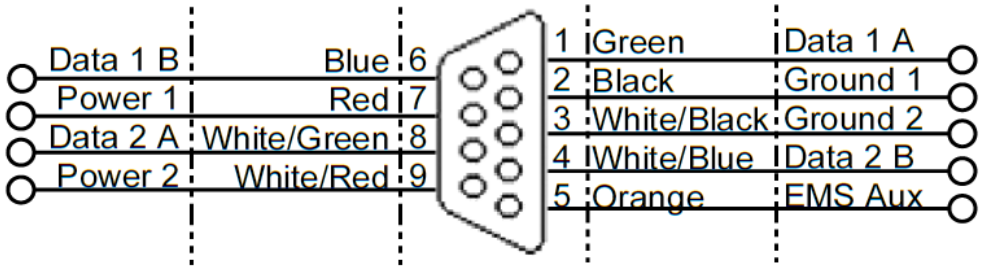


72200 ADAHRS 200/201 Wiring

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:

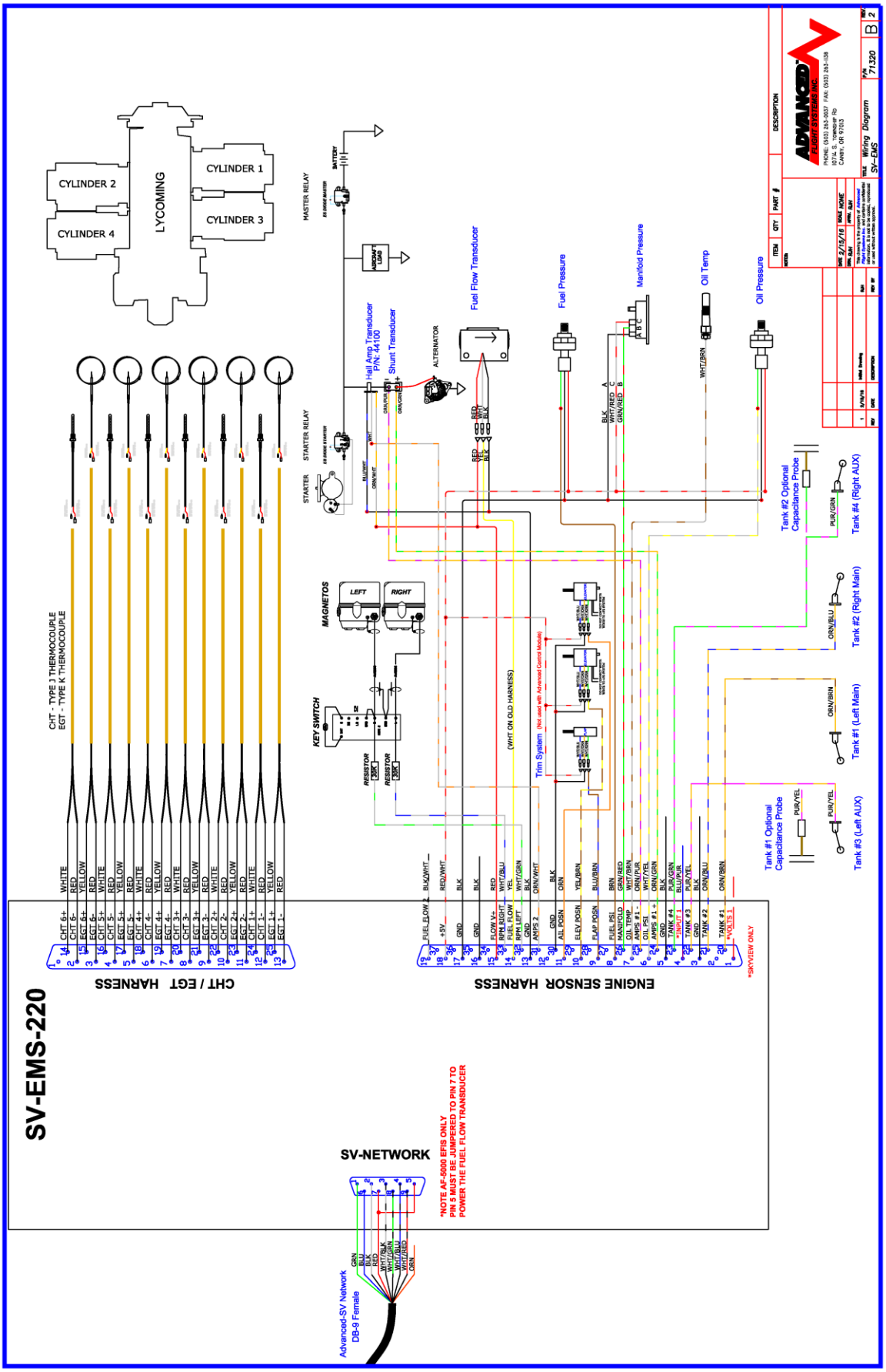


Advanced-SV Network Female D9 Pin	Advanced-SV Network Cable Wire Color	Description
1	Green	Network Data 1 A
2	Black	Network Ground 1
3	White with Black Stripe	Network Ground 2
4	White with Blue Stripe	Network Data 2 B
5	Orange	EMS Auxiliary Voltage
6	Blue	Network Data 1 B
7	Red	Network Power 1
8	White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

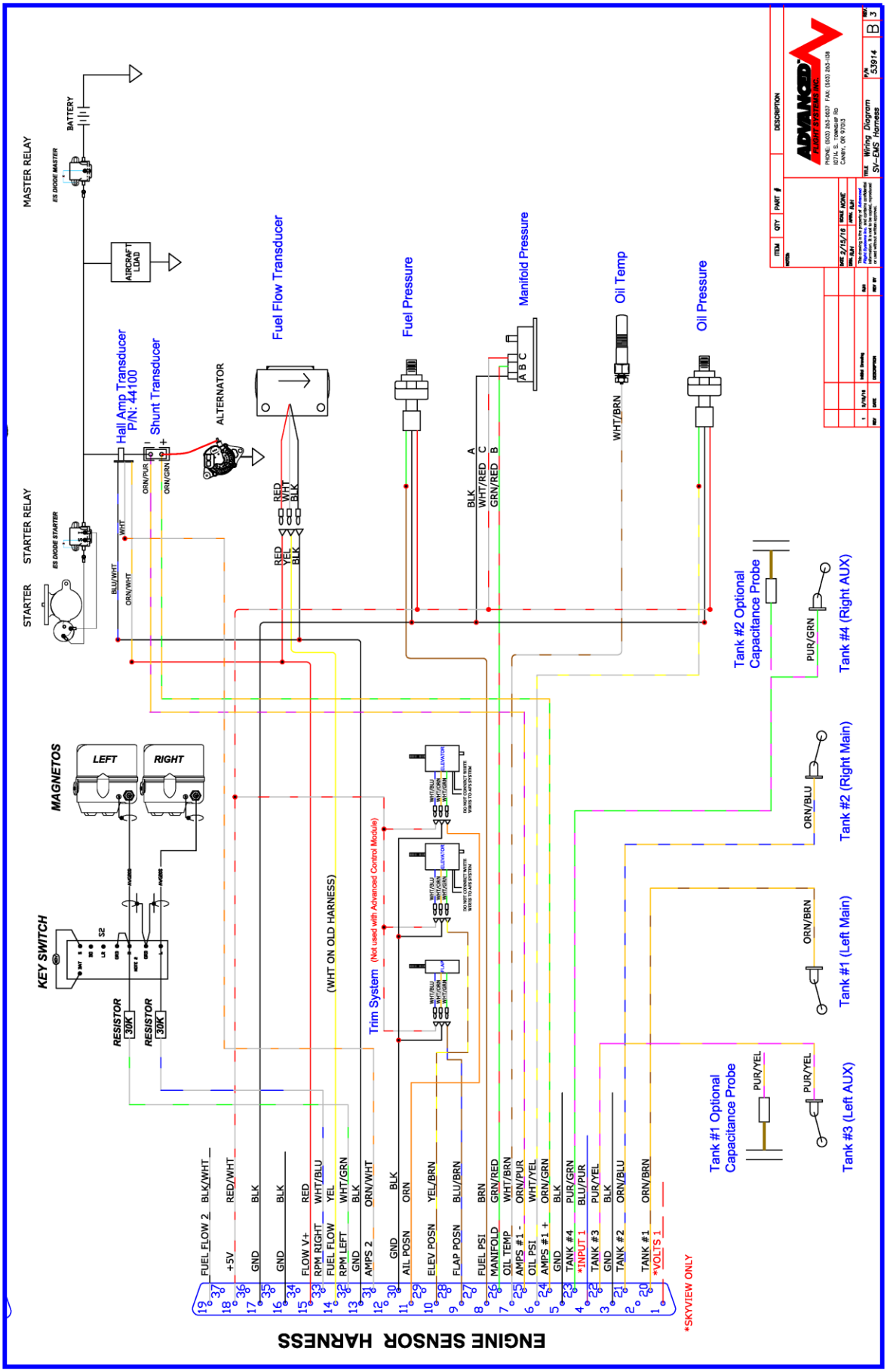


Network Female D9 Pin Insertion View (Rear)

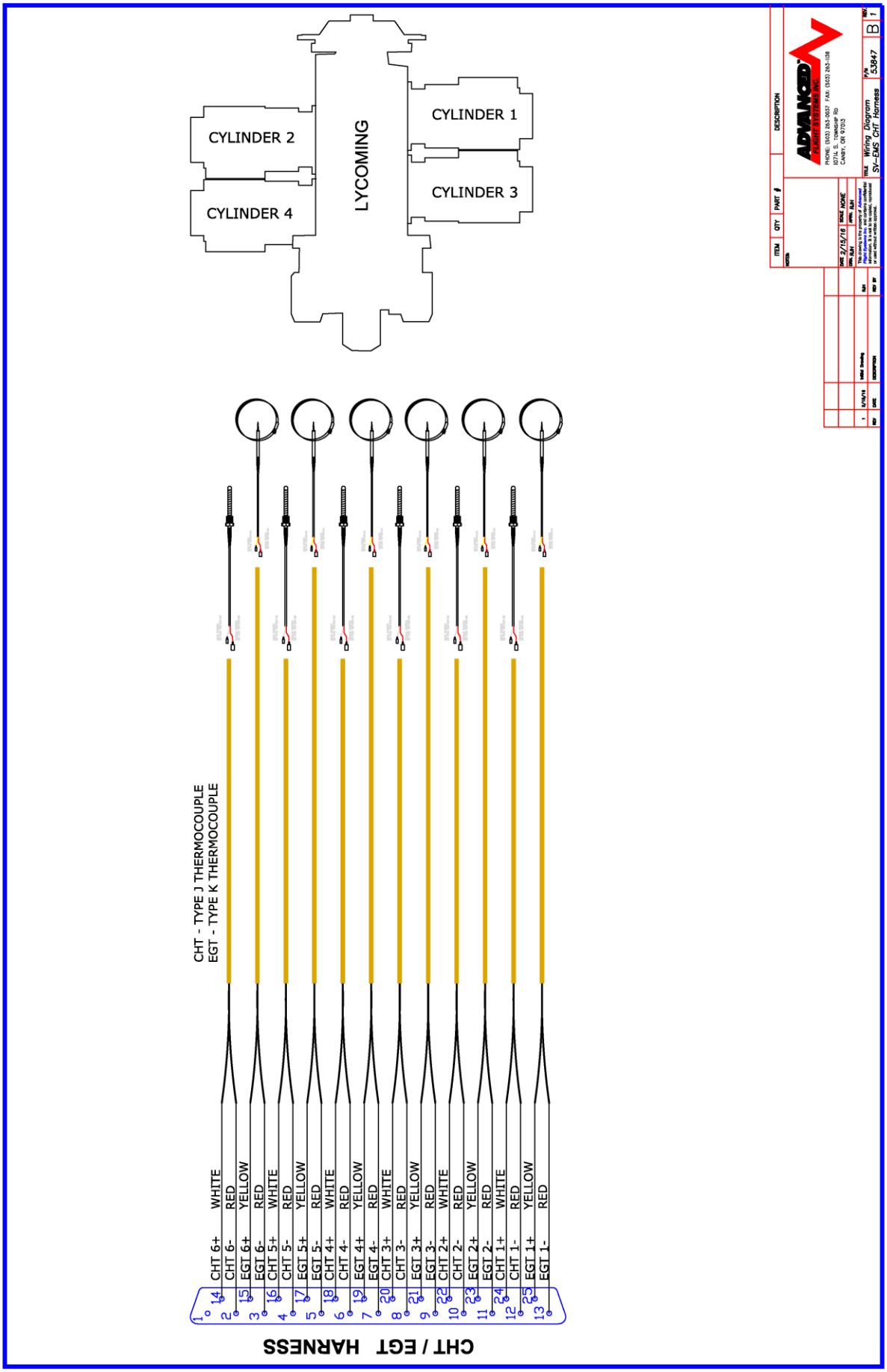
71320 SV EMS Wiring



53914 SV EMS Engine Sensor Harness Diagram



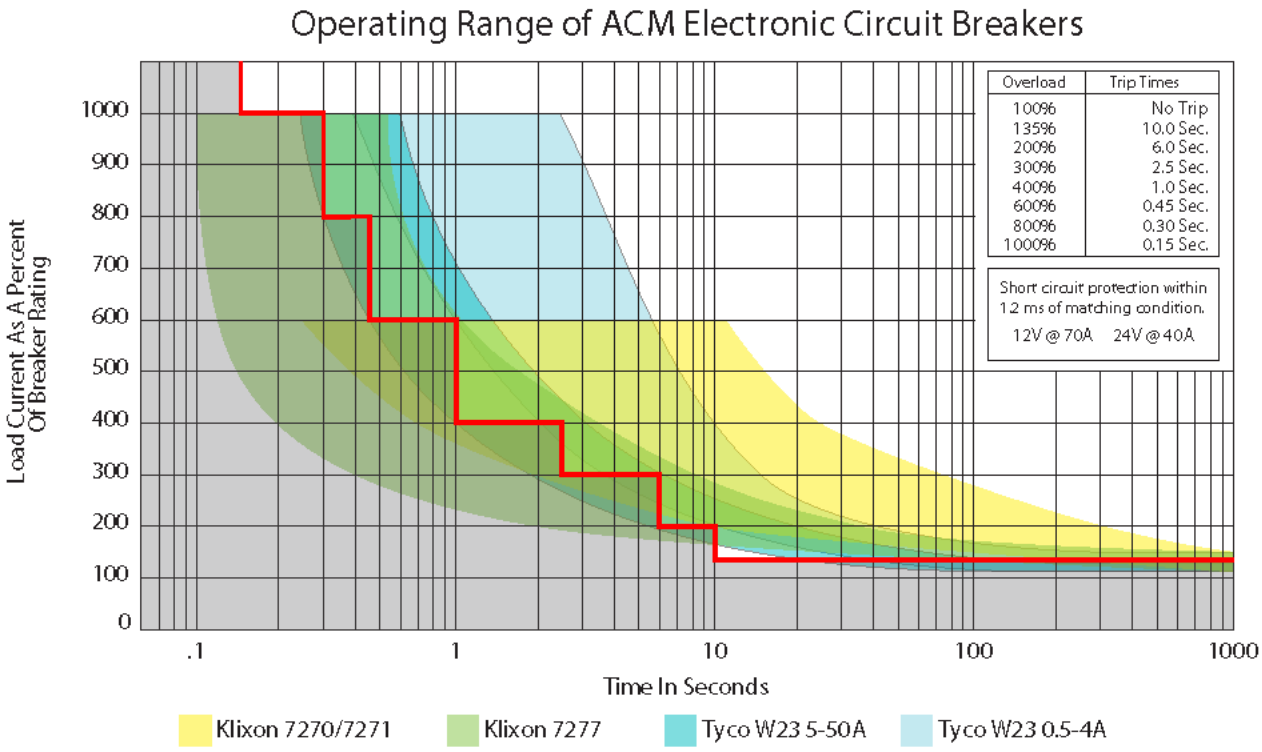
53847 SV EMS EGT-CHT Harness Diagram



Advanced Control Module Fuses				
Fuse	**Description**	**Max Amps**	**Connector (Pins)**	**Control**
1	Left wing landing light	**10**	**AIRCRAFT REAR (13,25)**	**CPU**
2	Stobe 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

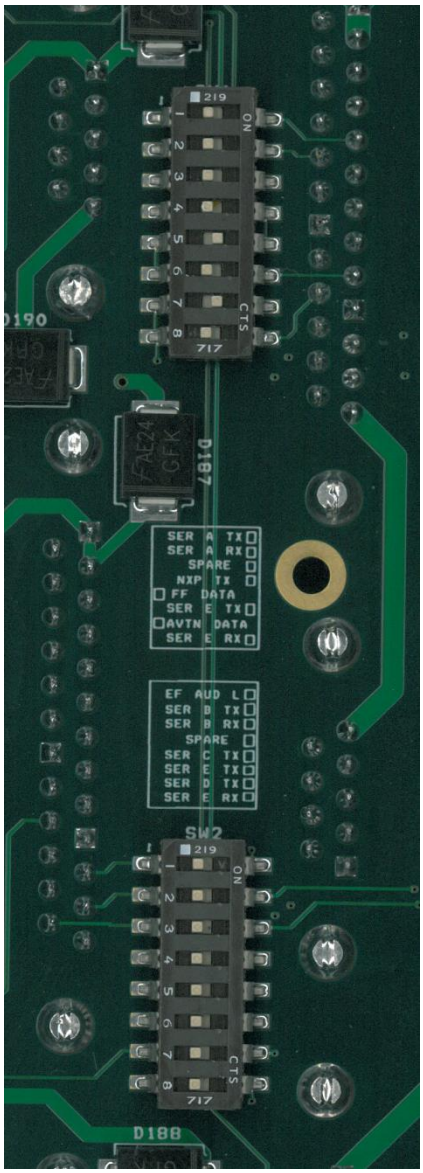
The ACM-ECB module uses electronic circuit breakers that can be reset or shut off from the EFIS screen.



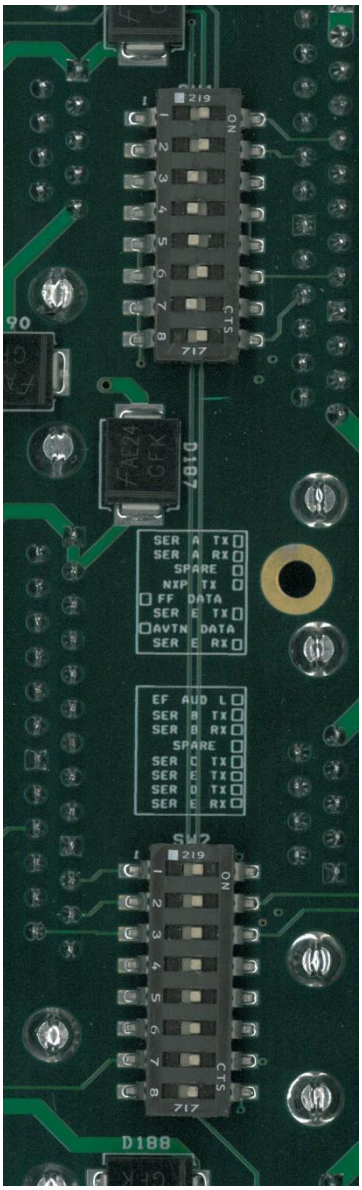
ACM-ECB Jumper Settings

The Electronic Circuit Breaker version of the ACM has configuration jumpers that can be set from the back of the unit.

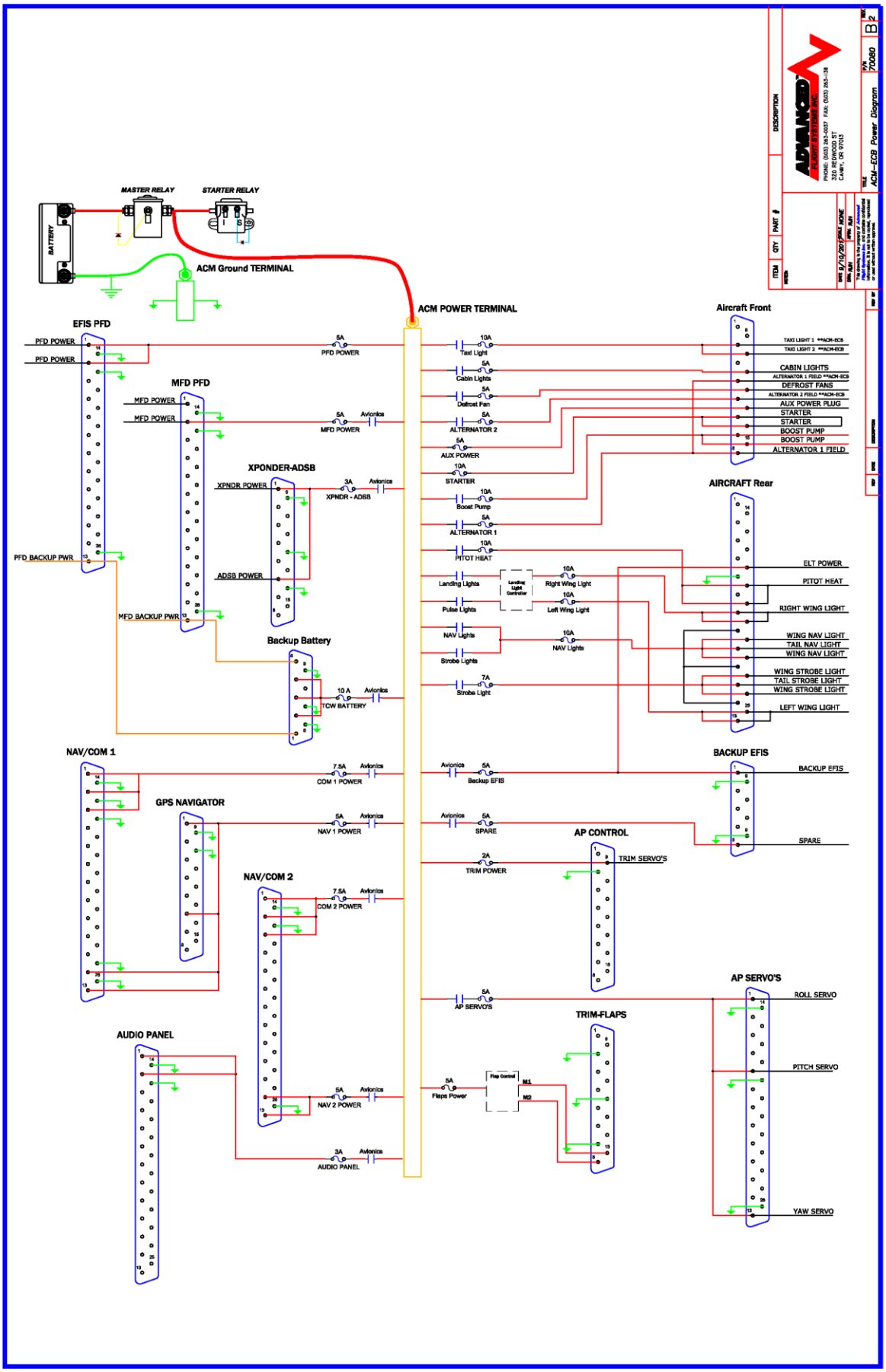
AF-5000 Settings

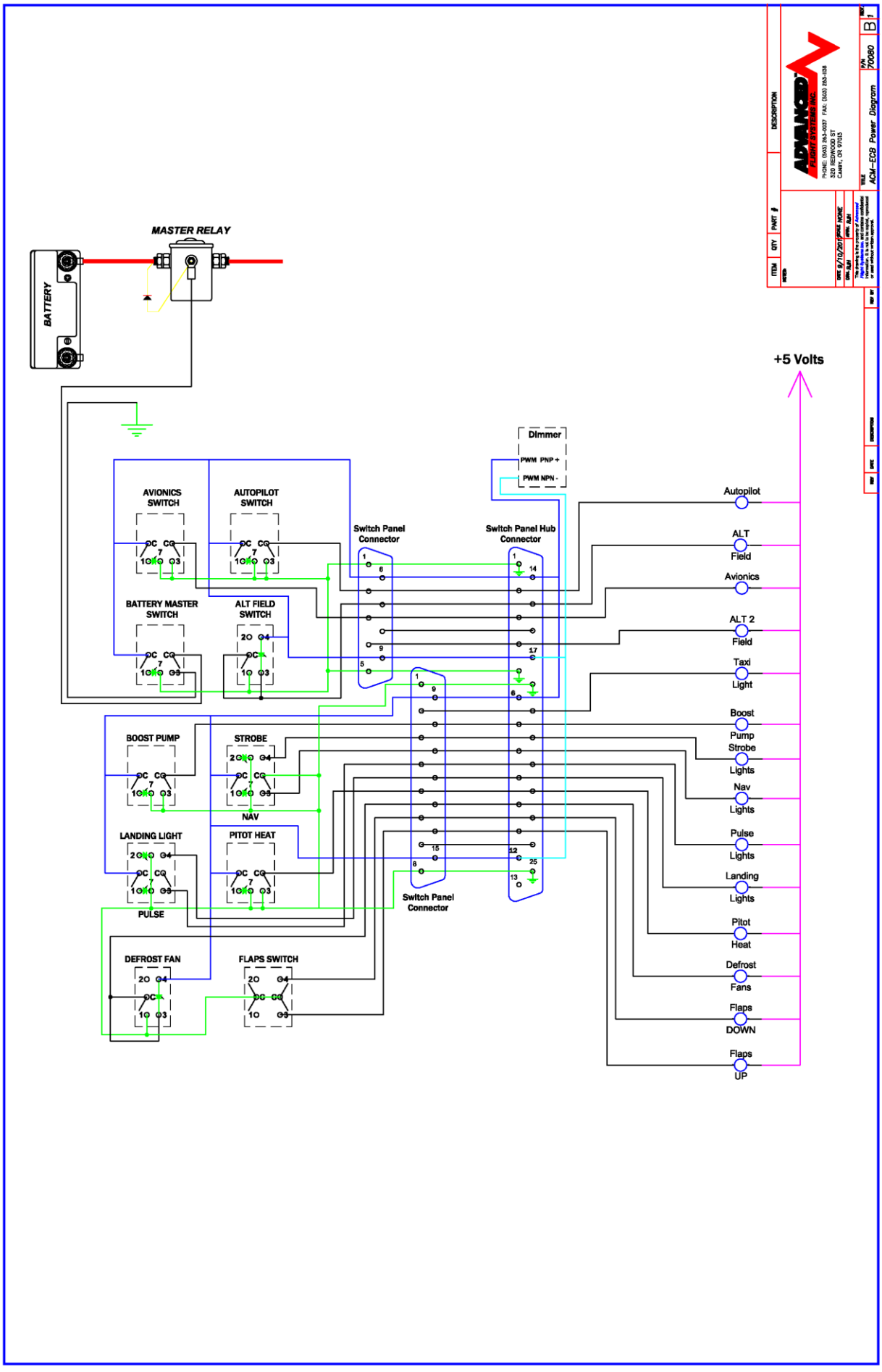


Skyview Settings

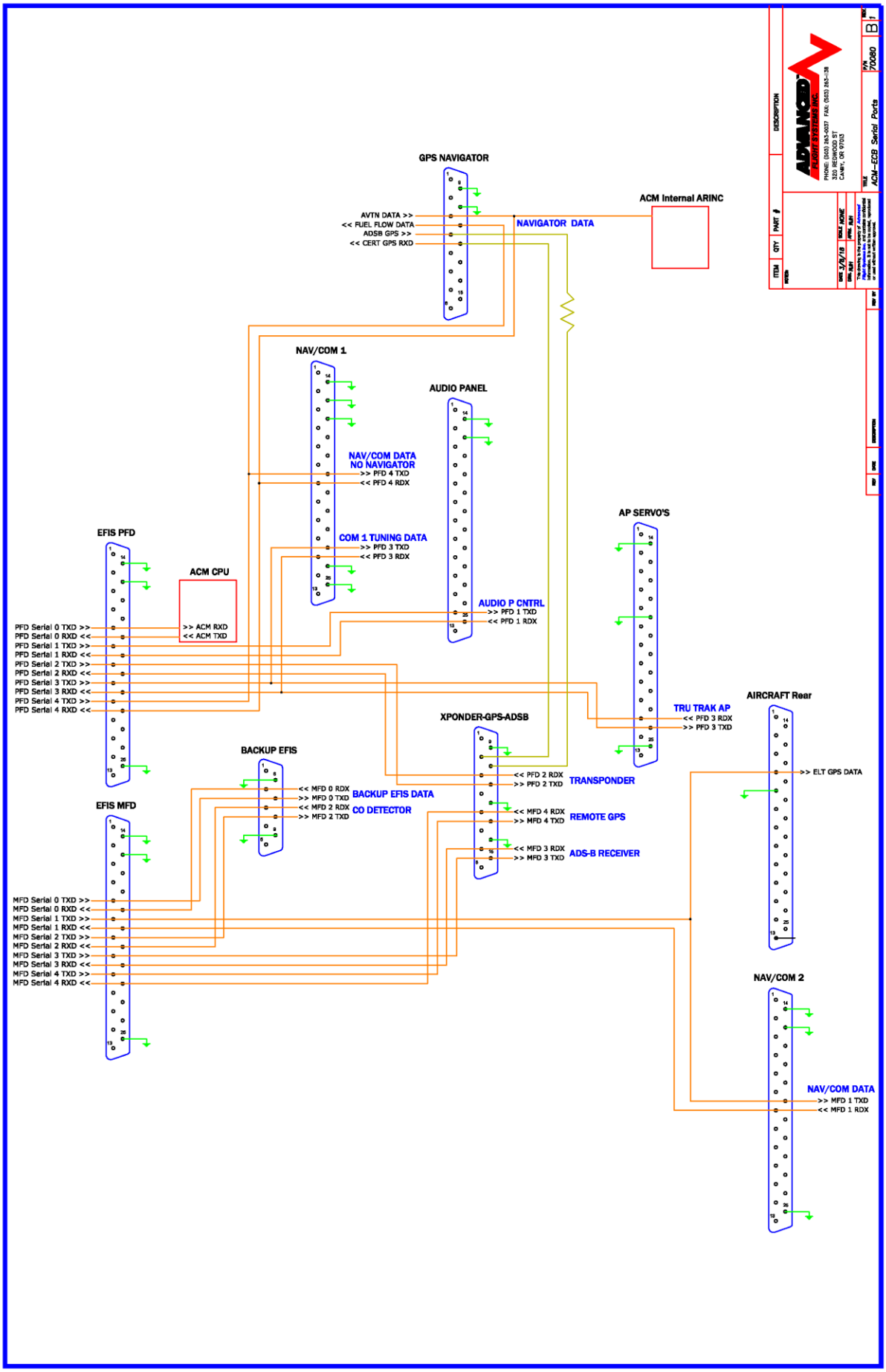


ACM Power Diagram

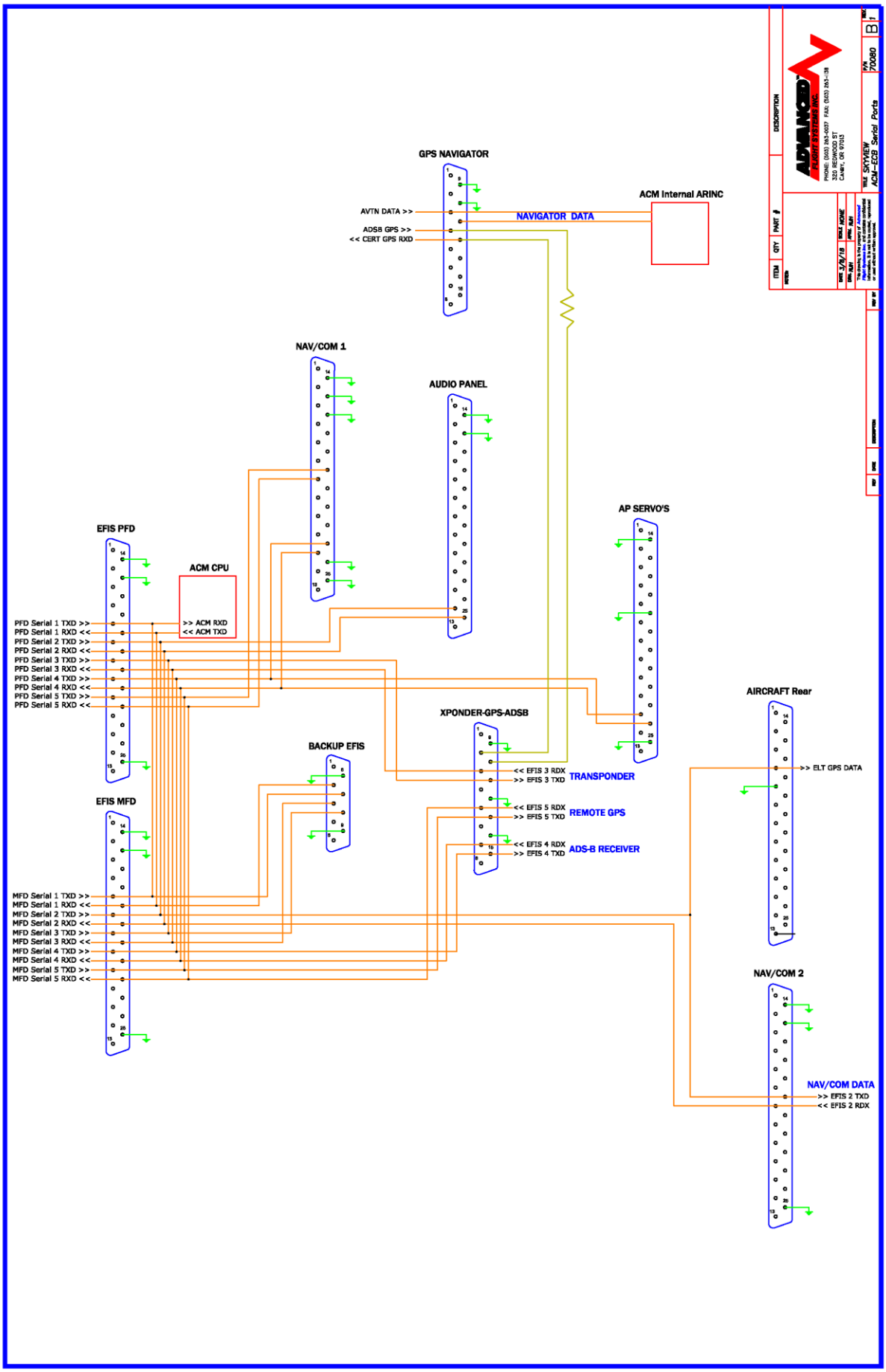


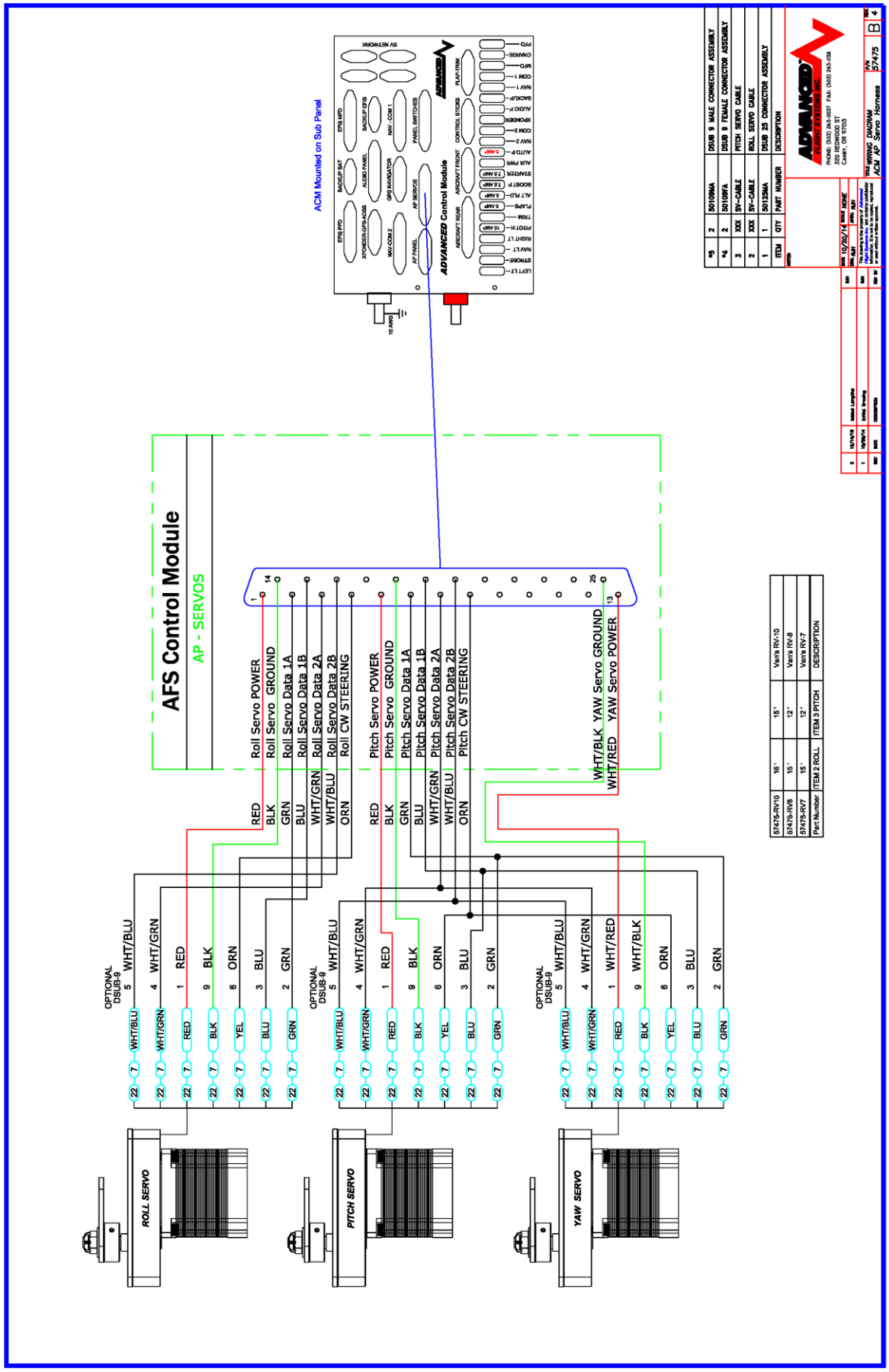

MASTER RELAY
BATTERY
+5 Volts
Dimmer
PWM PNP +
PWM NPN -
AVIONICS SWITCH
AUTOPILOT SWITCH
BATTERY MASTER SWITCH
ALT FIELD SWITCH
BOOST PUMP
STROBE
NAV
LANDING LIGHT
PULSE
PITOT HEAT
DEFROST FAN
FLAPS SWITCH
Switch Panel Connector
Switch Panel Hub Connector
Switch Panel Connector
Autopilot
ALT Field
Avionics
ALT 2 Field
Taxi Light
Boost Pump
Strobe Lights
Nav Lights
Pulse Lights
Landing Lights
Pitot Heat
Defrost Fans
Flaps DOWN
Flaps UP
ACM-ECB Power Diagram
P/N 70080
REV B
ADVANCED FLIGHT SYSTEMS INC.
PHONE: (503) 263-0057 FAX: (503) 263-1026
320 REDWOOD ST
CANBY, OR 97013

ACM RS-232 Wiring Diagram AF-5000

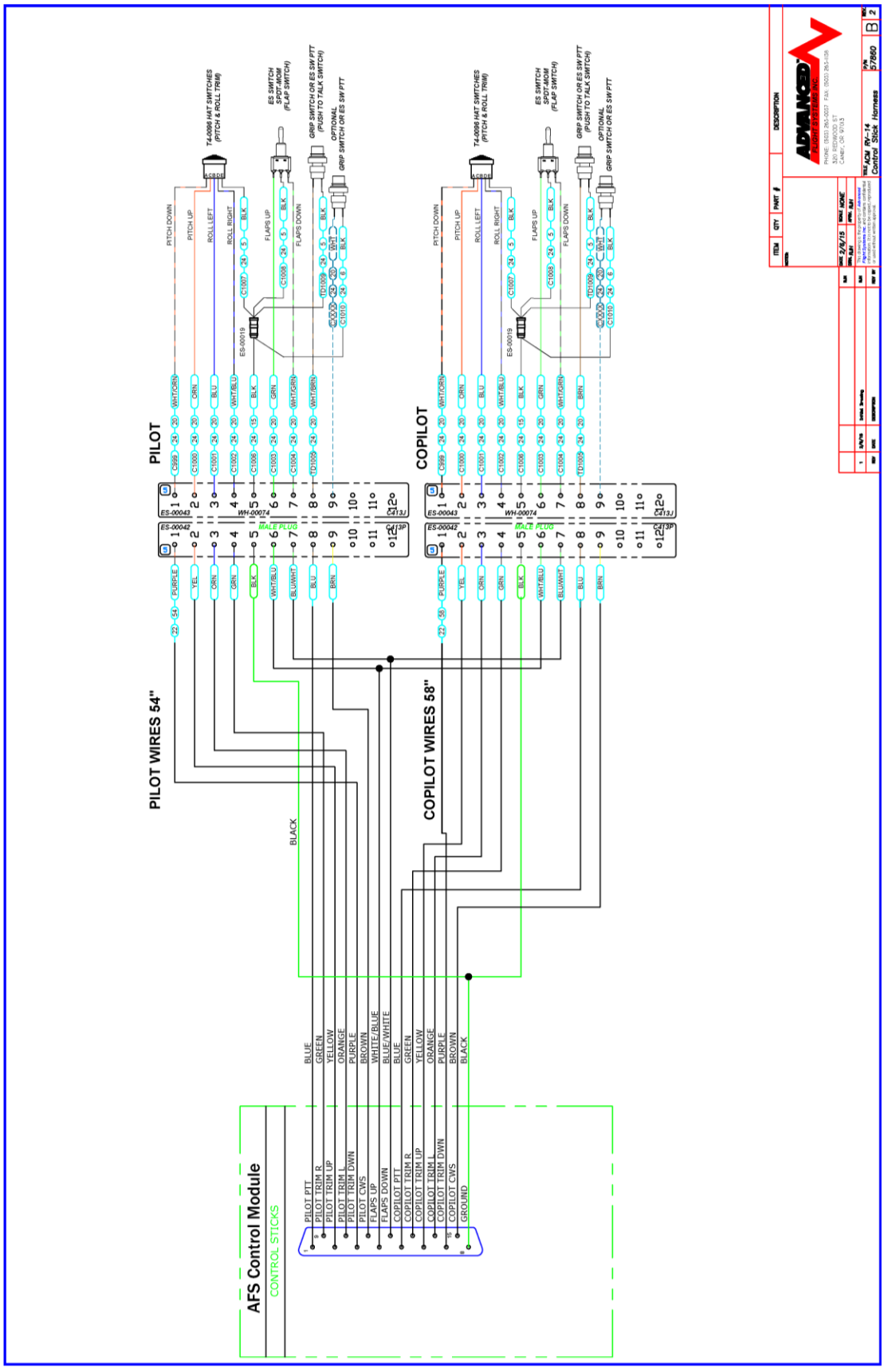


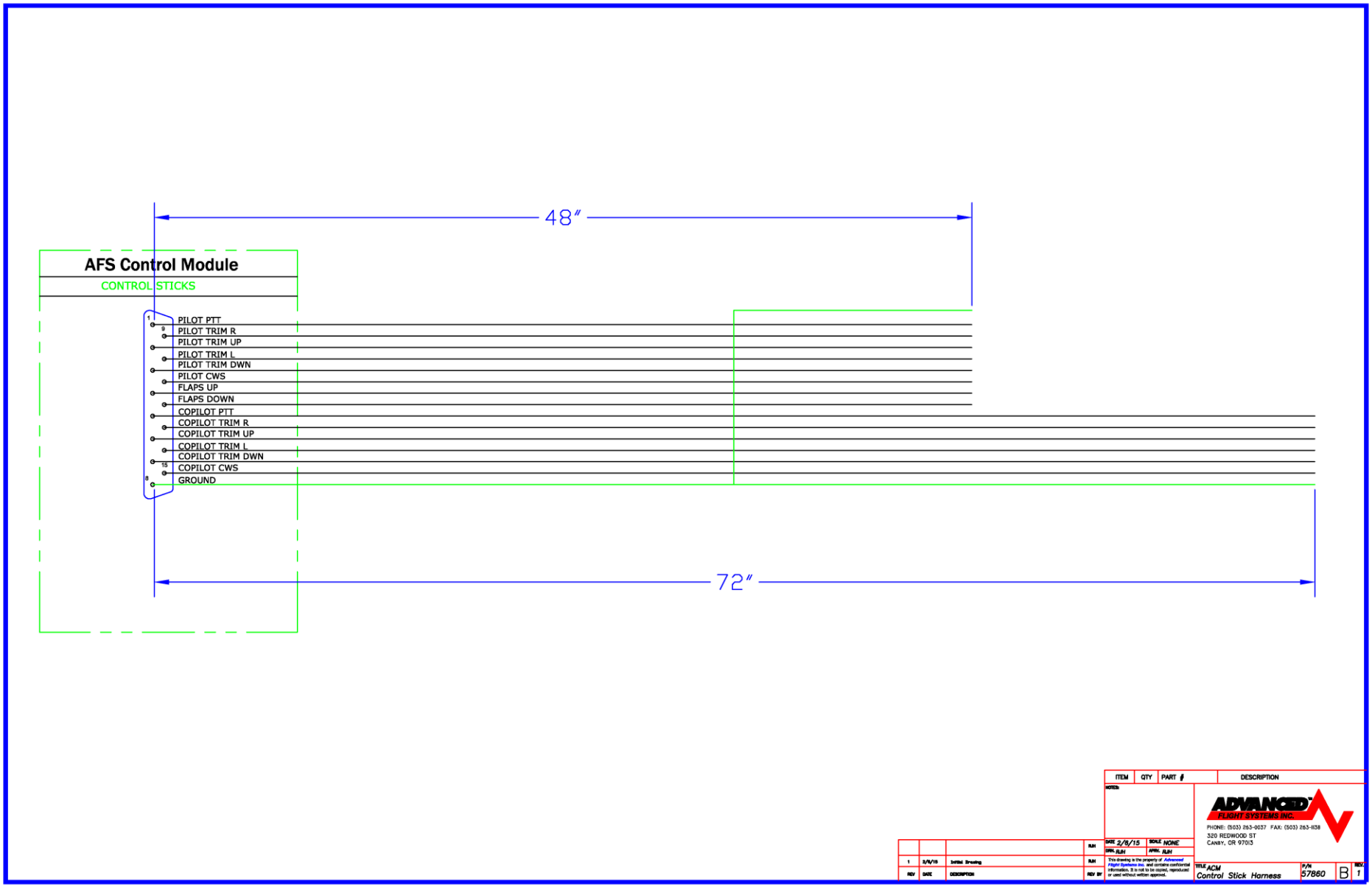
ACM RS-232 Wiring Diagram Skyview

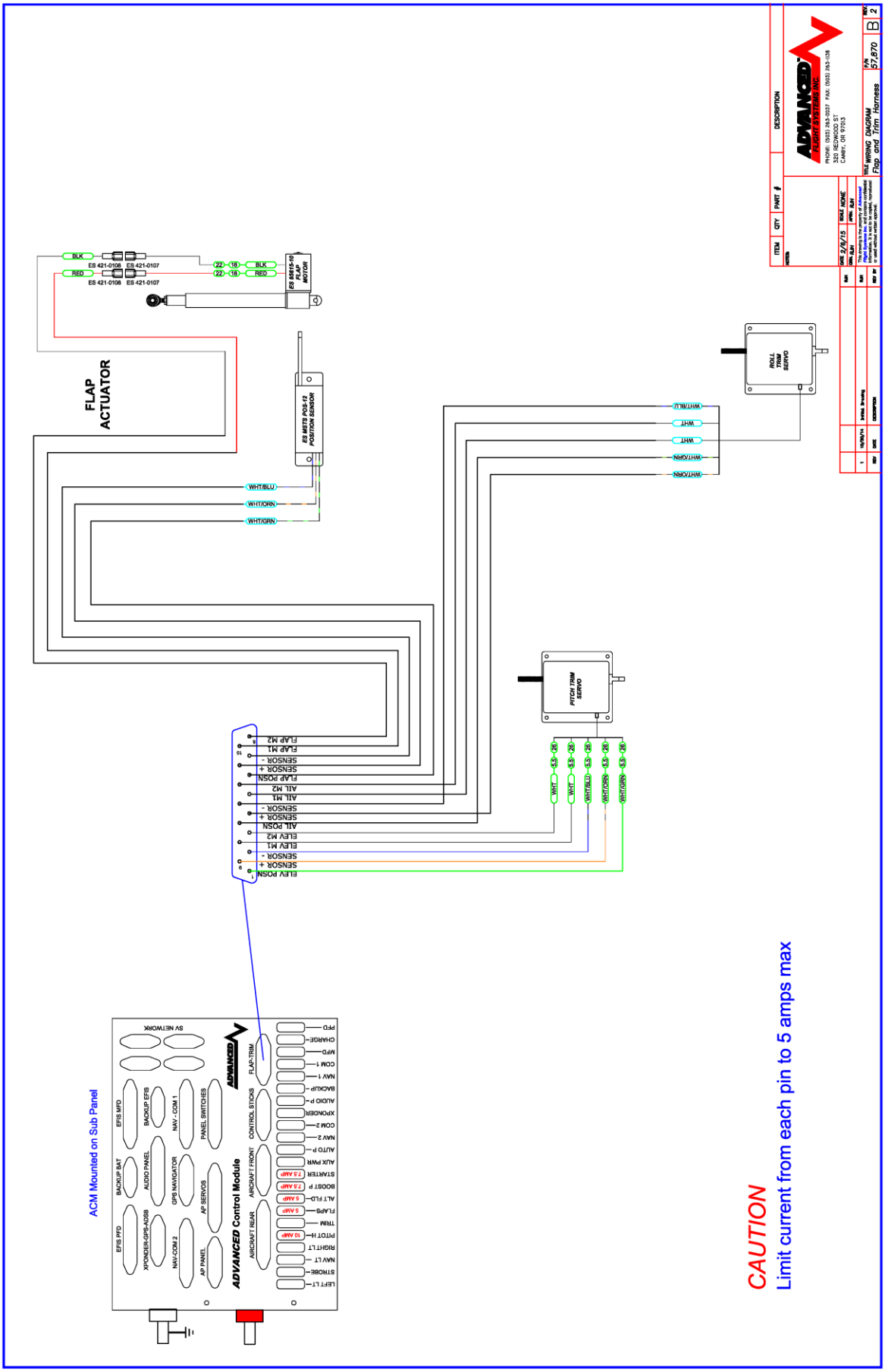



ACM Mounted on Sub Panel
ADVANCED Control Module
AFS Control Module
AP - SERVOS
Roll Servo POWER
Roll Servo GROUND
Roll Servo Data 1A
Roll Servo Data 1B
Roll Servo Data 2A
Roll Servo Data 2B
Roll CW STEERING
Pitch Servo POWER
Pitch Servo GROUND
Pitch Servo Data 1A
Pitch Servo Data 1B
Pitch Servo Data 2A
Pitch Servo Data 2B
Pitch CW STEERING
WHT/BLK YAW Servo GROUND
WHT/RED YAW Servo POWER
ROLL SERVO
PITCH SERVO
YAW SERVO
OPTIONAL DSUB-9
ADVANCED FLIGHT SYSTEMS INC.
ACM AP Servo Harness
P/N 57475

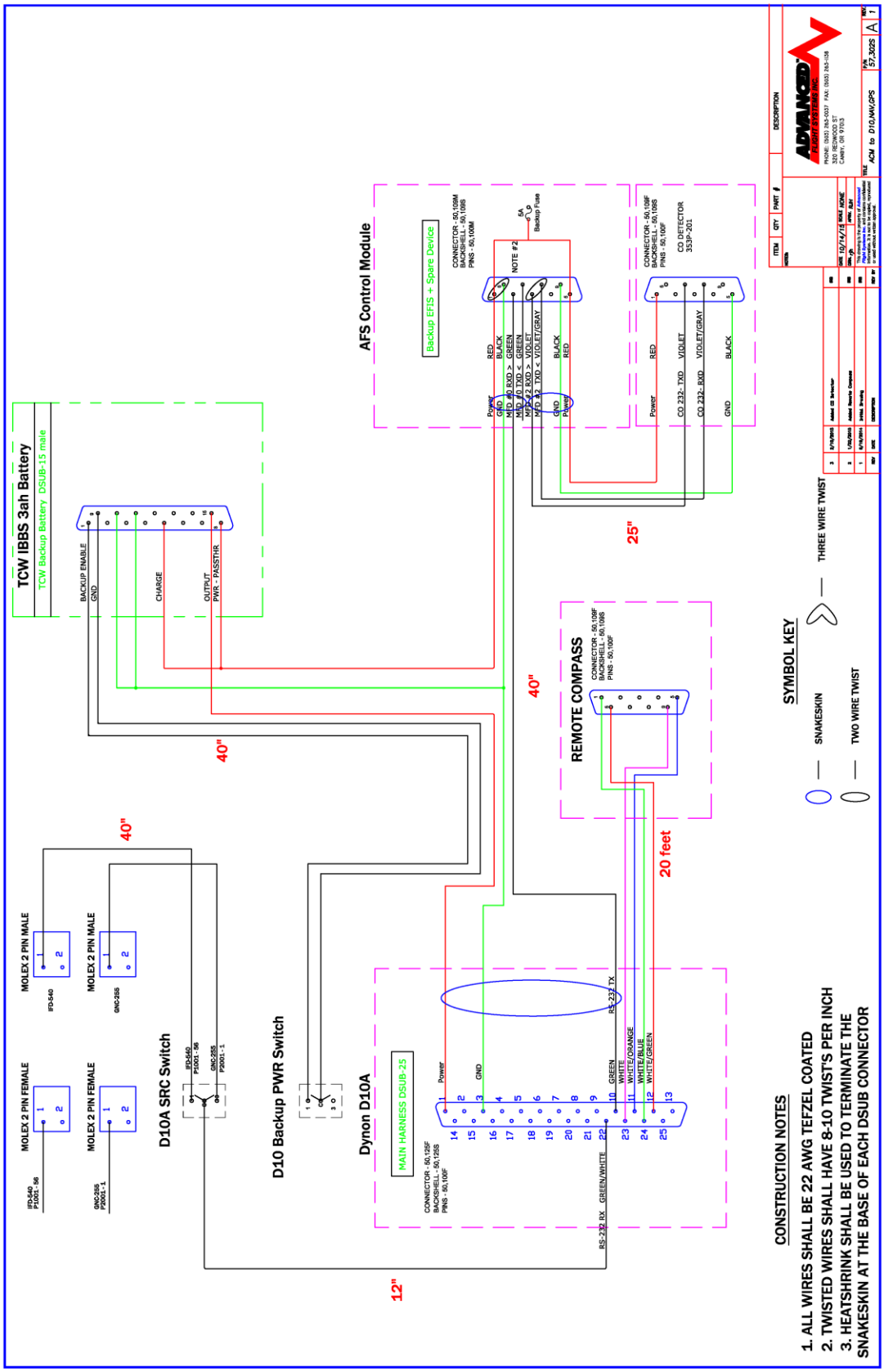
57860 Control Stick Harness



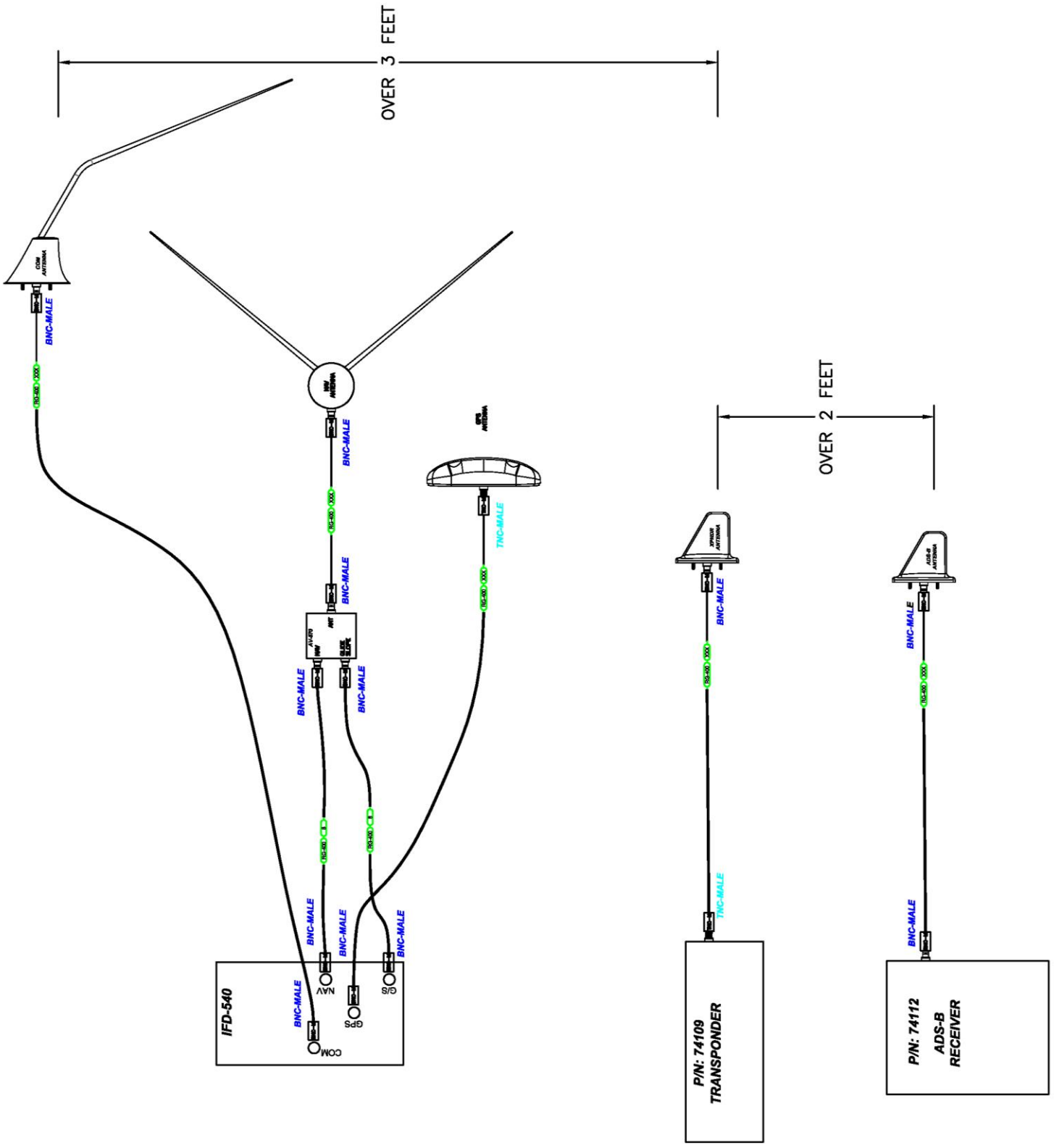

48″
AFS Control Module
CONTROL STICKS
1
9
15
8
PILOT PTT
PILOT TRIM R
PILOT TRIM UP
PILOT TRIM L
PILOT TRIM DWN
PILOT CWS
FLAPS UP
FLAPS DOWN
COPILOT PTT
COPILOT TRIM R
COPILOT TRIM UP
COPILOT TRIM L
COPILOT TRIM DWN
COPILOT CWS
GROUND
72″
ITEM
QTY
PART #
DESCRIPTION
NOTES:
ADVANCED FLIGHT SYSTEMS INC.
PHONE: (503) 263-0037 FAX: (503) 263-1138
320 REDWOOD ST
CANBY, OR 97013
DRN. RJH
DATE 2/6/15
SCALE NONE
APPR. RJH
REV
DATE
DESCRIPTION
REV BY
1
2/6/15
Initial Drawing
RJH
This drawing is the property of Advanced Flight Systems Inc. and contains confidential information. It is not to be copied, reproduced or used without written approval.
TITLE ACM Control Stick Harness
P/N 57860
B
REV. 1

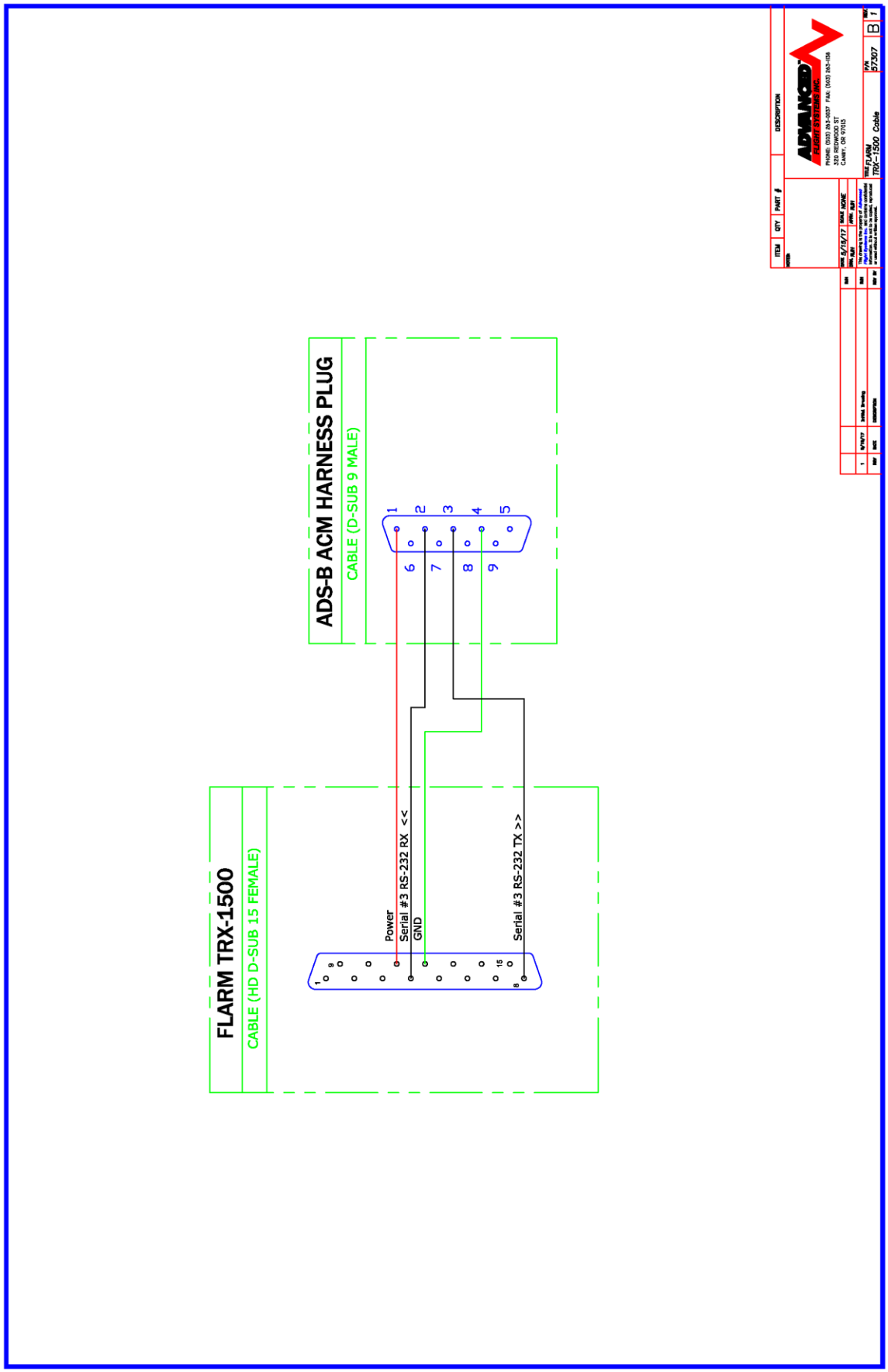

FLAP ACTUATOR
ES 421-0106
ES 421-0107
ES 88615-10 FLAP MOTOR
ES M6T3 POS-12 POSITION SENSOR
ROLL TRIM SERVO
PITCH TRIM SERVO
WHT/BLU
WHT/ORN
WHT
ADVANCED Control Module
ACM Mounted on Sub Panel
CAUTION
Limit current from each pin to 5 amps max
DESCRIPTION
Flap and Trim Harness
57,870

57302 D10 Backup Harness with CO and TCW Battery



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




ADS-B ACM HARNESS PLUG
CABLE (D-SUB 9 MALE)
1
2
3
4
5
6
7
8
9
FLARM TRX-1500
CABLE (HD D-SUB 15 FEMALE)
1
8
9
15
Power
Serial #3 RS-232 RX <<
GND
Serial #3 RS-232 TX >>
ADVANCED FLIGHT SYSTEMS INC.
FLARM TRX-1500 Cable
17307
B

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 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

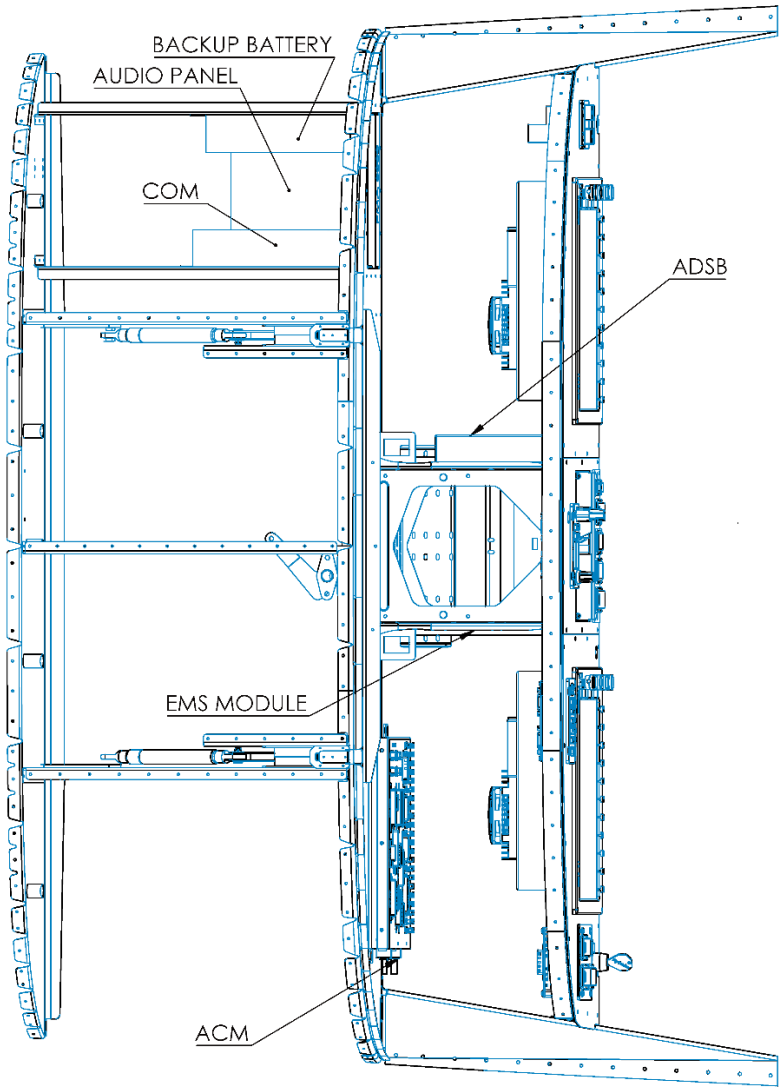
The IFD Tray mounts to the RV-14 airframe panel ribs. You will need to use the IFD tray as a template to mark the side hole locations on the airframe panel ribs. After marking the 8 hole locations, 4 on each side you will need to drill for 6-32 screws. Mount the tray to the airframe panel ribs using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

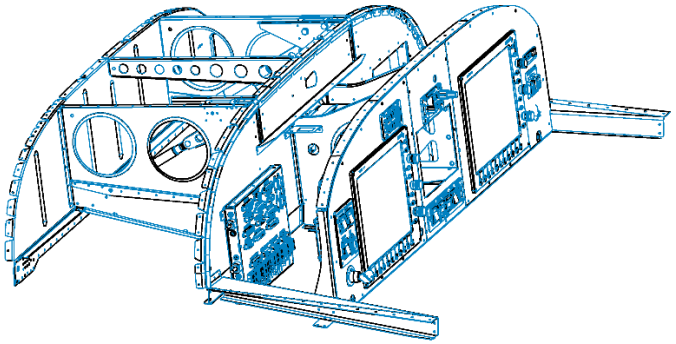
RV-14 EMS-220 Module Install

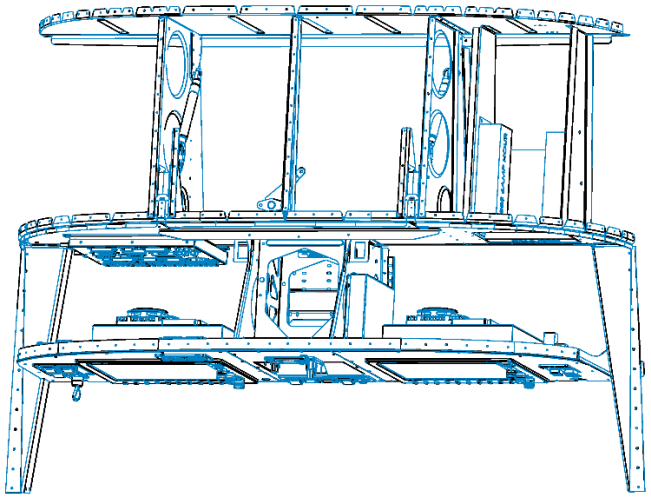
Mount the EMS-220 to the left side panel mounting rib, see P/N: 25014 RV-14 remote component mounting drawing.

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.







REVISION: TITLE: RV 14 AVIONICS ASSEMBLY DRAWING NUMBER:

ADVANCED FLIGHT SYSTEMS INC.

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

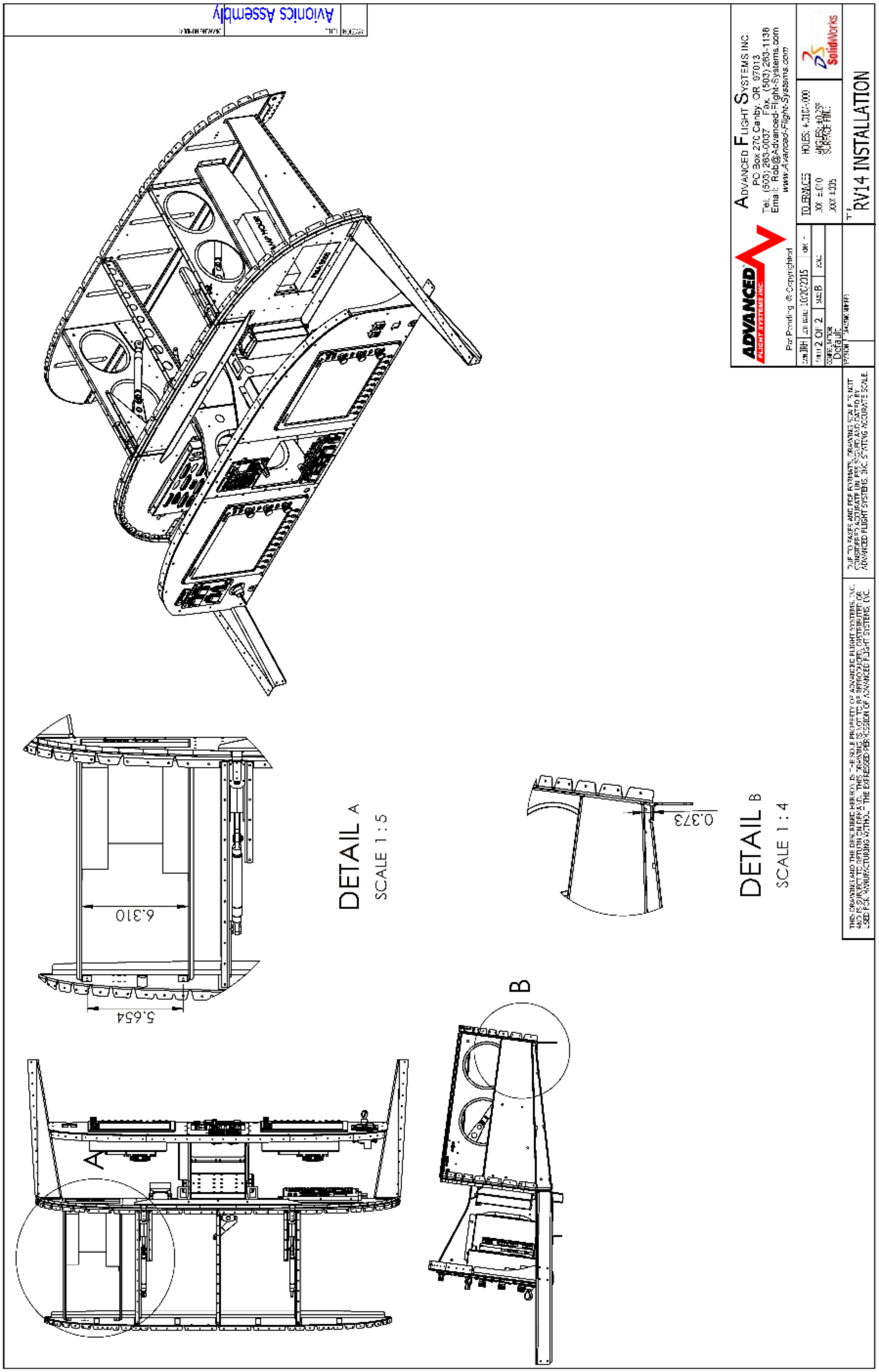
DWN: VR | EDIT DATE: 3/16/2017 | CHK: -
SHEET: 1 OF 1 | SIZE: B | SCALE:
CONFIGURATION: Default
REVISION: | DRAWING NUMBER: 25014

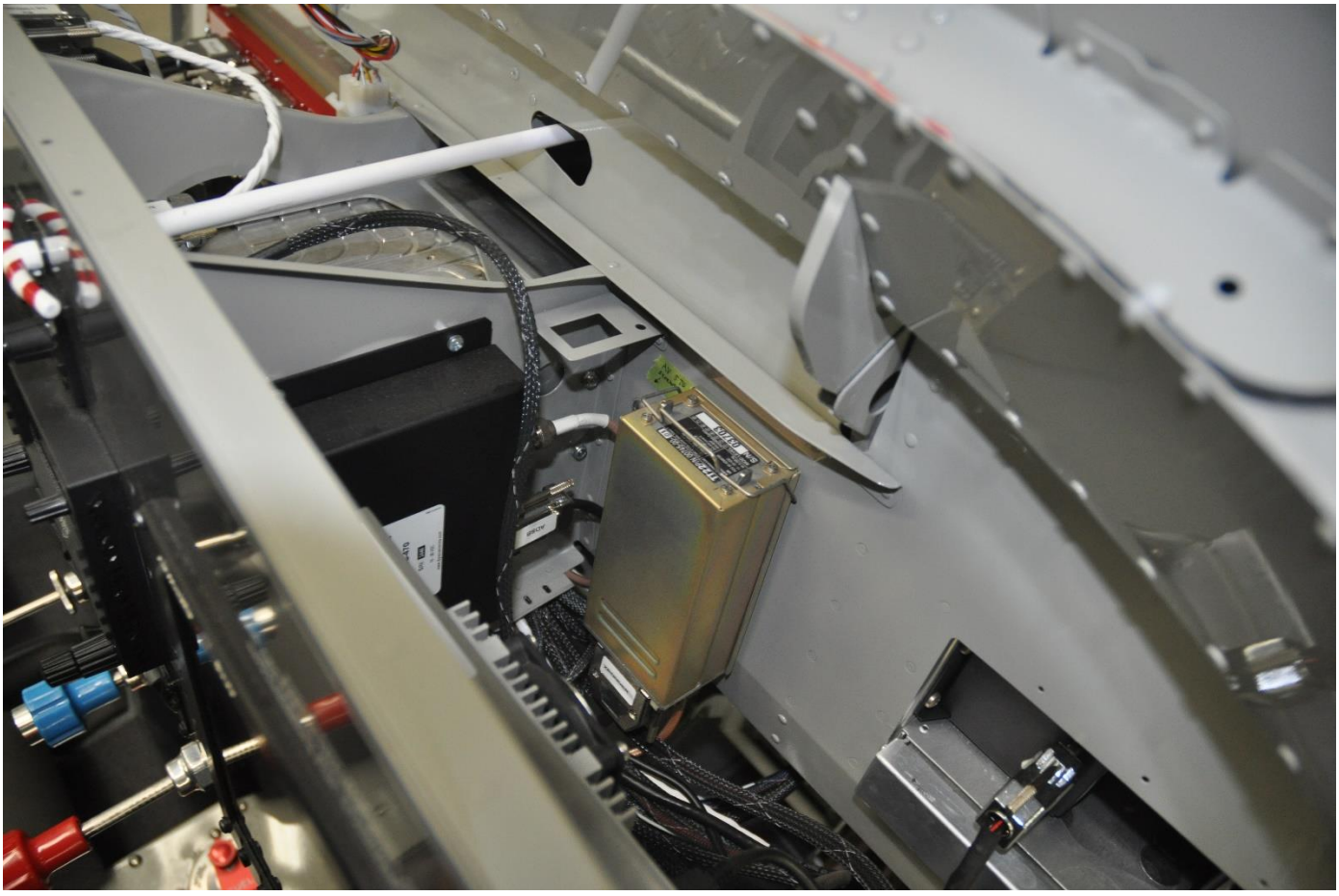
TOLERANCES
.XX ±.010
.XXX ±.005
HOLES: +.010/-.000
ANGLES: ±0.25°
SURFACE FIN.:

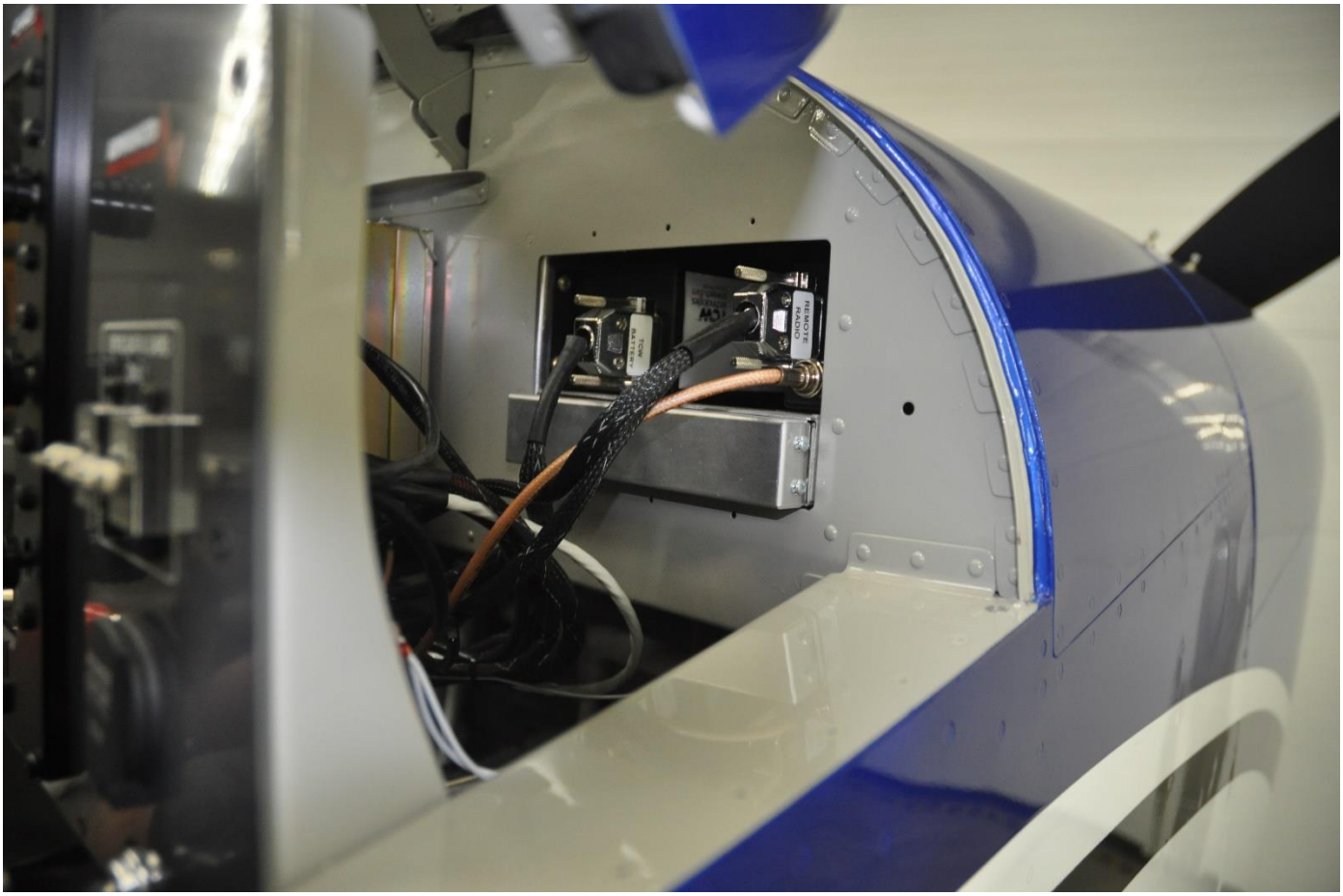
SolidWorks

TITLE: 14 COMPONENTS

DUE TO FAXES AND PDF FORMATS, DRAWING SCALE IS NOT CONSIDERED ACCURATE UNLESS SIGNED AND DATED BY ADVANCED FLIGHT SYSTEMS, INC. STATING ACCURATE SCALE.

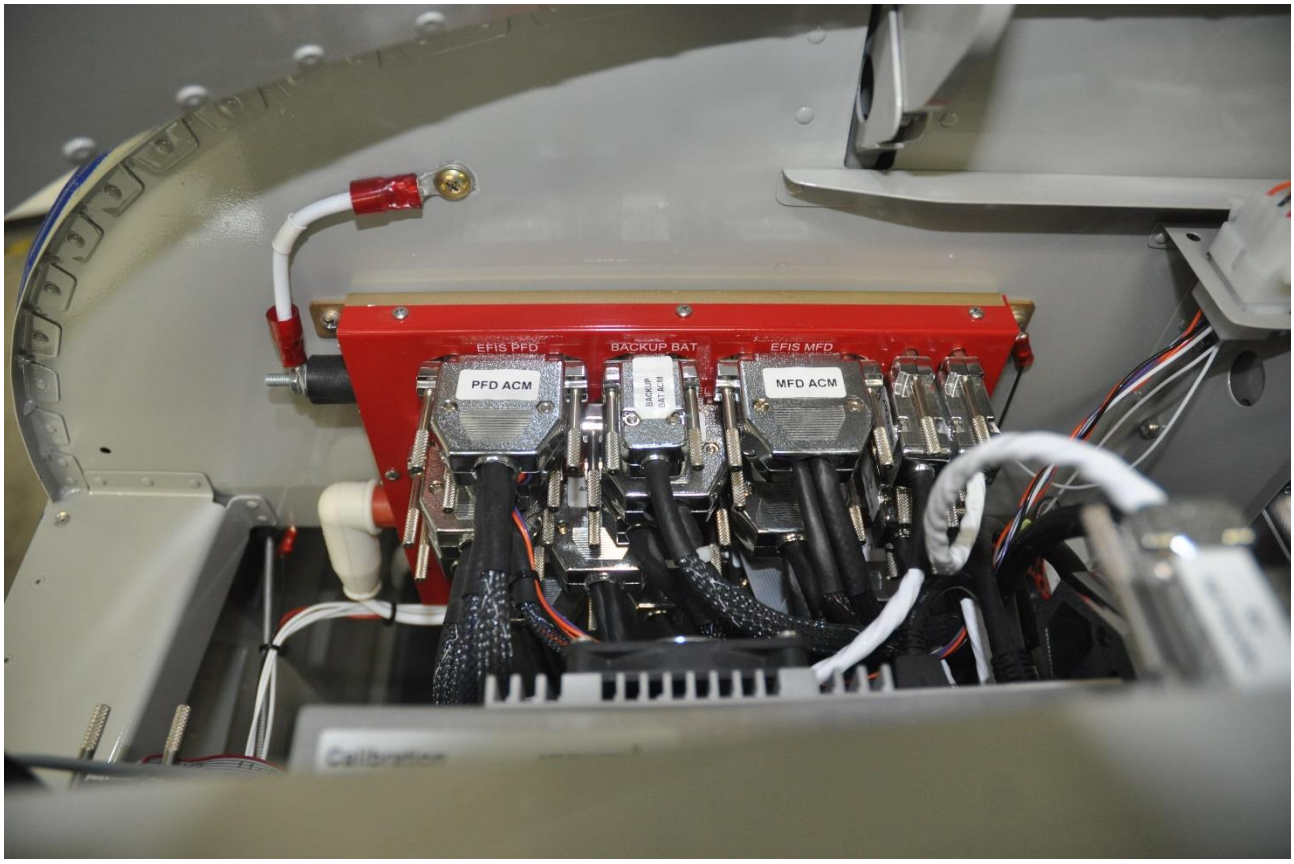

Avionics Assembly
ADVANCED FLIGHT SYSTEMS INC.
PO Box 270 Canby, OR 97013
Tel. (503) 263-0037 Fax. (503) 263-1138
Email: Rob@Advanced-Flight-Systems.com
www.Advanced-Flight-Systems.com
Pat Pending & Copyrighted
RV14 INSTALLATION
DETAIL A
SCALE 1 : 5
6.310
5.654
DETAIL B
SCALE 1 : 4
0.373
A
B




REMOTE
RADIO

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 ¼" (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.

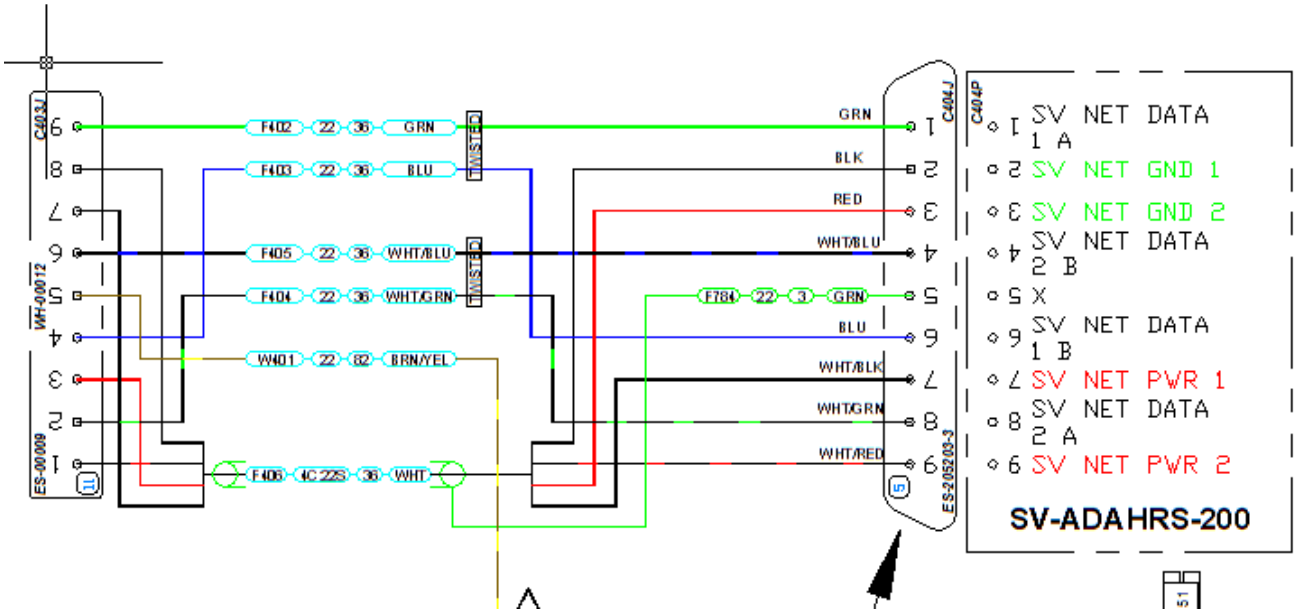
Red Main Power Terminal Max Nut Torque: 30 in-lbs

Black Main Ground Terminal Max Nut Torque: 24 in-lbs

RV-14 ADAHRS Mounting and Wiring

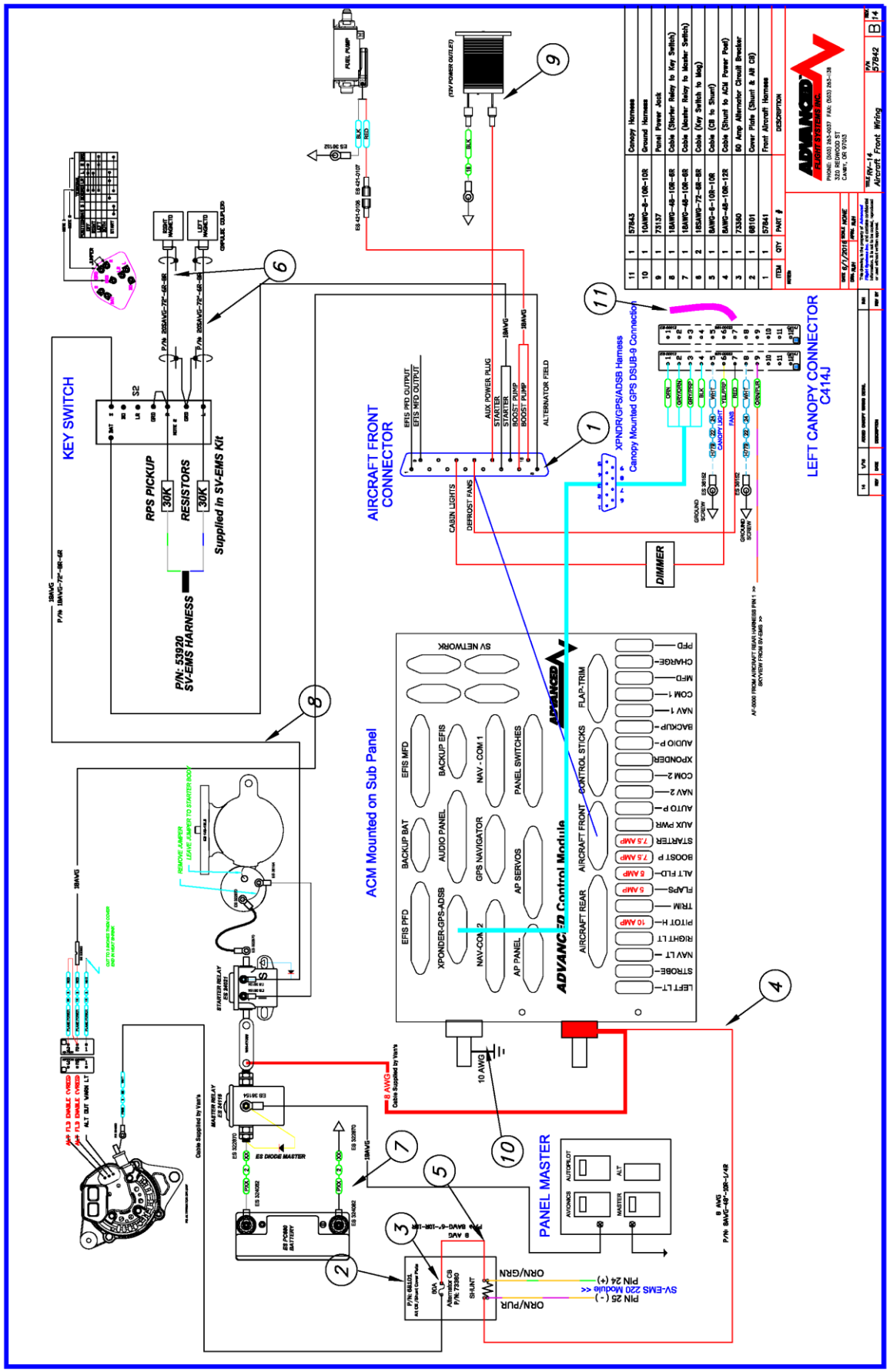
The RV-14 ADAHRS mounts in the left wing using the Van's supplied slide in mounting bracket. The Van's ADAHRS bracket has a built-in tab that will hold the ADAHRS into the slide in mounting bracket. The ADAHRS should slide into the bracket slots and not have any slop or looseness. If the ADAHRS is loose 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 ADARS is properly installed the PITOT/STATIC ports should point forward.

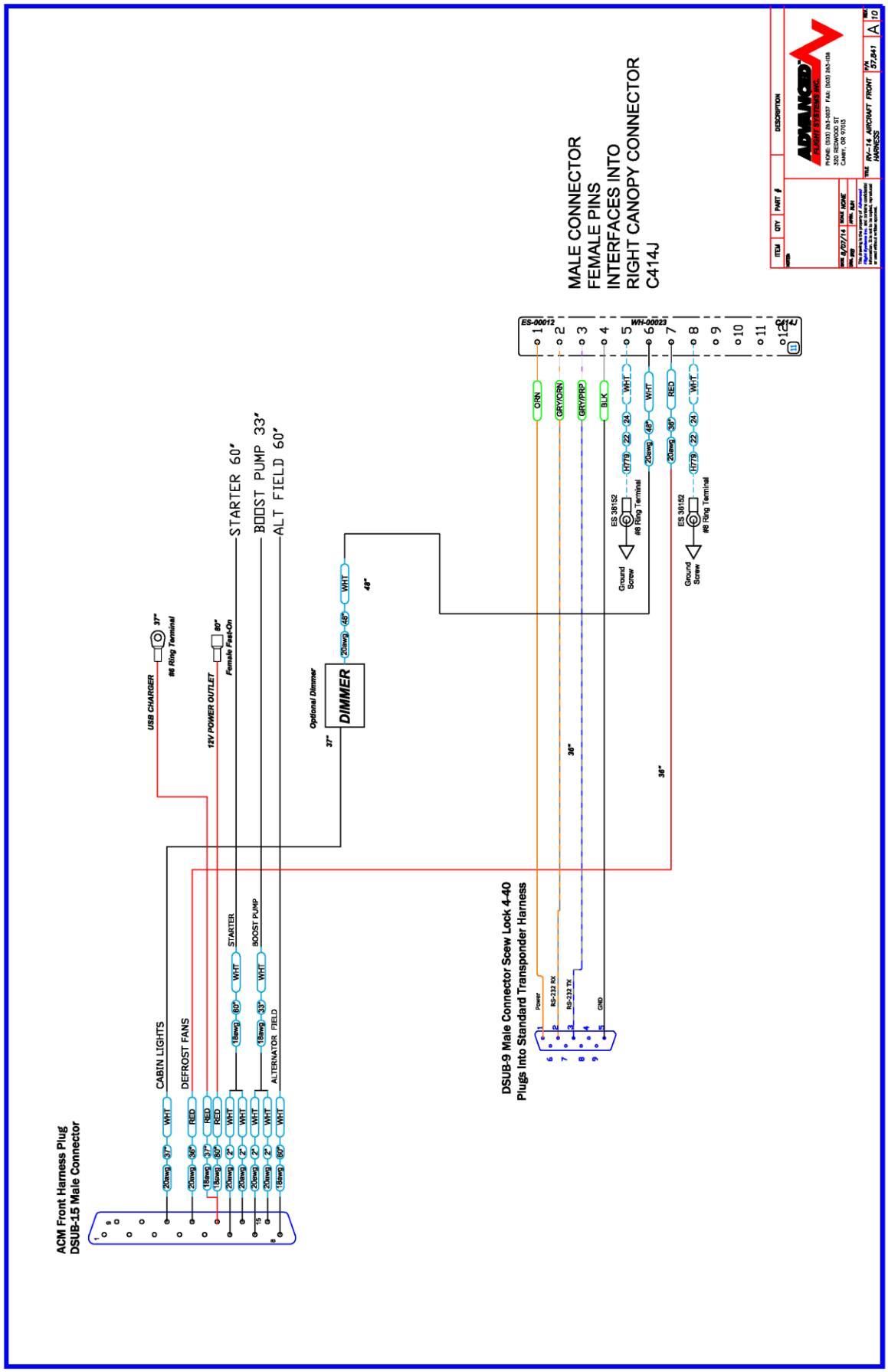
The ADAHRS wires are supplied in the Van's wing kit, you will need to insert the pre-wired female pins into the AFS supplied DSUB 9 female connector and connector Shell.



RV-14 Aircraft Front Wiring (P/N: 57842)

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

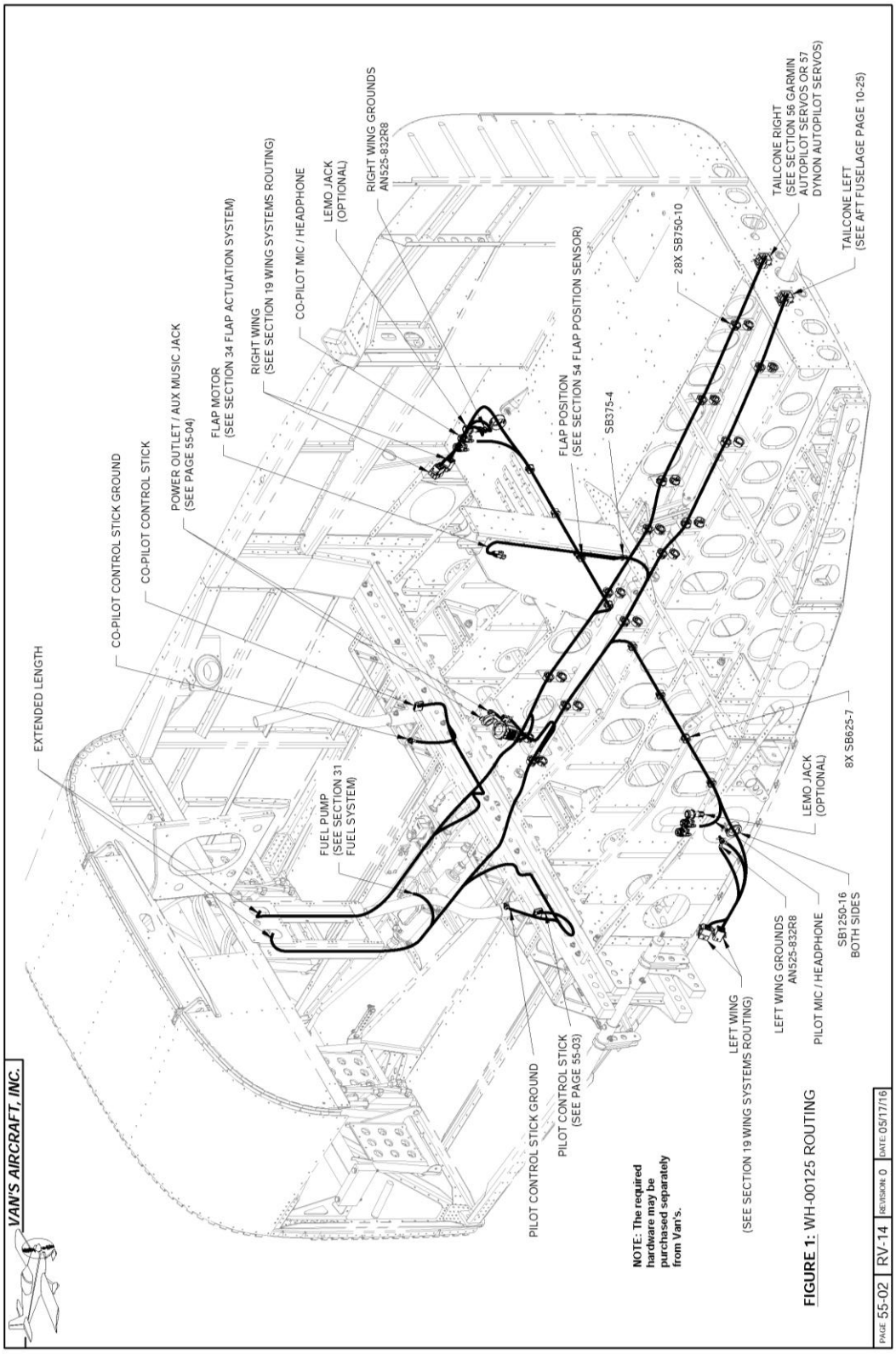


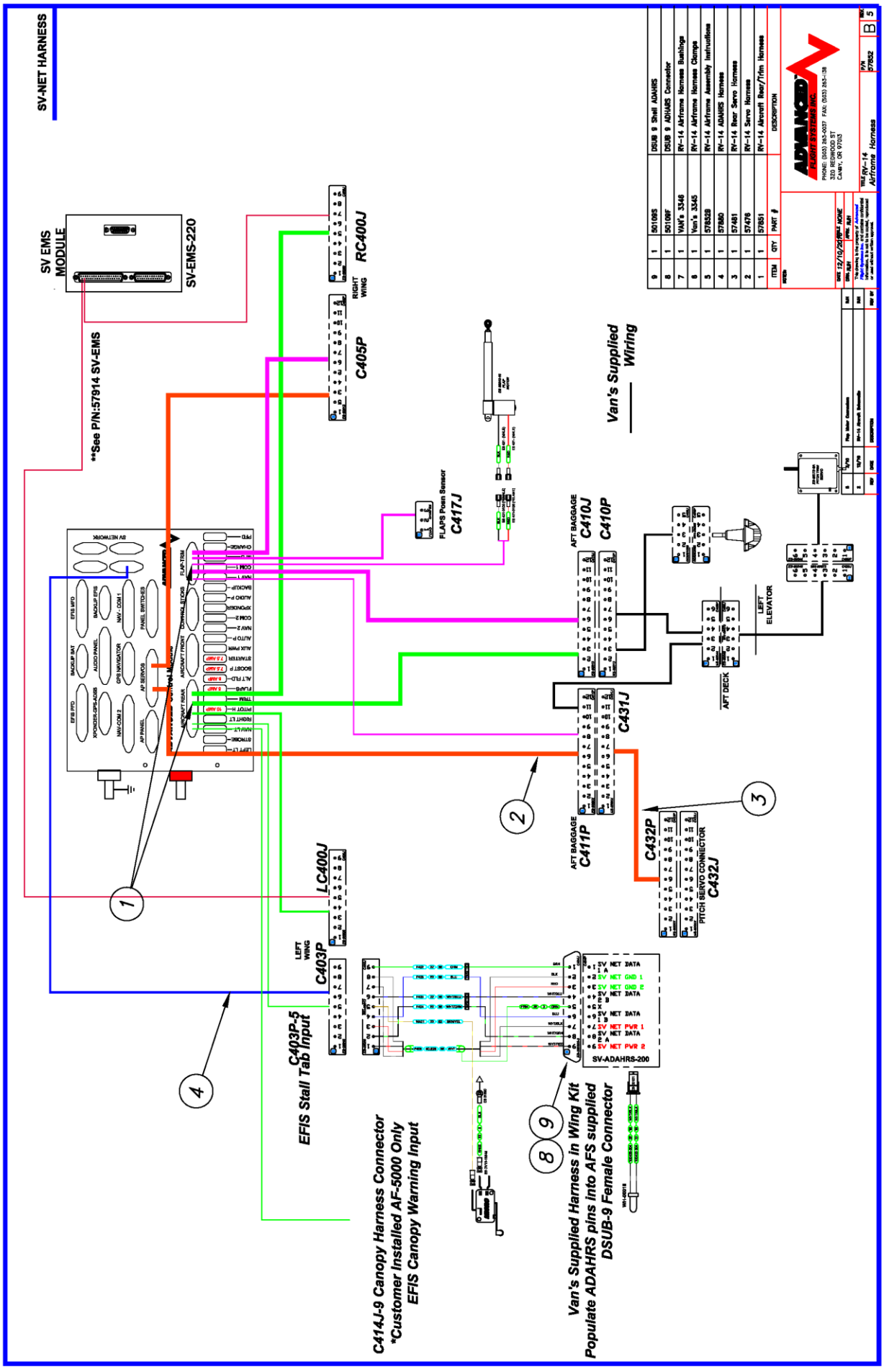

ACM Front Harness Plug
DSUB-15 Male Connector
CABIN LIGHTS
DEFROST FANS
STARTER
BOOST PUMP
ALTERNATOR FIELD
STARTER 60"
BOOST PUMP 33"
ALT FIELD 60"
USB CHARGER
#6 Ring Terminal
12V POWER OUTLET
Female Fast-On
Optional Dimmer
DIMMER
DSUB-9 Male Connector Screw Lock 4-40
Plugs Into Standard Transponder Harness
Power
RS-232 RX
RS-232 TX
GND
ES-00012
WH-00023
C414J
ORN
GRY/ORN
GRY/PRP
BLK
WHT
RED
ES 38152
#8 Ring Terminal
Ground Screw
MALE CONNECTOR
FEMALE PINS
INTERFACES INTO
RIGHT CANOPY CONNECTOR
C414J
RV-14 AIRCRAFT FRONT HARNESS
ADVANCED FLIGHT SYSTEMS INC.

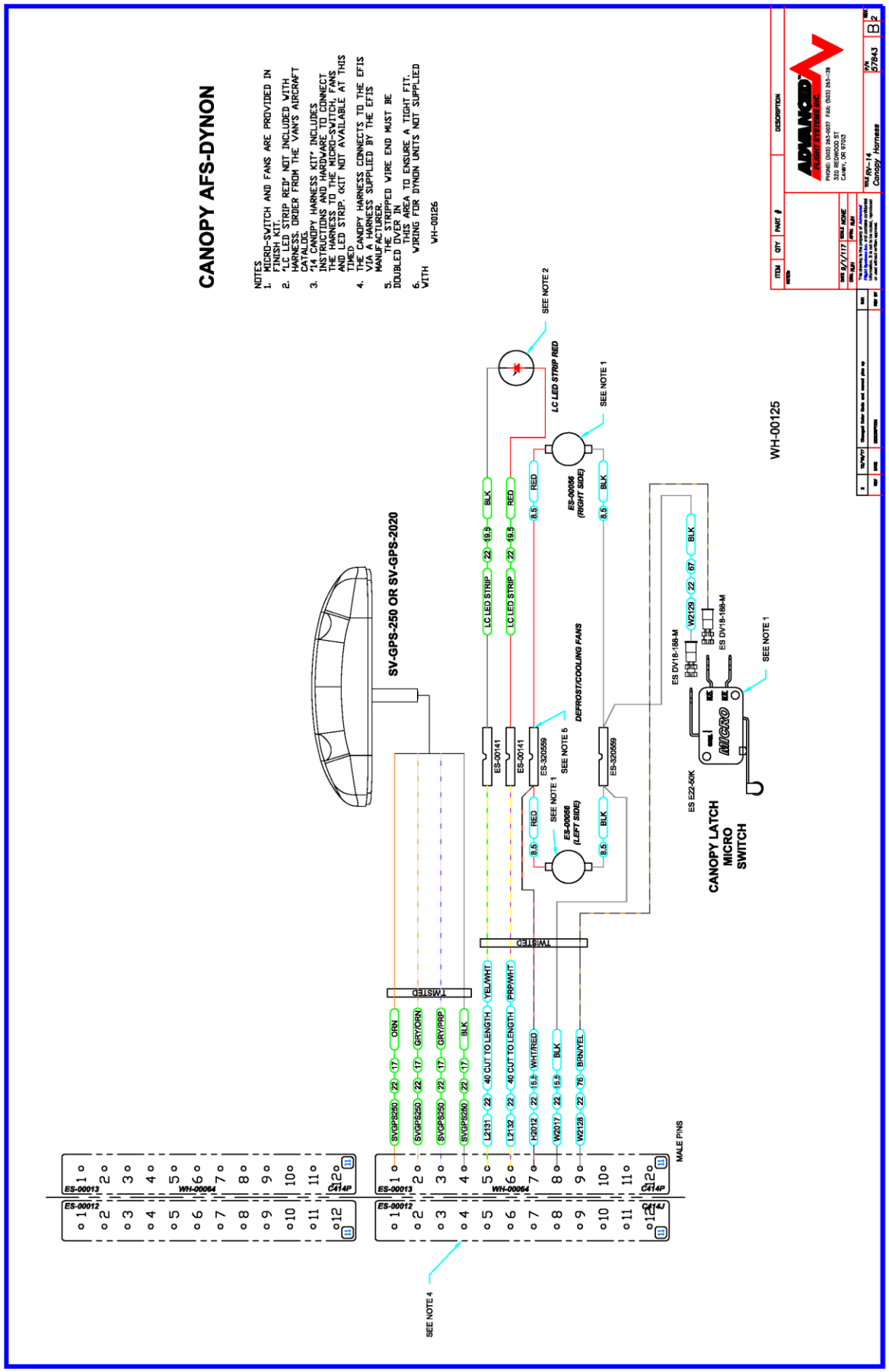
RV-14 Airframe Harnesses (P/N: 57852)

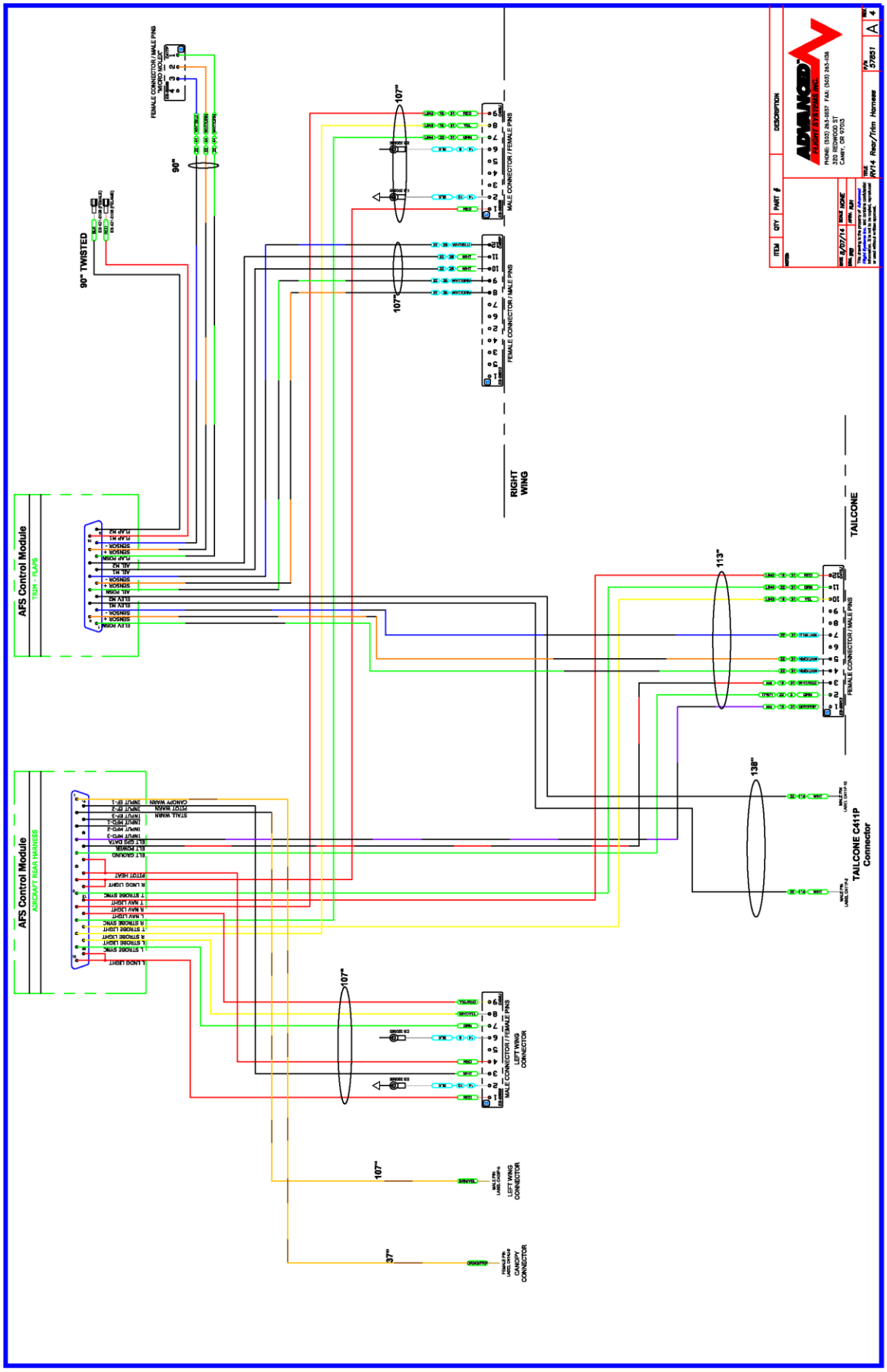
Install the supplied RV-14 airframe harness:

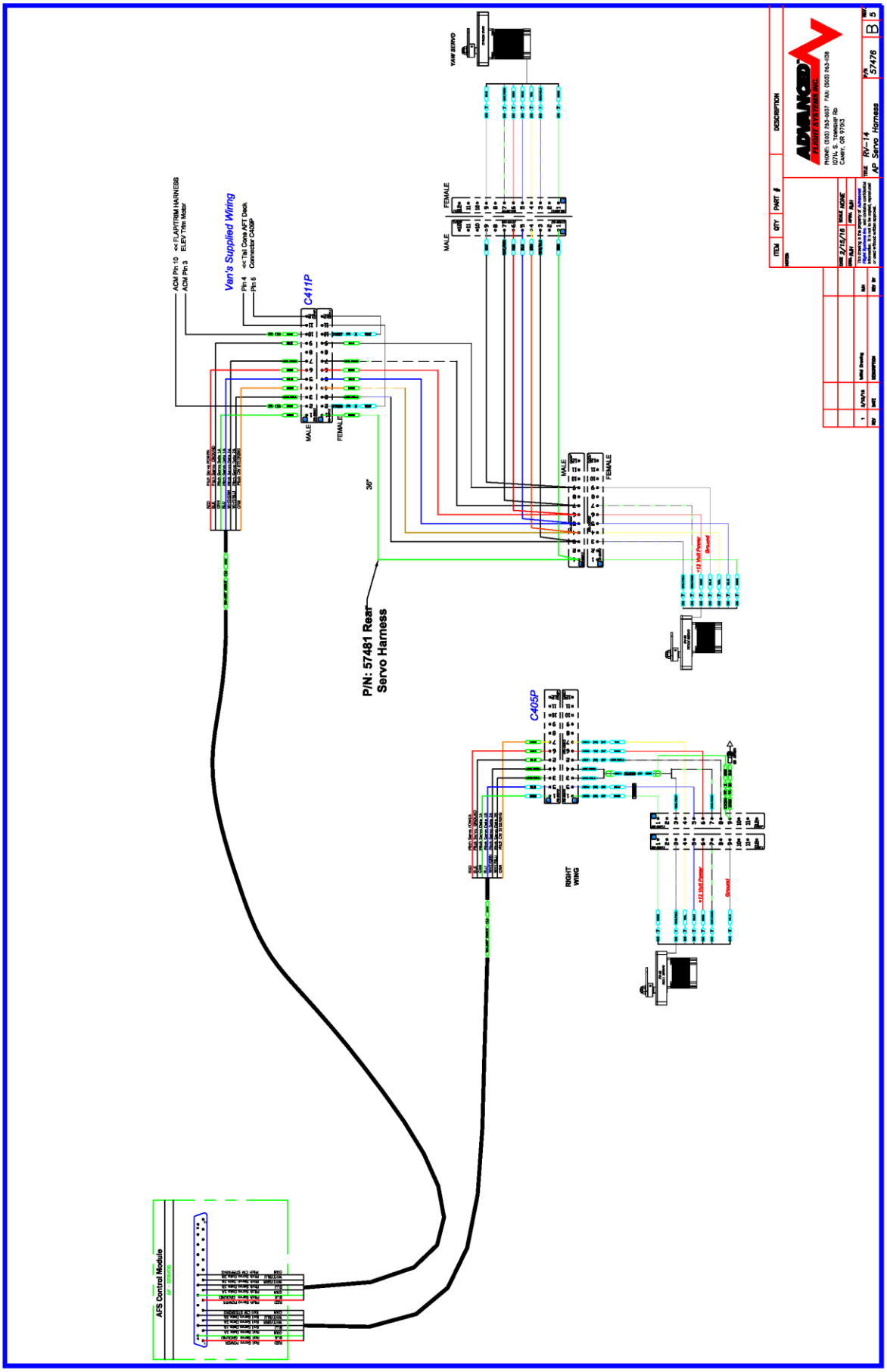
P/N: 57852AFS for AF-5600 install or P/N: 57852HDX for a Skyview HDX install. Start in the middle of the fuselage and work toward the ACM connector end (Aircraft Rear, AP Servo, Flap Trim, ADAHRS SVN-Net) routing the harness using Van's instructions Section 55-02 RV-14 Harness install. You will need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

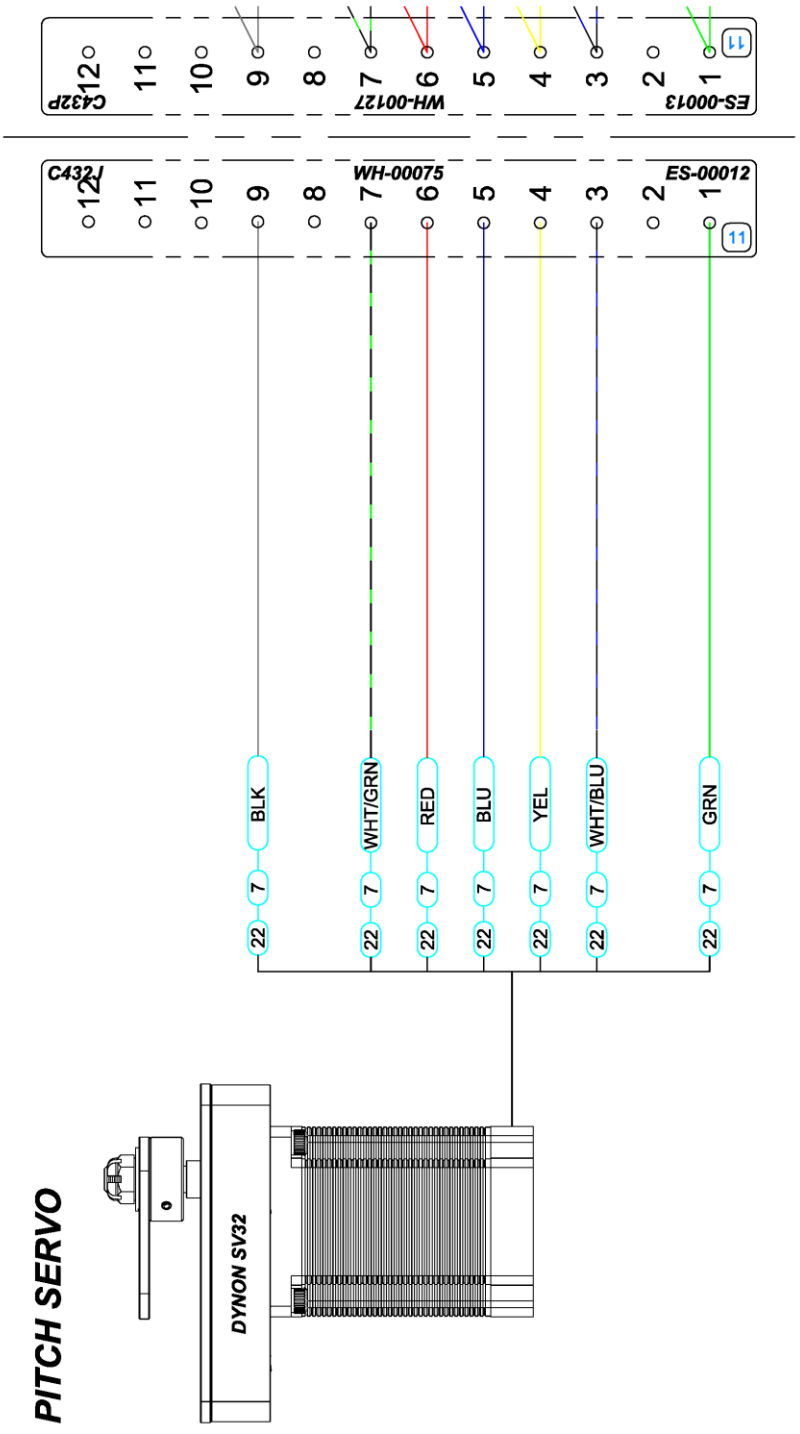


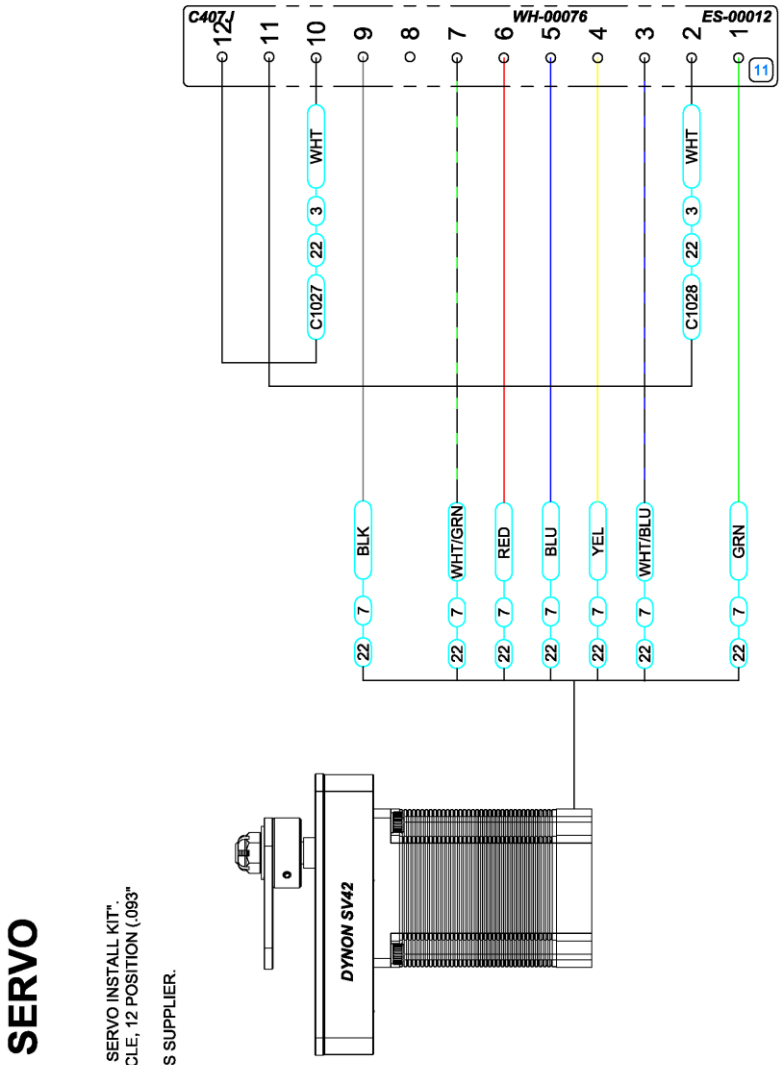

SV-NET HARNESS
SV EMS MODULE
SV-EMS-220
**See P/N:57914 SV-EMS
RC400J
RIGHT WING
C405P
Van's Supplied Wiring
FLAPS Posn Sensor
C417J
AFT BAGGAGE
C410J
C410P
C431J
AFT DECK
LEFT ELEVATOR
AFT BAGGAGE
C411P
C432P
PITCH SERVO CONNECTOR
C432J
LC400J
LEFT WING
C403P
C403P-5
EFIS Stall Tab Input
SV-ADAHRS-200
C414J-9 Canopy Harness Connector
*Customer Installed AF-5000 Only
EFIS Canopy Warning Input
Van's Supplied Harness in Wing Kit
Populate ADAHRS pins into AFS supplied
DSUB-9 Female Connector
1
2
3
4
8
9


CANOPY AFS-DYNON
NOTES
1. MICRO-SWITCH AND FANS ARE PROVIDED IN FINISH KIT.
2. "LC LED STRIP RED" NOT INCLUDED WITH HARNESS. ORDER FROM THE VAN'S AIRCRAFT CATALOG.
3. "14 CANOPY HARNESS KIT" INCLUDES INSTRUCTIONS AND HARDWARE TO CONNECT THE HARNESS TO THE MICRO-SWITCH, FANS 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 OVER IN THIS AREA TO ENSURE A TIGHT FIT.
6. WIRING FOR DYNON UNITS NOT SUPPLIED WITH WH-00126
WH-00125
SV-GPS-250 OR SV-GPS-2020
LC LED STRIP RED
SEE NOTE 2
SEE NOTE 1
ES-00056 (RIGHT SIDE)
ES-00056 (LEFT SIDE)
ES-00141
ES-320569
DEFROST/COOLING FANS
ES DV18-188-M
ES E22-60K
CANOPY LATCH MICRO SWITCH
MALE PINS
SEE NOTE 4
ES-00013
ES-00012
WH-00064
C414P
C414J
SVGPS250
ORN
GRY/ORN
GRY/PRP
BLK
YEL/WHT
PRP/WHT
WHT/RED
BRN/YEL
LC LED STRIP
RED
BLK
W2129
W2128
W2017
H2012
L2131
L2132
TWISTED
40 CUT TO LENGTH
DESCRIPTION
PART #
QTY
ITEM
9/7/17
RV-14
Canopy Harness
57843
B2


AFS Control Module
TRIM - FLAPS
AFS Control Module
AIRCRAFT REAR HARNESS
RIGHT WING
TAILCONE
LEFT WING CONNECTOR
CANOPY CONNECTOR
TAILCONE C411P Connector
90" TWISTED
90"
107"
113"
138"
37"
ADVANCED FLIGHT SYSTEMS INC.
RV14 Rear/Trim Harness
57851


Van's Supplied Wiring
C411P
C405P
P/N: 57481 Rear
Servo Harness
RIGHT WING
AFS Control Module
RV-14
AP Servo Harness
57476


C432P
WH-00127
ES-00013
C432J
WH-00075
ES-00012
BLK
WHT/GRN
RED
BLU
YEL
WHT/BLU
GRN
22
7
DYNON SV32
PITCH SERVO



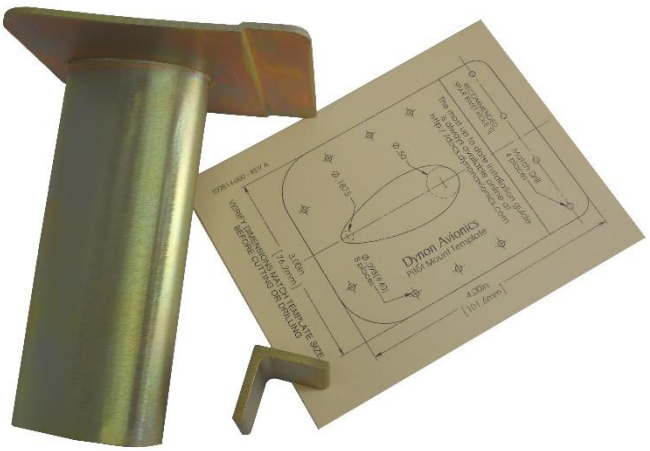
DYNON/AFS ROLL SERVO

NOTES
1. MOLEX PINS PROVIDED IN "14 SV AFS AP SERVO INSTALL KIT".
2. CONNECTOR ES-00012 MOLEX RECEPTACLE, 12 POSITION (.093" SOCKETS) SUPPLIED IN THE WING KIT.
3. PURCHASE SERVO FROM YOUR AVIONICS SUPPLIER.

RV-14 Heated Pitot Tube

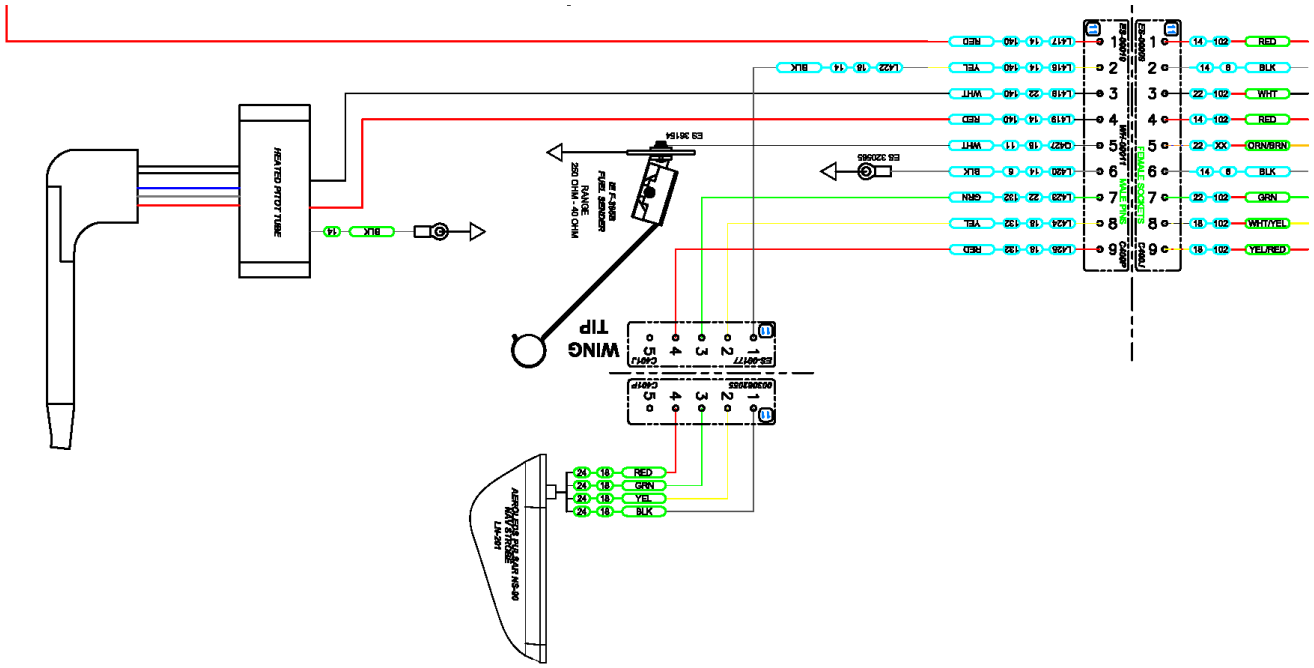
The Dynon heated pitot tube is mounted in the left wing using the Dynon Pitot Mast P/N: 102813-000

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

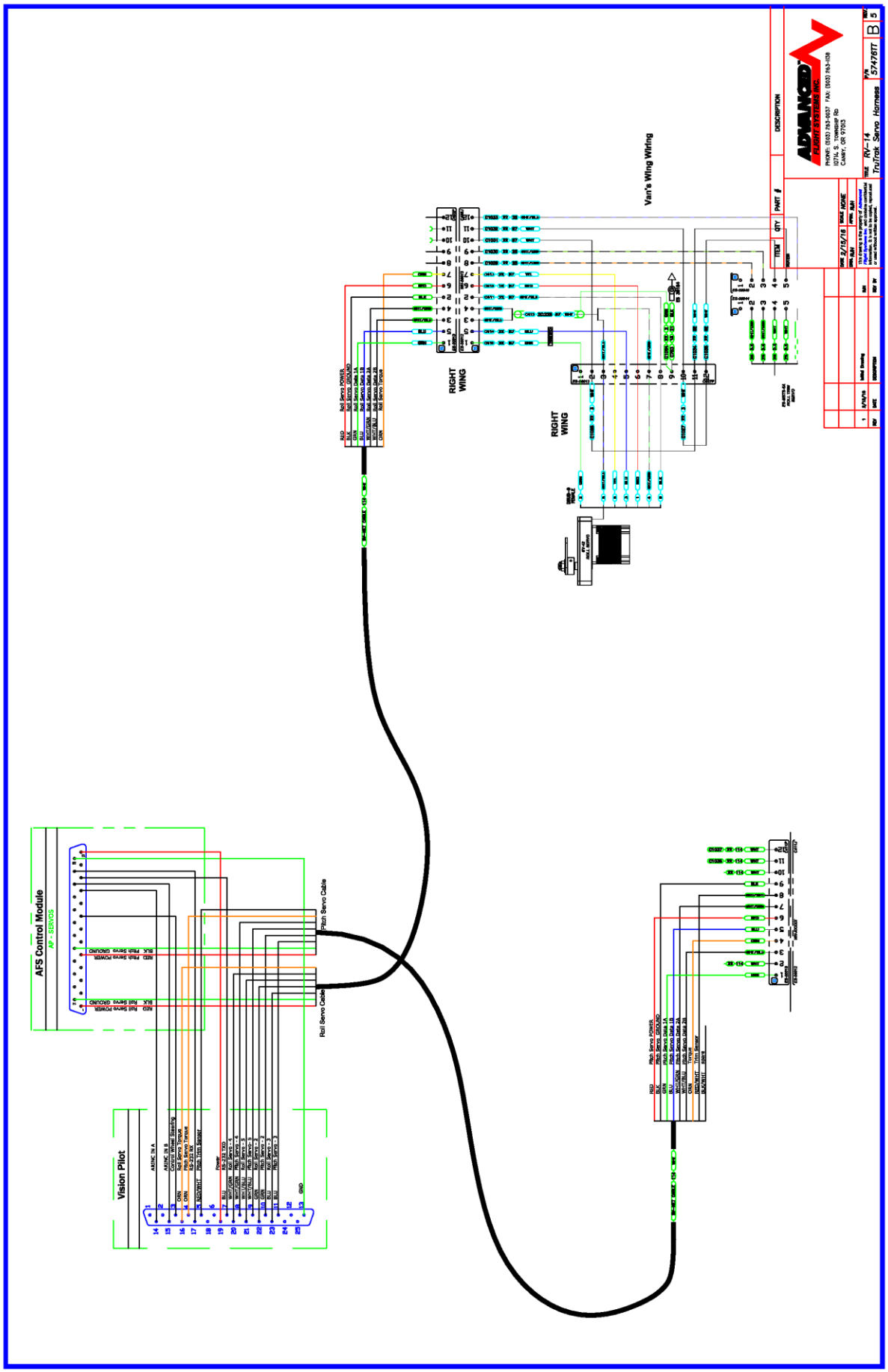


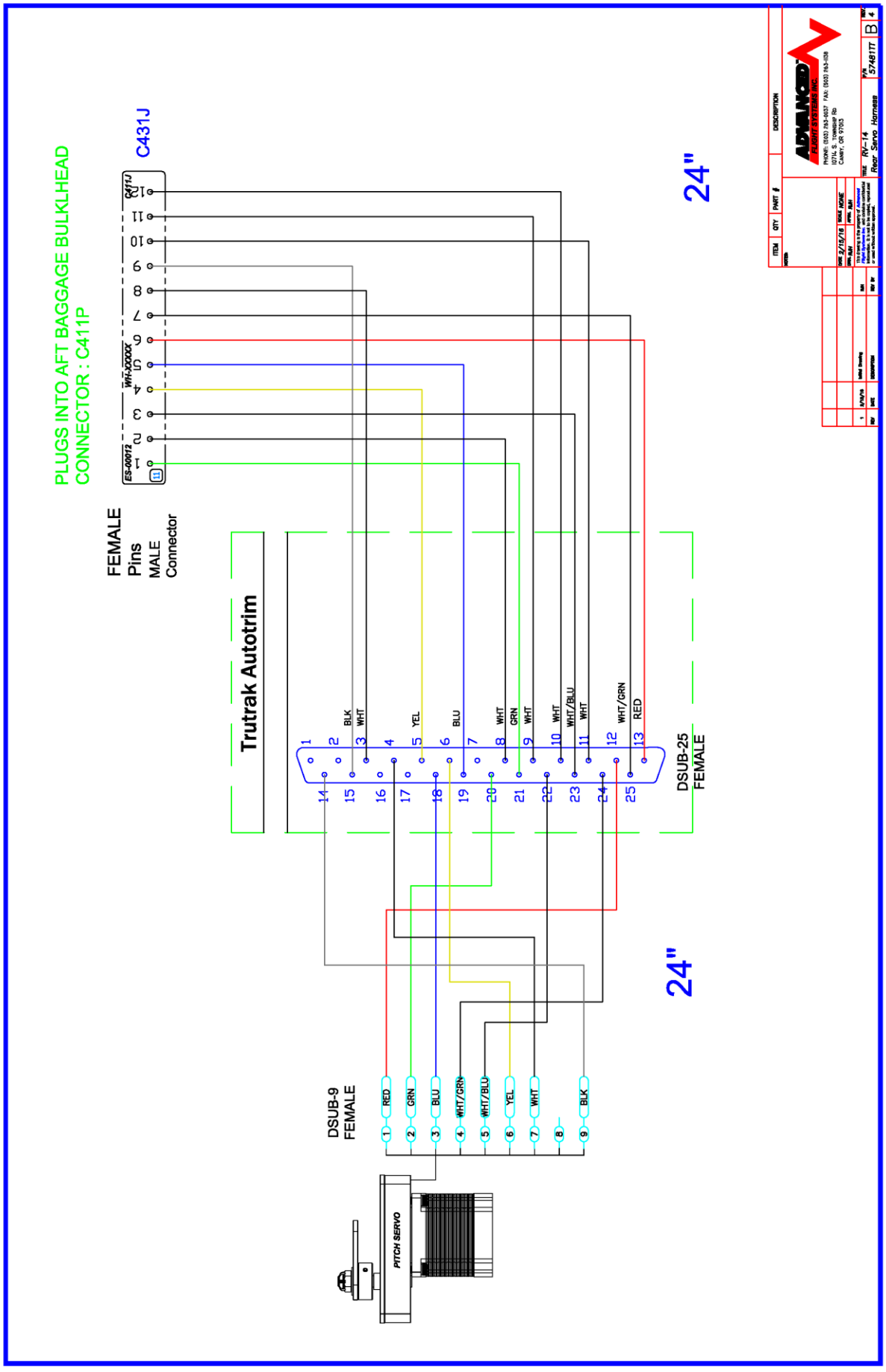
- Extend the Pitot Tube controller wires and connect to the Left Wing C400P Molex connector using the following:

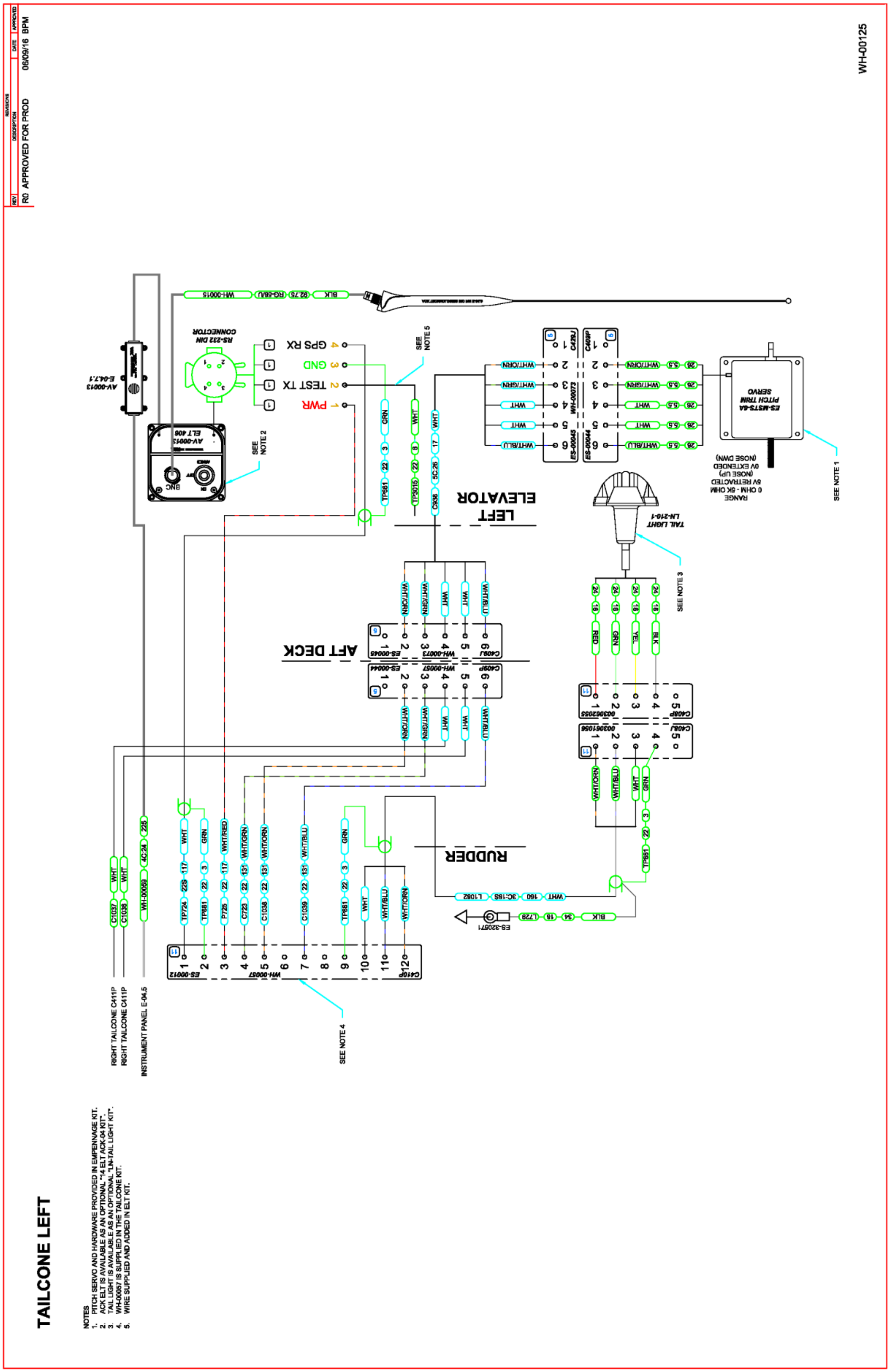
Pitot Controller	Description	Wire Size	C400P Male Pin
Red	+12V Power	#14	4
Black	Ground	#14	Locally grounded using ring terminal
White	Signal	#22	3

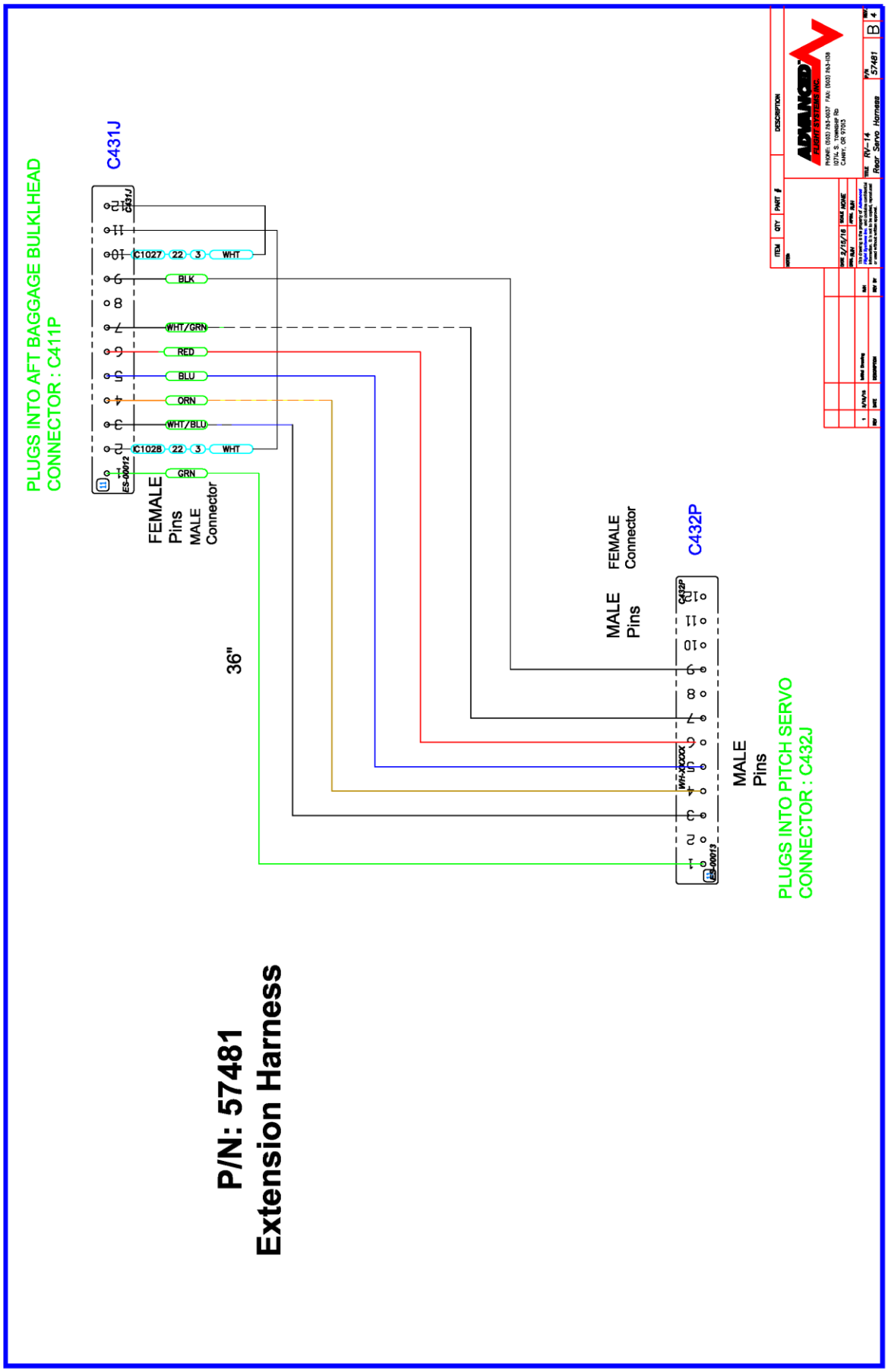


The Pitot line and AOA line should be connected to the Dynon ADAHRS using the Dynon Pitot/Static Plumbing Kit P/N: 102628-000


Van's Wing Wiring
RIGHT WING
RIGHT WING
AFS Control Module
AP - SERVOS
Vision Pilot
Roll Servo Cable
Pitch Servo Cable
Pitch Servo POWER
Pitch Servo GROUND
Pitch Servo Data 1A
Pitch Servo Data 1B
Pitch Servo Data 2A
Pitch Servo Data 2B
Pitch Servo Torque
Roll Servo POWER
Roll Servo GROUND
Roll Servo Data 1A
Roll Servo Data 1B
Roll Servo Data 2A
Roll Servo Data 2B
Roll Servo Torque
RV-14
TruTrak Servo Harness
5747BTT

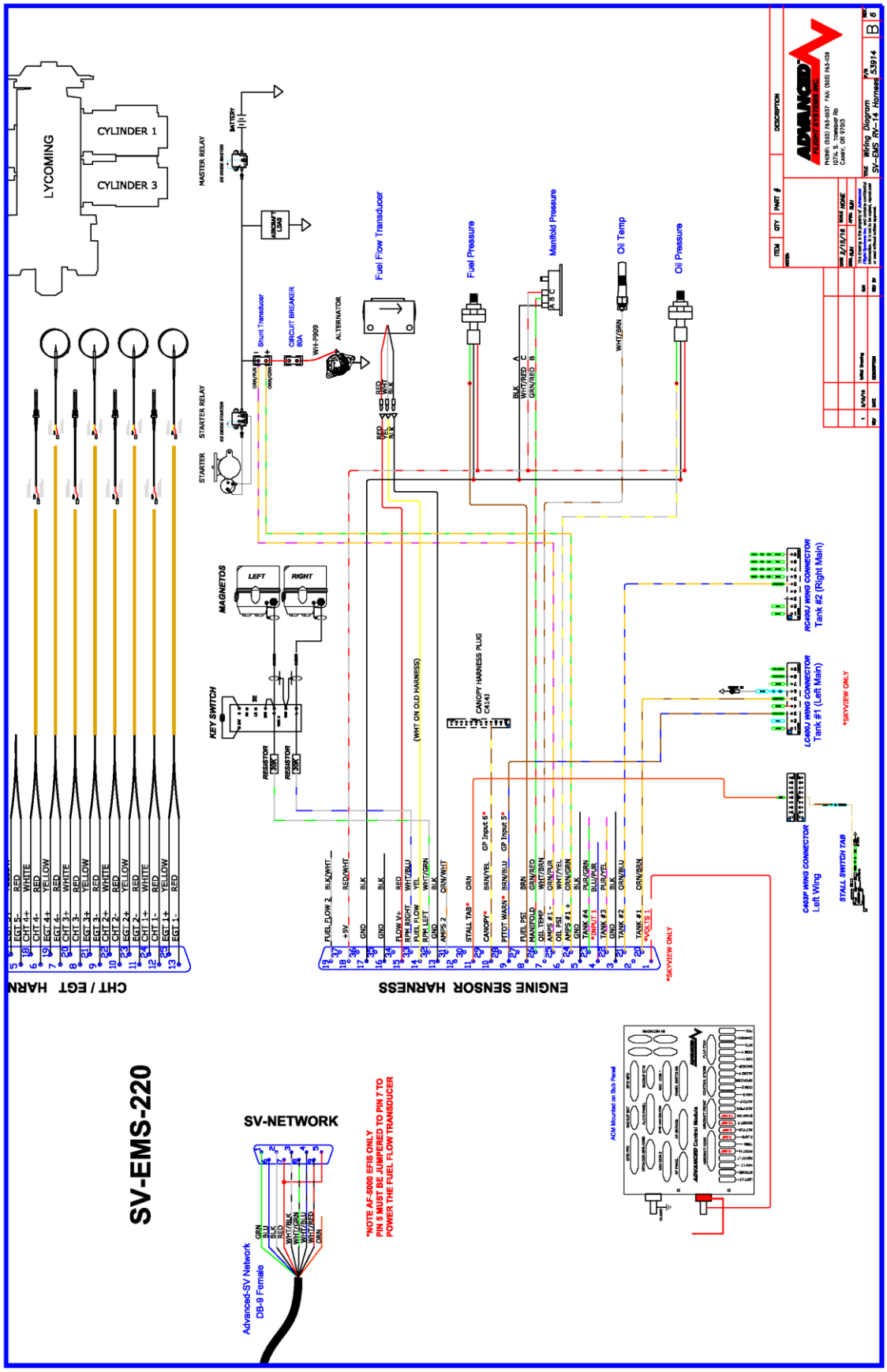

PLUGS INTO AFT BAGGAGE BULKHEAD
CONNECTOR : C411P
C431J
ES-00012
WH-XXXXX
FEMALE
Pins
MALE
Connector
24"
Trutrak Autotrim
BLK
WHT
YEL
BLU
WHT
GRN
WHT
WHT
WHT/BLU
WHT
WHT/GRN
RED
DSUB-25
FEMALE
24"
DSUB-9
FEMALE
RED
GRN
BLU
WHT/GRN
WHT/BLU
YEL
WHT
BLK
PITCH SERVO
ADVANCED
FLIGHT SYSTEMS INC.
RV-14
Rear Servo Harness
5748111
B


TAILCONE LEFT
WH-00125
AFT DECK
LEFT ELEVATOR
RUDDER
GPS RX
GND
TEST TX
PWR

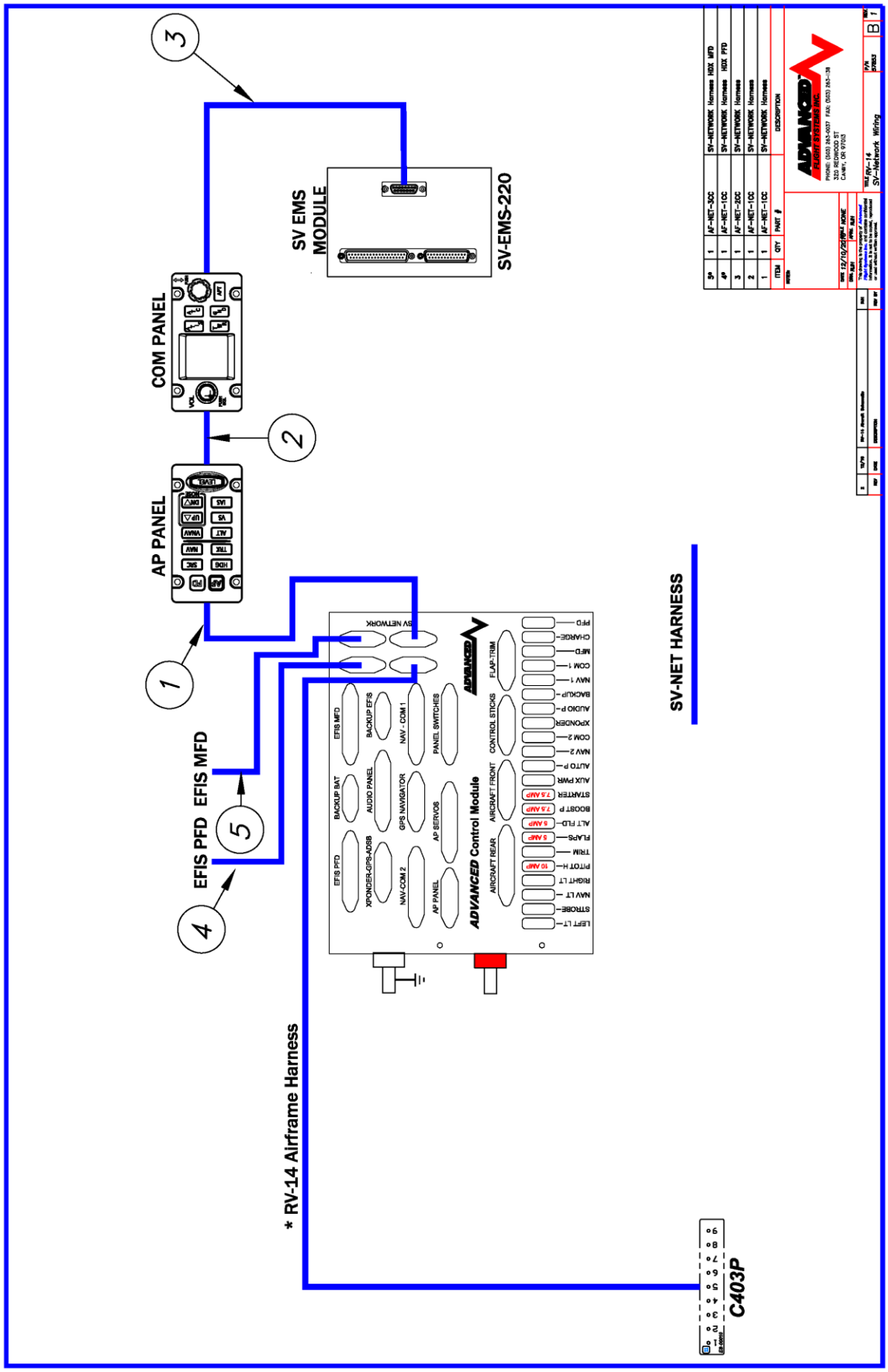

PLUGS INTO AFT BAGGAGE BULKHEAD
CONNECTOR : C411P
C431J
C1027 22 3 WHT
BLK
WHT/GRN
RED
BLU
ORN
WHT/BLU
C1028 22 3 WHT
GRN
FEMALE Pins
MALE Connector
36"
MALE Pins
FEMALE Connector
C432P
PLUGS INTO PITCH SERVO
CONNECTOR : C432J
P/N: 57481
Extension Harness
RV-14
Rear Servo Harness
57481

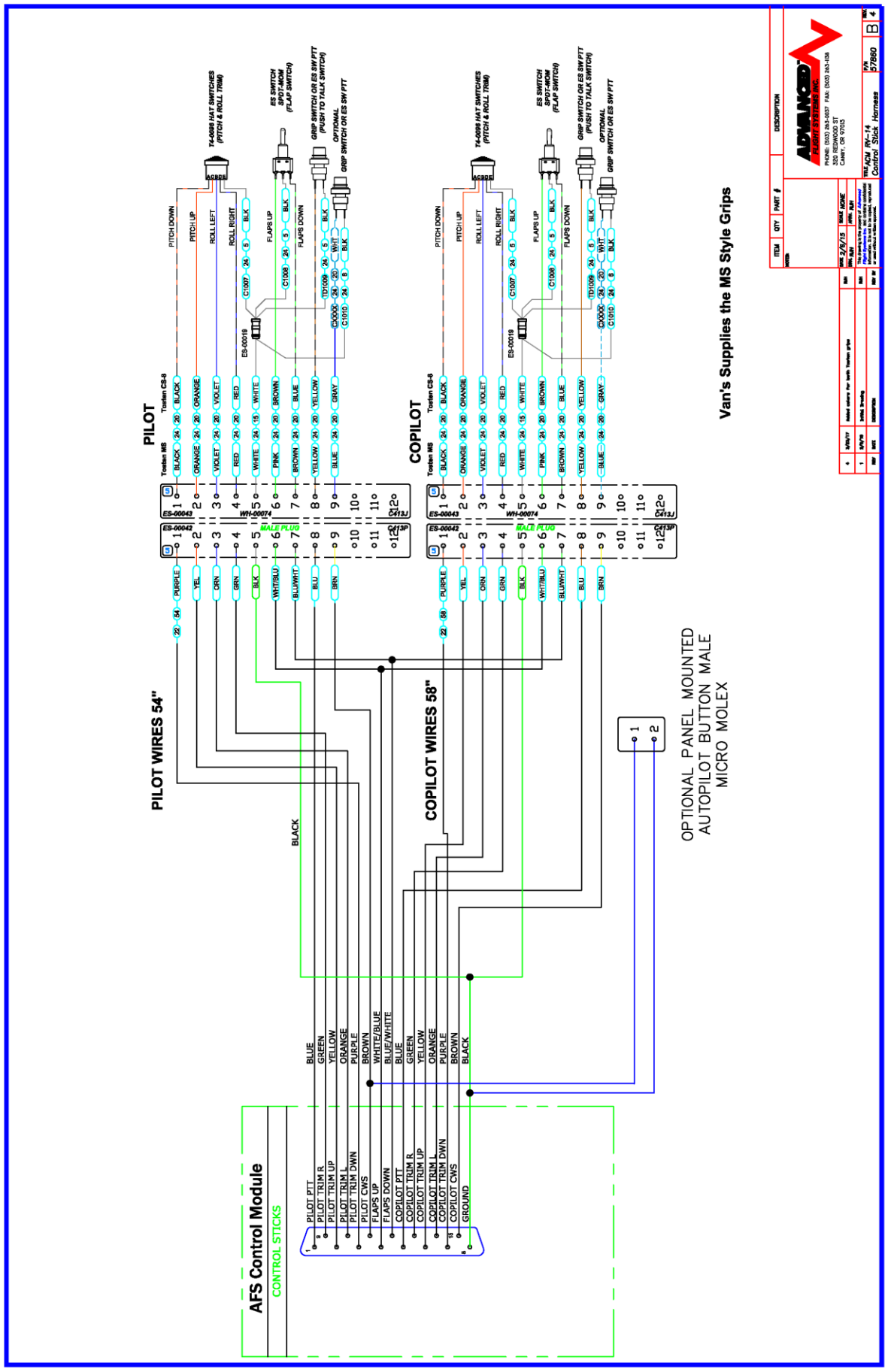
RV-14 EMS Harness Install (P/N: 53914)

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).



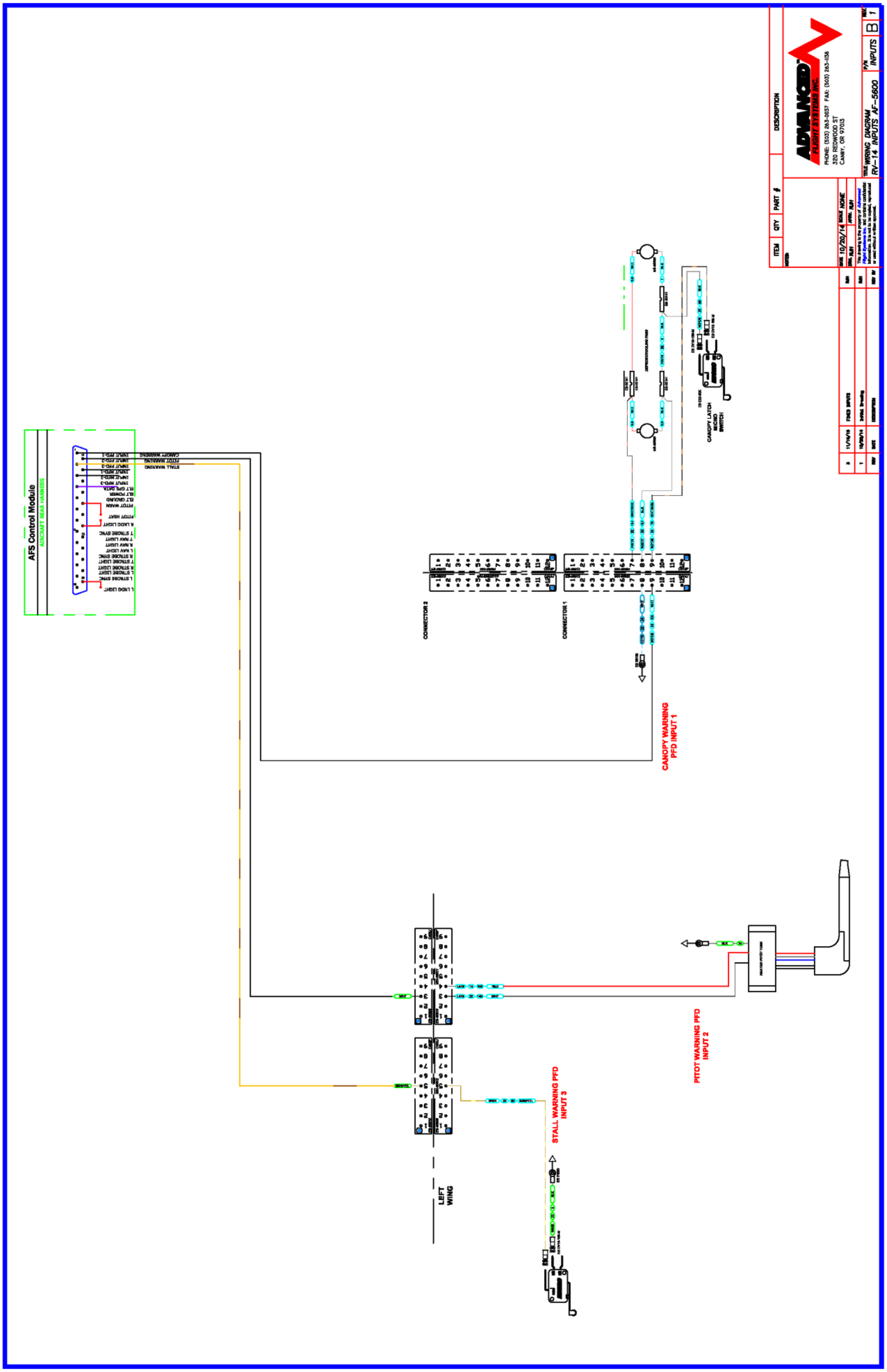
RV-14 SV-Network Wiring (P/N: 57853)




PILOT
COPILOT
PILOT WIRES 54"
COPILOT WIRES 58"
Van's Supplies the MS Style Grips
OPTIONAL PANEL MOUNTED
AUTOPILOT BUTTON MALE
MICRO MOLEX
AFS Control Module
CONTROL STICKS
PILOT PTT
PILOT TRIM R
PILOT TRIM UP
PILOT TRIM L
PILOT TRIM DWN
PILOT CWS
FLAPS UP
FLAPS DOWN
COPILOT PTT
COPILOT TRIM R
COPILOT TRIM UP
COPILOT TRIM L
COPILOT TRIM DWN
COPILOT CWS
GROUND
BLUE
GREEN
YELLOW
ORANGE
PURPLE
BROWN
WHITE/BLUE
BLUE/WHITE
BLUE
GREEN
YELLOW
ORANGE
PURPLE
BROWN
BLACK
BLACK
PITCH DOWN
PITCH UP
ROLL LEFT
ROLL RIGHT
FLAPS UP
FLAPS DOWN
T4-00099 HAT SWITCHES (PITCH & ROLL TRIM)
ES SWITCH SPDT-MOM (FLAP SWITCH)
GRIP SWITCH OR ES SW PTT (PUSH TO TALK SWITCH)
OPTIONAL GRIP SWITCH OR ES SW PTT
ES-00043
ES-00042
WH-00074
ES-00019
C413J
C413P
MALE PLUG
Advanced Flight Systems Inc.
RV-14 Control Stick Harness
P/N 57860

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.


AFS Control Module
AIRCRAFT REAR HARNESS
CONNECTOR 2
CONNECTOR 1
CANOPY LATCH MICRO SWITCH
CANOPY WARNING PFD INPUT 1
PITOT WARNING PFD INPUT 2
STALL WARNING PFD INPUT 3
LEFT WING
ADVANCED FLIGHT SYSTEMS INC.
WIRING DIAGRAM RV-14 INPUTS AF-5600
INPUTS
B

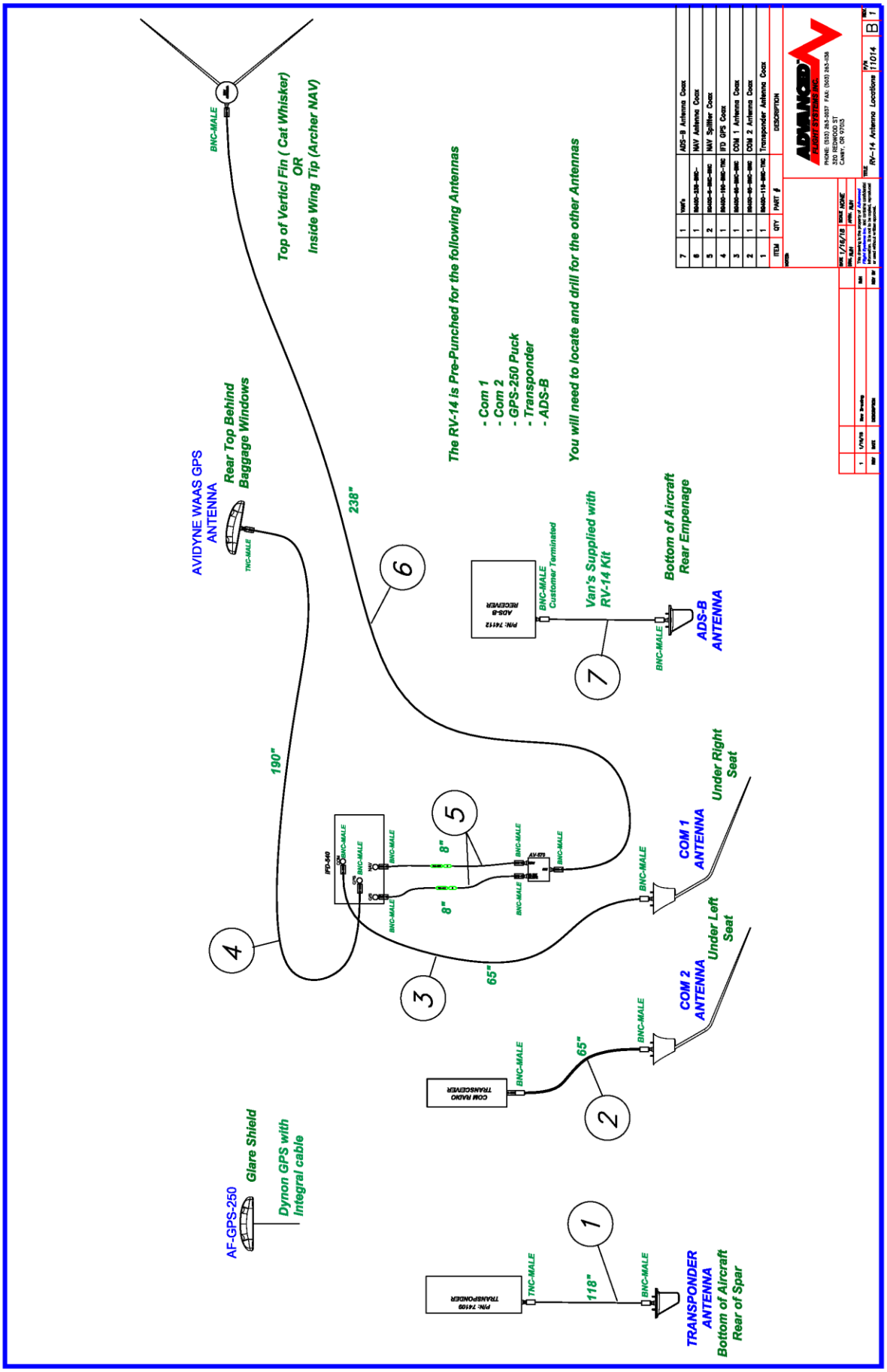
RV-14 Input Wiring and Configuration (Skyview)

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

RV-14 Antenna Locations



ACM Flap Control

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

SET > CAL > 44. Flap Position

7. Operation Mode:

POSTION
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.

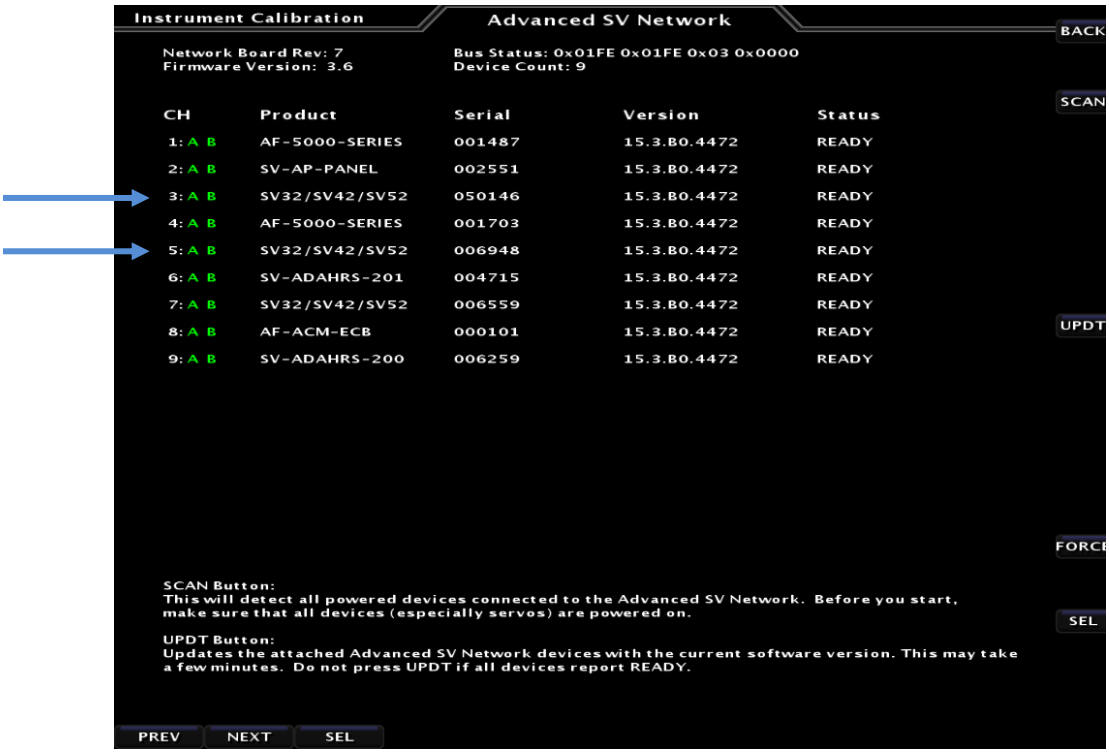
9. Motor Polarity (NORMAL or REVERSED) Verify that the Flaps move in the correct direction using the EFIS **CHECK** > **ELEC** menu buttons. If the Stick mounted buttons are backwards you will need to swap the stick Up and Down button wiring.

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.

Advanced Control Module AF-GPS Routing Table

AFS GPS	Cable Color	DSUB-9	ACM 15 Pin ACM: XPND,GPS,ADSB	ACM 25 Pin ACM: MFD	EFIS 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 Function	Cable Color	Skyview DSUB-37	ACM 25 Pin ACM: PFD	ACM 25 Pin Audio Panel	SV-INTERCOM 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: XPND,GPS,ADSB	ACM 25 Pin ACM: MFD	EFIS MFD Serial #3 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 DSUB-9	ACM 9 Pin ACM: BACKUP EFIS	ACM 25 Pin ACM: MFD	EFIS MFD Serial #2 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

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*Engine Model :*_____

*System Model #:*_____*Serial Number:*_____

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