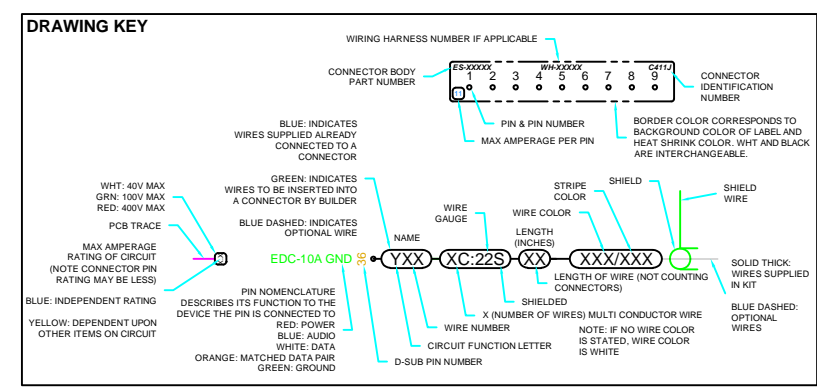


CIRCUIT LETTER FUNCTION	
LETTER	CIRCUITS
C	CONTROL SURFACE
D	INSTRUMENT
E	ENGINE INSTRUMENT
F	FLIGHT INSTRUMENTS
H	HEATING VENTILATING
J	IGNITION
K	ENGINE CONTROL
L	LIGHTING
P	POWER CONTROL
Q	FUEL
R	RADIO
RZ	HEADPHONE
T	SPECIAL ELECTRONIC
TC	RADIO CONTROL
TD	AIRBORNE ANNOUNCING
TP	BEACON
TQ	TRANSMITTER RECEIVER
W	WARNING EMERGENCY



**ELECTRICAL SYSTEM NOTES**

- USE M22759/16 OR M27500 TEFZEL AIRCRAFT WIRE. CONTACT VAN'S ABOUT USING OTHER EQUIV.
- USE MIL-I-23053 HEATSHRINK. CONTACT VAN'S ABOUT USING OTHER EQUIV.
- LABEL THE FLYING LEAD OF EACH WIRE WITH THE TRUNCATED NOMENCLATURE AND WIRE NUMBER.
- CONNECT ALL 20-24 AWG WIRES TO D-SUBS USING ES-SA-1017 SOCKETS OR ES-SA-1018 PINS. PERMISSIBLE TO STRIP 18 AWG WIRE TO FIT ES-SA-1017 SOCKETS OR ES-SA-1018 PINS. ALL CRIMPS TO BE MADE PER MIL-C-22520F (1.2.2) USING A TYPE 1 TOOL.
- USE ONLY NOR-COMP BACKSHELLS ON D-SUB CONNECTORS (WITH THE EXCEPTION OF 50-PIN CONNECTORS)
- HARNESS MUST BE TESTED WITH ALL AVIONICS IN ACCORDANCE WITH THE "ELECTRICAL SYSTEM BENCH TEST PROCEDURE". RESULTS ARE TO BE SUPPLIED TO VAN'S FOR EACH HARNESS.
- CRIMPED MOLEX, TYCO, AND AMP TERMINALS ARE TO BE CRIMPED WITH THE MANUFACTURER'S RECOMMENDED CRIMPING TOOL.
- CRIMPED TERMINALS ARE TO BE INDIVIDUALLY PULL TESTED.
- DO NOT COVER WIRES WITH WIRE NET.
- HARNESSES ARE TO BE BUNDLED WITH LACING CHORD, WITH THE EXCEPTION OF BLUE TIE-WRAPS USED AT BULKHEAD STATIONS.
- ALL 3 CONDUCTOR JACKETED NON-SHIELDED WIRE MAY BE REPLACED WITH TWISTED WIRES OF THE SAME AWG SIZE AND THE SAME WIRE COLOR.
- ADJUST SOLDER SPLICE / RING TERMINAL SIZE AS REQUIRED TO ACCOMMODATE DESIRED WIRE GAUGE(S). MAINTAIN RING TERMINAL STUD/TAB SIZE.

**ELECTRICAL SYSTEM BENCH TEST PROCEDURE**

- Avionics Group**
1. Check PFD & MFD Power On
  2. Install latest software and settings per the readme files (applicable portions) on the Van's Web Site
    - a. Setup Xpndr Hex Code
    - b. Setup AP servos if installed
  3. Check PFD & MFD recognize all LRU's
  4. Check Xpndr will transmit.
  5. Check COM turns on.
  6. Check PFD recognizes COM, and can push frequencies to COM radio
  7. Check Backup Battery Function PFD
  8. If installed check AP Control Head function (knobs function for SkyView as well)
- Audio Group**
- NOTE: If customer has selected the pre-wired stick option then use their control sticks
1. Configure GTN 650Xi in accordance with "GTN 650Xi Internal Presets"
  2. Check Pilot Headset Jack
  3. Check Pilot Mic Jack for Xmit
  4. Check Co-Pilot Headset Jack
  5. Check Co-Pilot Mic Jack for Xmit
  6. If installed check XM music output to headset.
- Cockpit Group**
- NOTE: If customer has selected the pre-wired stick option then use their control sticks
1. Check Pilot TX Button
  2. Check Pilot Trim Buttons (Both Directions)
    - a. Verify proper trim direction movement on screen indicator and servo with input
  3. Check Co-Pilot TX Button
  4. Check Co-Pilot Trim Buttons (Both Directions)
    - a. Verify proper trim direction movement on screen indicator and servo with input
  5. Check function of AP disconnect switch near throttle.
  6. Check Pilot AP Disconnect Switch
  7. Check Co-Pilot AP Disconnect Switch
  8. Check Pilot COM Freq Swap
  9. Check Co-Pilot Freq Swap
  10. Check Dimmer (Note PCB portion will be checked during AV-60000 Check)
    - a. Turn on all switches. Check that all lighted switches lights turn on and dim. (Ignore wires going to cabin light.)
  11. Check canopy latch switch
  12. Check flap motor function both directions
  13. Check for power output at USB connectors / Power Outlet
- Wing Group**
1. Check Stall Warning
  2. Check NAV/Strobe Lights
  3. Check Landing Lights (Both if applicable)
  4. Check Wig Wag Function
- iS Engine Group**
1. Check Master Relay Switch grounds out wire going to master relay
  2. Check Key switch connects HIC connector start pins
  3. Check spar pin light comes on when spar pin switches are not grounded.
  4. Check emergency switch provides power to Power X3 connector Pin 3
  5. Check Emergency Li Bat Warn Wire turns on warning in EFIS when grounded. (NOTE Check this error)
  6. Check fuel pump A and B switches for function

**GARMIN GTN 650Xi INTERNAL PRESETS**

AIRINC 429 CONFIGURATION	LEVEL	EFIS FORMAT 2
- AIRINC 429 IN 1	LOW	EFIS FORMAT 2
- AIRINC 429 IN 2	LOW	OFF
- AIRINC 429 OUT 1	LOW	GARMIN 429
- AIRINC 429 OUT 2	LOW	OFF
- SDI		LNAV 1

RS-232 CONFIGURATION (CHANNEL, INPUT, OUTPUT)	STATUS	FORMAT
- RS-232 1	MAPMX FORMAT 2	MAPMX FORMAT 2
- RS-232 2	OFF	ADS-B+ FORMAT 1
- RS-232 3	OFF	OFF
- RS-232 4	CONNECT FORMAT 2	CONNEXT FORMAT 2

**MAIN SYSTEM CONFIGURATION**

- AIRFRAME TYPE	FIXED-WING
- AIR/GROUND THRESHOLD	30KT
- AIR/GROUND DISCRETE	ACTIVE FOR AIRBORNE
- GPS ANT. HEIGHT ABOVE GND	4FT
- GPS SELECT	AUTO
- HEADING SRC INPUT	CONNECTED
- RADIO ALTIMETER INPUT	NOT CONNECTED
- ALTITUDE SRC INPUT	CONNECTED
- ENHANCED LIGHTING MODE	ENABLED
- CROSSFILL STATUS ALERT	DISABLED
- SYSTEM ID	GTN 1
- DATABASE SYNC	PILOT CONTROL
- AIRSPACE LABELS	ENABLED
- CHECKLIST PAGE TITLE	CHECKLIST
- ENHANCED LIGHTING MODE	ENABLED

**COM CONFIGURATION**

- COM RADIO	ENABLED
- COM SQUELCH MODE	BASIC
- COM RX SQUELCH	0%
- MIC 1 GAIN	+12DB
- SIDETONE SOURCE	EXTERNAL
- SIDETONE VOLUME	+26DB

**VOR/LOC/GS CONFIGURATION**

- NAV RADIO	ENABLED
- AIRINC 429 CONFIGURATION	TX LOW SDI VOR/ILS 1

**DISCRETE INPUTS**

- J1001-36	REMOTE GO AROUND
------------	------------------

**ENHANCED LIGHTING SOURCE SETTINGS**

- DISPLAY SOURCE	LIGHTING BUS 1
- KEYS SOURCE	LIGHTING BUS 1
- LIGHTING BUS 1	14V DC 1 SEC

**DAY MODE OPERATION DISPLAY**

- MINIMUM LEVEL	0.05%
- MAXIMUM LEVEL	100.00%

**CONFIGURE CURVE**

- VERTEX 1 INPUT LEVEL	1.00%
- VERTEX 1 OUTPUT LEVEL	1.00%
- VERTEX 2 INPUT LEVEL	8.00%
- VERTEX 2 OUTPUT LEVEL	1.00%
- VERTEX 3 INPUT LEVEL	88.00%
- VERTEX 3 OUTPUT LEVEL	100.00%
- VERTEX 4 INPUT LEVEL	99.00%
- VERTEX 4 OUTPUT LEVEL	100.00%

**PHOTOCELL OVERRIDE**

- PHOTOCELL TRANSITION	10.0%
------------------------	-------

**KEYS**

- MINIMUM LEVEL	1.00%
- MAXIMUM LEVEL	100.00%



VAN'S AIRCRAFT, INC. 14401 NE KEIL RD. NI AURORA, OR 97002 USA

**ROTAX 912IS G3X NAVCOM ELECTRICAL SYSTEM**

DATE DRAWN: 04/06/2018

DRAWN BY: T. DE MAN

TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)

UNITS: INCHES  
WH-00136-1

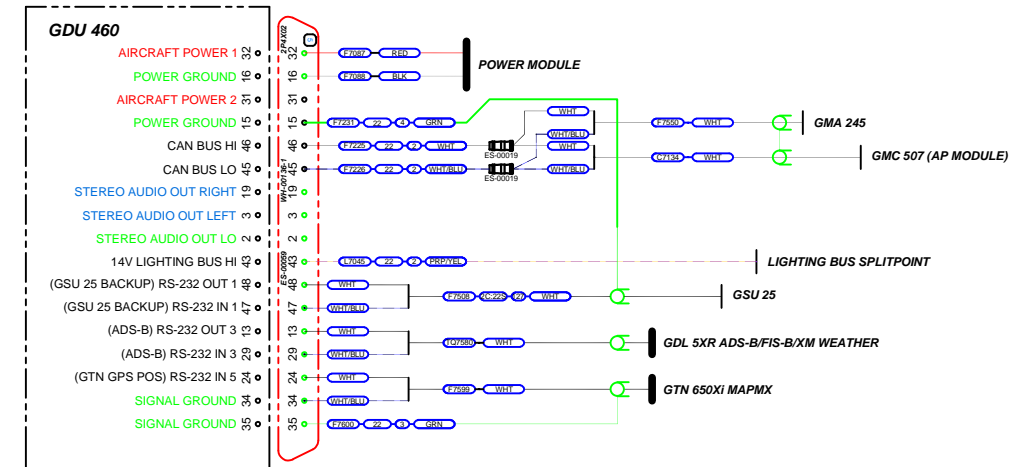
SCALE: NONE PAGE: 1 OF 11

REVISIONS			
REV	DESCRIPTION	DATE	APPROVE
R0	SEE PG 1		

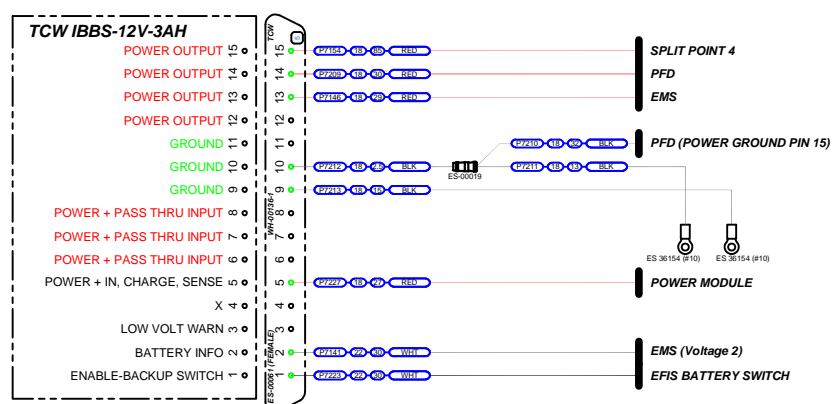
### PFD




### MFD



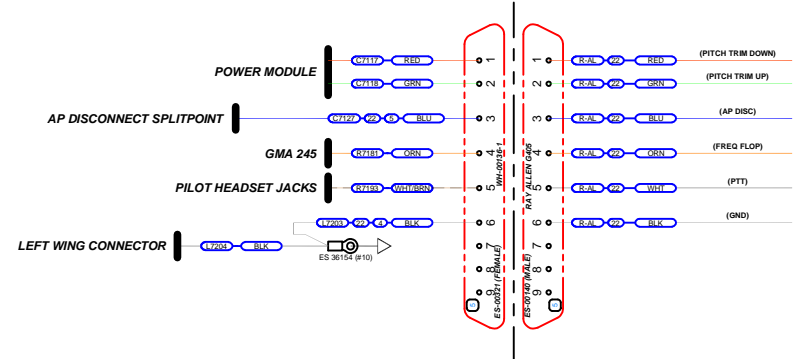
### EFIS BATTERY



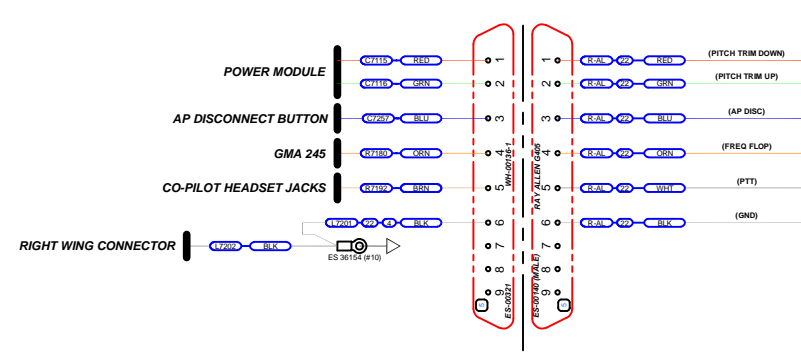
	<b>VAN'S AIRCRAFT, INC.</b> 14401 NE KEIL RD. NI AURORA, OR 97002 USA	
	<b>ROTAX 912IS G3X NAVCOM          ELECTRICAL SYSTEM</b>	
DATE DRAWN: 04/06/2018	UNITS: INCHES	WH-00136-1
DRAWN BY: T. DE MAN	TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)	SCALE: NONE PAGE: 2 OF 11
<small>DATA FILE: ENAME: C:\N\17\Systems\10\Electrical System\10\Electrical System 012S NavCom (RML)0118.1.DWG</small>		<small>C:\S17F ORIGINAL</small>

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
R0	SEE PG 1		

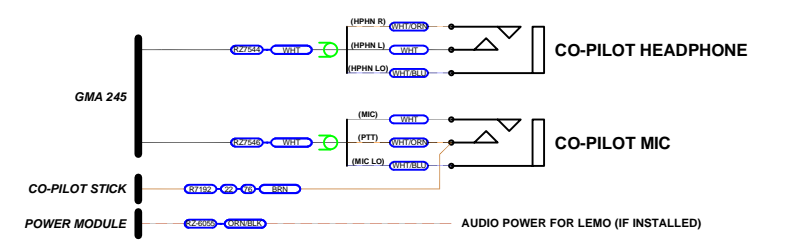
### PILOT STICK GRIP



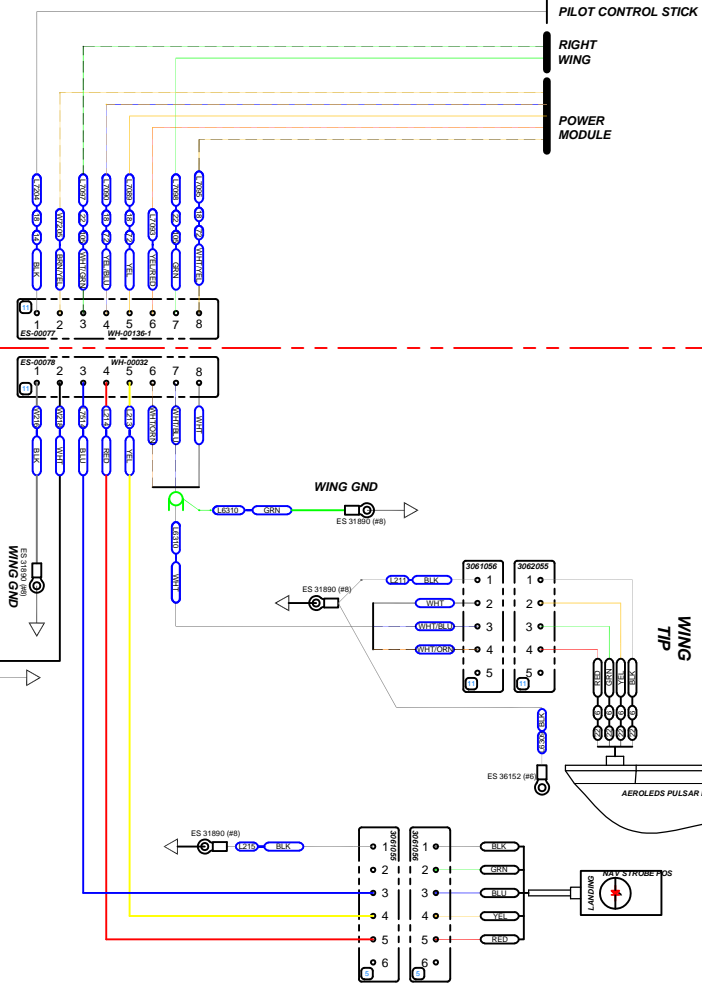
### CO-PILOT STICK GRIP



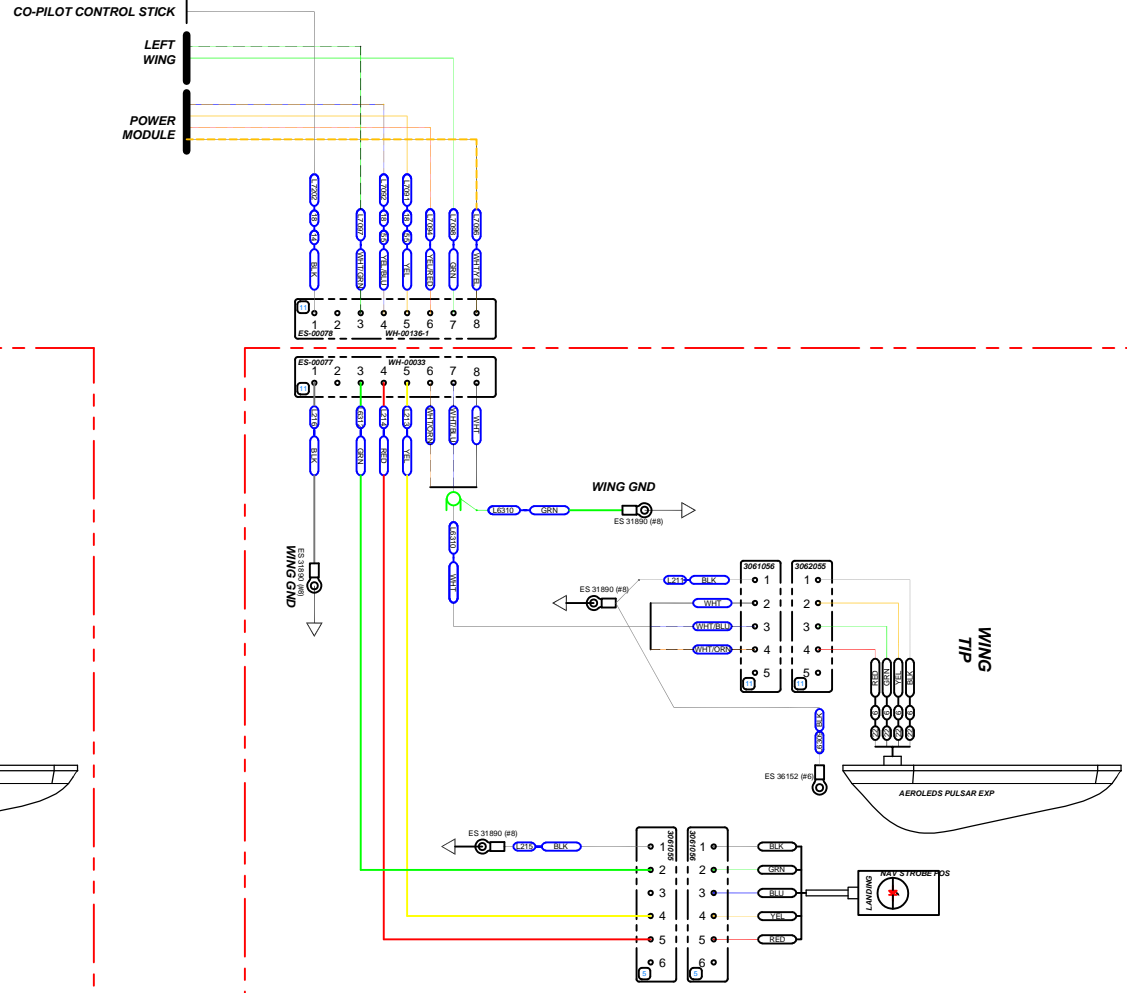
### CO-PILOT HEADSET JACKS



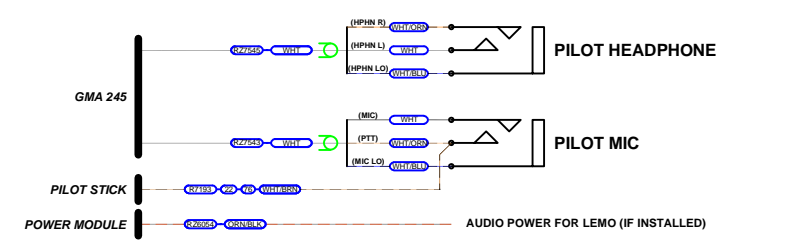
### LEFT WING CONNECTOR



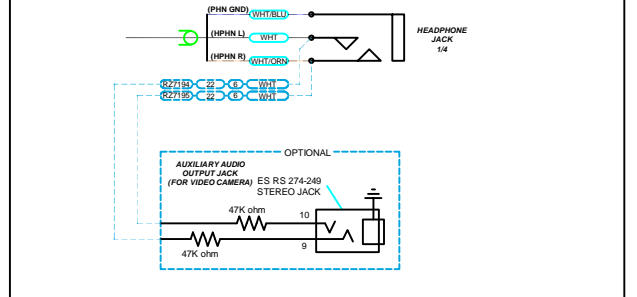
### RIGHT WING CONNECTOR



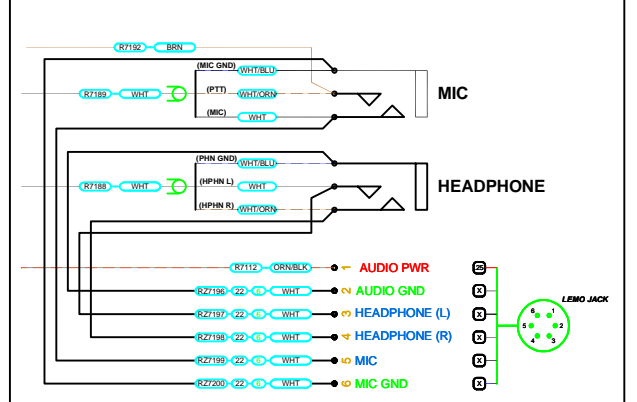
### PILOT HEADSET JACKS



### OPTIONAL AUDIO OUTPUT




### OPTIONAL LEMO JACK



THESE COMPONENTS NOT INCLUDED IN AVIONICS KIT, NOR PART OF THE WH-00136-1. SEE WH-00032 AND WH-00033 RV-12IS WING HARNESS DRAWINGS.

THESE COMPONENTS NOT INCLUDED IN AVIONICS KIT, NOR PART OF THE WH-00136-1. SEE WH-00032 AND WH-00033 RV-12IS WING HARNESS DRAWINGS.



**VAN'S AIRCRAFT, INC.**

14401 NE KEIL RD. NI  
AURORA, OR  
97002 USA

**ROTAX 912IS G3X NAVCOM  
ELECTRICAL SYSTEM**

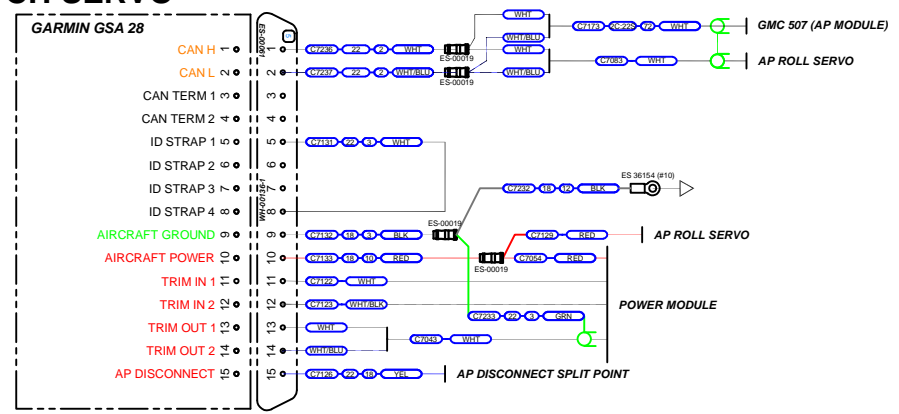
DATE DRAWN: 04/06/2018		UNITS: INCHES	
DRAWN BY: T. DE MAN		WH-00136-1	
TOLERANCES: NONE		SCALE: NONE	
(UNLESS OTHERWISE SPECIFIED)		PAGE: 3 OF 11	

DATELEN ENAME: C:\RV-12\Systems\RV12Electrical System\RV12IS NavCom\RM-00136-1.DWG C:\S17F ORIGINAL

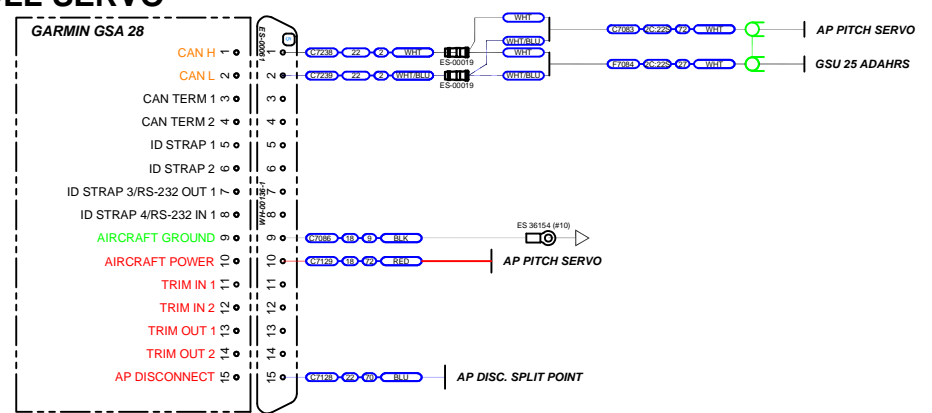


REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
R0	SEE PG 1		

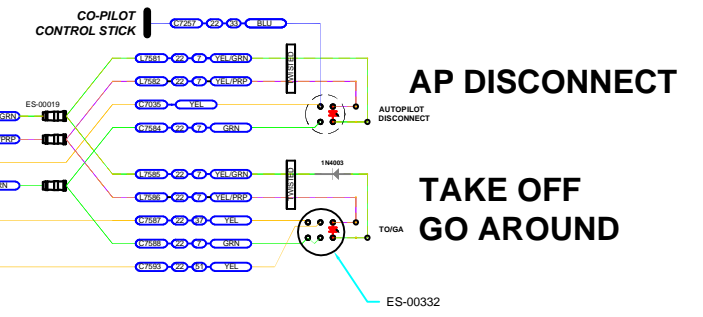
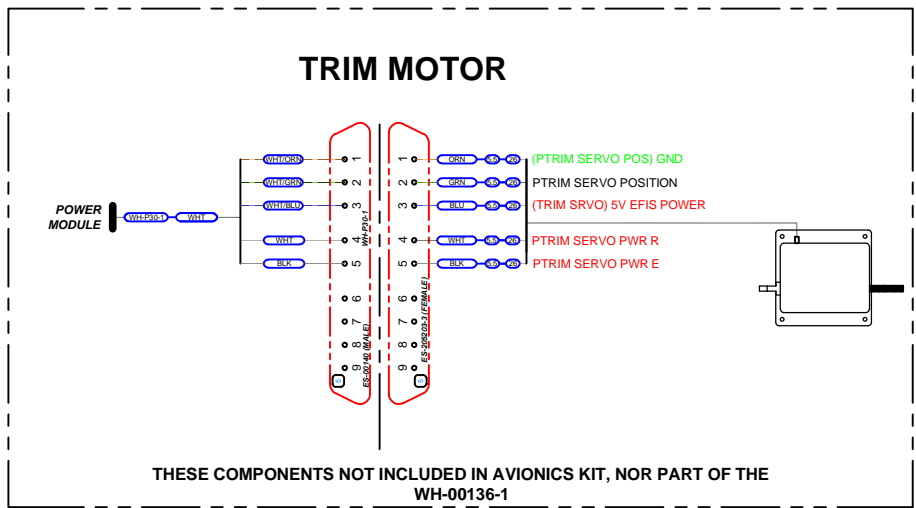
### AUTOPILOT PITCH SERVO



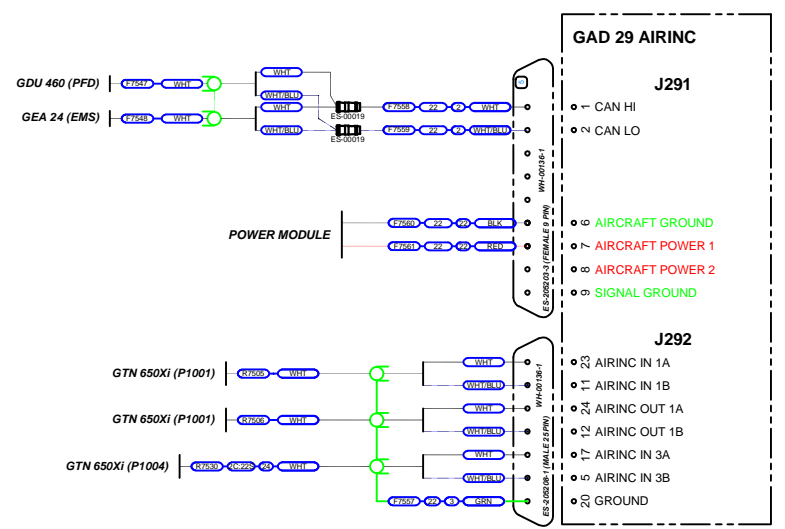
### AUTOPILOT ROLL SERVO



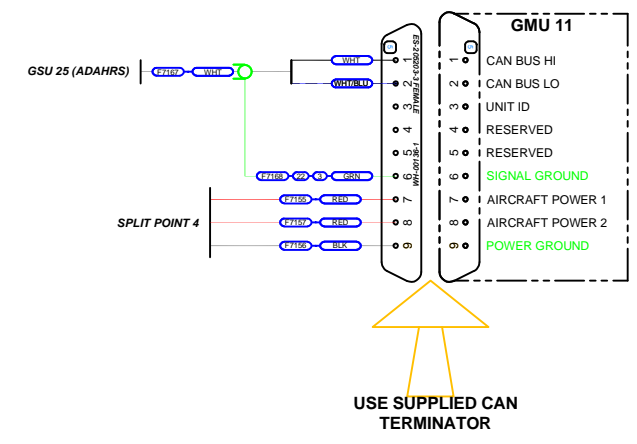
### TRIM MOTOR



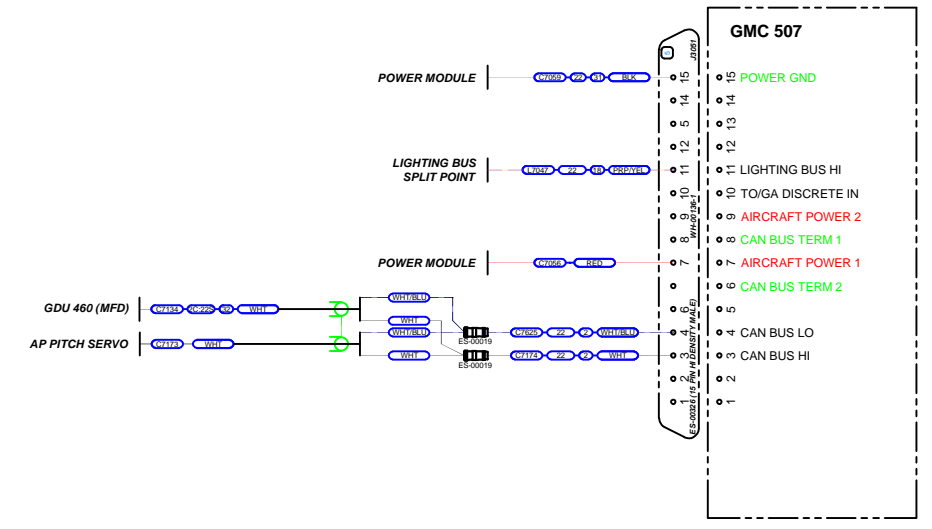
### DATA BUS ADAPTER




### MAGNETOMETER



### AP MODULE

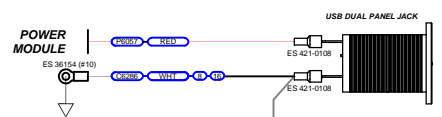


	<b>VAN'S AIRCRAFT, INC.</b> 14401 NE KEIL RD. NI AURORA, OR 97002 USA	
	<b>ROTAX 912IS G3X NAVCOM          ELECTRICAL SYSTEM</b>	
DATE DRAWN: 04/06/2018 DRAWN BY: T. DE MAN TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)	UNITS: <b>INCHES</b>	<b>WH-00136-1</b>
	SCALE: NONE	PAGE: 5 OF 11
DATE/REV: ENAME: C:\REV_17\Systems_VR\Electrical System_VR\Electrical System 912IS NavCom (RML)00136-1.DWG		C:\S17F ORIGINAL

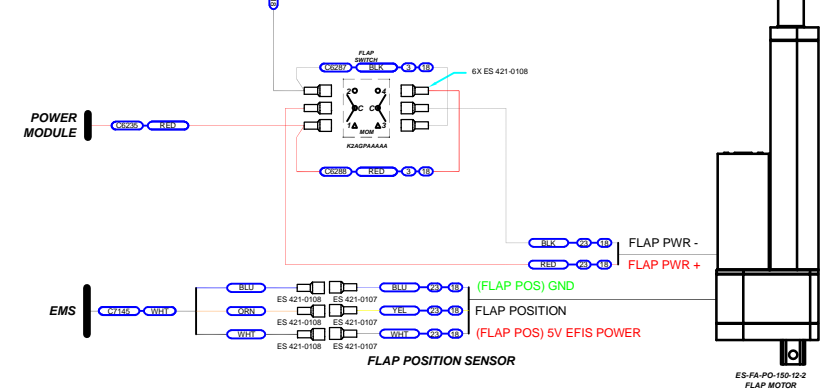


REVISIONS			
REV	DESCRIPTION	DATE	APPROVE
R0	SEE PG 1		

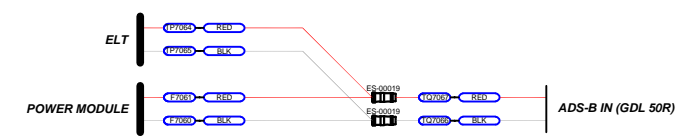
### POWER OUTLET



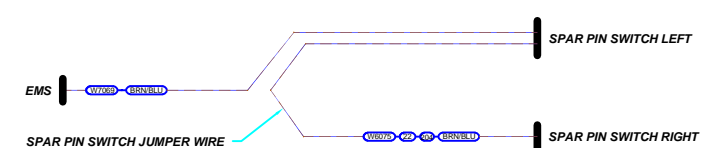
### FLAP MOTOR



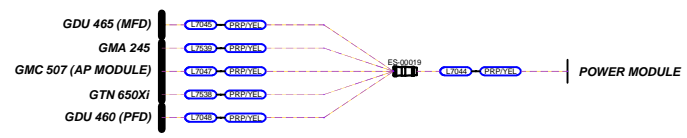
### SPLIT POINT 5



### SPLIT POINT 1



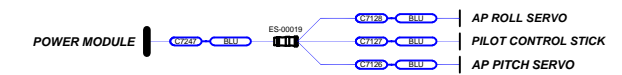
### LIGHTING BUS SPLIT



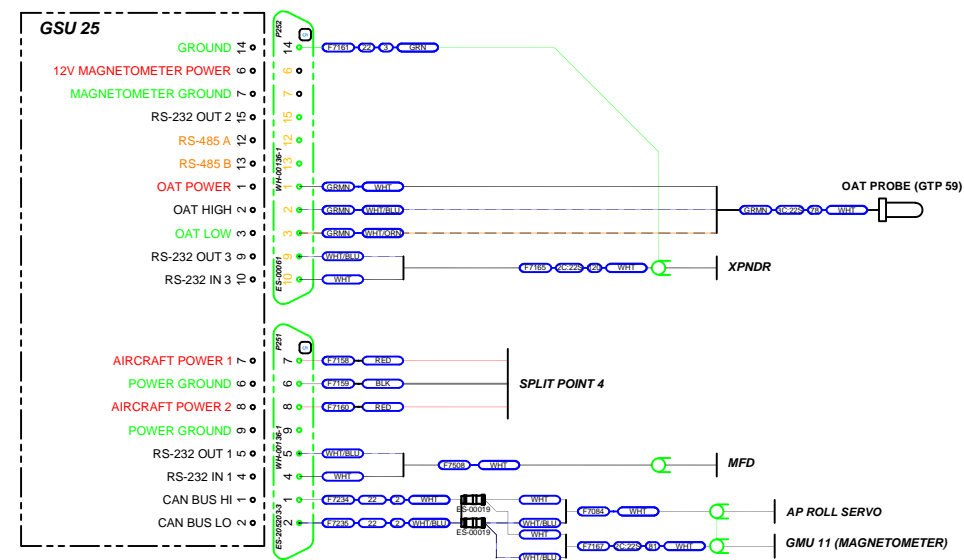
### SPLIT POINT 4



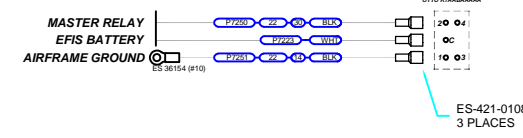
### AUTOPILOT DISC. SPLIT POINT



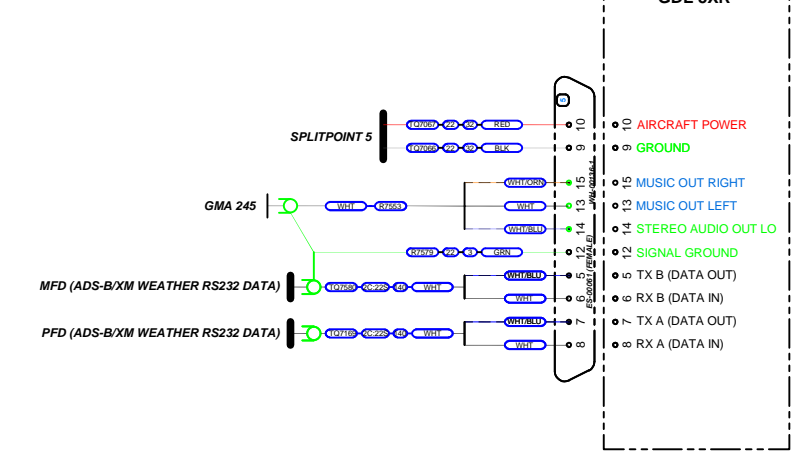
### ADAHRS



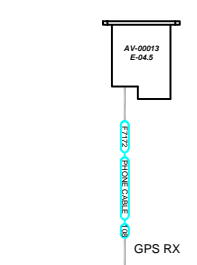
### EFIS BATTERY SWITCH



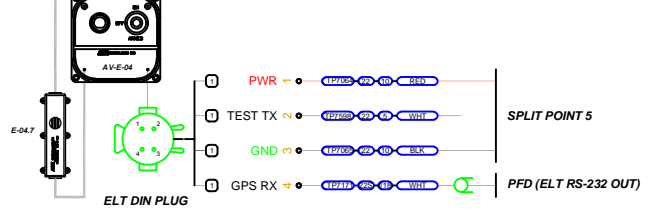
### ADS-B IN



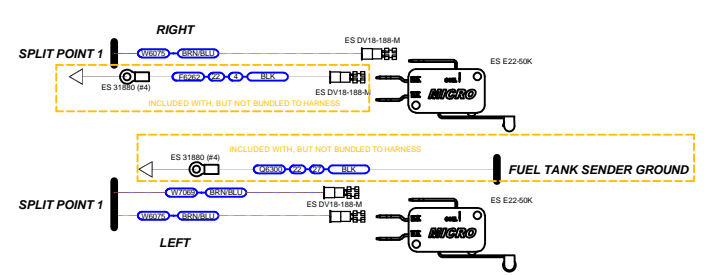
### ELT REMOTE



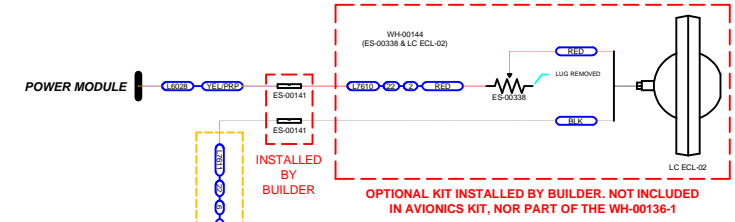
### ELT



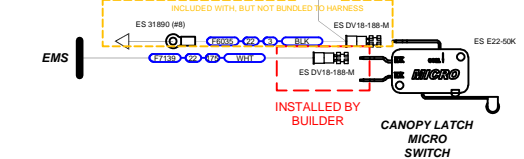
### SPAR PIN SWITCHES



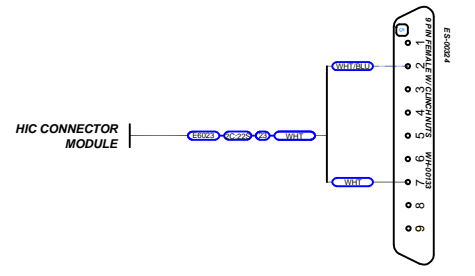
### CABIN LIGHT & DIMMER



### CANOPY SWITCH



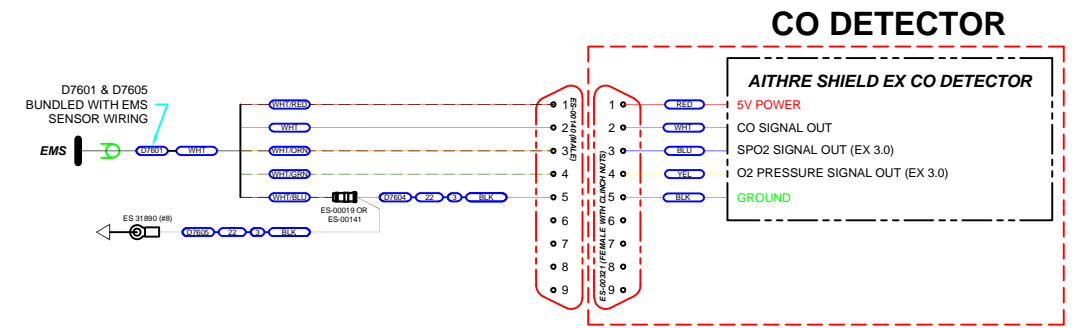
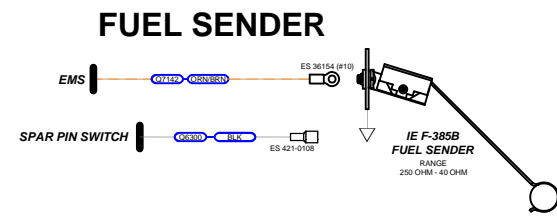
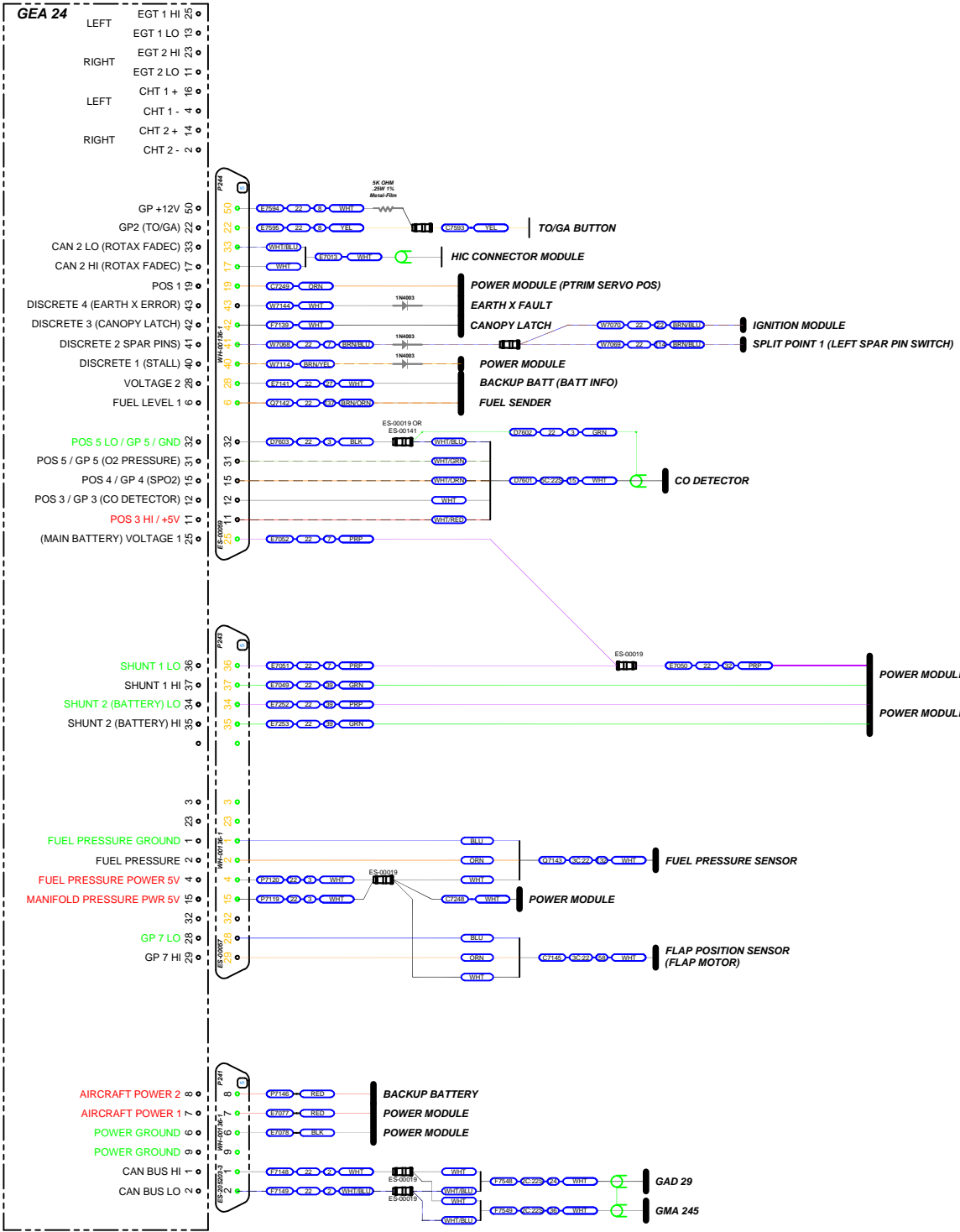
### 912iS MAINT PORT



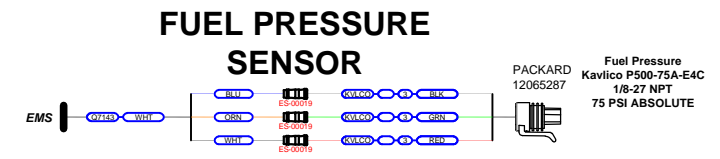
	VAN'S AIRCRAFT, INC. 14401 NE KEIL RD. NI AURORA, OR 97002 USA	
	<b>ROTAX 912iS G3X NAVCOM ELECTRICAL SYSTEM</b>	
DATE DRAWN: 04/06/2018	INCHES	WH-00136-1
DRAWN BY: T. DE MAN	SCALE: NONE	PAGE: 6 OF 11
TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)	C-S17F ORIGINAL	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
R0	SEE PG 1		

# EMS



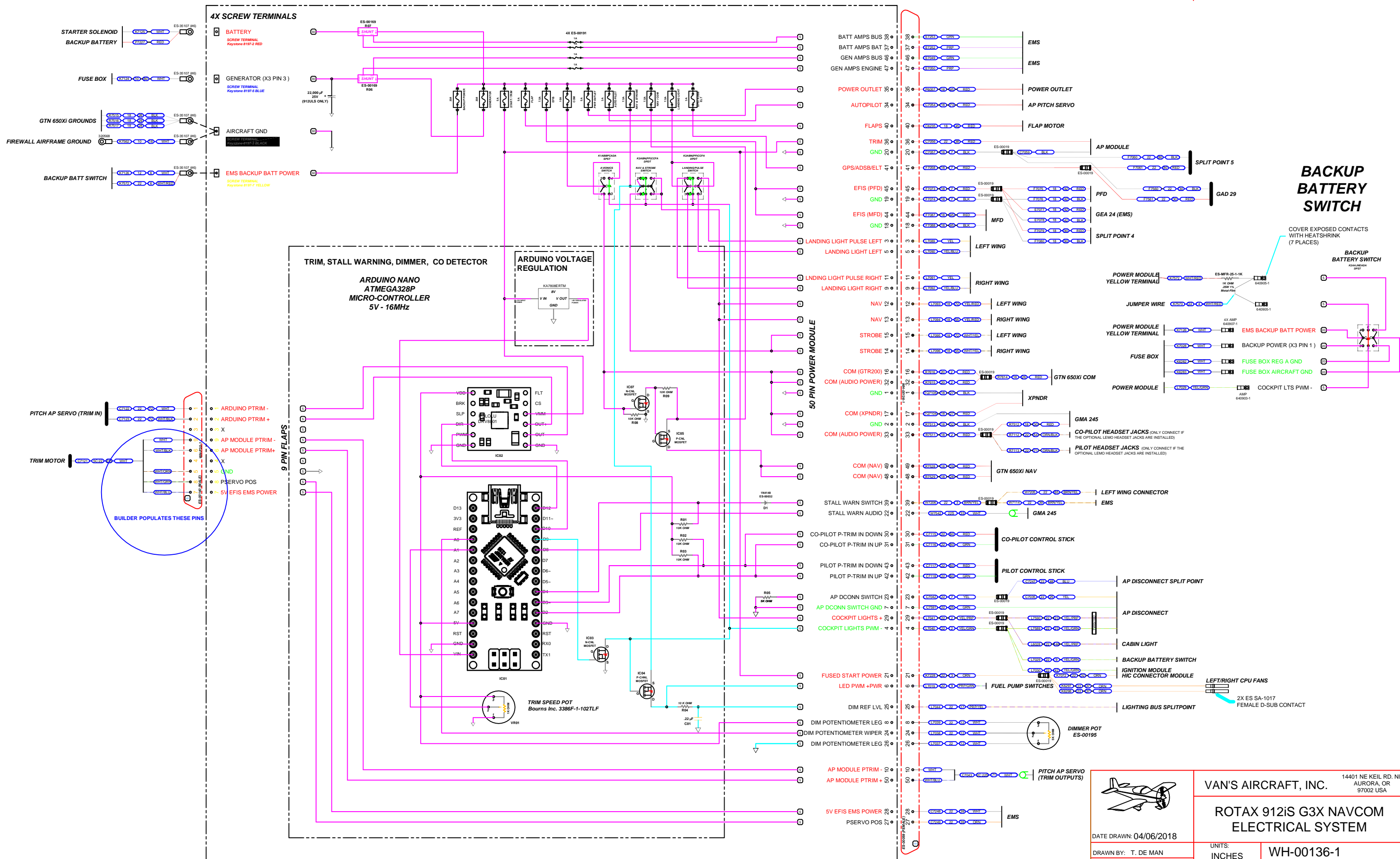
OPTIONAL KIT INSTALLED BY BUILDER. NOT INCLUDED IN AVIONICS KIT, NOR PART OF THE WH-00136-1



	<b>VAN'S AIRCRAFT, INC.</b> 14401 NE KEIL RD. NI AURORA, OR 97002 USA	
	<b>ROTAX 912IS G3X NAVCOM          ELECTRICAL SYSTEM</b>	
DATE DRAWN: 04/06/2018 DRAWN BY: T. DE MAN TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)	UNITS: <b>INCHES</b>	<b>WH-00136-1</b>
	SCALE: NONE	PAGE: 7 OF 11
<small>DATA FILE NAME: C:\REV_17\System_VR\Electrical System_VR\Electrical System 012IS NavCom_R040118.11.DWG C:\S17F ORIGINAL</small>		

# POWER MODULE iS-ULS PCB V3.4

REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
R0	SEE PG 1		



**VAN'S AIRCRAFT, INC.** 14401 NE KEIL RD. NI AURORA, OR 97002 USA

**ROTAX 912IS G3X NAVCOM ELECTRICAL SYSTEM**

DATE DRAWN: 04/06/2018  
 DRAWN BY: T. DE MAN  
 TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)

UNITS: INCHES  
 SCALE: NONE

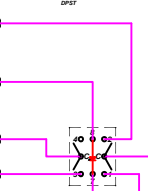
WH-00136-1  
 PAGE: 8 OF 11

C-S17F ORIGINAL

## BACKUP BATTERY SWITCH

COVER EXPOSED CONTACTS WITH HEATSHRINK (7 PLACES)

### BACKUP BATTERY SWITCH



CO-PILOT HEADSET JACKS (ONLY CONNECT IF THE OPTIONAL LEMO HEADSET JACKS ARE INSTALLED)

PILOT HEADSET JACKS (ONLY CONNECT IF THE OPTIONAL LEMO HEADSET JACKS ARE INSTALLED)

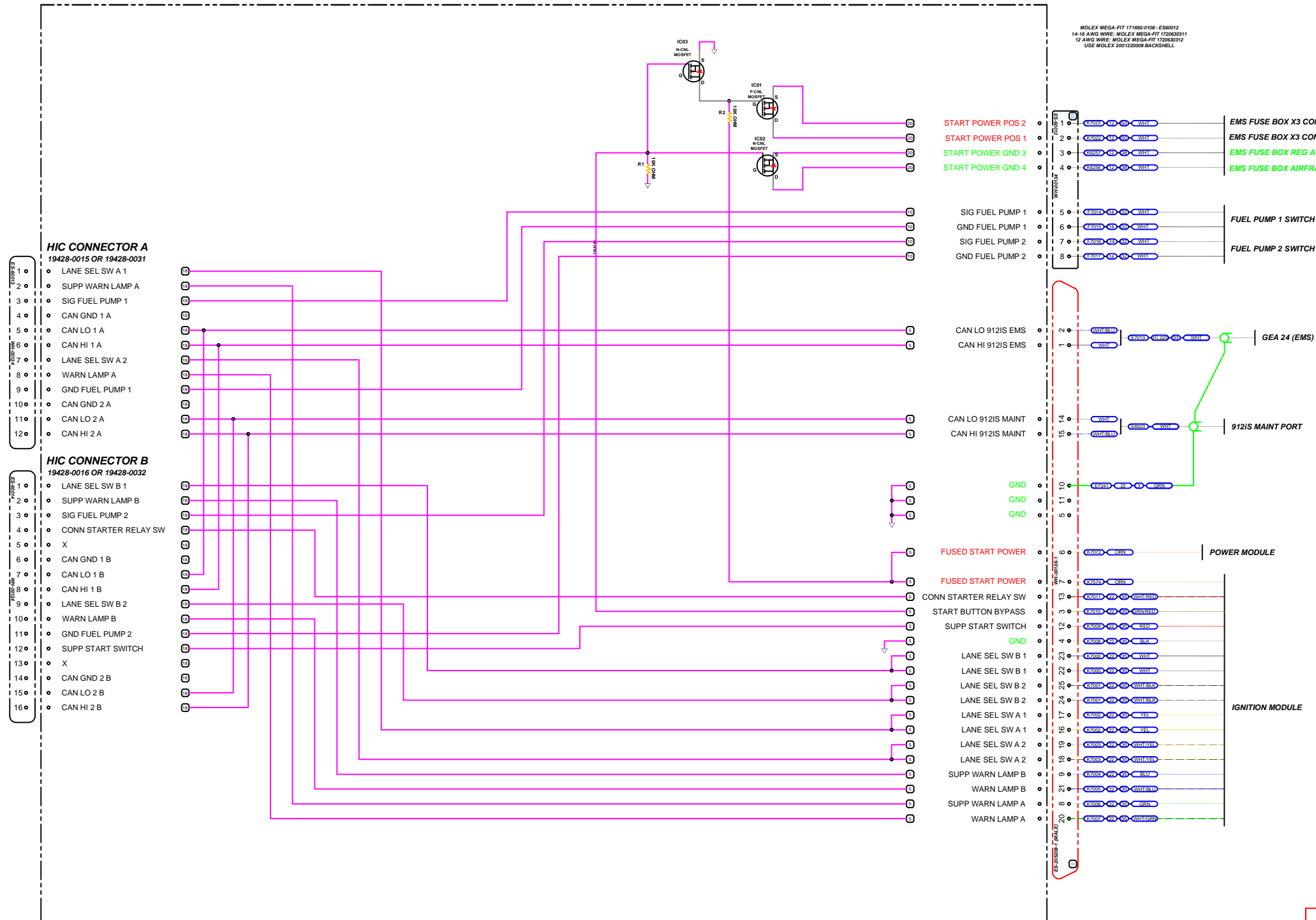
LEFT/RIGHT CPU FANS  
 2X ES SA-1017 FEMALE D-SUB CONTACT

DIMMER POT  
 ES-00195

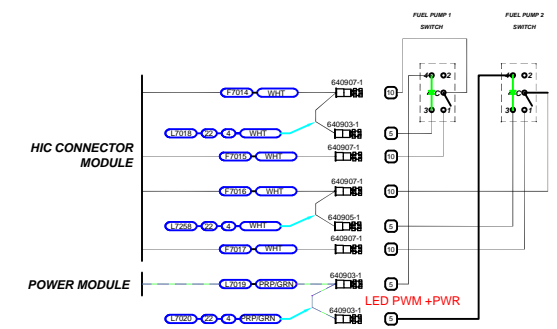



# HIC CONNECTOR MODULE IS PCB ES-60009

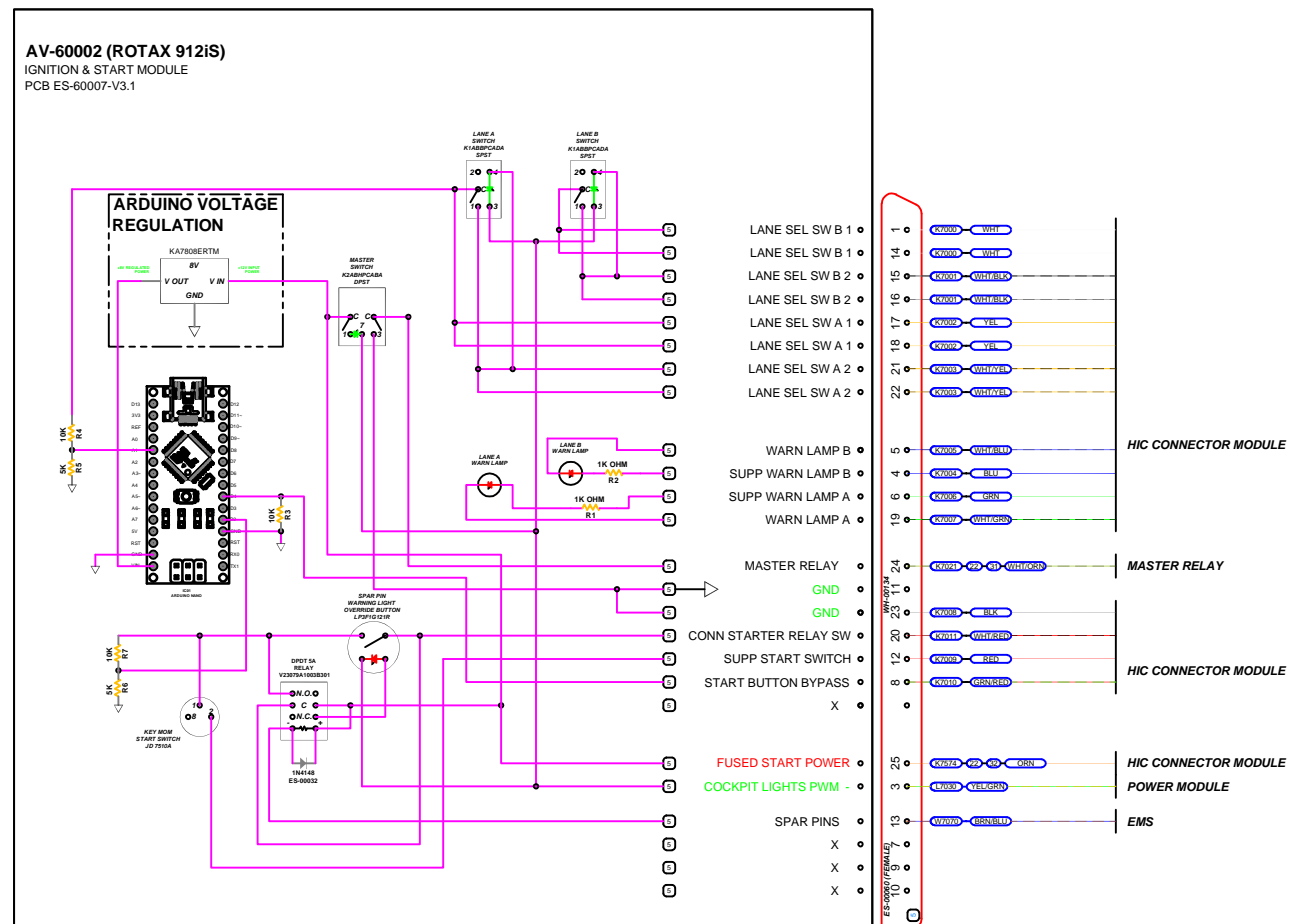
REVISIONS			
REV	DESCRIPTION	DATE	APPROVE
R0	SEE PG 1		




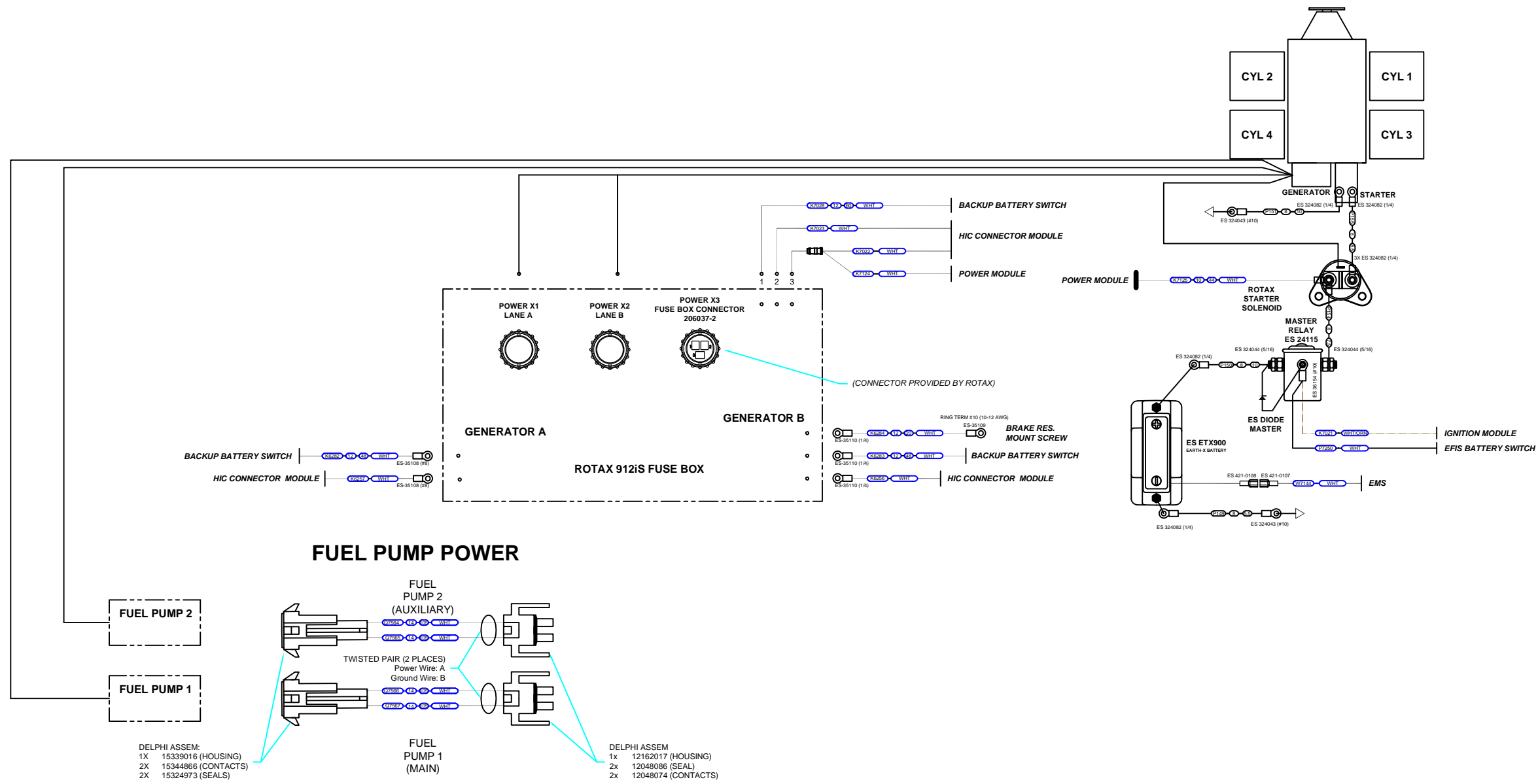
## FUEL PUMP SWITCHES




	<b>VAN'S AIRCRAFT, INC.</b> 14401 NE KEIL RD. NI AURORA, OR 97002 USA	
	<b>ROTAX 912IS G3X NAVCOM ELECTRICAL SYSTEM</b>	
DATE DRAWN: 04/06/2018 DRAWN BY: T. DE MAN TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)	UNITS: <b>INCHES</b>	<b>WH-00136-1</b>
SCALE: NONE	PAGE: 9 OF 11	©: S17F ORIGINAL



	<b>VAN'S AIRCRAFT, INC.</b> 14401 NE KEIL RD, NI AURORA, OR 97002 USA	
	<b>ROTAX 912iS G3X NAVCOM ELECTRICAL SYSTEM</b>	
DATE DRAWN: 04/06/2018	UNITS: INCHES	<b>WH-00136-1</b>
DRAWN BY: T. DE MAN	TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)	SCALE: NONE    PAGE: 10 OF 11
<small>DATELEN ENAME: C:\REV\173\System\173\Electrical System\173\Electrical System\912iS NavCom\RAW\2018\11\DWG\C-S17F ORIGINAL</small>		



 DATE DRAWN: 04/06/2018 DRAWN BY: T. DE MAN TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)	<b>VAN'S AIRCRAFT, INC.</b> 14401 NE KEIL RD. NI AURORA, OR 97002 USA	
	<b>ROTAX 912iS G3X NAVCOM ELECTRICAL SYSTEM</b>	
UNITS: <b>INCHES</b>	<b>WH-00136-1</b>	
SCALE: NONE PAGE: 11 OF 11	C-S17F ORIGINAL	