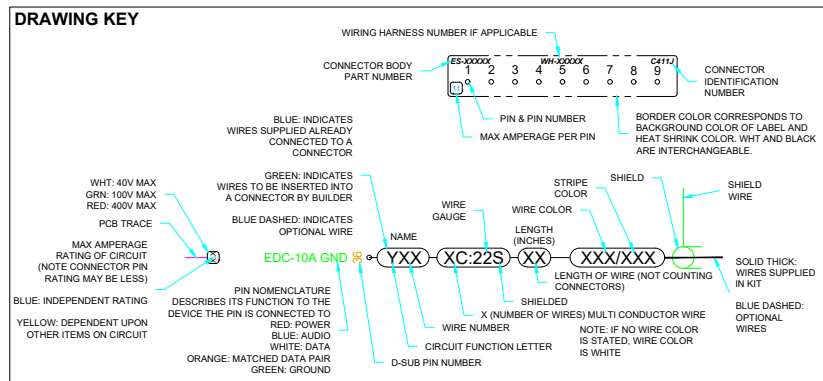


REV		DESCRIPTION	DATE	APPROVED
R0	INITIAL RELEASE, UPDATED AV-60009 HIC MODULE TO AV-60009-2, MINOR CORRECTIONS, FIXED FILE PATH		06/21/22	TK

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-SA01017 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. SkyView Check PFD and MFD recognize a USB stick
  3. Install latest software and settings per the readme files (applicable portions) on the Van's Web Site
    - a. Setup X Pndr Hex Code
    - b. Setup AP servos if installed
  4. Check PFD & MFD recognize all LRU's
  5. Check X pndr will transmit.
  6. Check COM turns on.
  7. Check PFD recognizes COM, and can push frequencies to COM radio
  8. Check Backup Battery Function PFD
  9. If installed check AP Control Head function (knobs function for SkyView as well)

- Audio Group**
1. Configure COM radio in accordance with "GTR 200B Internal Presets" or "Trig TY96 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

**GTR 200B INTERNAL PRESETS**

- "MENU" BUTTON OPTIONS**
- MUSIC VOL 75%
  - ICS VOL 80%
  - ICS SQLCH AUTO
  - COM MUTE ON
  - COM MUTE ICS OFF
  - ICS MUTE MUSIC OFF
  - MUTE LEVEL FULL
  - COM 3D ON
  - ICS 3D ON
  - COCKPIT NOISE NORMAL
  - MUSIC BASE BOOST OFF
  - MUSIC EQ OFF
  - KEY BEEP VOL 50%
  - CONTRAST +0

**INTERNAL MENU SETTINGS**

- SIDETONE 05
- MIC GAIN 05
- RF SQLCH 00
- MON SWAP ON
- INTERCOM ENABLE YES
- RECIEVE OUT GAIN 100%
- AUX 1 SQLCH 30%
- AUX 1 VOL 50%
- AUX 1 MUTE NO
- AUX 2 SQLCH 30%
- AUX 2 VOL 50%
- AUX 2 MUTE NO
- PILOT RT NO

**SOFTKEY SETUP**

- 1 USER LISTS
- 2 TUNE EMERGENCY

**DISCRETE SETUP**

- 1 FREQ SWAP
- 2 DISABLED

LIGHTING SOURCE 14V

**GTR 200 PRESET NOTES:**

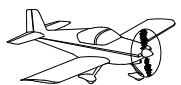
- ALL SETTINGS NOT DEFINED BY THIS DRAWING ARE ACCEPTABLE AS CONFIGURED FROM MANUFACTURER.
- THE ABOVE SETTINGS CORRESPOND TO SOFTWARE SYS 2.60.

**TRIG TY96 INTERNAL PRESETS**

- INTERCOM VOLUME:
- AUX IN VOLUME:
- MUSIC IN VOLUME:
- SIDETONE VOLUME:
- INTERCOM SQLCH:
- MIC 1 GAIN:
- MIC 2 GAIN:
- RADIO SQLCH:

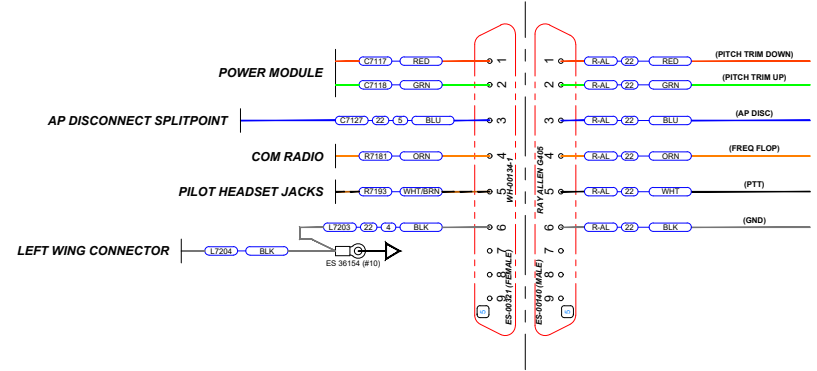
**TY96 PRESET NOTES:**

- SET FREQUENCY STEP SIZE APPROPRIATE FOR REGION.
- ALL SETTINGS NOT DEFINED BY THIS DRAWING ARE ACCEPTABLE AS CONFIGURED FROM MANUFACTURER.

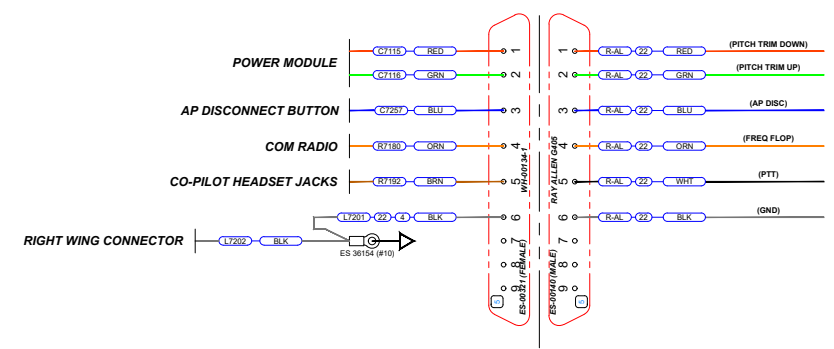
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	<b>ROTAX 912iS G3X ELECTRICAL SYSTEM</b>		
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DRAWN BY: T. DE MAN TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)	SCALE: NONE	PAGE: 1 OF 11	
PATH/FILENAME: Q:\Components\Electrical\Wiring Harness\WH-00134\Electrical System 912iS G3X (WH-00134-2).DWG			C-SIZE ORIGINAL



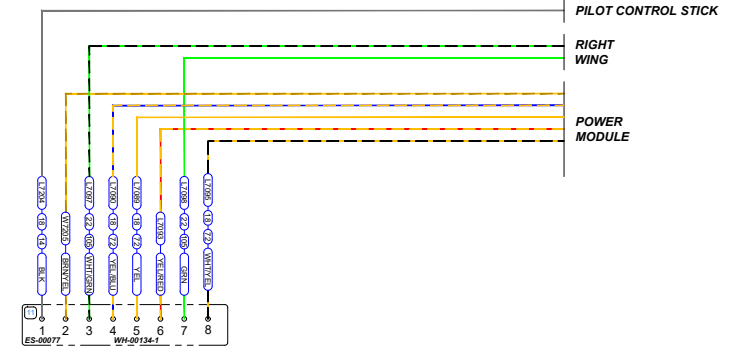
### PILOT STICK GRIP



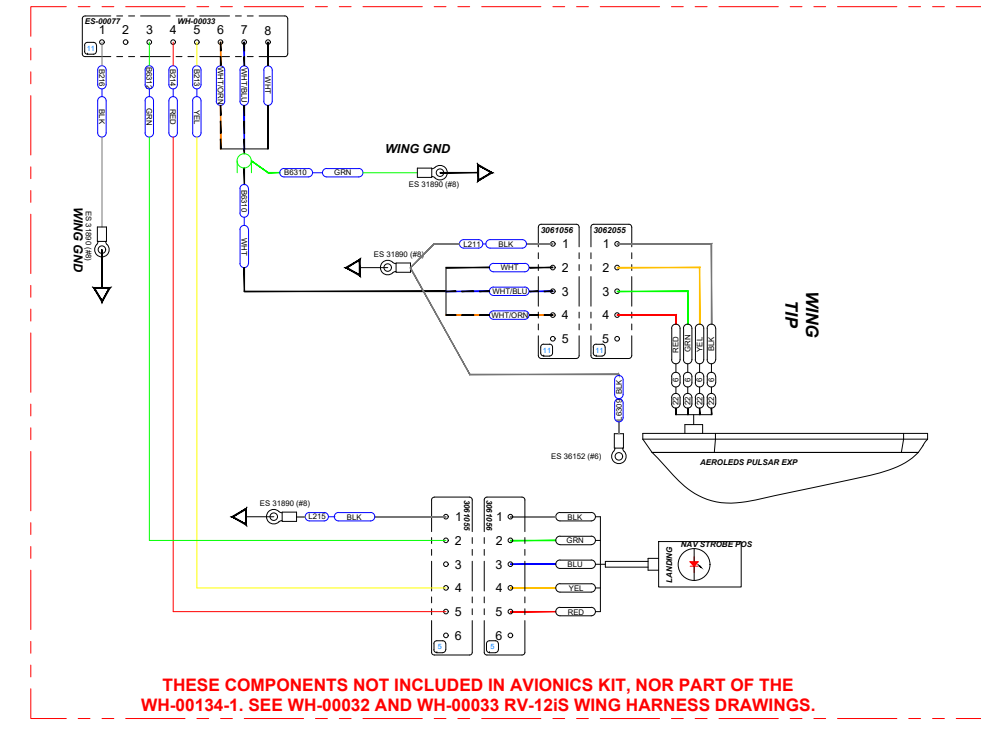
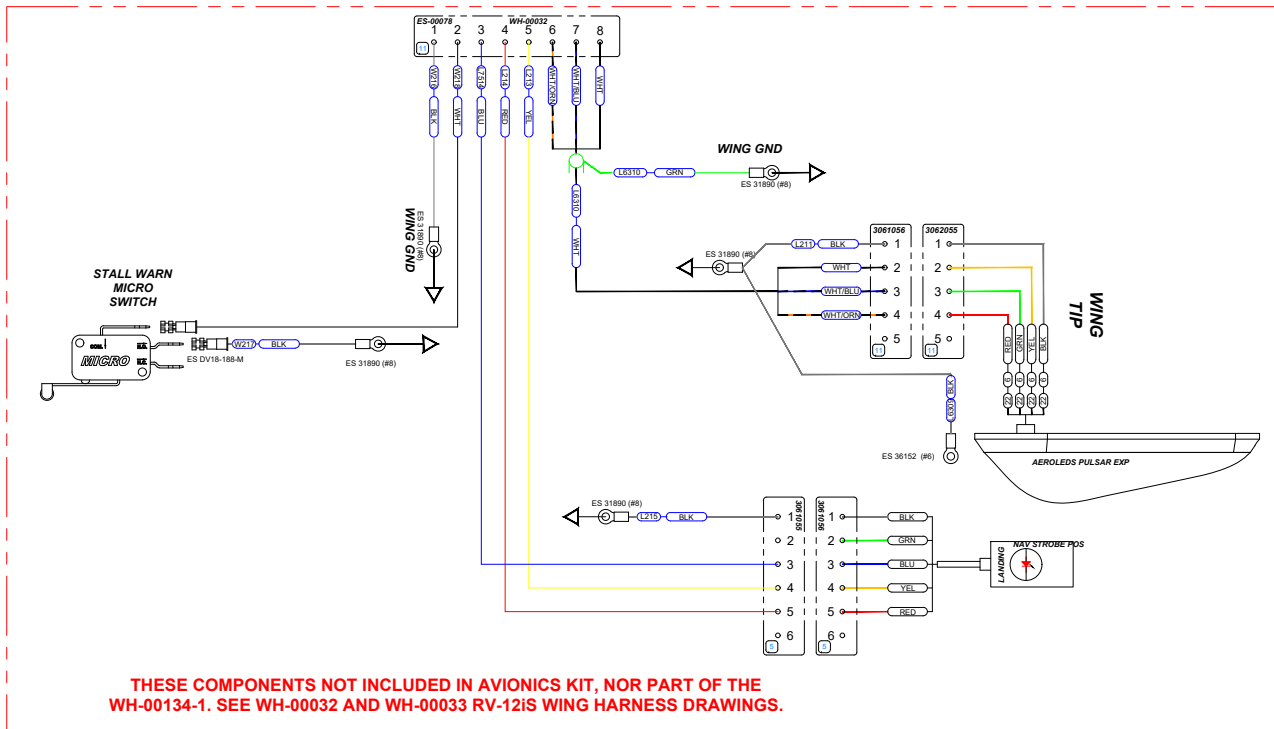
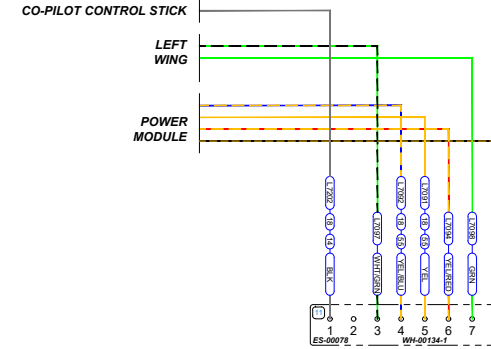
### CO-PILOT STICK GRIP



### LEFT WING CONNECTOR




### RIGHT WING CONNECTOR



THESE COMPONENTS NOT INCLUDED IN AVIONICS KIT, NOR PART OF THE WH-00134-1. SEE WH-00032 AND WH-00033 RV-12iS WING HARNESS DRAWINGS.

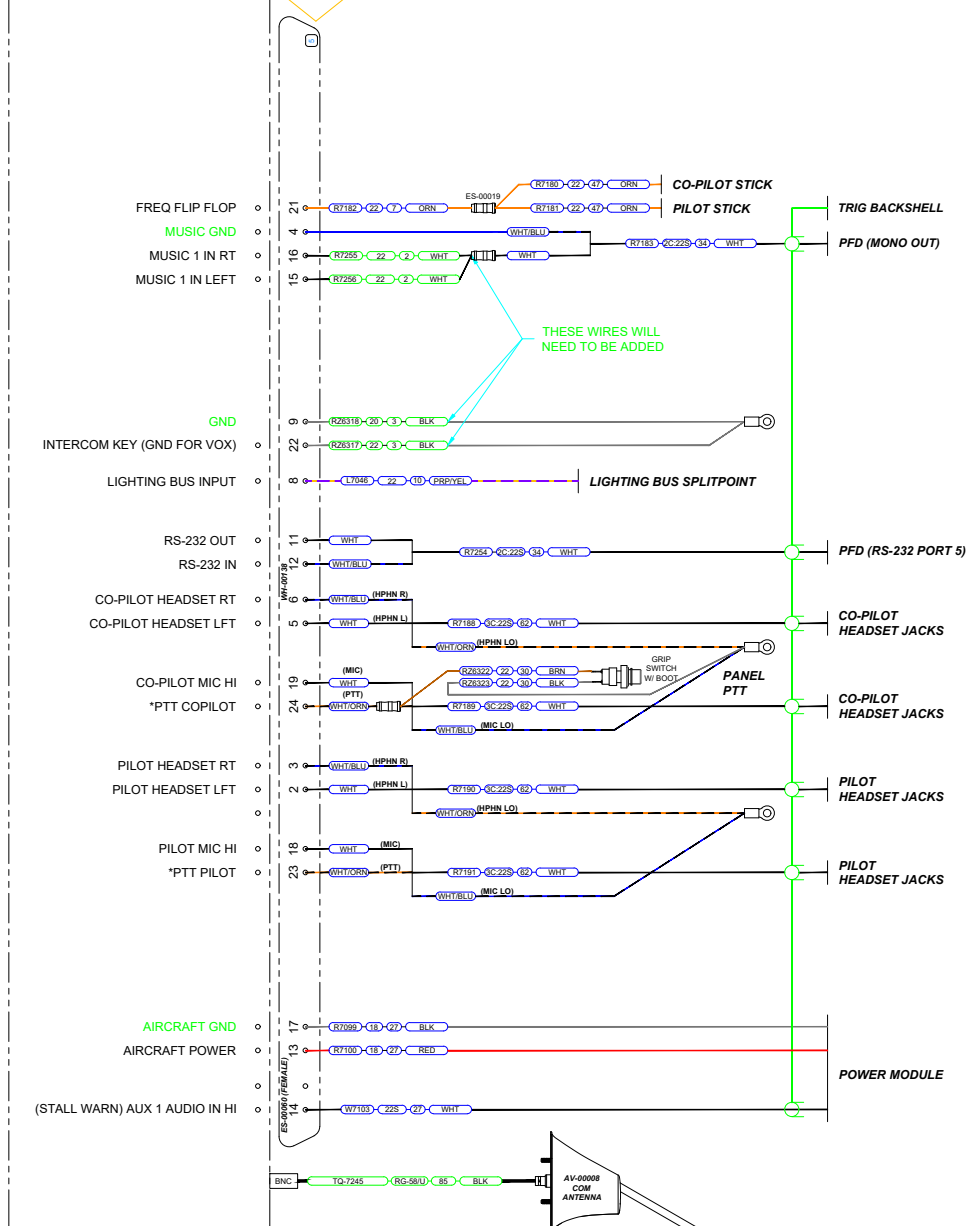
THESE COMPONENTS NOT INCLUDED IN AVIONICS KIT, NOR PART OF THE WH-00134-1. SEE WH-00032 AND WH-00033 RV-12iS WING HARNESS DRAWINGS.

	<b>VAN'S AIRCRAFT, INC.</b> 14401 NE KEIL RD. NE AURORA, OR 97002 USA	
	<b>ROTAX 912iS G3X ELECTRICAL SYSTEM</b>	
DATE DRAWN: 6/11/2018 DRAWN BY: T. DE MAN TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)	UNITS: <b>INCHES</b>	<b>WH-00134-2</b>
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USE TRIG BACKSHELL

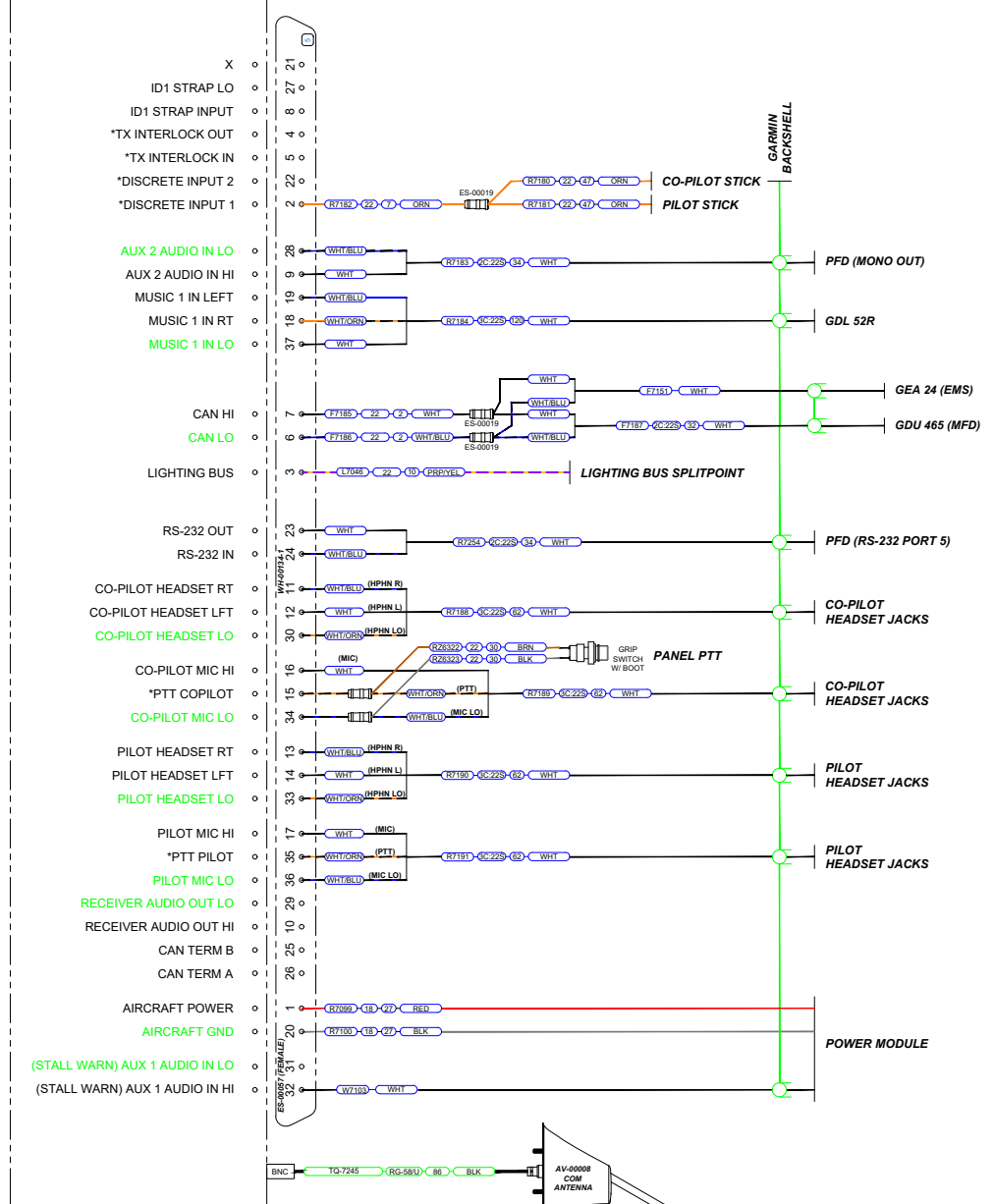
1. TRIG TY-96 USED FOR INTERNATIONAL AVIONICS KIT ONLY
2. COVER UNUSED PINS WITH HEAT SHRINK AND SECURE TO HARNESS NEAR TY96 CONNECTOR

### COM-RADIO - TRIG TY96

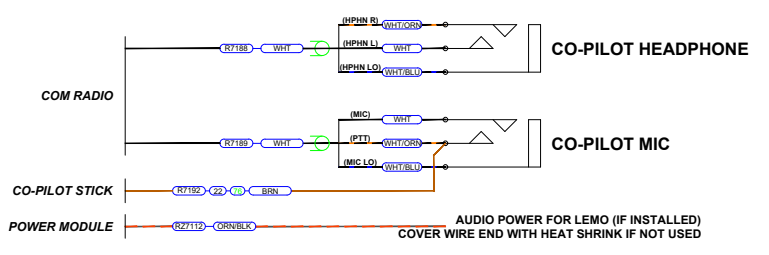


USE GARMIN BACKSHELL

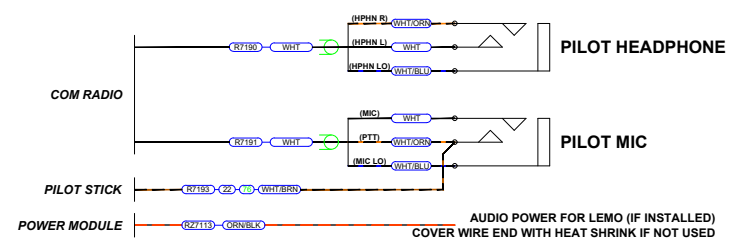
### COM RADIO - GTR 200B



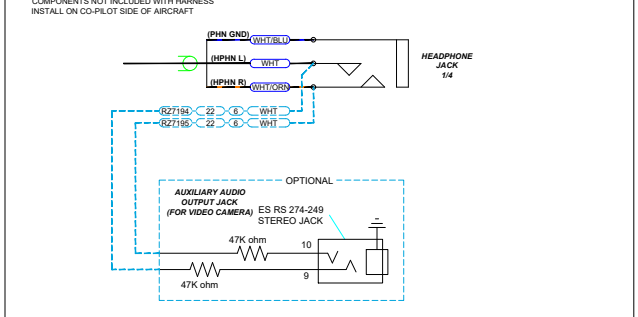
### CO-PILOT HEADSET JACKS



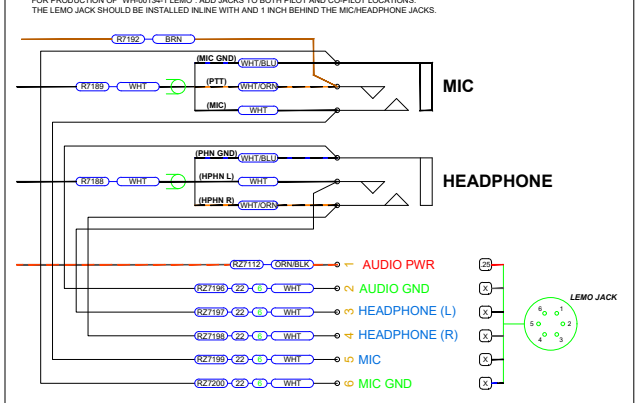
### PILOT HEADSET JACKS



### OPTIONAL AUDIO OUTPUT



### OPTIONAL LEMO JACK



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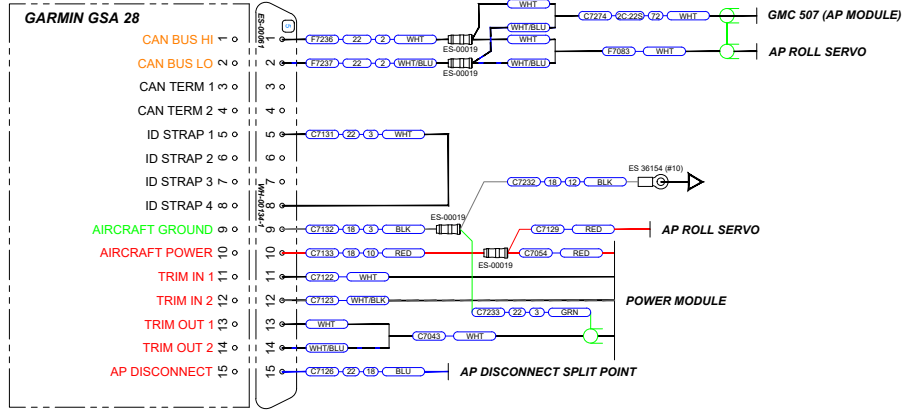
## ROTAX 912iS G3X ELECTRICAL SYSTEM

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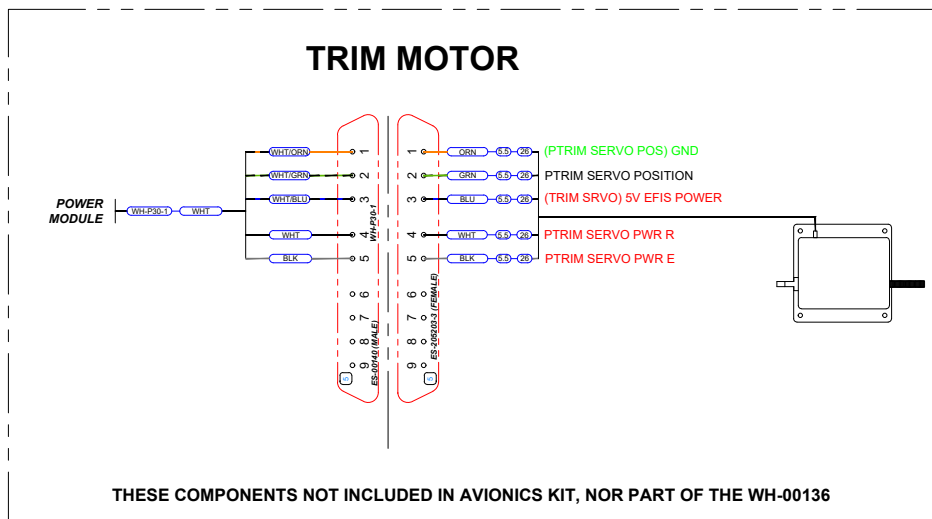
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TOLERANCES: NONE  
(UNLESS OTHERWISE SPECIFIED)

UNITS: INCHES  
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PAGE: 4 OF 11

### AUTOPILOT PITCH SERVO

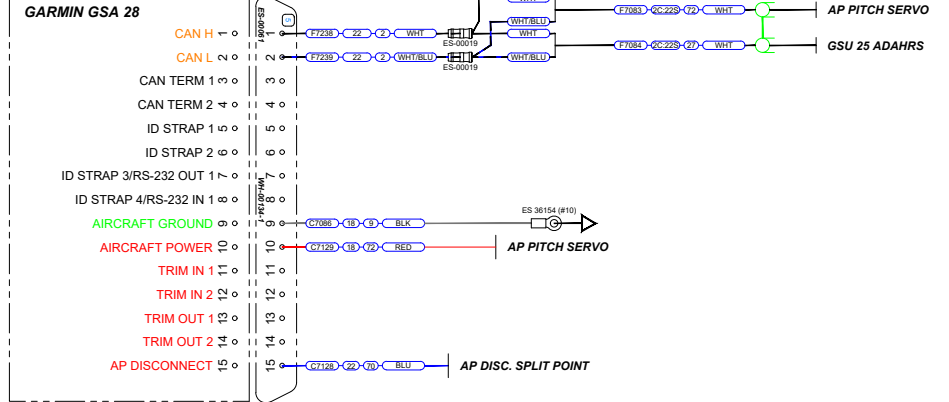


### TRIM MOTOR

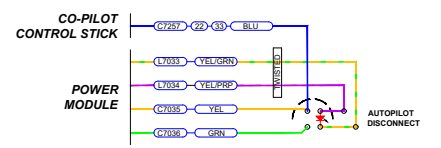


THESE COMPONENTS NOT INCLUDED IN AVIONICS KIT, NOR PART OF THE WH-00136

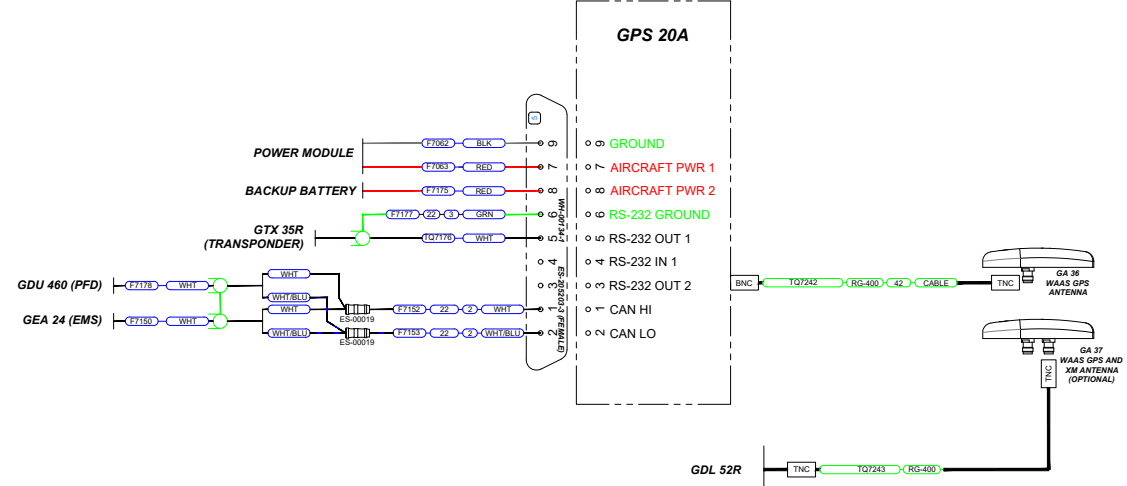
### AUTOPILOT ROLL SERVO



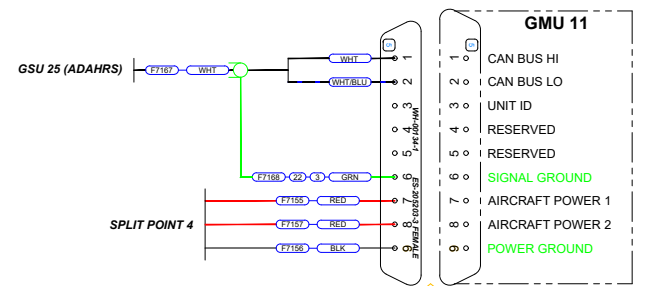
### AP DISCONNECT



### WAAS POSITION

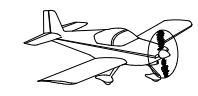
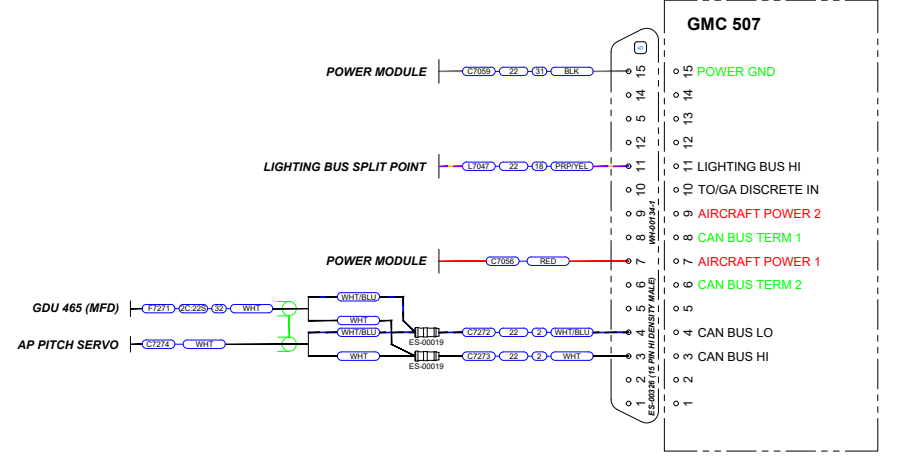


### MAGNETOMETER



USE SUPPLIED CAN TERMINATOR

### AP MODULE



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### ROTAX 912iS G3X ELECTRICAL SYSTEM

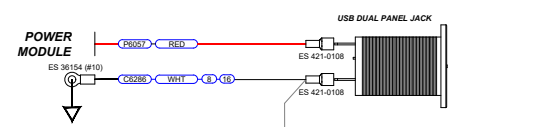
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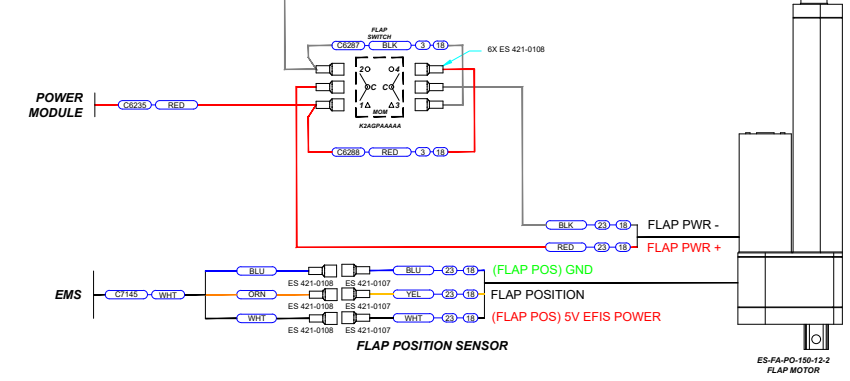
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WH-00134-2

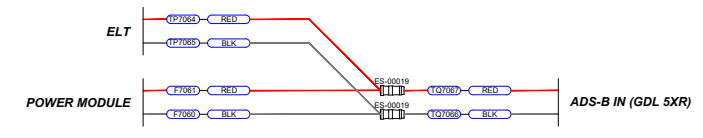
### POWER OUTLET



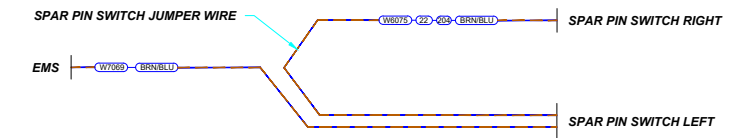
### FLAP MOTOR



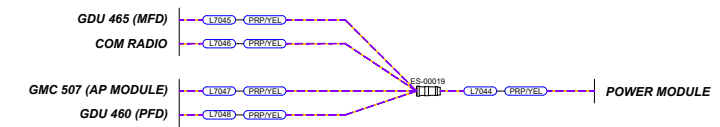
### SPLIT POINT 5



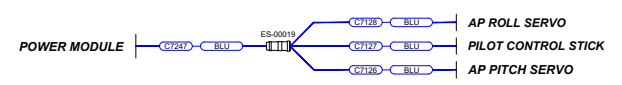
### SPLIT POINT 1



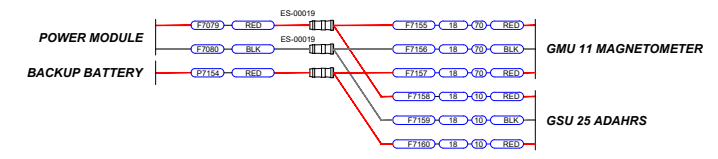
### LIGHTING BUS SPLIT



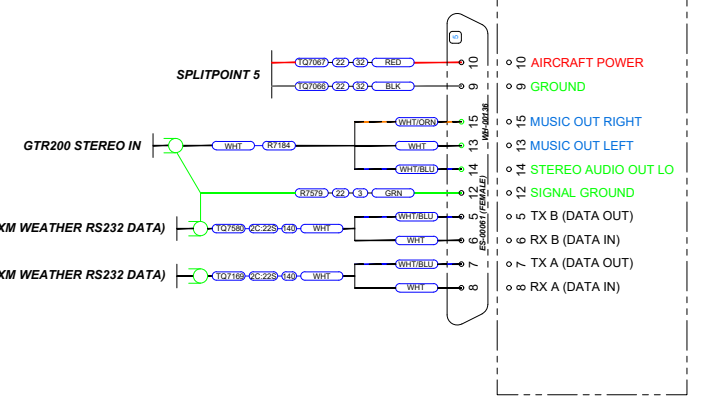
### AUTOPILOT DISC. SPLIT POINT



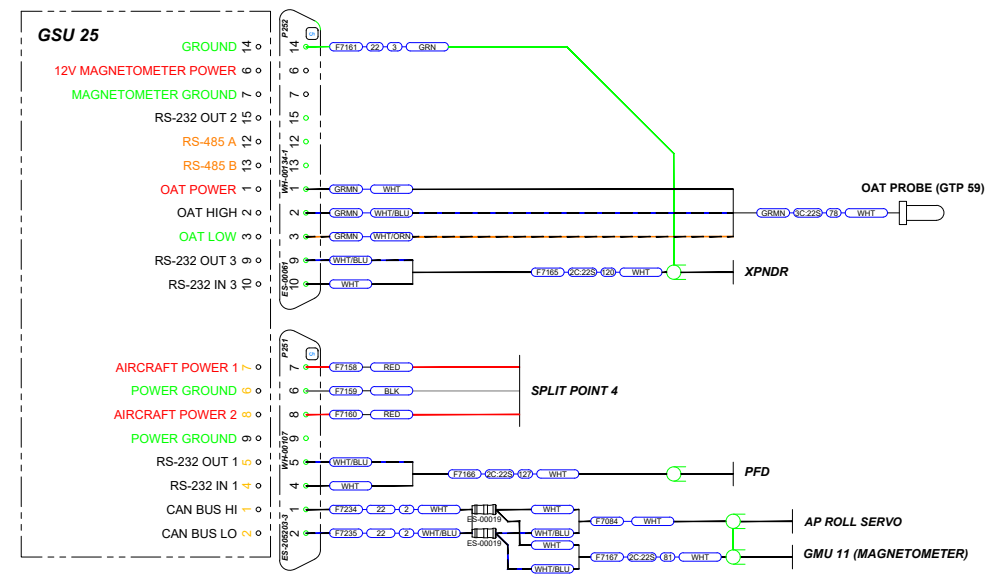
### SPLIT POINT 4



### ADS-B IN



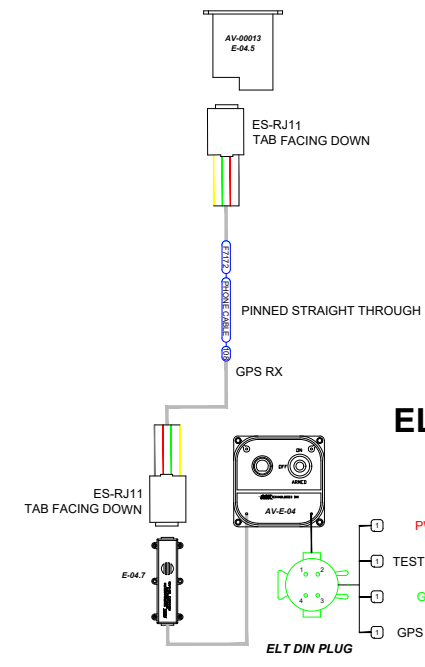
### ADAHRS



### EFIS BATTERY SWITCH

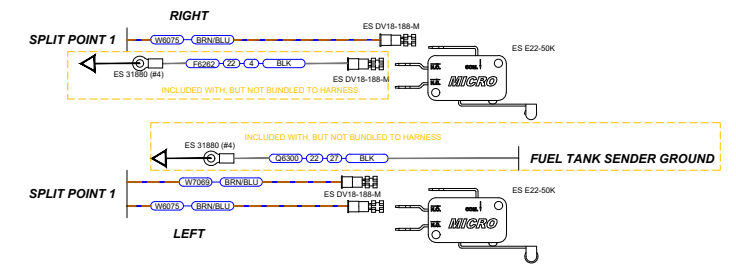


### ELT REMOTE

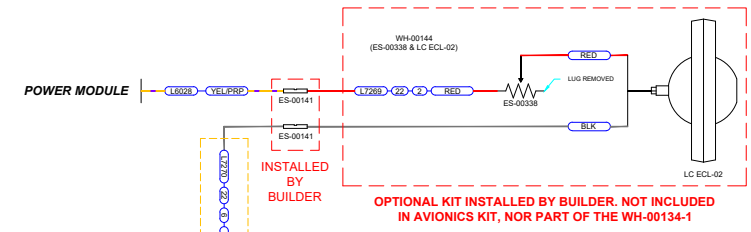


### ELT

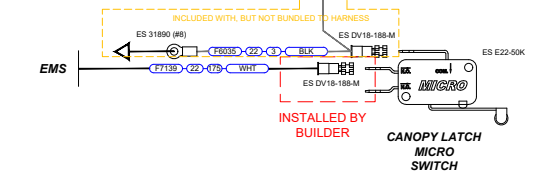
### SPAR PIN SWITCHES



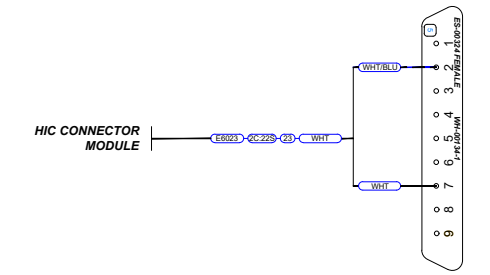
### CABIN LIGHT & DIMMER




### CANOPY SWITCH



### 912IS MAINT PORT





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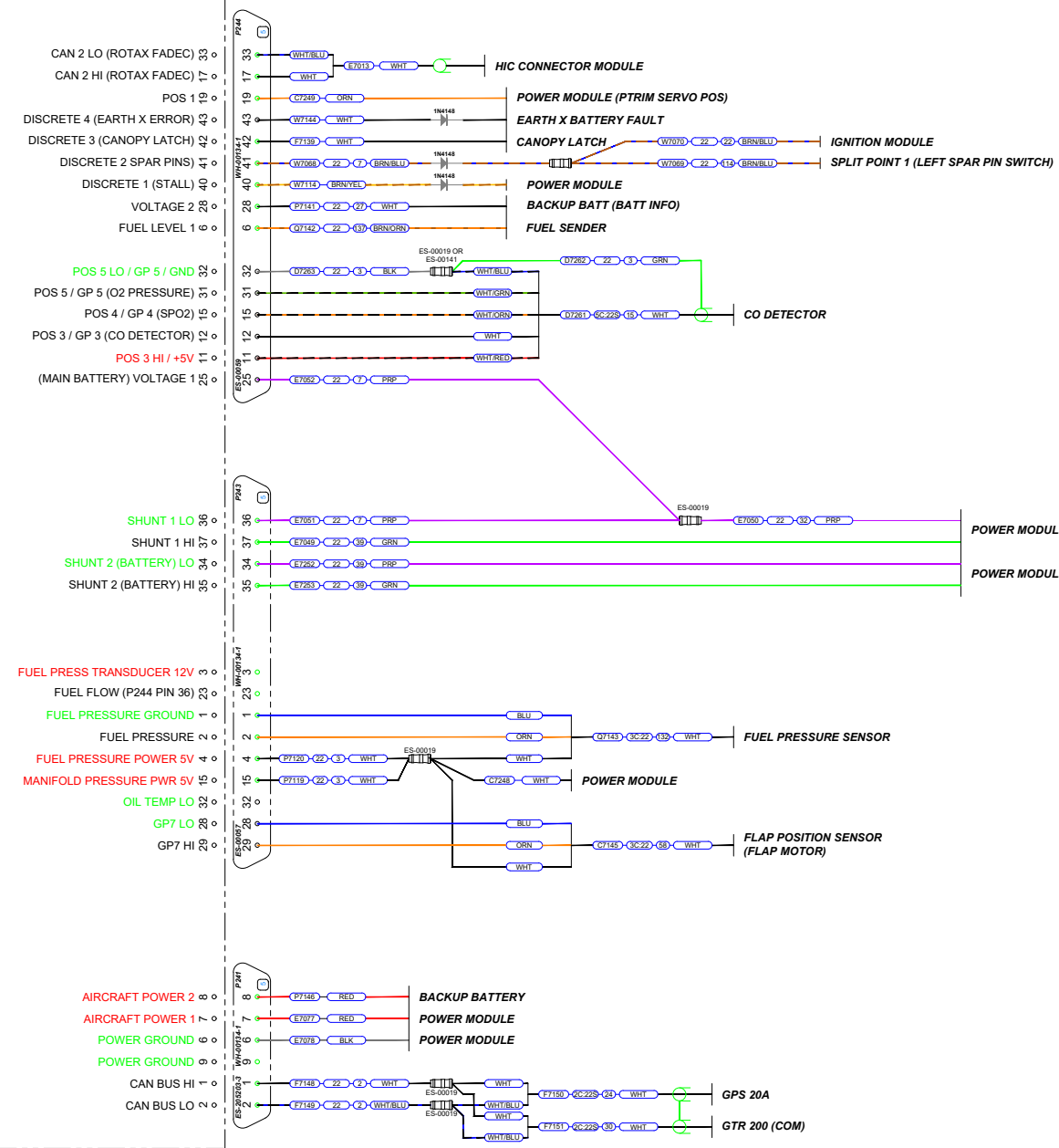
**ROTAX 912iS G3X  
ELECTRICAL SYSTEM**

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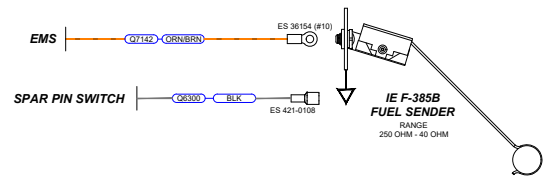
# EMS

## GEA 24

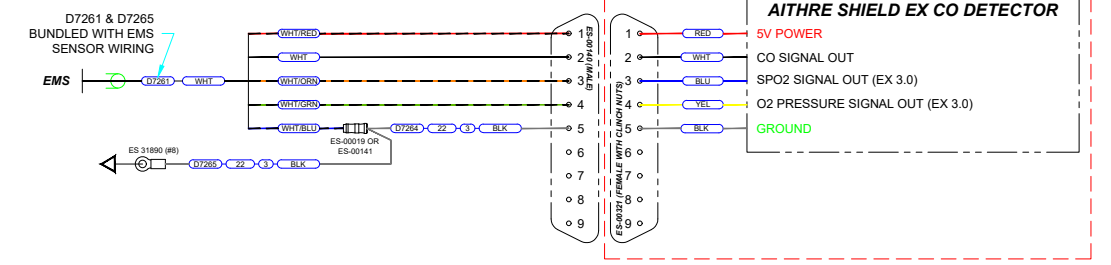
- LEFT EGT 1 HI 25
- LEFT EGT 1 LO 13
- RIGHT EGT 2 HI 23
- RIGHT EGT 2 LO 11
- LEFT CHT 1 + 16
- LEFT CHT 1 - 4
- RIGHT CHT 2 + 14
- RIGHT CHT 2 - 2



### FUEL SENDER

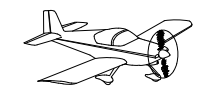
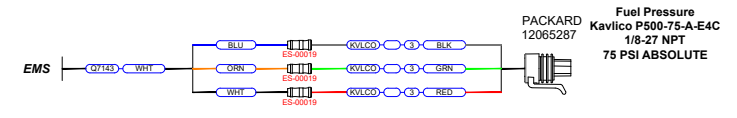


### CO DETECTOR



OPTIONAL KIT INSTALLED BY BUILDER. NOT INCLUDED IN AVIONICS KIT, NOR PART OF THE WH-00134-1

### FUEL PRESSURE SENSOR



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

## ROTAX 912iS G3X ELECTRICAL SYSTEM

DATE DRAWN: 6/11/2018

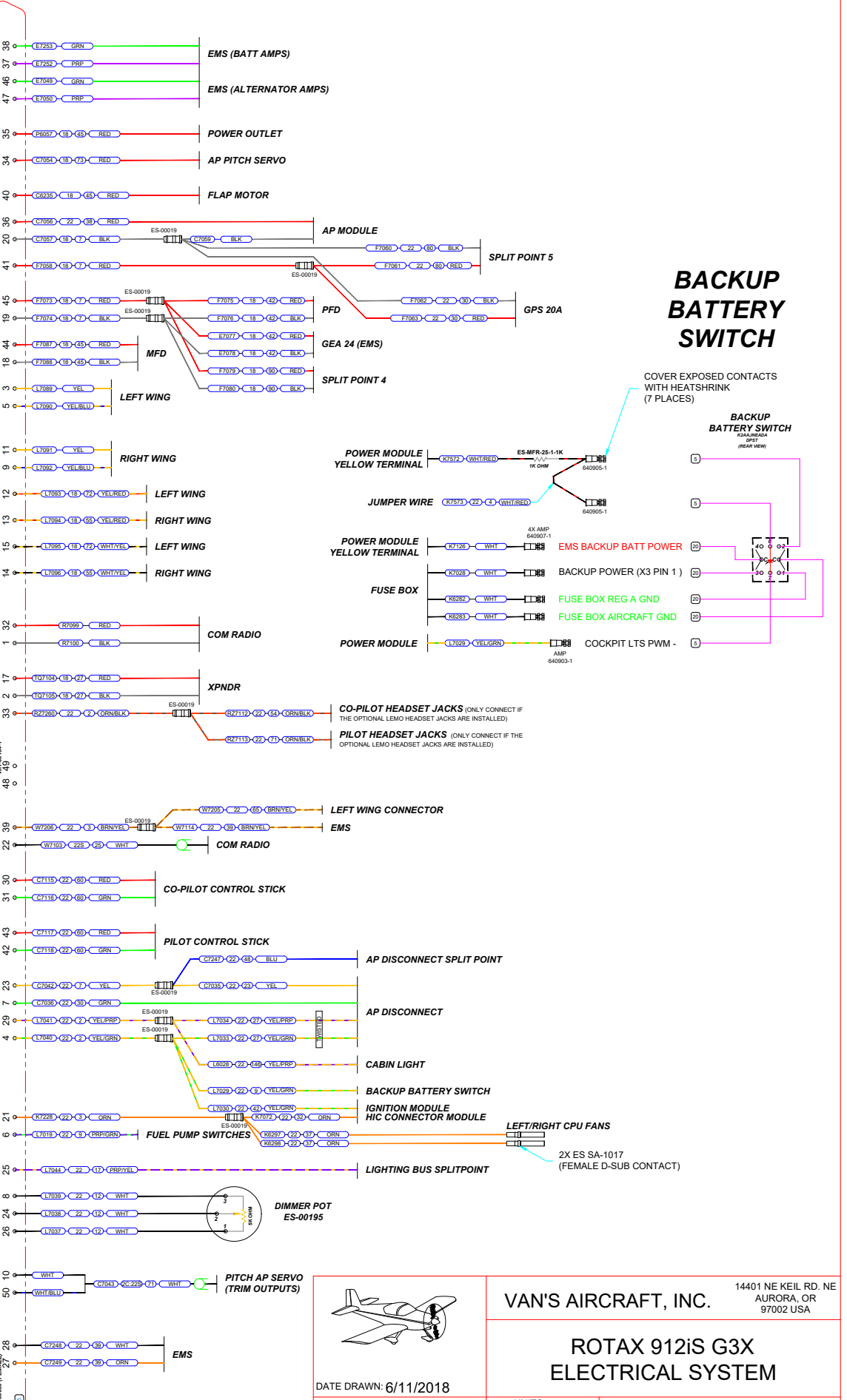
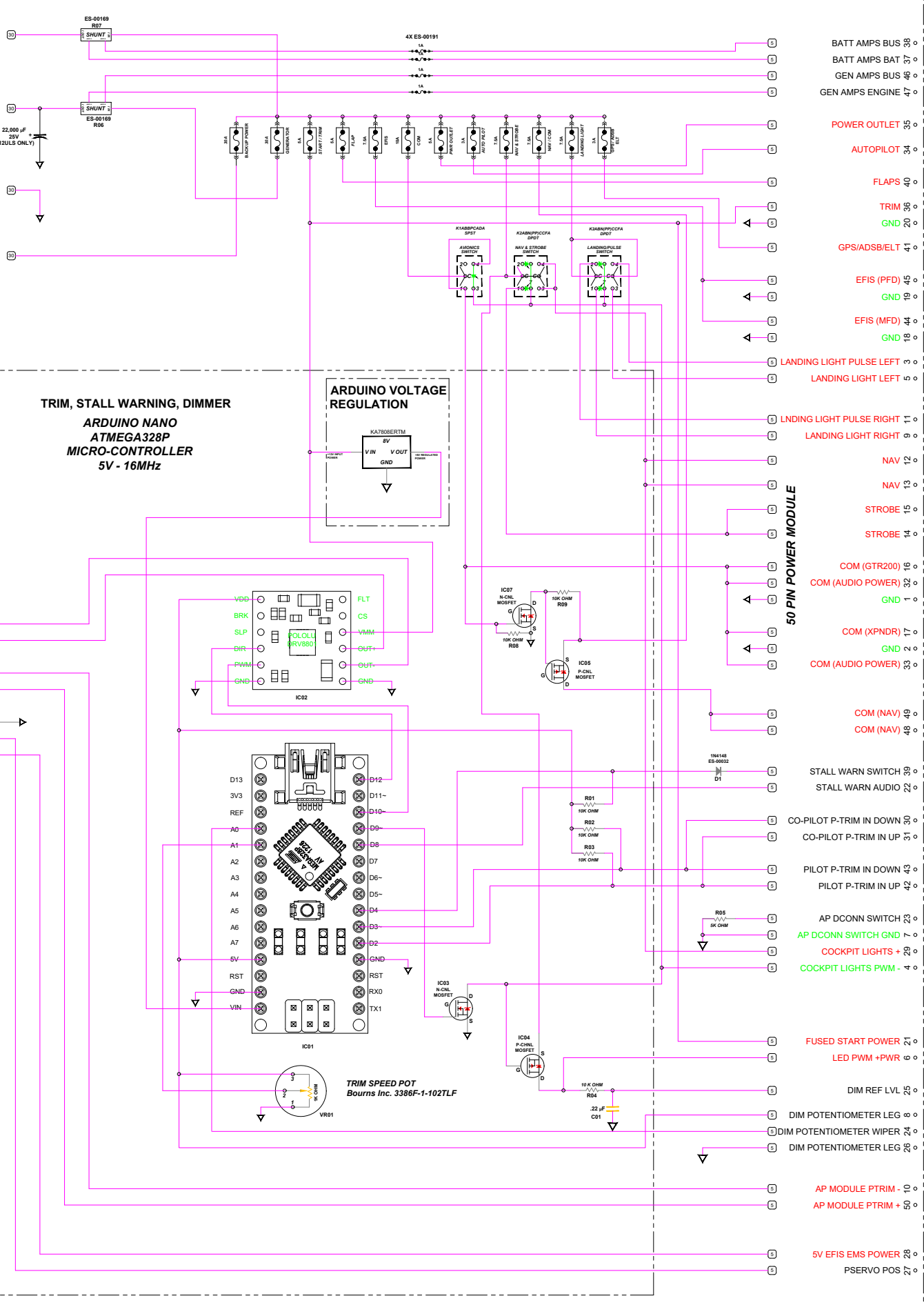
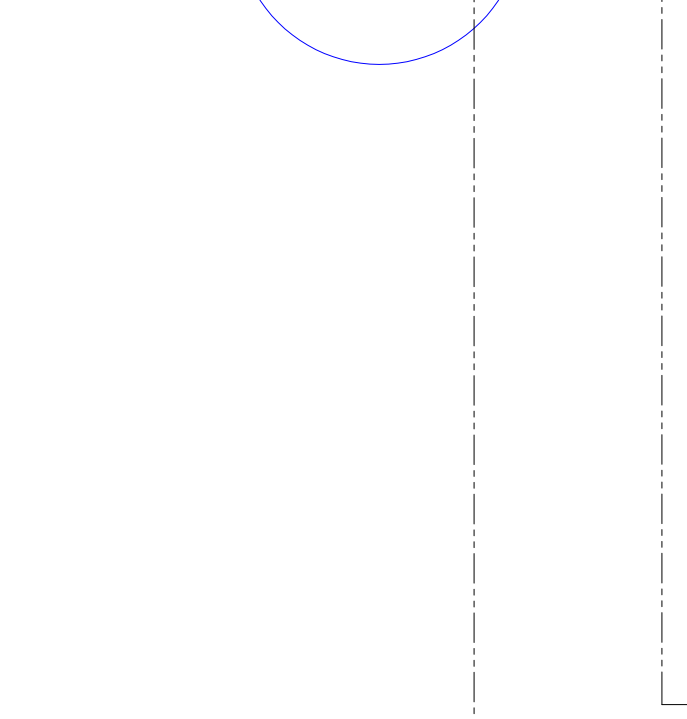
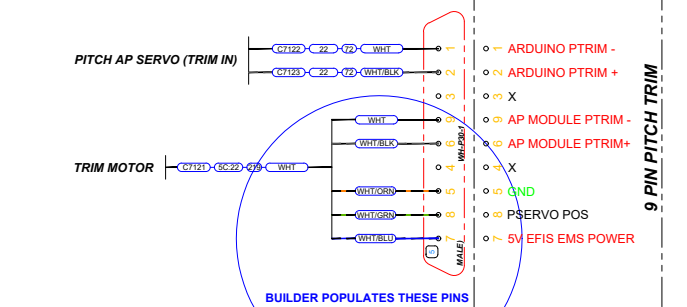
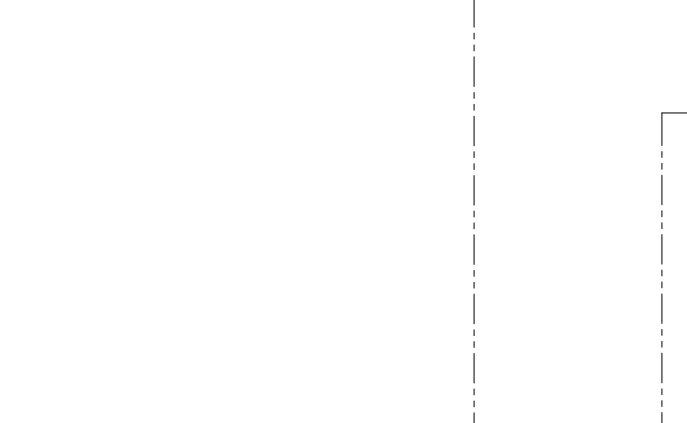
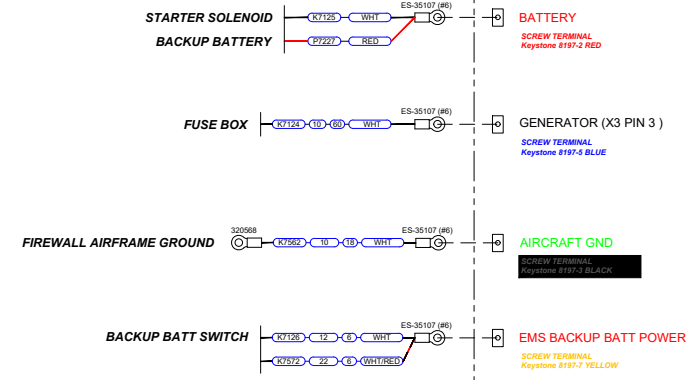
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TOLERANCES: NONE  
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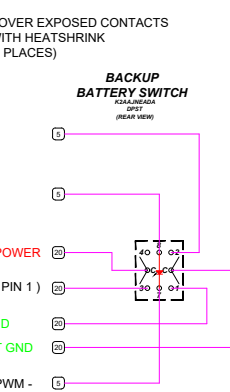
WH-00134-2

# AV-60000 POWER MODULE IS-ULS PCB V3.4

## 4X SCREW TERMINALS



## BACKUP BATTERY SWITCH



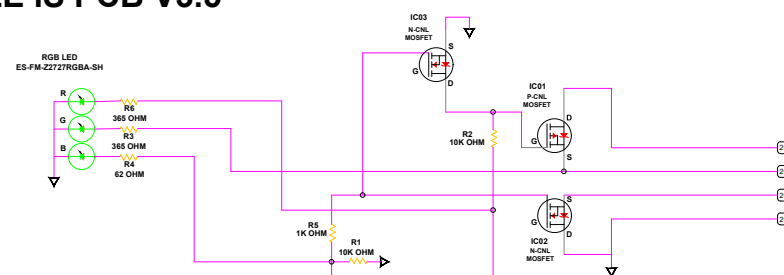
VAN'S AIRCRAFT, INC. 14401 NE KEIL RD. NE AURORA, OR 97002 USA

## ROTAX 912iS G3X ELECTRICAL SYSTEM

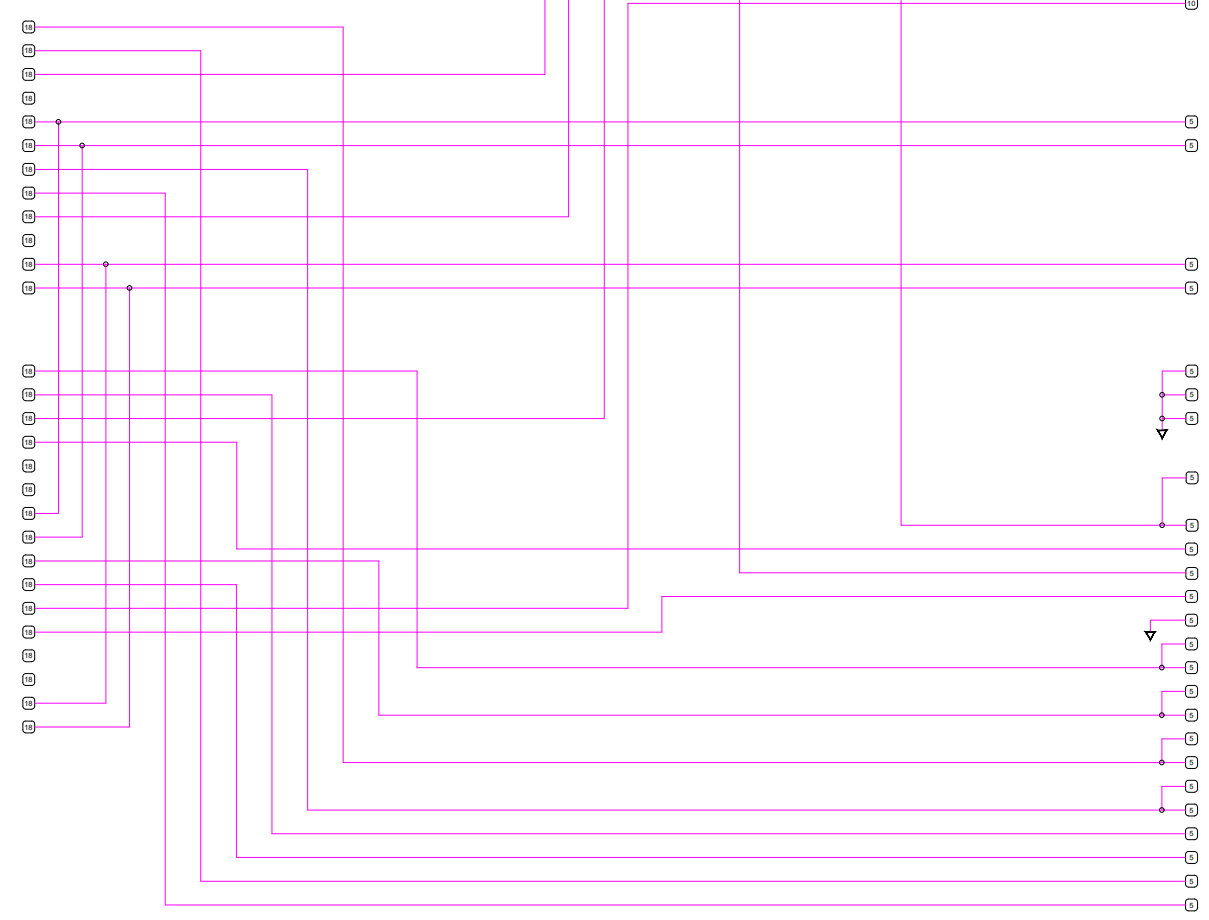


# ES-60009-2 HIC CONNECTOR MODULE iS PCB V3.5

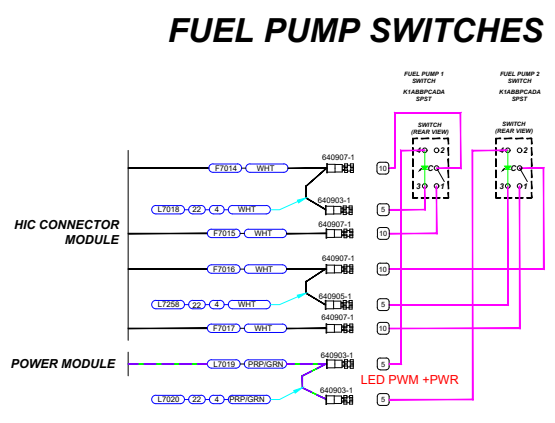
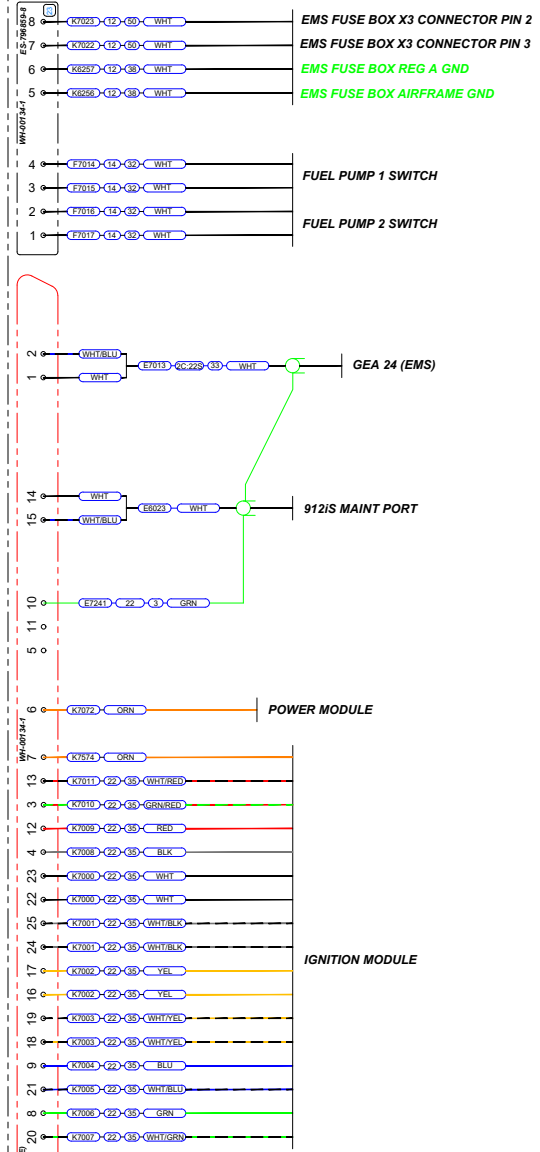
Diagnostic LED Color Codes when Installed in Aircraft  
**EXPECTED PRE-START CONDITION**  
 SBB & FSP & Batt Bus Power (all High) = WHITE  
**EXPECTED POST-START CONDITION** - After ~60 seconds with Engine Running & SBB "Start Computer" Timed Out  
 FSP & Batt Bus Power (no SBB) = YELLOW  
**POSSIBLE PRE-START FAULT COLOR CODES**  
 FSP Only (no SBB & no Batt Bus Power) = Red  
 SBB Only (no FSP & no Batt Bus Power) = Blue  
 Batt Bus Power Only (no SBB & no FSP) = Green  
 FSP & Batt Bus Power Only (no SBB) = Yellow  
 SBB & Batt Bus Power (no FSP) = Teal  
 FSP & SBB (no Batt Bus Power) = Magenta  
 Batt Bus Power = +12v from X3 Connector Pin 3  
 FSP = Fused Start Power, +12v from SB25 Pin 6 & 7  
 SBB = Start Button Bypass, +4v from DB25 Pin 3




- HIC CONNECTOR A**  
19428-0015 OR 19428-0031
- 1 0 LANE SEL SW A 1
  - 2 0 SUPP WARN LAMP A
  - 3 0 SIG FUEL PUMP 1
  - 4 0 CAN GND 1 A
  - 5 0 CAN LO 1 A
  - 6 0 CAN HI 1 A
  - 7 0 LANE SEL SW A 2
  - 8 0 WARN LAMP A
  - 9 0 GND FUEL PUMP 1
  - 10 0 CAN GND 2 A
  - 11 0 CAN LO 2 A
  - 12 0 CAN HI 2 A
- HIC CONNECTOR B**  
19428-0016 OR 19428-0032
- 1 0 LANE SEL SW B 1
  - 2 0 SUPP WARN LAMP B
  - 3 0 SIG FUEL PUMP 2
  - 4 0 CONN STARTER RELAY SW
  - 5 0 X
  - 6 0 CAN GND 1 B
  - 7 0 CAN LO 1 B
  - 8 0 CAN HI 1 B
  - 9 0 LANE SEL SW B 2
  - 10 0 WARN LAMP B
  - 11 0 GND FUEL PUMP 2
  - 12 0 SUPP START SWITCH
  - 13 0 X
  - 14 0 CAN GND 2 B
  - 15 0 CAN LO 2 B
  - 16 0 CAN HI 2 B



- START POWER POS 2
- START POWER POS 1
- START POWER GND 3
- START POWER GND 4
- SIG FUEL PUMP 1
- GND FUEL PUMP 1
- SIG FUEL PUMP 2
- GND FUEL PUMP 2
- CAN LO 912IS EMS
- CAN HI 912IS EMS
- CAN LO 912IS MAINT
- CAN HI 912IS MAINT
- GND
- GND
- GND
- FUSED START POWER
- FUSED START POWER
- CONN STARTER RELAY SW
- START BUTTON BYPASS
- SUPP START SWITCH
- GND
- LANE SEL SW B 1
- LANE SEL SW B 1
- LANE SEL SW B 2
- LANE SEL SW B 2
- LANE SEL SW A 1
- LANE SEL SW A 1
- LANE SEL SW A 2
- LANE SEL SW A 2
- SUPP WARN LAMP B
- WARN LAMP B
- SUPP WARN LAMP A
- WARN LAMP A





14401 NE KEIL RD. NE  
AURORA, OR  
97002 USA

**VAN'S AIRCRAFT, INC.**

**ROTAX 912iS G3X  
ELECTRICAL SYSTEM**

DATE DRAWN: 6/11/2018

DRAWN BY: TONY KIRK

TOLERANCES: NONE  
(UNLESS OTHERWISE SPECIFIED)

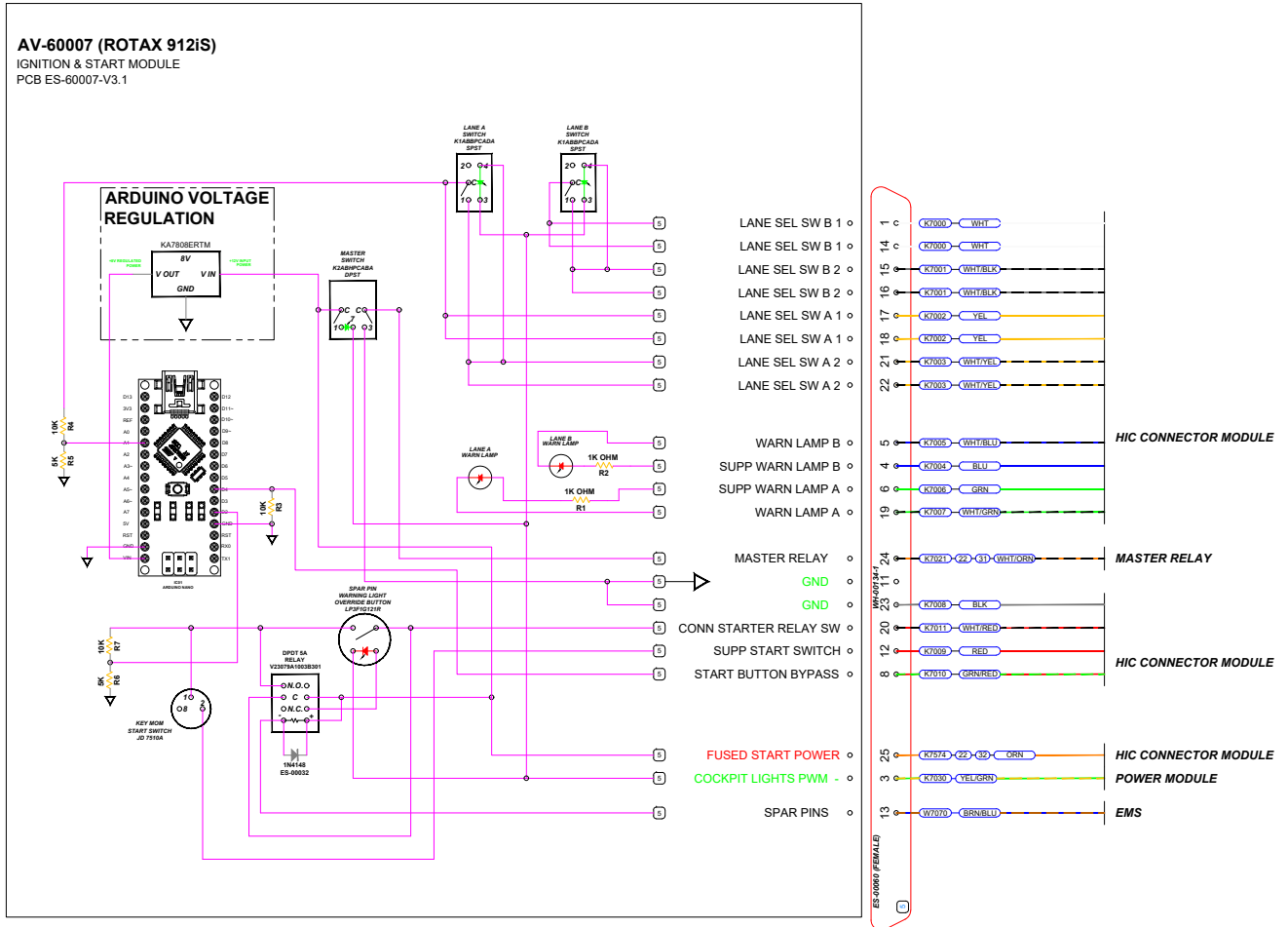
UNITS:  
**INCHES**

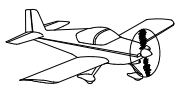
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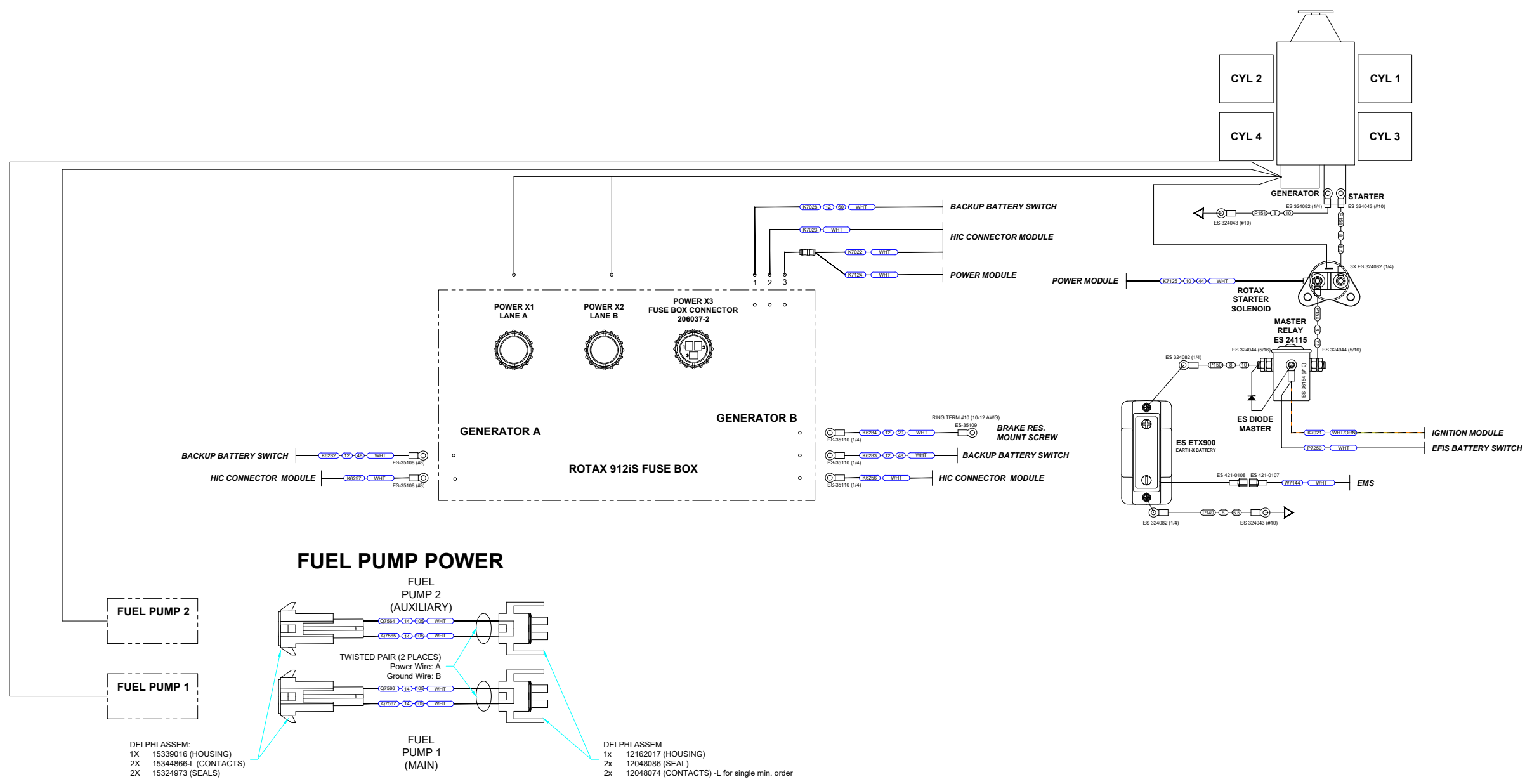
**WH-00134-2**

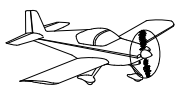
PAGE: 9 OF 11

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	<b>VAN'S AIRCRAFT, INC.</b> <small>14401 NE KEIL RD. NE AURORA, OR 97002 USA</small>	
	<b>ROTAX 912iS G3X ELECTRICAL SYSTEM</b>	
DATE DRAWN: 6/11/2018 DRAWN BY: TONY KIRK TOLERANCES: NONE <small>(UNLESS OTHERWISE SPECIFIED)</small>	UNITS: <b>INCHES</b> SCALE: NONE	<b>WH-00134-2</b> PAGE: 10 OF 11
<small>PATH/FILENAME: Q:\Components\Electrical\Wiring Harness\WH-00134\Electrical System 912iS G3X (WH-00134-2).DWG</small>		<small>C-SIZE ORIGINAL</small>



	<b>VAN'S AIRCRAFT, INC.</b> 14401 NE KEIL RD. NE AURORA, OR 97002 USA	
	<b>ROTAX 912iS G3X ELECTRICAL SYSTEM</b>	
DATE DRAWN: 6/11/2018 DRAWN BY: T. DE MAN TOLERANCES: NONE (UNLESS OTHERWISE SPECIFIED)	UNITS: <b>INCHES</b>	<b>WH-00134-2</b>
	SCALE: NONE	PAGE: 11 OF 11
PATH\FILENAME: Q:\Components\Electrical\Wiring Harness\WH-00134\Electrical System 912iS G3X (WH-00134-2).DWG		C-SIZE ORIGINAL