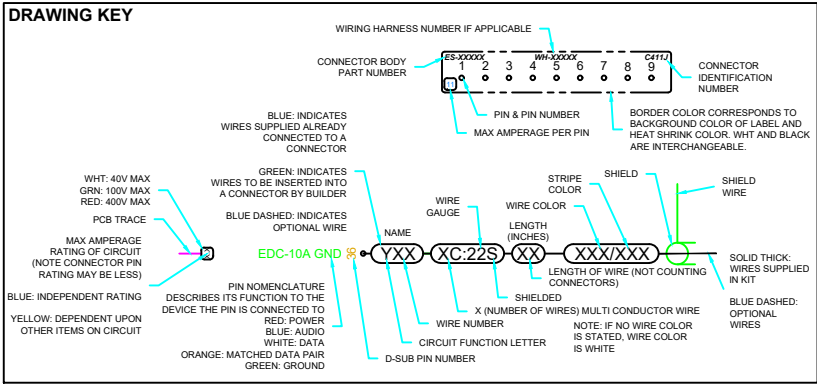


CIRCUIT LETTER FUNCTION	
LETTER	CIRCUITS
C	CONTROL SURFACE
D	INSTRUMENT
E	ENGINE INSTRUMENT
F	FLIGHT INSTRUMENTS
H	HEATING VENTILATING
J	IGNITION
K	ENGINE CONTROL
L	LIGHTING
P	POWER CONTROL
Q	FUEL
R	RADIO
RZ	HEADPHONE
T	SPECIAL ELECTRONIC
TC	RADIO CONTROL
TD	AIRBORNE ANNOUNCING
TP	BEACON
TQ	TRANSMITOR 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.
- CANBUS REQUIRES USE OF GIGAFLIGHT 120 OHM CANBUS CABLE

GTR 205x 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 205X PRESET NOTES:

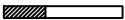
- ALL SETTINGS NOT DEFINED BY THIS DRAWING ARE ACCEPTABLE AS CONFIGURED FROM MANUFACTURER.
- THE ABOVE SETTINGS CORRESPOND TO SOFTWARE SYS 2.60.

TRIG TY96 INTERNAL PRESETS

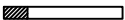
INTERCOM VOLUME:



AUX IN VOLUME:



MUSIC IN VOLUME:



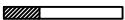
SIDETONE VOLUME:



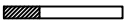
INTERCOM SQLCH:



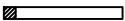
MIC 1 GAIN:



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.

ELECTRICAL SYSTEM BENCH TEST PROCEDURE

Avionics Group

- ___Check PFD & MFD Power On
- ___SkyView Check PFD and MFD recognize a USB stick
- ___Install latest software and settings per the readme files (applicable portions) on the Van's Web Site
 - ___Setup X Pndr Hex Code
 - ___Setup AP servos if installed
- ___Check PFD & MFD recognize all LRU's
- ___Check X pndr will transmit.
- ___Check COM turns on.
- ___Check PFD recognizes COM, and can push frequencies to COM radio
- ___Check Backup Battery Function PFD
- ___If installed check AP Control Head function (knobs function for SkyView as well)

Audio Group

- ___Configure COM radio in accordance with "GTR 205x Internal Presets"
- ___Check Pilot Headset Jack
- ___Check Pilot Mic Jack for Xmit
- ___Check Co-Pilot Headset Jack
- ___Check Co-Pilot Mic Jack for Xmit
- ___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

- ___Check Pilot TX Button
- ___Check Pilot Trim Buttons (Both Directions)
 - ___Verify proper trim direction movement on screen indicator and servo with input
- ___Check Co-Pilot TX Button
- ___Check Co-Pilot Trim Buttons (Both Directions)
 - ___Verify proper trim direction movement on screen indicator and servo with input
- ___Check function of AP disconnect switch near throttle.
- ___Check Pilot AP Disconnect Switch
- ___Check Co-Pilot AP Disconnect Switch
- ___Check Pilot COM Freq Swap
- ___Check Co-Pilot Freq Swap
- ___Check Dimmer (Note PCB portion will be checked during AV-60000 Check)
 - ___Turn on all switches. Check that all lighted switches lights turn on and dim. (Ignore wires going to cabin light.)
- ___Check canopy latch switch
- ___Check flap motor function both directions
- ___Check for power output at USB connectors / Power Outlet

Wing Group

- ___Check Stall Warning
- ___Check NAV/Strobe Lights
- ___Check Landing Lights (Both if applicable)
- ___Check Wig Wag Function

IS Engine Group

- ___Check Master Relay Switch grounds out wire going to master relay
- ___Check Key switch connects HIC connector start pins
- ___Check spar pin light comes on when spar pin switches are not grounded.
- ___Check emergency switch provides power to Power X3 connector Pin 3
- ___Check Emergency Li Bat Warn Wire turns on warning in EFIS when grounded. (NOTE Check this error)
- ___Check fuel pump A and B switches for function



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14401 NE KEIL RD, NE
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97002 USA

ROTAX 912iS G3X ELECTRICAL SYSTEM

DATE DRAWN: 06/11/18

DRAWN BY: T. DE MAN

TOLERANCES: NONE

(UNLESS OTHERWISE SPECIFIED)

UNITS:

INCHES

SCALE: NONE

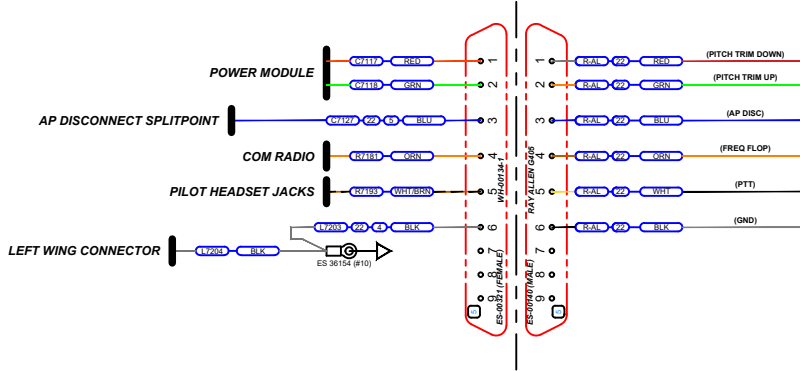
WH-00134-4

PAGE: 1 OF 11

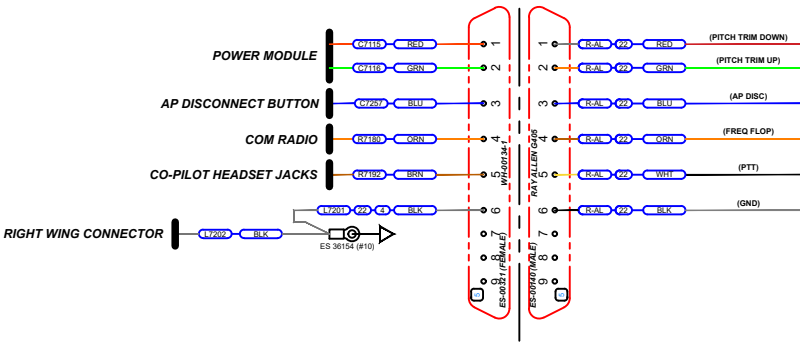
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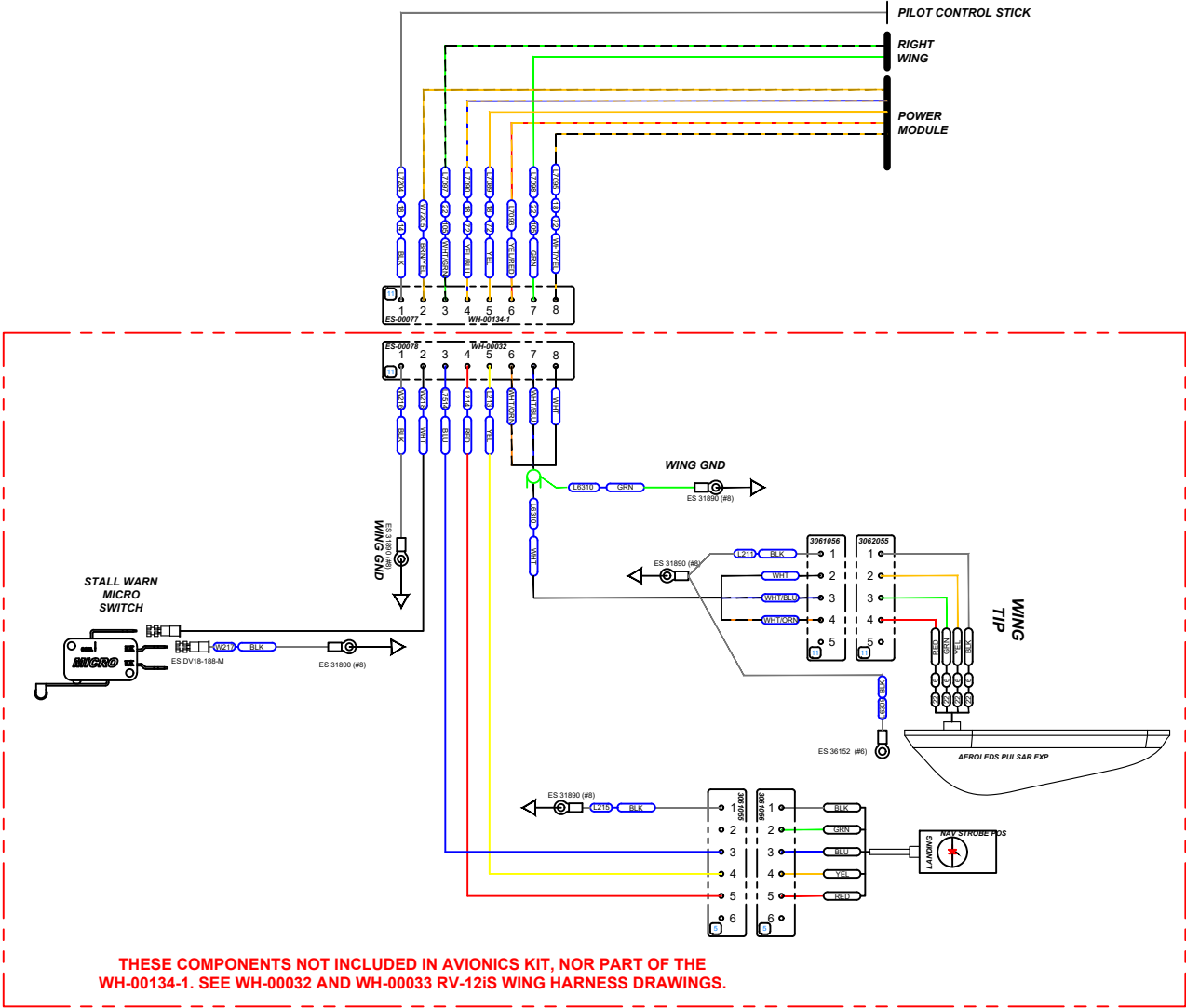
PILOT STICK GRIP



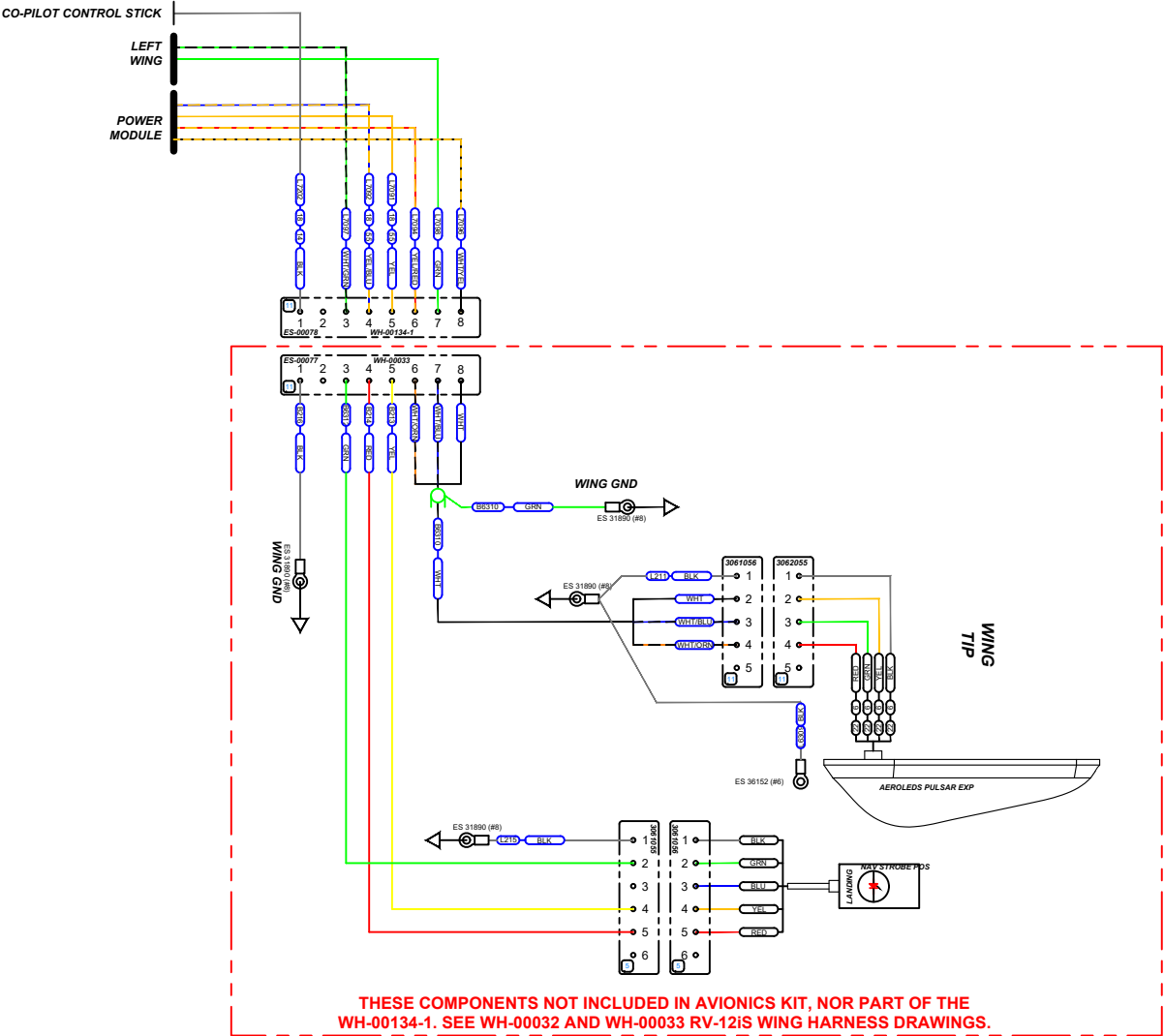
CO-PILOT STICK GRIP



LEFT WING CONNECTOR



RIGHT WING CONNECTOR



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DRAWN BY: T. DE MAN

TOLERANCES: NONE

(UNLESS OTHERWISE SPECIFIED)

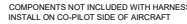
UNITS:
INCHES

SCALE: NONE

WH-00134-4

PAGE: 3 OF 11

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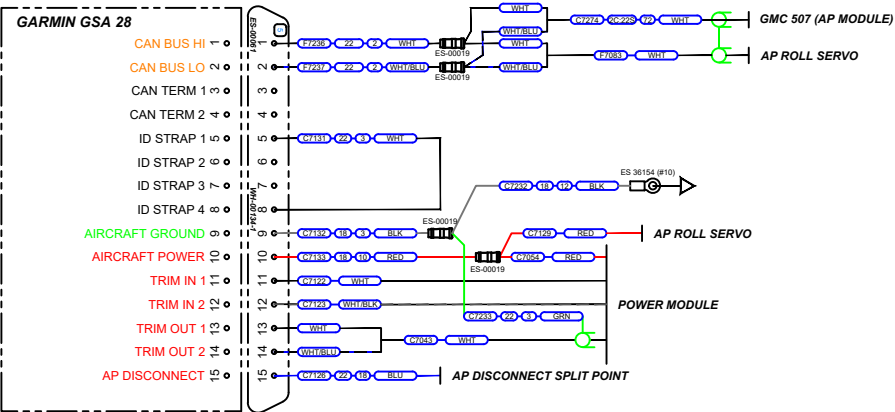


ROTAX 912iS G3X ELECTRICAL SYSTEM

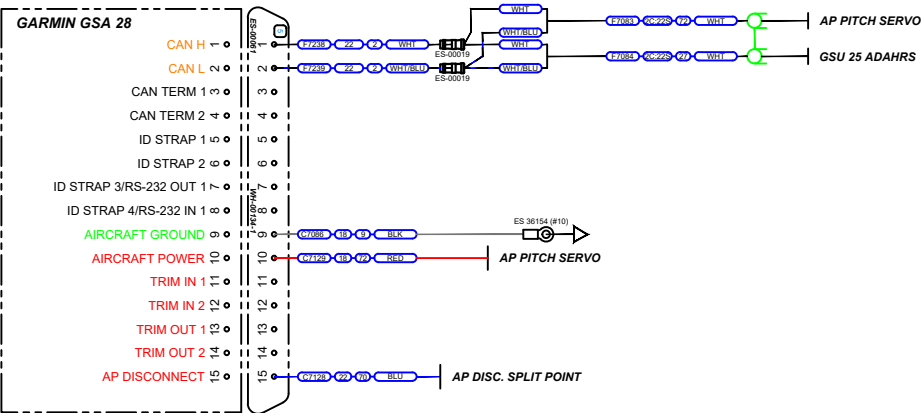
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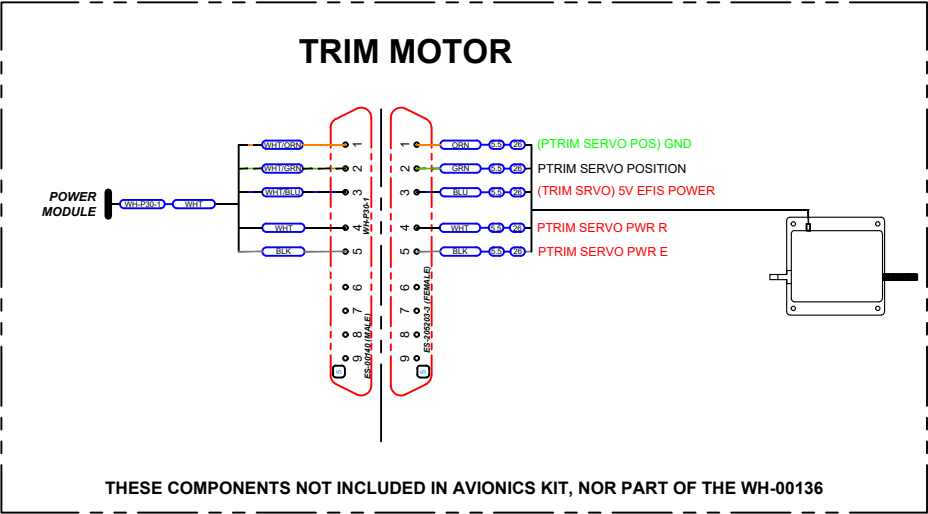
AUTOPILOT
PITCH SERVO



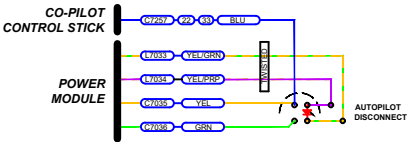
AUTOPILOT
ROLL SERVO



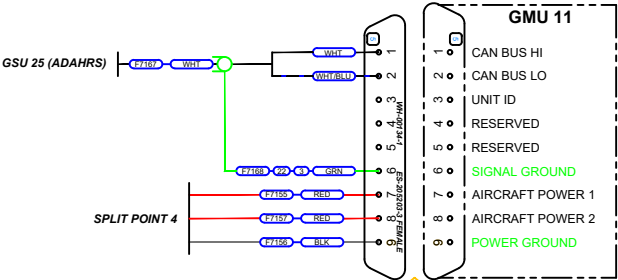
TRIM MOTOR



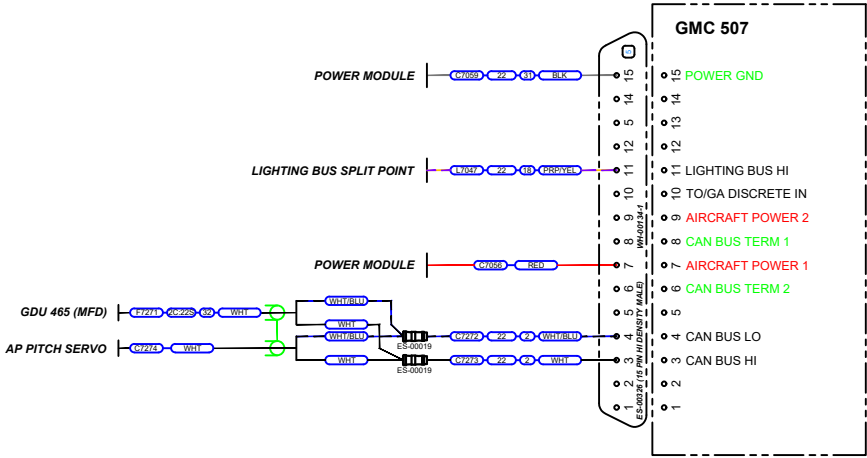
AP DISCONNECT



MAGNETOMETER



AP MODULE



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ROTAX 912iS G3X
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DRAWN BY: T. DE MAN

TOLERANCES: NONE

(UNLESS OTHERWISE SPECIFIED)

UNITS:

INCHES

SCALE: NONE

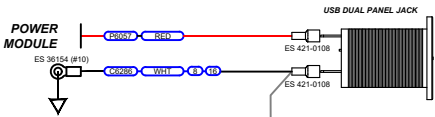
WH-00134-4

PAGE: 5 OF 11

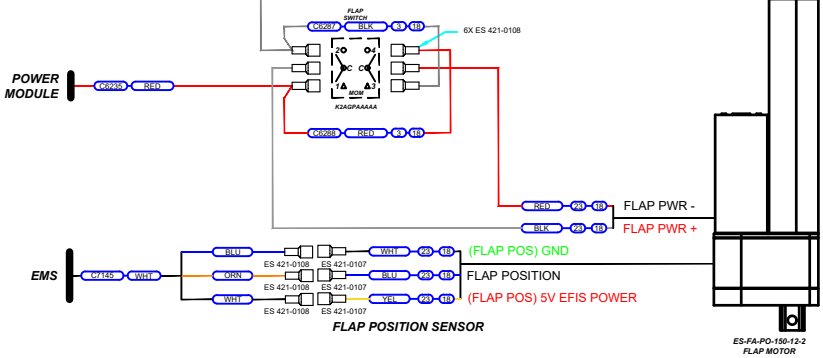
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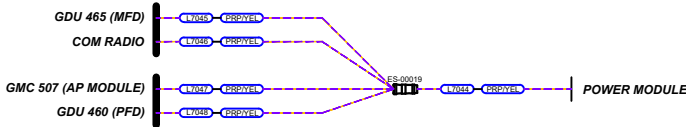
POWER OUTLET



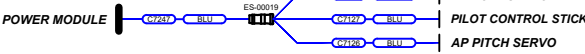
FLAP MOTOR



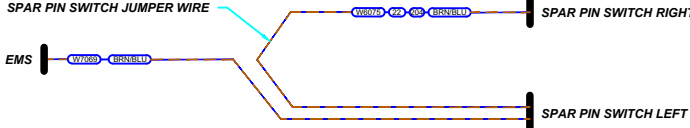
LIGHTING BUS SPLIT



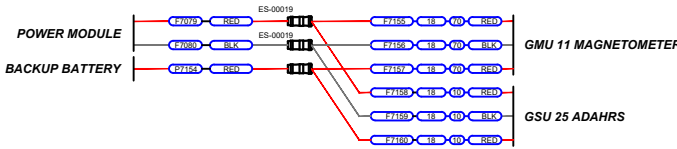
AUTOPILOT DISC. SPLIT POINT



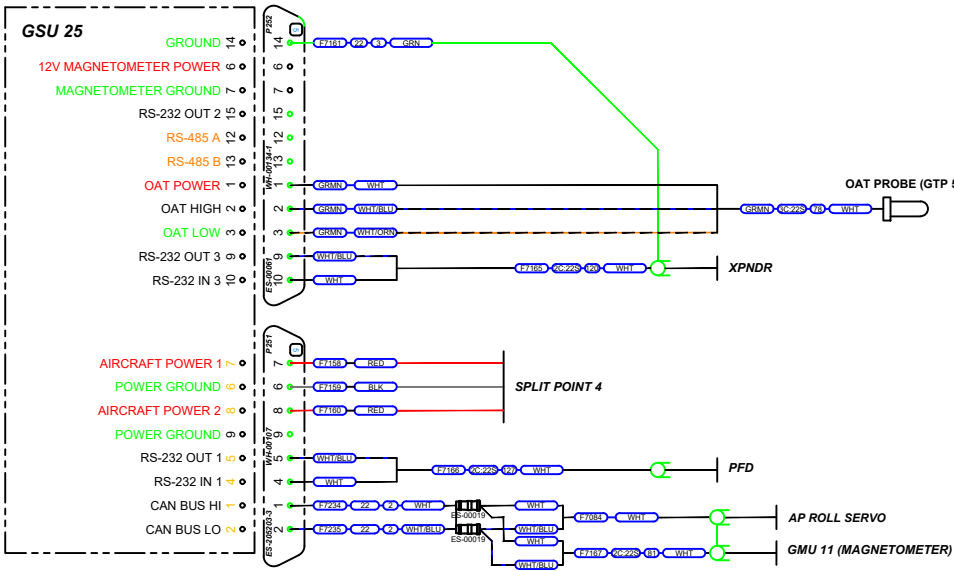
SPLIT POINT 1



SPLIT POINT 4



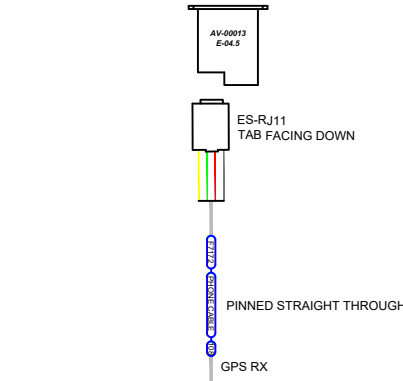
ADAHRS



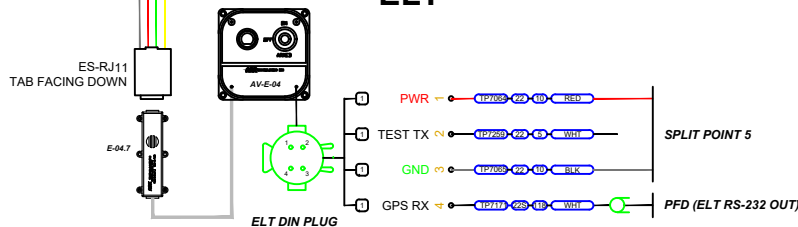
EFIS BATTERY SWITCH



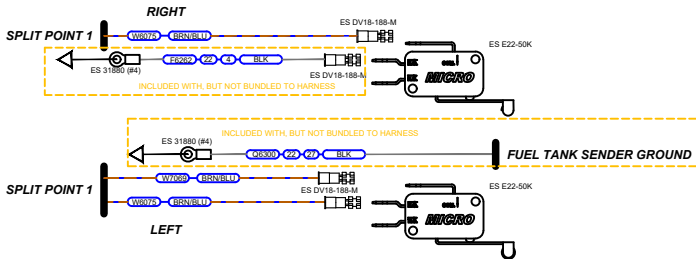
ELT REMOTE



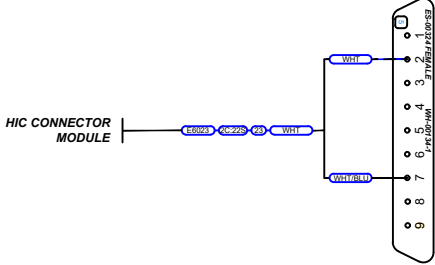
ELT



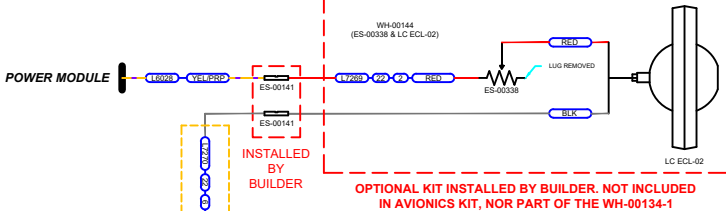
SPAR PIN SWITCHES



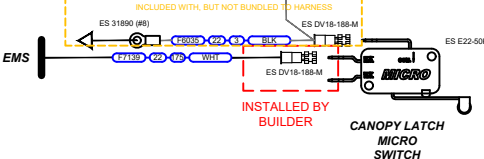
912iS MAINT PORT



CABIN LIGHT & DIMMER



CANOPY SWITCH



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97002 USA

ROTAX 912iS G3X
ELECTRICAL SYSTEM

DATE DRAWN: 6/11/2018

DRAWN BY: T. DE MAN
TOLERANCES: NONE
(UNLESS OTHERWISE SPECIFIED)

INCHES

SCALE: NONE

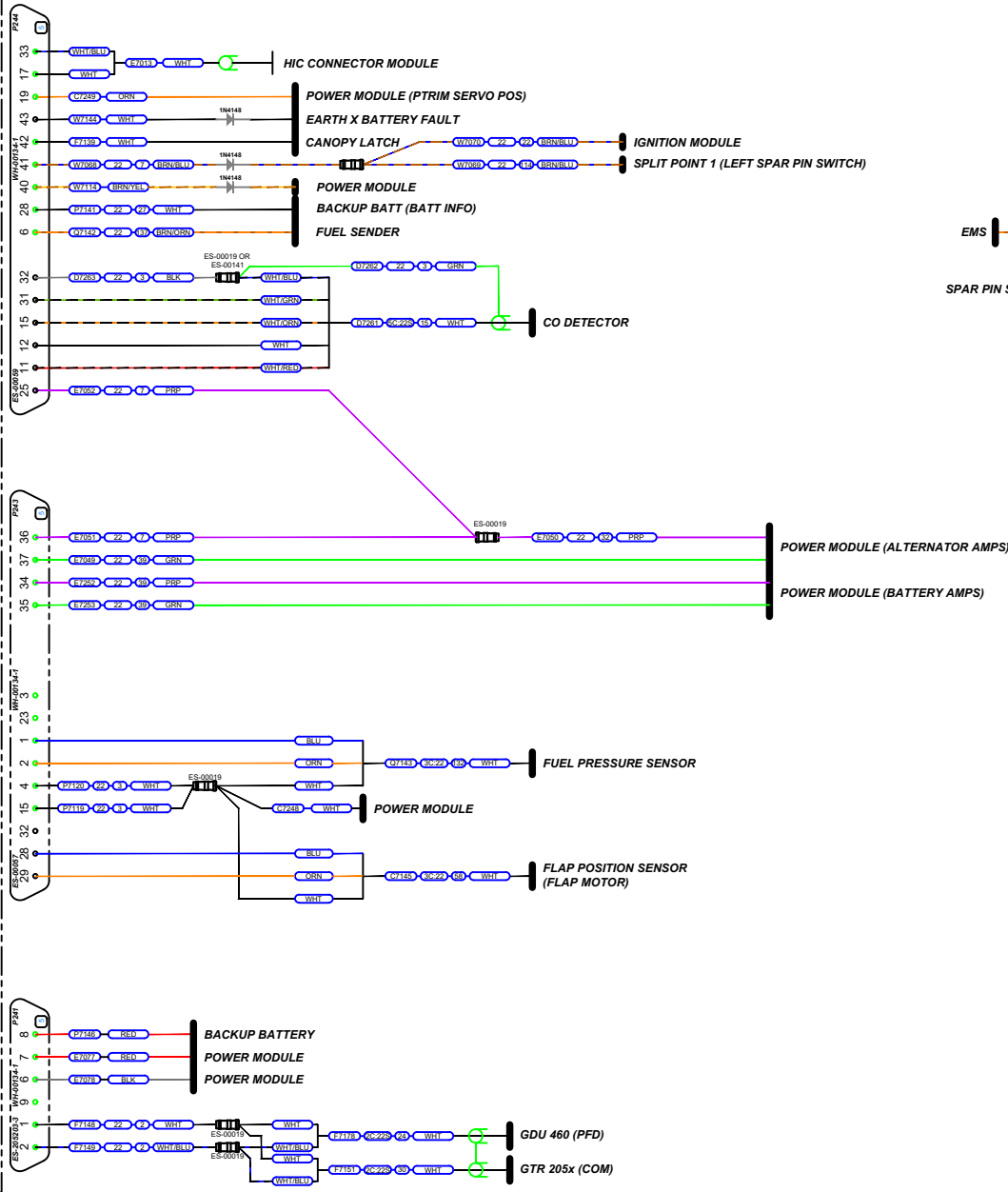
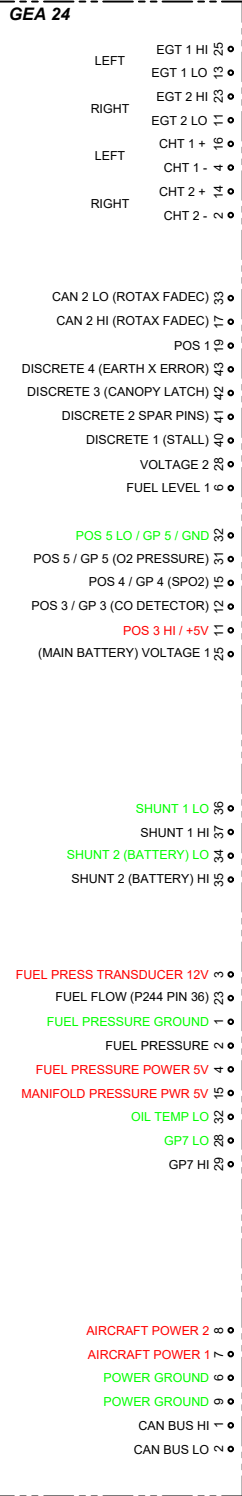
WH-00134-4

PAGE: 6 OF 11

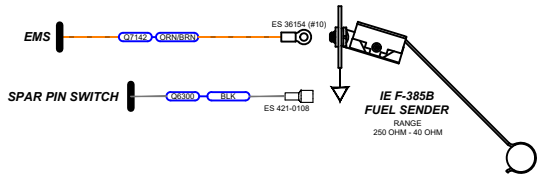
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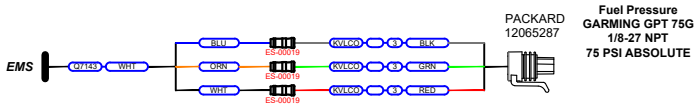
EMS



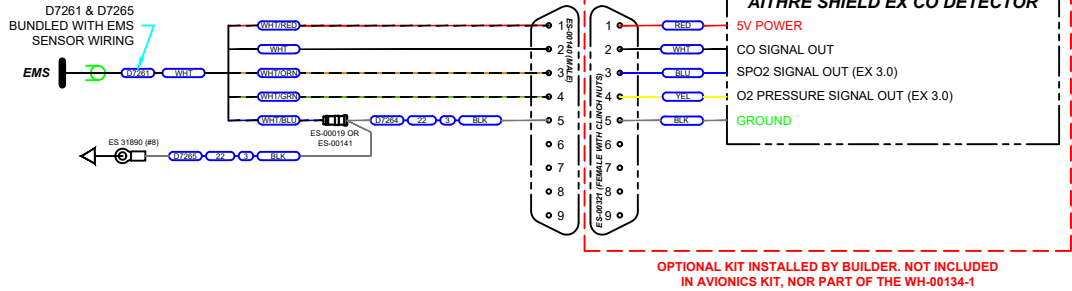
FUEL SENDER



FUEL PRESSURE SENSOR



CO DETECTOR



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14401 NE KEIL RD, NE
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UNITS:

INCHES

SCALE: NONE

WH-00134-4

PAGE: 7 OF 11

PATH\\FILENAME: Q:\Components\Electrical\Wiring Harness\WH-00134\Electrical System 912iS G3X (WH-00134-4).DWG

C-SIZE ORIGINAL

AV-60000 POWER MODULE iS-ULS PCB V3.4

4X SCREW TERMINALS

- BATTERY

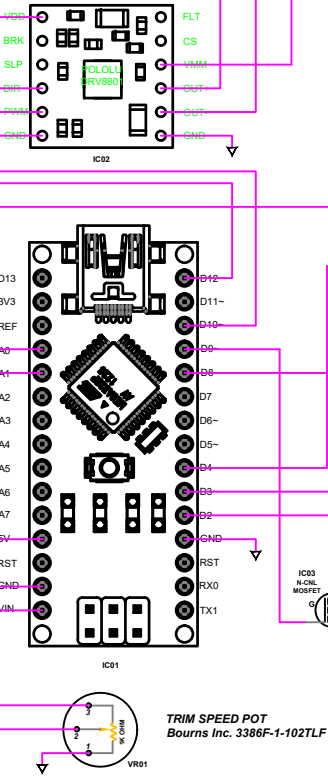
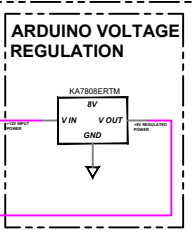
SCREW TERMINAL
Keystone 8197-2 RED
- GENERATOR (X3 PIN 3)

SCREW TERMINAL
Keystone 8197-2 BLUE
- AIRCRAFT GND

SCREW TERMINAL
Keystone 8197-2 BLACK
- EMS BACKUP BATT POWER

SCREW TERMINAL
Keystone 8197-2 YELLOW

TRIM, STALL WARNING, DIMMER
ARDUINO NANO
ATMEGA328P
MICRO-CONTROLLER
5V - 16MHz



50 PIN POWER MODULE

- BATT AMPS BUS

38

EMS (BATT AMPS)
- BATT AMPS BAT

37

EMS (ALTERNATOR AMPS)
- GEN AMPS BUS

46

37

46

37

46

37
- GEN AMPS ENGINE

47

37

46

37

46

37
- POWER OUTLET

35

35

35

35

35

35
- AUTOPILOT

34

34

34

34

34

34
- FLAPS

40

40

40

40

40

40
- TRIM

36

36

36

36

36

36
- GND

20

20

20

20

20

20
- GPS/ADS-B/ELT

41

41

41

41

41

41
- EFIS (PFD)

45

45

45

45

45

45
- GND

19

19

19

19

19

19
- EFIS (MFD)

44

44

44

44

44

44
- GND

18

18

18

18

18

18
- LANDING LIGHT PULSE LEFT

3

3

3

3

3

3
- LANDING LIGHT LEFT

5

5

5

5

5

5
- LANDING LIGHT PULSE RIGHT

11

11

11

11

11

11
- LANDING LIGHT RIGHT

9

9

9

9

9

9
- NAV

12

12

12

12

12

12
- NAV

13

13

13

13

13

13
- STROBE

15

15

15

15

15

15
- STROBE

14

14

14

14

14

14
- COM (GTR205x)

16

16

16

16

16

16
- COM (AUDIO POWER)

32

32

32

32

32

32
- GND

1

1

1

1

1

1
- COM (XPNDR)

17

17

17

17

17

17
- GND

2

2

2

2

2

2
- COM (AUDIO POWER)

33

33

33

33

33

33
- COM (NAV)

49

49

49

49

49

49
- COM (NAV)

48

48

48

48

48

48
- STALL WARN SWITCH

39

39

39

39

39

39
- STALL WARN AUDIO

23

23

23

23

23

23
- CO-PILOT P-TRIM IN DOWN

30

30

30

30

30

30
- CO-PILOT P-TRIM IN UP

31

31

31

31

31

31
- PILOT P-TRIM IN DOWN

43

43

43

43

43

43
- PILOT P-TRIM IN UP

42

42

42

42

42

42
- AP DCONN SWITCH

23

23

23

23

23

23
- AP DCONN SWITCH GND

7

7

7

7

7

7
- COCKPIT LIGHTS +

29

29

29

29

29

29
- COCKPIT LIGHTS PWM -

4

4

4

4

4

4
- FUSED START POWER

21

21

21

21

21

21
- LED PWM +PWR

6

6

6

6

6

6
- DIM REF LVL

25

25

25

25

25

25
- DIM POTENTIOMETER LEG

8

8

8

8

8

8
- DIM POTENTIOMETER WIPER

24

24

24

24

24

24
- DIM POTENTIOMETER LEG

26

26

26

26

26

26
- AP MODULE PTRIM -

10

10

10

10

10

10
- AP MODULE PTRIM +

50

50

50

50

50

50
- 5V EFIS EMS POWER

28

28

28

28

28

28
- PSERVO POS

27

27

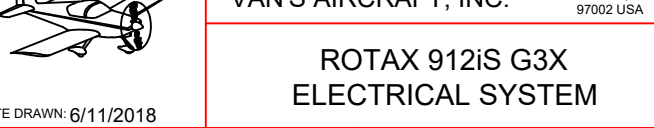
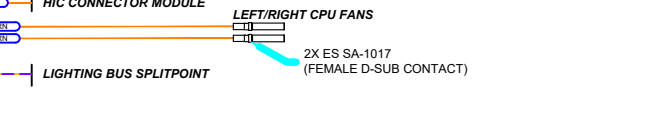
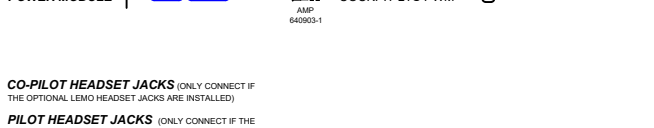
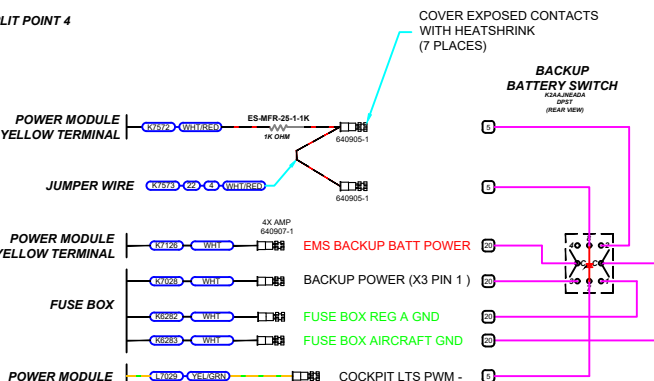
27

27

27

27

BACKUP BATTERY SWITCH



DATE DRAWN: 6/11/2018

DRAWN BY: TONY KIRK

TOLERANCES: NONE

(UNLESS OTHERWISE SPECIFIED)

UNITS: INCHES

SCALE: NONE

WH-00134-4

PAGE: 8 OF 11

14401 NE KEIL RD. NE
AURORA, OR
97002 USA

C-SIZE ORIGINAL

AV-60000 POWER MODULE iS-ULS PCB V3.4

4X SCREW TERMINALS

- BATTERY

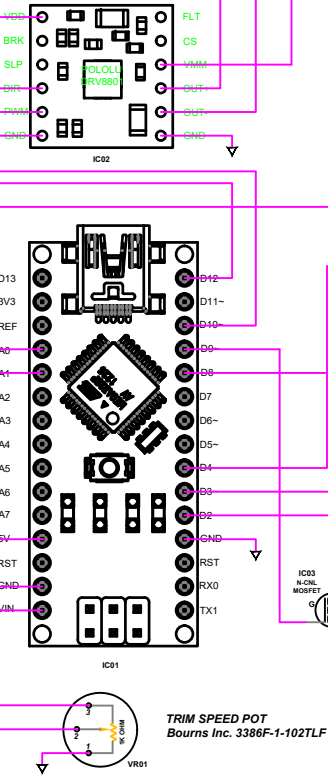
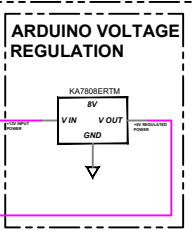
SCREW TERMINAL
Keystone 8197-2 RED
- GENERATOR (X3 PIN 3)

SCREW TERMINAL
Keystone 8197-2 BLUE
- AIRCRAFT GND

SCREW TERMINAL
Keystone 8197-2 BLACK
- EMS BACKUP BATT POWER

SCREW TERMINAL
Keystone 8197-2 YELLOW

TRIM, STALL WARNING, DIMMER
ARDUINO NANO
ATMEGA328P
MICRO-CONTROLLER
5V - 16MHz



TRIM SPEED POT
Bourns Inc. 3386F-1-102TLF

50 PIN POWER MODULE

- BATT AMPS BUS

38

EMS (BATT AMPS)
- BATT AMPS BAT

37

EMS (BATT AMPS)
- GEN AMPS BUS

46

EMS (ALTERNATOR AMPS)
- GEN AMPS ENGINE

47

EMS (ALTERNATOR AMPS)
- POWER OUTLET

35

POWER OUTLET
- AUTOPILOT

34

AP PITCH SERVO
- FLAPS

40

FLAP MOTOR
- TRIM

36

AP MODULE
- GND

20

AP MODULE
- GPS/ADS-B/ELT

41

ELT
- EFIS (PFD)

45

PFD
- GND

19

PFD
- EFIS (MFD)

44

MFD
- GND

18

MFD
- LANDING LIGHT PULSE LEFT

3

LEFT WING
- LANDING LIGHT LEFT

5

LEFT WING
- LANDING LIGHT PULSE RIGHT

11

RIGHT WING
- LANDING LIGHT RIGHT

9

RIGHT WING
- NAV

12

LEFT WING
- NAV

13

RIGHT WING
- STROBE

15

LEFT WING
- STROBE

14

RIGHT WING
- COM (GTR205x)

16

COM RADIO
- COM (AUDIO POWER)

32

COM RADIO
- GND

1

COM RADIO
- COM (XPNDR)

17

XPNDR
- GND

2

XPNDR
- COM (AUDIO POWER)

33

XPNDR
- COM (NAV)

49

COM (NAV)
- COM (NAV)

48

COM (NAV)
- STALL WARN SWITCH

39

EMS
- STALL WARN AUDIO

23

COM RADIO
- CO-PILOT P-TRIM IN DOWN

30

CO-PILOT CONTROL STICK
- CO-PILOT P-TRIM IN UP

31

CO-PILOT CONTROL STICK
- PILOT P-TRIM IN DOWN

43

PILOT CONTROL STICK
- PILOT P-TRIM IN UP

42

PILOT CONTROL STICK
- AP DCONN SWITCH

23

AP DISCONNECT SPLIT POINT
- AP DCONN SWITCH GND

7

AP DISCONNECT
- COCKPIT LIGHTS +

29

CABIN LIGHT
- COCKPIT LIGHTS PWM -

4

CABIN LIGHT
- FUSED START POWER

21

BACKUP BATTERY SWITCH
- LED PWM +PWR

6

IGNITION MODULE
HIC CONNECTOR MODULE
- DIM REF LVL

25

LEFT/RIGHT CPU FANS
- DIM POTENTIOMETER LEG

8

2X ES SA-1017
(FEMALE D-SUB CONTACT)
- DIM POTENTIOMETER WIPER

24

DIMMER POT
ES-00195
- DIM POTENTIOMETER LEG

26

DIMMER POT
ES-00195
- AP MODULE PTRIM -

10

PITCH AP SERVO
(TRIM OUTPUTS)
- AP MODULE PTRIM +

50

PITCH AP SERVO
(TRIM OUTPUTS)
- 5V EFIS EMS POWER

28

EMS
- PSERVO POS

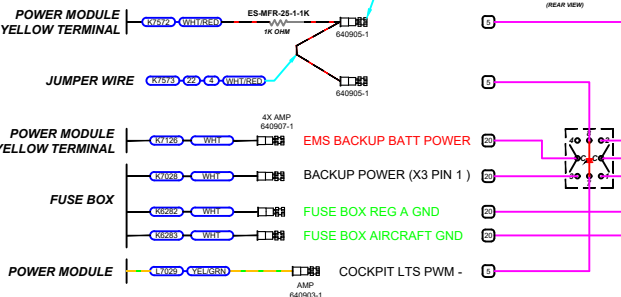
27

EMS

BACKUP
BATTERY
SWITCH

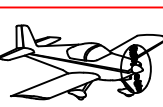
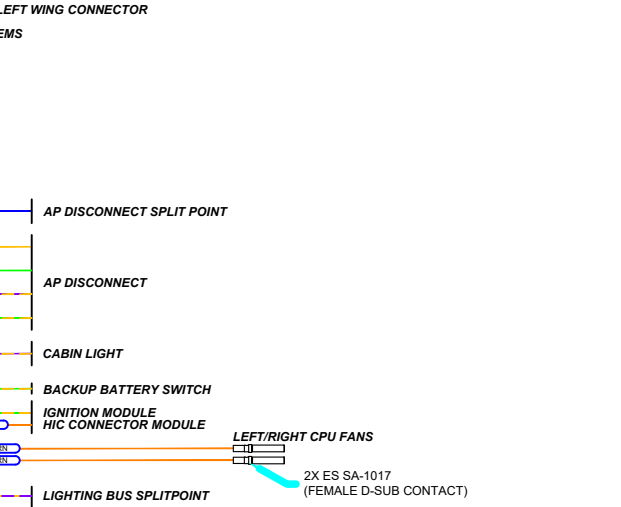
COVER EXPOSED CONTACTS
WITH HEATSHRINK
(7 PLACES)

BACKUP
BATTERY SWITCH
K24AURADA
SPST
(REAR VIEW)



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)



VAN'S AIRCRAFT, INC.

14401 NE KEIL RD. NE
AURORA, OR
97002 USA

ROTAX 912iS G3X
ELECTRICAL SYSTEM

DATE DRAWN: 6/11/2018

DRAWN BY: TONY KIRK

TOLERANCES: NONE

(UNLESS OTHERWISE SPECIFIED)

UNITS:

INCHES

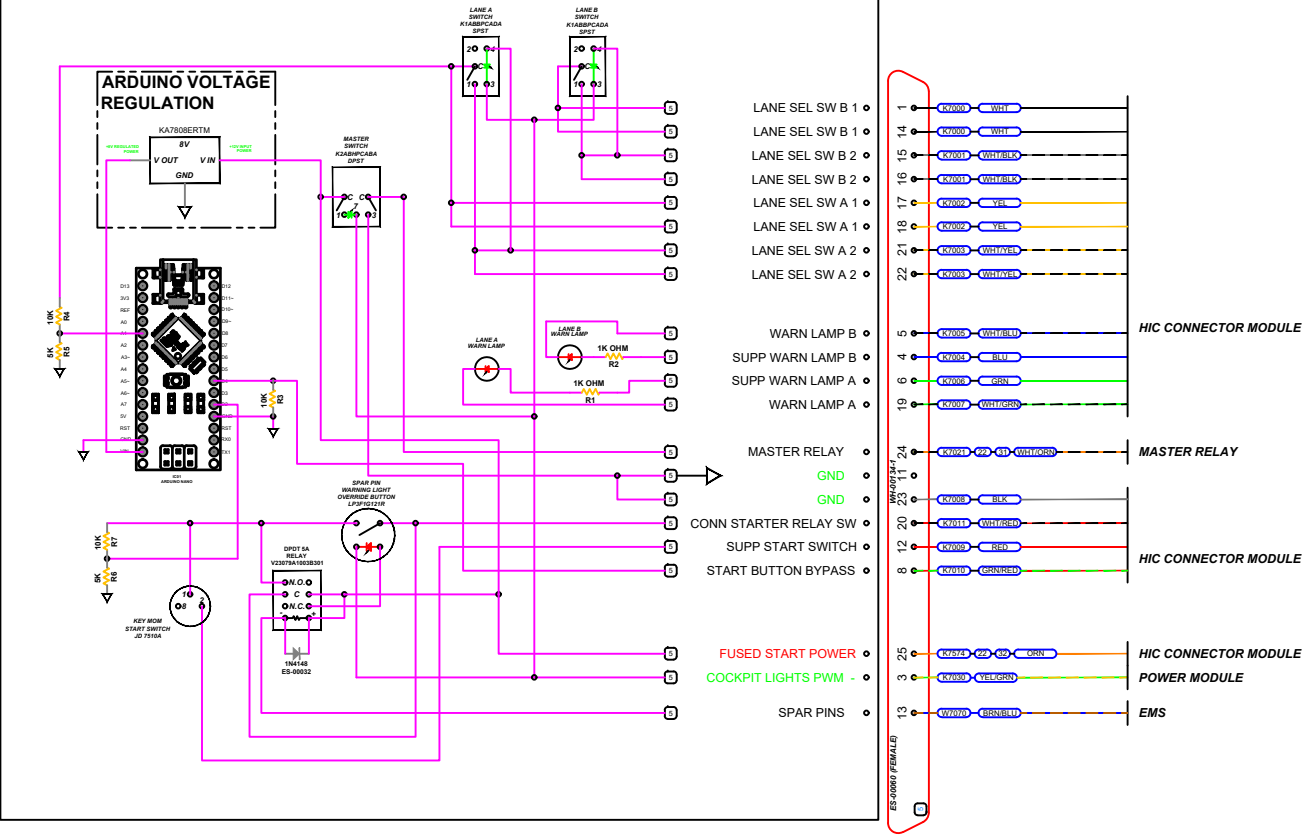
SCALE: NONE

WH-00134-4

PAGE: 8 OF 11

PATH:FILENAME: Q:\Components\Electrical\Wiring Harness\WH-00134\Electrical System 912iS G3X (WH-00134-4).DWG C-SIZE ORIGINAL

AV-60007 (ROTAX 912iS)
IGNITION & START MODULE
PCB ES-60007-V3.1



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

ROTAX 912iS G3X
ELECTRICAL SYSTEM

DATE DRAWN: 6/11/2018

DRAWN BY: TONY KIRK

TOLERANCES: NONE

(UNLESS OTHERWISE SPECIFIED)

UNITS:

INCHES

SCALE: NONE

WH-00134-4

PAGE: 10 OF 11

