



Multiplex Integration Schematic

2022 Allegro RED

33 AA 37 BA 37 PA 38 KA

SPYDER
CONTROLS CORP









Table of Contents

! COMPONENTS ARE NOT TO SCALE !

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- 8 HVAC

- 9 Water Heat / Pump
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Schematic Connections Legend

-  Constant Ground
-  Constant 12V+
-  Switched Ground
-  Switched 12V+
-  Reverse Polarity
-  Signal
-  120V AC Line
-  Network

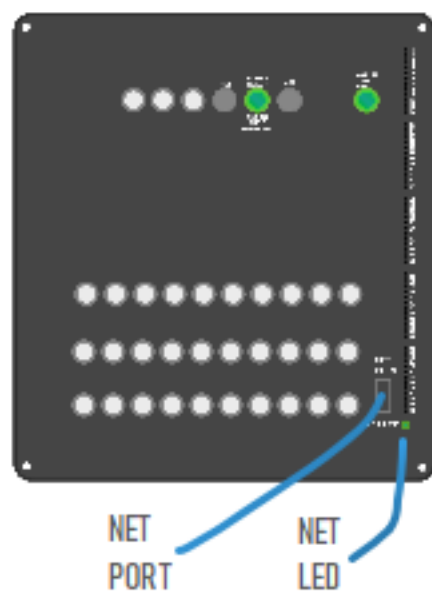


A G6 CHS PANEL



Spyder Part Number
BENC254DH
Tiffin Part Number
5113997

Dimensions
10" X 10"

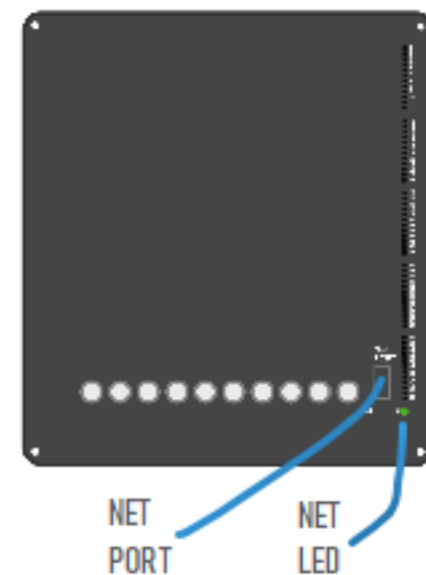


B G6 HSE PANEL



Spyder Part Number
BENC252DH
Tiffin Part Number
5114031

Dimensions
10" X 10"



C DCD Panel



Spyder Part Number
BENC238DH
Tiffin Part Number
5114013

Dimensions
10" X 10"

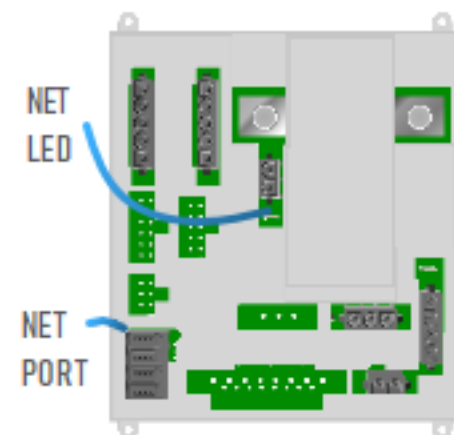


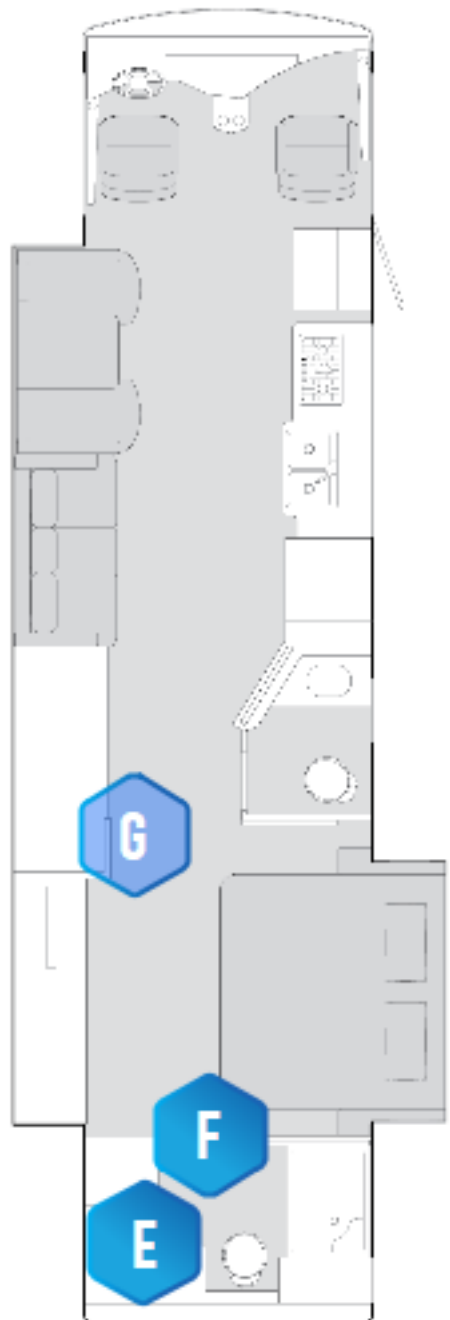
D PMM



Spyder Part Number
BENCZP8CY
Tiffin Part Number
5104147

Dimensions
5.7" X 5.4"

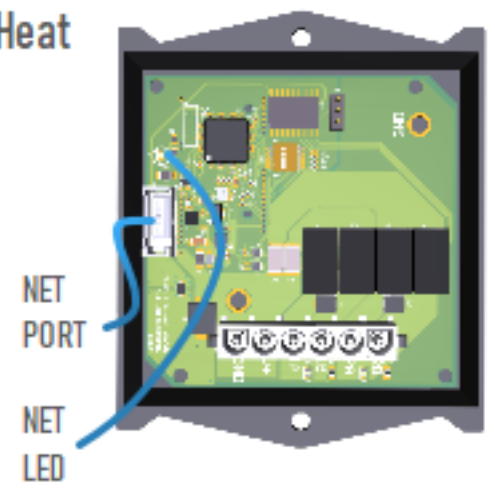




E HCR-15
Floor Heat



Spyder Part Number
BM0DZQFC0
Tiffin Part Number
5110710
Dimensions
2.7" X 2.7"



F Mira Module



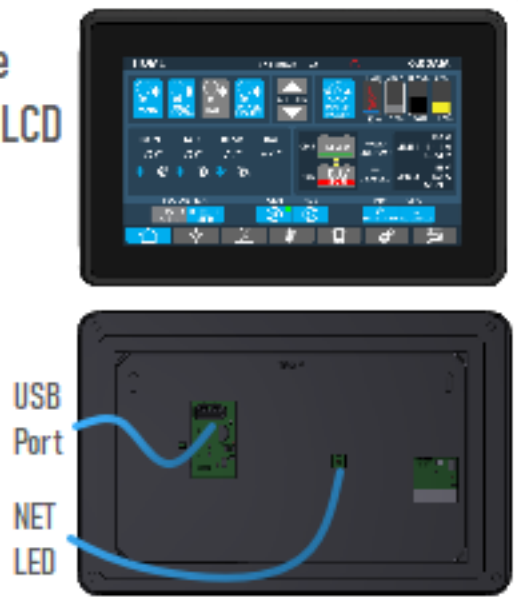
Spyder Part Number
BM0DZ56VF
Tiffin Part Number
5114034
Dimensions
4" X 2.5"



G 7" Lite
Color LCD



Spyder Part Number
BSSPZZQDS
Tiffin Part Number
5114026
Dimensions
7.6" X 5"



G6A CONTROL PANEL LAYOUT
Tiffin PN: 5114031 Spyder PN: BENCZ52DH
2022 RED - HOUSE
PINOUT DIAGRAM - 2021-02-25

Back View

- CONNECTOR 4**
- 4-1 REAR BATH/MID SINK CEILING LIGHTS - (G6 LED 13)
 - 4-2 TASK LIGHTS - (G6 LED 14)
 - 4-3 MID BATH CEILING LIGHTS - (G6 LED 15)
 - 4-4 BEDROOM ACCENT (G6 LED 16)

- CONNECTOR 5**
- 5-1 TV LIFT UP - (G6 LED 17)
 - 5-2 TV ACCENT LIGHTS - (G6 LED 18)
 - 5-3 FR ZONE HT EXCHANGER - (G6 LED 19)
 - 5-4 RR ZONE HT EXCHANGER - (G6 LED 20)

- CONNECTOR 6**
- 6-1 TV LIFT DOWN - (G6 LED 21)
 - 6-2 PORCH LIGHT - (G6 LED 22)
 - 6-3 ELECTRIC WTR HT - (G6 LED 23)
 - 6-4 DIESEL / GAS WTR HT - (G6 LED 24)

J16 --- FR TV LIFT COMMON

J18 --- FR TV LIFT COMMON

- CONNECTOR 10**
- 10-1 A/C ON/OFF 1 - (G6 LED 37)
 - 10-2 A/C 1 LO - (G6 LED 38)
 - 10-3 A/C 1 HI - (G6 LED 39)
 - 10-4 A/C 1 STRIP HT - (G6 LED 40)

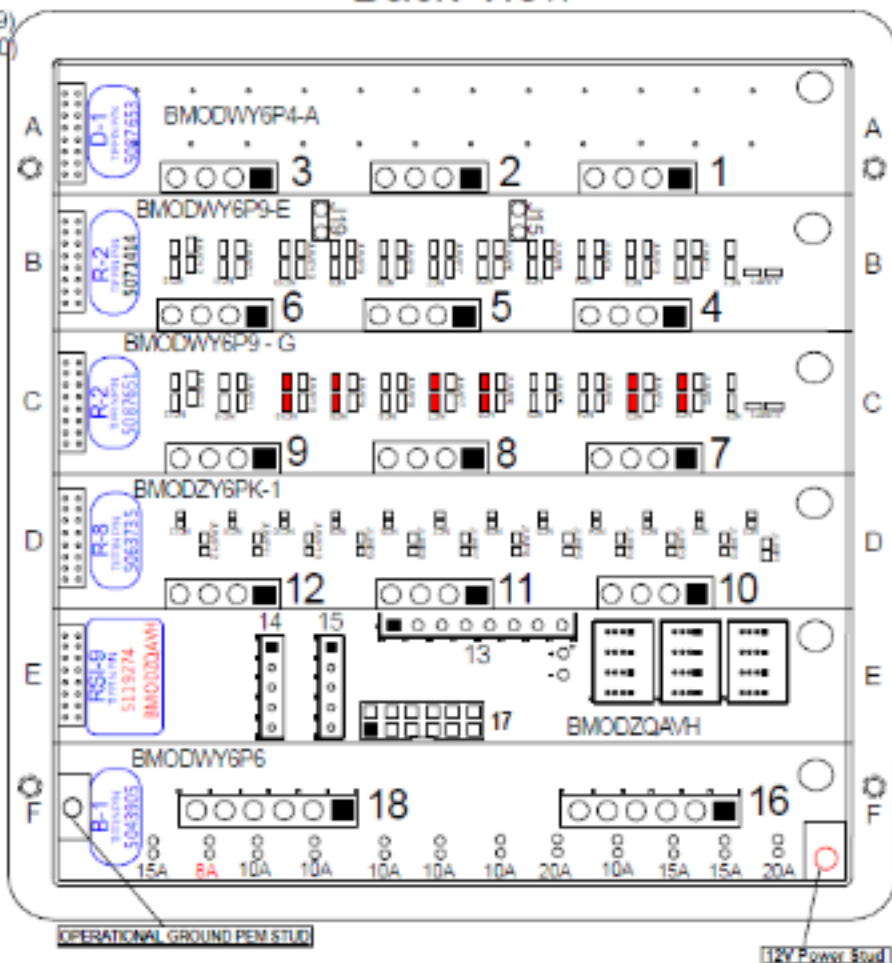
- CONNECTOR 11**
- 11-1 A/C ON/OFF 2 - (G6 LED 41)
 - 11-2 A/C 2 LO - (G6 LED 42)
 - 11-3 A/C 2 HI - (G6 LED 43)
 - 11-4 A/C 2 STRIP HT - (G6 LED 44)

- CONNECTOR 12**
- 12-1 A/C ON/OFF 3 - (G6 LED 45)
 - 12-2 A/C 3 LO - (G6 LED 46)
 - 12-3 A/C 3 HI - (G6 LED 47)
 - 12-4 A/C 3 STRIP HT - (G6 LED 48)

- CONNECTOR 17 THERMISTER INPUTS**
- RR FLOOR HEAT THERMISTER INPUT
 - FR FLOOR HEAT THERMISTER INPUT
 - BAY ZONE THERMISTER INPUT
 - MID ZONE THERMISTER INPUT
 - REAR ZONE THERMISTER INPUT
 - FRONT ZONE THERMISTER INPUT

- CONNECTOR 14 (12V+ INPUTS)**
- 14-1 WTR HTR STATUS
 - 14-2 IGN 12V+ INPUT
 - 14-3 AQUAHOT EXCHANGER INPUT (AQUAHOT PIN 7)
 - 14-4 FLUID FULL
 - 14-5

- CONNECTOR 15 (GND INPUTS)**
- 15-1 WATER PUMP SW
 - 15-2 PARK BRAKE INPUT
 - 15-3 CLOSET LIGHT SW
 - 15-4 ENTRY DOOR PIN SW
 - 15-5



- CONNECTOR 1**
- 1-1 MAIN O/H / LIV RM LIGHT 1 - (G6 LED 1)
 - 1-2 ENTRY / FLOOR LIGHT - (G6 LED 2)
 - 1-3 PS SLIDE LIGHTS - (G6 LED 3)
 - 1-4 DS SLIDE LIGHTS - (G6 LED 4)

- CONNECTOR 2**
- 2-1 MID HALL LIGHTS - (G6 LED 5)
 - 2-2 FURNACE 12V+ TRIGGER - (G6 LED 6)
 - 2-3 BAY HT EXCHANGER - (G6 LED 7)
 - 2-4 GALLEY LIGHTS - (G6 LED 8)

- CONNECTOR 3**
- 3-1 SCONCE - (G6 LED 9)
 - 3-2 MAIN O/H / LIV RM LIGHT 2 - (G6 LED 10)
 - 3-3 FRONT ACCENT - (G6 LED 11)
 - 3-4 BEDROOM LIGHTS - (G6 LED 12)

- CONNECTOR 7**
- 7-1 GALLEY FAN ON/OFF - (G6 LED 25)
 - 7-2 GALLEY FAN UP - (G6 LED 26)
 - 7-3 GALLEY FAN DN - (G6 LED 27)
 - 7-4 CLOSET LIGHTS (OPTIONAL) - (G6 LED 28)

- CONNECTOR 8**
- 8-1 MID BATH FAN ON/OFF - (G6 LED 29)
 - 8-2 MID BATH FAN UP - (G6 LED 30)
 - 8-3 MID BATH FAN DN - (G6 LED 31)
 - 8-4 REAR BATH / MID SINK FAN ON/OFF - (G6 LED 32)

- CONNECTOR 9**
- 9-1 REAR BATH / MID SINK FAN UP - (G6 LED 33)
 - 9-2 REAR BATH / MID SINK FAN DN - (G6 LED 34)
 - 9-3 CEILING FAN LO - (G6 LED 35)
 - 9-4 CEILING FAN HI - (G6 LED 36)

- CONNECTOR 13**
- 13-1
 - 13-2
 - 13-3 GND (COMMON FOR SENSORS)
 - 13-4 LPG SENSOR INPUT
 - 13-5 BLACK TANK SENSOR INPUT
 - 13-6 GREY TANK SENSOR INPUT
 - 13-7 FRESH TANK SENSOR INPUT
 - 13-8

- CONNECTOR 18**
- 18-1 FRONT THERMO - BREAKER #67
 - 18-2 MID THERMO - BREAKER #68
 - 18-3 TOILET/REAR THERMO - BREAKER #69
 - 18-4 BRKR TO RR SLIDE - BREAKER #70
 - 18-5 TRUMA WATER HEATER - BREAKER #71
 - 18-6 BREAKER #72

- CONNECTOR 16**
- 16-1 MACERATOR TOILET - BREAKER #61
 - 16-2 FRONT FURNACE - BREAKER #62
 - 16-3 REAR FURNACE - BREAKER #63
 - 16-4 SWTCHER / LP/IR - BREAKER #64
 - 16-5 OUTSIDE TV - BREAKER #65
 - 16-6 BRKR TO FR SLD - BREAKER #66

/ SHD MOD

NOTE: CONNECTORS ARE SHOWN HERE IN THE LOADED (REAR) VIEW.

Card Legend

- R=RELAY CARD
- B=BREAKER CARD
- RSI-9=INPUT MODULE
- D=DIMMER CARD
- = JUMPED

G6A CONTROL PANEL LAYOUT
 Tiffin PN: 5113997 Spyder PN: BENCZ54DH
 2022 RED - CHASSIS
PINOUT DIAGRAM - 2021.02.04

Back View

MUST HAVE SIDE MOUNTING TABS ON G6 PANEL

- CONNECTOR 4**
- 4-1 WATER PUMP
 - 4-2
 - 4-3 DOOR / ASSIST HANDLE
 - 4-4

- CONNECTOR 5**
- 5-1 DOOR AWN RET
 - 5-2 DOOR AWN EXT
 - 5-3
 - 5-4

- CONNECTOR 6**
- 6-1 GALLEY SHADE UP
 - 6-2 GALLEY SHADE DN
 - 6-3 GEN START
 - 6-4 GEN STOP

PARK BRAKE SIGNAL

IGNITION SIGNAL

- CONNECTOR 10**
- 13-1 MAP LT / RADIO / FANS - BREAKER #49
 - 13-2 USB POWER - BREAKER #50
 - 13-3 KEYLESS POWER - BREAKER #51
 - 13-4 ENTRY STEP SWITCH - BREAKER #52
 - 13-5 ENTRY STEP POWER - BREAKER #53
 - 13-6 CAR/GO LIGHTS (CONST) - BREAKER #54

- CONNECTOR 11**
- 15-1 POWER SEAT #1 - BREAKER #55
 - 15-2 CB - BREAKER #56
 - 15-3 ELEC STEP COVER - BREAKER #57
 - 15-4 SATELITE - BREAKER #58
 - 15-5 SHADES - BREAKER #59
 - 15-6 POWER SEAT #2 - BREAKER #60

Card Legend

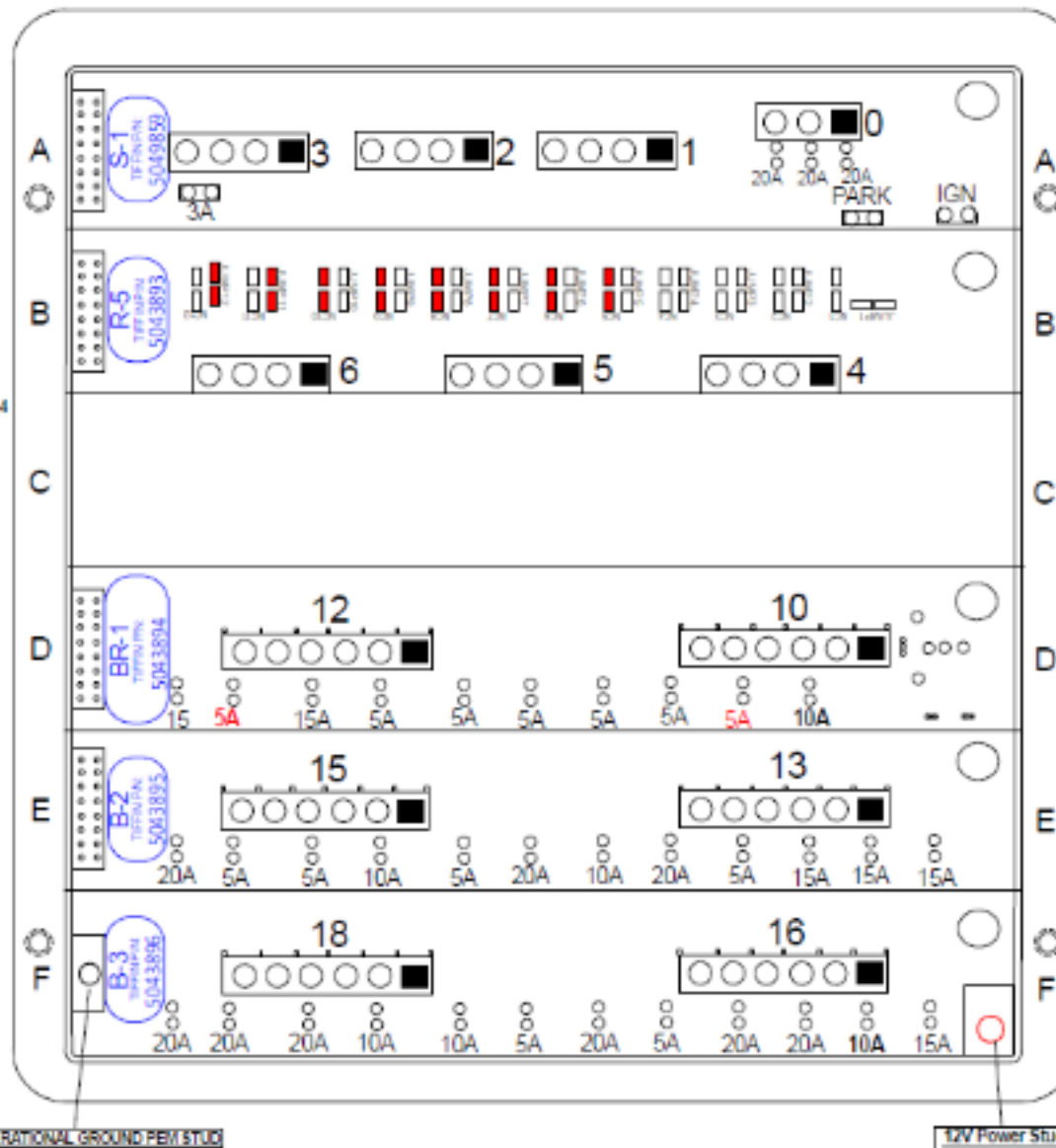
R=RELAY CARD

B=BREAKER CARD

BR=BREAKER/
RELAY CARD

D=DIMMER CARD

= JUMPERED



NOTE: CONNECTORS ARE SHOWN HERE IN THE LOADED (REAR) VIEW.

- CONNECTOR 0**
- 0-1 FRONT SLIDE MODULE
 - 0-2 VANITY SLIDE MODULE
 - 0-3 BED SLIDE MODULE

- CONNECTOR 1**
- 1-1 D/S FR SLIDE RET
 - 1-2 D/S FR SLIDE EXT
 - 1-3 P/S FR SLIDE RET
 - 1-4 P/S FR SLIDE EXT

- CONNECTOR 2**
- 2-1 D/S RR SLIDE RET
 - 2-2 D/S RR SLIDE EXT
 - 2-3 P/S RR SLIDE RET
 - 2-4 P/S RR SLIDE EXT

- CONNECTOR 3**
- 3-1 HYDRAULIC PUMP - D/S SLIDE
 - 3-2 HYDRAULIC PUMP - P/S SLIDE
 - 3-3
 - 3-4

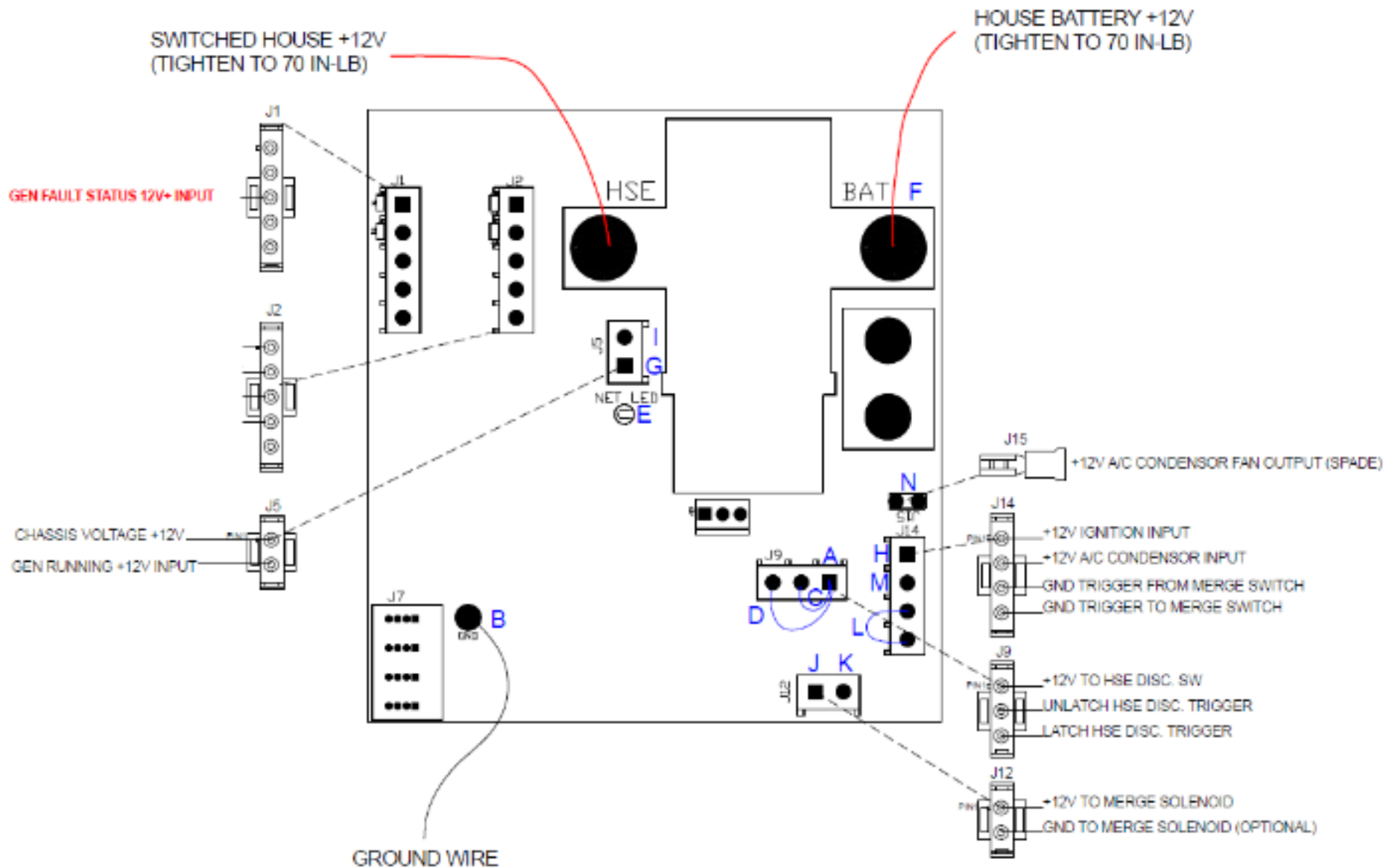
- CONNECTOR 3A**
- 3A-1 UNDERCOACH CONSTANT

- CONNECTOR 10**
- 10-1 - BREAKER #37
 - 10-2 - BREAKER #38
 - 10-3 DENSO A/C PWR IGN(YLW) - BREAKER #39
 - 10-4 DRIVERS MIRROR PWR - BREAKER #40
 - 10-5 CAMERA IGN - BREAKER #41
 - 10-6 JACK BUZZER - BREAKER #42

- CONNECTOR 12**
- 12-1 PANEL LAMP/HEADLT LED - BREAKER #43
 - 12-2 FRIDGE - BREAKER #44
 - 12-3 ENTRY STEP IGN - BREAKER #45
 - 12-4 DOCK LIGHT - BREAKER #46
 - 12-5 PASS SIDE MIRROR PWR - BREAKER #47
 - 12-6 POWER WINDOW OPTION - BREAKER #48

- CONNECTOR 16**
- 16-1 RADIO MEMORY / XM PWR - BREAKER #61
 - 16-2 DENSO A/C POWER - BREAKER #62
 - 16-3 12V+ OUTLET #1 - BREAKER #63
 - 16-4 12V+ OUTLET #2 - BREAKER #64
 - 16-5 ENGINE PREHEAT SWITCH - BREAKER #65
 - 16-6 HYDRA-HOT (option) - BREAKER #66

- CONNECTOR 18**
- 18-1 EMS MODULE - BREAKER #67
 - 18-2 CORD REEL - BREAKER #68
 - 18-3 HOSE REEL - BREAKER #69
 - 18-4 FRONT SLIDE MODULE - BREAKER #70
 - 18-5 VANITY SLIDE MODULE - BREAKER #71
 - 18-6 BED SLIDE MODULE - BREAKER #72



NOTE: CONNECTORS ARE SHOWN HERE IN THE LOADED (REAR) VIEW.

CON 4

Non-Dimming Lights



- 1 G6 LED 13 - Rear Bth/Mid Snk Ceiling Lts
- 2 G6 LED 14 - Task Lts
- 3 G6 LED 15 - Mid Bath Ceil Lts
- 4 G6 LED 16 - Bedroom Accent

CON 3

Dimming Lights



- 1 G6 LED 9 - Sconce Lts
- 2 G6 LED 10 - Main O/H 2 Lts
- 3 G6 LED 11 - Front Accnt Lts
- 4 G6 LED 12 - Bedroom Lts

CON 2

Dimming Lights



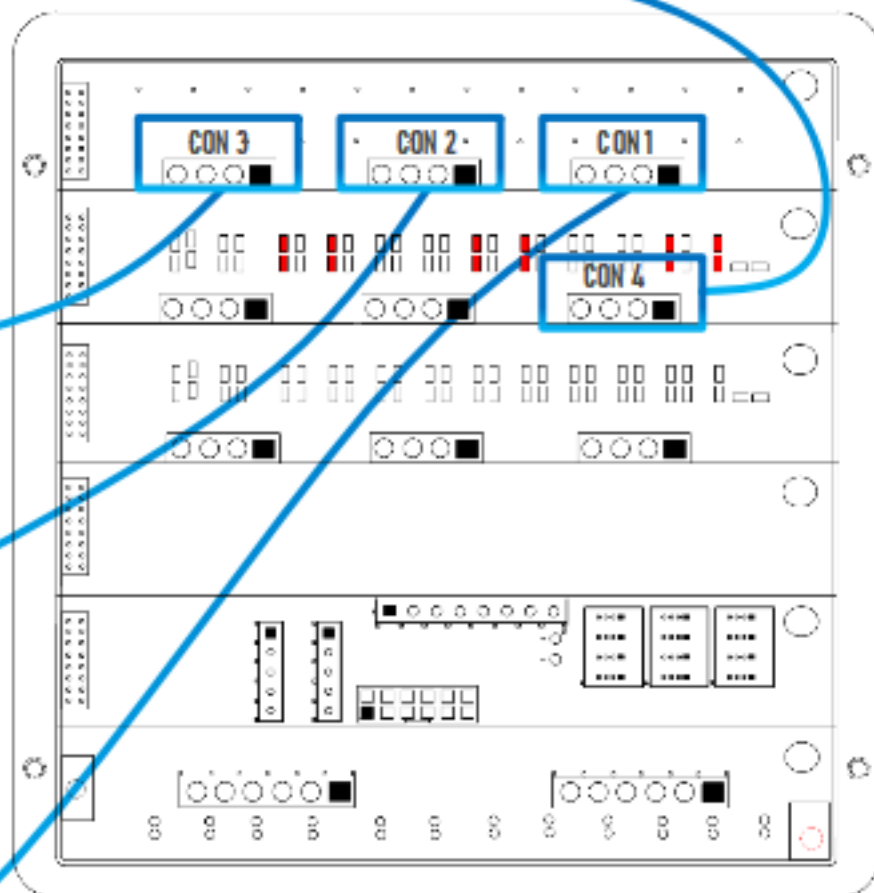
- 1 G6 LED 5 - Mid Hall Lts
- 2 G6 LED 6 - Entry Lts
- 3 G6 LED 7 - Entry Lts
- 4 G6 LED 8 - Galley Lts

CON 1

Dimming Lights



- 1 G6 LED 1 - Main O/H Ceiling Lts
- 2 G6 LED 2 - Entry Lts
- 3 G6 LED 3 - P/S Slide Lts
- 4 G6 LED 4 - D/S Slide Lts

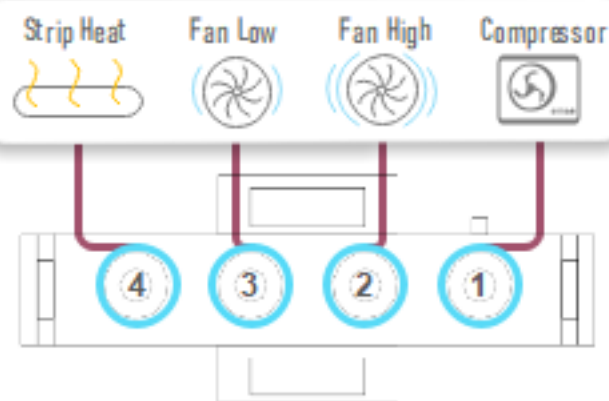


G6 HOUSE PANEL

@ Bathroom Vanity

REAR AC

@ Roof

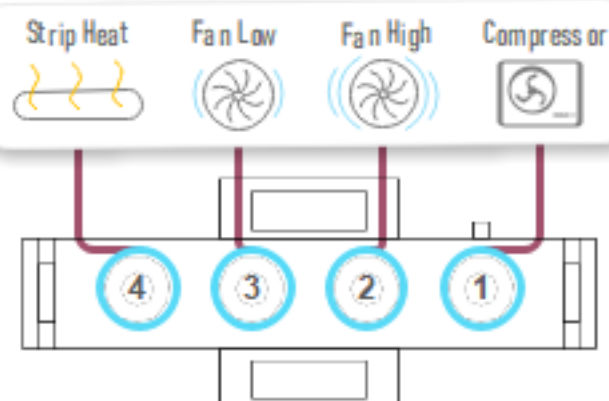


CON
12

- ① G6 LED 45 - RR A/C Compressor
- ② G6 LED 46 - RR A/C Fan High
- ③ G6 LED 47 - RR A/C Fan Low
- ④ G6 LED 48 - RR A/C Heat Pump

MID AC

@ Roof

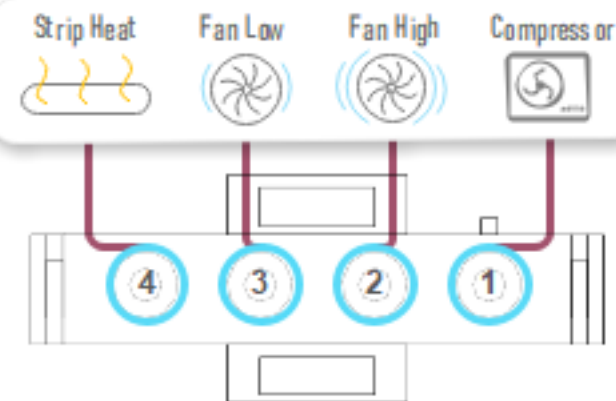


CON
11

- ① G6 LED 41 - MD A/C Compressor
- ② G6 LED 42 - MD A/C Fan High
- ③ G6 LED 43 - MD A/C Fan Low
- ④ G6 LED 44 - MD A/C Heat Pump

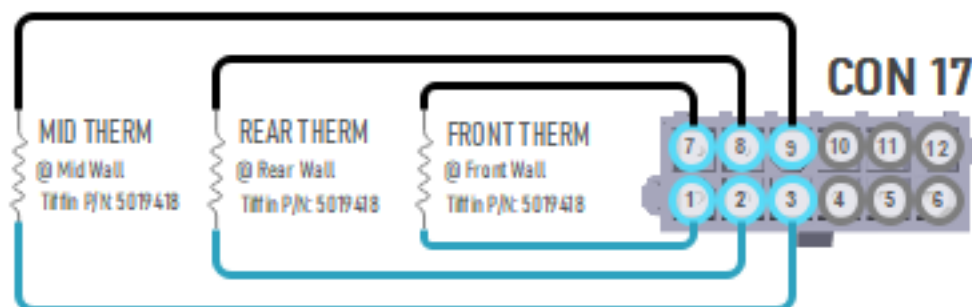
FRONT AC

@ Roof



CON
10

- ① G6 LED 37 - FR A/C Compressor
- ② G6 LED 38 - FR A/C Fan High
- ③ G6 LED 39 - FR A/C Fan Low
- ④ G6 LED 40 - FR A/C Heat Pump



HVAC thermistors - 100Kohms @25 C or 77 F

NOTE: As the temperature increases the resistance lowers

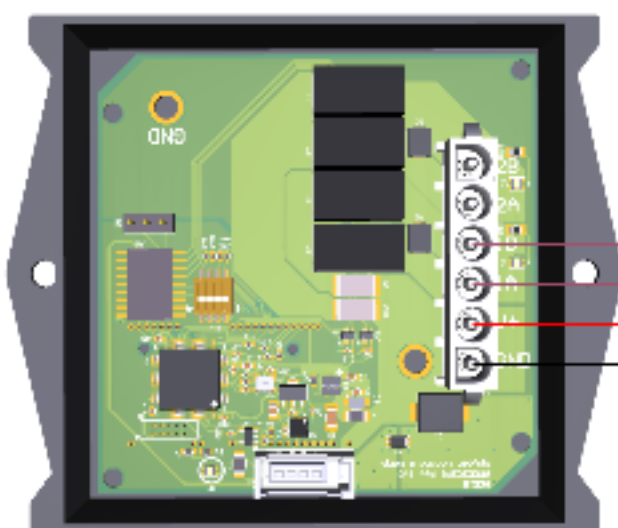


**G6 HOUSE
PANEL**
@ Bathroom Vanity



120V BREAKER PANEL

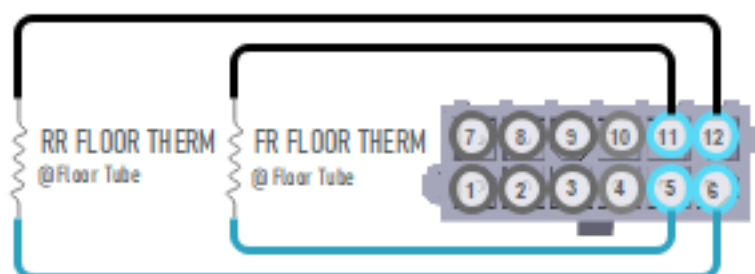
@ Rear Closet



HCR-15 FLOOR HEAT

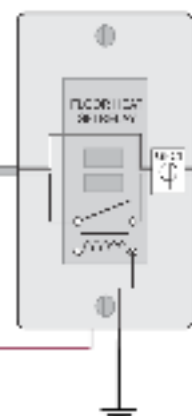
@ Rear Bath Vanity

GND 12V+



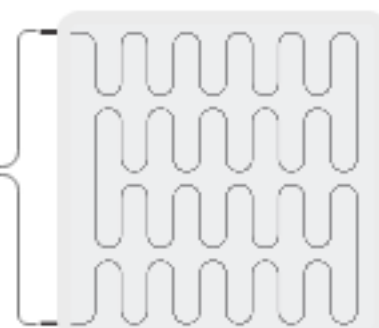
HVAC thermistors - 10Kohms @ 25 C or 77 F

NOTE: As the temperature increases the resistance lowers

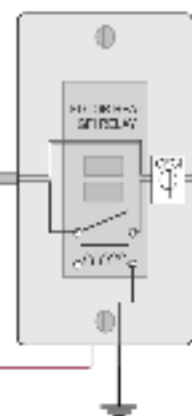


FR FLOOR HEAT GFI RELAY

@ Rear Closet
Tiffin P/N 5043498

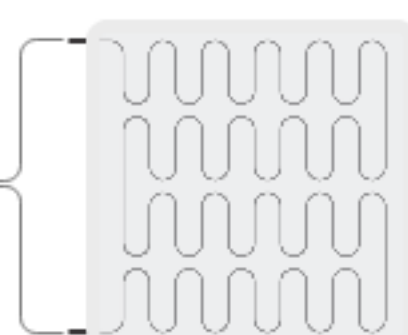


FR FLOOR HEAT PAD

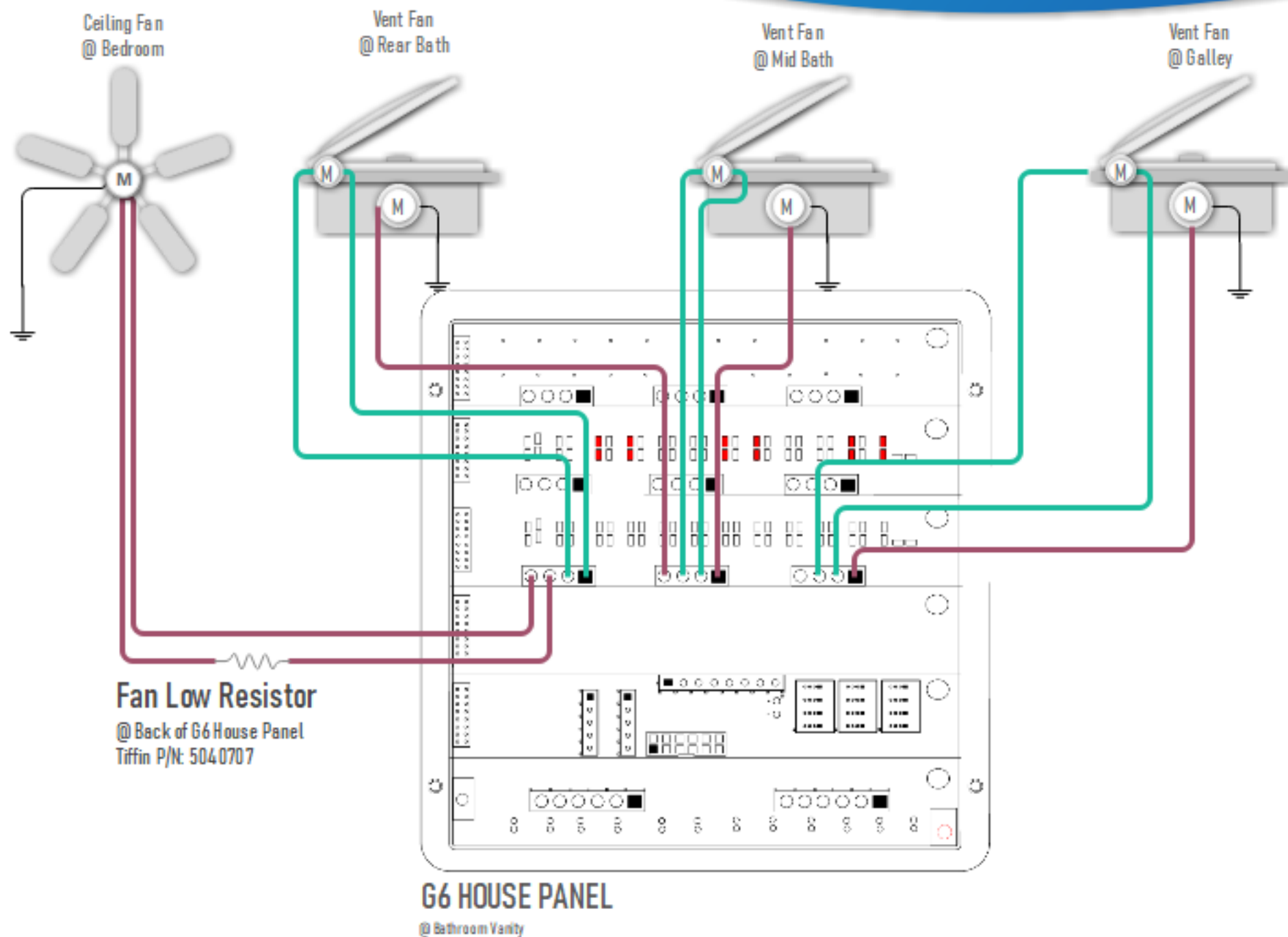


RR FLOOR HEAT GFI RELAY

@ Rear Closet
Tiffin P/N 5043498

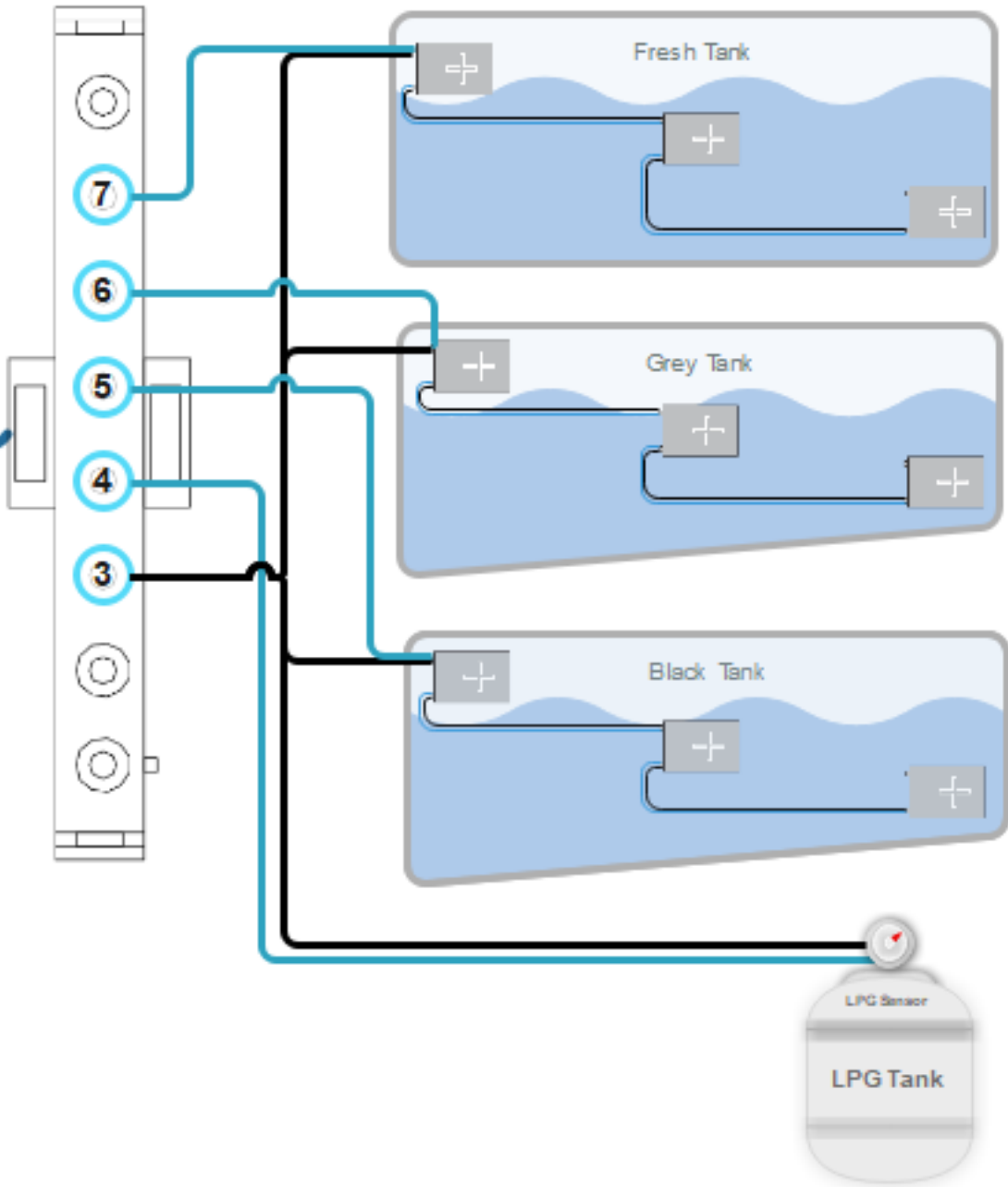
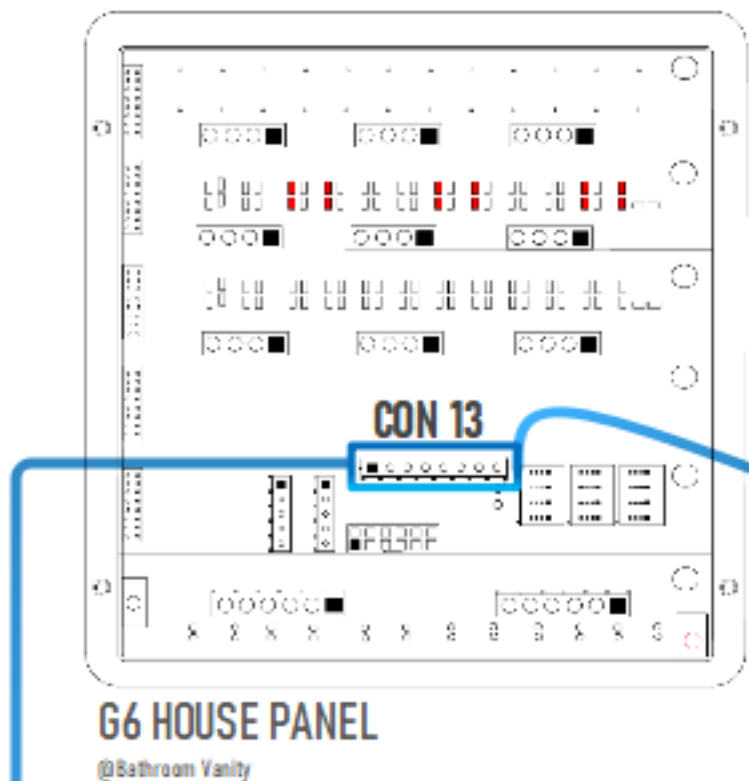


RR FLOOR HEAT PAD



CON 13

3 Level Tank Sensor System



CON 13



- 3 Common Ground
- 4 LPG Sensor In put
- 5 Black Sensor Input
- 6 Grey Sensor Input
- 7 Fresh Sensor In put

FRONT TV LIFT COMMON

CON 5

Front TV Lift Outputs

- 1 LED 43 - FRTV Lift Up



CON 6

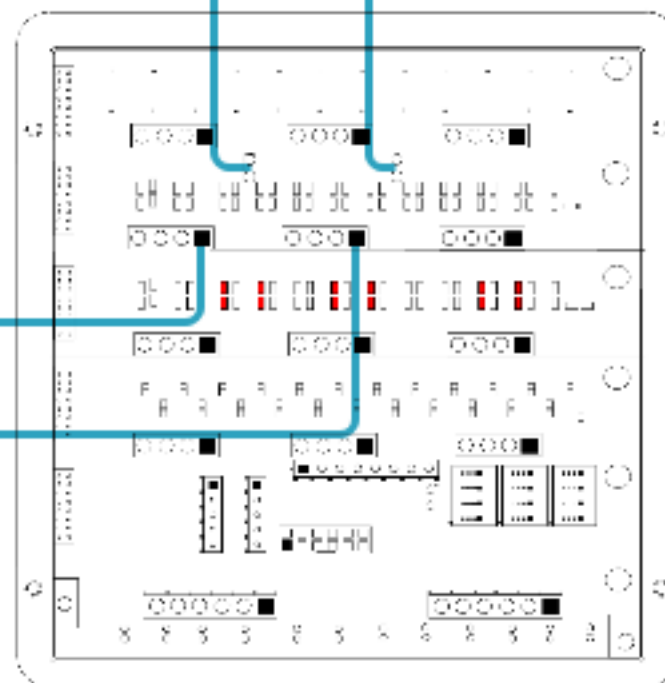
Front TV Lift Outputs

- 1 LED 44 - FRTV Lift Down



TV Lift Operation

- Press the control to raise the TV lift.
- Press and hold the control to lower the TV lift.



G6 HOUSE PANEL

@ Bathroom Vanity

Front Slide Outputs

- Power Input
- D/S Front Slide Retract
- D/S Front Slide Extend
- P/S Front Slide Retract
- P/S Front Slide Extend

Hydraulic Pumps

- Hydraulic Pump
- Power Input

Rear Slide Outputs

- Power Input
- P/S Rear Slide Extend
- P/S Rear Slide Retract
- D/S Rear Slide Extend
- D/S Rear Slide Retract

G6 CHASSIS PANEL

@EXT/D/S Comp



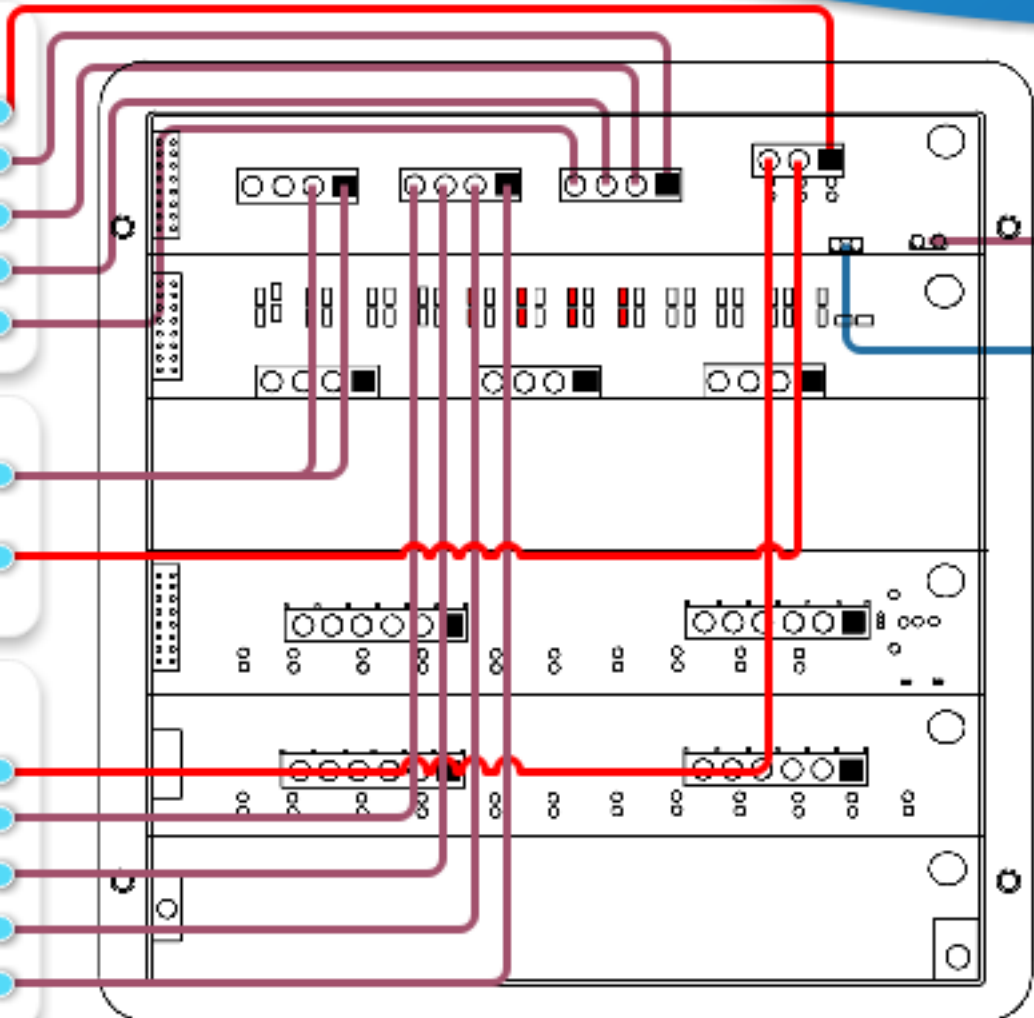
D/S Front Slide Switch
@ D/S Seat



P/S Front Slide Switch
@ P/S Seat

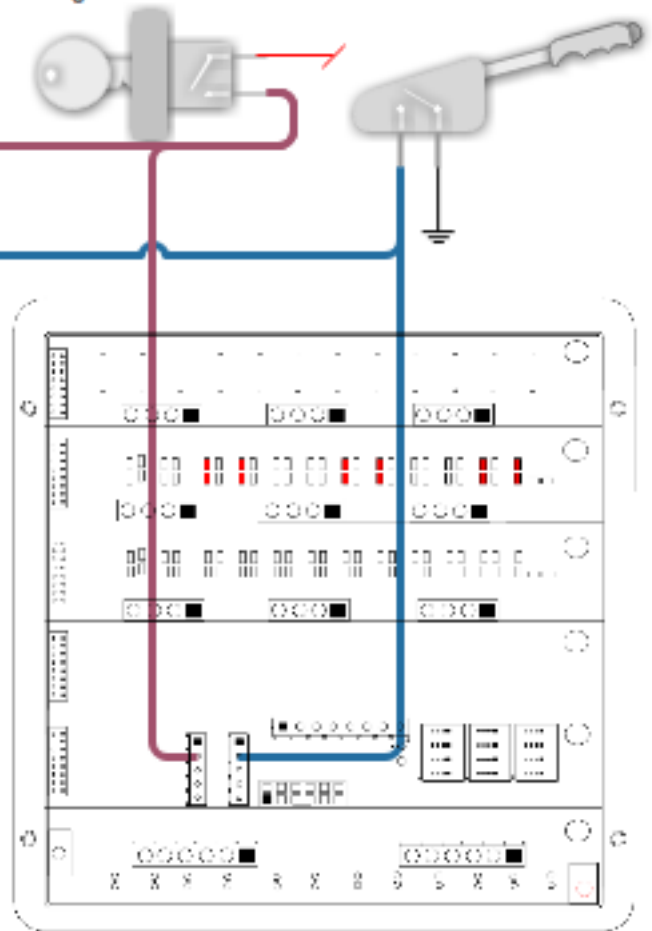
Emergency Override

Park brake and ignition must be on for slides to operate.
In case of a system failure, use manual overrides on front of G6 Chassis panel to operate slides. Engage overrides using a pen or other pointed object.



Ignition Switch

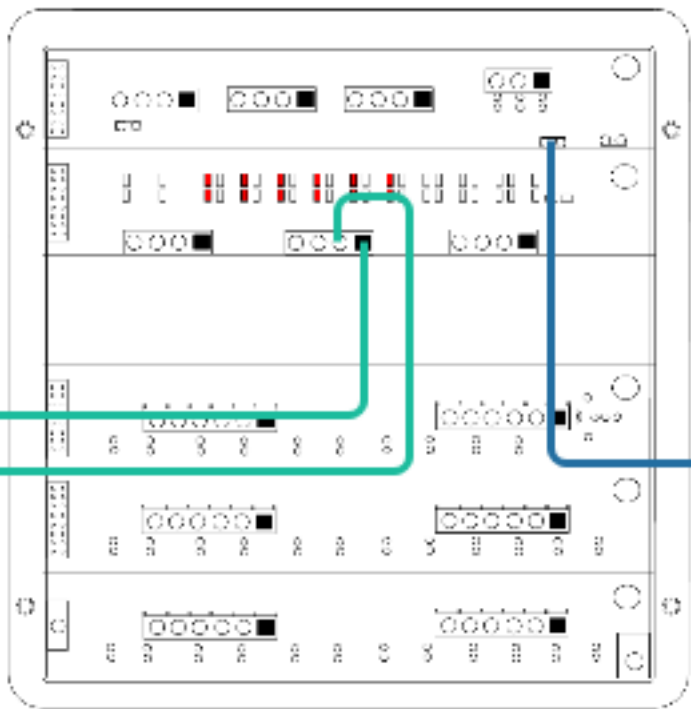
Park Brake Switch



G6 HOUSE PANEL

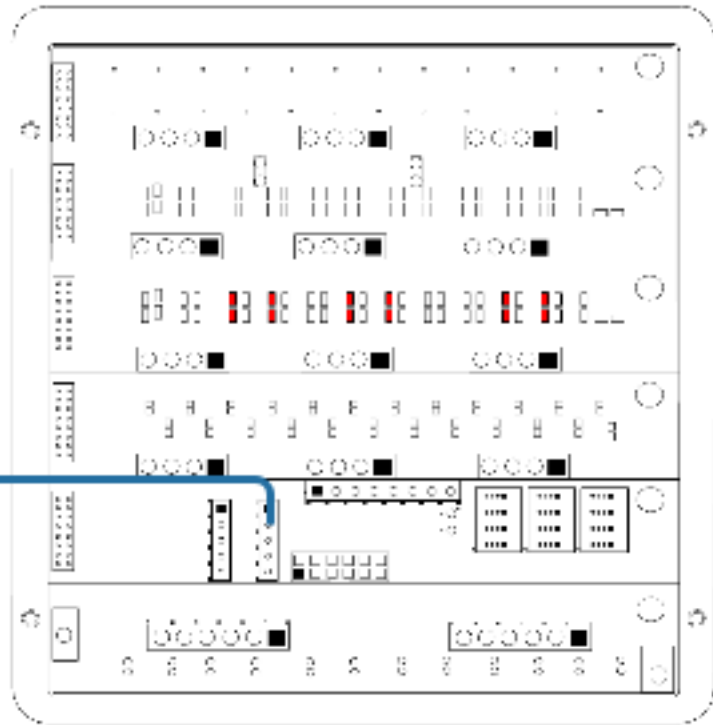
@ Bathroom Vanity

Park Brake Switch



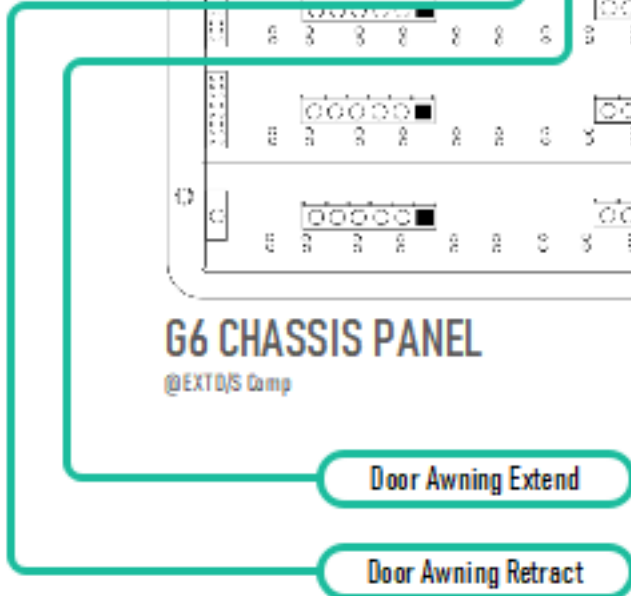
G6 CHASSIS PANEL

@EXTD/S Comp



G6 HOUSE PANEL

@Bathroom Vanity



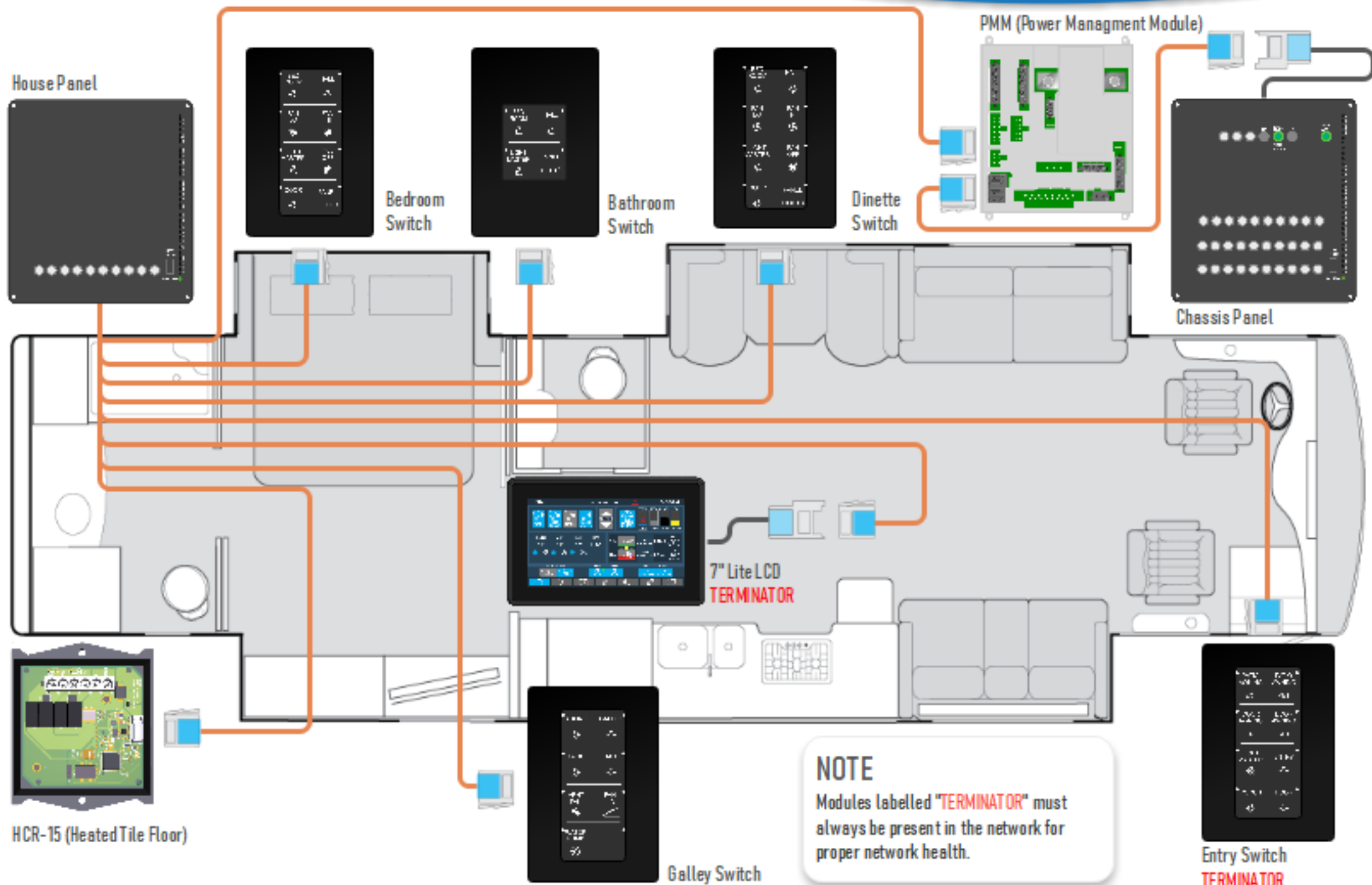
Door Awning Extend

Door Awning Retract



DOOR AWNING MOTOR

@Door Awning



NOTE
 Modules labelled "TERMINATOR" must always be present in the network for proper network health.

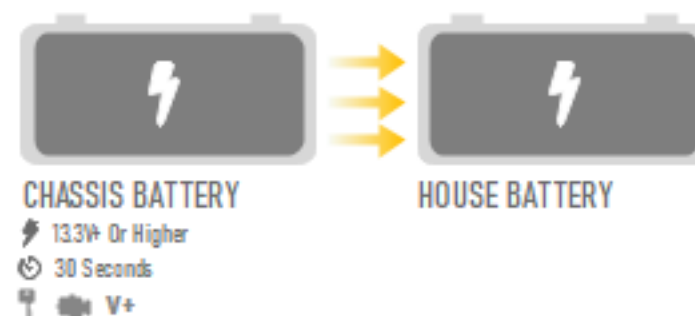
MERGE LOGIC - CHASSIS CHARGING HOUSE

The merge solenoid will engage if the following conditions are present:

- Ignition signal is present and chassis voltage is above 13.3V (charging) for 30 seconds

The merge solenoid will disengage under either of the following conditions:

- Ignition signal is removed
- Chassis voltage drops below 12.6V for more than 30 seconds (unmerge until the engine is shut off and started again)



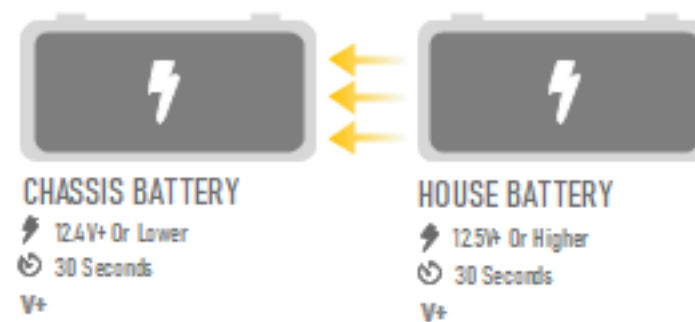
MERGE LOGIC - HOUSE CHARGING CHASSIS

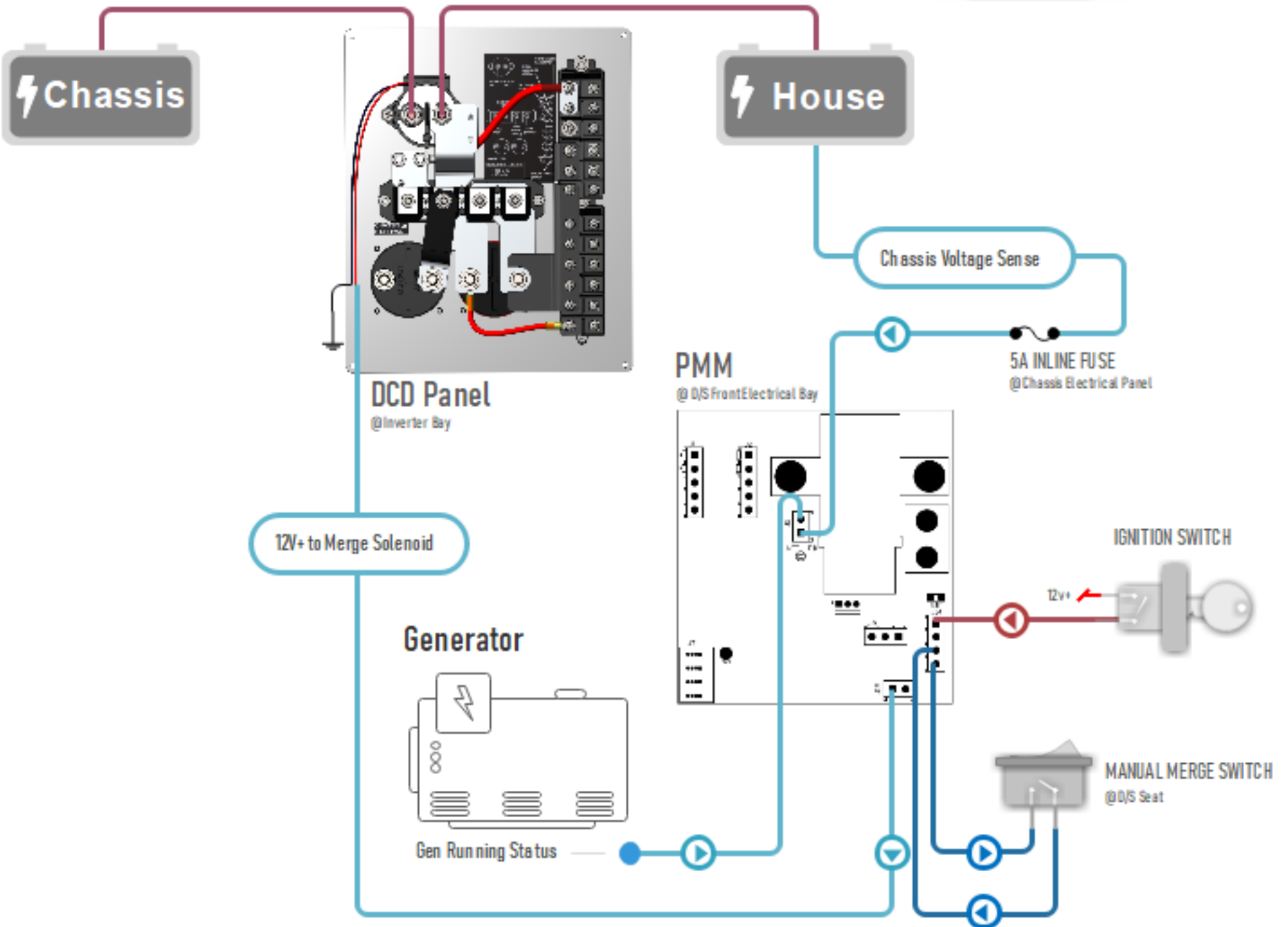
The merge solenoid will engage if the following conditions are present:

- House voltage is above 12.5V (charging) and chassis voltage is below 12.4V (low battery voltage) for 30 seconds

The merge solenoid will disengage under either of the following conditions:

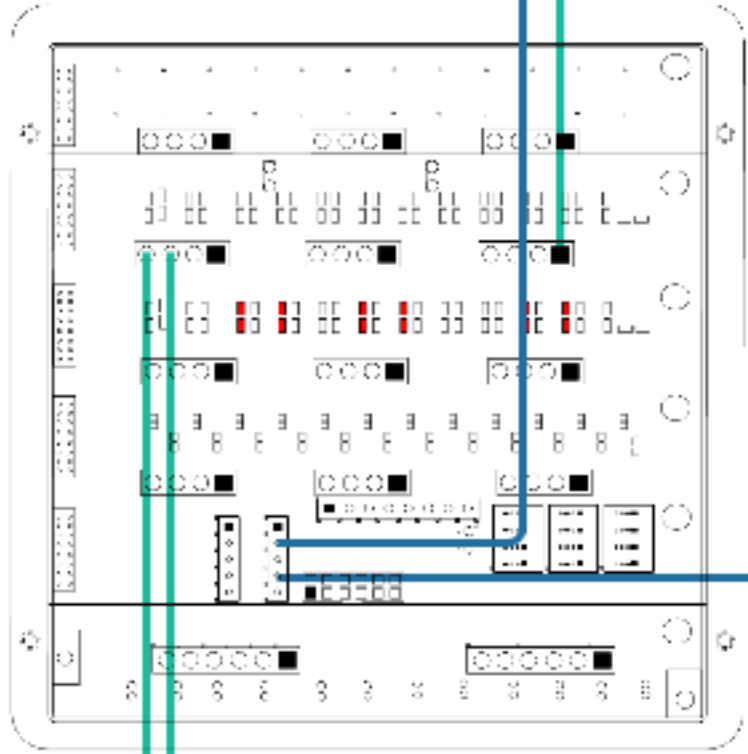
- House voltage drops below 12.2V for more than 30 seconds, OR
- 60 minutes timed battery merge period expires. Re-merge will occur again if the merge conditions are still present



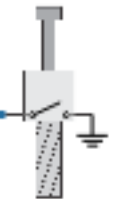


G6 HOUSE PANEL

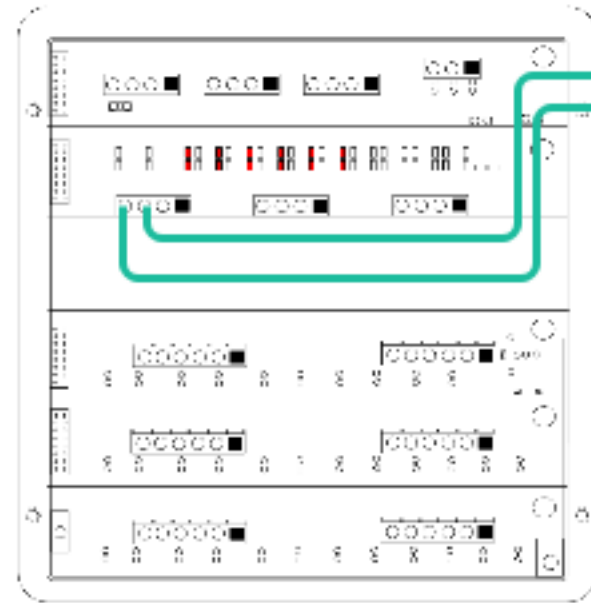
@ Bathroom Vanity



Water Pump Switch & Indicator
@ Plumbing Bay



ENTRY DOOR PIN SWITCH
@ Entry Door

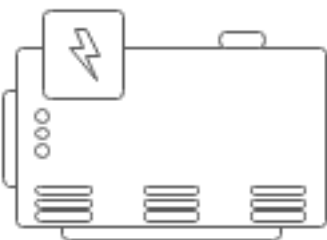


GALLEY SHADE MOTOR
@ Galley Shade

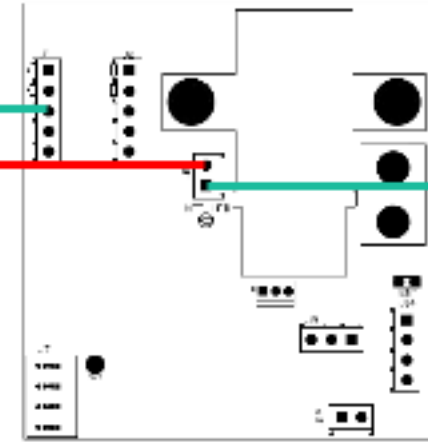
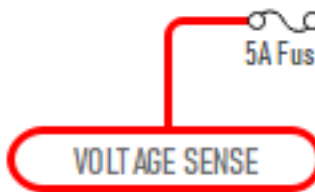
G6 CHASSIS PANEL

@ Front D/S EXT Compartment

Generator



- Gen Stop — ●
- Gen Start — ●
- Gen Fault Status — ●
- Gen Running Status — ●



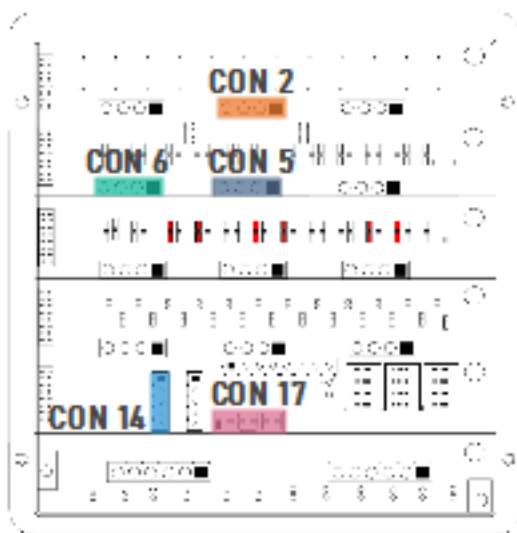
PMM
@ Front D/S EXT Compartment

- 12V+ output from Spyder To Aqua-Hot
- 12V+ output from Aqua-Hot To Spyder

CON 5

12V+ Outputs from G6

- LED 19 - FR HT Exchange
- LED 20 - RR HT Exchange



CON 2

12V+ Outputs from G6

- LED 6 - Furnace Trigger
- LED 7 - Bay Ht Exchange



CON 6

12V+ Outputs from G6

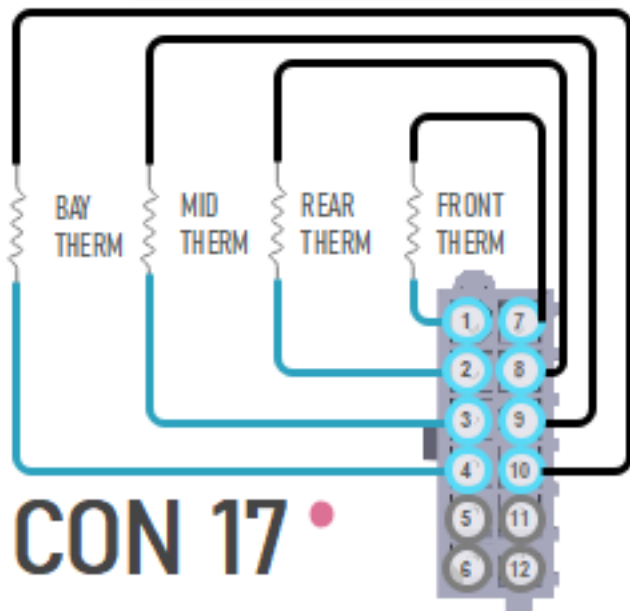
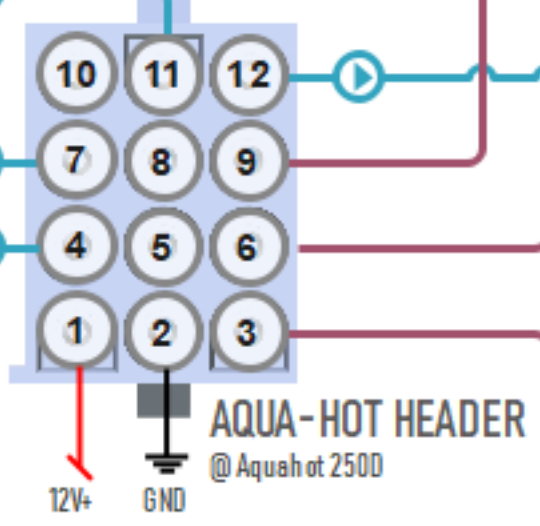
- LED 23 - Electric Wtr Heat
- LED 24 - Diesel Water Heat



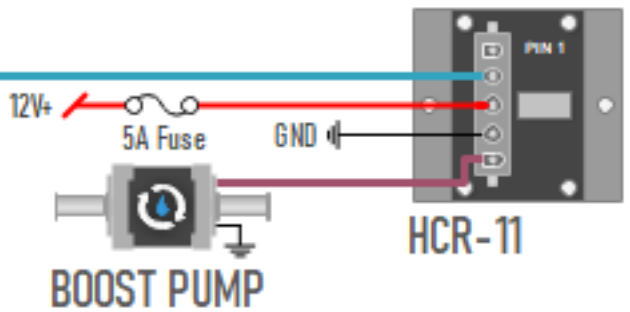
CON 14

12V+ Inputs from AH Header

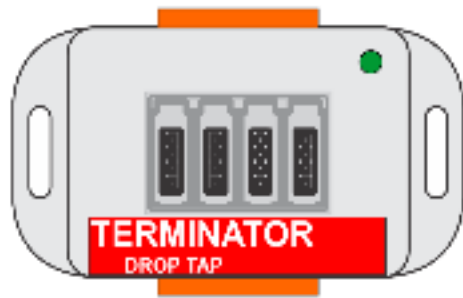
- Water Heater Status
- AH Exchanger Input
- Liquid Level Sensor



CON 17



G3 Terminator Tap
Tiffin P/N: 5051935



G3 Common Tap
Tiffin P/N: 5027834



G4 Common Drop Tap
Tiffin P/N: 6018692



Mini-Clamp Plug
Tiffin P/N: 6088157



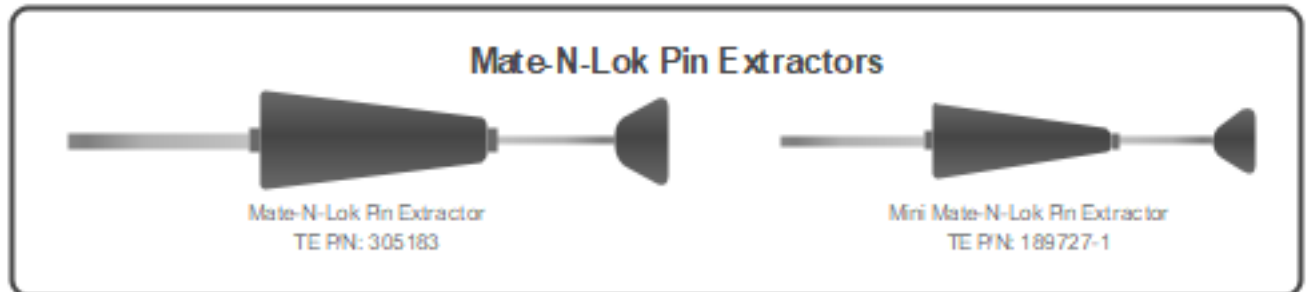
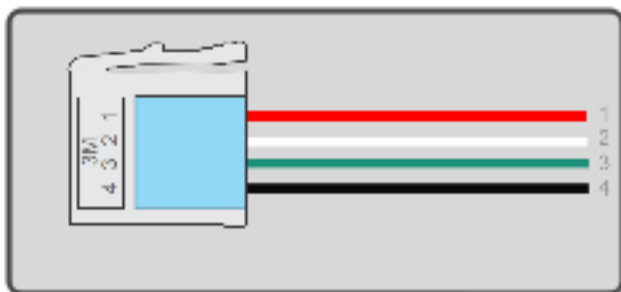
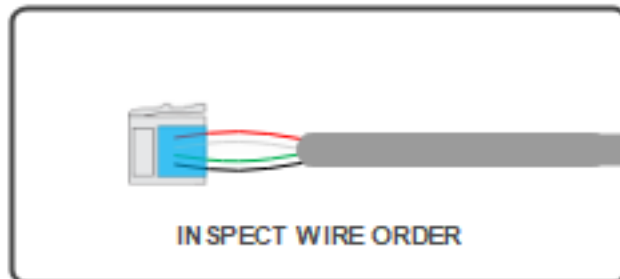
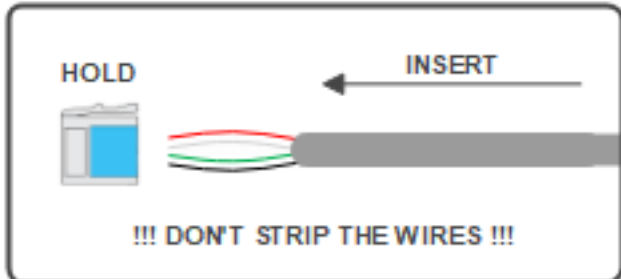
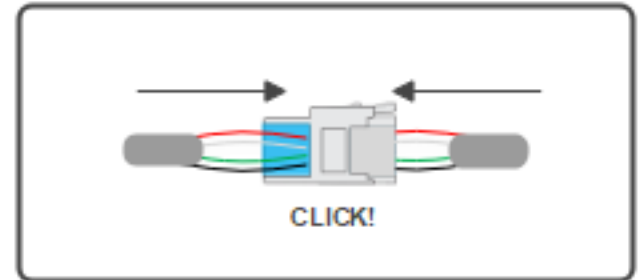
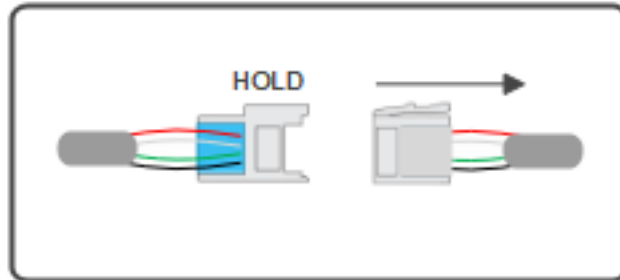
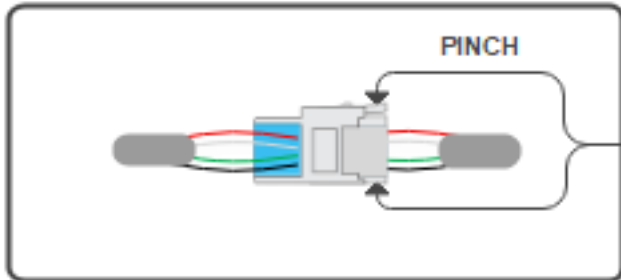
G4 Terminator Drop Tap
Tiffin P/N: 6061938



Mini-Clamp Socket
Tiffin P/N: 6088158



4 Pos Wago Connector
Tiffin P/N: 6016508



Mate-N-Lok Pin Extractors

Mate-N-Lok Pin Extractor
TE P/N: 305183

Mini Mate-N-Lok Pin Extractor
TE P/N: 189727-1