











Multiplex Integration Schematic

2020 Phaeton

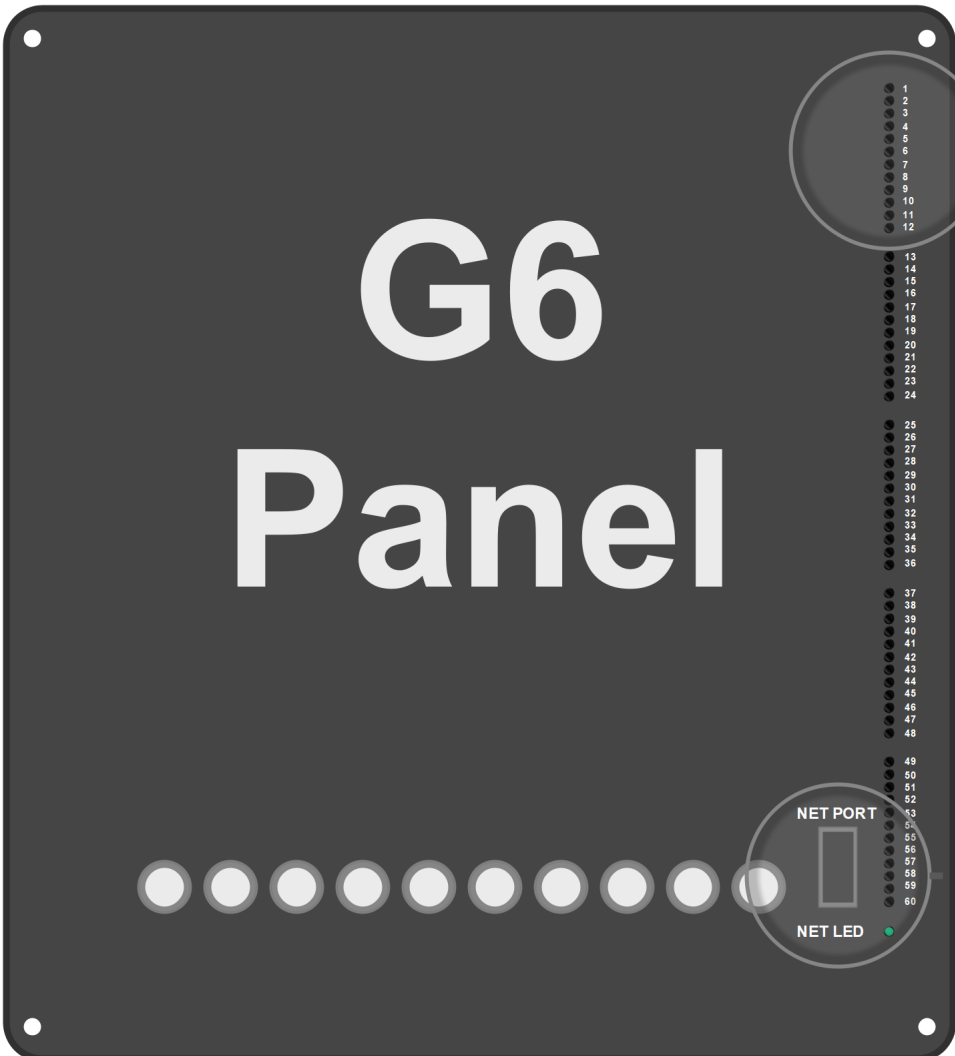
Schematic Connections Legend

 Constant Ground	 Reverse Polarity
 Constant 12V+	 Signal
 Switched Ground	 120 VAC Line
 Switched 12V+	

Network Connections Legend

 Critical Network
 Switch / Screen
 Module Network

2020 Tiffin Phaeton
General Info & Support
 (Components not to scale)



The CHANNEL LED corresponds with the circuit listed on the house or chassis G6A panels. The LED will turn on or off indicating whether the circuit is on or off. Please refer to the house or chassis panel pinouts for a complete channel list.

The NET PORT is a helpful diagnostic tool. If you are updateing your coach with a programmer switch you will generally plug it in here. Spyder may also ask you to use this port to troubleshoot network issues. The NET LED reports the network status of the G6 panel. Please see the network status chart for more information.

Spyder Controls Website


To access more information on your coach or to contact us by email please navigate to

<http://spydercontrols.com/customer-login/>








OR

Scan the QR Code below with your smartphone camera. Enter the following into the username and password feilds.

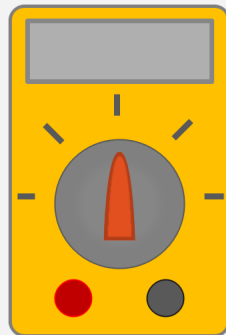
Username: Tiffin
Password: Motorhomes






NETWORK STATUS LED INDICATOR

-  **SOLID GREEN** - Device is connected to network and communicating properly
-  **LED OFF** - Device has no power or has failed completley
-  **SOLID RED** - Device has gone offline and is not connected to the network
-  **FAST FLASHING GREEN (4 times / sec)** - Device is attempting to make intial connection and claim a network address
-  **SLOW FLASHING GREEN (1 times / sec)** - Device is online but has not seen a valid network message in 5 seconds
-  **ALTERNATING RED & ORANGE** - Device has gone offline and is attempting to re-connect (within 30 seconds)
-  **ALTERNATING GREEN & ORANGE** - Device is currentley online but has gone offline 2 or more times

Helpful Tools to Keep on Hand



Multi-Meter

-  **Robertson Head Screwdriver**
-  **Phillips Head Screwdriver**
-  **Flat Head Screwdriver**

G6A CONTROL PANEL LAYOUT
TIFFIN PN: 5089756 | SPYDER PN: BENCZ52CT
2020 BUS/PHTN - HOUSE - REV 0VA
PINOUT DIAGRAM - REAR VIEW
06.04.2019

CONNECTOR 1

- 1-1 (G6 LED 1) MAIN O/H / LIV RM LTS
- 1-2 (G6 LED 2) ENTRY/FLOOR LTS
- 1-3 (G6 LED 3) PS CEILING LTS
- 1-4 (G6 LED 4) DS CEILING LTS

CONNECTOR 2

- 2-1 (G6 LED 5) HALL/DASH ACCENT LTS
- 2-2 (G6 LED 6) P/S SLIDE LTS
- 2-3 (G6 LED 7) SCONCE LTS
- 2-4 (G6 LED 8) D/S SLIDE LTS

CONNECTOR 3

- 3-1 (G6 LED 9) FR CRTSY LIGHTS
- 3-2 (G6 LED 10) RR CRTSY LTS
- 3-3 (G6 LED 11) BED SCONCE LTS
- 3-4 (G6 LED 12) BEDROOM LTS

CONNECTOR 4

- 4-1 (G6 LED 13) REAR BATH/MID SINK CEILING LTS
- 4-2 (G6 LED 14) TASK LTS
- 4-3 (G6 LED 15) MID BATH CEILING LTS
- 4-4 (G6 LED 16) MID BATH VANITY LTS

CONNECTOR 5

- 5-1 (G6 LED 17) REAR BATH/MID SINK VANITY LTS
- 5-2 (G6 LED 18) TV ACCENT LTS
- 5-3 (G6 LED 19) FR ACCENT LTS
- 5-4 (G6 LED 20) FR ACCENT LTS

CONNECTOR 6

- 6-1 (G6 LED 21) BED ACCENT LTS
- 6-2 (G6 LED 22) SPARE
- 6-3 (G6 LED 23) SPARE
- 6-4 (G6 LED 24) SPARE

CONNECTOR 7

- 7-1 (G6 LED 25) GALLEY FAN ON/OFF
- 7-2 (G6 LED 26) GALLEY FAN UP
- 7-3 (G6 LED 27) GALLEY FAN DN
- 7-4 (G6 LED 28) CLOSET LTS (Option)

CONNECTOR 8

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

CONNECTOR 9

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

CONNECTOR 10

- 10-1 (G6 LED 37) FLR HT ZONE 1
- 10-2 (G6 LED 38) FLR HT ZONE 2
- 10-3 (G6 LED 39) SPARE
- 10-4 (G6 LED 40) SPARE

CONNECTOR 11

- 11-1 (G6 LED 41) BED LIFT UP
- 11-2 (G6 LED 42) BED LIFT DN
- 11-3 (G6 LED 43) FR TV LIFT UP - WHISPER RIDE
- 11-4 (G6 LED 44) FR TV LIFT UP - WHISPER RIDE

CONNECTOR 12

- 12-1 (G6 LED 45) BED TV LIFT UP
- 12-2 (G6 LED 46) BED TV LIFT DN
- 12-3 (G6 LED 47) FIREPLACE OVERRIDE
- 12-4 (G6 LED 48) SPARE

CONNECTOR 13

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

CONNECTOR 14 (12V+ INPUTS)

- 14-1 WTR HTR STATUS
- 14-2 GEN FAULT STATUS
- 14-3 SPARE
- 14-4 BED LIFT PLUNGER
- 14-5 SPARE

CONNECTOR 15 (GND INPUTS)

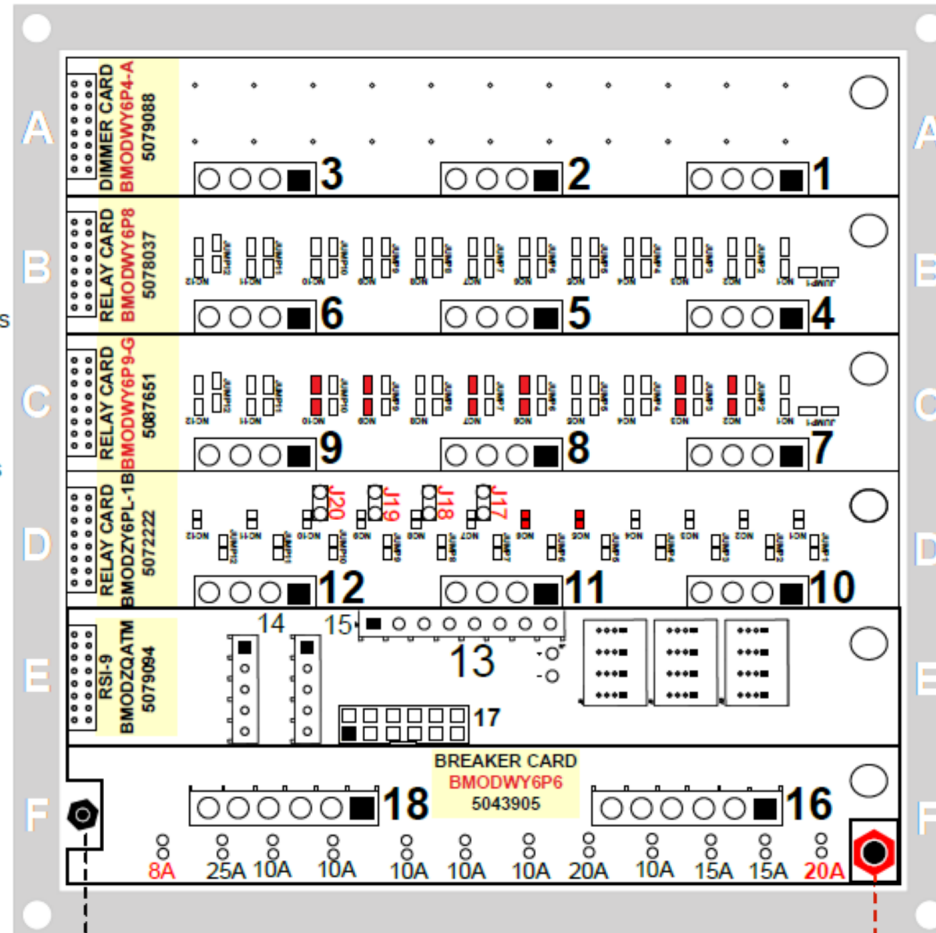
- 15-1 SPARE
- 15-2 BEDROOM LT SW
- 15-3 CLOSET LT SW
- 15-4 DASH ACNT LT ON
- 15-5 DASH ACNT LT OFF

CONNECTOR 16

- 16-1 BREAKER #61 - SPARE
- 16-2 BREAKER #62 - FR FURNACE
- 16-3 BREAKER #63 - RR FURNACE
- 16-4 BREAKER #64 - SWITCHER / LP/IR
- 16-5 BREAKER #65 - OUTSIDE TV
- 16-6 BREAKER #66 - SPARE

CONNECTOR 18

- 18-1 BREAKER #67 - Moryde TV Lift (TV Lift Module)
- 18-2 BREAKER #68 - SPARE
- 18-3 BREAKER #69 - SPARE
- 18-4 BREAKER #70 - BRKR TO RR SLIDE
- 18-5 BREAKER #71 - FRIDGE
- 18-5 BREAKER #72 - Truma WTR HT (Phaeton Only)



WHISPER RIDE TV LIFTS ONLY

- J17— FR TV LIFT COMMON
- J18— FR TV LIFT COMMON
- J19— RR TV LIFT COMMON
- J20— RR TV LIFT COMMON

CONNECTOR 17

- 17-6 SPARE
- 17-5 REAR AC TEMP SENSOR
- 17-4 MID AC TEMP SENSOR
- 17-3 FR AC TEMP SENSOR
- 17-2 RR FLOOR HEAT TEMP SENSOR
- 17-1 FR FLOOR HEAT TEMP SENSOR

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

2020 Tiffin Phaeton

G8 Module Pinout

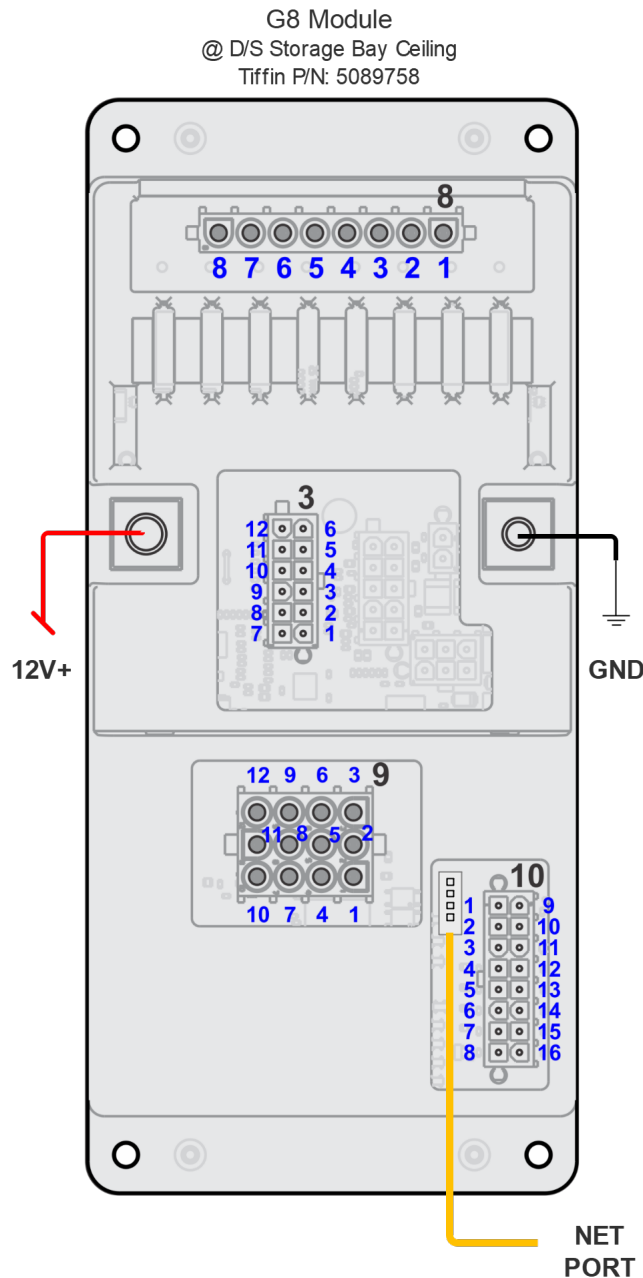
(Components not to scale)

3

Bay Temp #1	Pin 1
Pin 2 EXT Temp #2	Pin 2
Spare #3	Pin 3
Spare #4	Pin 4
Spare #5	Pin 5
Spare #6	Pin 6
GND	Pin 7
GND	Pin 8
GND	Pin 9
GND	Pin 10
GND	Pin 11
GND	Pin 12

9

Electric Water Heater #9	Pin 1
Spare #19	Pin 2
Spare #20	Pin 3
Diesel Water Heater #10	Pin 4
Spare #17	Pin 5
Spare #18	Pin 6
Engine Pre-Heat #11	Pin 7
Spare #15*	Pin 8
Spare #16	Pin 9
FR FURN./AQUAHOT #12	Pin 10
RR FURN./AQUAHOT #13	Pin 11
Door Bell Chime #14	Pin 12



8

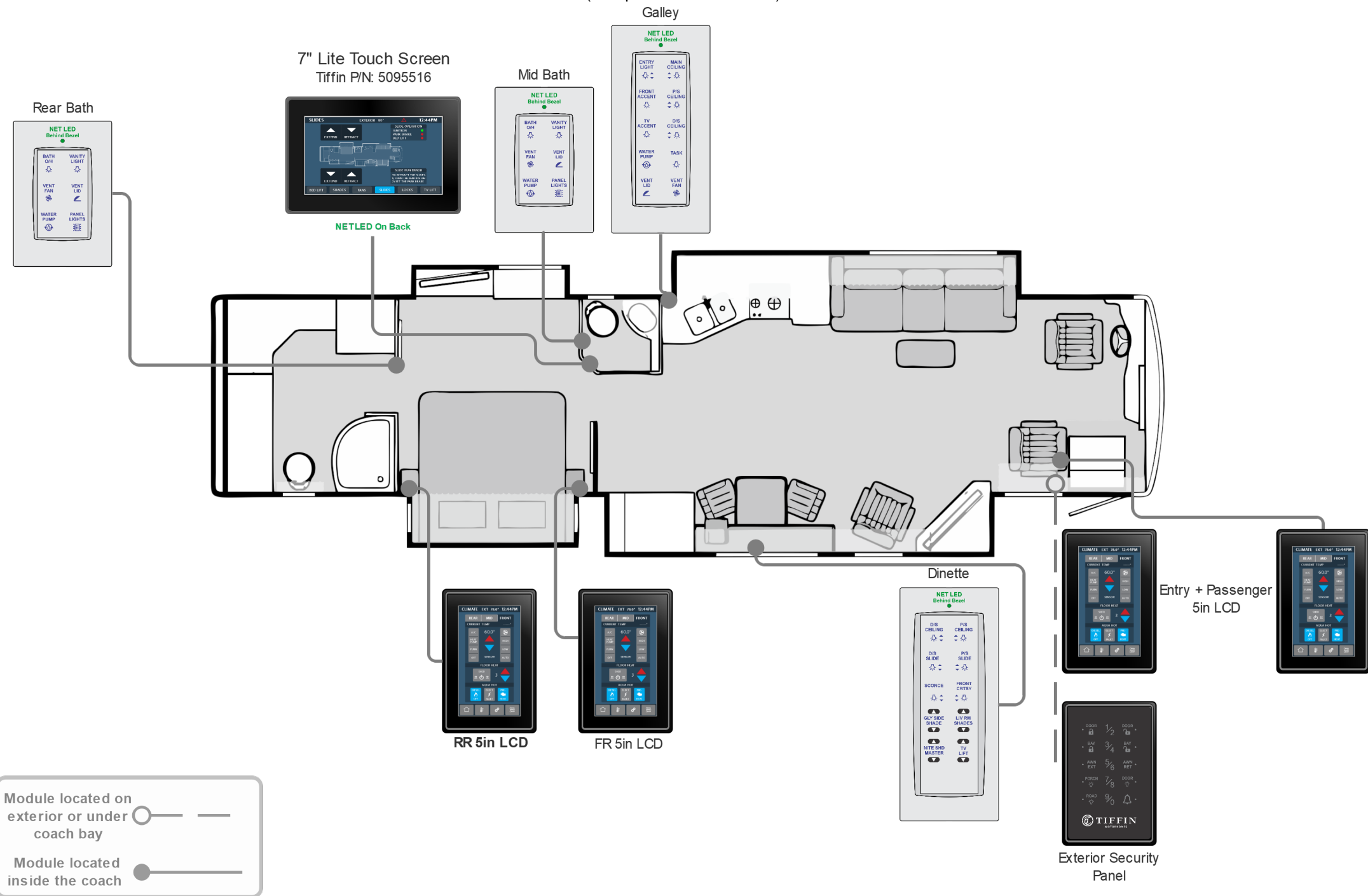
Pin 1	Door Awning Extend
Pin 2	Door Awning Retract
Pin 3	Bay Doors Lock
Pin 4	Bay Doors Unlock
Pin 5	Water Pump
Pin 6	Spare (GND)
Pin 7	Entry Door Lock
Pin 8	Entry Door Unlock

10

Pin 1	Generator (12V+)
Pin 2	Ignition (12V+)
Pin 3	Merge Output #23 *
Pin 4	Water Pump Switch (GND)
Pin 5	Park Brake (GND)
Pin 6	Spare (GND)
Pin 7	Door Pin Sw (Logic A) (GND)
Pin 8	Door Pin Sw (Logic B) (GND)
Pin 9	CHS Voltage (12V+)
Pin 10	House Disconnect Sense (12V+)
Pin 11	N/A
Pin 12	N/A
Pin 13	Spare (12V+)
Pin 14	Spare (12V+)
Pin 15	Spare (12V+)
Pin 16	Spare (12V+)

2020 Tiffin Phaeton Switch & Screen Location Diagram

(Components not to scale)



2020 Tiffin Phaeton Module Locations Diagram

(Components not to scale)

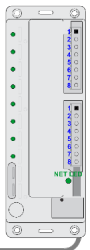
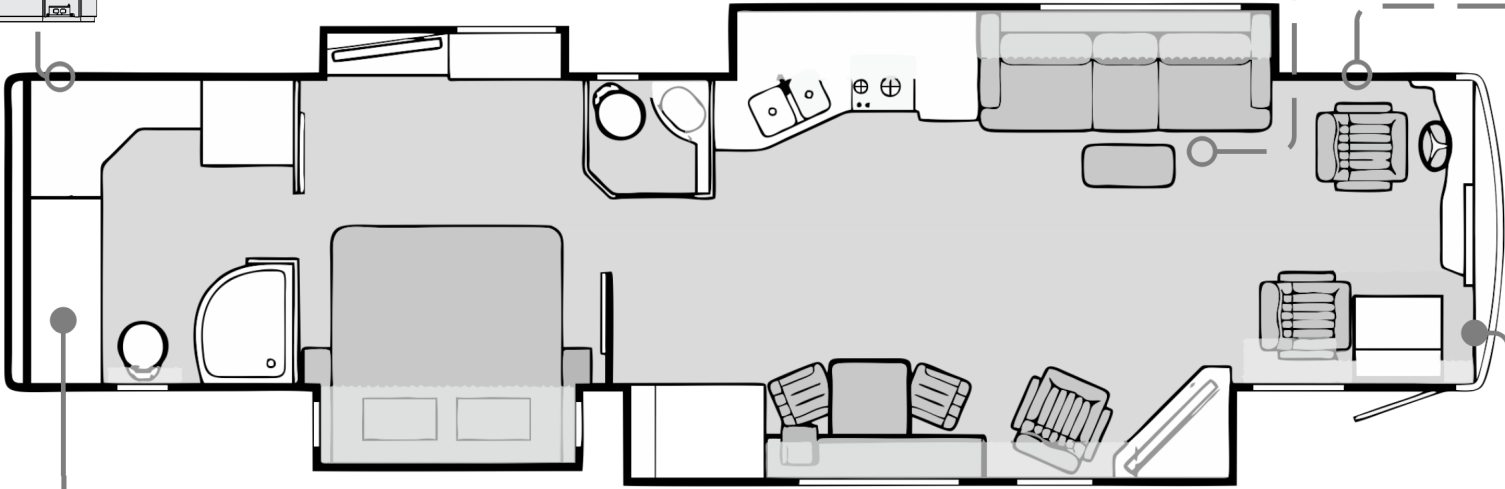
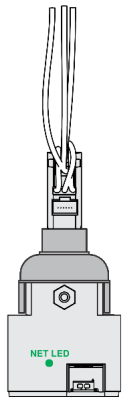
Module located on exterior or under coach bay

Module located inside the coach

SECTION A

SECTION B

AC Power Monitor
@ Transfer Switch
Tiffin P/N: 5064974



Cockpit G5
Shade Module
@ Cockpit -
Overhead
Cabinet by Entry
Door

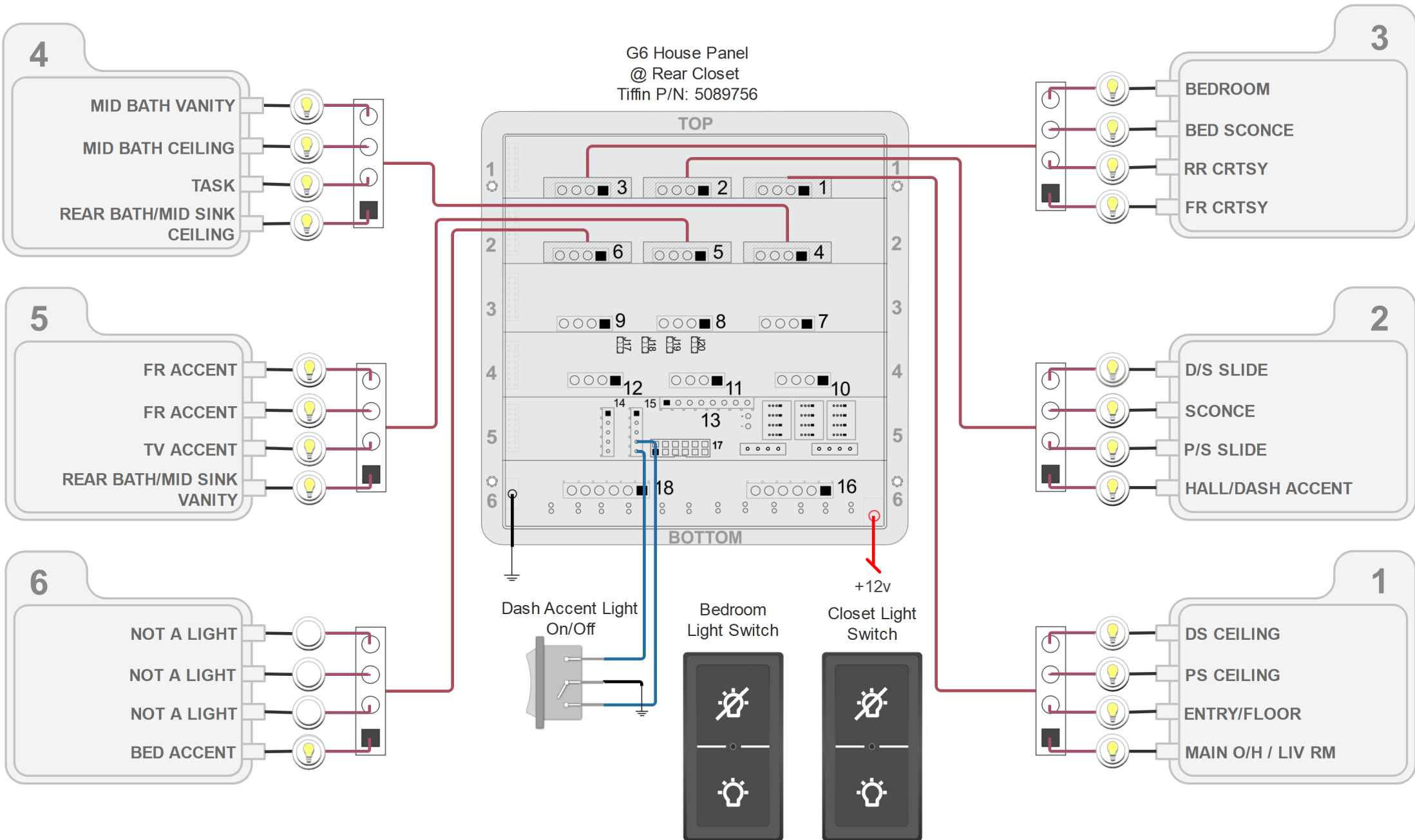
SECTION C

Legend

- 1A - G8 Module Tiffin P/N: 5089758
- 2A - BDC2 Tiffin P/N: 5074515
- 3A - CAN Router Tiffin P/N: 5076945
- 1B - RSI-11 Tiffin P/N: 5067281
- 2B - G6 Chassis Panel Tiffin P/N: 5093304
- 1C - G6 House Panel Tiffin P/N: 5089756
- 2C - HCR15 / MoRyde Tiffin P/N: 5092297
- 3C - HCR12 Tiffin P/N: 5076028
- 4C - ACR3 Tiffin P/N: 5091113 (24") or 5091114 (60")

Module in this section can be grouped in the bathroom or in the rear closet of the bedroom depending on floorplan.

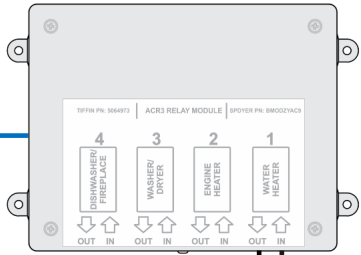
2020 Tiffin Phaeton Lighting System (Components not to scale)



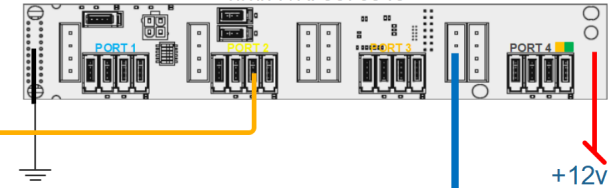
2020 Tiffin Phaeton HVAC System

(Components not to scale)

ACR3
@ Rear Closet or Bathroom
Tiffin P/N: 5091114

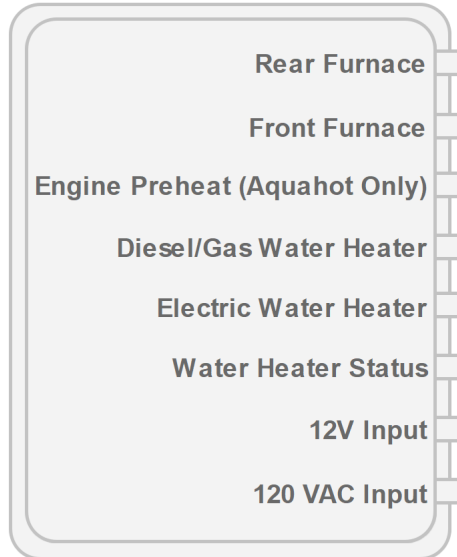
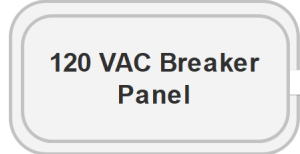
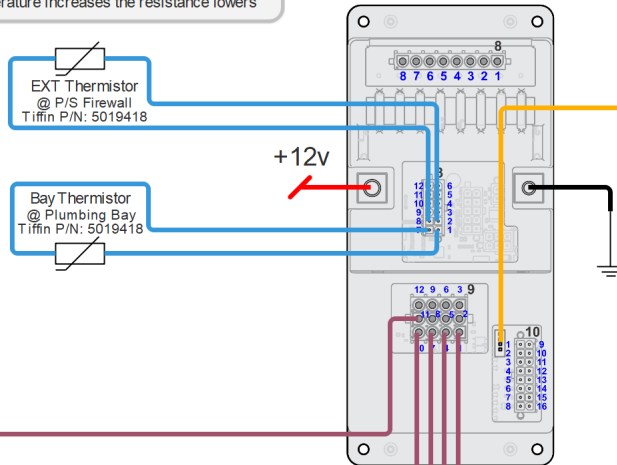


CAN Router 2
@ D/S Storage Bay Ceiling
Tiffin P/N: 5076945



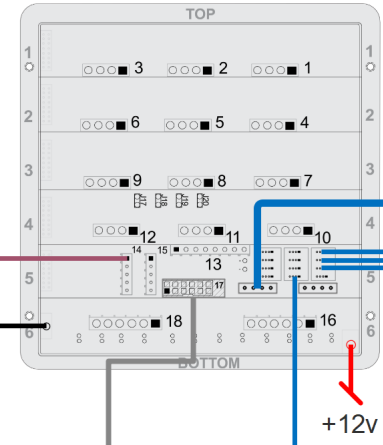
Ext & Bay Thermistors - 10K ohms @ 25 C
NOTE:
As the temperature increases the resistance lowers

G8 Module
@ D/S Storage Bay Ceiling
Tiffin P/N: 5089758

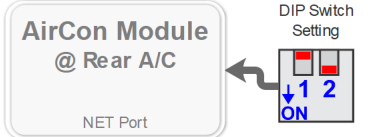
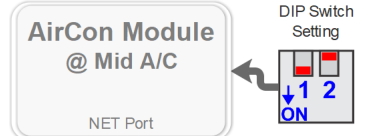
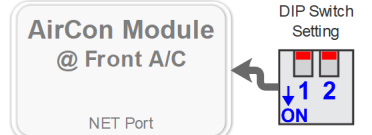


(*Aquahot) Breaker #8 on DCD Panel

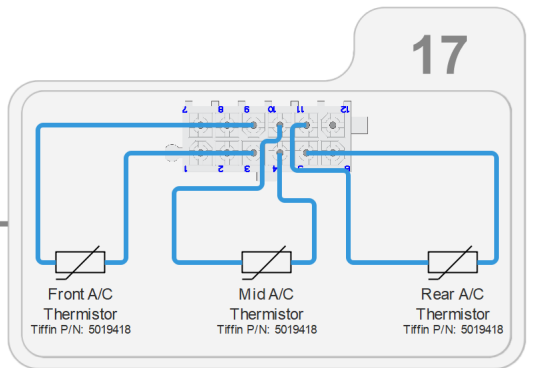
G6 House Panel
@ Rear Closet
Tiffin P/N: 5089756



A/C freeze sensors - 10K ohms @ 25 C
NOTE:
As the temperature increases the resistance lowers

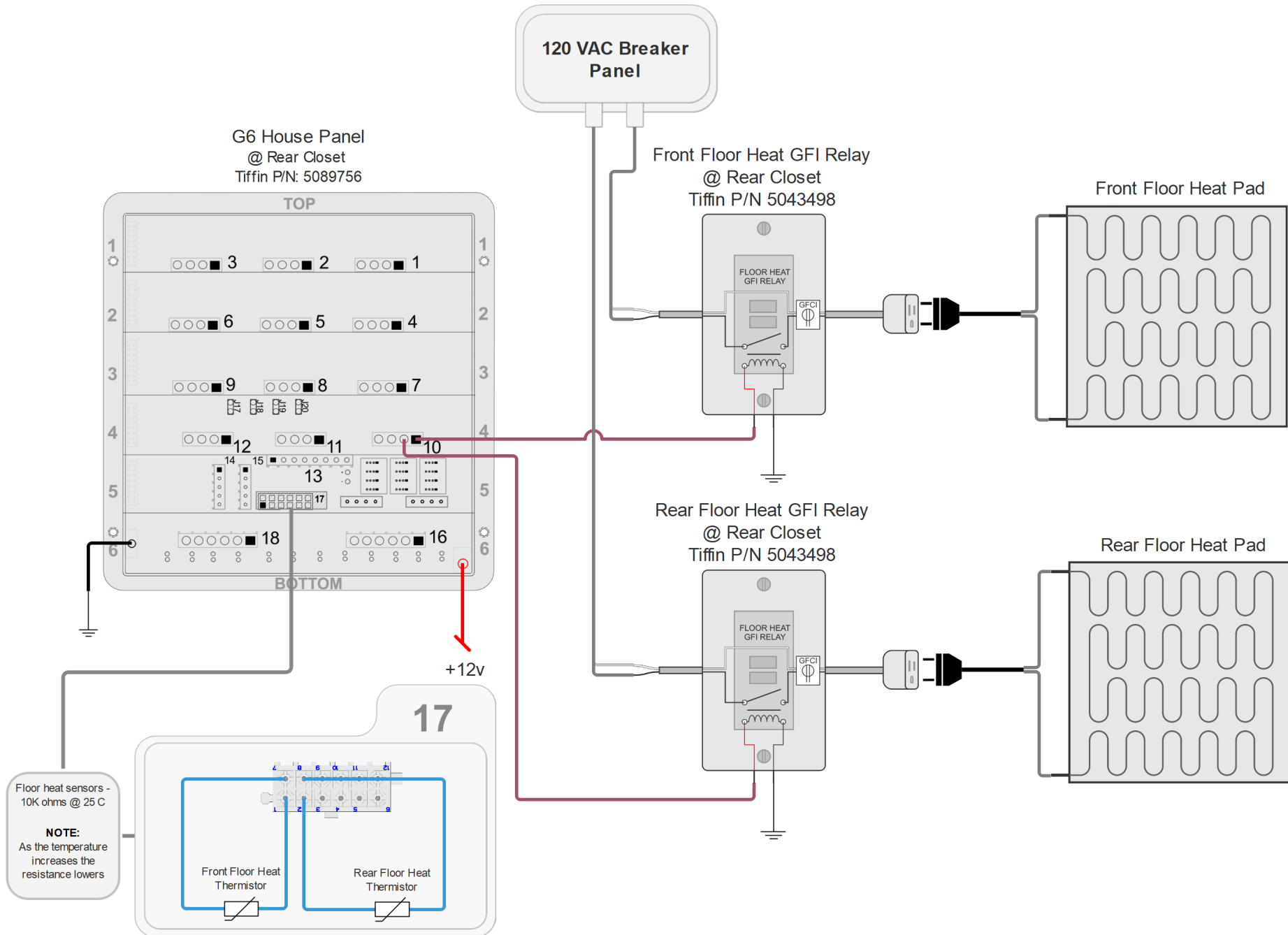


HVAC thermistors - 100K ohms @ 25 C
NOTE:
As the temperature increases the resistance lowers

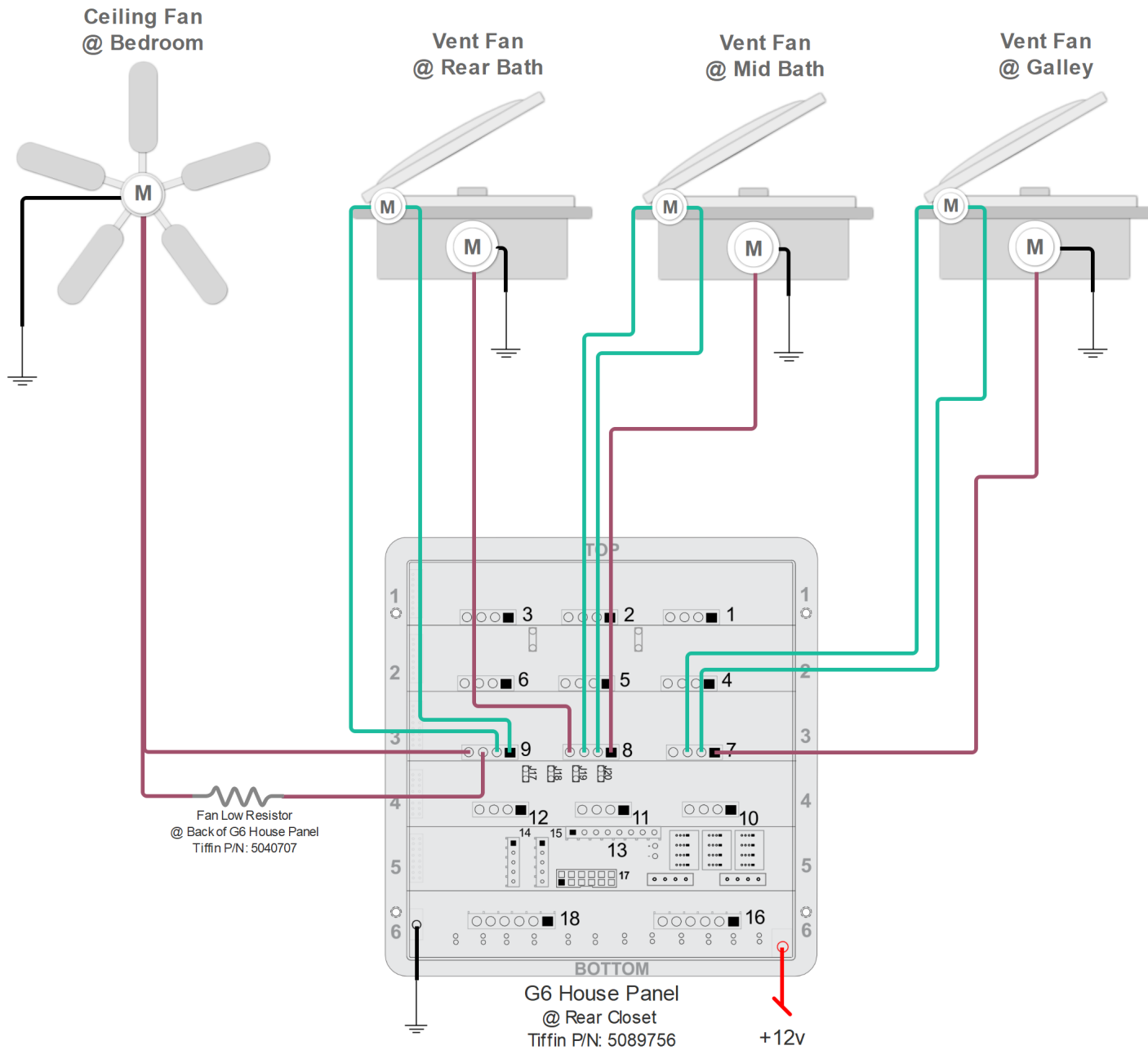


17

2020 Tiffin Phaeton Floor Heat System (Components not to scale)

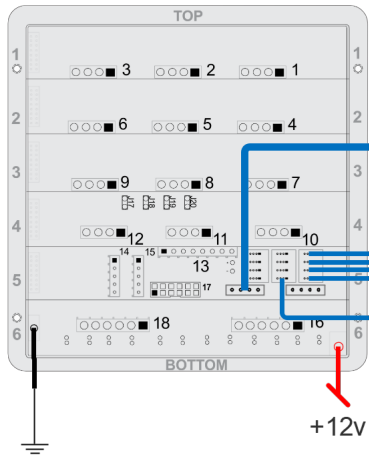


2020 Tiffin Phaeton Vent Fan & Ceiling Fan System (Components not to scale)

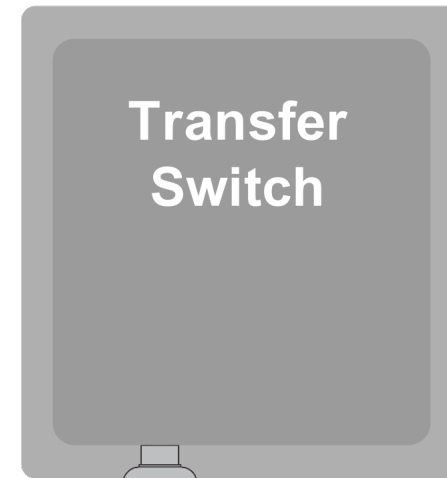
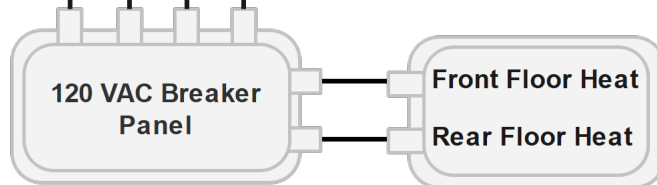
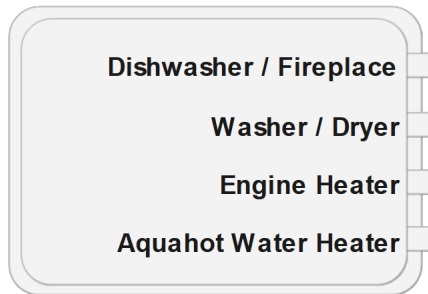
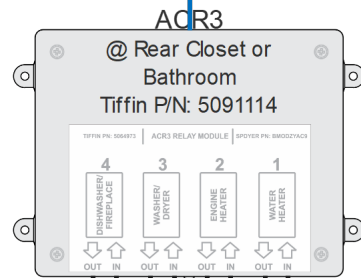
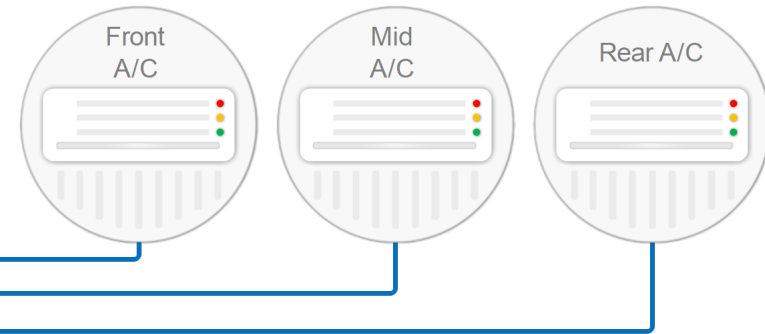
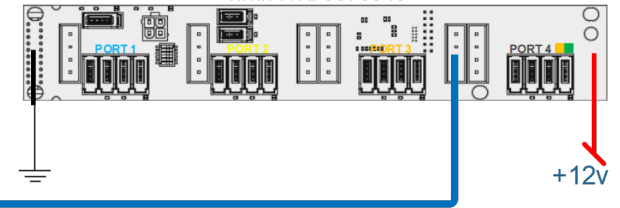


2020 Tiffin Phaeton EMS System (Components not to scale)

G6 House Panel
@ Rear Closet
Tiffin P/N: 5089756

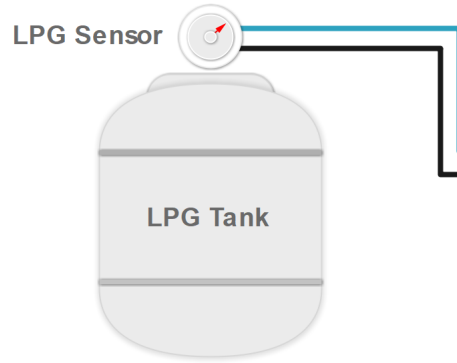


CAN Router 2
@ D/S Storage Bay Ceiling
Tiffin P/N: 5076945

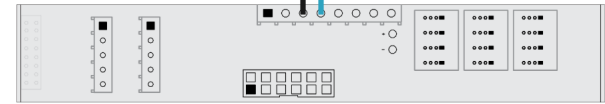


AC Power Monitor
@ Transfer Sw itch
Tiffin P/N: 5064974

2020 Tiffin Phaeton Tank Level System (Components not to scale)



RSI-9
@ Back of G6 House Panel

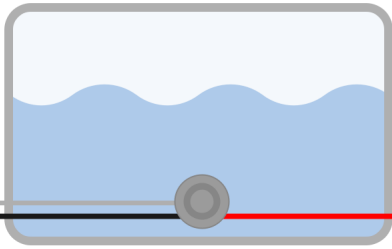


LPG Sensor

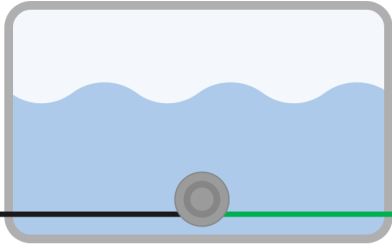
LPG Sensor measures LPG level. A full LPG Tank will measure 90+ Ohms a empty tank will measure close to or 0 Ohms.

Spyder Tank Sensor Side Mount
@ P/S Tank Plane
Tiffin P/N: 5078149

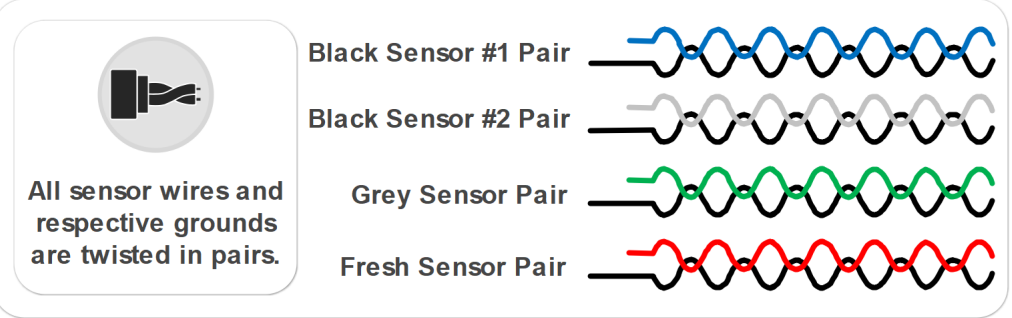
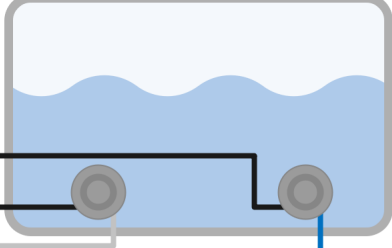
Fresh Tank



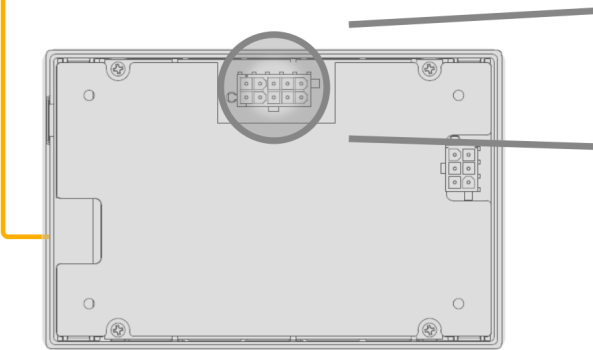
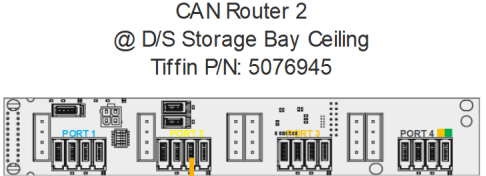
Grey Tank



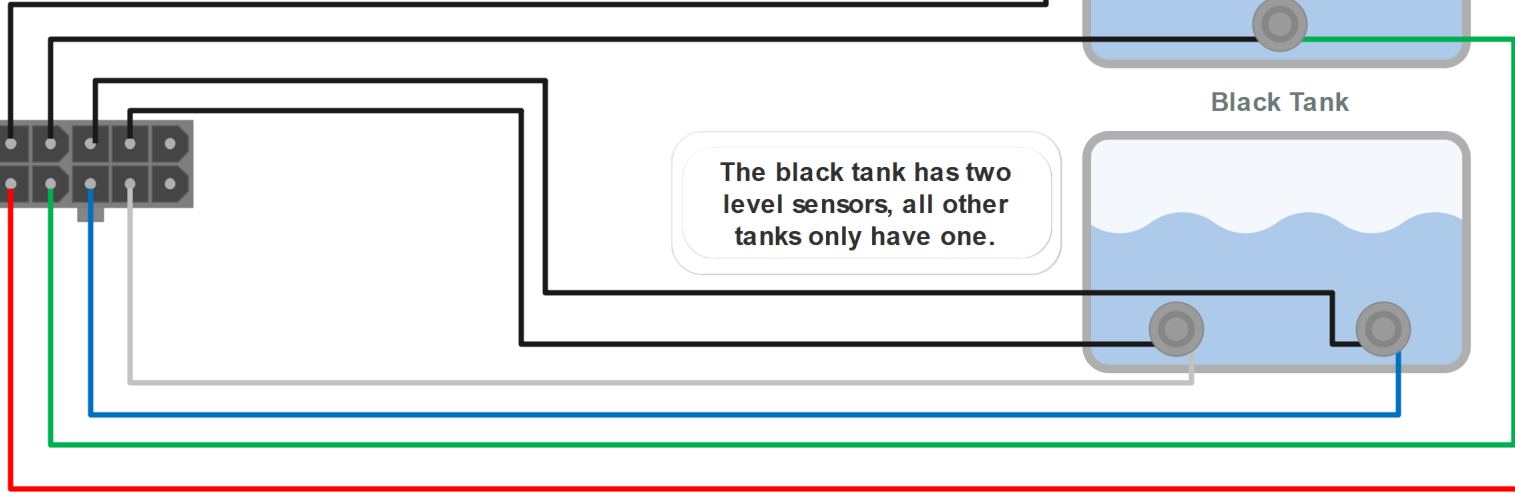
Black Tank



The black tank has two level sensors, all other tanks only have one.

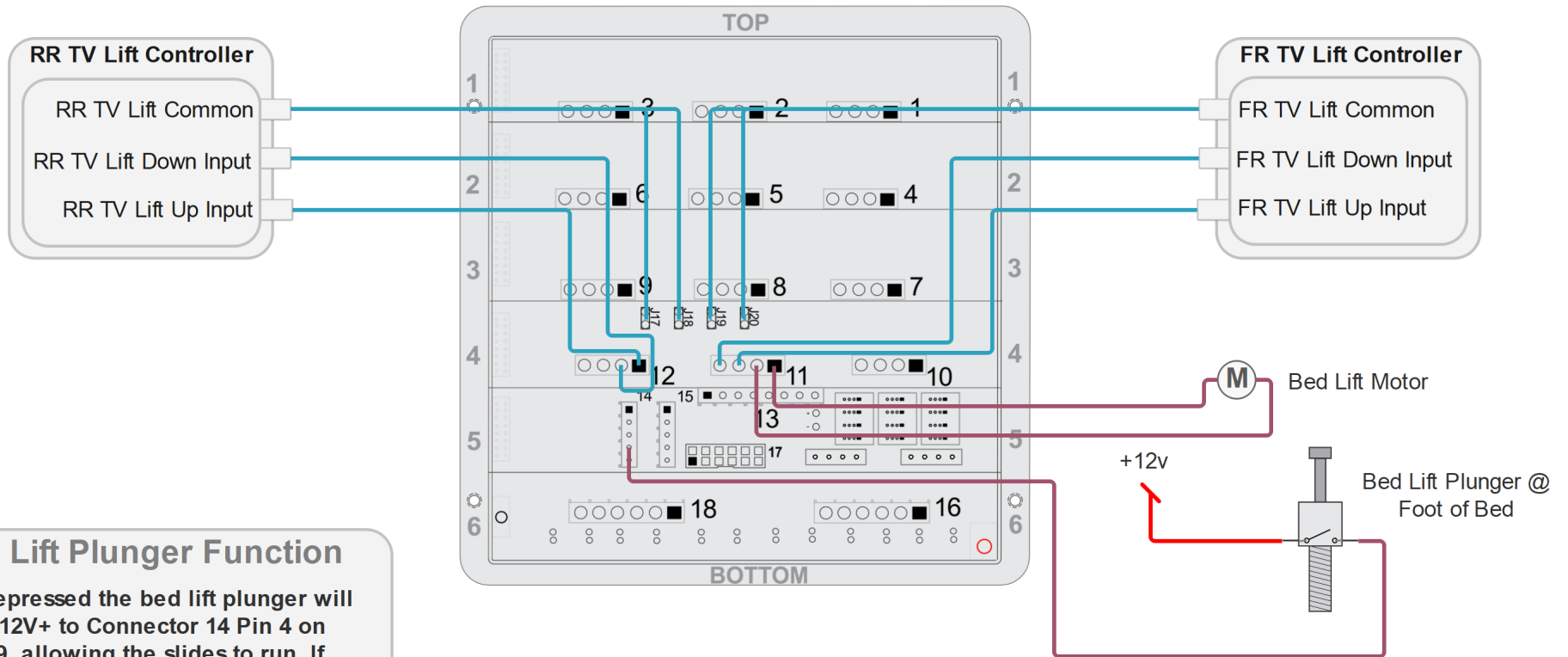


Spyder RV-C Tank Monitor
@ Plumbing Bay
Tiffin P/N: 5078244



2020 Tiffin Phaeton Bed Lift & TV Lift System (If Applicable) (Components not to scale)

G6 House Panel
@ Rear Closet
Tiffin P/N: 5089756



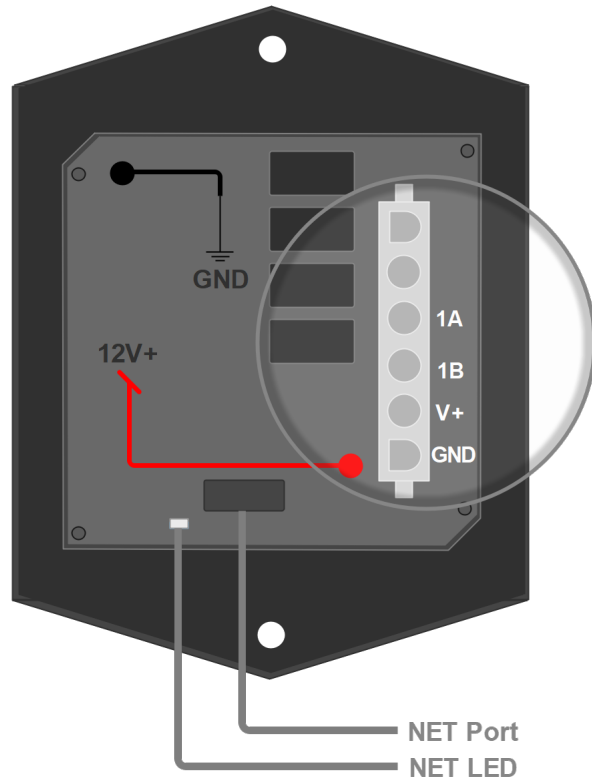
Bed Lift Plunger Function

When depressed the bed lift plunger will provide 12V+ to Connector 14 Pin 4 on the RSI-9, allowing the slides to run. If this pin is not depressed and no 12V+ signal is being received at the RSI-9 input, the slides will not run.

Normal operation of any TV lift will be as follows:

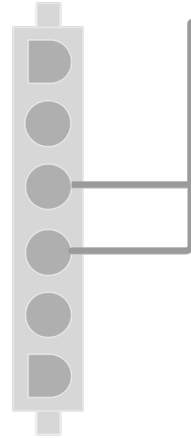
- Press the control to raise the TV lift.
- Press and hold the control to lower the TV lift.

HCR-15 Single Motor Control
Tiffin P/N: 5092297

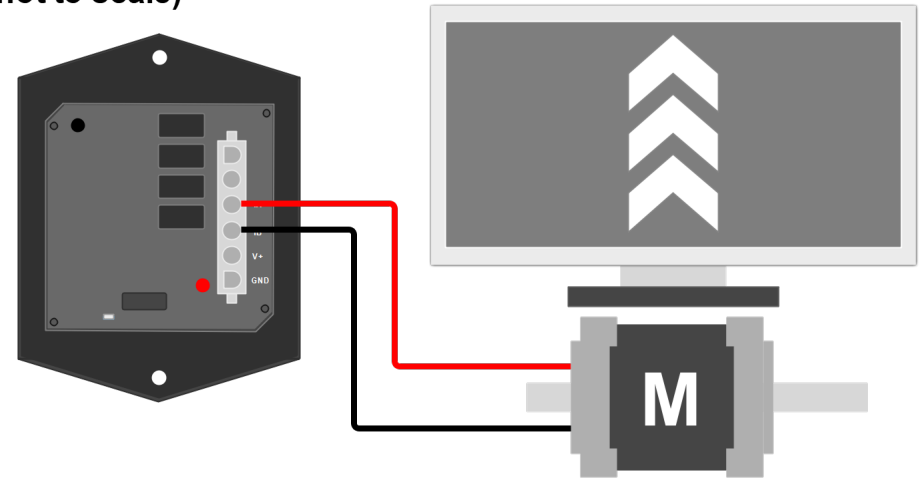


2020 Tiffin Phaeton
MoRyde TV Lift - If Applicable
(Components not to scale)

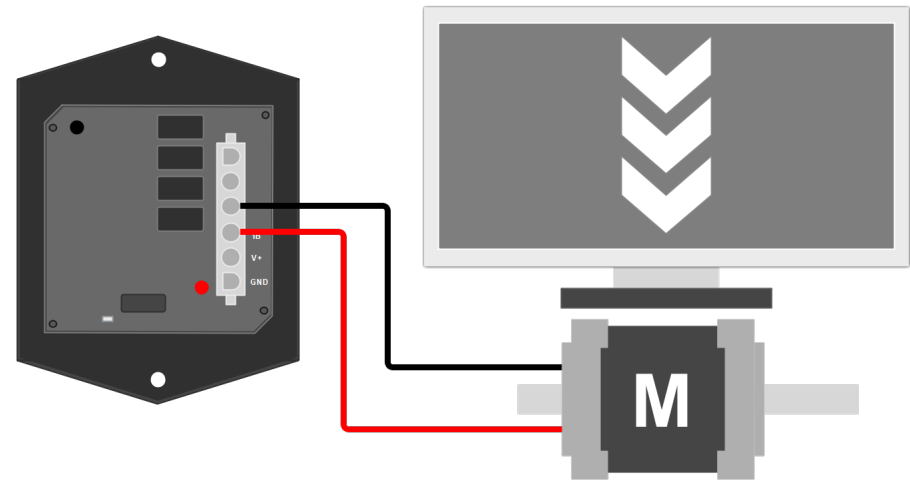
Reverse
Polarity
Outputs



Up Operation



Down Operation



Trouble Shooting

The information is only applicable to coaches with a MoRyde TV Lift. The module above is a HCR-15 and is responsible for providing reverse polarity output to the MoRyde TV Lift Motor.

If the TV lift is not raising or lowering check to ensure the NET LED on the HCR-15 is on solid green. If it is flashing or off completely there is an issue with network connectivity. If the module is online (solid green LED) and the TV lift still fails to work, use a multimeter to probe the connector.

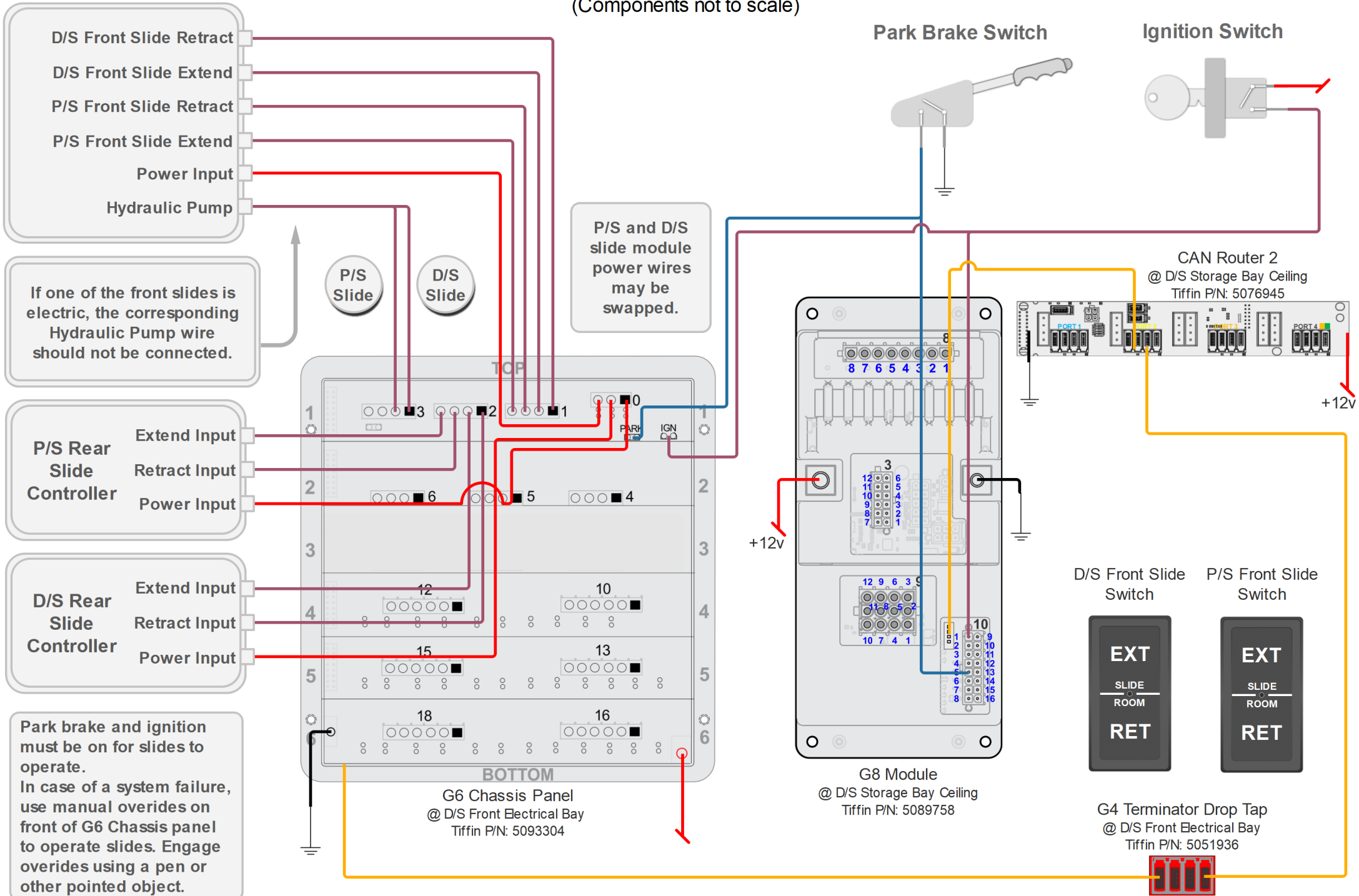
Remove the white 6 position header and insert one probe into 1A and the other probe into 1B. Correct function would have the module output 12V+ one direction and ground the other direction. If this is not occurring please call Spyder Controls.

Note

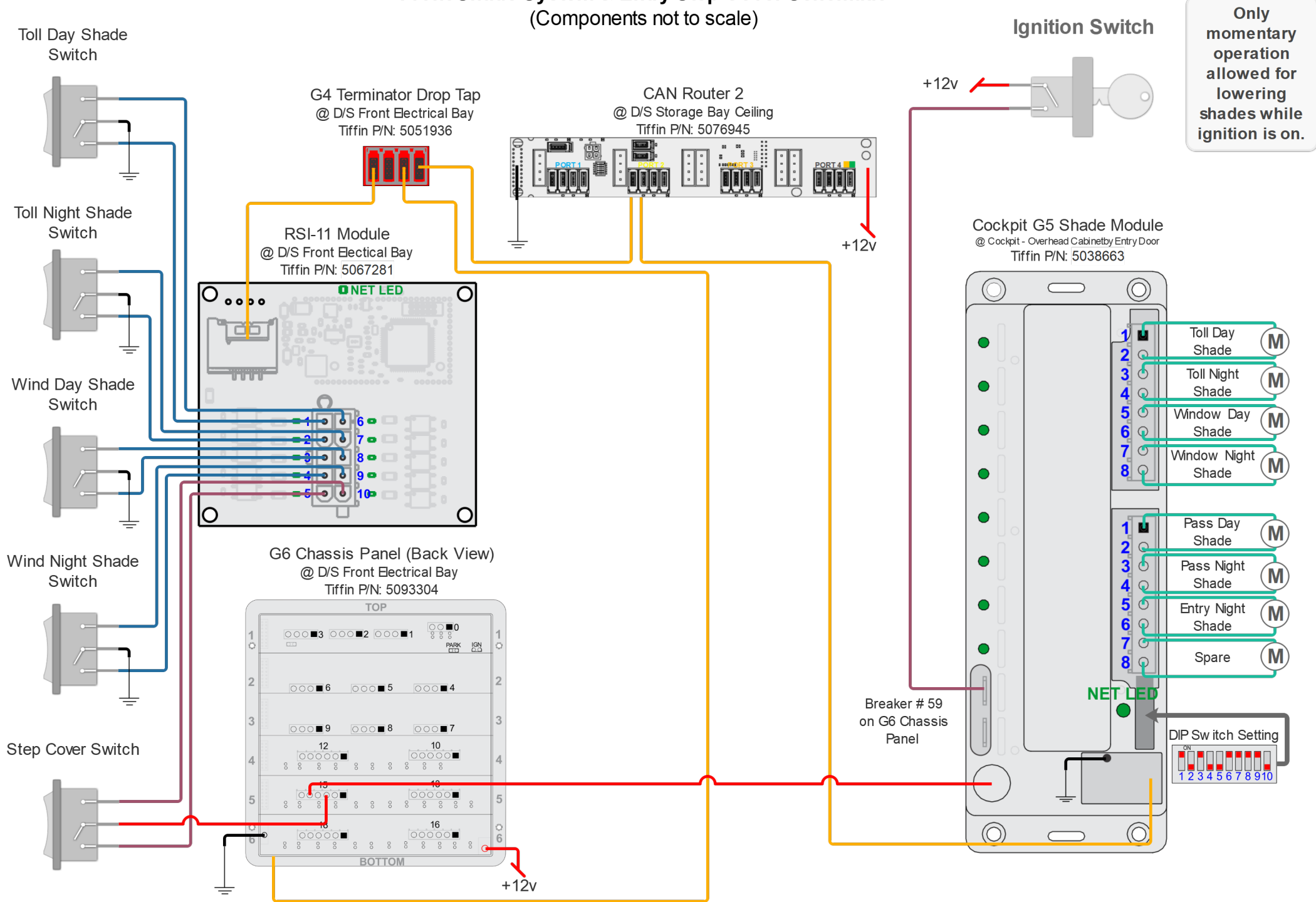
Please note there is only one HCR-15 per TV Lift, above is only an illustration of how the reverse polarity controls the TV Lift motor. For any questions please contact Spyder Controls.

2020 Tiffin Phaeton Slide System

(Components not to scale)

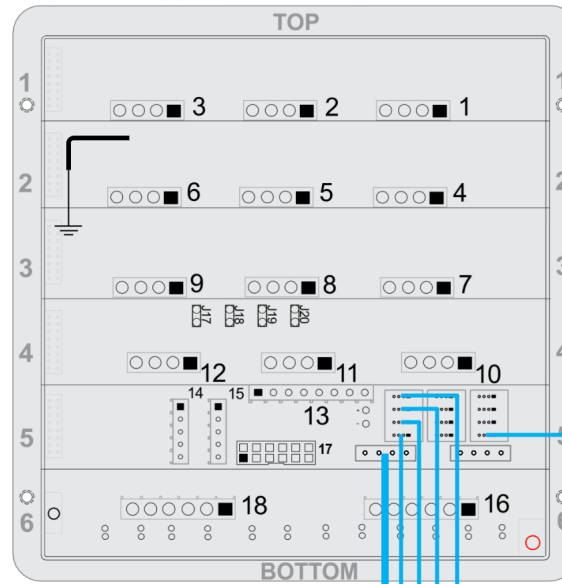


2020 Tiffin Phaeton Front Shade System & Entry Step Cover Schematic (Components not to scale)

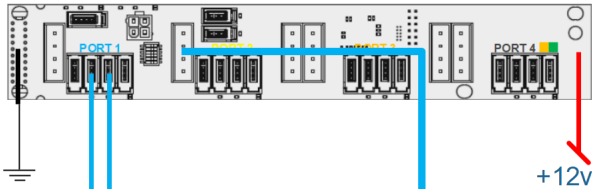


2020 Tiffin Phaeton Blue Network (Components not to scale)

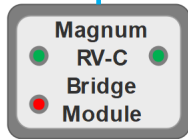
G6 House Panel
@ Rear Closet
Tiffin P/N: 5089756



CAN Router 2
@ D/S Storage Bay Ceiling
Tiffin P/N: 5076945

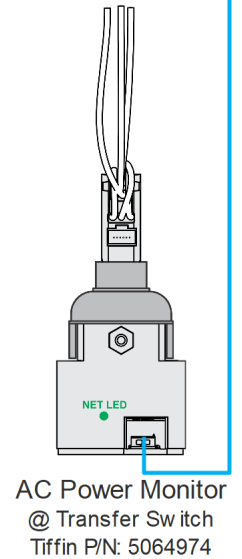
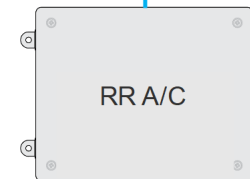
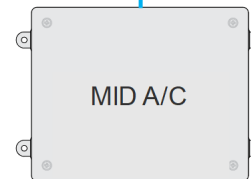
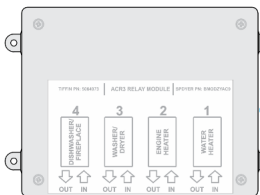


7" Lite Touch Screen
Tiffin P/N: 5095516



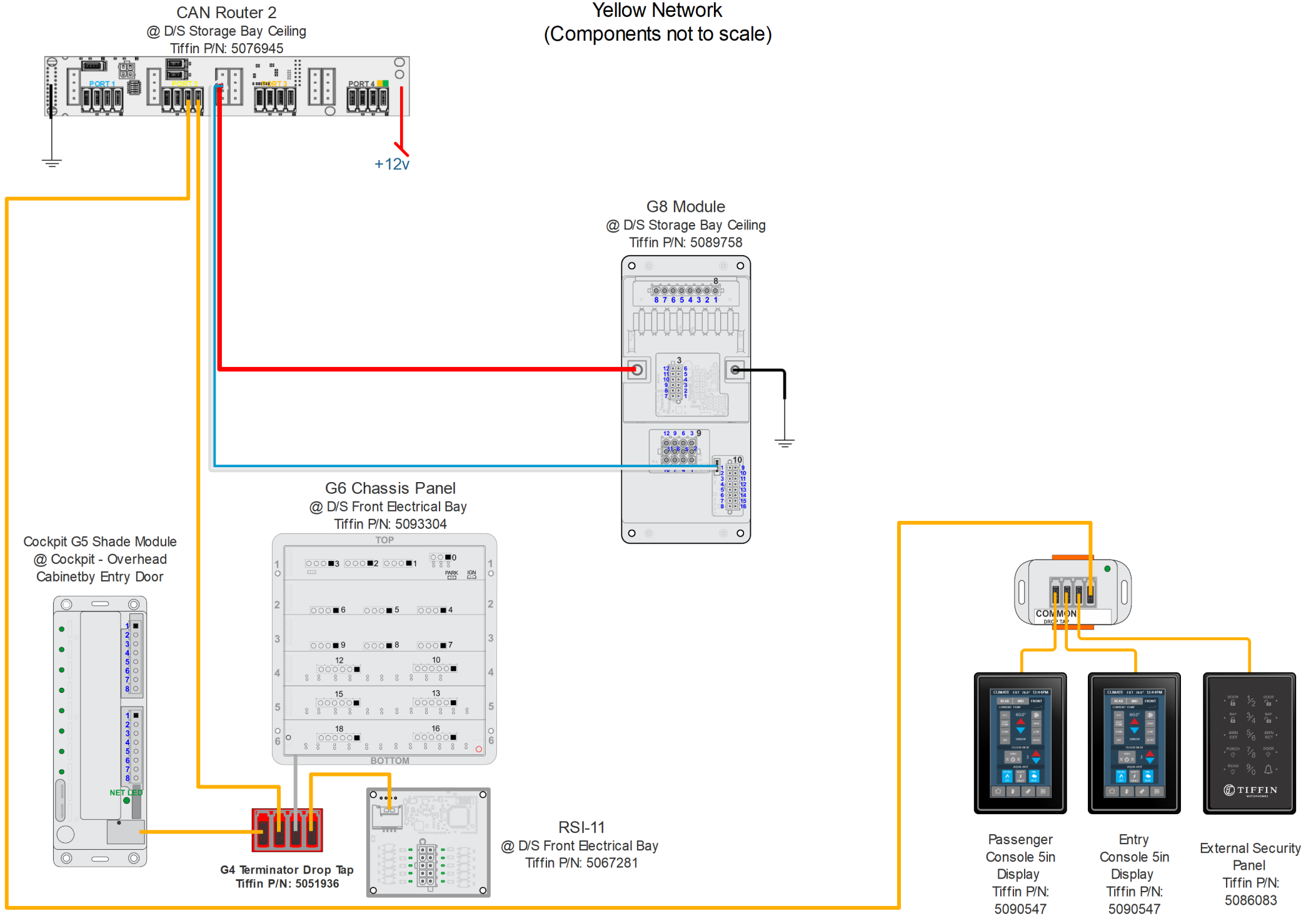
NETLED On Back

ACR3
@ Rear Closet
Tiffin P/N: 5091114

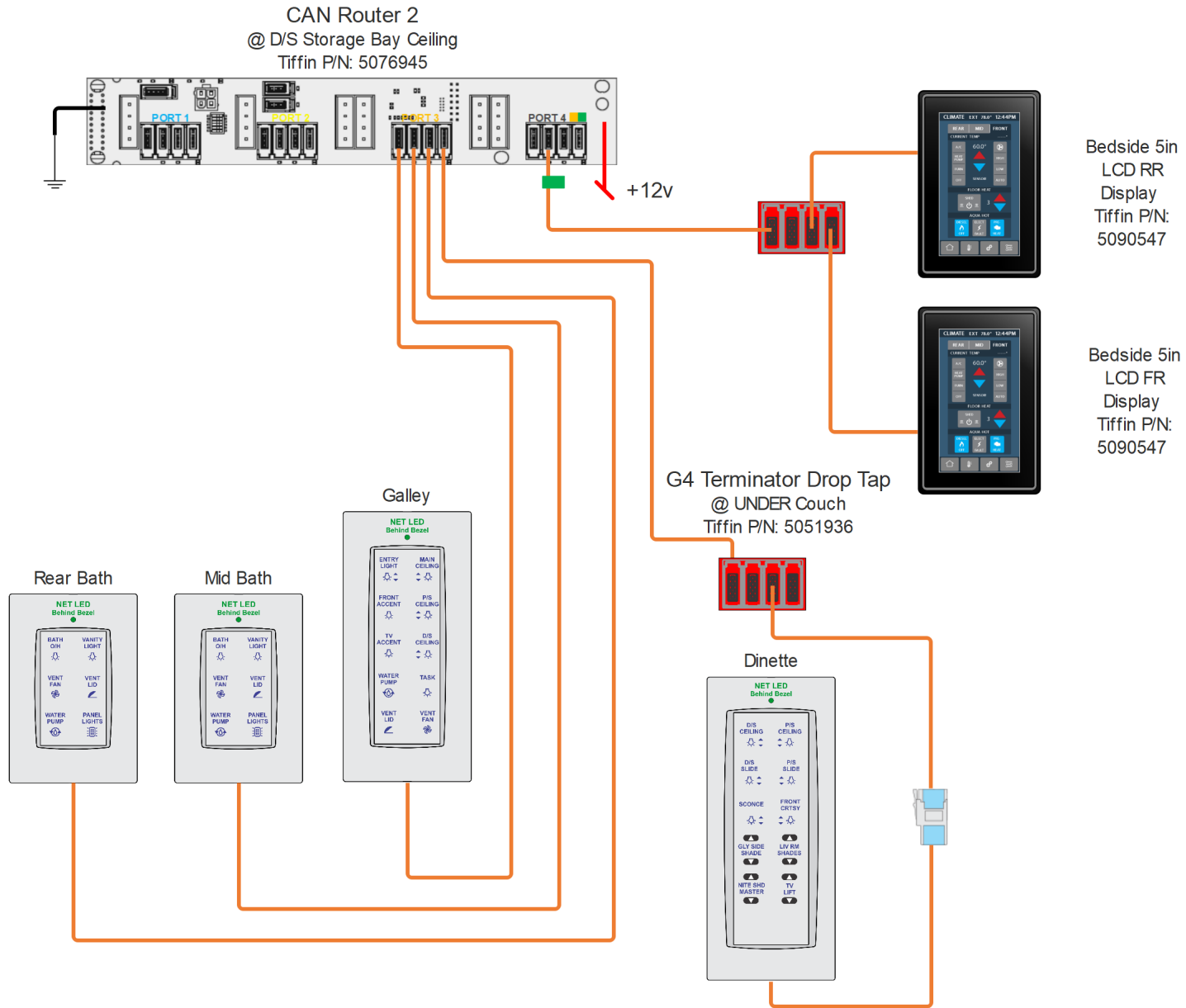


AC Power Monitor
@ Transfer Sw itch
Tiffin P/N: 5064974

2020 Tiffin Phaeton Yellow Network (Components not to scale)



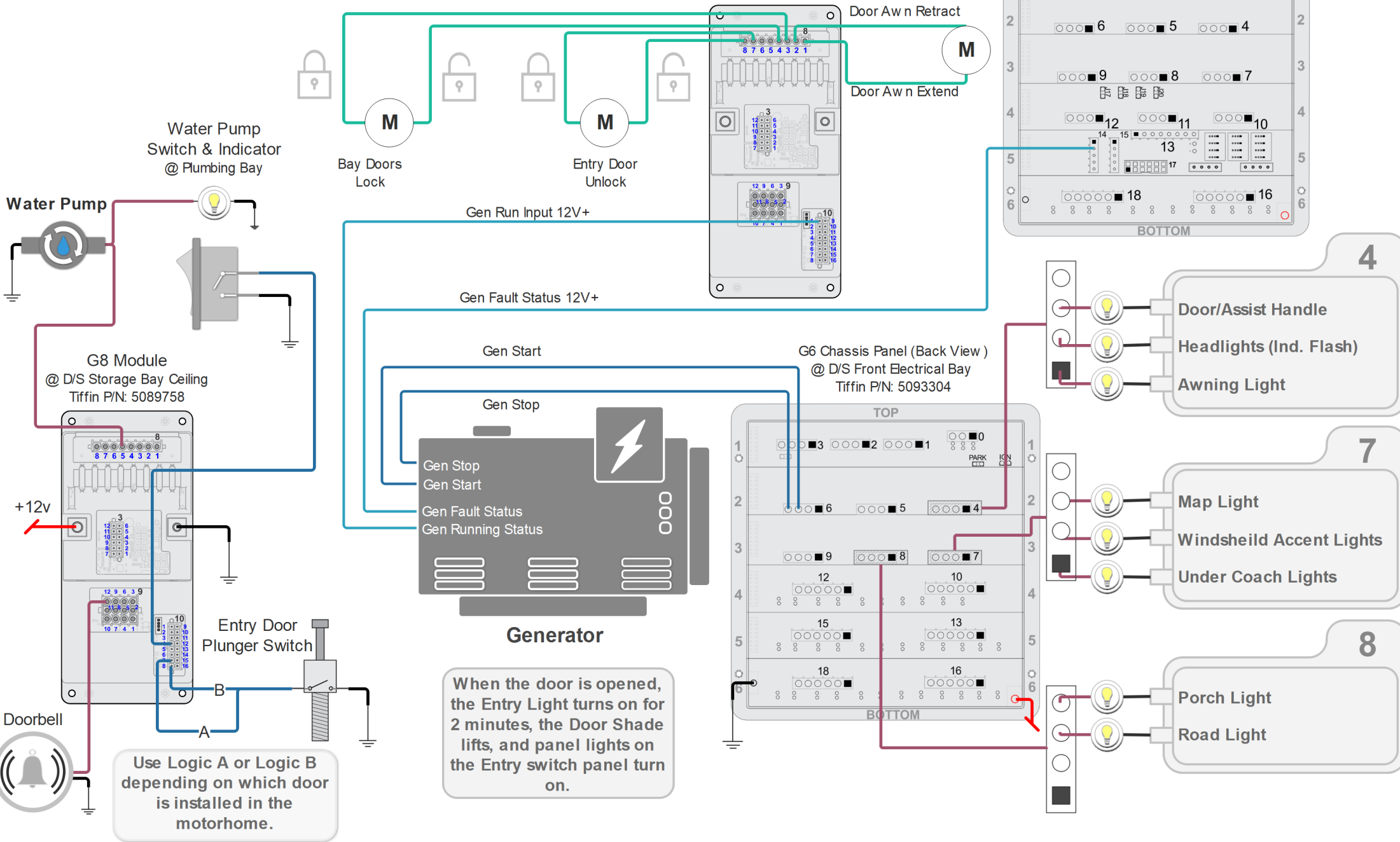
2020 Tiffin Phaeton Switch and Screen Network (Components not to scale)



2020 Tiffin Phaeton Miscellaneous (Components not to scale)

G6 House Panel
@ Rear Closet
Tiffin P/N: 5089756

G8 Module
@ D/S Storage Bay Ceiling
Tiffin P/N: 5089758



2018-2020 Allegro Bus / Phaeton / Zephyr Battery Merge Logic

Case 1 – CHASSIS CHARGING HOUSE batteries

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

- Ignition signal present for 30 seconds; AND
- Chassis voltage is above 13.3V (charging)

The merge solenoid will dis-engage if under the following conditions:

- Generator starts – unmerge and lockout all merge functionality until the generator running signal is removed (or until the ignition signal is removed); OR
- Ignition signal is removed; OR
- Chassis voltage drops below 12.6V for more than 30 seconds, unmerge until the ignition signal is cycled

Case 2 – HOUSE CHARGING CHASSIS batteries

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

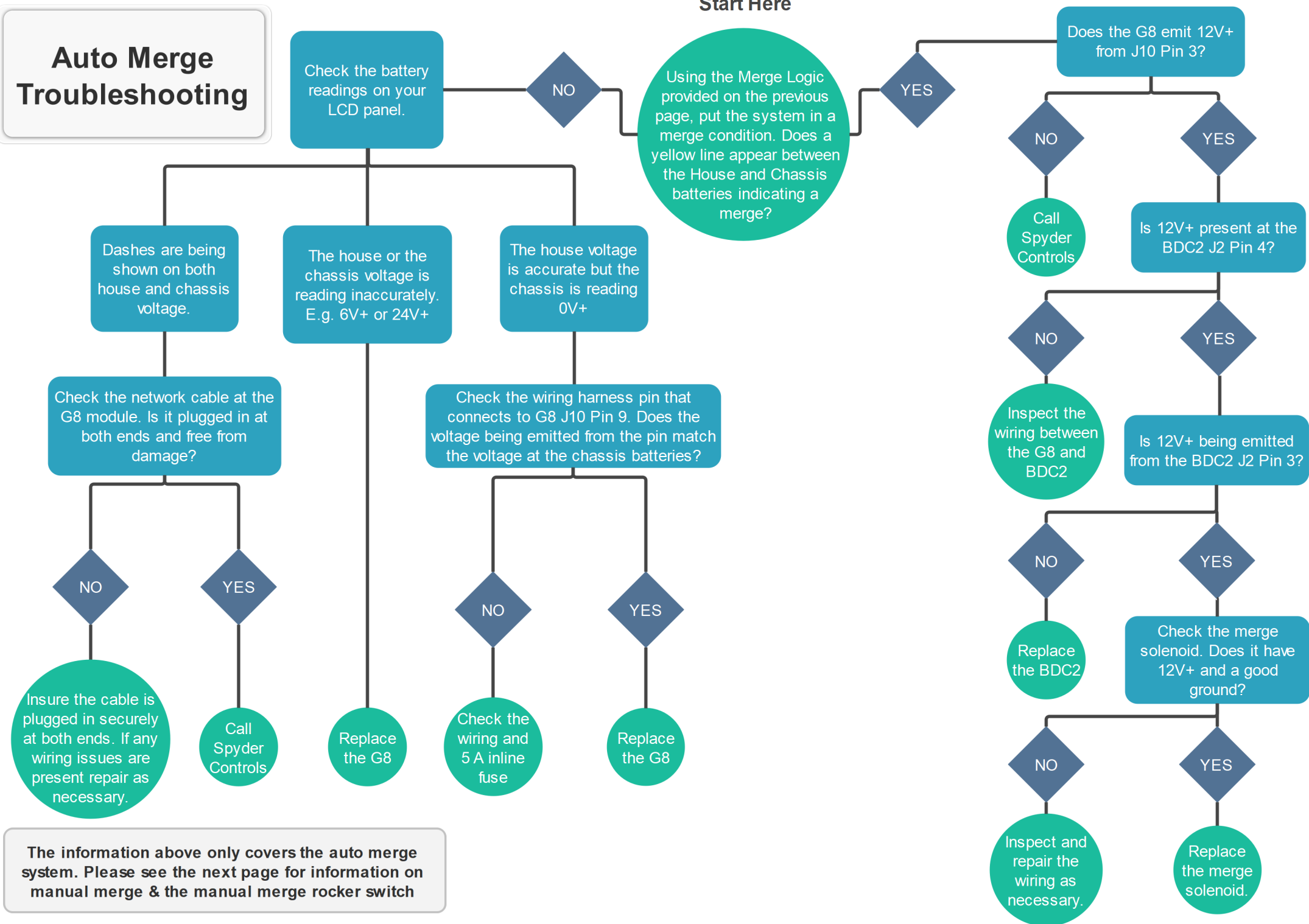
- House voltage is above 12.5V (charging); AND
- Chassis voltage is below 12.4V (low battery voltage) for 30 seconds AND
- **The Magnum Charger is charging**

The merge solenoid will dis-engage if under 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
- **The Magnum Charger stops charging**

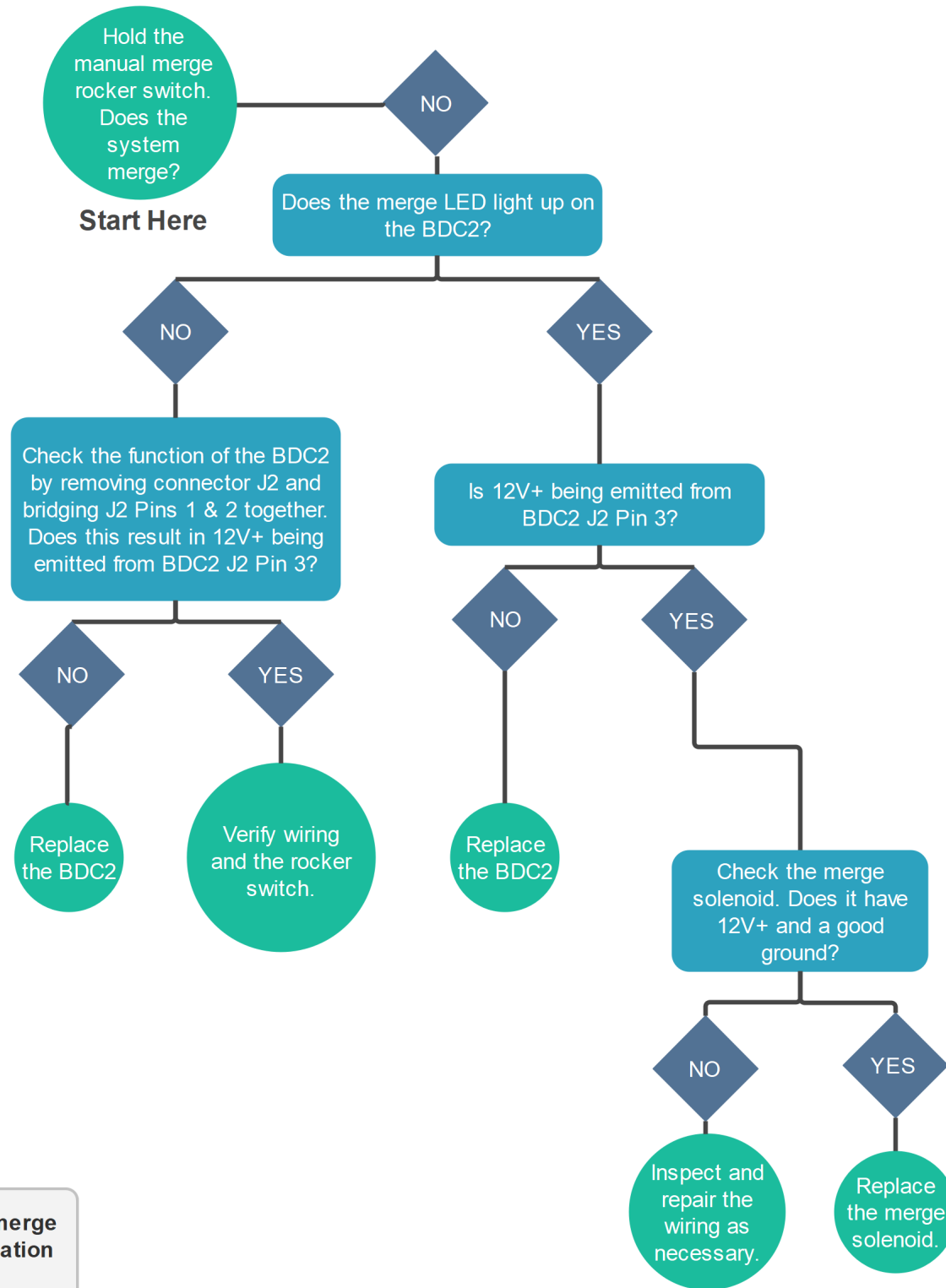
Auto Merge Troubleshooting

Start Here



The information above only covers the auto merge system. Please see the next page for information on manual merge & the manual merge rocker switch

Manual Merge Troubleshooting



The information above only covers the manual merge system. Please see the previous page for information on auto merge system.

2020 Tiffin Phaeton
Inverter Assist
(Components not to scale)

Inverter assist is a state in which power is temporarily drawn from the batteries to keep EMS loads from shedding.

INVERTER ASSIST WILL ACTIVATE IF THE FOLLOWING CONDITIONS ARE TRUE

1

SHORE OR GENERATOR POWER IS AVAILIABLE

3

THE CHARGE RATE HAS BEEN REDUCED

2

THE CHARGER IS IN FLOAT MODE
(BATTERIES ARE CLOSE TO FULL CHARGE)

4

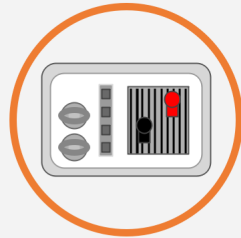
A NON-EMS INVERTED LOAD IS ACTIVATED,
SUCH AS THE MICROWAVE



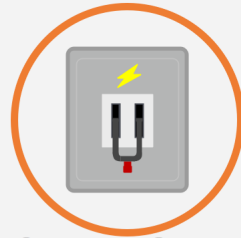
Batteries close to full



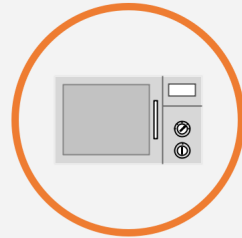
Connected to Shore Power or Gen Charging



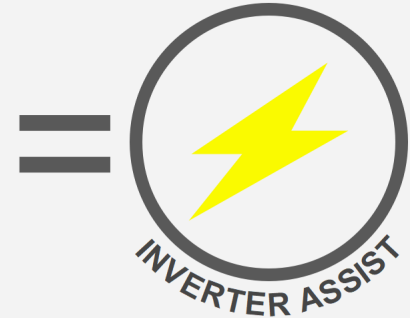
Charger in Float



Close to Shore / Gen Breaker Max



Non-EMS Inverted Load Activated



!

If the conditons above are true. To keep any EMS load from shedding the inverter will go from passthrough to inverting to temporarily invert for 5 minutes.

!

Please note inverter assist can only occur once every charge cycle. Therefore the coach will not frequently be in inverter assist mode.

!

Please note inverter assist will temporarley decrease your battery voltage. This is normal the voltage will stablize realtivley quickly once the inveter assist period has expired.

!

Please contact Spyder Controls Corp for further info.

SSP-22 Guide



Locked



Requires PIN

Fig.1



Unlocked



All Functions Available

Fig.2

Once the keypad is unlocked the two outermost columns will illuminate. These buttons provide quick access to all features shown on the label. Please note pressing door unlock will unlock the entry door and turn on the door light for 30 seconds. Pressing door lock will lock entry door and keypad simultaneously.

Please note the keypad has an auto-lock feature. If you do not interact with the keypad for 5 minutes the keypad will lock.

Parking brake must be engaged to use awnings.

When the park brake is enabled the center column of numbers will be illuminated white, if the center column is not illuminated simply press any button on the keypad for 1 second. Once the center column is illuminated white you may enter your pin. If you wish to set or reset your pin please refer to # in this manual.

As you enter the pin green LED's will light up on the left side of the switch panel. If the pin is accepted the outer two columns will illuminate blue. If the pin is rejected the panel will flash and discard your input, you must enter your pin again. If the wrong pin is entered to many times your keypad will lock for 15 minutes.

The doorbell may be rung even if the keypad is locked. If your doorbell does not work please check to insure you have it enabled on your main LCD panel.



Fig.3

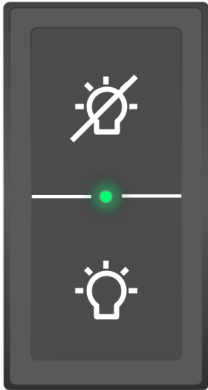
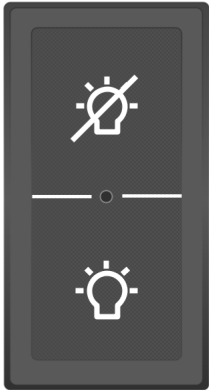
Access to settings related to the exterior keypad can be found on the main Spyder screen. Navigate to settings > screen settings. (Fig.3)

Once on this page various actions can be performed such as enabling or disabling your door bell, setting or resetting your exterior keypad pin and pairing your key fobs.

Instructions are provided on screen for setting or resetting your pin and pairing your key fobs.

Not Transmitting

Transmitting



To Replace The Battery

If the wireless rocker switch stops communicating it may be due to a low battery. To ensure the switch panel has a low battery navigate to the settings > switch settings page on your main LCD panel. The wireless rocker switches will display "LOW BATTERY" in the right-hand column. If this is the case you will need to replace the battery.

To replace the battery firmly grasp the outside edge of the wireless rocker switch.

Pull to the left or right until the switch snaps off the wall. Use a pen or other thin object to push the coin cell out of the retaining clip. Insert new battery with the + symbol facing upwards, ensure battery is seated into retaining clip all the way.

Use the up arrows on the back of the switch panel to orientate placement back onto the mounting bracket. Snap the wireless rocker switch back into place.

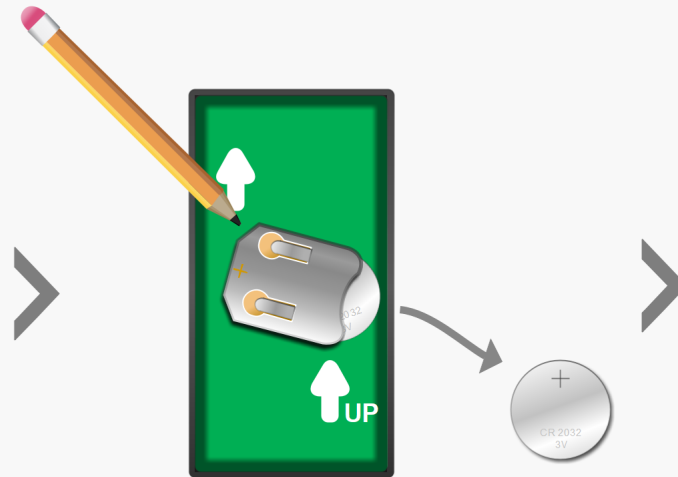
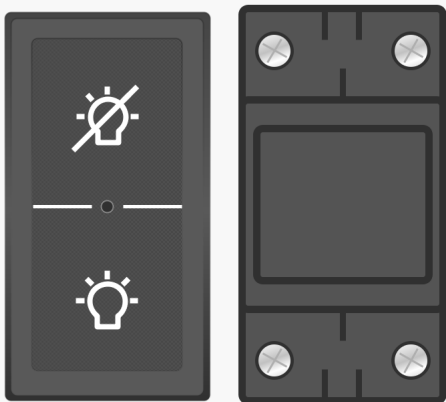
Test the switch and dispose of the old battery responsibly.

Wireless Rocker Switch Quick Guide and Battery Replacment



A green LED will turn on when a button is pressed. This is the transmit LED and confirms that the switch panel is transmitting information. This LED will flash occasionally, this indicates the switch panel is transmitting it's battery status.

Snaps on and off wall bracket



NOTE: ONLY REPLACE THE COIN CELL BATTERY WITH A CR 2032. DOING OTHERWISE WILL VOID THE PANEL WARRANTY AND COULD DAMAGE THE PANEL

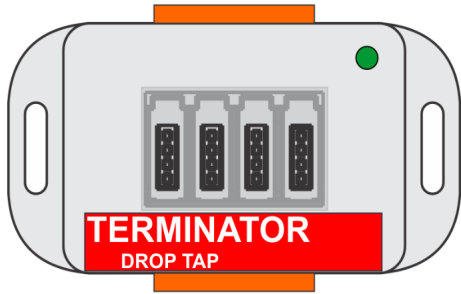


2020 Tiffin Phaeton

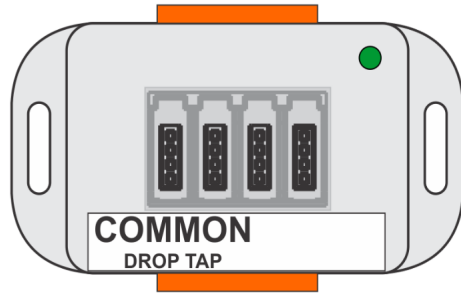
Network Connectors and Related Parts

(Components not to scale)

G3 Terminator Tap
Tiffin P/N: 5051935



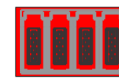
G3 Common Tap
Tiffin P/N: 5027834



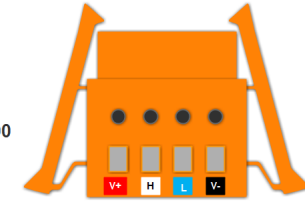
G4 Common Drop Tap
Tiffin P/N: 5016592



G4 Terminator Drop Tap
Tiffin P/N: 5051936



4 Pos Wago Connector
Tiffin P/N: 5015508



Wago Hook Tool
Wago P/N: 231-131



Mini-Clamp Plug
Tiffin P/N: 5066157
3M P/N: 37104-2165-000 FL 100



Mini-Clamp Socket
Tiffin P/N: 5066158
3M P/N: 37304-2165-000 FL 100

