

So The Adventure Starts Now. Explore. Find Out. Live. Free

2026

Tiffin Byway

Integration Schematic











SPYDER
CONTROLS CORP



- 1** **Module Locations**
- 2** **Module Locations (Continued)**
- 3** **G12 Pinout**
- 4** **G12 Pinout (Continued)**
- 5** **M1 Overview**
- 6** **M1 Slide Card**
- 7** **M1 Slide Card Alternate**
- 8** **M1 HC Half Bridge Card**

- 9** **M1 Breaker Card 1**
- 10** **M1 Breaker Card 2**
- 11** **Lighting**
- 12** **Slides**
- 13** **MaxxFans**
- 14** **Vent Fans (Non-MaxxFan)**
- 15** **LPG + Chassis Voltage**









Schematic Connections Legend

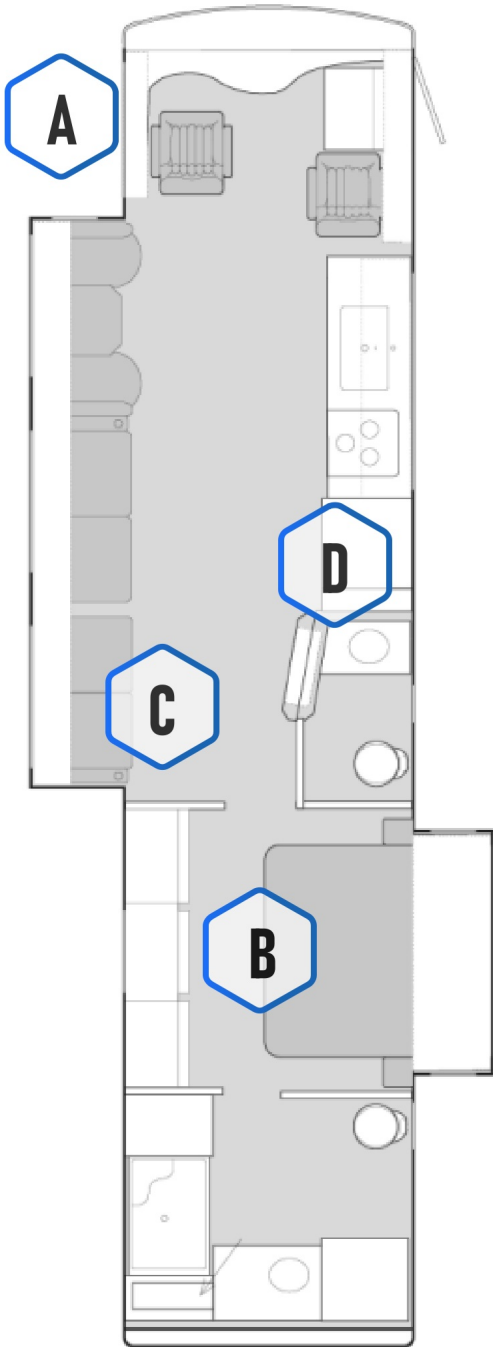
-  Constant Ground
-  Constant 12V+
-  Switched Ground
-  Switched 12V+
-  Reverse Polarity
-  Signal
-  120V AC Line
-  Network

16	HVAC
17	Tank Sensing
18	Switch Panels
19	Water Heat
20	Merge System
21	Merge Logic
22	Awnings

23	Network Overview
24	Network Always On
25	Power Diagram
26	HCR-11 Pinout
27	Network Connectors

Schematic Connections Legend

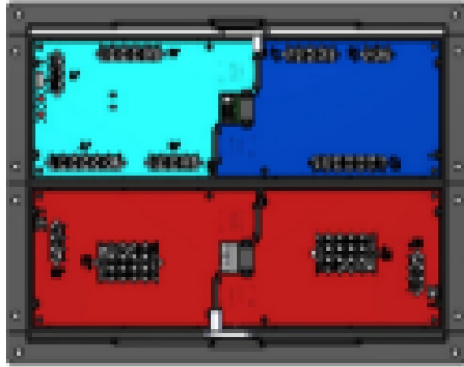
	Constant Ground
	Constant 12V+
	Switched Ground
	Switched 12V+
	Reverse Polarity
	Signal
	120V AC Line
	Network



Note
The G12 Module and Bridge Module may be located in the rear bath. Location will change depending on floor plan.

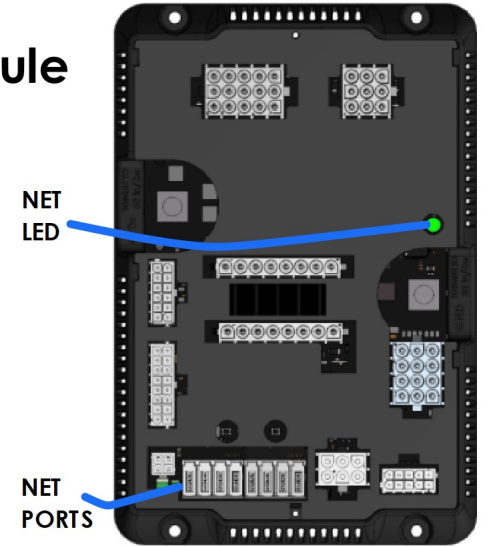
A M1 Front Panel

i
Spyder Part #
BENCZM2DS
Tiffin Part #
5126983
Dimensions
10" X 7.8"



B G12 Module

i
Spyder Part #
BMODZU2VU
Tiffin Part #
5126984
Dimensions
9" X 6"



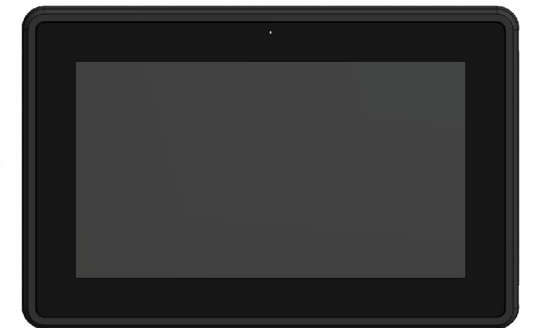
C DCD Panel

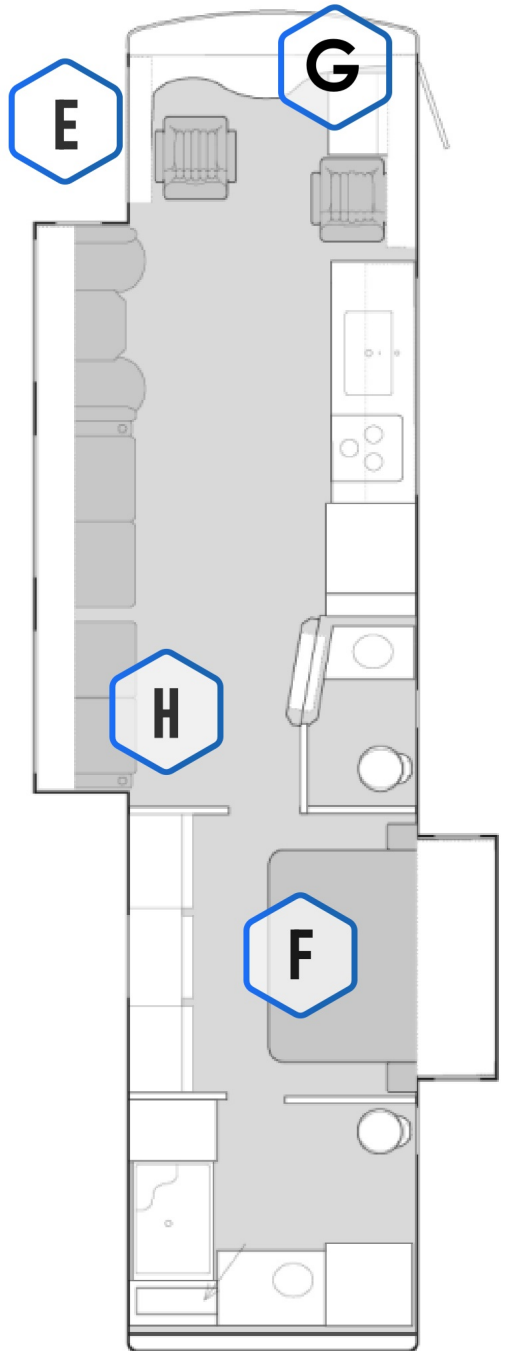
i
Spyder Part #
BENCZ38DS
Tiffin Part #
5127268
Dimensions
10" X 4"



D 7" Color LCD

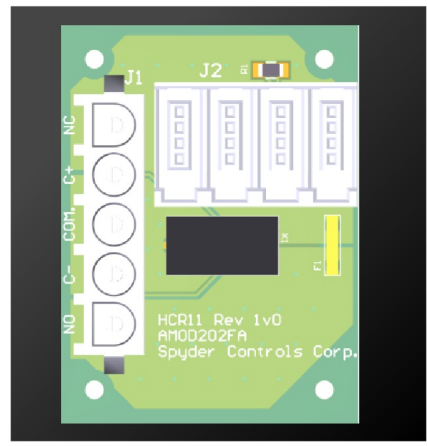
i
Spyder Part #
BSSPZZQDZ
Dimensions
7.6" X 5"





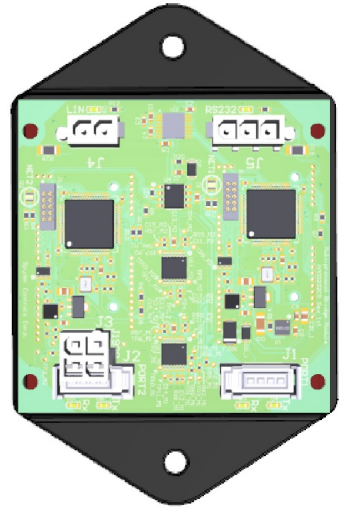
E HCR-11
(Terminator)

i
Spyder Part #
 BMODZGAN6
Tiffin Part #
 5105426
Dimensions
 2.5" X 2"



F Bridge
Module

i
Spyder Part #
 BMODZTCT0
Tiffin Part #
 5127271
Dimensions
 2.7" X 2.7"



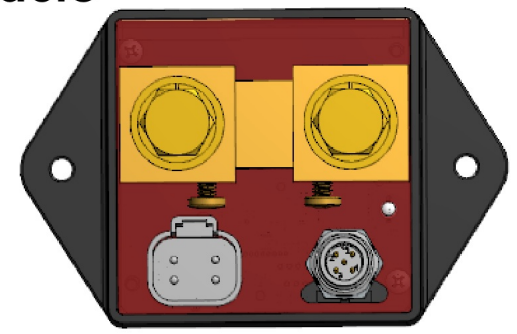
G Mira
Module

i
Spyder Part #
 BMODZ56VF
Tiffin Part #
 5114034
Dimensions
 4" X 2.5"

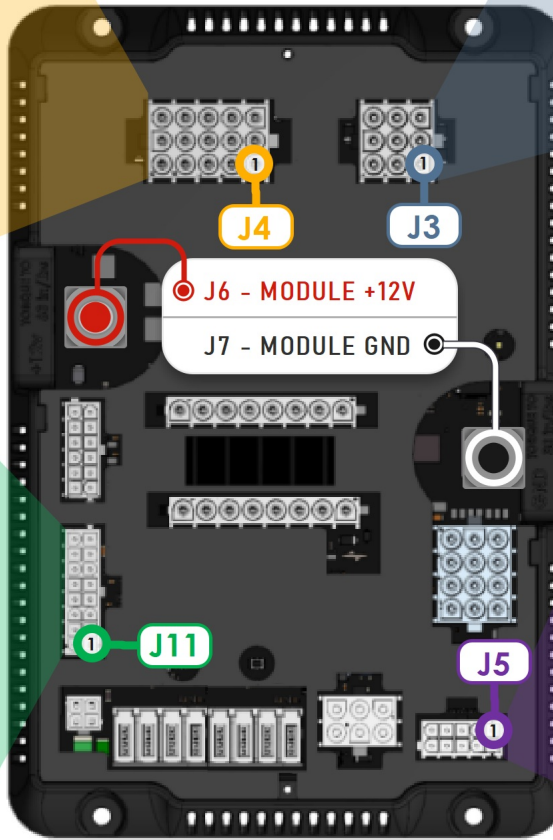


H TruState
Module

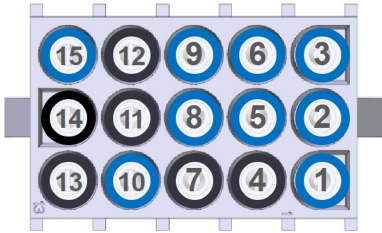
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Spyder Part #
 BMODZC6VR
Tiffin Part #
 5114016
Dimensions
 2.7" X 2.7"



G12 Module @ Under Bed

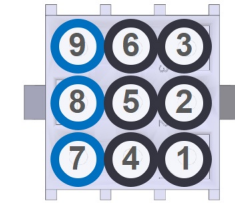


J4



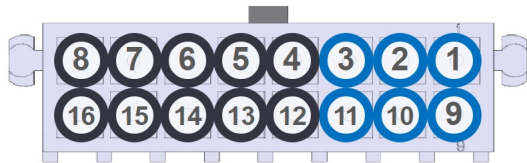
- | | |
|-----------------------------|--------------------------------|
| 1 P/S Slide Lt (CH30) | 9 Rear Bath Lt (CH38) |
| 2 D/S Slide Lt (CH31) | 10 Mid Bath Ceiling Lts (CH39) |
| 3 Main OH/Liv Rm Lt (CH32) | 11 Spare |
| 4 Spare | 12 Spare |
| 5 Entry Lt (CH34) | 13 Spare |
| 6 Task Lt (CH35) | 14 Spare |
| 7 Spare | 15 Galley (CH44) |
| 8 Bedroom Ceiling Lt (CH37) | |

J3



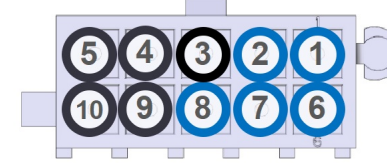
- | | |
|---------|------------------------|
| 1 Spare | 6 Spare |
| 2 Spare | 7 Galley Fan (CH27) |
| 3 Spare | 8 Mid Bath Fan (CH28) |
| 4 Spare | 9 Rear Bath Fan (CH29) |
| 5 Spare | |

J11



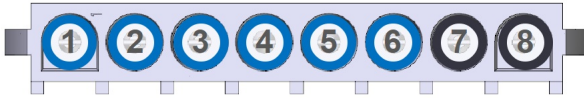
- | | |
|---------------------------|--------------------|
| 1 Fresh Tank Sensor Input | 9 Tank Sensor GND |
| 2 Grey Tank Sensor Input | 10 Tank Sensor GND |
| 3 Black Tank Sensor Input | 11 Tank Sensor GND |
| 4 N/A | 12 N/A |
| 5 N/A | 13 N/A |
| 6 Spare | 14 Spare |
| 7 Spare | 15 Spare |
| 8 Spare | 16 Spare |

J5



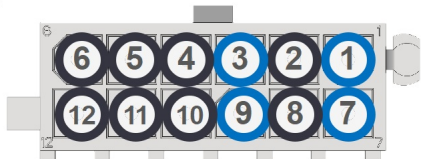
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|-----------------------|-----------------------------|
| 1 Park Brake (GND) | 6 IGN Input (+12V) |
| 2 Water Pump SW (GND) | 7 Merge Status (+12V) |
| 3 Spare (GND) | 8 Shore Power Detect (+12V) |
| 4 Entry Door (GND) | 9 Spare (+12V) |
| 5 Spare (GND) | 10 Spare (+12V) |

J8



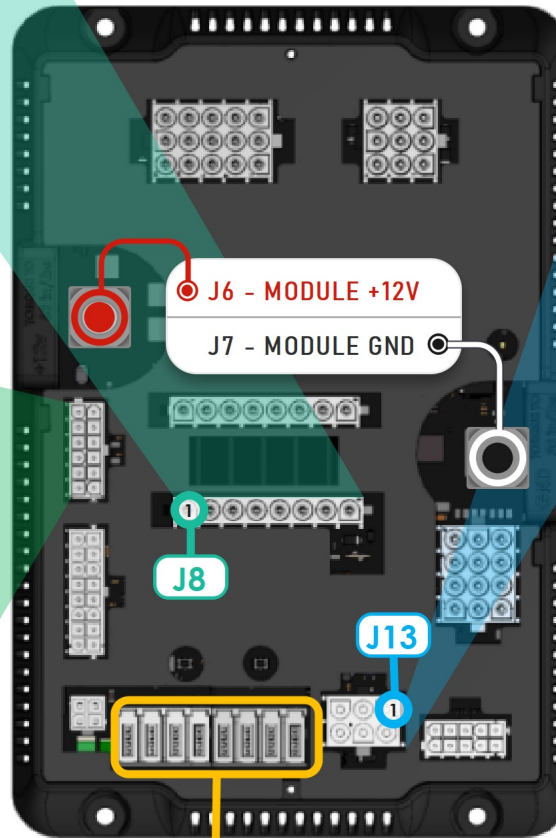
1 Galley Fan Lid Up (CH1)	5 Rear Bath Fan Lid Up (CH5)
2 Galley Fan Lid Dn (CH2)	6 Rear Bath Fan Lid Dn (CH6)
3 Mid Bath Fan Lid Up(CH3)	7 Front Furnace
4 Mid Bath Fan Lid Dn(CH4)	8 Rear Furnace

J12



1 Front Zone Therm	7 Front Zone GND
2 Spare	8 Spare
3 Rear Zone Therm	9 Rear Zone GND
4 Spare	10 Spare
5 Spare	11 Spare
6 Spare	12 Spare

G12 Module @ Under Bed



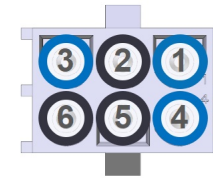
J6 - MODULE +12V
J7 - MODULE GND

J8

J13

Net Ports

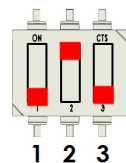
J13



1 LPG Signal	4 LPG GND
2 Spare	5 Spare
3 Spare	6 Generator Run Status

M1 Slide Card

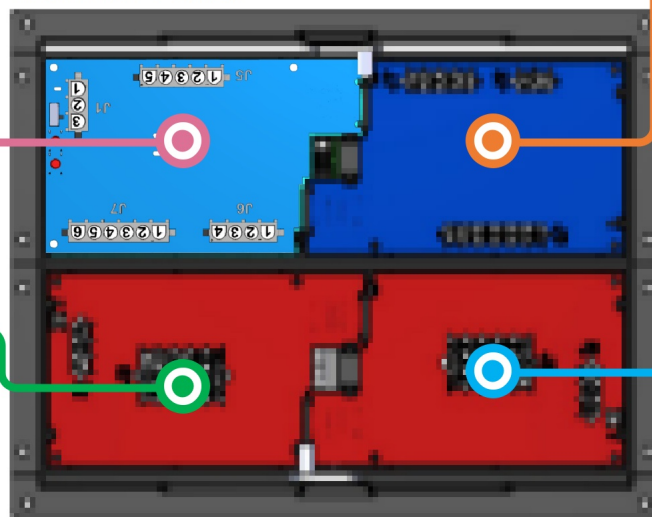
- Ignition (12V)
- Park Brake (GND)
- P/S FR Slide EXT
- P/S FR Slide RET
- D/S FR Slide EXT
- D/S FR Slide RET
- P/S RR Slide EXT
- P/S RR Slide RET
- D/S RR Slide EXT
- D/S RR Slide RET
- Hydraulic Pump



Dip Switch Settings

- | | |
|---|------------|
| 1 | OFF (Down) |
| 2 | ON (Up) |
| 3 | OFF (Down) |

Front M1 Panel



M1 HC Relay Card

- Door/Assist Handle
- Water Pump
- Porch
- Door Awning EXT
- Door Awning RET
- Gen Start
- Gen Stop

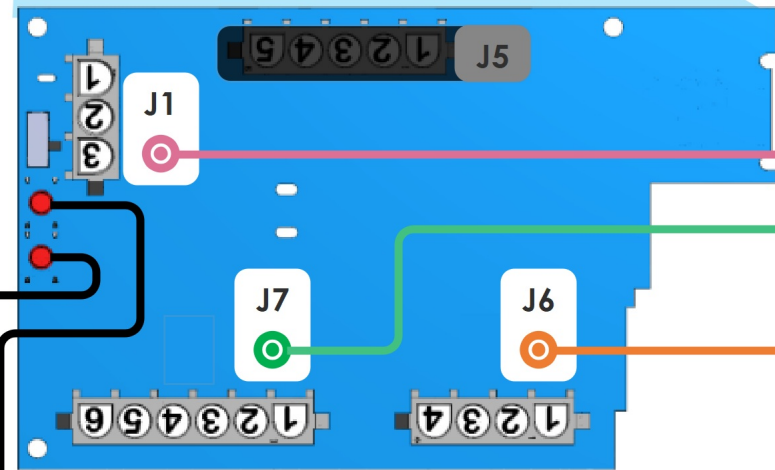
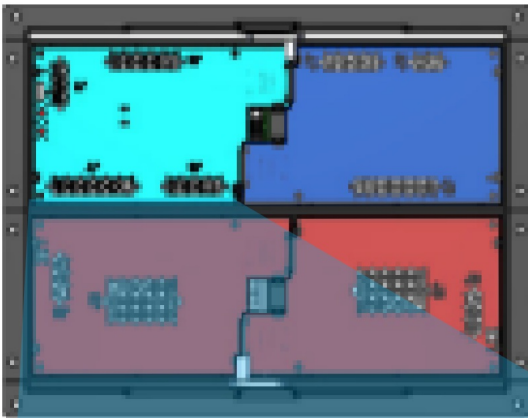
M1 Breaker (Card 3)

- Cargo Lights (HSE)
- Jack Buzzer (IGN)
- CB/Satellite
- Panel Lamp/ Head Light (IGN)
- Front Furnace (HSE)
- Rear Furnace (HSE)
- HCR-11
- Oven Option (HSE)
- HVAC Denso
- 12V Outlet 1/USB PWR
- Entry Step SW
- Bedslide (HSE)
- IGN (+12V)

M1 Breaker (Card 4)

- 12V Outlet 2/ USB PWR
- AGS Power (CHS)
- Sat/IR/HD ANT/HDMI (HSE)
- Slide 3&4 (IGN)
- D/S Mirror PWR (IGN)
- P/S Mirror PWR (IGN)
- Seat Power #1
- Seat Power #2
- Passenger Console
- Map Lt/Fans/Radio
- Awning PWR Lippert
- Truma (HSE)
- Awning PWR Girard (HSE)
- IGN (12V)

Front M1 Panel



M1 Slide Card

OVERVERRIDE RET

OVERVERRIDE EXT

i **Emergency Override**
 For more information on the slide overrides please see Page 15

J1

① Ignition (+12V)	③ N/A
② Park Brake (GND)	

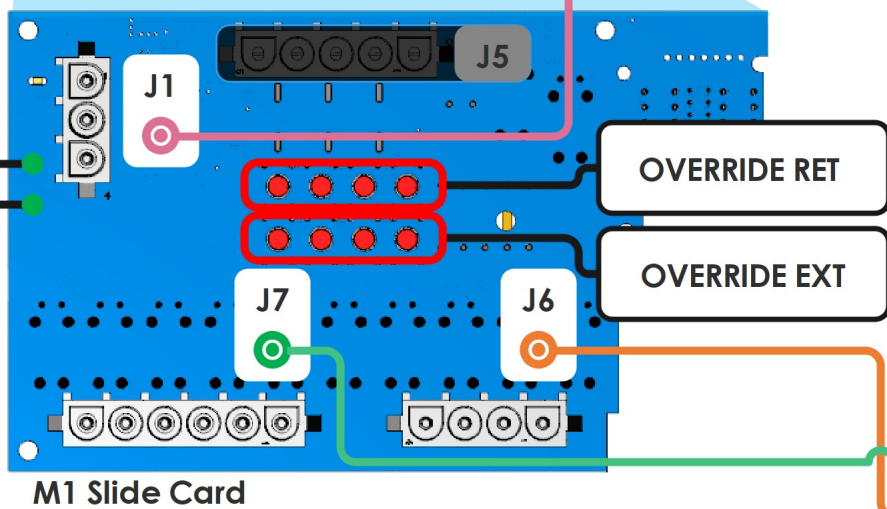
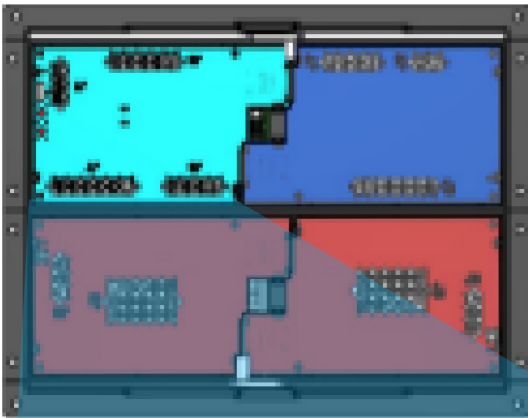
J7

① P/S RR Slide Ext	④ D/S RR Slide Ret
② P/S RR Slide Ret	⑤ Hydraulic Pump
③ D/S RR Slide Ext	⑥ Spare

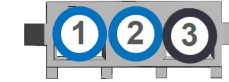
J6

① P/S FR Slide Ext	③ D/S FR Slide Ext
② P/S FR Slide Ret	④ D/S FR Slide Ret

Front M1 Panel

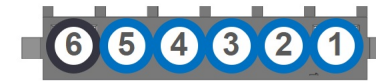


J1



- | | |
|--------------------|-------|
| ① Ignition (+12V) | ③ N/A |
| ② Park Brake (GND) | |

J7



- | | |
|--------------------|--------------------|
| ① P/S RR Slide Ext | ④ D/S RR Slide Ret |
| ② P/S RR Slide Ret | ⑤ Hydraulic Pump |
| ③ D/S RR Slide Ext | ⑥ Spare |

J6

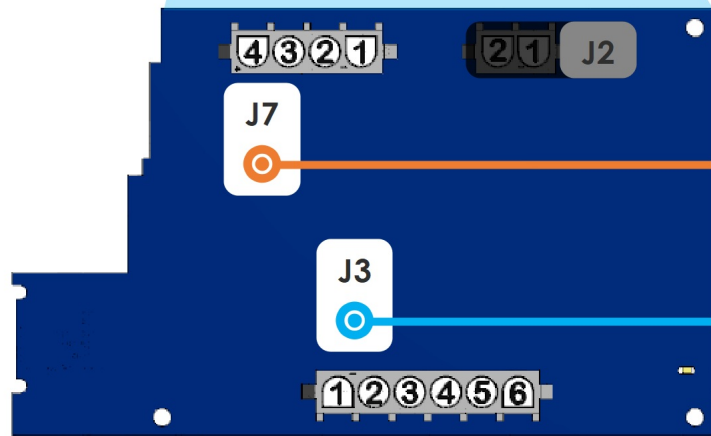
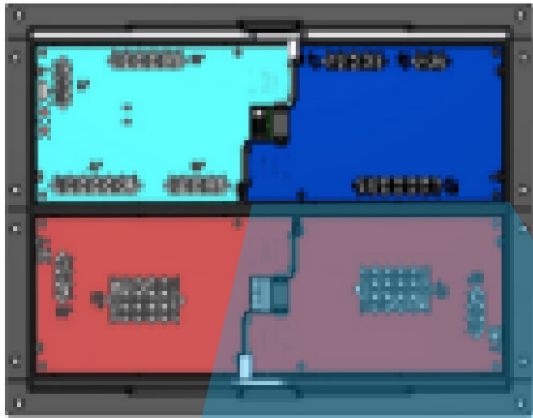


- | | |
|--------------------|--------------------|
| ① P/S FR Slide Ext | ③ D/S FR Slide Ext |
| ② P/S FR Slide Ret | ④ D/S FR Slide Ret |

Emergency Override

For more information on the slides please see Page 15

Front M1 Panel



J7



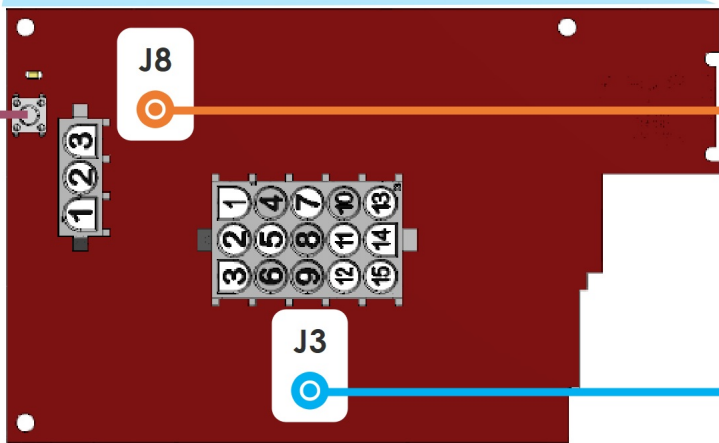
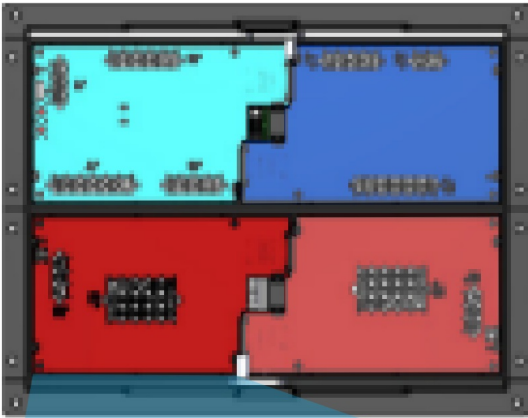
- | | |
|-------------------|---------|
| ① Door Awning EXT | ③ Spare |
| ② Door Awning RET | ④ Spare |

J3



- | | |
|----------------------|---------|
| ① Door/Assist Handle | ④ Spare |
| ② Water Pump | ⑤ Porch |
| ③ Spare | ⑥ Spare |

Front M1 Panel



M1 Breaker Card

Breaker Reset

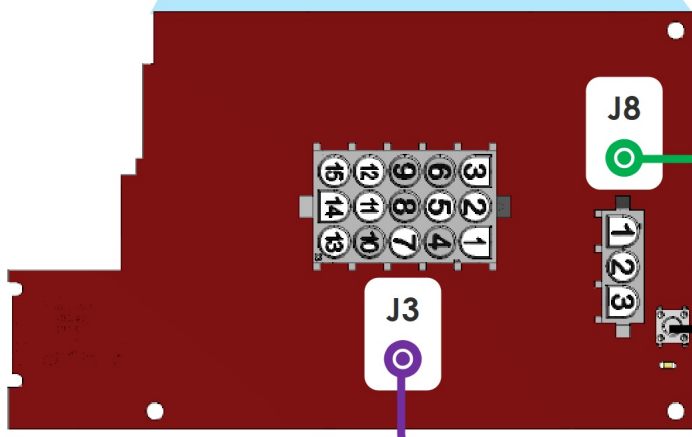
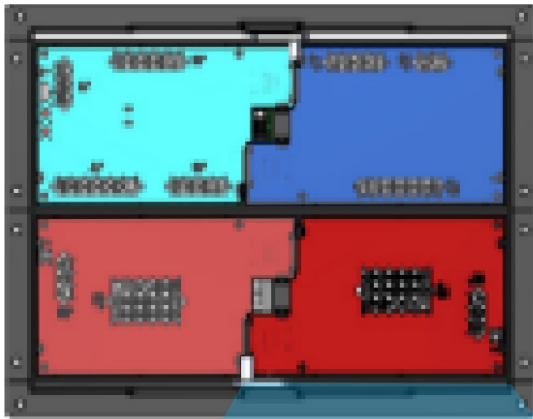
J8

① IGN (+12V)	② N/A
③ N/A	

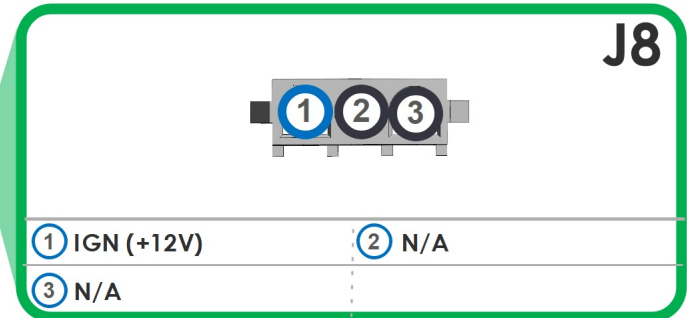
J3

① Bedside (HSE)	⑨ Panel Lamp/Head Lt (IGN)
② Cargo Lights (CHS)	⑩ HVAC Denso (IGN)
③ Jack Buzzer (IGN)	⑪ N/A
④ Entry Step SW	⑫ Front Furnace (HSE)
⑤ N/A	⑬ Oven Option (HSE)
⑥ CB/Satellite	⑭ HCR-11
⑦ 12V Outlet 1/USB PWR	⑮ Rear Furnace (HSE)
⑧ N/A	

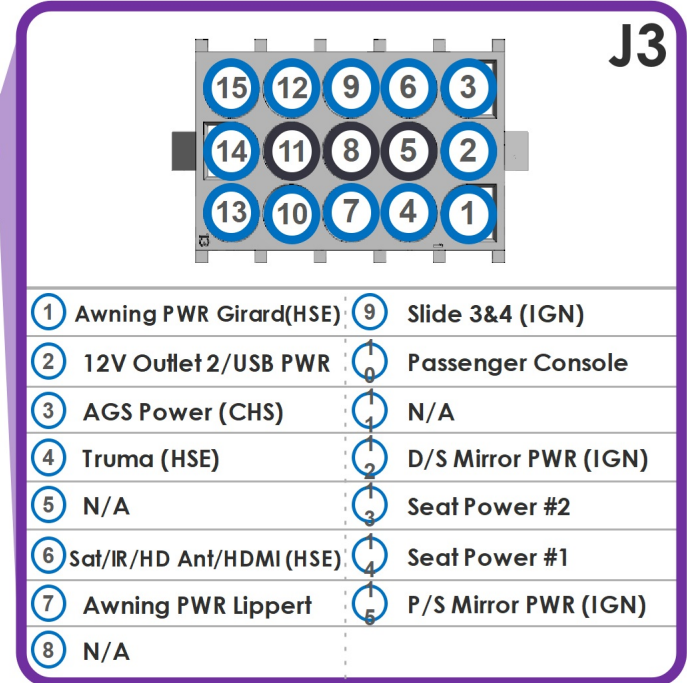
M1 Front Panel



M1 Breaker Card



- | | |
|--------------|-------|
| ① IGN (+12V) | ② N/A |
| ③ N/A | |



- | | |
|----------------------------|------------------------|
| ① Awning PWR Girard(HSE) | ⑨ Slide 3&4 (IGN) |
| ② 12V Outlet 2/USB PWR | ⑩ Passenger Console |
| ③ AGS Power (CHS) | ⑪ N/A |
| ④ Truma (HSE) | ⑫ D/S Mirror PWR (IGN) |
| ⑤ N/A | ⑬ Seat Power #2 |
| ⑥ Sat/IR/HD Ant/HDMI (HSE) | ⑭ Seat Power #1 |
| ⑦ Awning PWR Lippert | ⑮ P/S Mirror PWR (IGN) |
| ⑧ N/A | |

Breaker Reset

G12 Module @ Under Bed

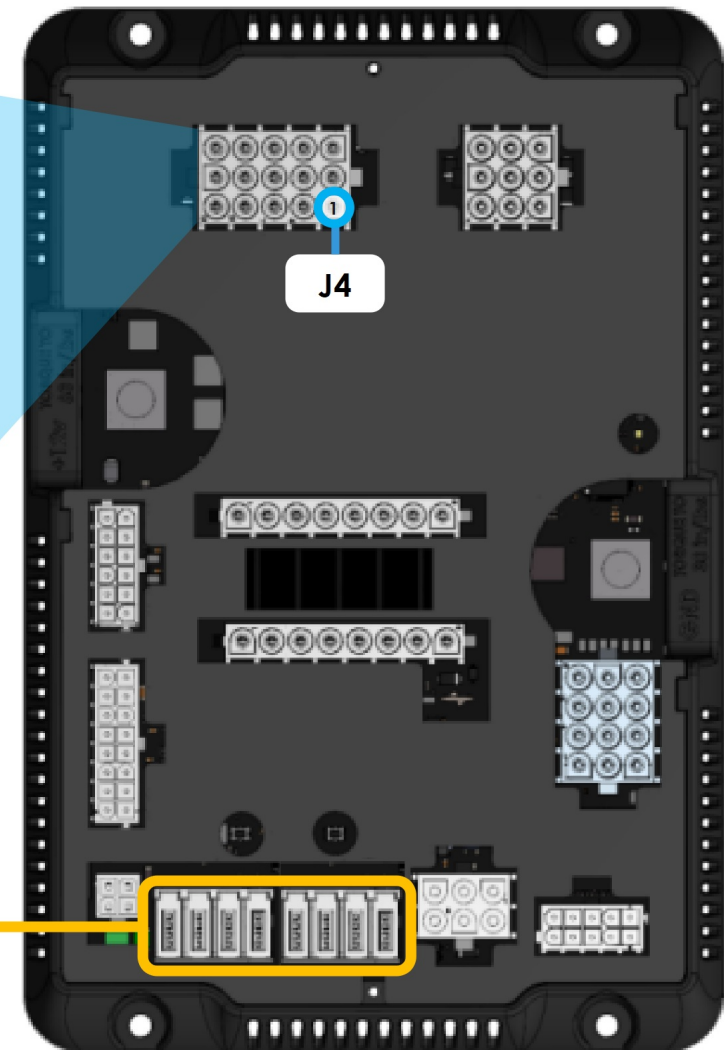
J4

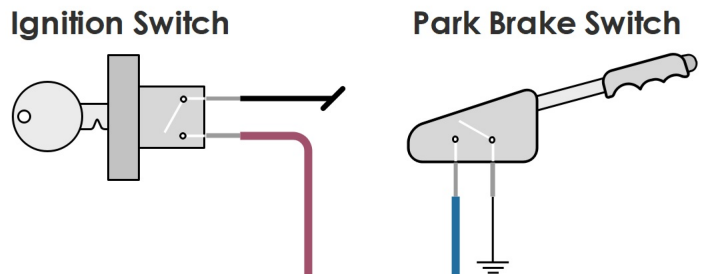
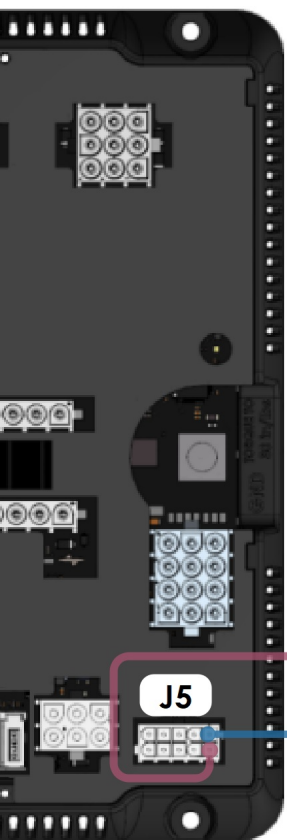
① P/S Slide Lt (CH30)	⑨ Rear Bath Lt (CH38)
② D/S Slide Lt (CH31)	⑩ Mid Bath Ceiling Lts (CH39)
③ Main OH/Liv Rm Lt (CH32)	⑪ Spare
④ Spare	⑫ Spare
⑤ Entry Lt (CH34)	⑬ Spare
⑥ Task Lt (CH35)	⑭ Galley Accent (CH43)
⑦ Spare	⑮ Galley (CH44)
⑧ Bedroom Ceiling Lt (CH37)	

* All Lights Listed Can Dim

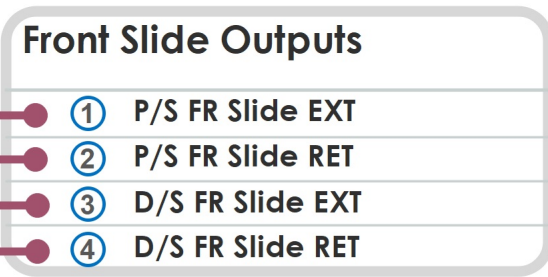
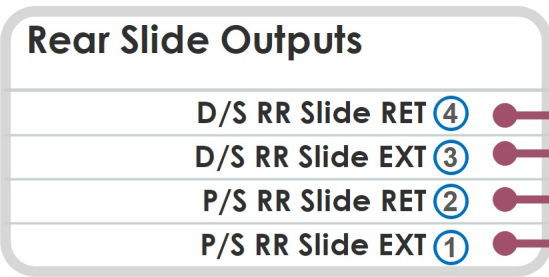
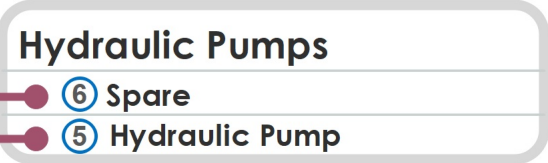
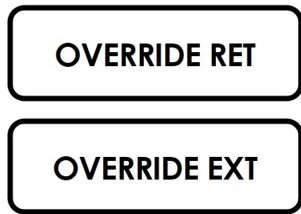
* All lights are grounded outside of the Spyder System. The G12 only provides 12V+

Network Ports

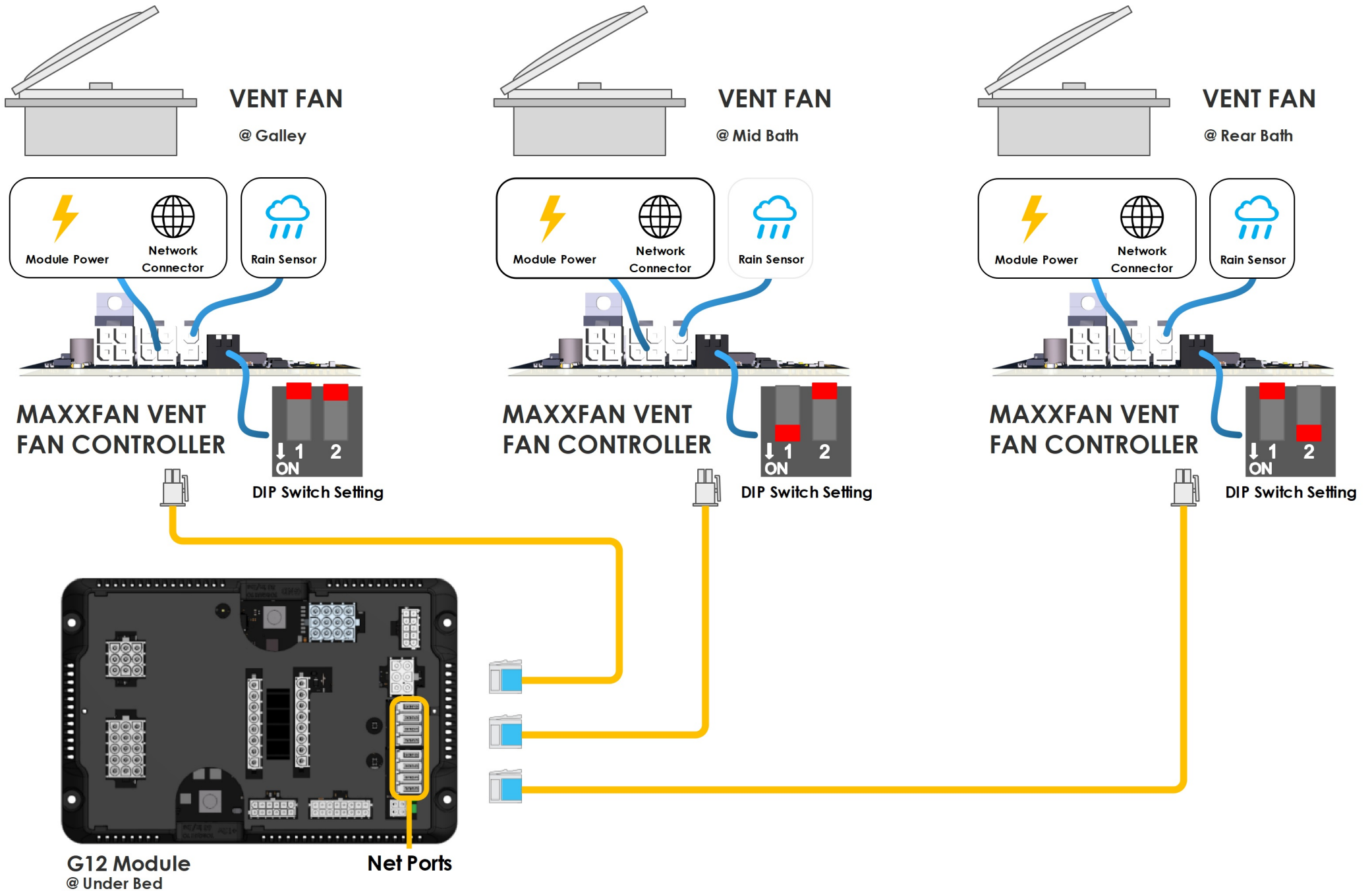


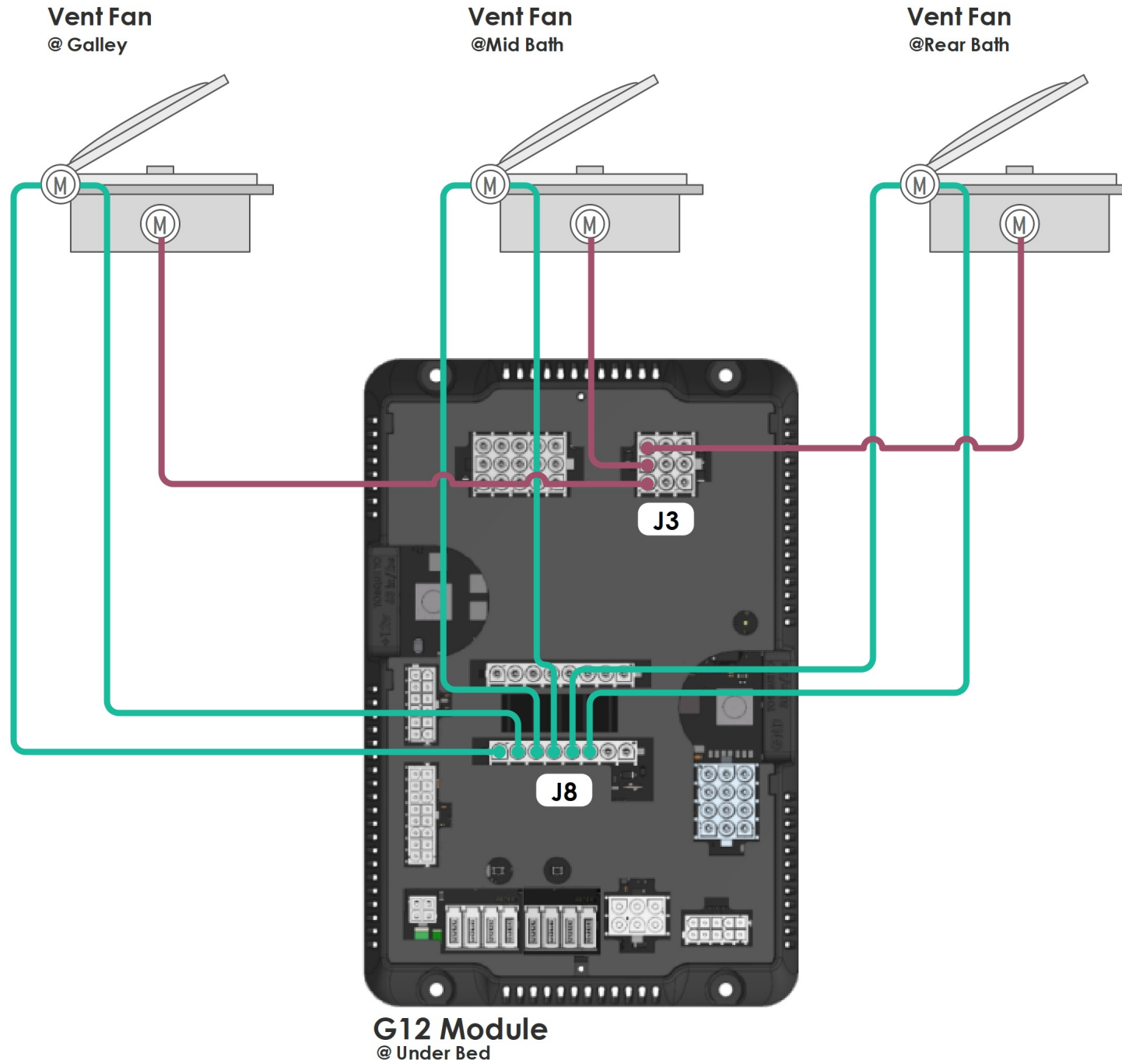


M1 Slide Card

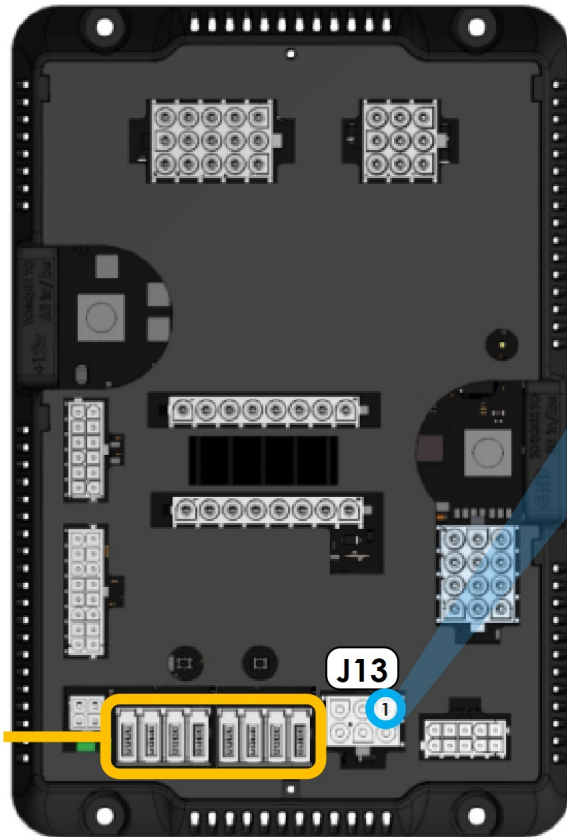


i **Emergency Override**
 Park brake and ignition must be on for slides to operate.
 In case of a system failure, use manual overrides on the slide card to operate slides. Engage overrides using a pen or other pointed object.



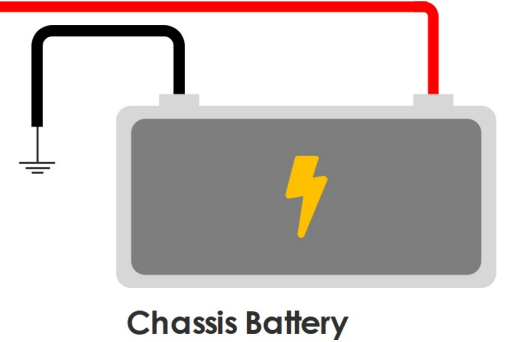
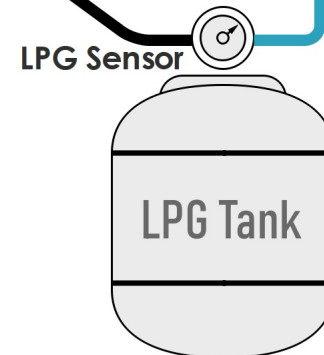
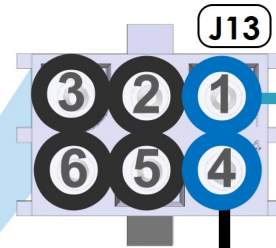
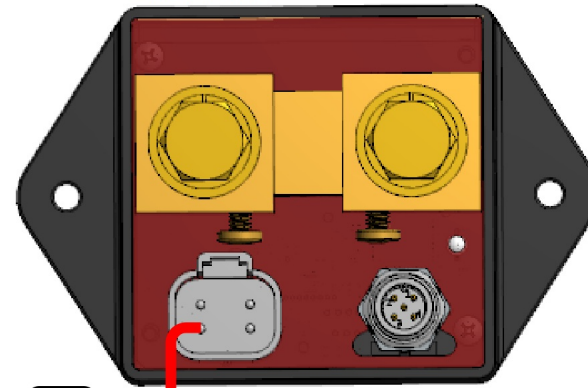


G12 Module
@ Under Bed



Network Ports

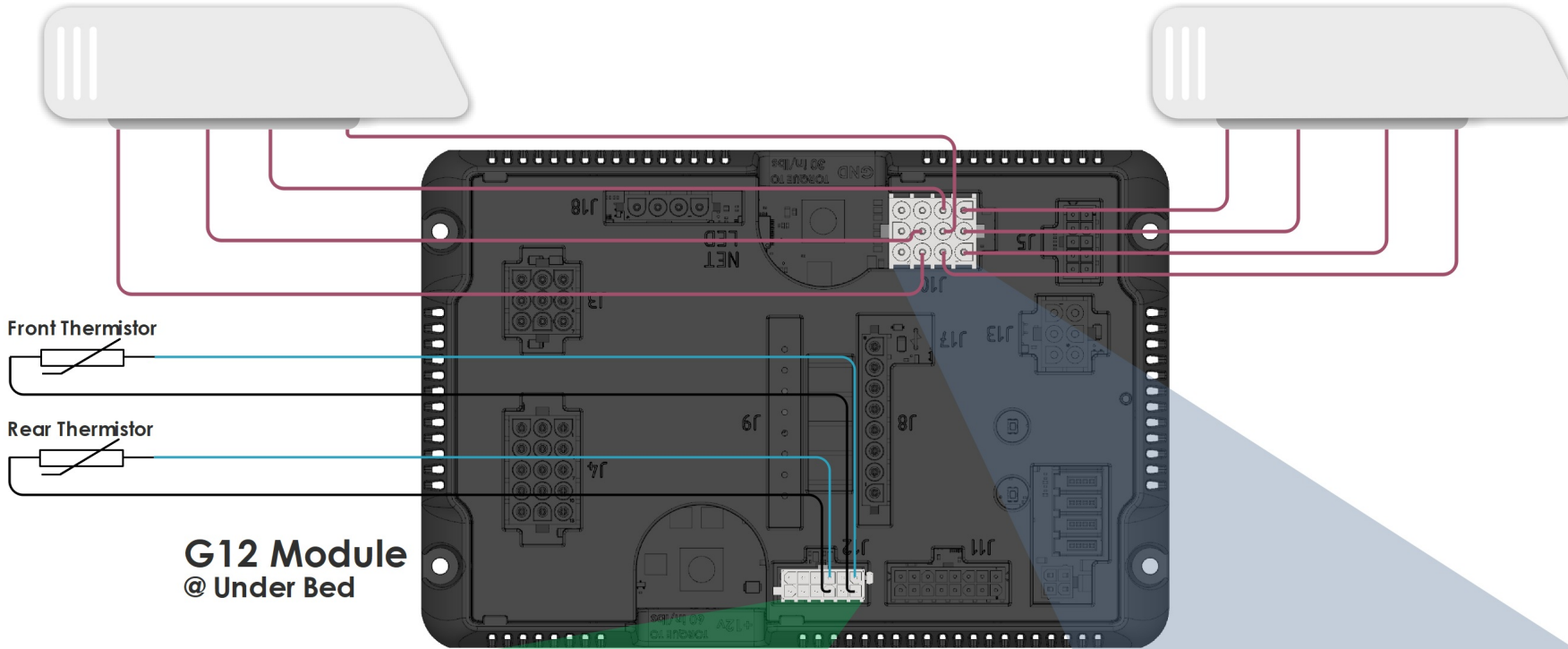
TruState
@ DCD Panel



Chassis Battery

REAR AC
@ Roof

MID AC
@ Roof

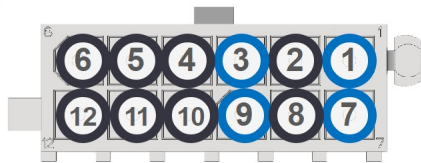


Front Thermistor

Rear Thermistor

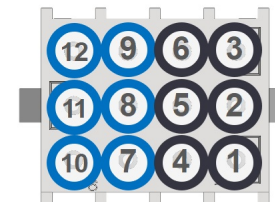
G12 Module
@ Under Bed

J12



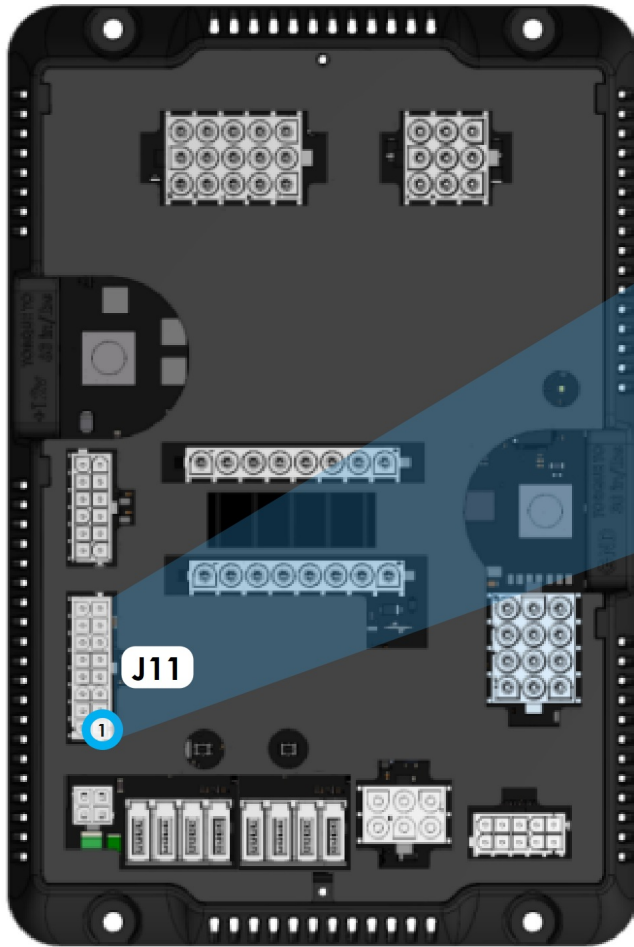
① Front Zone Therm	⑦ Front Zone GND
② Spare	⑧ Spare
③ Rear Zone Therm	⑨ Rear Zone GND
④ Spare	⑩ Spare
⑤ Spare	⑪ Spare
⑥ Spare	⑫ Spare

J10

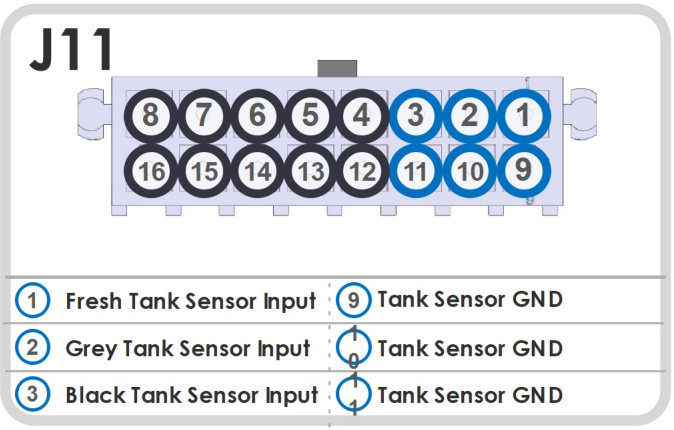
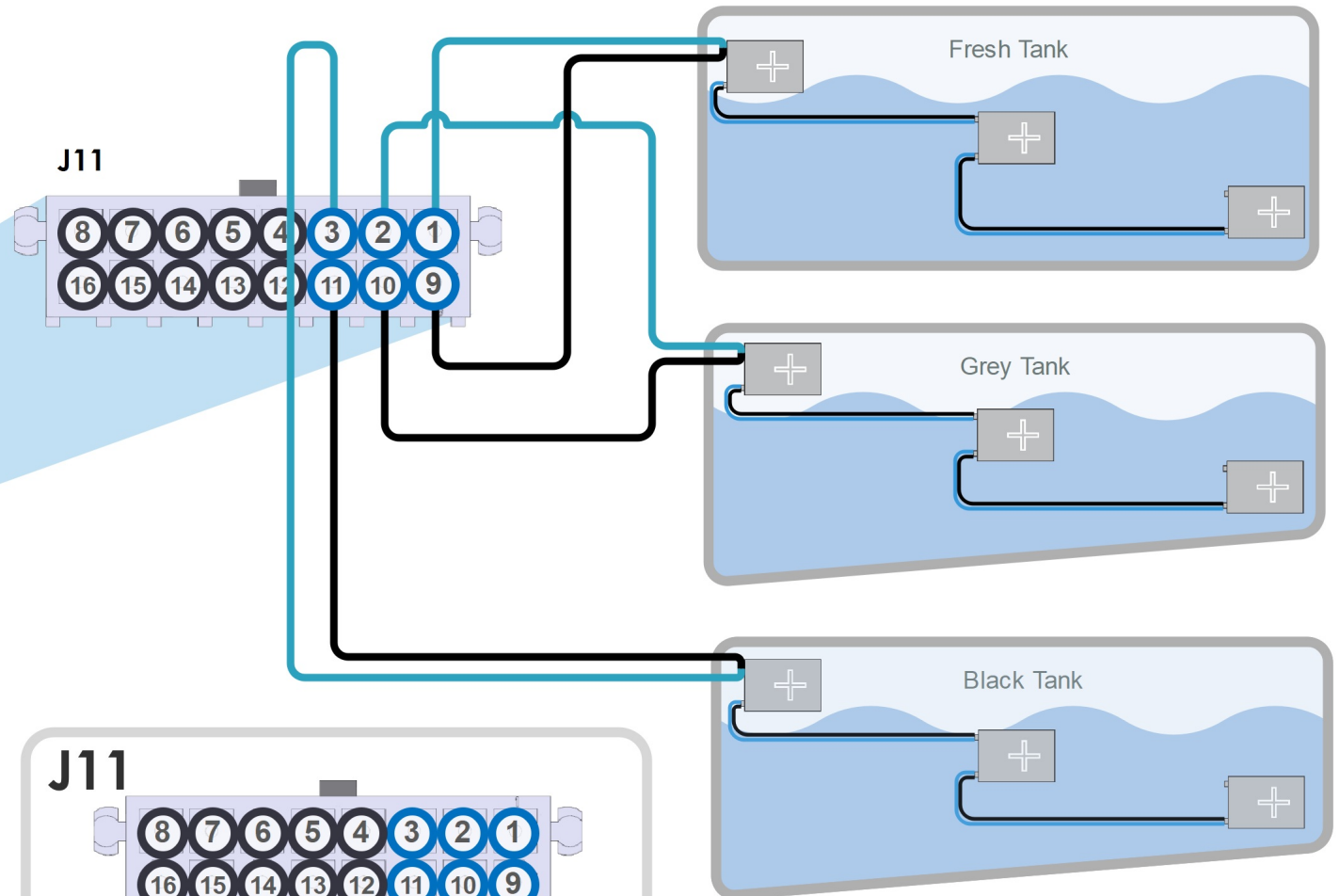



① Front A/C Compressor	⑦ Rear A/C Fan LO
② Front A/C Fan HI	⑧ Rear A/C Heat Pump
③ Front A/C Fan LO	⑨ Spare
④ Front A/C Heat Pump	⑩ Spare
⑤ Rear A/C Compressor	⑪ Spare
⑥ Rear A/C Fan HI	⑫ Spare

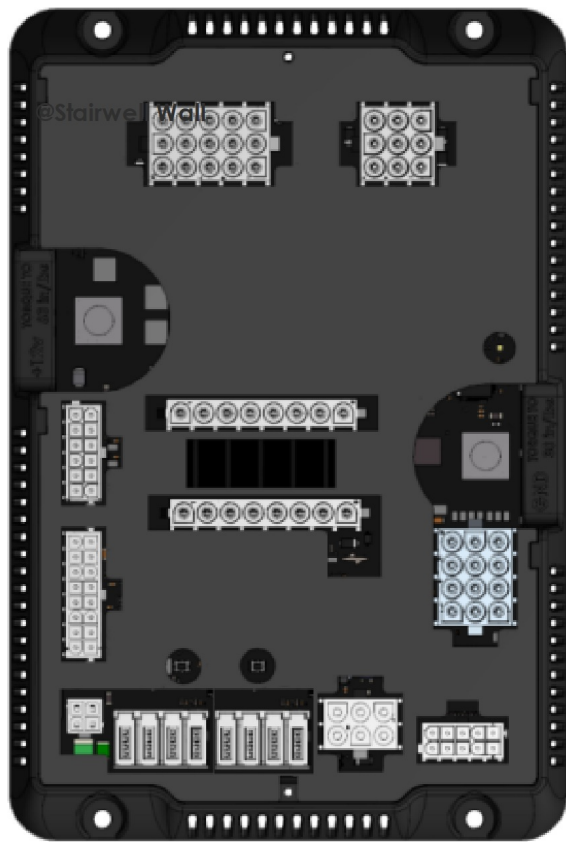
G12 Module



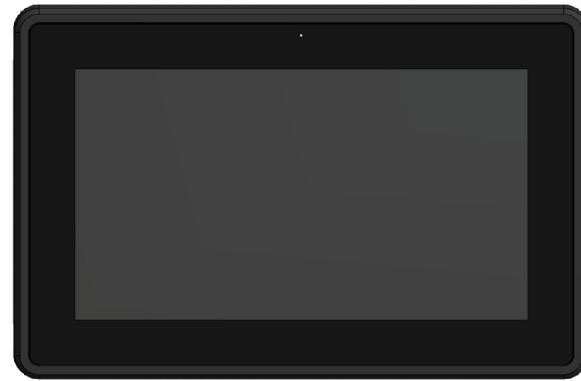
3 Level Tank Sensor System



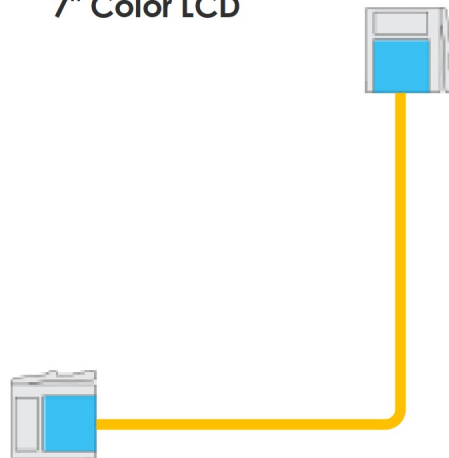
If a switch has the  symbol nearby, it means the switch or module communicates via RF.



G12 Module
@ Under Bed



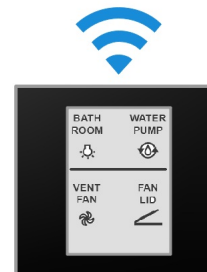
7" Color LCD



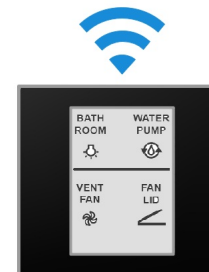
Entry
@Stairwell Wall
Tiffin P/N: 5106529



Galley
@Galley Wall
Tiffin P/N: 5103634



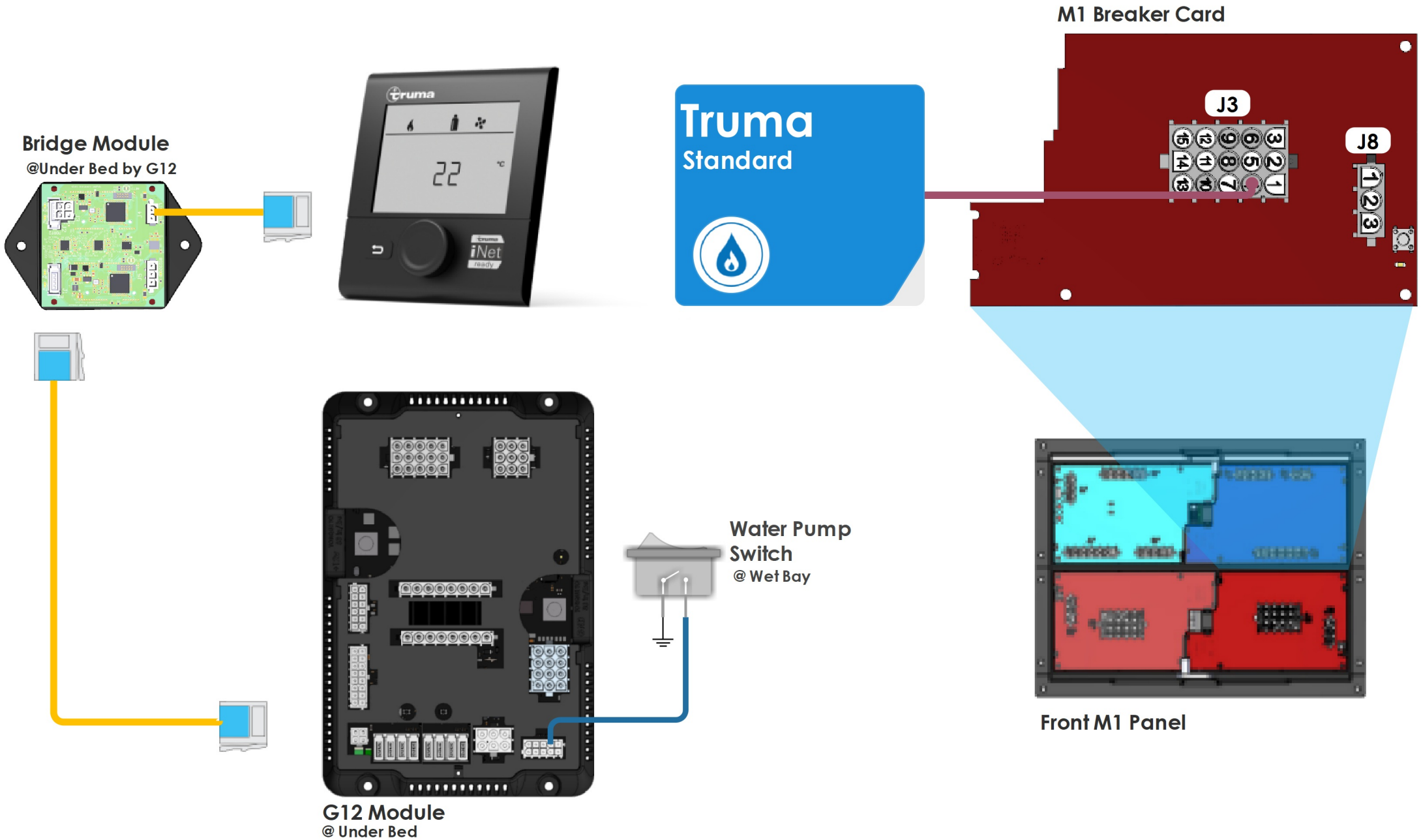
Rear Bath
@Bathroom Wall
Tiffin P/N: 5093651

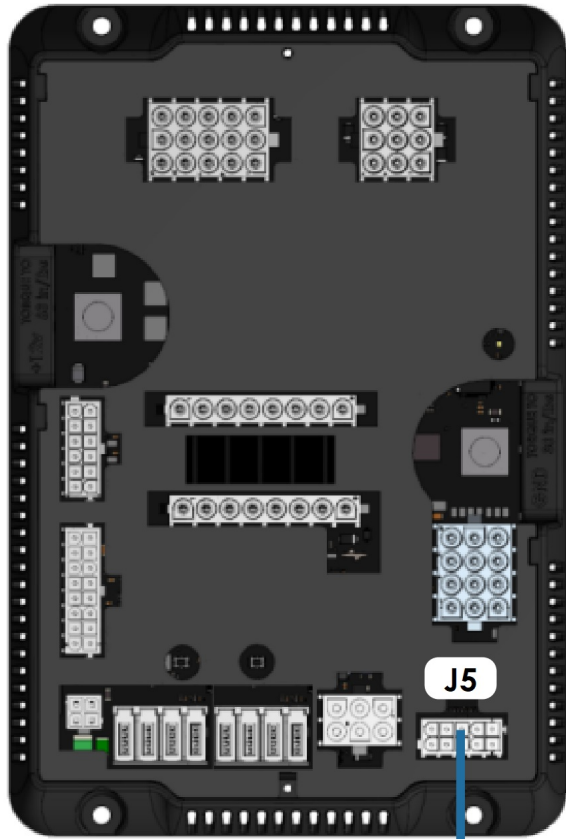


Mid Bath
@Bathroom Wall
Tiffin P/N: 5093651



Bedroom
@Bed Wall
Tiffin P/N: 5093649


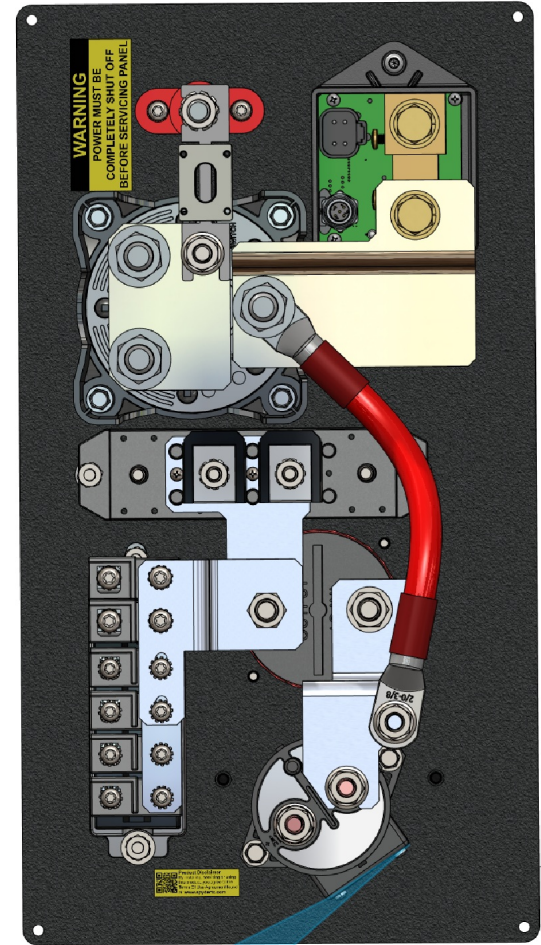




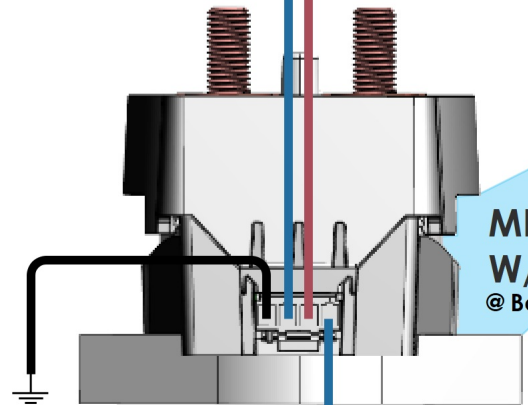
G12 Module
@ Under Bed

COACH RUNNING INPUT

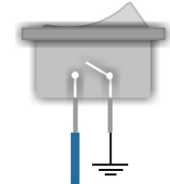
Depending on the chassis used in the coach the coach running input will either come from the engine (switched GND) or from the ignition (switched 12V+)

Two green circular icons are shown: the left one contains a white engine icon, and the right one contains a white key icon. Blue and red lines extend from these icons towards the central solenoid diagram.

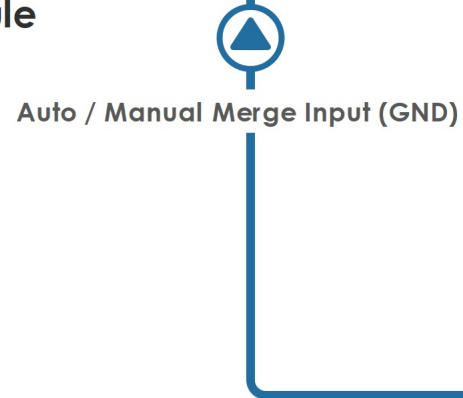
DCD PANEL
@ Inverter Bay

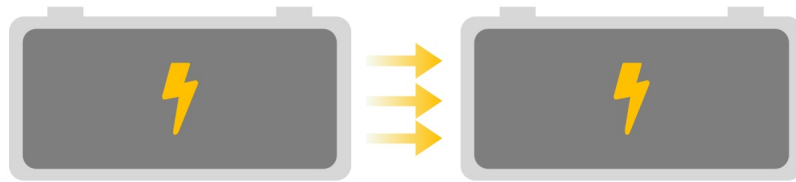


MERGE SOLENOID W/ MERGEMAN
@ Back of DCD



Manual Merge Override Switch
@ Dash

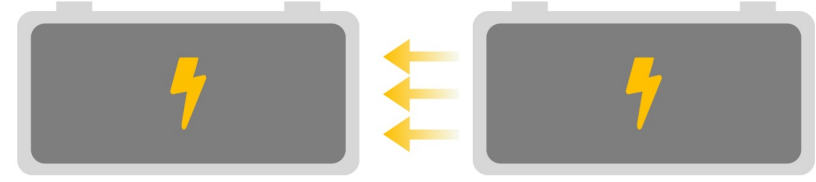


**CHASSIS BATTERY**

⚡ 13.3V+ Or Higher

🕒 30 Seconds

🔑 🚗 V+

HOUSE BATTERY**CHASSIS BATTERY**

⚡ 12.4V+ Or Lower

🕒 30 Seconds

V+

HOUSE BATTERY

⚡ 12.5V+ Or Higher

🕒 30 Seconds

V+

MERGE LOGIC - CHASSIS CHARGING HOUSE

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

- Engine run or 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

- Engine run or ignition signal is removed
- Chassis voltage drops below 12.6V for more than 30 seconds (unmerge until engine is 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

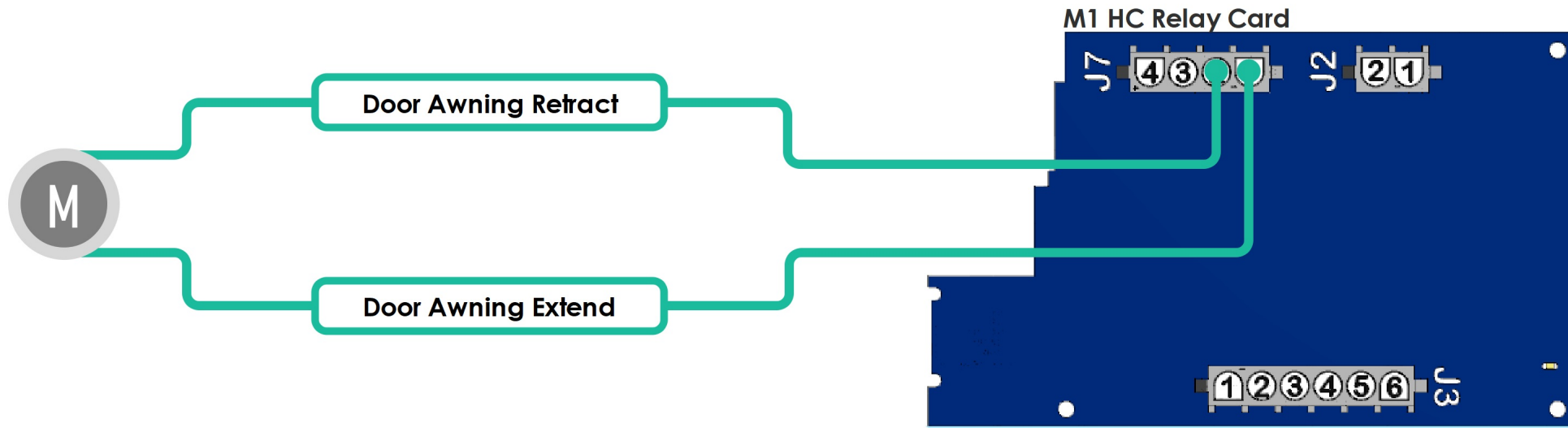
The merge solenoid will disengage under either of the following conditions:

- 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

i

Merge Logic - Note

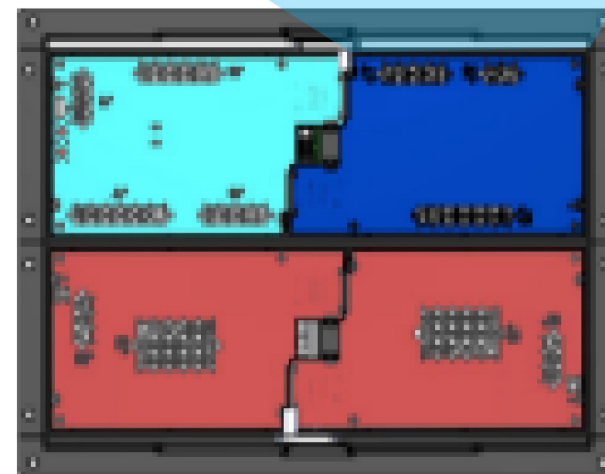
The voltages used in this spec are what are read directly at the MergeMan which is installed at the DCD panel and may vary from the voltages displayed on the LCD screens for general informational purposes



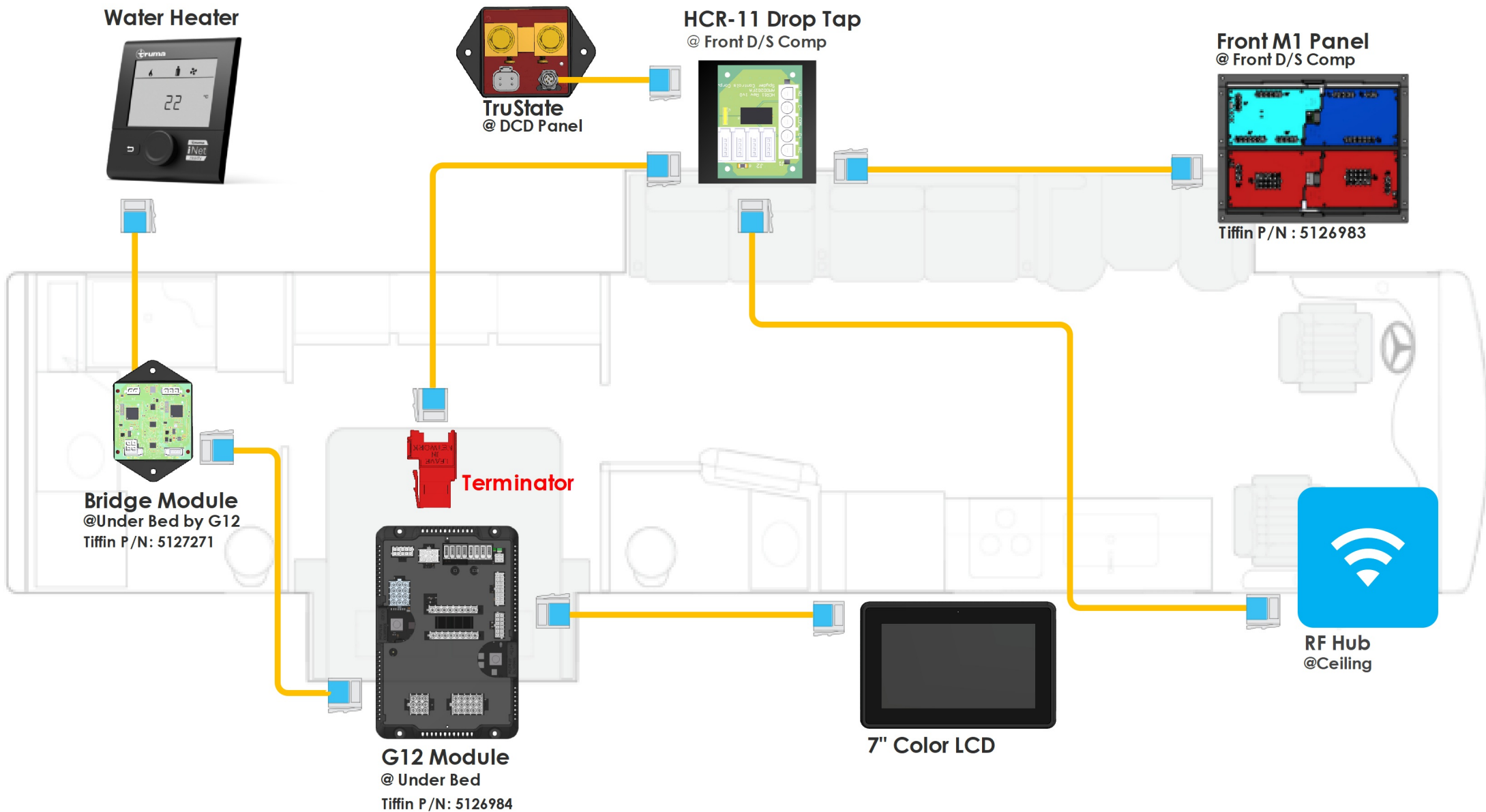
i **Awning Run Requirements**

The park brake signal is required for the awning to run. If ignition is present the awning will not run.

The information box contains two icons: a green circle with a white 'P' representing the park brake signal, and a red circle with a white key symbol representing the ignition signal.



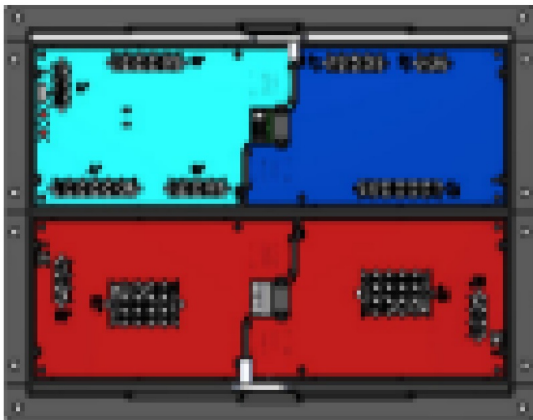
Front M1 Panel



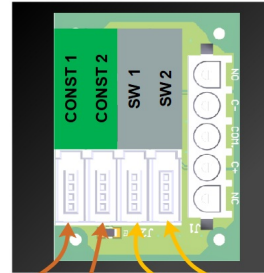
THE ORDER OF THE NETWORK CABLES AT THIS TAP IS IMPORTANT !

The RF Hub and M1 Panel **MUST** be plugged into the ports shown. The always on ports are powered when the house disconnect is off.

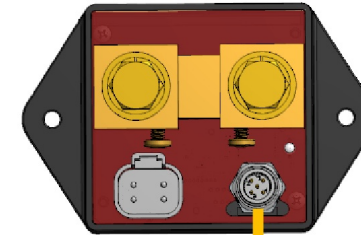
Tiffin P/N : 5126983
Front M1 Panel
@Front D/S Comp



Terminator
HCR-11 Drop Tap
@ Front D/S Comp



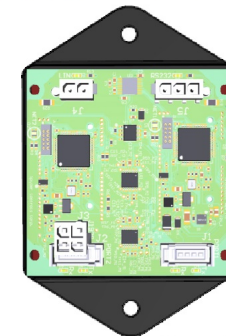
Tiffin P/N: 5114016
TruState
@DCD Panel



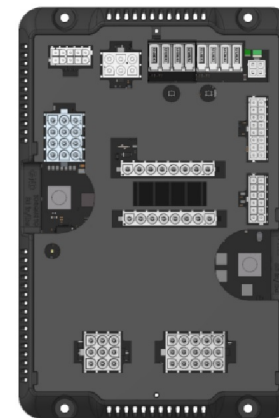
Always On

Switched

Tiffin P/N: 5127271
Bridge Module
@Under Bed by G12



Terminator



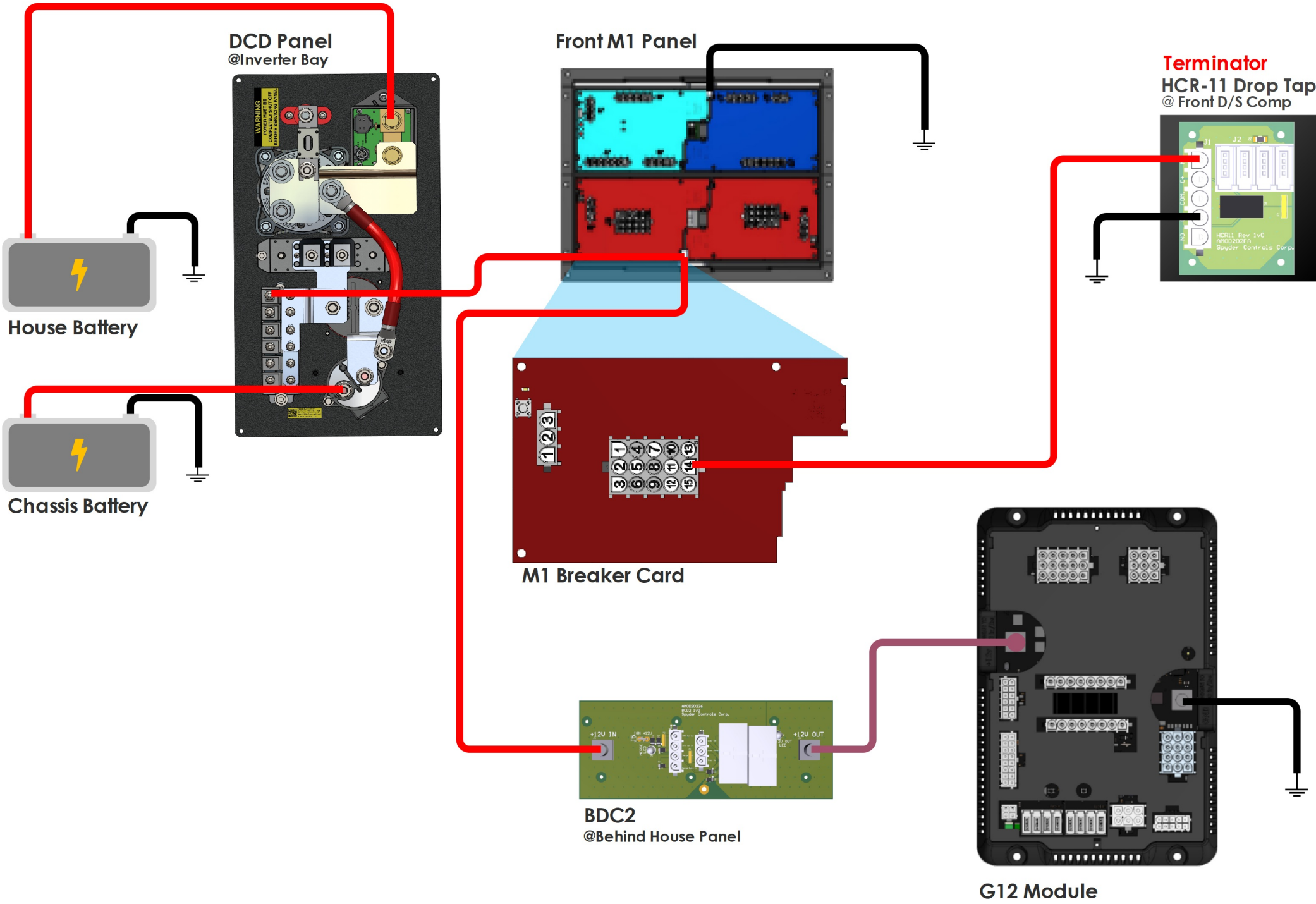
G12 Module
@Under Bed
Tiffin P/N: 5126984

i **Always On Network**
This network to remain powered while house disconnect is off.
This network can be turned off using the battery disconnect on the DCD panel.
*(Ensure power does not transfer through the network cable to the G12, but does transfer to the RF Hub) ⚠

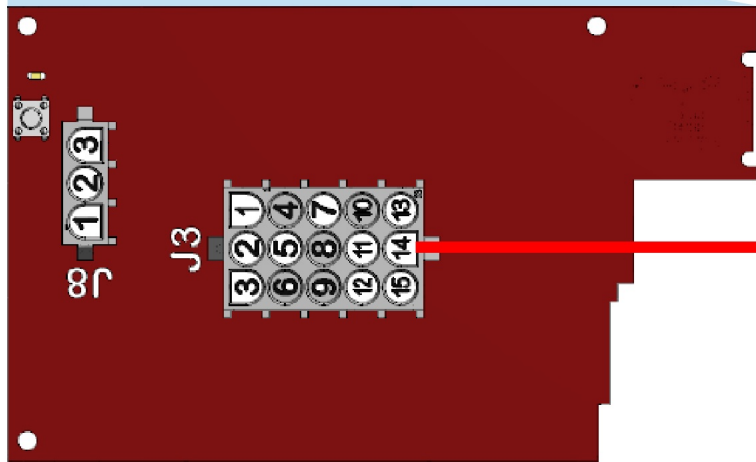
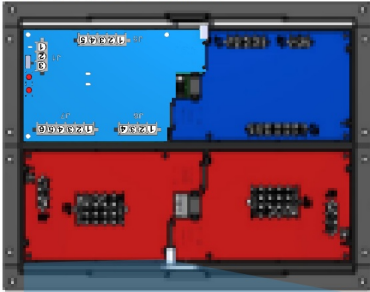


RF Hub
@Ceiling



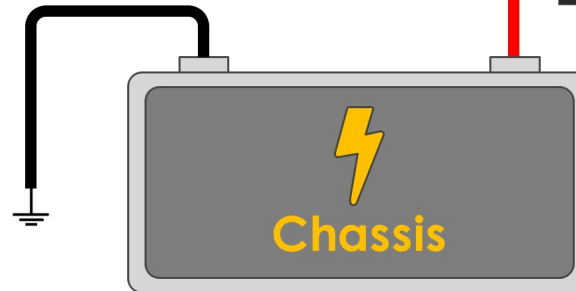
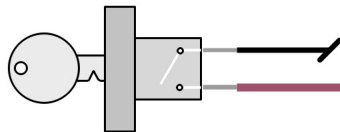


M1 Front Panel

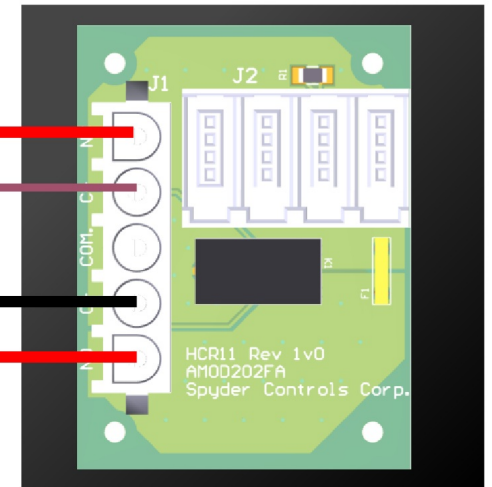


M1 Breaker Card

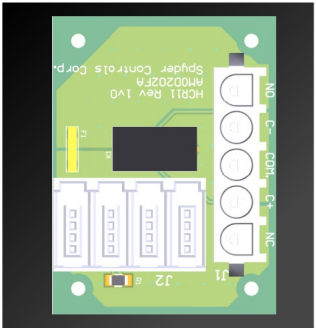
Ignition Switch



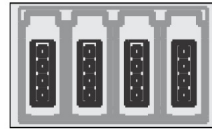
Terminator
HCR-11 Drop Tap
@ Front D/S Comp



TERMINATOR
HCR-11
Tiffin P/N: 5105426



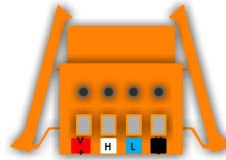
G4 Common Drop Tap
Tiffin P/N: 5016592



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

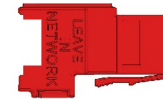


Mini-Clamp Socket
Tiffin P/N: 5066158

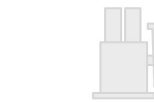
3M P/N: 37304-2165-000 FL 100



In-Line Terminator
Spyder P/N: BBCKZG700
Tiffin P/N: 5125008



MiniFit Jr Pins
Digi-Key P/N: 0039000181



MiniFit Jr Connector
Digi-Key P/N: 0039012040

