Power Supply
&
Electrical System

Supplementary User Guide for Jayco products

WARNING: Jayco products utilise a power supply and electrical system that can incorporate low voltage (230V), extra low voltage (12V) and automotive wiring systems.

WARNING: Dangerous voltage. Your Jayco may be equipped with a power inverter. To avoid serious injury or death from electrical shock disconnect all AC external power supply(s) and DC battery power to the inverter before servicing electrical systems.

WARNING: A connectable electrical installation battery shall only be replaced by one of the same type and specification as that originally fitted. Upgrades to the battery or system shall only be performed by a competent person.

WARNING: Any electrical work carried out on a Jayco product should only be carried out by a competent or qualified person. Contact your nearest Jayco service agent or service for advice.

Visit **www.jayco.com.au** to locate your nearest Jayco service agent.

ELECTRICAL DIAGRAM REFERENCES

Motorhome:

- Typical 12V Schematic for all Motorhomes and Campervans
- Typical 240V Schematic for all Motorhomes and Campervans
- Typical 240V Schematic arrangement for Generator system
- Typical 240V Schematic arrangement for Inverter system
- Schematic for External Lights – Fiat Motorhomes
- Schematic for External Lights - Iveco Motorhomes
- Schematic for External Lights - MS24-4-Model

Towable:

- 12V diagram for all product excluding Camper Trailers – refer "Schematics Projecta 335 &235"
- 12V diagram for Camper Trailers – refer "Schematics BMPRO J35"
- 240V diagram for all product – refer "240V System"
- 240V diagram for all product with Inverter System – refer "240V System including 3000W inverter"

Your Jayco product contains both 12V and 240V appliances. To supply the appropriate power to these appliances, a power converter – including Battery Management System (BMS) – is installed. The BMS is the brains of the power supply and electrical system. Depending on your model range, and availability of options, your product may be equipped with a variety of power supplies including:

- External 240V power (standard on all Jayco Motorised product)
- Auxiliary (House) Battery (standard on all Jayco Motorised product)
- Roof mounted solar panel(s) (standard on all Jayco Motorised product)
- Auxiliary solar panel input
- Auxiliary 12V power from Vehicle Battery with DC-DC charger
- 240V Inverter system
- 240V Generator **(Motorised product only)**

EXTERNAL 240V POWER

A 240V power inlet is located on either the roadside or rear of your Jayco. In most cases the 240V inlet will be adjacent to the Circuit Breaker. The power inlet is a 240V, 15A inlet. The appropriate power lead must be used when connecting your Jayco to an external 240V power source.

240V power is supplied from the external power inlet to the low voltage electrical circuit. If your BMS is connected to the 240V circuit, 12V will be supplied into the extra-low voltage electrical circuit.

If your Jayco is connected to external 240V power, all electrical circuit will be fully powered and appliances/accessories fully functional.

AUXILIARY (HOUSE) BATTERY

Your Jayco product comes standard with an auxiliary battery. Depending on the model it may contain the following types:

- [1]100Ah Gel Battery (lead acid)
- [1]100Ah or [1,2]120Ah Lithium-ion Battery (Bluetooth enabled)
- [1]200Ah/ [1]210Ah Lithium-ion Battery
- [1, 2]240Ah Lithium-ion Battery (Bluetooth enabled)
- [2]400Ah/ [1]420Ah Lithium-ion Battery

The purpose of the auxiliary battery is to supply power to the extra-low voltage (12V) circuit when your product is not connected to external 240V power. This allows all 12V appliances and accessories, such as lighting, to remain fully functional without being connected to 240V.

In the event the battery state of charge drops to a significantly low level, the BMS will shut off any further load to protect the battery. Should this happen, the battery will need to be re-charged.

Your battery is part of a self-contained electrical system. The battery will receive charging from via BMS. The BMS will monitor the state of charge of the battery and regulate charging from the most appropriate power supply(s) available – either 240V, solar or from the vehicle alternator.

WARNING: Your battery must not be charged from a third party or external battery charger – permanent damage or fire may occur. If your battery is unable to be re-charged – contact your nearest Jayco service agent for advice.
If your Jayco has provision for an additional auxiliary battery, it must be of the same type and specification as that already fitted.

WARNING: A connectable electrical installation battery shall only be replaced by one of the same type and specification as that originally fitted. Upgrades to the battery or system shall only be performed by a competent person.

1 Available for Towable products only.

2 Available for Motorised products only.

SOLAR PANELS

Depending on model, your Jayco will have solar panel(s) fitted to the roof. The purpose of these panels is to provide a 12V supply, via the BMS, to the auxiliary battery for charging purposes.

The BMS has a built-in regulator to monitor and control the extra-low voltage input from the solar panels. The BMS also regulates the current flow from the solar panel to the battery for charging purposes.

Your Jayco may also have an auxiliary solar input on the roadside of the unit. This input is identified by a grey Anderson plug (with label affixed). This input also runs via the BMS in the same way as the roof mounted solar panels. When utilising the auxiliary connection (with portable solar panels), a panel compatible with the BMS should be chosen.

To maximise the efficiency of the roof mounted solar panels they should be periodically cleaned.

AUXILIARY 12V POWER FROM VEHICLE BATTERY

The Motorhome and the Campervan Vehicles supplies 12V Power to the BMS from the Vehicle battery. This may be supplied through an Engine loom Relay box (depending on the Motorhome & Campervan Models) or via the 12-pin plug at the drawbar (towable vehicles).

In most models a DC-DC charger may be fitted. The purpose of the DC-DC charger is to compensate for any voltage drop from smart alternators of the vehicle. This compensation optimises the charging of the battery while towing.

INVERTER SYSTEM

Some Models are fitted with a 3000W inverter system (Currently a standard feature for VW MK2 campervans and any Motorised/ towable product with Off-grid system). The purpose of the inverter is to draw extra-low voltage (12V) from the auxiliary battery(s) and "inverting" it to 240V before feeding back into the low voltage circuit. This allows all 240V appliances including Air conditioners (and general power outlets) to functional without being connected to an external 240V power supply.

The inverter has a built-in automatic transfer switch for the quick transfer of power between external 240V supply and battery power. The inverter also has its own safety 'cut-out' switch (RCD) – disconnecting all powered outlets in the instance of an earth leakage, protecting from electrocution.

Any general power outlet (GPO) powered by the inverter will be identified by a "dual supply" label. Note – the BMS GPO is isolated from the inverter, continuing to be powered only by the external 240V power supply.

WARNING: Dangerous voltage. Your Jayco may be equipped with a power inverter. To avoid serious injury or death from electrical shock disconnect all AC external power supply(s) and DC battery power to the inverter before servicing electrical systems.

GENERATOR SYSTEM

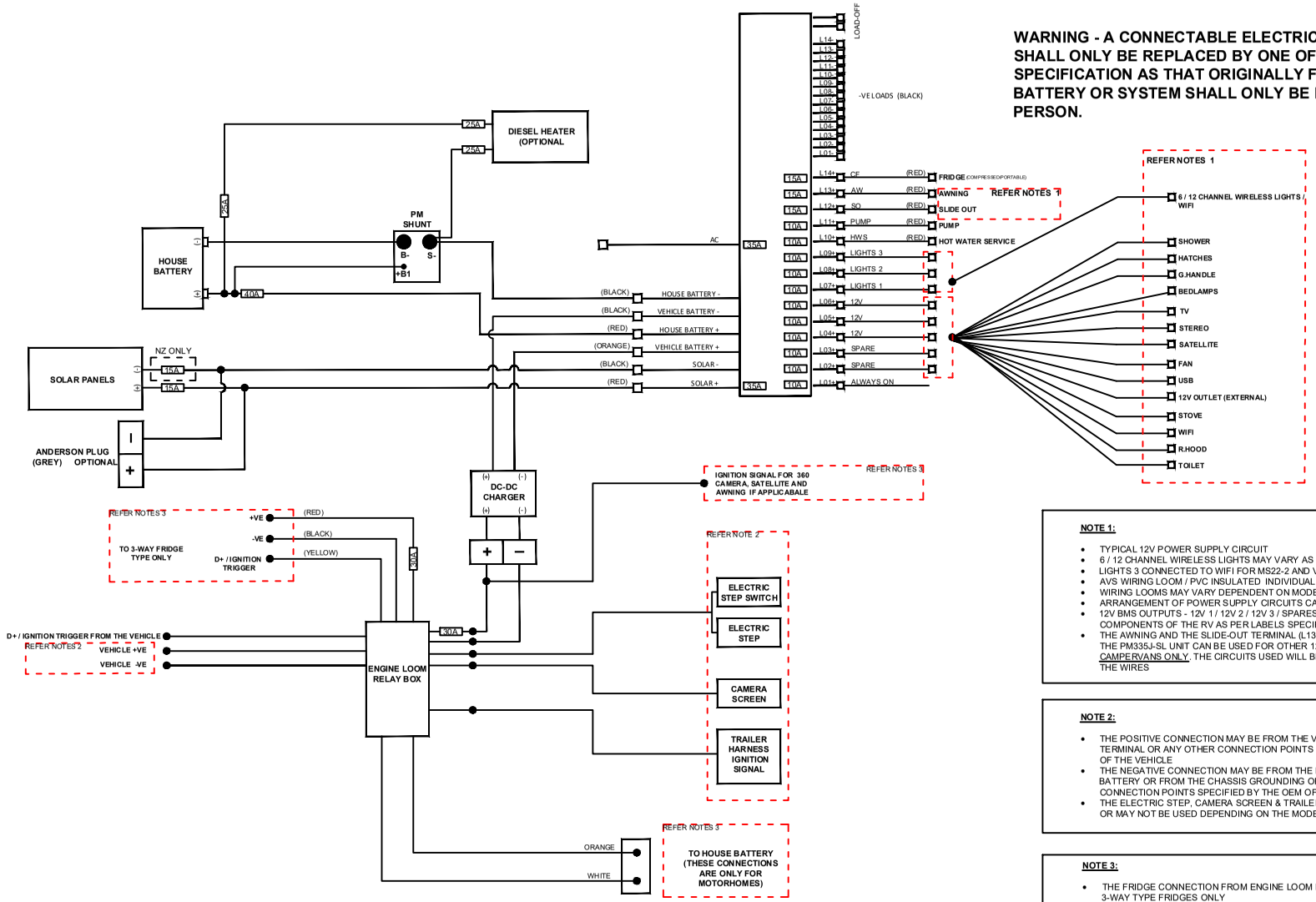
(FOR IV29-5 MOTORHOME)

The IV29-5 Optimum Motorhomes are fitted with a Gasoline (Unleaded) Generator (230V, 15.7A, 3.6KVA). 12V power from the house battery is utilised to start the Generator, the output power from the Generator is fed to the Motorhome through a Change-over switch and an internal RCD. This switch must be manually operated accordingly when connecting to Mains power or Generator power.

Any general power outlet (GPO) powered by the Generator will be identified by a "dual supply" label.

WARNING: Dangerous voltage. Your Jayco may be equipped with a 240V power Generator. To avoid serious injury or death from electrical shock disconnect all AC external power supply(s) and DC battery power to the Generator before servicing electrical systems.

TYPICAL 12V SCHEMATIC FOR ALL MOTORHOMES AND CAMPERVANS



NOTE 1:

- TYPICAL 12V POWER SUPPLY CIRCUIT
- 6 / 12 CHANNEL WIRELESS LIGHTS MAY VARY AS PER MODELS AND OPTIONS
- LIGHTS 3 CONNECTED TO WIFI FOR MS22-2 AND VW-CK CAMPERVANS ONLY
- AVS WIRING LOOM / PVC INSULATED INDIVIDUAL WIRES USED
- WIRING LOOMS MAY VARY DEPENDENT ON MODEL AND OPTIONS
- ARRANGEMENT OF POWER SUPPLY CIRCUITS CAN VARY PER MODEL
- 12V BMS OUTPUTS - 12V 1 / 12V 2 / 12V 3 / SPARES ARE WIRED TO COMPONENTS OF THE RV AS PER LABELS SPECIFIED ON THE ACTUAL WIRES
- THE AWNING AND THE SLIDE-OUT TERMINAL (L13 & L12 RESPECTIVELY)ON THE PM335J-SL UNIT CAN BE USED FOR OTHER 12V CIRCUITS FOR CAMPERVANS ONLY, THE CIRCUITS USED WILL BE AS PER THE LABELS ON THE WIRES

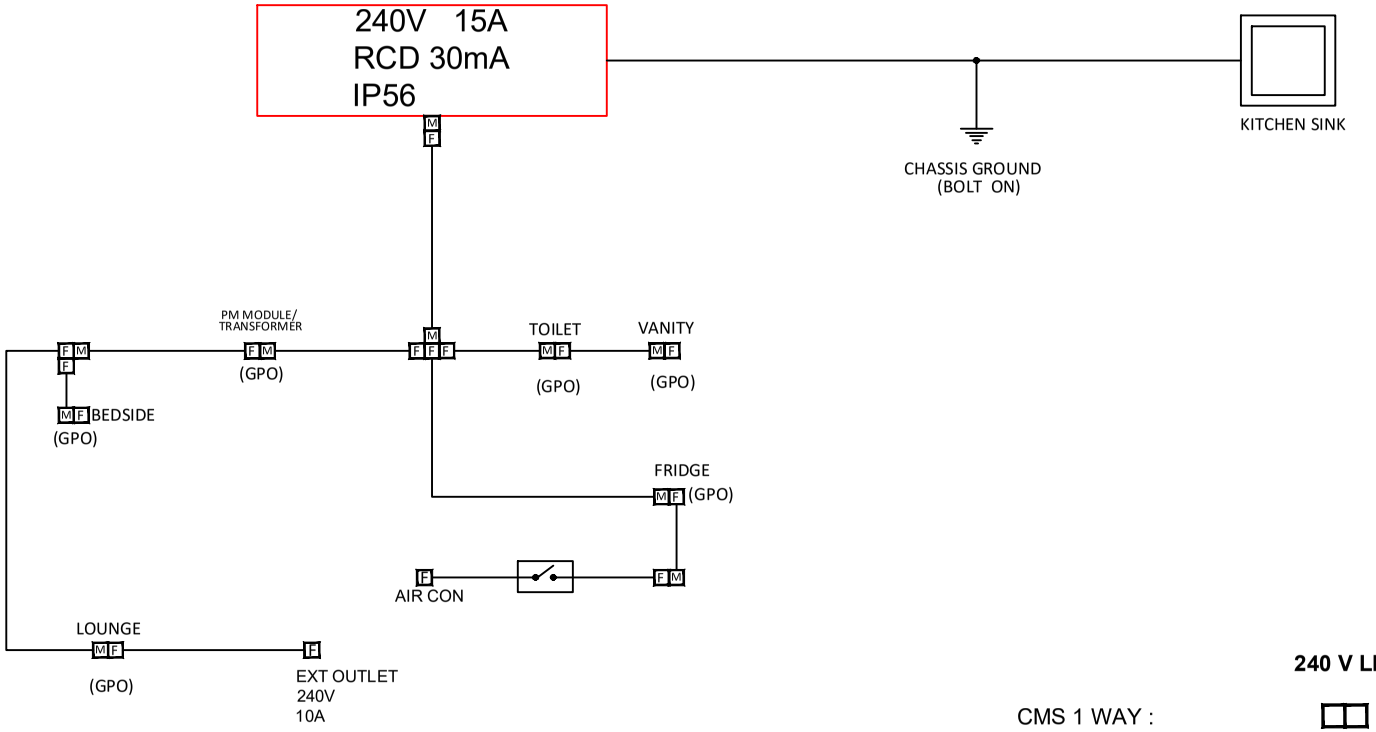
NOTE 2:

- THE POSITIVE CONNECTION MAY BE FROM THE VEHICLE BATTERY +VE TERMINAL OR ANY OTHER CONNECTION POINTS AS SPECIFIED BY THE OEM OF THE VEHICLE
- THE NEGATIVE CONNECTION MAY BE FROM THE NEGATIVE TERMINAL OF THE BATTERY OR FROM THE CHASSIS GROUNDING OR FROM ANY OTHER CONNECTION POINTS SPECIFIED BY THE OEM OF THE VEHICLE
- THE ELECTRIC STEP, CAMERA SCREEN & TRAILER HARNESS CIRCUITS MAY OR MAY NOT BE USED DEPENDING ON THE MODEL AND THE OPTIONS

NOTE 3:

- THE FRIDGE CONNECTION FROM ENGINE LOOM RELAY BOX ARE ONLY FOR 3-WAY TYPE FRIDGES ONLY
- AUX INPUT SIGNAL IS USED FOR TRIGGERING 360 CAMERA & INHIBITING SATELLITE AND AWNING
- THE AUX WIRES (ORANGE & WHITE) ARE ONLY PRESENT IN MOTORHOMES ENIGINE RELAY BOX AND NOT APPLICABLE FOR CAMPERVANS

TYPICAL 240V SYSTEM



240 V LEGEND

CMS 1 WAY :

CMS 2 WAY SPLITTER:

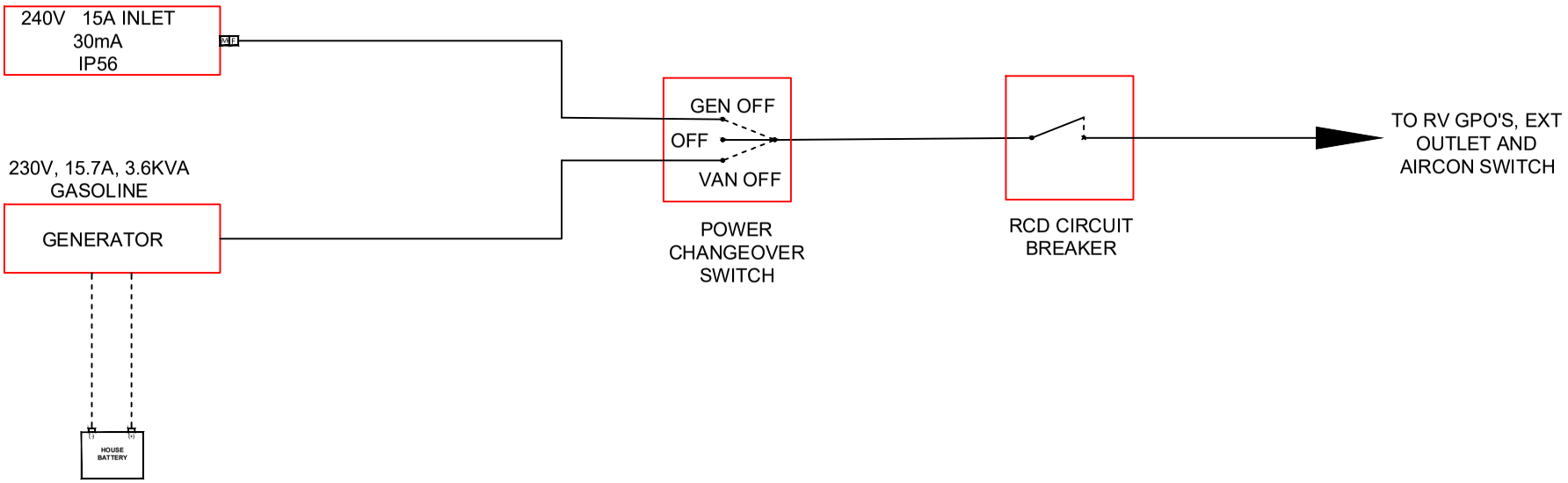
CMS 3 WAY SPLITTER:

GPO: GENERAL POWER OUTLET (240 V)

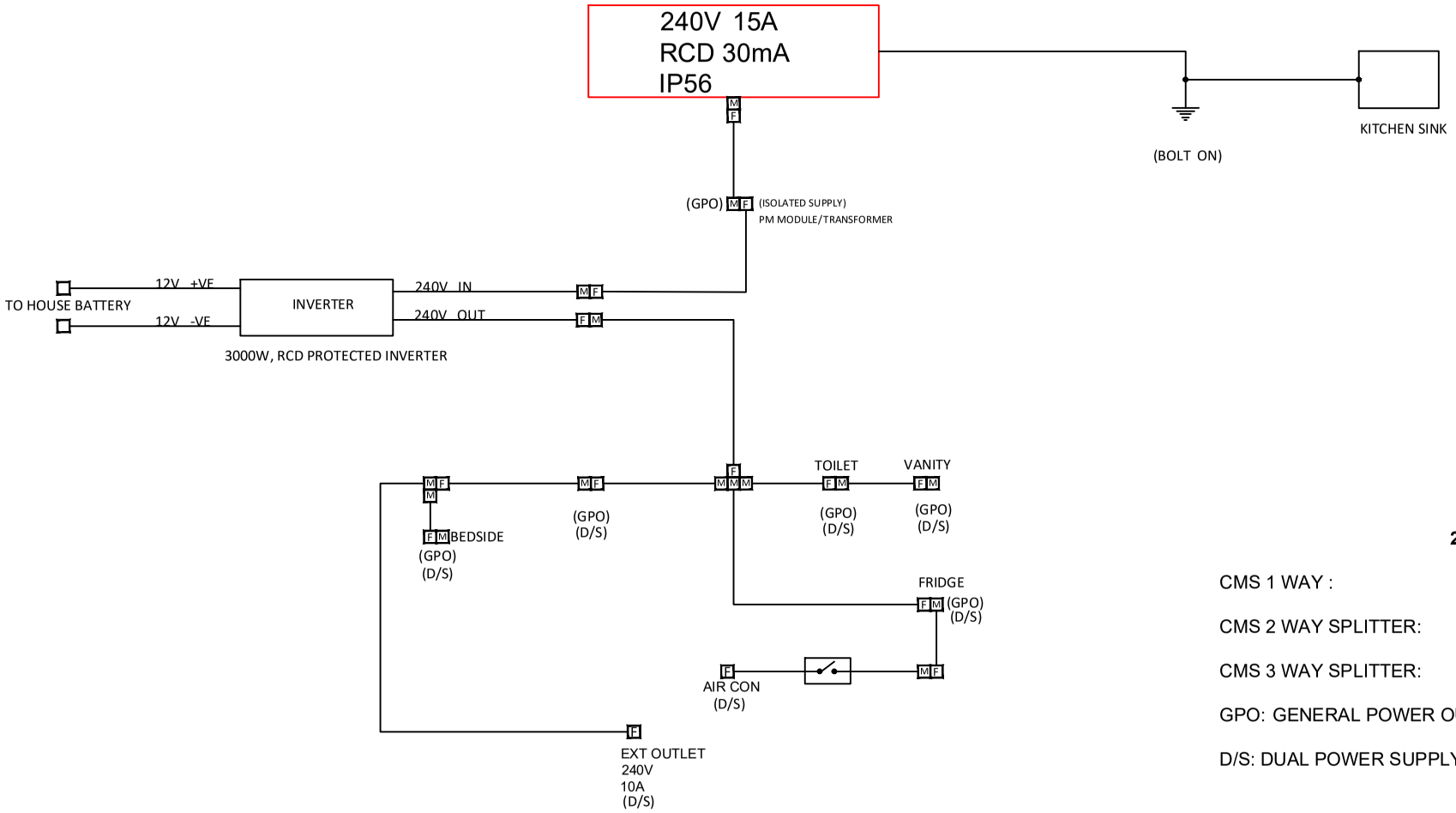
F — TYPICAL CMS 240V LOOM — M

3 CORE DOUBLE INSULATED PVC
V-90 450/750V 3x2.5mm^2

SCHEMATIC OF GENERATOR & 240V MAINS



SCHEMATIC 240V SYSTEM INV (Motorhomes and Campervans)



240 V LEGEND

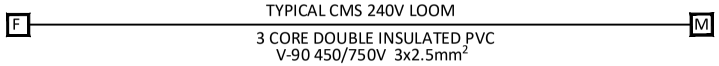
CMS 1 WAY :

CMS 2 WAY SPLITTER:

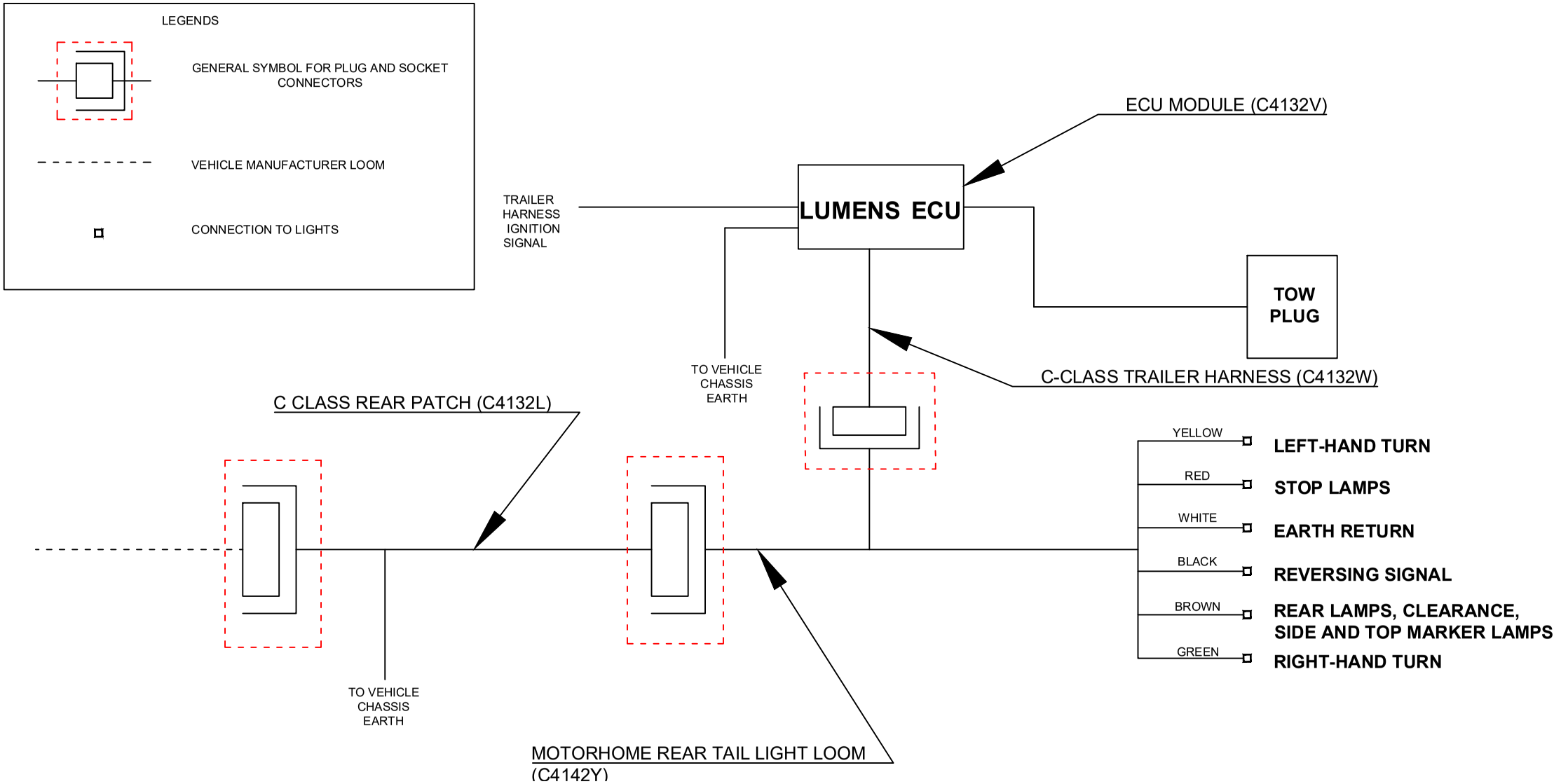
CMS 3 WAY SPLITTER:

GPO: GENERAL POWER OUTLET (240 V)

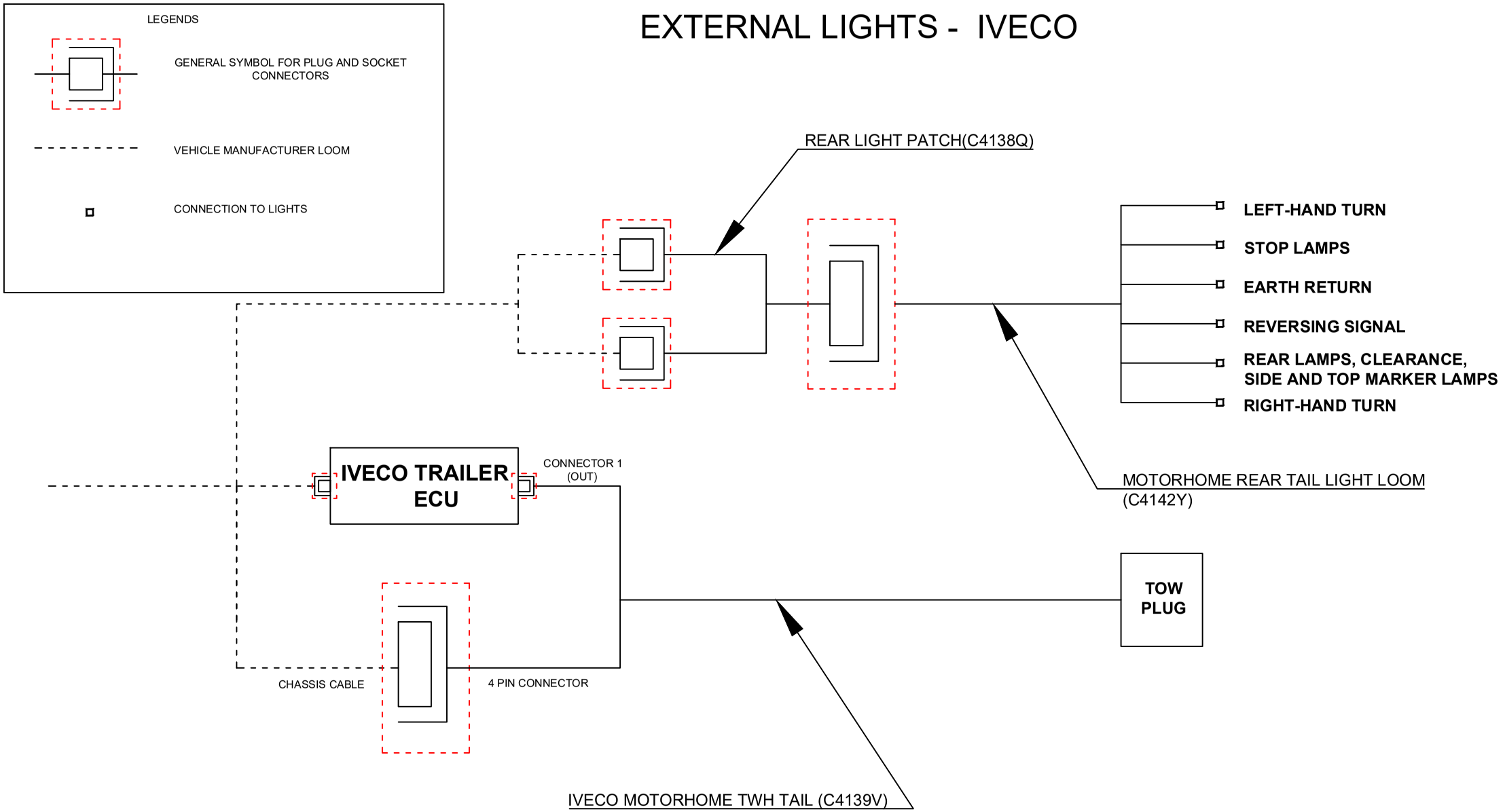
D/S: DUAL POWER SUPPLY



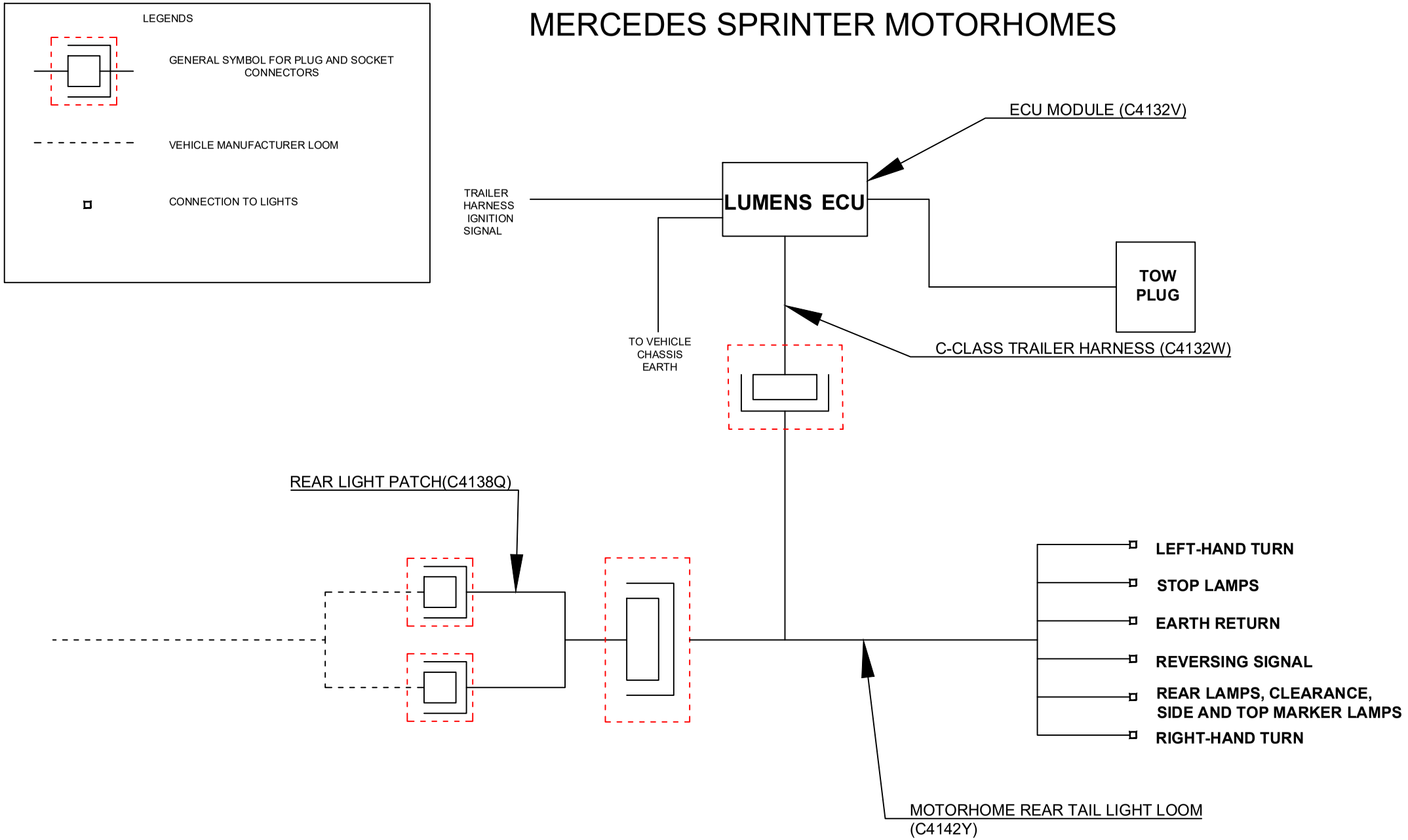
SIMPLE LOOM SCHEMATIC
EXTERNAL LIGHTS - FIAT



SIMPLE LOOM SCHEMATIC
EXTERNAL LIGHTS - IVECO

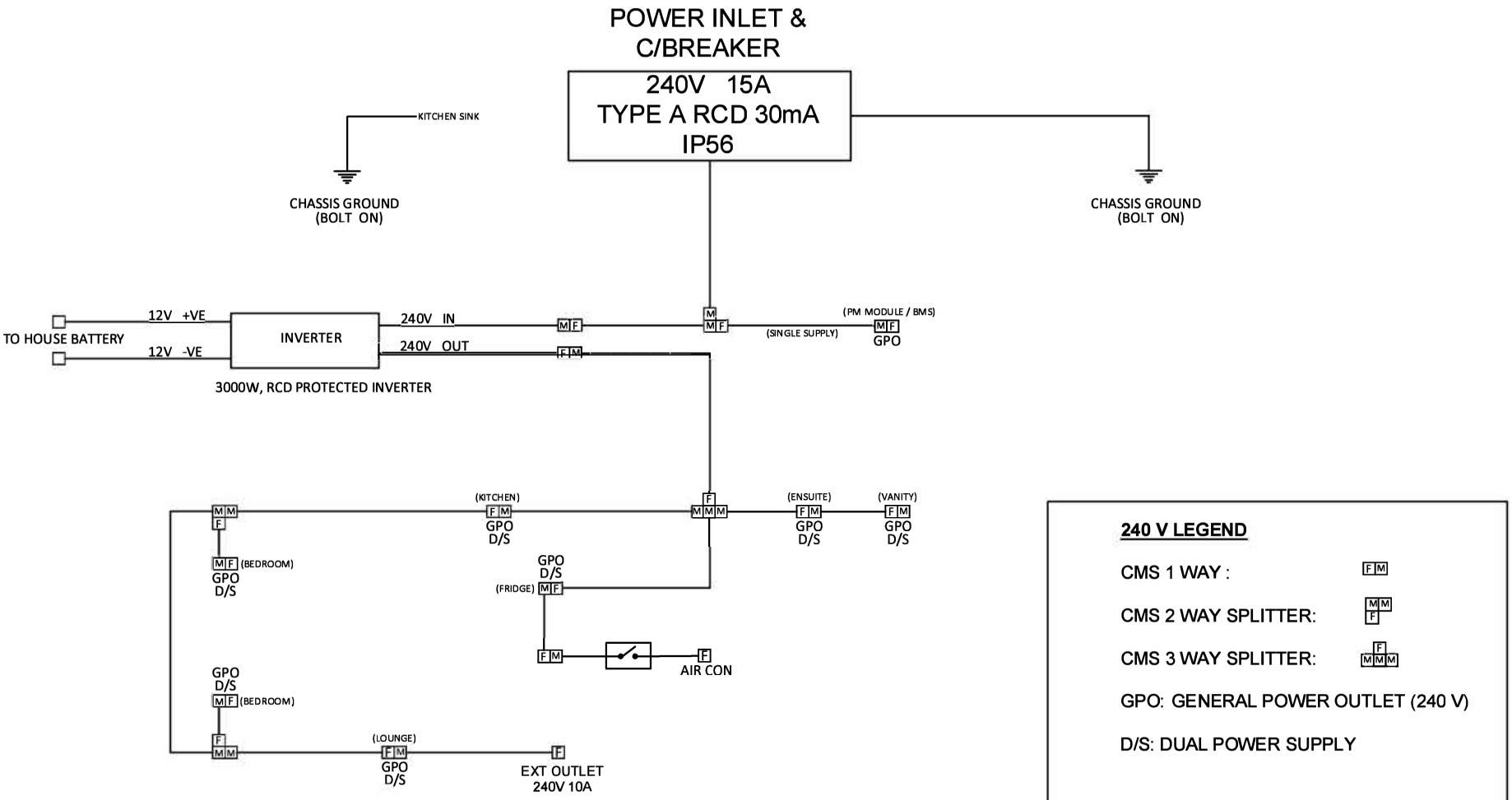


SIMPLE LOOM SCHEMATIC EXTERNAL LIGHTS
MERCEDES SPRINTER MOTORHOMES



NOTES:

1. TYPICAL 240V ELECTRICAL DIAGRAM ONLY
2. ARRANGEMENT MAY VARY WITH LAYOUT AND OPTIONS
3. ELECTRICAL INSTALLATION MAY INCLUDE EXTRA BRANCHES AND OUTLETS
4. 12V BMS CONNECTS INTO 240V GPO ISOLATED FROM INVERTER SUPPLY



240 V LEGEND

CMS 1 WAY :

CMS 2 WAY SPLITTER:

CMS 3 WAY SPLITTER:

GPO: GENERAL POWER OUTLET (240 V)

D/S: DUAL POWER SUPPLY

TYPICAL CMS 240V LOOM
3 CORE DOUBLE INSULATED PVC
V-90 450/750V 3x2.5mm^2

ACN 005 266 991 Registered office 1 Jayco Drive, Dandenong South, Victoria, Australia 3175

IF IN DOUBT ASK!

Drawn by:

Date: 20/11/2023

Scale: NTS

Title: 240V SYSTEM INCLUDING 3000W INVERTER

Dealer / Customer:

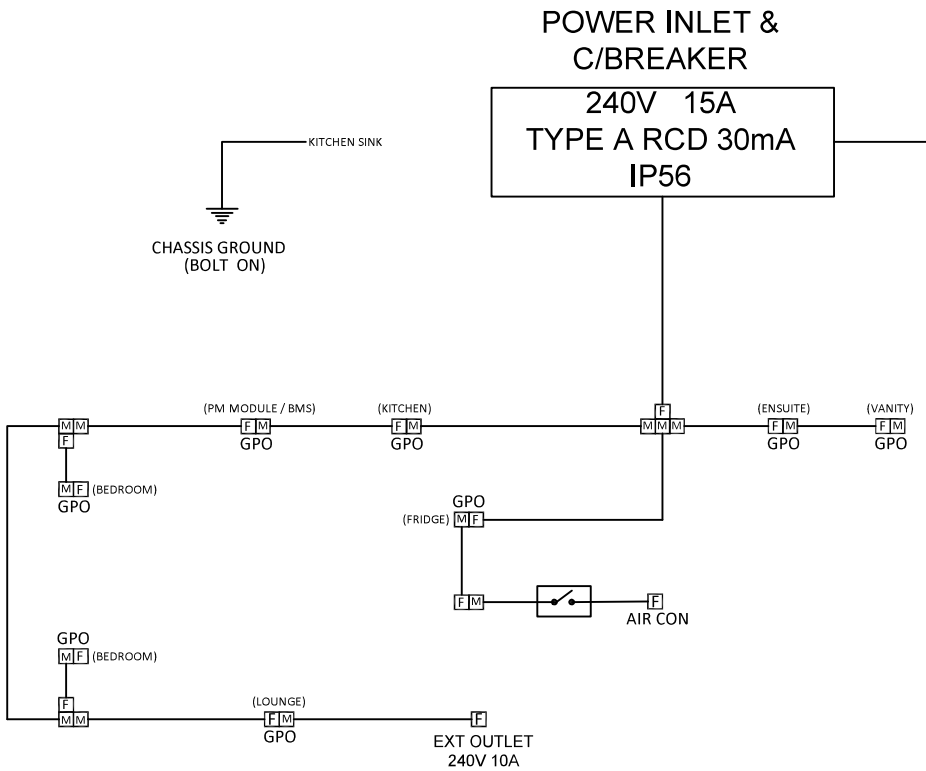
SHEET: 1

File Name: RELEASE 1.01

Notes:

NOTES:

1. TYPICAL 240V ELECTRICAL DIAGRAM ONLY
2. ARRANGEMENT MAY VARY WITH LAYOUT AND OPTIONS
3. ELECTRICAL INSTALLATION MAY INCLUDE EXTRA BRANCHES AND OUTLETS
4. 12V BMS CONNECTS INTO 240V VIA GPO AS MARKED



240 V LEGEND

CMS 1 WAY :

CMS 2 WAY SPLITTER:

CMS 3 WAY SPLITTER:

GPO: GENERAL POWER OUTLET (240 V)

TYPICAL CMS 240V LOOM

3 CORE DOUBLE INSULATED PVC
V-90 450/750V 3x2.5mm^2

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IF IN DOUBT ASK!

Drawn by:

Date: 20/11/2023

Scale: NTS

Title: 240V SYSTEM

Dealer / Customer:

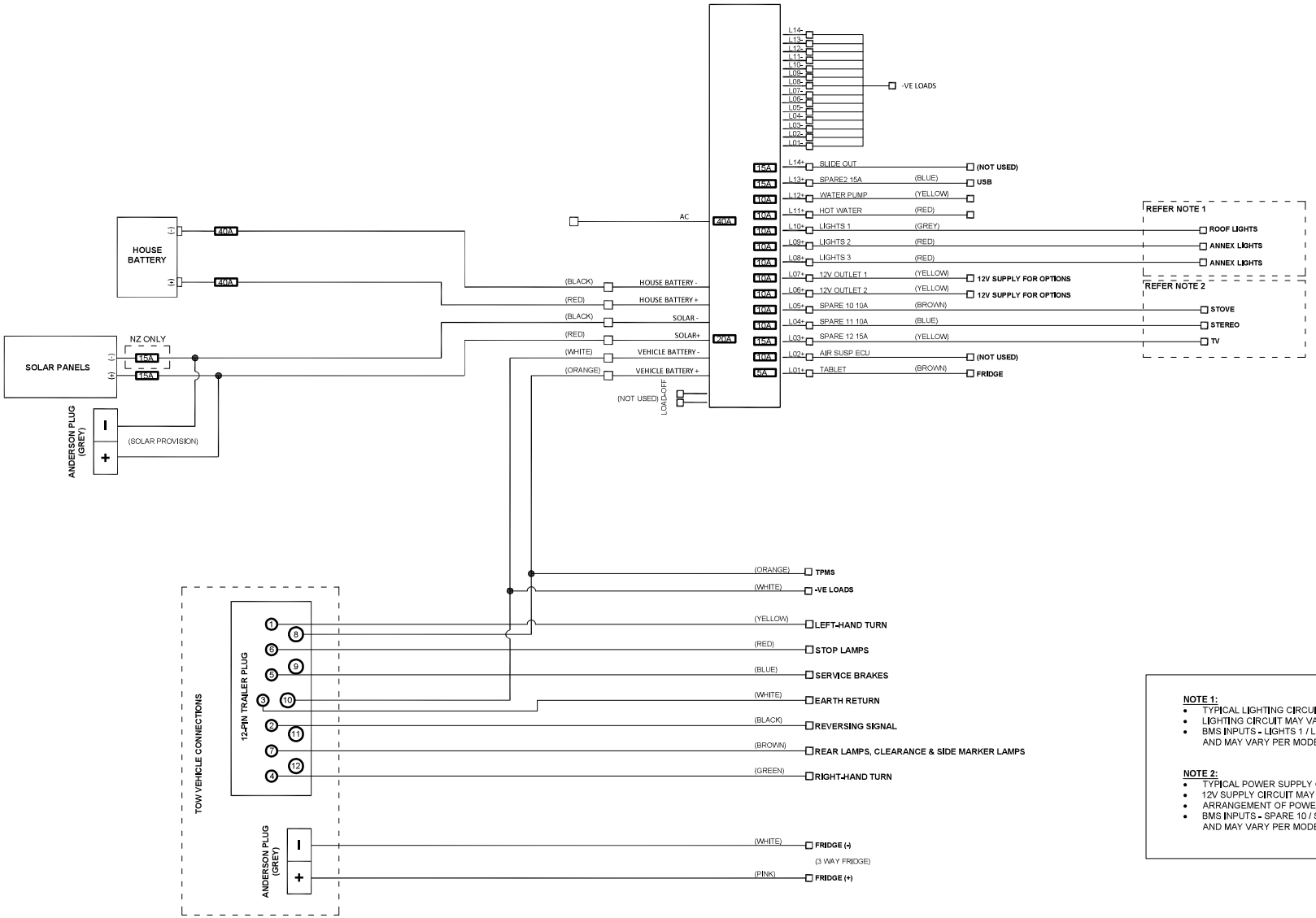
SHEET: 1

File Name: RELEASE 1.01

Notes:

NOTES:

1. TYPICAL 12V ELECTRICAL DIAGRAM FOR UNITS USING BMPRO J35 BATTERY MANAGEMENT SYSTEM (BMS)
2. ARRANGEMENT MAY VARY WITH LAYOUT AND OPTIONS



NOTE 1:
- TYPICAL LIGHTING CIRCUIT
- LIGHTING CIRCUIT MAY VARY DEPENDENT ON MODEL AND OPTIONS
- BMS INPUTS - LIGHTS 1 / LIGHTS 2 / LIGHTS 3 ARE INTERCHANGEABLE AND MAY VARY PER MODEL

NOTE 2:
- TYPICAL POWER SUPPLY CIRCUIT
- 12V SUPPLY CIRCUIT MAY VARY DEPENDENT ON MODEL AND OPTIONS
- ARRANGEMENT OF POWER SUPPLY CIRCUITS CAN VARY PER MODEL
- BMS INPUTS - SPARE 10 / SPARE 11 / SPARE 12 ARE INTERCHANGEABLE AND MAY VARY PER MODEL

ACN 005 266 991 Registered office 1 Jayco Drive, Dandenong South, Victoria, Australia 3175

IF IN DOUBT ASK!

Drawn by:

Date: 20/11/2023

Scale: NTS

Title: SCHEMATICS BMPRO J35

Dealer / Customer:

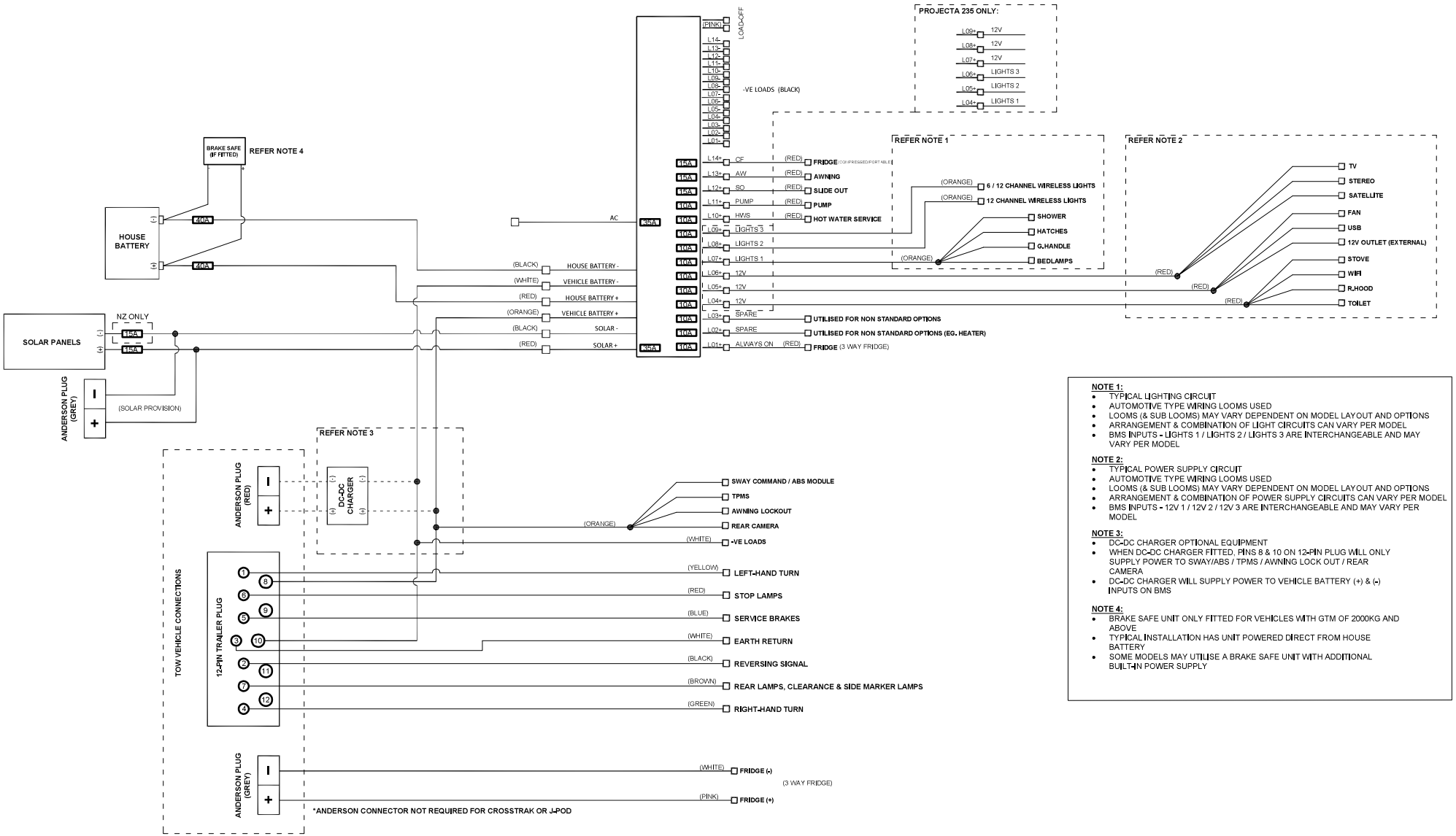
SHEET: 1

File Name: RELEASE 1.01

Notes:

NOTES:

1. TYPICAL 12V ELECTRICAL DIAGRAM FOR UNITS USING PROJECTA 235 OR 335 BATTERY MANAGEMENT SYSTEM (BMS)
2. ARRANGEMENT MAY VARY WITH LAYOUT AND OPTIONS



NOTE 1:
- TYPICAL LIGHTING CIRCUIT
- AUTOMOTIVE TYPE WIRING LOOMS USED
- LOOMS (& SUB LOOMS) MAY VARY DEPENDENT ON MODEL LAYOUT AND OPTIONS
- ARRANGEMENT & COMBINATION OF LIGHT CIRCUITS CAN VARY PER MODEL
- BMS INPUTS - LIGHTS 1 / LIGHTS 2 / LIGHTS 3 ARE INTERCHANGEABLE AND MAY VARY PER MODEL

NOTE 2:
- TYPICAL POWER SUPPLY CIRCUIT
- AUTOMOTIVE TYPE WIRING LOOMS USED
- LOOMS (& SUB LOOMS) MAY VARY DEPENDENT ON MODEL LAYOUT AND OPTIONS
- ARRANGEMENT & COMBINATION OF POWER SUPPLY CIRCUITS CAN VARY PER MODEL
- BMS INPUTS - 12V 1 / 12V 2 / 12V 3 ARE INTERCHANGEABLE AND MAY VARY PER MODEL

NOTE 3:
- DC-DC CHARGER OPTIONAL EQUIPMENT
- WHEN DC-DC CHARGER FITTED, PINS 8 & 10 ON 12-PIN PLUG WILL ONLY SUPPLY POWER TO SWAY/ABS / TPMS / AWNING LOCK OUT / REAR CAMERA
- DC-DC CHARGER WILL SUPPLY POWER TO VEHICLE BATTERY (+) & (-) INPUTS ON BMS

NOTE 4:
- BRAKE SAFE UNIT ONLY FITTED FOR VEHICLES WITH GTM OF 2000KG AND ABOVE
- TYPICAL INSTALLATION HAS UNIT POWERED DIRECT FROM HOUSE BATTERY
- SOME MODELS MAY UTILISE A BRAKE SAFE UNIT WITH ADDITIONAL BUILT-IN POWER SUPPLY

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IF IN DOUBT ASK!

Drawn by:

Date: 20/11/2023

Scale: NTS

Title: Schematics Projecta 335 & 235

Dealer / Customer:

SHEET: 1

File Name: RELEASE 1.01

Notes: