



Distribution Box Information Guide

MANOO39.11



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1. Safety Precautions

WARNING

- ❑ Avoid mechanical shock.
- ❑ Do not expose the device to water.
- ❑ Do not expose the device to fire.
- ❑ Do not pierce the device.
- ❑ Risk of burns if misused.
- ❑ Always follow safe working practices.
- ❑ Installation of this device must only be carried out by appropriately qualified competent person(s).
- ❑ All connections must be fused at recommended fuse ratings to avoid damage to components.
- ❑ All minimum cable gauges and maximum lengths must be followed.

2. Specifications

Type	Base Line	SmartSolar Line
Nominal Voltage	12.8V	12.8V
Operating Temp	-30°C -80°C	-30°C -50°C
Dimensions (LxWxD)	219.7mm x 291.5mm x 64mm	
Weight	1.8Kg	2.65Kg
Victron SmartSolar MPPT	N/A	Max 75V, Max 15A
Victron Smart Shunt	N/A	500A/50mV

Table 1 Distribution Box Specifications

3. Quick Start Guide – Distribution Box

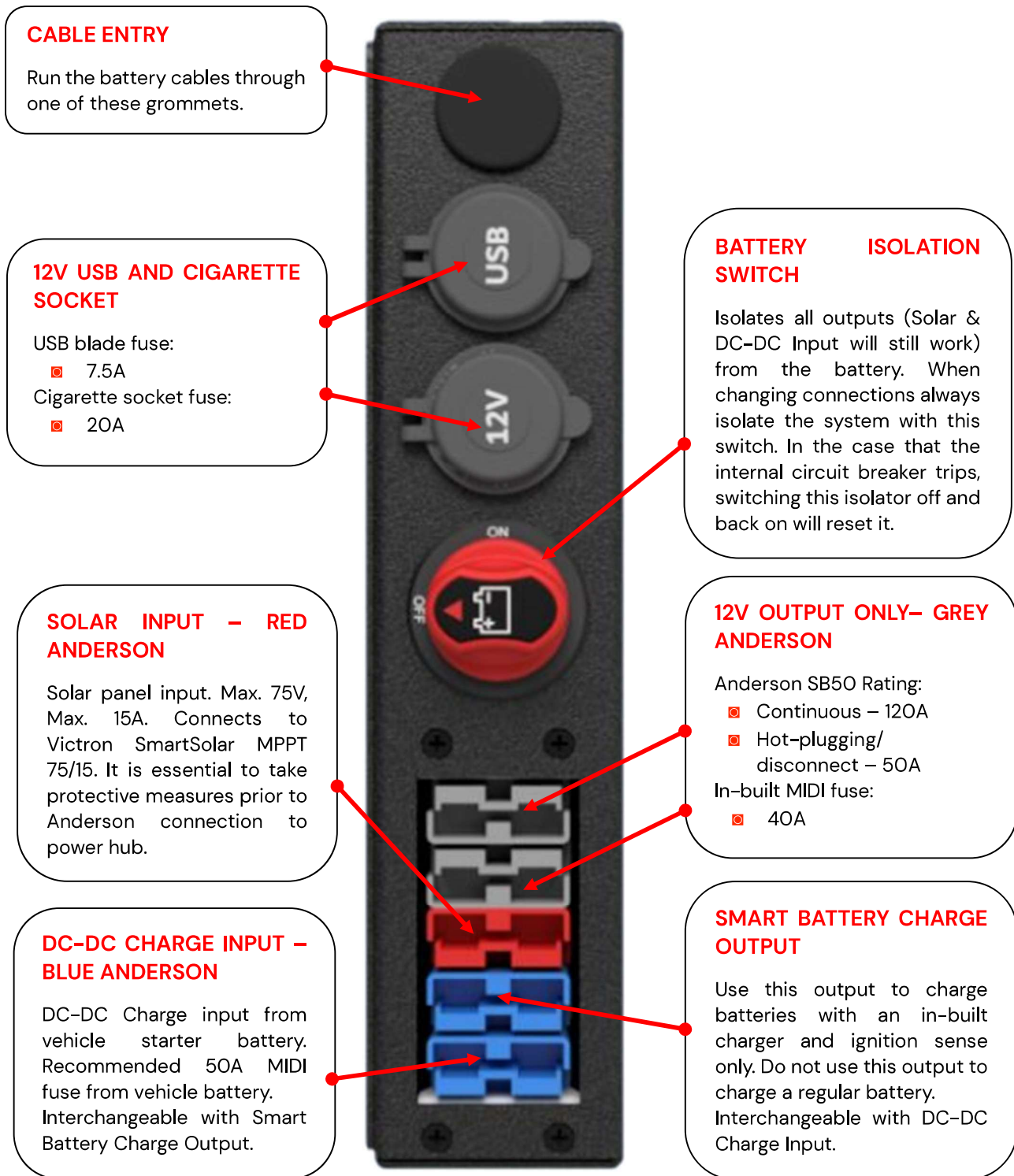


Figure 1 Distribution Box Connection Description

4. Distribution Box Dimensions and Mounting Orientation

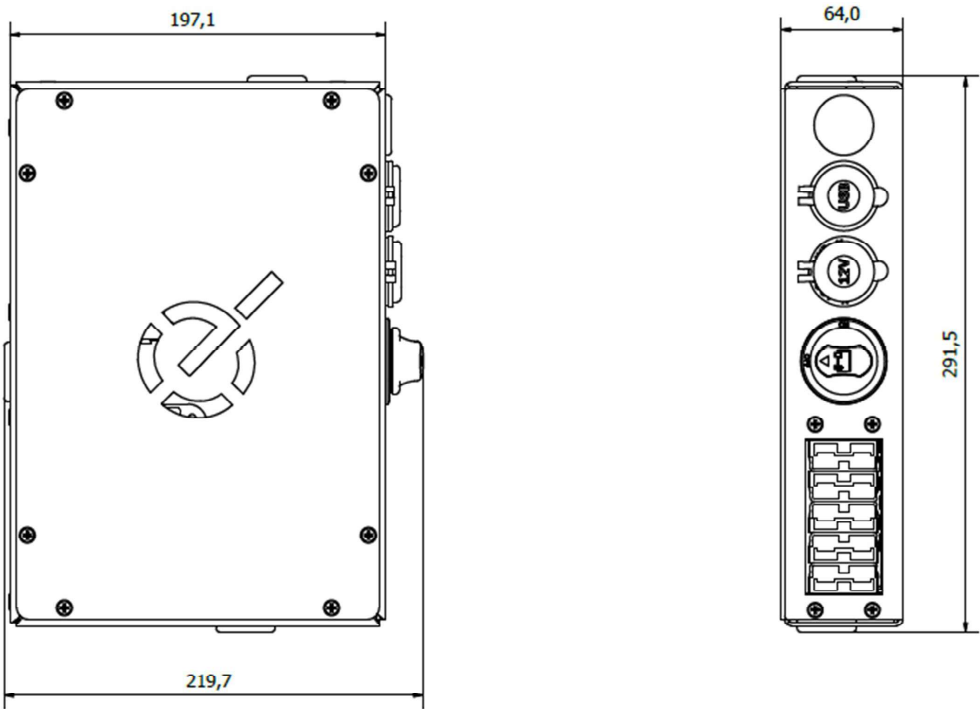


Figure 2 Distribution Box Dimensions

Product Number	Version	Version Date
Distribution Box	R1	11 – NOVEMBER – 2025

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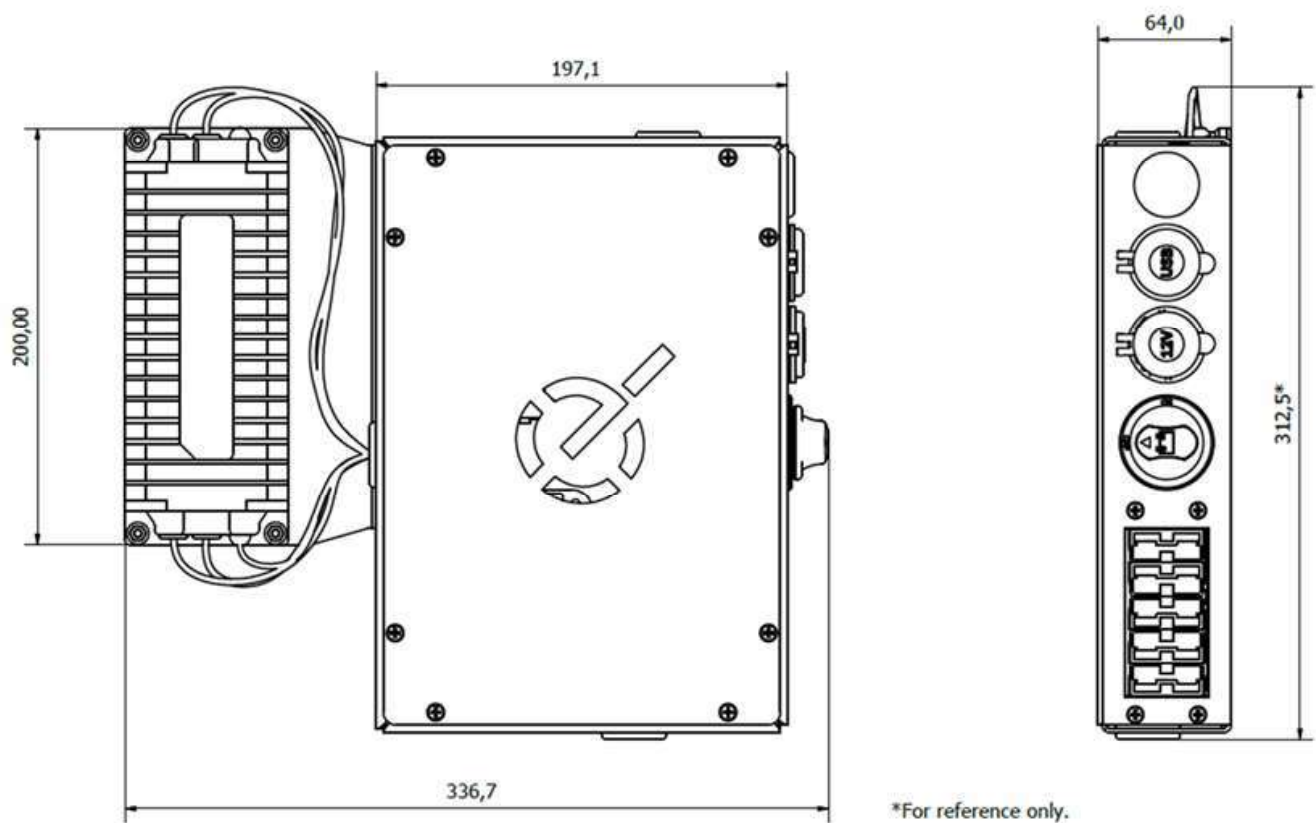


Figure 3 Distribution Box Dimensions

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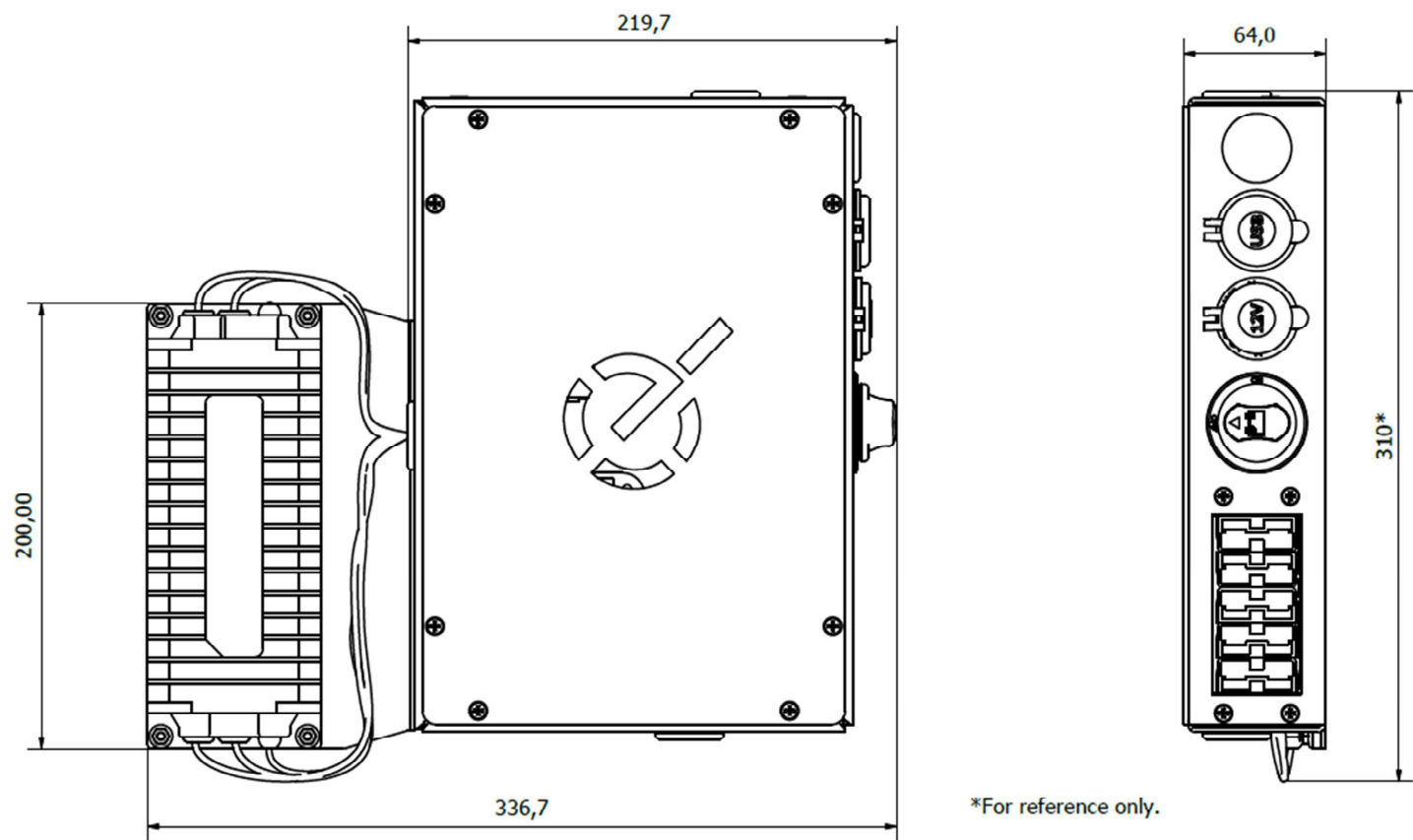
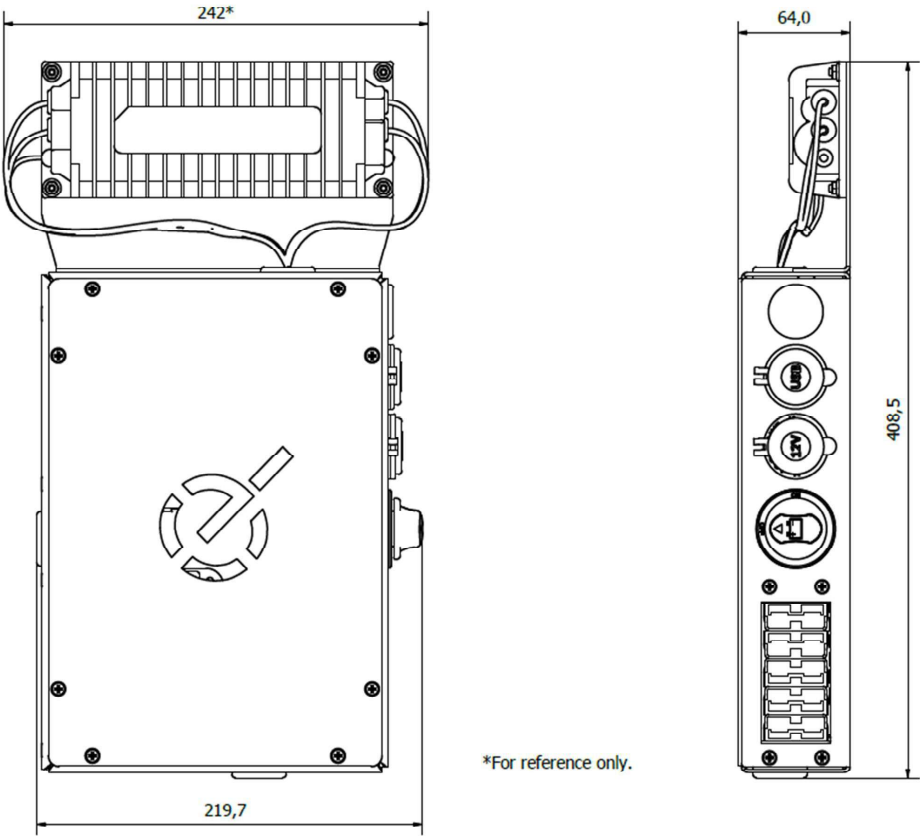


Figure 4 Distribution Box Dimensions

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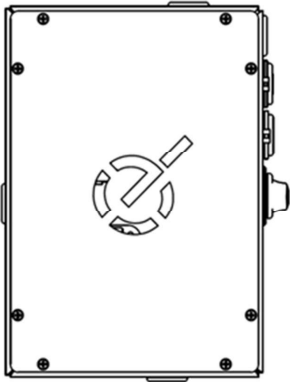
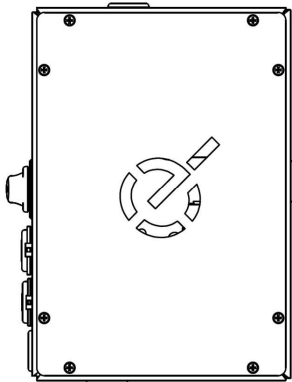
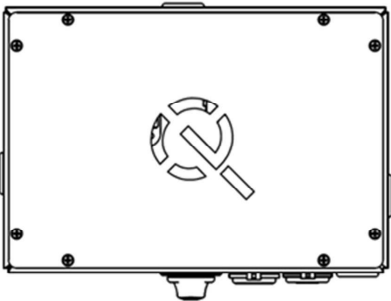
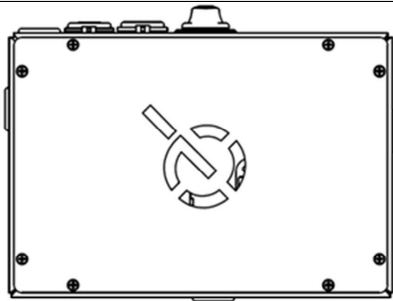
Figure 5 Distribution Box Dimensions

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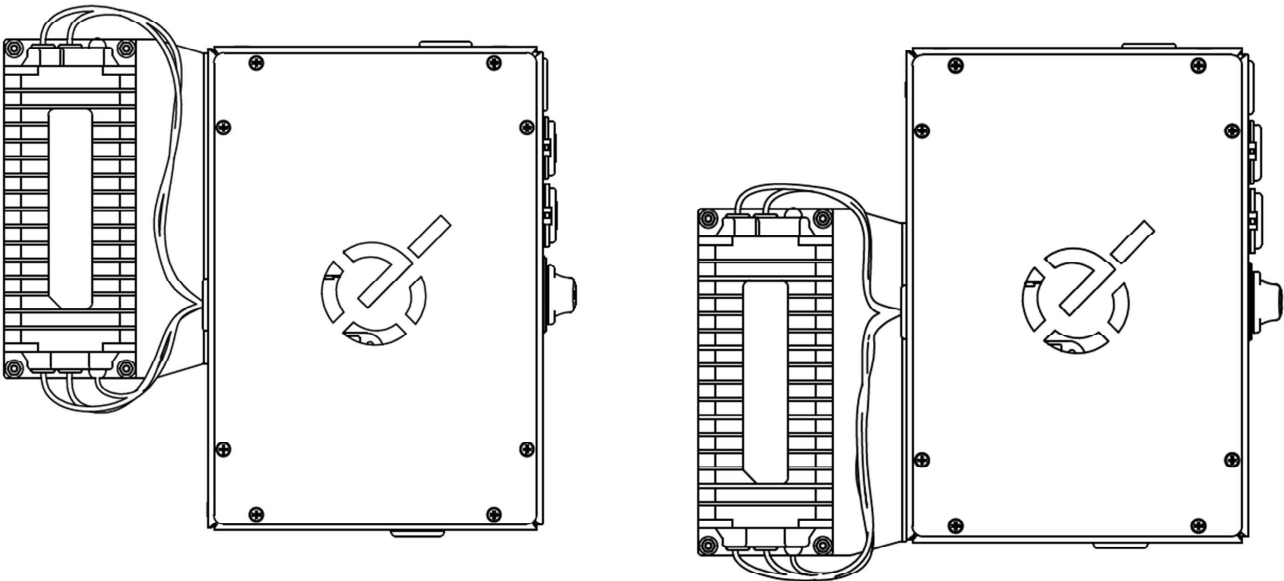


EXAMPLE MOUNTING ORIENTATIONS



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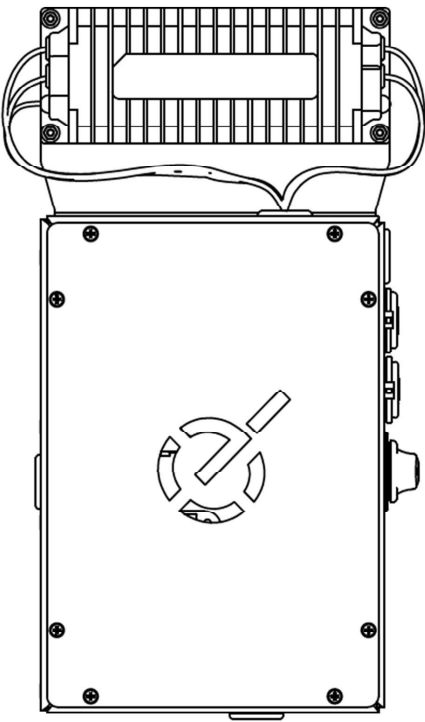


Table 2 Distribution Box Mounting Orientation

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5. Distribution Box Example Wiring Schematics

For systems with solar inputs, the solar input connections must be externally protected with a dual-pole DC breaker switch. Once turned off, the red Anderson SB50 plug used for solar input can be removed to disconnect solar inputs.

Please note: An external shunt is not required as a smart shunt is pre-built within the system.

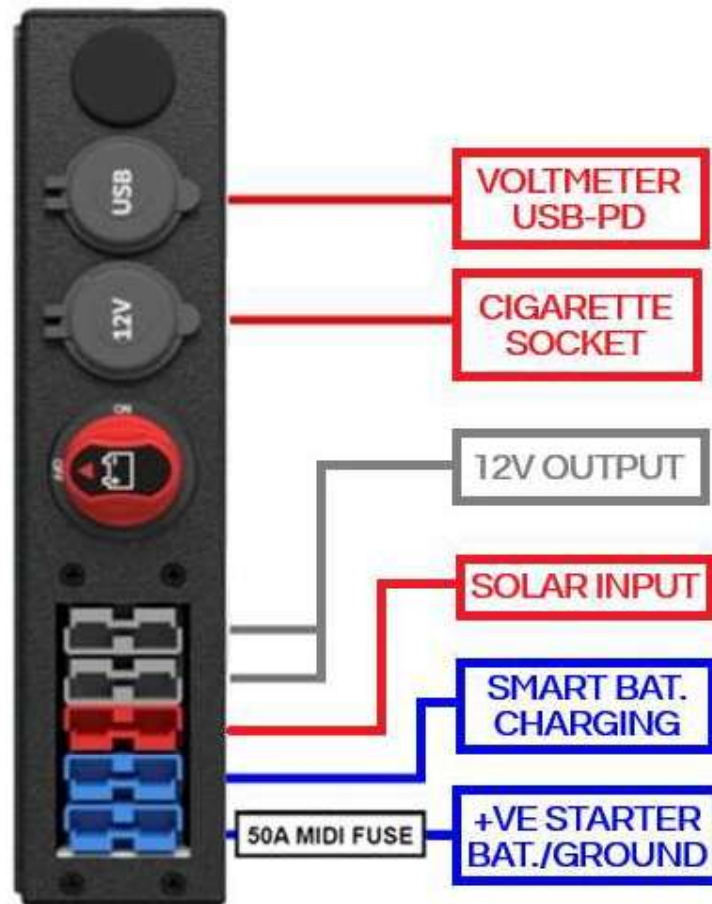


Figure 6 Distribution Box Example Wiring Schematic



Figure 7 Distribution Box DC Charger Wiring Schematic

6. Distribution Box Example Use Case Schematics

Please Note: This is for illustration purposes only and is **NOT** intended to be used as a guide for installation.

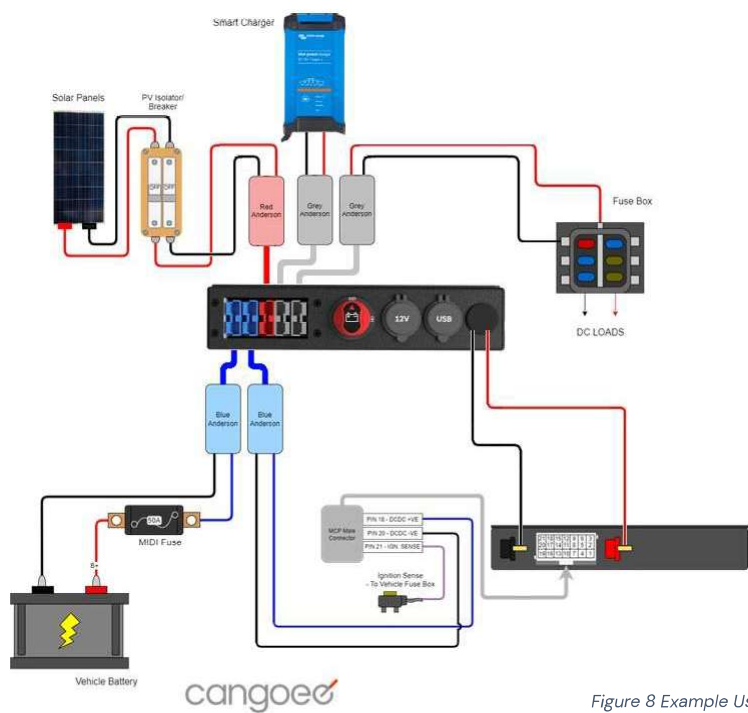


Figure 8 Example Use Case of Distribution Box

7. Recommended Wire Sizes and Gauges Chart

The table below lists the recommended wire sizes/gauges for battery installation in vehicles.

DCDC Capacity/ Cable	Recommended Wire Size/ Gauge Figure 8 Cable	Recommended Wire Length
DC-DC 20A	8 B&S/ AWG (CSA 7.71mm ²)	1m- Up to/ Maximum 5m
DC-DC 40A	6 B&S/ AWG (CSA 13.5mm ²)	1m – Up to/ Maximum 5m
Ignition Sense Cable	18-14 B&S/ AWG (CSA 0.64mm ² – 1.84mm ²) (Running a max of 1-2 Amps)	1m – Up to/ Maximum 6m
Main Positive +	6 B&S/ AWG (CSA 13.5mm ²) to 1 B&S/ AWG (CSA 42.4mm ²) 80A – 120A current-carrying capacity	1m – Up to/ Maximum 4m
Main GND –	6 B&S/ AWG (CSA 13.5mm ²) to 1 B&S/ AWG (CSA 42.4mm ²) 80A – 120A current-carrying capacity	1m – Up to/ Maximum 4m

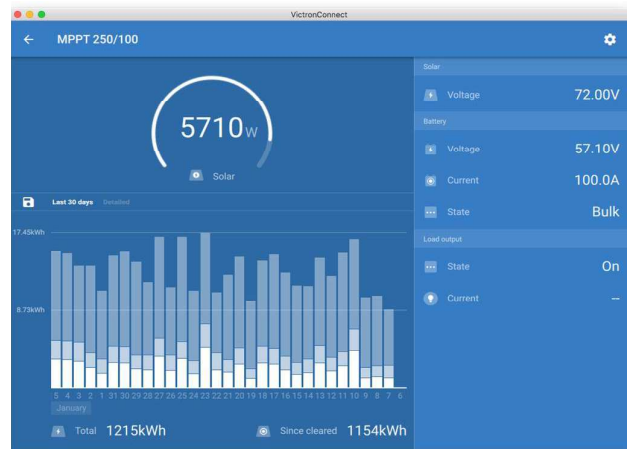
Table 3 Recommended Wire Sizes and Gauges

Please note: These wire gauges are suggested to mitigate the voltage drop along the cable. It is recommended that you check the voltage at the battery's DC-DC input and alter the charger selector switches accordingly.

8. Victron Connect App

Download the Victron Connect application onto your smart device to access and manage Victron Energy Components.

Victron Connect info:



9. Victron Energy SmartSolar MPPT 75/15



Victron Energy SmartSolar MPPT 75/15	
Manual	Datasheet
	

The Victron Energy SmartSolar MPPT 75/15 model is a compact and highly efficient solar charge controller, ideal for optimising solar power systems. It offers advanced Maximum Power Point Tracking (MPPT) technology to maximise the energy harvested from your solar panels.

9.1 Solar Panel Array Input Limitations

MAX OPEN CIRCUIT VOLTAGE (Voc): 75 V

It is recommended to stay at least 10% below the rated maximum open circuit voltage (Voc)

MAX SHORT CIRCUIT CURRENT (Isc): 15A

Pre-set and suggested programming settings in the Victron Connect Application

Victron Connect → SmartSolar MPPT 75/15 → ⚙️ (Settings) → Battery

←

Settings

ⓘ Battery voltage

12V

Max charge current

15A

Charger enabled

☒

Battery preset

User defined ▾

Expert mode

☐

Charge voltages

Absorption voltage

14.40V

Float voltage

13.80V

Equalization voltage

13.80V

Equalization

Automatic equalization

Disabled

Manual equalization

Start now

Voltage compensation

Temperature compensation

-16.20mV/°C

Battery limits

Low temperature cut-off

Disabled

Table 4 Pre-set and Suggested Programming Settings in the Victron Connect Application for SmartSolar MPPT

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10. Victron Energy SmartShunt 500A/ 50mV



Victron Energy SmartShunt 500A/ 50mV	
Manual	Datasheet
	

The Victron Energy SmartShunt is an all-in-one battery monitor, only without a display. A smartphone can be utilised as a display. The SmartShunt connects via Bluetooth to the VictronConnect app on the smart device and conveniently displays all monitored battery parameters.

Pre-set and suggested programming settings in the Victron Connect Application

Victron Connect → SmartShunt 500A/ 50mV →  (Settings) → Battery

← Battery settings	
Battery capacity	110Ah
Charged voltage	14.0V
Discharge floor	20%
Tail current	1.00%
Charged detection time	3m
Peukert exponent	1.05
Charge efficiency factor	99%
Current threshold	0.10A
Time-to-go averaging period	3m
Battery SOC on reset	Keep SOC
State-of-Charge Manually set the current state-of-charge	85.0%
Synchronize SOC to 100%	Synchronize
Zero current calibration	Calibrate

Table 5 Pre-set and Suggested Programming Settings in the Victron Connect Application for SmartShunt

11. Example Solar Panel Array Configuration

Please Note: This page is intended for illustrative purposes only and NOT intended as a guide for installation. Solar panel installation must be undertaken by a qualified person(s).

Example 200W Solar Panel		
Max Power Output	P _{max}	200 W
Max Power Voltage	V _{mp}	29 V
Max Power Current	I _{mp}	6.9 A
Open Circuit Voltage	V _{oc}	33.75 V
Short Circuit Current	I _{sc}	7.5 A



Figure 9 Solar Panel

11.1 Series Array Configuration

Solar Panels that are connected in a series configuration will result in the summation of the voltages, while the current flowing throughout the circuit remains the same.

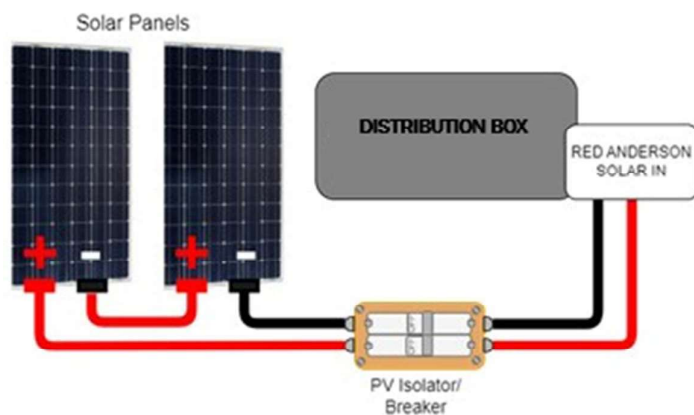


Figure 10 Example Series Configuration of Solar Panel Array

Example Output from Solar Panel Array in Series Configuration	
Max Power Voltage	29 + 29 = 58 V
Open Circuit Voltage	33.75 + 33.75 = 67.5 V (Within max Voc limitations)
Current	6.9 A
Short Circuit Current	7.5 A
Watts	58 V * 6.9 A = 400W

11.2 Parallel Array Configuration

Solar Panels that are connected in a parallel configuration will result in the summation of the current, while the voltage across all components within the circuit remains the same.

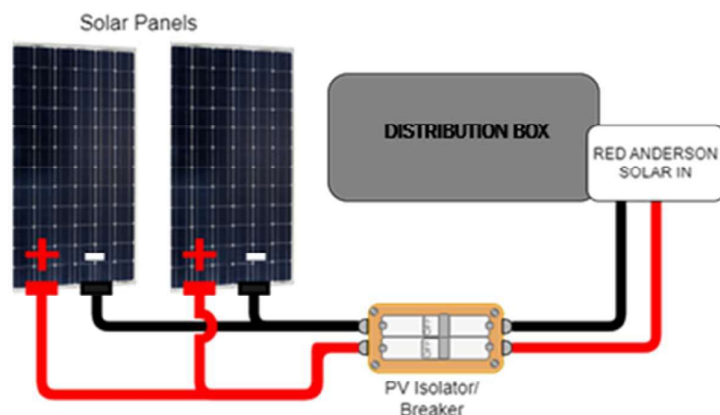


Figure 11 Example Parallel Configuration of Solar Panel Array

Example Output from Solar Panel Array in Parallel Configuration	
Max Power Voltage	29 V
Open Circuit Voltage	33.75 V
Current	6.9 + 6.9 = 13.8 A
Short Circuit Current	7.5 + 7.5 = 15 A (Within max I _{sc} limitations)
Watts	29 V * 13.8 A = 350W