

INTELLI-GRID MASTER CHARGER INSTRUCTION MANUAL



IMPORTANT SAFETY INFORMATION

Please read this manual thoroughly before use and store in a safe place for future reference.

WARNINGS

- Explosive gases. Prevent flames and sparks. Provide adequate ventilation during charging
- Before charging, read the instructions
- For indoor use. **Do not** expose to rain
- For charging Lead Acid and LiFePO₄ batteries **only** (of the size & voltage specified in the specifications table)
- Always charge the battery on the correct voltage setting. Never set the charger to a higher voltage than the battery specifications state
- **Disconnect the 240V mains supply before making or breaking the connections to the battery**
- The battery charger must be plugged into an earthed socket outlet
- Connection to supply mains is to be in accordance with national wiring rules
- Do not attempt to charge non-rechargeable batteries
- Never charge a frozen battery
- If AC cord is damaged, do not attempt to use. It must be replaced or repaired by a qualified technician
- Corrosive substances may escape from the battery during charging and damage delicate surfaces. Store and charge in a suitable area
- This charger is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety
- Children being supervised not to play with the appliance
- If the recreational vehicle is to be put into storage without power, please turn off the BATTERY MASTER SWITCH. If the recreational vehicle is to be put in to long term storage without power, disconnect ALL cabling from the battery
- The battery terminal not connected to the chassis must be connected first. The other connection is to be made to the chassis, remote from the battery and fuel line. The battery charger is then to be connected to the supply mains
- After charging/for temporary or permanent removal of the battery/s, disconnect the charger from the mains supply. Then remove the chassis connection and then the battery connection
- **There is no serviceable part inside the product**
Opening the product will void the warranty
The product contains lithium coin/button battery which is not serviceable and does not need to be replaced during the whole life of the product. This product is considered as "lower risk" regarding the dangers of the internally fitted button battery.
- **Please ensure the coin battery is kept out of reach of children.**
This includes both new and used batteries.
Hazardous if swallowed.
Swallowing can lead to chemical burns, perforation of soft tissue and death.
Severe burns can occur within 2 hours, if swallowed or placed inside any part of the body.
SEEK MEDICAL ATTENTION IMMEDIATELY, if it is suspected the battery has been swallowed or placed inside any part of the body.

- **If you suspect your child has ingested a button battery:**

If your child is having any difficulty breathing, call 000 immediately.

Contact the Poisons Information Centre on 13 11 26 and you will be directed to the nearest hospital or emergency service that can manage the injury.

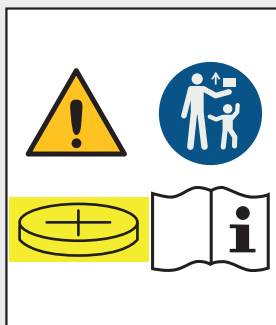
Prompt action is critical. Do not wait for symptoms to develop.

Do not let the child eat or drink until an X-ray is taken.

Do not induce vomiting.

- **Safe disposal of coin or button batteries:**

Dispose of used batteries properly by putting tape around both sides of the battery, securing them out of reach of children, and taking them to your nearest recycling facility.

	WARNING This product contains a Lithium coin cell battery. Please ensure the coin battery is kept OUT OF REACH OF CHILDREN. This includes both new and used batteries. Hazardous if swallowed. The battery can cause severe or fatal injuries in 2 hours or less if it is swallowed or placed inside any part of the body. If a coin battery is swallowed or placed inside any part of the body: SEEK MEDICAL ATTENTION IMMEDIATELY. See instructions.
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Cyber Security Compliance Information

This product contains Bluetooth® functionality that connects with mobile phones or other smart devices.

To view the "Statement of Compliance" with the Cyber Security (Security Standards for Smart Devices) Rules 2025, scan the QR code:



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1 PRODUCT INSTRUCTIONS

1.1 Overview

The PM535 Power Management unit is designed for caravans or motor homes.

It has the following functions integrated into the unit: battery charger, power supply, MPPT solar charge controller, DC-DC charger, fused distribution blocks, low voltage disconnect (LVD), water pump controller, hot water system controller, water tank indicator and battery monitoring.

It also supports a range of additional Projecta accessories including tyre pressure monitors, leveling sensors and lithium batteries. Using Projecta accessories ensures that each component is optimised to work with each other in a complete ecosystem and allows for easy diagnosis if any issues arise.

SYSTEM COMPONENTS

- 1 Master Charger
- 2 Display Screen/Monitor
- 3 Up to 4 water tank probes (not included)
- 4 Accessories Cables

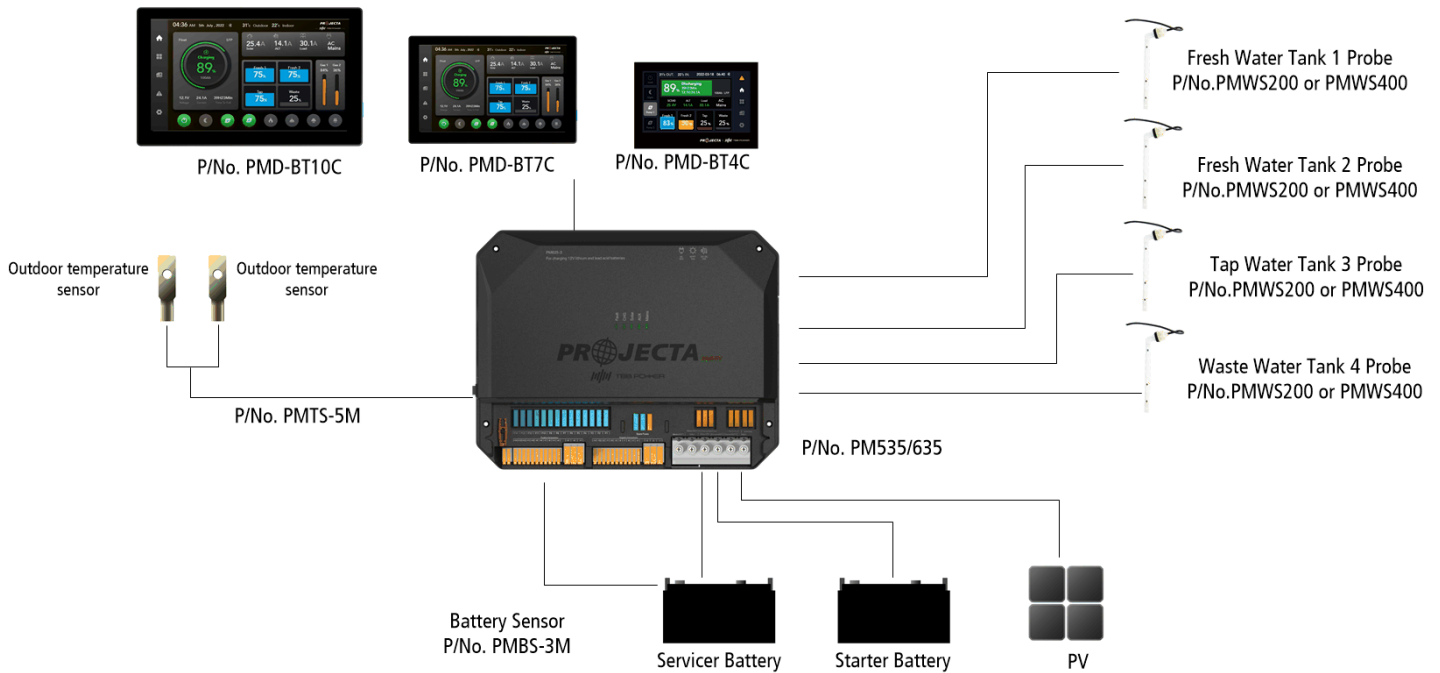


Figure 1 System Components

Intelli-GRID Phone App

The Intelli-GRID phone app is designed to provide comprehensive control and monitoring capabilities for Intelli-GRID users. It allows users to keep track of battery status, monitor power consumption, check water tank levels and manage caravan loads, including lights, pumps, and hot water systems.

Scan the QR code to download the APP

ANDROID



IOS



1.2 Features

PM535 has the following features

- Smart battery charger 12V 30A (35 Amp total for charge and supply)
 - Multi-stage adaptive charging algorithm to charge battery quickly at an optimal charge rate
 - Temperature compensation charging
- Float charge for Starter/Vehicle battery. Refer Section 2.3
- 30A MPPT Solar Charge Controller
- Built-in DC-DC charger
 - 12V 30A continuous
- 15 Built-in fused outputs
- Battery low voltage protection
- Built-in battery switch to isolate the battery when in storage
(Doesn't isolate the Always ON circuit)
- Built-in shunt for precise battery measurement
- Support for 4 water tank sensors
- Built-in Master Bluetooth® for Bluetooth® sensors
- LIN & CAN compatible

1.3 Block Diagram

CATEGORY	QTY	DESCRIPTION	POSSIBLE USES
Class A5	2	Relay controlled output with fuse. Protected by main master switch relay	Water pump.
Class C2	10	Fused outputs, protected by master switch relay	Ventilation fan etc.
Class C3	2	Always ON Load (LVD protected)	Fridge, Security Alarm etc.
Class D	1	Constant Supply Loads (no discharge protection)	Breakaway Systems, Sway Controllers, Radio memory

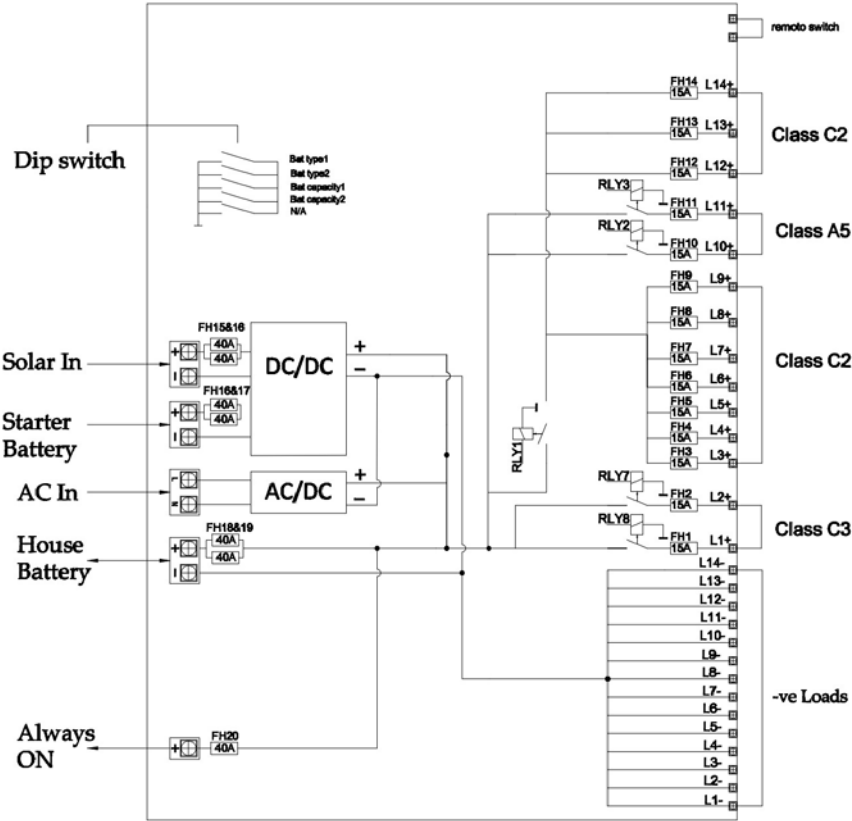


Figure 2 Unit Schematic

1.4 Water Tank Probe

PM535 can monitor a maximum of 4 water tank probes.

NOTE: Always check the probe required for the water tank before purchase. There are 2 probe styles.

PMWS200:

- Side installation
- Suitable for water tank
- Depth > 200mm

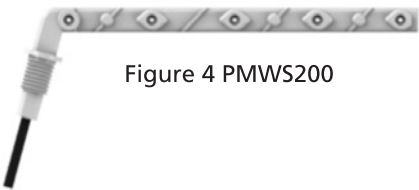


Figure 4 PMWS200

PMWS400:

- Side installation
- Suitable for water tank
- Depth 300-400mm

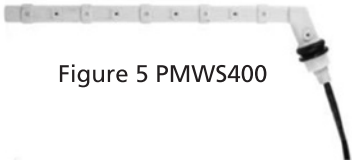


Figure 5 PMWS400

2 KEY FEATURES AND FUNCTIONS

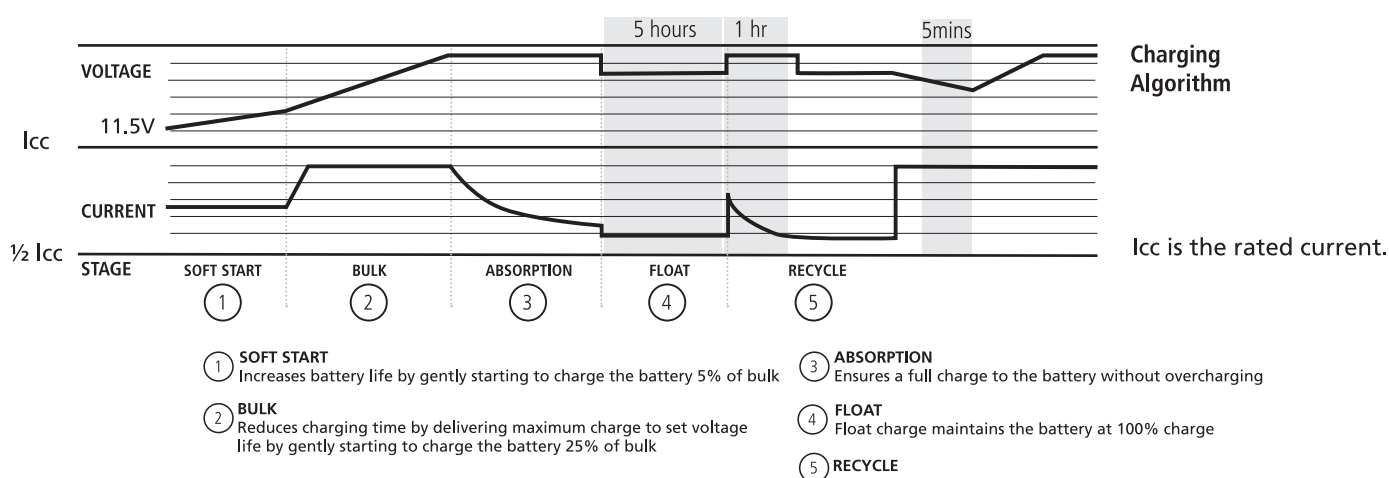
2.1 Multiple Inputs

PM535 can support multiple charging sources at any one time. These sources include AC mains, Solar and starter battery (Vehicle). Charging priorities are listed within the table to the right.

AC MAINS	X	X	
SOLAR	X		X
DC IN		X	X
CHARGING PRIORITY	COMBINED	AC MAINS	COMBINED

2.2 Battery Charger of Starter/Service Battery

The charger automatically starts when the appropriate qualified power is connected, either from AC mains, alternator or solar. With multiple charging stages (soft start-bulk absorption float & recycle), PM535 is designed to fully charge the service battery quickly. PM535 features Microprocessor-controlled charging algorithms. The Float and Recycle charging programs ensure that the battery condition does not change despite being connected for a long period.



When the Charger is at Float Stage, if a new input source is added (AC Mains or Solar), the charger will return to the Bulk stage.

Battery Temperature Sensor

The battery temperature sensor (P/N: PMBS-3m) is used to measure the temperature of the battery, allowing the PM535 to adjust, in real time to charge the battery, at a compensation rate of $-4\text{mV} \pm 10\%/^{\circ}\text{C}/\text{cell}$. In installations where this sensor is not present, the PM535 will use 25°C as a default setting. The voltage sensor can automatically adjust its output to compensate the voltage drop caused by a cable. This ensures the right voltage is being delivered for optimal charging.

Voltage Compensation Charging

With a voltage sensor the PM535 can automatically adjust its output to compensate the voltage drop caused by a cable. This ensures the right voltage is being delivered for optimal charging.

Note: To enable the voltage compensation feature, a Projecta current shunt (part number: PMSHUNT) or a compatible Projecta battery (part number: LB100-HD, LB200-HD, LB400-HD, LB210-HDCP, LB420-HDCP) is required. This feature is not supported when using third-party shunts or batteries.

Conventional/Wet Battery Adjustable Charging Current

Users can adjust the charging current by specifying the battery capacity. The charging current is set at threshold rate of 10% the of the battery capacity ($I = 0.1C$) by default.

Lithium Battery Charging

The PM535 can be configured to charge Lithium batteries. The max charging current for lithium is automatically set at 30% of the battery capacity ($I_{\text{max}}=0.3C$).

2.3 Vehicle (Starter) Battery Charger

Along with a powerful charger for the service battery, PM535 offers a float charge of up to 3A to keep the starter battery topped up, whether connected to AC mains or PV (Solar). When the Vehicle battery is less than 12.4V, the PM535 starts charging after 30 minutes delay and stops charging when voltage reaches 12.8V.

2.4 Power Supply Mode

If no battery is attached to PM535 unit, it will automatically work as a 35A power supply with a 12.8VDC output. When connected to AC charge the PM535 can work as a 30A AC Charger and 5A to the Load.

2.5 MPPT Solar Charger Controller

PM535 has a built-in MPPT charger for the House battery with:

- Max input voltage 42VDC
- Max charging current 30A
- Max supply current 30A

2.6 Built-in DC-DC Vehicle Charger

The PM535 has an intelligent built-in 30A DC-DC charging system that charges the battery at optimal charge via the alternator while the engine is running. The charging current is controlled according to the settings.

When the Vehicle/Starter battery reaches 13.2VDC with threshold time delay (4 seconds), the DC-DC charger will charge the Service battery from the alternator.

The DC-DC charger will continue charging until the Starter battery voltage drops under 12.8VDC (5 seconds).

The DC-DC charger also supports vehicles fitted with a smart alternator by using a D+ signal wire. With the D+ wire connected the DC-DC charger will work when the alternator is switched ON and will continue charging until the alternator is switched OFF. Service Battery voltage needs to be >10.5VDC or Starter Battery voltage >12.0VDC.

D+ Ignition Signal Wire:

A D+ signal wire is included in the Battery Sensor Harness (p/n: PMBS-3M/PMDBS-10M). This is connected to the PM535 via the Battery Sensor/Dry Contact socket. The D+ cable needs to be wired to an ignition circuit from the tow vehicle.

NOTE: All electrical wiring work must be performed by a qualified electrician.

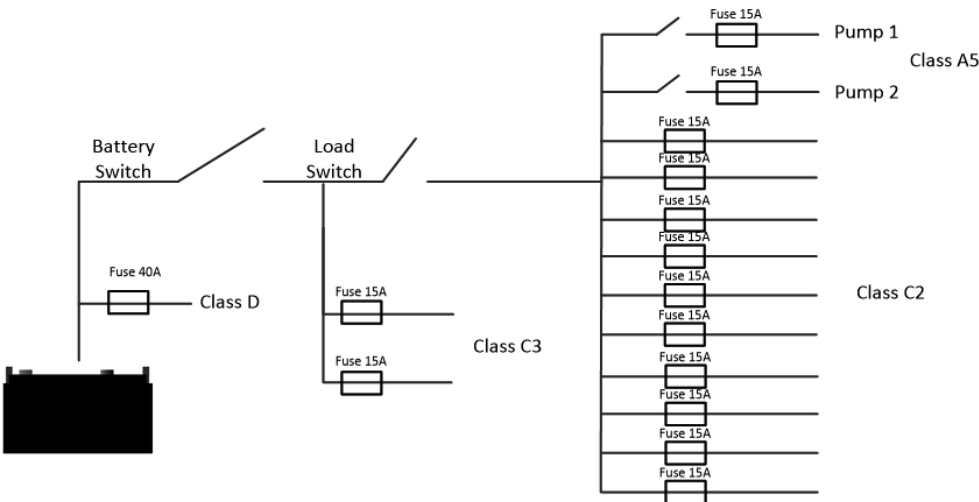
	DC-DC TURN ON VOLTAGE (V)	DC-DC TURN OFF VOLTAGE (V)
Without D+ connection	13.2V	12.8V
D+ connection	Ignition ON	Ignition OFF or starter battery <10.5V

NOTE: If no service battery is available and D+ connection is present, the following logic will apply:
TURN ON: Ignition ON and Starter battery >12V
TURN OFF: Ignition OFF or start battery <12V

2.7 Categorised Outputs

The 15 outputs are categorised into groups and controls as per below:

CATEGORY	QTY	DESCRIPTION	POSSIBLE USES
Class A5	2	Relay controlled output with fuse. Protected by main master switch relay	Water pump.
Class C2	10	Fused outputs, protected by master switch relay	Ventilation fan etc.
Class C3	2	Always ON Load (LVD protected)	Fridge, Security Alarm etc.
Class D	1	Constant Supply Loads (no discharge protection)	Breakaway Systems, Sway Controllers, Radio memory



2.8 Battery Low Voltage Protection (BLVP or commonly known as an LVD)

The PM535 has a built-in low voltage protection relay. It will disconnect the load once the battery voltage drops below the threshold voltage. The default setting is 10.5VDC for AGM/WET(Default)/GEL and 11.6VDC for LFP. This switch can be manually turned On/Off via the LOAD button on the LCD display.

NOTE: Class D loads remain active.

2.9 Battery Switch

The PM535 offers a convenient way to switch off the output of the service battery on-board. It protects the service battery from being drained by electronics on board, completely isolating the battery. PM535 also supports a remote manual battery switch. Before using the remote switch, ensure the manual battery switch at the unit is set as "ON".

The switch is only effective when the system has no other input source for the load except the battery.

2.10 Precise Battery Measurement

PM535 has a battery measurement system controlled by a microprocessor. It measures battery voltage, charge/discharge current, remaining battery capacity (in amp hours) and time remaining.

Compared to conventional indicating meters, a small current can be measured and read accurately with this device.

This feature highlights faults, alarms and installation errors.

NOTE: If you have loads connected directly on battery instead of the PM535 Power Management System, the measurement will not be accurate.

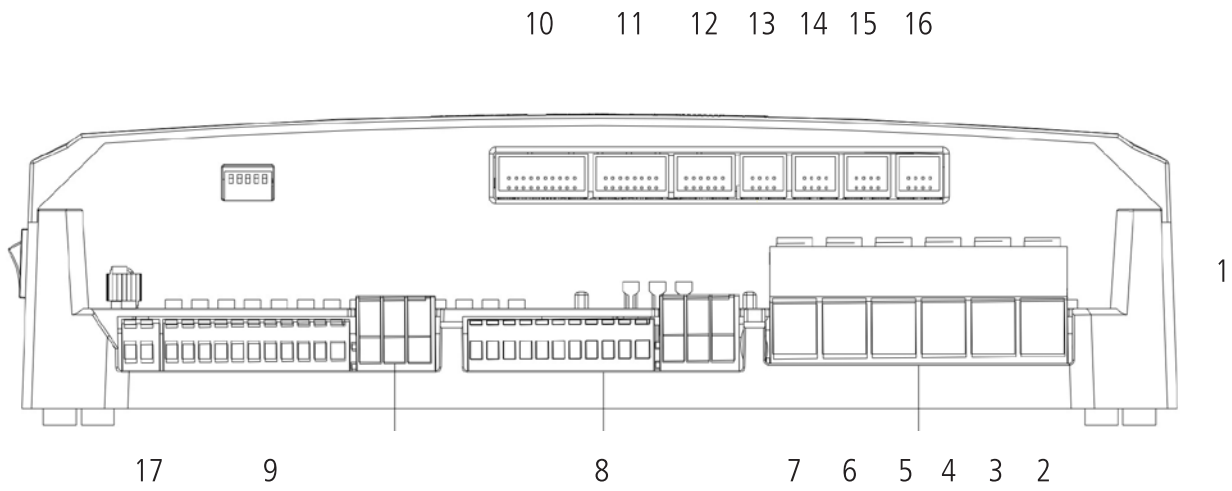
NOTE: P/No. PMSHUNT is required when heavy loads are used that are connected directly connected to non Projecta batteries. This ensures accurate state of charge. It is recommended to use Projecta's range of LB-HD batteries for seamless integration and accurate state of charge.

2.11 Night Mode

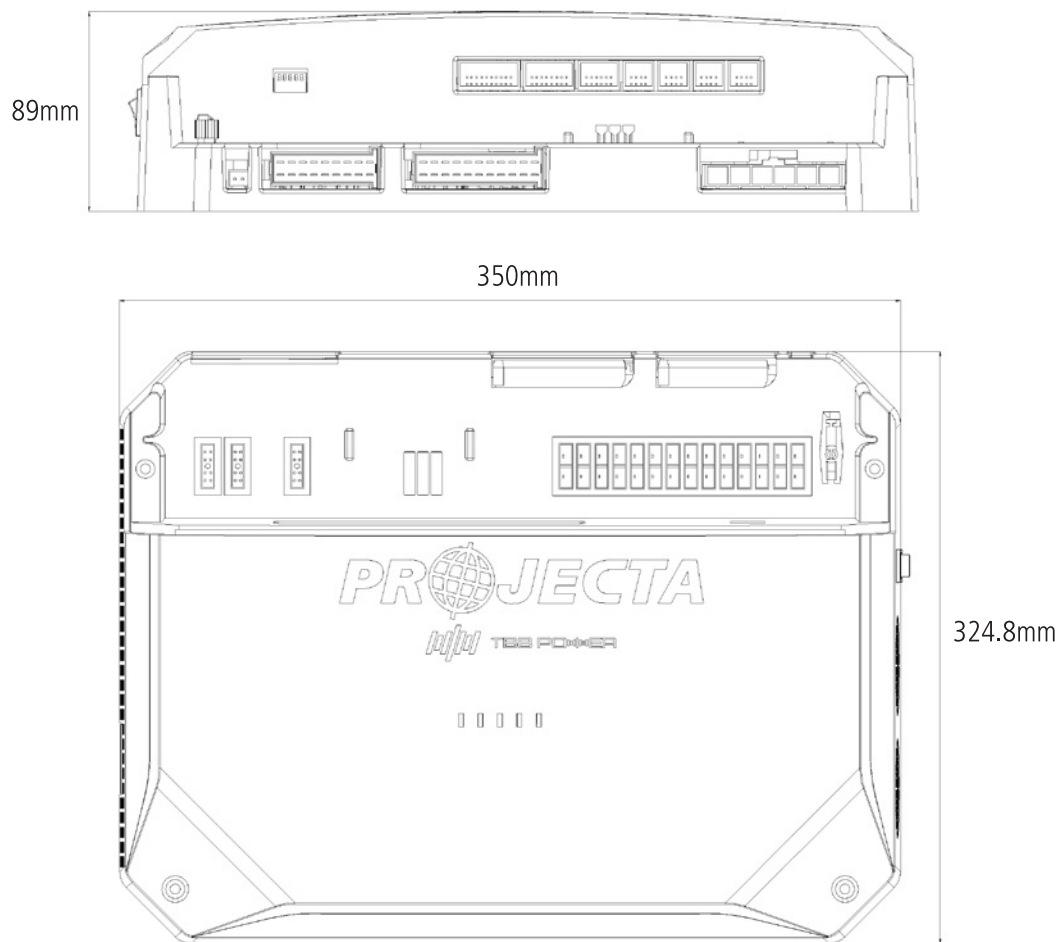
In Night Mode, the backlight of the monitor will turn off and the cooling fans will operate at a decreased speed. Charge current will be reduced to half rated selection when Night Mode is active.

3 STRUCTURE AND INSTALLATION

3.1 PM535 Power Management System



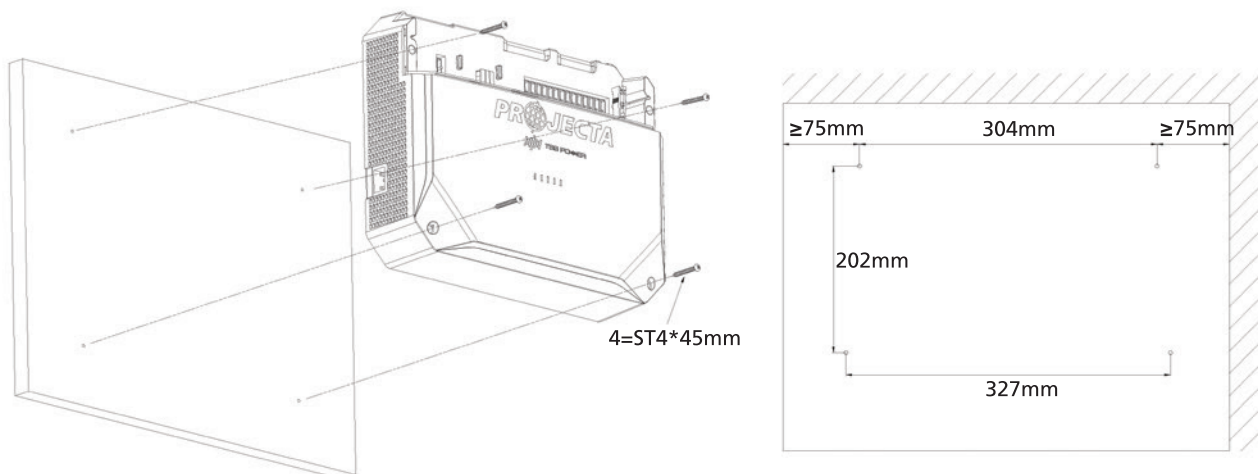
Nº	NAME	DESCRIPTION	TYPE
1	AC Input	AC input	IEC Socket
2	Solar+	Solar input Positive	Screw Terminal
3	S BATT+	Starter BATT input Positive	
4	BATT+	Service BATT input Positive	
5	Always ON+-	40A Always ON output Positive	
6	Solar-	Solar Input Negative	
7	BATT –	Service BATT input Negative	
8	Load-	Load Negative	WAGO connector
9	Load+	Load Positive	
10	Battery Sensor / Dry contact	Battery sensor and 6 dry set contact	20 pin socket
11	Switch Panel / COMM	IO COMM for LED panel and 485 COM for Power module and sensors	16 pin socket
12	LCD Monitor	COM for LCD monitor	12 pin socket
13	Water1	1 Water Tank	8 pin socket
14	Water2	2 Water Tank	8 pin socket
15	Water3	3 Water Tank	8 pin socket
16	Water4	4 Water Tank	8 pin socket
17	Remote Switch	Power Management Remote Switch	WAGO Connector



Installation:

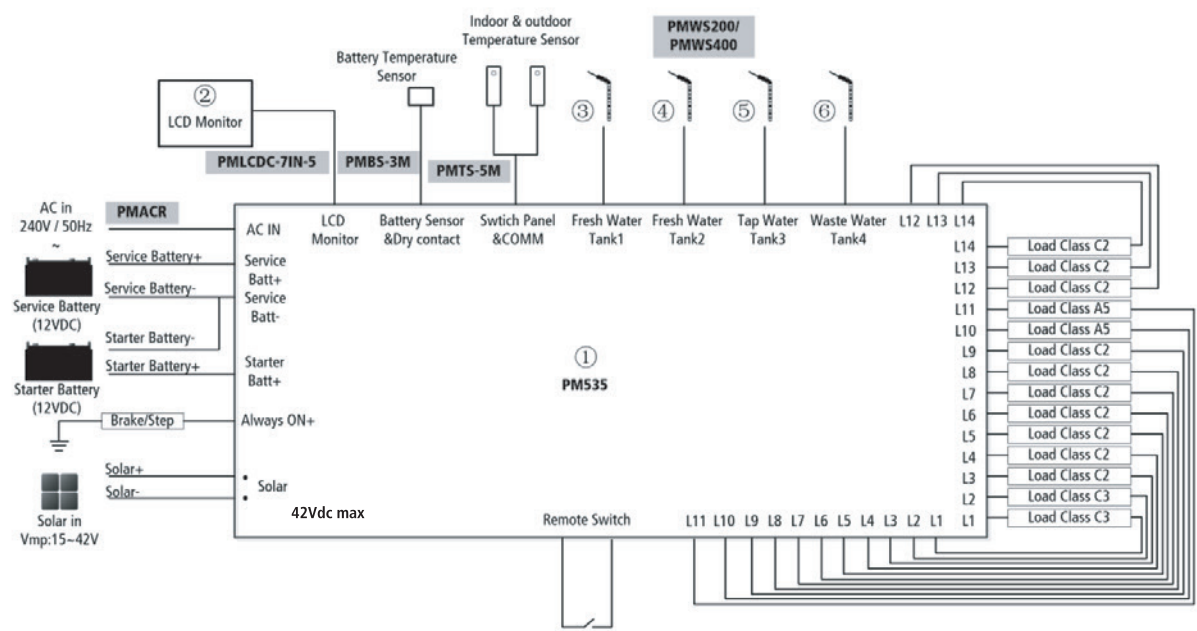
PM535 adopts fan-forced air cooling for heat dissipation. To ensure effective heat dissipation, it is necessary to ensure that there is enough installation space. The installation space needs a minimum distance of 50mm on either side of the unit to keep the vents clear. It is also recommended that the installation space has adequate ventilation to ensure effective airflow.

Recommended vent size: 144 x 54mm



4 WIRING

4.1 System Schematic



4.2 Preparation

PM535 is designed with ease of installation in mind. Follow recommendations in the table below for minimum wiring sizes.

CURRENT	MINIMUM CABLE SIZE	CURRENT	MINIMUM CABLE SIZE
0–5A	1.0mm ² or 18 B&S	20–25A	5.0mm ² or 10 B&S
5–10A	2.0mm ² or 14 B&S	25–40A	8.0mm ² or 8 B&S
10–15A	3.0mm ² or 12 B&S	40–45A	13.0mm ² or 8 B&S
15–20A	4.0mm ² or 10 B&S	45–60A	20.0mm ² or 4 B&S



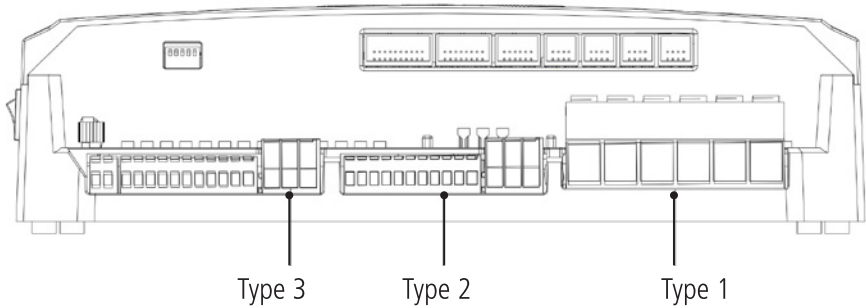
When running cables, if they pass through panels or wall, ensure the cables are protected from damage by sharp edges. In such cases, it is recommended to use cable glands.

For cables sized 7.00mm² or 8 AWG OR 10.00mm² or 7 AWG, ensure the total cable length does not exceed 2 metres to ensure proper electrical performance and to minimise voltage drop.

4.3 Connection

PM535 is designed with quick connect terminals. Please refer to illustration below.

Each type of terminal is designed to fit a different range of cable sizes.



TYPE	MINIMAL CABLE SIZE	SUITABLE CABLE GAUGE
Type 1	Screw Terminal	0.5mm ² – 20mm ²
Type 2	WAGO 2604-111	0.2mm ² – 4mm ²
Type 3	WAGO 2606-1103	0.25mm ² – 6mm ²

5 LED INDICATORS

5.1 PM535 Battery Management System



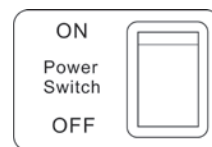
NAME	COLOUR	STATUS	DESCRIPTION
Mains	GREEN	ON	AC input OK
		OFF	AC disconnected
		Quick Flash	AC input abnormal
AUX		ON	Vehicle battery charging the battery
		Slow Flash (once every second)	The input of the AUX is normal, but battery is charged by AC Mains
		Quick Flash (twice every second)	Vehicle Battery input error
		OFF	Vehicle Battery disconnected
Solar		ON	Solar charging the battery
		Slow Flash (once every second)	The input of the AUX is normal, but battery is charged by AC Mains
		Quick Flash (twice every second)	Solar input abnormal
		OFF	Solar disconnected
CHG		ON	Battery charging - Float Stage
		Slow Flash (once every second)	Battery charging - BULK, ABS Stage or VSR
		Quick Flash(twice every second)	Battery discharging
	OFF	Battery disconnected	
FAULT	RED	ON	Short circuit
		1 Flash	House battery under-voltage
		2 Flash	House battery over-voltage
		3 Flash	Over temperature (Heat sink)
		4 Flash	Bulk charge time-out
		5 Flash	DCDC abnormal
		8 Flash	Over temperature (Unit)
		9 Flash	Over temperature (PCB or Load circuit)

6 OPERATION

6.1 Manual Switch

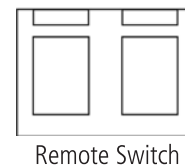
There is an ON/OFF switch on the side of the PM535, which is used to disconnect the unit from the battery. If the unit is connected to AC mains and the switch is 'OFF' it will also turn off the screen and charging. This switch must be 'ON' for the Remote Switch to operate.

NOTE: Turning the switch off disables DC-DC charging. Solar charging will work even if the Power switch is OFF to facilitate the solar wake up function to charge the battery.



6.2 Remote Switch

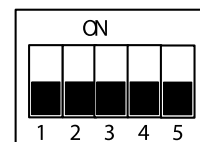
The remote switch terminals are located next to the output terminals. This requires the use of an external switch and functions the same way as the manual On/Off Battery Switch on the side of the charger. The Battery Switch must be 'ON' to use the Remote Switch Line. When not used, both terminals must be bridged together.



6.3 Dip Switch

It is always recommended to use the screen or APP to change any settings. In an event where the screen or APP are not available, the 5 pin Dip Switch panel on the unit can be used to manually adjust the charging current and battery type. Refer to the manual Dip Switch configurations below:

NOTE: The last method used to adjust the settings overrides any previous methods



Pin 1-2 Definition

		Lead Acid		Lithium
1	2	AC Charge	Solar Charge	AC/Solar Charge
ON	ON	10A	30A	30A/30A
ON	OFF	15A	30A	30A/30A
OFF	ON	20A	30A	30A/30A
OFF	OFF	30A	30A	30A/30A

Pin 3-4 Definition

3	4	Type	Absorption	Float
ON	ON	WET	14.7	13.7
ON	OFF	LFP	14.2	13.5
OFF	ON	GEL	14.1	13.5
OFF	OFF	AGM	14.4	13.5

6.4 Maintenance

BATTERY MONITOR MAINTENANCE

PM535 systems feature built-in battery measurement software. To ensure accurate readings, maintain the system with the following instructions:

- 1: Fully charge the battery from AC mains instead of Solar/DC every 2 weeks when in use.
- 2: Fully charge the battery from AC mains at least once every 3 months, even in storage, unless required to earlier.
- 3: Charge the battery from AC mains until the "CHG" LED on PM535 unit or "Float" shows on the monitor.

DAILY MAINTENANCE

- Confirm Mains Power switch is turned ON and the plug is securely in the socket when you want to charge with AC input.
- Check the nominal battery is 12VDC.
- Ensure there is enough space (50mm each side of the unit) for the appropriate ventilation.
- When replacing an existing battery, fully charge via AC mains to ensure SOC% is accurately calibrated.



Only the energy consumption of the loads connected on the PM535 are measured and calculated in the data on the Monitor.



For storage it is recommended to switch off the Manual Battery Switch on the unit or the Remote Switch (if installed) to cut off power to the system from the service battery.

NOTE: There may be some loads connected to the battery or constant output line (class D) that can continue to draw power.

Disclaimer:

To ensure safe and reliable operation, customers are advised not to run continuous loads exceeding 80A. Exceeding this limit may result in overheating, reduced performance, or potential damage to system components.

Please also note: The total usable loads on L1-L14 outputs are limited to 35A. The "Always On" output is limited to 40A however it is not recommended to run 40A continuous over a long period of time

These specifications should be carefully considered during system design and installation to prevent overloading and ensure safe operation of the system.

7 TROUBLE SHOOTING

7.1 LED Indicators on PM535

NAME	COLOUR	STATUS	DESCRIPTION
Mains	GREEN	Quick Flash	AC input abnormal
AUX		Slow Flash (once every second)	The input of the AUX is normal, but battery is charged by AC Mains
		Quick Flash (twice every second)	Vehicle Battery input error
Solar		Quick Flash (twice every second)	Solar input abnormal
Fuse	RED	Solid	Fuse blown - Need to check the device or cables and replace fuse
Fault		ON	Short circuit
		1 Flash	House battery under-voltage - Charge the battery
		2 Flash	House battery over-voltage - Charge the battery
		3 Flash	Over temperature (Heat sink) - Stop charging or Turn the Load switch off
		4 Flash	Bulk charge time-out - Reconnect the power source
		5 Flash	DCDC abnormal - Restart the unit
		8 Flash	Over temperature (Unit) - Stop charging or Turn the Load switch off
		9 Flash	Over temperature (PCB or Load circuit) - Stop charging or Turn the Load switch off

8 SPECIFICATIONS

MODEL		PM535
ELECTRICAL SPECIFICATIONS		
AC Mains	Nominal input voltage	240V ±10%VAC 50/60Hz
	Power factor	0.95
	Input current at full load	2.5A
Battery	Vehicle Battery	12VDC
	Vehicle battery voltage range	12.8-16VDC
	House battery	12VDC
	House battery voltage range	10.5-16VDC
PV (Solar)	Charger type	MPPT
	Open circuit voltage	42VDC
	Max supply current	30A
	Max charging current	30A
DC-DC Charger	Alternator input voltage range (Intelligent type)	12~16VDC
	Automatic activation D+	Yes
	Absorption charge voltage AGM/GEL/LFP/WET	14.4/14.1/14.2/14.7
	Float charge voltage AGM/GEL/LFP/WET	13.5/13.5/13.5/13.7
	Charge current	30A
	Total current of load and charging	30A
	Maximum charging efficiency	96%
	Temperature compensation Default Setting	-4mV/°C/cel
	Voltage compensation	No

8 SPECIFICATIONS Continued

MODEL		PM535	
Charger Mode	Charge algorithms	5 Stages	
	Battery type	AGM/GEL/LFP(LiFePO ₄)/WET	
	Start voltage	>2A	
	Bulk current	30A (Max)	
	Absorption voltage	14.4/14.1/14.2/14.7VDC	
	Float voltage	13.5/13.5/13.5/13.7VDC	
	Maximum battery capacity	1200Ah	
	Maximum battery quantity	Dependent on battery capacity	
Power Supply Mode	Nominal output voltage	12.8V (14.2V for LFP when battery current > 2A)	
	Rated output current	35A (Continuous)	
Efficiency		88%	
Working Temperature		-40°C to +60°C (40°C - 60°C derating)	
Battery Disconnect	Disconnect voltage	Lead Acid	10.5VDC (Default)
		LFP (LiFePO ₄)	11.6VDC (Default)
	Delay off time	60 sec	
	Reconnect voltage	Lead Acid	11.5VDC (Default)
		LFP (LiFePO ₄)	12.2VDC (Default)

ELECTRICAL SPECIFICATIONS		
Current draw on battery	Only Battery and Load switch ON	700mA
	Only Battery and Load switch OFF	300mA
	Only Battery, Voltage < LVD	180mA
	Power Switch OFF	< 1mA
Fused outputs	Quantity	15
	Rated current	15A x 14, 40A x 1
Protection	Short circuit on outputs	Fuse blown
	Reverse polarity	Diode reverse isolation
	Overload protection	Derate the output until overload is removed
	Battery charger over temperature	Shut down PM535
	Ambient over temperature	Alarm
	Battery over voltage limits	Battery charger disconnected, Load disconnected
PHYSICAL SPECIFICATIONS		
Dimension	350mm x 325mm x 89mm	
Weight	3.8KG	
Enclosure	Metal & Plastic	
Battery Connector	Screw terminal 20mm²	
Load Connector	WAGO 2604-111 (4mm²) WAGO 2604-1103 (6mm²)	
Cooling	Fan Forced Cooling	
Protection category	IP20	
Approvals		
Electrical	AS/NZS 60335.2.29	
EMC	CISPR14	

9 ADD-ON ACCESSORIES

9.1 Projecta Accessory Range

The PM535 supports a range of additional Projecta accessories as listed below:
For details on how to connect accessories, refer to the connection diagram.

PMD-BT3C

3" DISPLAY WITH BLUETOOTH®



PART No.	PMD-BT3C
Input	12Vd.c
Current	180mA
Working Temperature	-40°C – 60°C
Dimensions	140 x 86.2 x 45mm
IP Rating	IP20
Weight	180g

PMD-BT4C

4" TOUCH DISPLAY WITH BLUETOOTH®



PART No.	PMD-BT4C
Input	12Vd.c
Current	350mA
Working Temperature	-40°C – 60°C
Dimensions	137 x 80 x 35mm
IP Rating	IP20
Weight	180g

PMD-BT7C

7" TOUCH DISPLAY WITH BLUETOOTH®



PART No.	PMD-BT7C
Input	12Vd.c
Current	1000mA
Working Temperature	-40°C – 60°C
Dimensions	180 x 115 x 34mm
IP Rating	IP20
Weight	400g

PMD-BT10C

10" TOUCH DISPLAY WITH BLUETOOTH®



PART No.	PMD-BT10C
Input	12Vd.c
Current	2000mA
Working Temperature	-40°C – 60°C
Dimensions	276 x 170 x 43mm
IP Rating	IP20
Weight	11600g

	WARNING This product contains a Lithium coin cell battery. Please ensure the coin battery is kept OUT OF REACH OF CHILDREN. This includes both new and used batteries. Hazardous if swallowed. The battery can cause severe or fatal injuries in 2 hours or less if it is swallowed or placed inside any part of the body. If a coin battery is swallowed or placed inside any part of the body: SEEK MEDICAL ATTENTION IMMEDIATELY. See instructions.
--	---

9 ADD-ON ACCESSORIES continued

PMWSW4

4 POSITION WIRELESS SWITCH

Wireless switches make it easy to install additional switches if required, eg. an additional bedroom switch is easy as 2 screws for installation.



PART No.	PMWSW4
Rated Voltage	5V
Battery Power	2 X CR2032
Communication	RF 433Mhz
Effective Range	Outdoor 30m Indoor 15m
IP Rating	IP20
Working Temperature	-40°C – +60°C
Mounting	Surface
Weight	40g

	WARNING
	This product contains a Lithium coin cell battery. Please ensure the coin battery is kept OUT OF REACH OF CHILDREN. This includes both new and used batteries. Hazardous if swallowed. The battery can cause severe or fatal injuries in 2 hours or less if it is swallowed or placed inside any part of the body. If a coin battery is swallowed or placed inside any part of the body: SEEK MEDICAL ATTENTION IMMEDIATELY. See instructions.

SC520/SC540/SC550

5 STAGE MPPT SOLAR CHARGER CONTROLLER WITH 100V INPUT

Get the most out of your solar array using these Maximum Power Point Tracking (MPPT) Solar controllers increasing the charging output by up to 30% (compared to PWM Solar controllers).



	20 AMP	40 AMP	50 AMP
PART No.	SC520	SC540	SC550
Battery Voltage	12/24/48V		
Maximum Solar Voltage	100V		
Standby Current	1mA at 12V, 3mA at 24V, 5mA at 48V		
Charge Type	5 Stage		
Input	100V		
Output	20A	40A	50A
Control Type	MPPT		
Batteries Supported	GEL, AGM, Wet, Lithium		
Temperature Compensation	-18mV/12V		
Communication	RS485, Bluetooth®		
Storage Temperature	-40 – 70°C		
Humidity	5 – 95%		
IP Rating	IP31		
Weight	1.4kg	1.85kg	
Cooling	Convection		

9 ADD-ON ACCESSORIES continued

PMDCS30/PMDCS60

DC-DC 12V CHARGER

Smart DC to DC chargers specifically designed for Intelli-RV and Intelli-Grid.



PART No.	30 AMP	60 AMP
	PMDCS30	PMDCS60
Charge Type	5 Stage	
Alternator Input Voltage	12- 16V	
Output	12V, <30A	12V, <60A
Batteries Supported	GEL, AGM, Wet, Lithium	
Alternator Type	Smart & Conventional	
Storage Temperature	-40 - 70°C	
Operating Temperature	-40 - 70°C	
Temperature Compensation	-3mV/°C/Cell	
IP Rating	IP20	
Dimensions	181 x 148 x 52mm	
Weight	1.0kg	
Cooling	Convection	
Smart Alternator	Turn on 12.2V Turn off 11.6V	
Conventional	Turn on 13.2V Turn off 12.8V	

PMDCS30-20

DC-DC 12V CHARGER

Smart DC to DC chargers specifically designed for Intelli-RV and Intelli-Grid where a 3 way fridge or compressor fridge are used.



Note: If using load as a 'CONSTANT' connection (set via display or APP), the output of DC-DC charger MUST be connected directly to LB-HD or PMSHUNT.

PART No.	PMDCS30-20
Charge Type	5 Stage
Alternator Input Voltage	12- 16V
Output	12V, <30A
Batteries Supported	GEL, AGM, Wet, Lithium
Alternator Type	Smart & Conventional
Storage Temperature	-40 - 70°C
Operating Temperature	-40 - 70°C
Temperature Compensation	-3mV/°C/Cell
IP Rating	IP20
Dimensions	181 x 148 x 52mm
Weight	1.0kg
Cooling	Convection
Smart Alternator	Turn on 12.2V Turn off 11.6V
Conventional	Turn on 13.2V Turn off 12.8V

9 ADD-ON ACCESSORIES continued

PMTTPMS

TYRE PRESSURE MONITORING SYSTEM MODULE

The Tyre Pressure Monitoring System (TPMS) monitors the RV's tyre pressure before and during the journey.



PART No.	PMTTPMS x 4 (one for each type)
PART No.	Receiver - PMTPMS-R
Input	6-24V
Working Current	30mA
Working Temperature	-40°C – 85°C
Humidity	<95%
Receiving Frequency	433.910Mhz
Wired Communication	RS485
Weight	150g

PART No.	Sender - 4 x PMTPMS-S
Working Voltage	2.2 - 3.6V
Battery Type	CR1632
Transmitted Current	<5mA
Transmitted Power	<5dbm
Transmitted Frequency	433.910Mhz
Pressure Range	14 - 130PSI
Accuracy	±1.45 PSI
Working Temperature	-30°C - 70°C
Weight	13.8g

	WARNING
	This product contains a Lithium coin cell battery. Please ensure the coin battery is kept OUT OF REACH OF CHILDREN. This includes both new and used batteries. Hazardous if swallowed. The battery can cause severe or fatal injuries in 2 hours or less if it is swallowed or placed inside any part of the body. If a coin battery is swallowed or placed inside any part of the body: SEEK MEDICAL ATTENTION IMMEDIATELY. See instructions.

PMLVL

LEVELLING SENSOR

Level the RV with the levelling sensor which can be monitored via the phone app.

Calibration

To calibrate the level sensor, the RV needs to be level both forward and back and side to side. Once level, go to the Setting Page, select Level Sensor and press Calibrate. This will zero the sensor.



PART No.	PMLVL
Working Voltage	9 - 16V
Working Current	30mA
Working Temperature	-40°C - 85°C
IP Rating	IP20
Accuracy	± 2°

9 ADD-ON ACCESSORIES continued

LB200-HD

12V HIGH DISCHARGE 200AH LITHIUM BATTERY

LB200-HD boast impressive capabilities and are ideal for 4WDs and caravans with high power demands



PART No.	LB200-HD
Nominal Voltage	12.8V
Nominal Capacity	200ah
Nominal Energy	2560Wh
Charge Voltage	14.2V
Discharge Cut-Off Voltage	11.2V
Standard Charge Current	100 Amps
Maximum Charge Current	200 Amps
Maximum Discharge Current	200 Amps
Peak Discharge Current	300 Amps (10mins)
Operating Temperature	-20°C - 60°C
Maximum Number of Batteries In Parallel	4
Number Of Discharge Cycles	3000
Weight	22Kg
IP Rating	IP20

LB400-HD

12V HIGH DISCHARGE 400AH LITHIUM BATTERY

The LB400-HD boasts an astonishing 400Ah capacity and a market leading 300A discharge capability making it ideal to partner with high current draw appliances such as 3000W inverters.

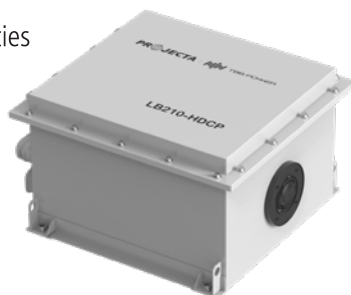


PART No.	LB400-HD
Nominal Voltage	12.8V
Nominal Capacity	400ah
Nominal Energy	2560Wh
Charge Voltage	14.2V
Discharge Cut-Off Voltage	11.2V
Standard Charge Current	100 Amps
Maximum Charge Current	200 Amps
Maximum Discharge Current	200 Amps
Peak Discharge Current	300 Amps (10mins)
Operating Temperature	-20°C - 60°C
Maximum Number of Batteries In Parallel	4
Number Of Discharge Cycles	3000
Weight	22Kg
IP Rating	IP20

LB210-HDCP

12V HIGH DISCHARGE 210AH LITHIUM BATTERY – for chassis installation

LB210-HDCP boast impressive capabilities and are ideal for 4WDs and caravans with high power demands



PART No.	LB210-HDCP
Nominal Voltage	12.8V
Nominal Capacity	210Ah
Nominal Energy	2680Wh
Charge Voltage	14.2V
Discharge Cut-Off Voltage	11.2V
Standard Charge Current	200 Amps
Maximum Charge Current	200 Amps
Maximum Discharge Current	200 Amps
Peak Discharge Current	300 Amps (10mins)
Operating Temperature	-20°C – 60°C
Maximum Number of Batteries In Parallel	4
Number Of Discharge Cycles	3000
Weight	30.6Kg
IP Rating	IP67

9 ADD-ON ACCESSORIES continued

LB420-HDCP

12V HIGH DISCHARGE 420AH LITHIUM BATTERY – for chassis installation

LB420-HDCP boasts an astonishing 420Ah capacity and a market leading 300A discharge making it ideal to partner with high current drawing appliances such as 3000W inverters.

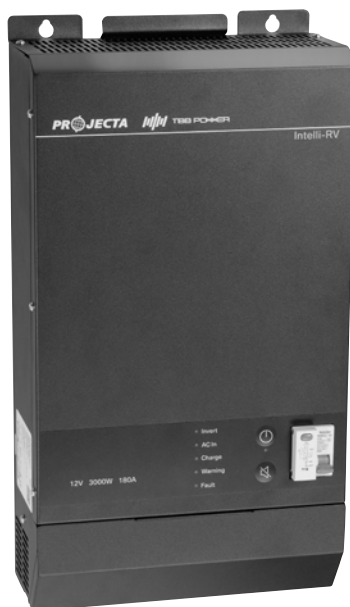


PART No.	LB210-HDCP
Nominal Voltage	12.8V
Nominal Capacity	420Ah
Nominal Energy	5376Wh
Charge Voltage	14.2V
Discharge Cut-Off Voltage	11.2V
Standard Charge Current	100 Amps
Maximum Charge Current	200 Amps
Maximum Discharge Current	200 Amps
Peak Discharge Current	300 Amps (10mins)
Operating Temperature	-20°C – 60°C
Maximum Number of Batteries In Parallel	4
Number Of Discharge Cycles	3000
Weight	48.5Kg
IP Rating	IP67

INVCHR2

2000W 12V INVERTER/ CHARGER

Perfect for powering the most demanding 240V appliances on the go this inverter/charger is ideal for operating on or off the grid. An RCD is included to ensure maximum safety for the unit and operator.



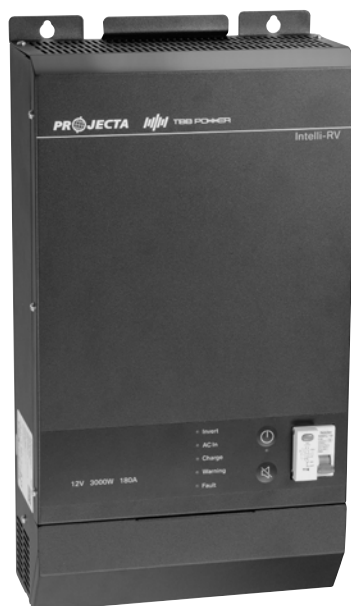
PART NO.	INVCHR2
240V Charging	
Charge Type	5 Stage Automatic
Input	240VAC, 50/60Hz, 32A(max)
Output	12V, 120A
Batteries Supported	GEL, AGM, Wet, Lithium
Temperature Compensation	Yes
INVERTER	
Input	12V (10.5~17V)
Output	220 / 230 / 240 VAC
Frequency	50/60 Hz
Output Power	2000W (4000W Peak)
Grid Boost Output	24Amps, (Mains supply + 8.3Amps inverter)
AC Transfer	<2mSec
Operating Temperature	-20 ~ 65°C
Weight	17Kg
IP Rating	IP20
Approvals	EMC, AS/NZS 60335.2.29

9 ADD-ON ACCESSORIES continued

INVCHR3

3000W 12V INVERTER/ CHARGER

This 3000W Inverter/Charger is ideal for serious power hungry consumers who require lots of power for all their creature comforts on the road. An RCD (INVCHR3 only) is included to ensure maximum safety for the unit and operator.



PART NO.	INVCHR3
240V Charging	
Charge Type	5 Stage Automatic
Input	240VAC, 50/60Hz, 32A(max)
Output	12V, 180A
Batteries Supported	GEL, AGM, Wet, Lithium
Temperature Compensation	Yes
INVERTER	
Input	12V (10.5~17V)
Output	220 / 230 / 240 VAC
Frequency	50/60 Hz
Output Power	3000W (6000W Peak)
Grid Boost Output	28Amps, (Mains supply + 12.5Amps inverter)
AC Transfer	<2mSec
Operating Temperature	-20 ~ 65°C
Weight	21Kg
IP Rating	IP20
Approvals	EMC, AS/NZS 60335.2.29

PMSHUNT

500A SHUNT MODULE



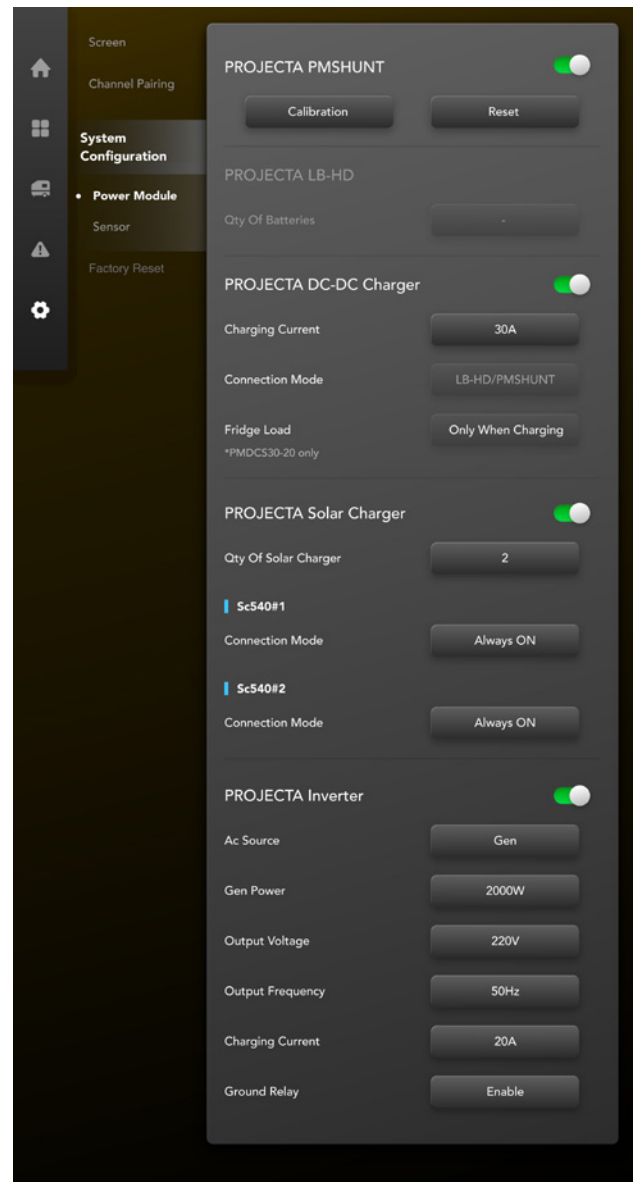
PART NO.	PMSHUNT
Nominal Battery Voltage	7 – 95V
Nominal Current	±500A
Batteries Supported	GEL, AGM, Wet, Lithium
Storage Temperature	-30°C – 70°C
Operating Temperature	-20°C – 50°C
IP Rating	IP20
Dimensions	105 x 105 x 63mm

9.2 Connecting and Using Projecta Add-on Accessories

The PM535 system supports a range of additional Projecta devices including sensors, DC-DC chargers and solar controllers listed on pages 18-24.

These devices are specifically designed to work with the Intelli-GRID systems to provide complete, real-time data of the system performance on the APP. Using the Projecta suite of accessories also ensures that each component is optimized to work with each other in a complete ecosystem and allows for easy diagnosis if any issues arise.

After installing the Projecta device to the system, visit the Configuration page to set up the device



9.2.1 PMSHUNT

PMSHUNT is used for monitoring the status of the battery accurately in cases where the system incorporates an external inverter or any other load device connected directly to the battery.

NOTE: Not required if using Projecta's LB range of batteries connected via communications.

“Active button”

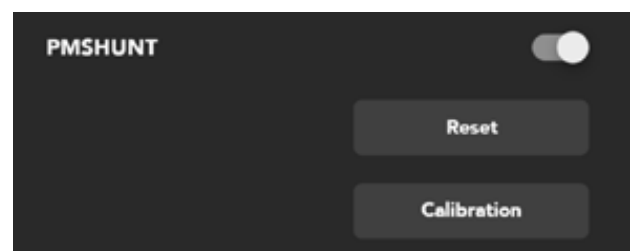
If the system does not detect PMSHUNT during the activation stage, the 8901 error code will be displayed. If this occurs, check whether the PMSHUNT has been powered on, and whether the communication harness for PMSHUNT is connected correctly.

“Reset”

This feature is used when replacing the battery. PMSHUNT will set an initial SOC based on the current voltage. For accurate SOC, the battery must be charged until it reaches float status.

“Calibration”

This feature updates the SOC to 100% directly. It is used when the battery is fully charged but the SOC does not show 100%. Use this function to recalibrate the SOC directly to 100%.



9.2.2 DC-DC CHARGER

The Projecta smart DC-DC range of chargers are specifically designed for Intelli-GRID power management systems. The range features the PMDCS30, PMDCS30-20, and PMDCS60. When connected to the Intelli-GRID system, the chargers communicate directly to the display to conveniently show VEH Input voltage, VEH charge current, and FRIDGE – load draw (only if using PMDCS30-20)

PMDCS30, PMDCS60 are booster chargers that allow charge currents of up to 30A or 60A

PMDCS30-20 is a dual output booster charger, with one output for auxiliary battery charging with charge current up to 30A, and the other dedicated to power a DC load (typically a DC fridge) with current up to 20A. When the vehicle engine is running, PMDCS30-20 will draw power from engine to charge the battery as well as to power the DC load; when vehicle engine is turned off, PMDCS30-20 will draw power from auxiliary battery to power the DC load. This ensures the connected DC load is always powered either by the vehicle's alternator or auxiliary battery.

“Active button”

After activating the DC-DC Charger feature, the vehicles charging current can be viewed via the monitor.

“Charging current”

Select the appropriate charging current according to the vehicle's alternator power.

“Connection Mode”

SHUNT/LBHD mode needs to be selected when connected directly to the battery and using comms.

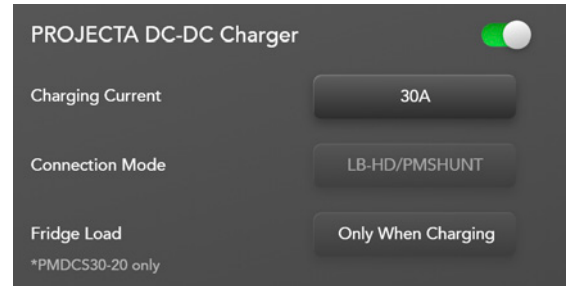
“Fridge Load”

Only When Charging: The Fridge Load will only be available when the alternator is running (i.e., engine is switched on)

Constant ON: The Fridge Load will be always ON. When the vehicles engine is running, it will draw power from engine to charge the battery as well as to power Fridge load; when vehicle engine is turned off, it will draw power from auxiliary battery to power the fridge load

Note: This setting is only available for PMDCS30-20.

Constant ON will only function correctly when the PMDCS30-20 is connected directly to PMSHUNT or LB-HD series batteries.



9.2.3 LB-HD BATTERIES

The Projecta LB-HD series lithium batteries are high-precision, high discharge current batteries. When connected to Intelli-GRID power management systems, the battery type and capacity are automatically recognised, and a custom charge algorithm is applied to ensure the optimum life cycle of the battery. Using a Projecta LB-HD battery also guarantees precise SOC and current of the battery on the monitor, which is vital in off-grid applications.

“Active button”

After activating LB-HD, the quantity of batteries needs to be set.

If the system shows 9401, please check if the communication cable from the battery to system is connected correctly.

If the system shows 9410, please check if the battery quantity is set correctly and check the communication cable between battery to the systems is connected correctly.



9.2.4 SC CHARGER

Get the most out of the caravan's solar array using The Projecta SC range of MPPT Solar Charge Controllers.

Connect the output of the solar controller to the Battery or shunt directly.

‘Active button’

After activating the SC solar controller, select the Connection Mode according to the SC Dip Switch configuration.

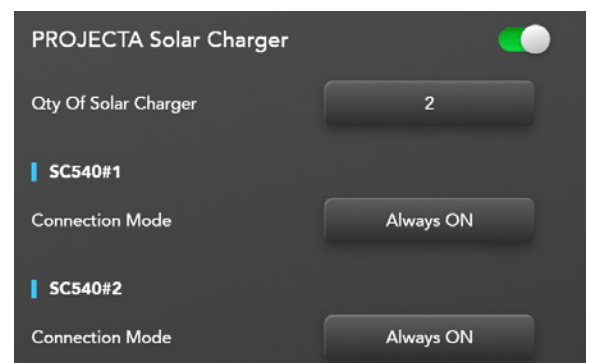
‘Qty of Solar Charge’

Select the number of additional SC controllers in the system, with a maximum of 2..

‘Connection Mode’

Always ON: Powered by Battery. The unit will stay on as long as there is battery charge. Low power Powered by Solar. The unit will only stay on as long as there is Solar input

Note: SC series of solar regulators MUST be connected to either PMSHUNT or LB-HD series batteries to ensure current measurement and SOC accuracy is maintained.



9.2.5 INVCHR Inverter

Projecta's inverter chargers are the ideal mobile power partner with surge capability to run any appliance on or off the grid with its built in high speed AC transfer switch and built in high current battery charger.

'AC Source'

Select the AC input source for the inverter: Generator or AC Mains (optional)

'Gen Power/Shore Power'

Set the input power or current. When the input source is a Generator, set its power according to the Generator's specification. When the input source is AC Mains, set its current according to the camp condition.

'Output voltage'

Set the inverter output voltage

'Output Frequency'

Set the inverter output Frequency

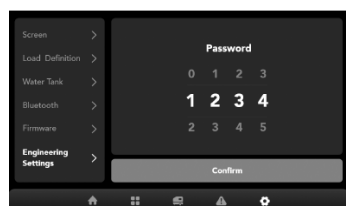
'Charge Current'

Set the inverter charger current to the battery

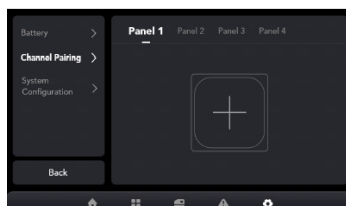


10 WIRELESS PANEL PAIRING PROCESS

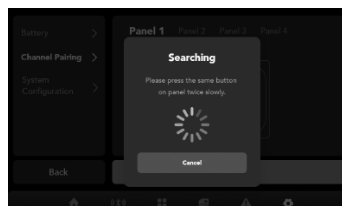
PM535 has built-in RF technology that can be used to support wireless panels (P/N:PMWSW4). It simplifies the internal wiring of the caravan making it easier to maintain. Below is a quick guide to configure the wireless panel in the system.



1 Find 'Engineering Settings' in the menu –the password is '1999'



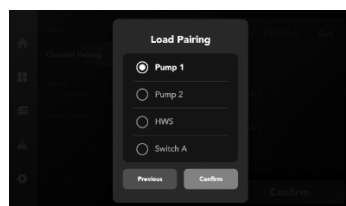
2 Click on the "+" icon



3 Click any button on the wireless panel twice, slowly.



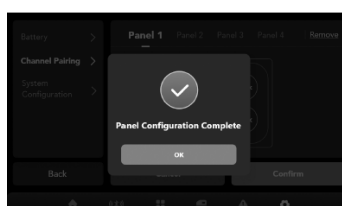
4 Click on the 'click' button to configure the function of the corresponding key



5 Select the function you would like to configure

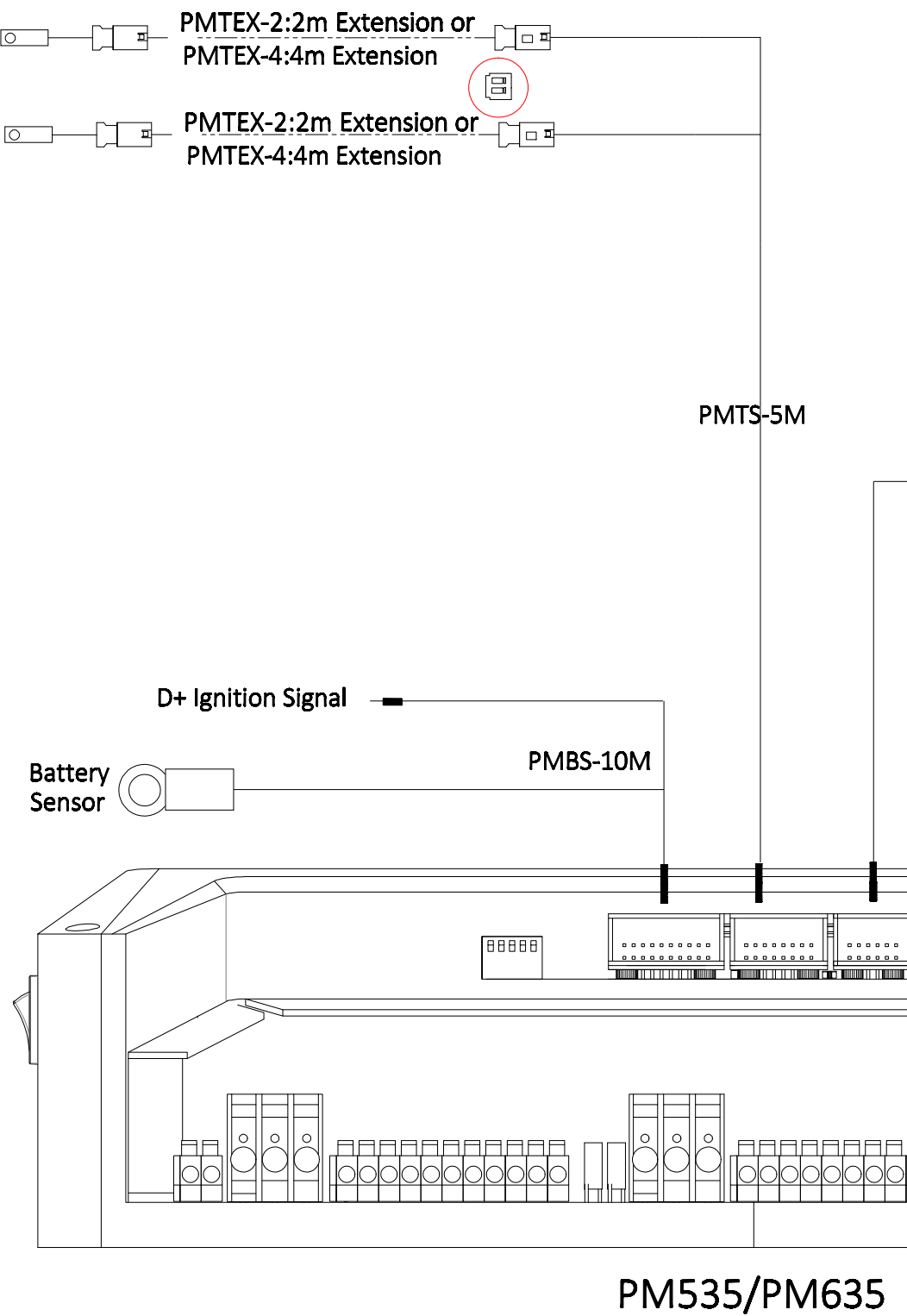


6 Repeat the configuration process (Step 4) for each key and then click on the 'Confirm'



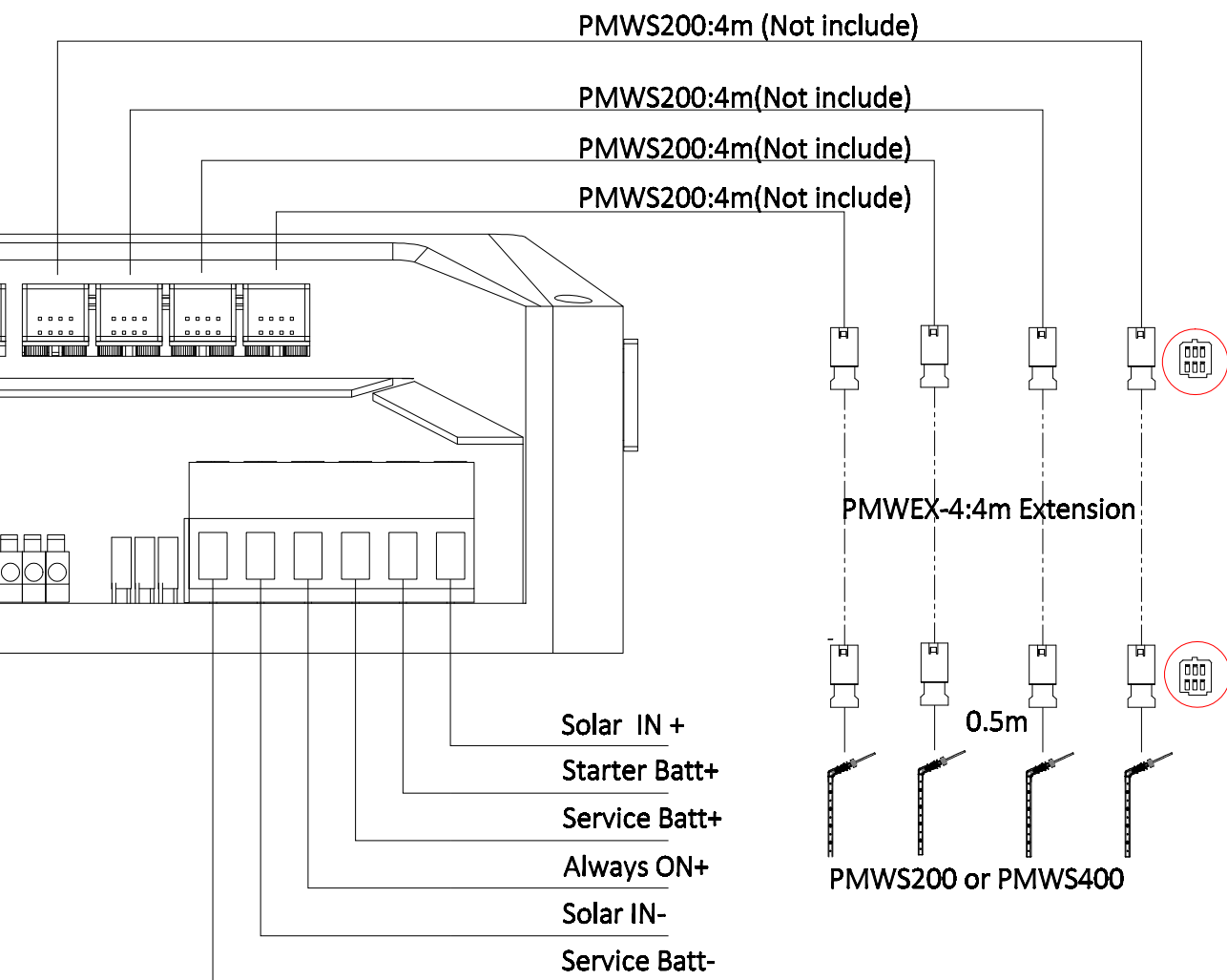
7 Configuration is complete, click on 'OK'

10.1 PM535/PM635 Wiring Diagram

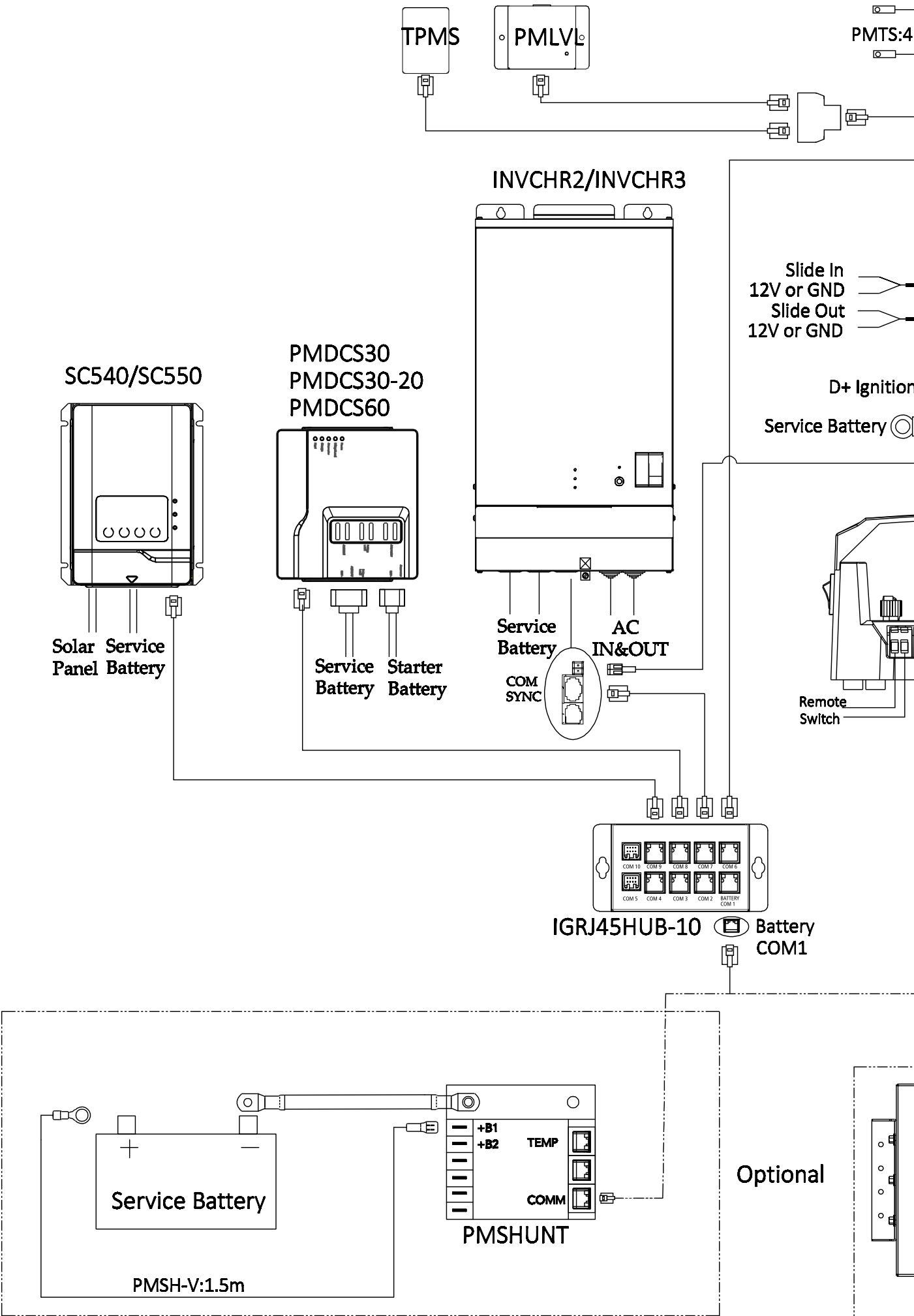


PMD-BT4C: Use PMLCDC-4IN-5M or PMLCDC-4IN-10M
PMD-BT7C/PMD-BT10C: Use PMLCD7-10-5M or PMLCDC7-10-10M

PMD-BT4C
PMD-BT7C
PMD-BT10C



10.2 PM535/PM635 Wiring Diagram with Add-on Accessories



WARRANTY STATEMENT

Applicable only to product sold in Australia

Brown & Watson International Pty Ltd of 1500 Ferntree Gully Road, Knoxfield, Vic., telephone (03) 9730 6000, fax (03) 9730 6050, warrants that all products described in its current catalogue (save and except for all bulbs and lenses whether made of glass or some other substance) will under normal use and service be free of failures in material and workmanship for a period of 5 years (unless this period has been extended as indicated elsewhere) from the date of the original purchase by the consumer as marked on the invoice. This warranty does not cover ordinary wear and tear, abuse, alteration of products or damage caused by the consumer.

To make a warranty claim the consumer must deliver the product at their cost to the original place of purchase or to any other place which may be nominated by either BWI or the retailer from where the product was bought in order that a warranty assessment may be performed. The consumer must also deliver the original invoice evidencing the date and place of purchase together with an explanation in writing as to the nature of the claim.

In the event that the claim is determined to be for a minor failure of the product then BWI reserves the right to repair or replace it at its discretion. In the event that a major failure is determined the consumer will be entitled to a replacement or a refund as well as compensation for any other reasonably foreseeable loss or damage. This warranty is in addition to any other rights or remedies that the consumer may have under State or Federal legislation.

IMPORTANT NOTE

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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