PROJECTA

INTELLI-JAY

INSTRUCTION MANUAL

P/No. PM535J/C4878L

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 $LiFePO_4$ 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

CONTENTS

1 PRODUCT INSTRUCTIONS

1.1 Overview

The PM535J 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 optimized to work with each other in a complete ecosystem and allows for easy diagnosis if any issues arise.

SYSTEM COMPONENTS

1 Master Power unit

2 Display Screen/Monitor

3 Up to 4 water tank probes, based on monitor selection (not included)

4 Accessories cables

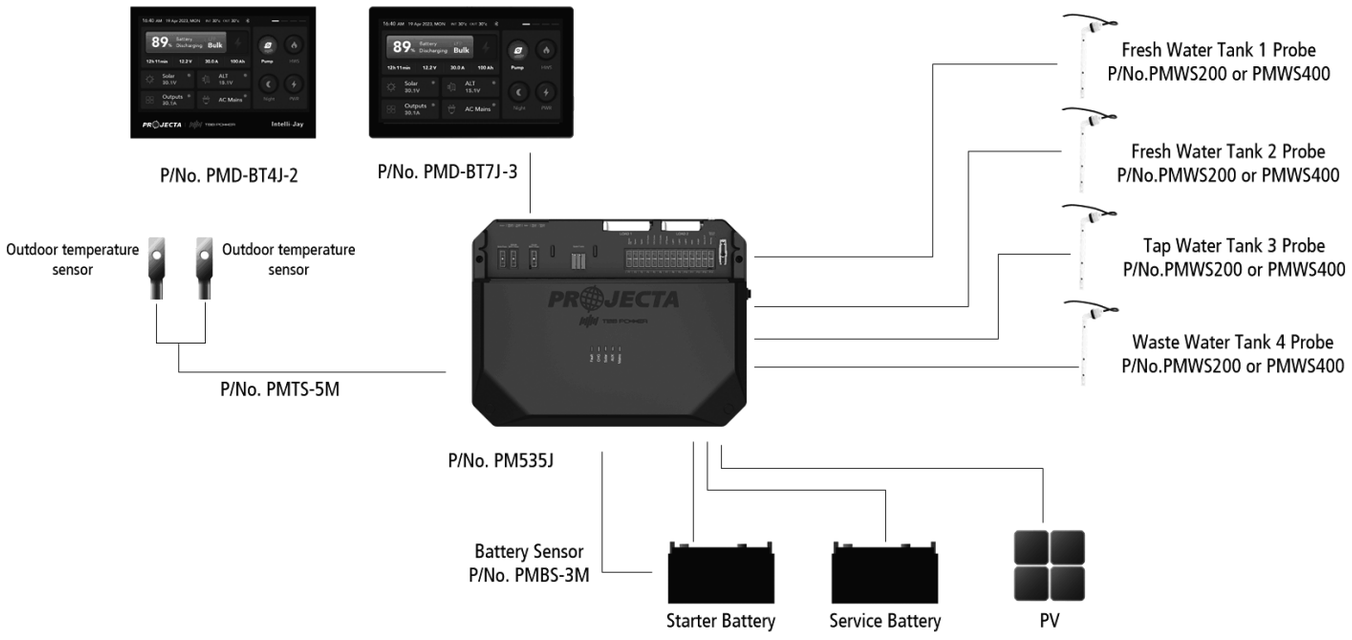


Figure 1 System Components

1.2 Features

PM535J has the following features

- Smart battery charger 12V 35A (35A for charging current)
  - Multi-stage adaptive charging algorithm
  - Active Power Factor Correction (PFC) charging
  - Temperature compensation charging
- Float charge for Starter/Vehicle battery
- 30A MPPT Solar charge controller
- Built-in DC-DC charger
  - 12V 30A continuous
- 14 built in fused outputs
- Battery low voltage protection
- Built-in battery switch to isolate the battery when in storage
- Built-in shunt for precise battery measurement
- Support for 4 water tank sensors
- Built-in Master Bluetooth for Bluetooth sensors
- RS485 & CAN compatible

1.3 Block Diagram

CATEGORY	QTY	DESCRIPTION	POSSIBLE USES
Class A5	7	Relay controlled output with fuse. Protected by main master switch relay	Water pump, HWS, TV etc.
Class C2	6	Fused outputs, protected by master switch relay	Ventilation fan etc.
Class D	1	Permanent on load	Fridge, Breakaway systems, Sway Controllers, Radio memory etc.

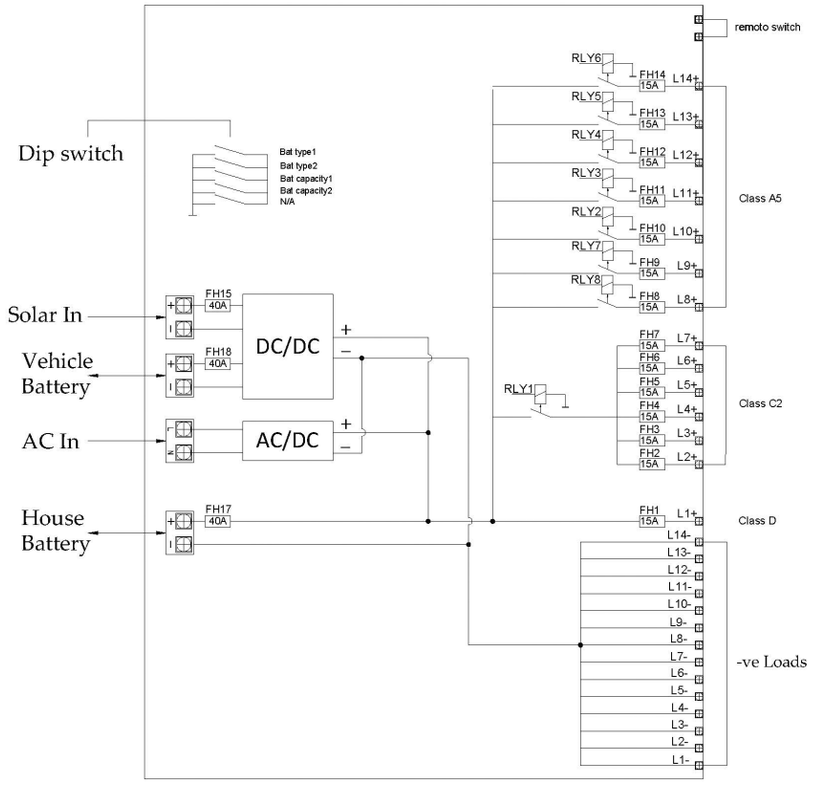


Figure 2 Unit Schematic

1.4 Water Tank Probe

PM535J 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

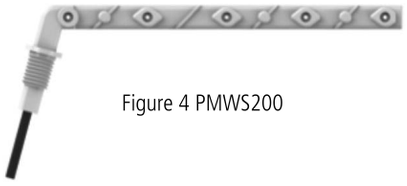


Figure 4 PMWS200

PMWS400:

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

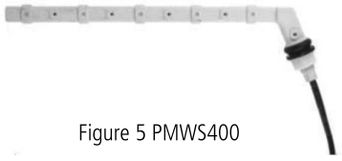


Figure 5 PMWS400

2 KEY FEATURES AND FUNCTIONS

2.1 Multiple Inputs

PM535J 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.

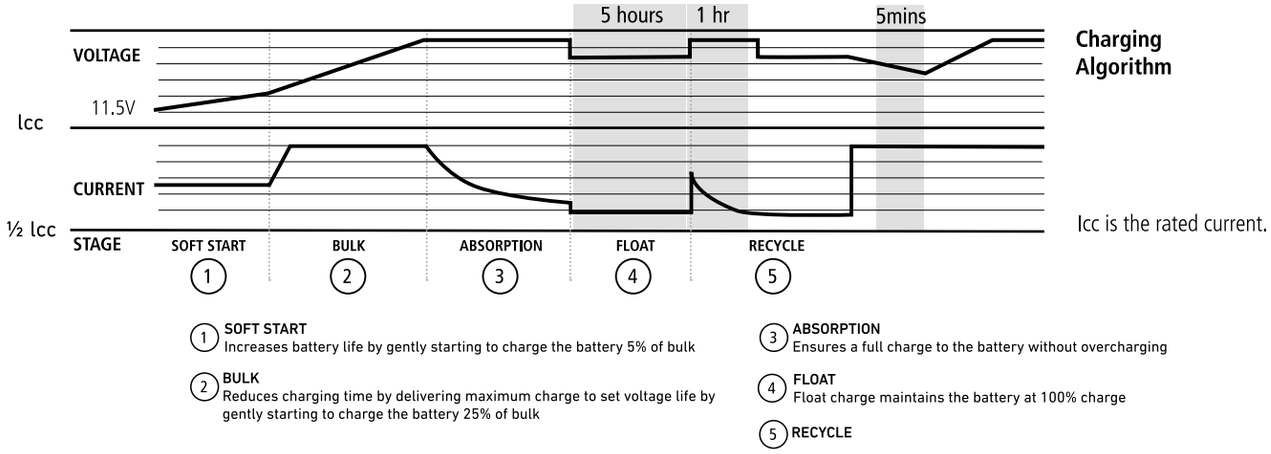
AC MAINS	**X**	**X**	
SOLAR	**X**		**X**
DC IN		**X**	**X**
CHARGING PRIORITY	COMBINED	AC MAINS	COMBINED

2.2 Battery Charger Of Starter/Service Battery

The charger automatically starts when the appropriate qualified power is connected, either from grid, alternator or solar.

With multiple charging stages (soft start-bulk absorption float & recycle), PM535J is designed to fully charge the service battery quickly.

PM535J 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 PM535J to adjust, in real time to charge the battery, at a compensation rate of -4mv±10%/°c/cell. In installations where this sensor is not present, the PM535J 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 PM535J 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.

Adjustable Charging Capacity

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 PM535J can be configured to charge Lithium batteries. The max charging current for lithium is automatically set at 30% of the battery capacity (Imax=0.3C)

2.3 Vehicle (Starter) Battery Charger

Along with a powerful charger for the service battery, PM535J 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 PM535J unit, it will automatically work as a 35A power supply with a 12.8VDC output.

2.5 MPPT Solar Charger Controller

PM535J has a built-in MPPT charger for the House battery with:

- Max input voltage 42VDC
- Max charging current 30A
- Max supply current 30A
- Max recommended solar panel wattage 800W

2.6 Built-in DC-DC Vehicle Charger

The PM535J has an intelligent built-in DC-DC charging system that charges the battery via the alternator while the engine is running. The charging current is controlled according to the settings.

When the Vehicle/Starter battery reaches 12.8VDC 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 12.0VDC (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 Vehicle/starter battery voltage is as low as 12.2Vdc and will continue charging until the alternator is switched OFF.

Installation of D+ signal wire:

1. For users with the 12-pin trailer connector from the vehicle, the D+ wire can be connected on pin 12 of the plug/socket.
2. For users without the 12-pin trailer connector – the D+ wire must be connected to the ignition circuit on the vehicle. It is also recommended that the vehicle is fitted with a VSR.

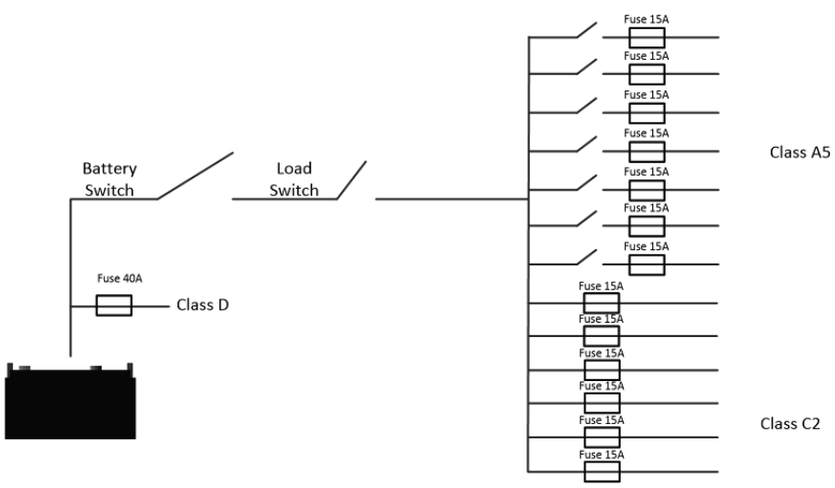
Note: All electrical wiring work must be performed by a certified electrician.

	DC-DC TURN ON VOLTAGE (V)	DC-DC TURN OFF VOLTAGE (V)
Without D+ connect	12.8V	12.0V
D+ connect	12.2V	0V

2.7 Categorised Outputs

The 14 outputs are categorised into groups and controls as per below:

CATEGORY	QTY	DESCRIPTION	POSSIBLE USES
Class A5	7	Relay controlled output with fuse. Protected by main master switch relay	Water pump, HWS, TV etc.
Class C2	6	Fused outputs, protected by master switch relay	Ventilation fan etc.
Class D	1	Permanent on load	Fridge, Breakaway systems, Sway Controllers, Radio memory etc.



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

The PM535J 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 C3 and Class D loads remain active.

2.9 Battery Switch

The PM535J 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. PM535J 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

PM535J has a battery measurement system controlled by 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 PM535J Power Management System, the measurement will not be accurate.

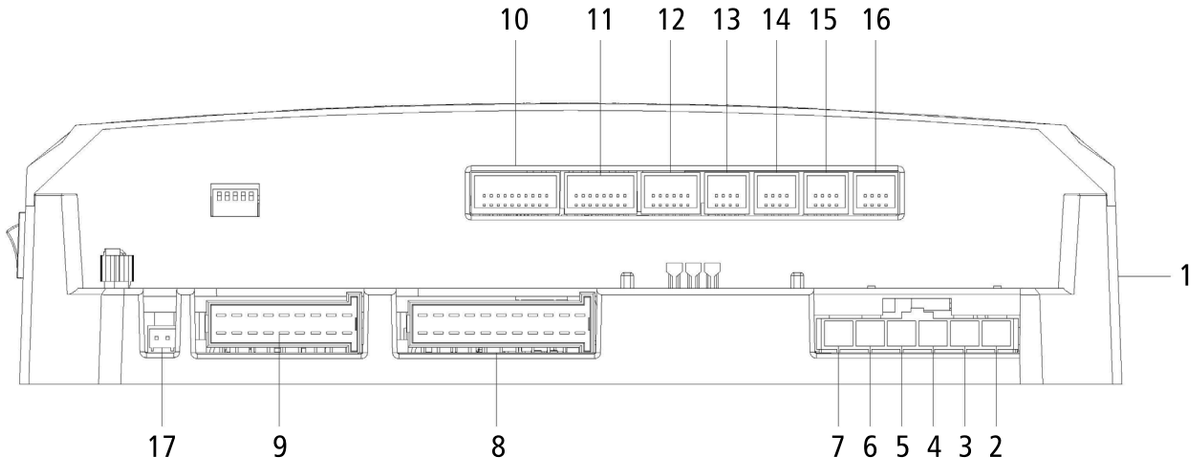
NOTE: P/No. PMShunt is required when heavy loads are used that are connected directly connected to non Projecta batteries. This ensures accurate state of charge. It is recommended to use Projecta's range of LB-HD batteries for seamless integration and accurate state of charge.

2.11 Night Mode

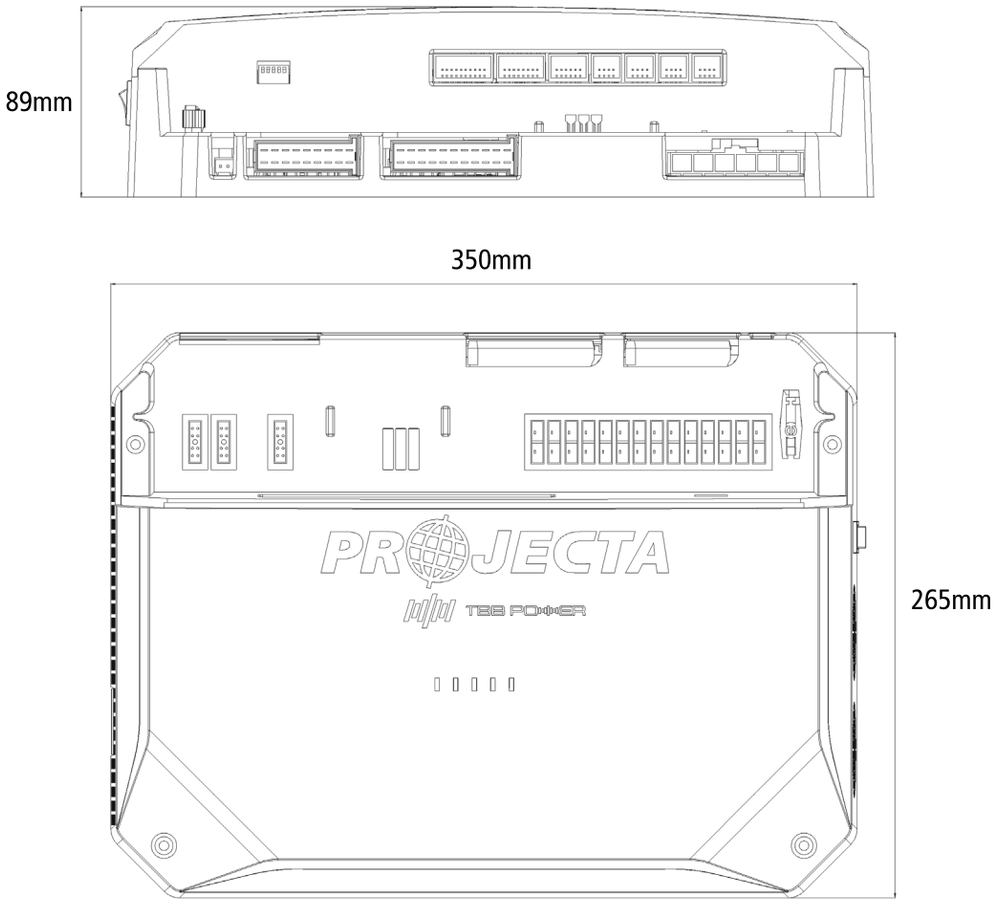
In Night Mode, the backlight of the monitor will turn off and the cooling fans will operate at a decreased speed.
Charge current will be reduced to half rated selection when night mode is active.

3 STRUCTURE AND INSTALLATION

3.1 PM535J Power Management System



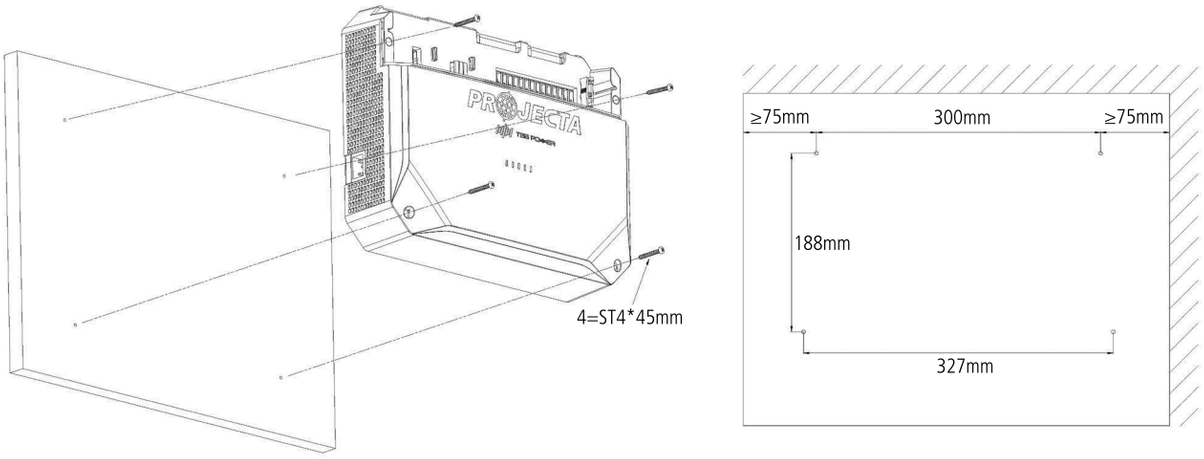
Nº	NAME	DESCRIPTION	TYPE
1	AC Input	AC input	IEC Socket
2	Solar+	Solar input Positive	Quick connector
3	Vehicle BATT+	Vehicle BATT input Positive	
4	House BATT+	House BATT input Positive	
5	Solar-	Solar input Negative	
6	House BATT –	House BATT –	
7	Vehicle BATT –	Vehicle BATT –	
8	Load1	Loads	Quick connector
9	Load2	Loads	
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	Remote Switch (refer to 6.2)	2 pin socket



Installation:

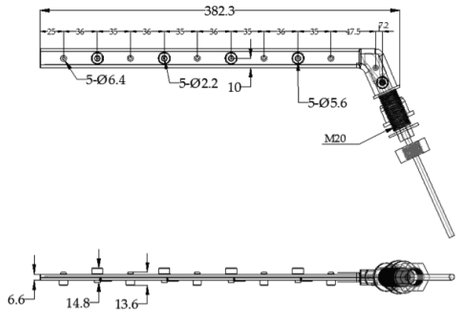
PM535J adopts fan-forced air cooling for heat dissipation. To ensure effective heat dissipation, it is necessary to ensure that there is enough installation space. The installation space needs a minimum distance of 50mm on either side of the unit to keep the vents clear. It is also recommended that the installation space has adequate ventilation to ensure effective airflow.

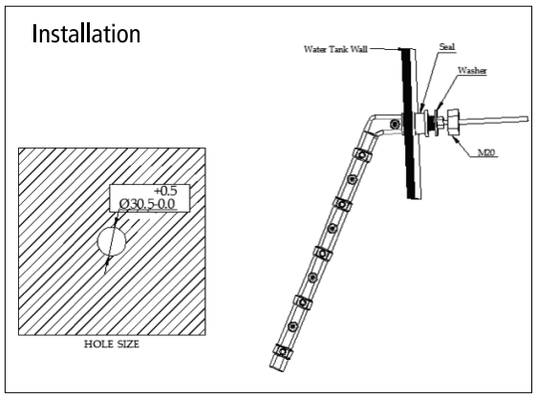
Recommended vent size: 144 x 54mm



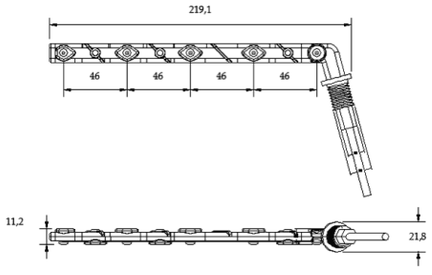
3.2 Water Tank Probe

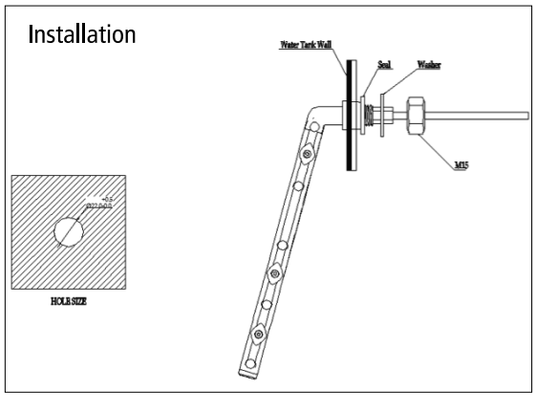
PMWS400 WATER TANK PROBE





PMWS200 WATER TANK PROBE



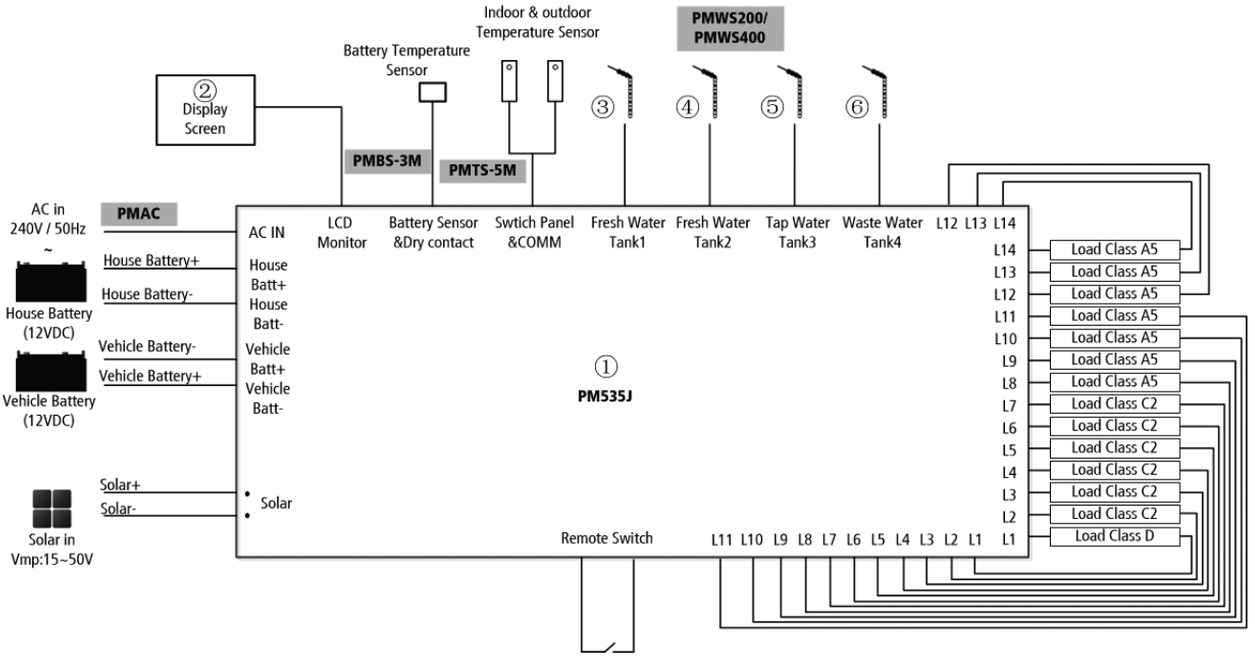


4 WIRING

4.1 System Components

CODE	NAME	MODEL/LENGTH	QTY	P/NO. ON DRAWING
1	Battery Management System	PM535J	1	1
2	Display Screen	PMD-BT4J-2 / PMD-BT7J-3	1	2
3	Water Tank Level Sensor	PMWS200 / PMWS400	4	3,4,5,6
4	AC Power Cable	1.5M	1	PMAC
5	Display Screen Cable	5M	1	PMLCDC-7IN-5
6	Battery Sensor Cable	3M	1	PMBS-3M
7	Indoor & Outdoor Temperature Sensor Cable	5M	1	PMTS-5M

4.2 System Schematic



4.3 Preparation

PM535J is designed with ease of installation in mind. Follow recommendations in the table below for minimum wiring sizes.

CURRENT	MINIMUM CABLE SIZE
0–5A	1.0mm² or 18 AWG
5–10A	2.0mm² or 14 AWG
10–15A	3.0mm² or 13 AWG
15–20A	4.0mm² or 11 AWG
20–25A	5.0mm² or 10 AWG
25–30A	6.0mm² or 9 AWG

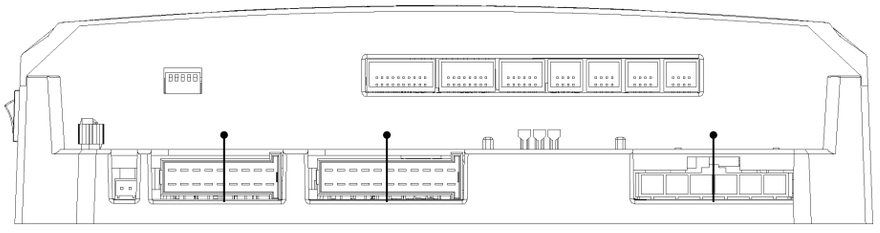
CURRENT	MINIMUM CABLE SIZE
30–35A	7.0mm² or 8 AWG
35–40A	8.0mm² or 8 AWG
40–45A	9.0mm² or 7 AWG
45–50A	10.0mm² or 7 AWG
50–60A	12.0mm² or 6 AWG

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.

4.4 Connection

PM535J 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 3 Type 2 Type 1

TYPE	MINIMAL CABLE SIZE	SUITABLE CABLE GAUGE
Type 1	MOLEX 42820-6224	0.5mm² – 8mm²
Type 2	TE 828801-7	0.5mm² – 3mm²
Type 3	TE 828801-6	0.5mm² – 3mm²

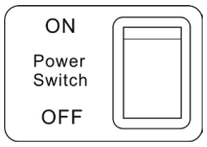
5 LED INDICATORS

5.1 PM535J 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 undervoltage
		2 Flash	House battery overvoltage
		3 Flash	Over temperature (Heat sink)
		4 Flash	Bulk charge time-out
		5 Flash	VSR abnormal
		8 Flash	Over temperature (Unit)
		9 Flash	Over temperature (PCB or Load circuit)

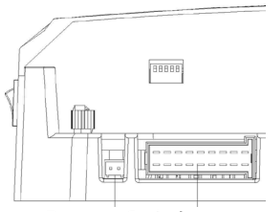
6 OPERATION

6.1 Manual Switch



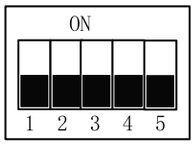
There is an ON/OFF switch on the side of the PM535J, which is used to disconnect the unit from the battery. If the unit is connected to AC mains and the switch is OFF it will also turn OFF the screen and charging. This switch must be "ON" for the Remote Switch to operate.

6.2 Remote Switch



The remote switch terminals are located next to the TYPE 3 connector on the left side of the unit. Refer to item 17 on the diagram on page 10. This can be wired to 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



There is 5 pin dip switch panel on the unit which is used for adjusting charging current and battery type.

Pin 1-2 Definition

		Lead Acid		Lithium
1	2	AC Charge	Solar Charge	AC/Solar Charge
ON	ON	10A	20A	35A/30A
ON	OFF	15A	30A	35A/30A
OFF	ON	20A	30A	35A/30A
OFF	OFF	35A	30A	35A

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 Operation of Awning and Slide-out.

To enable the awning and slide-out module, first disconnect the caravan from the towing vehicle, then turn on the load switch. This ensures that the safety inhibit feature, which prevents use while the vehicle is in motion, recognizes that the vehicle is no longer connected to the caravan and allows operation. If the caravan is not disconnected from the towing vehicle, the awning and slide-out outputs will remain inactive, even if the load switch is on.

6.5 Maintenance

BATTERY MONITOR MAINTENANCE

PM535J 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 every 2 weeks.

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 PM535J unit or "Float" shows on the monitor.

DAILY MAINTENANCE

- Confirm the Power switch is turned ON when you want to charge the battery with AC mains.
- 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 PM535J 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.

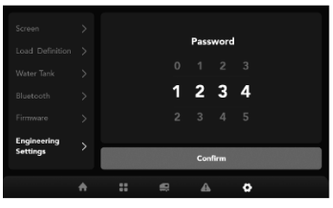
7 TROUBLE SHOOTING

7.1 LED Indicators on PM535J

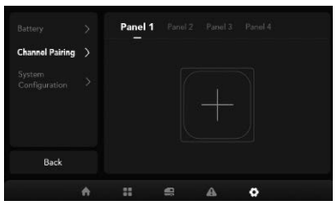
NAME	COLOUR	STATUS	DESCRIPTION
Mains	GREEN	Quick Flash	AC input abnormal
AUX		Slow Flash (once every second)	The input of the AUX is normal, but battery is charged by AC Mains
		Quick Flash (twice every second)	Vehicle Battery input error
Solar		Quick Flash (twice every second)	Solar input abnormal
Fuse	RED	Solid	Fuse blown - Need to check the device or cables and replace fuse
Fault		ON	Short circuit
		1 Flash	House battery undervoltage - Charge the battery
		2 Flash	House battery overvoltage - 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	VSR 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 WIRELESS PANEL PAIRING PROCESS

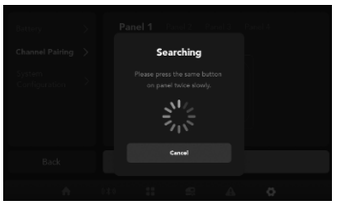
PM535J has built-in RF technology that can be used to support wireless panels. It simplifies the internal wiring of the caravan making it easier to maintain. Below is a quick guide to configure the wireless panel in the system.



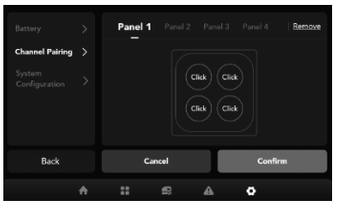
1 Find 'Engineering Settings' in the menu – the password is '1999'



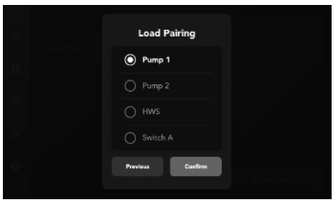
2 Click on the "+" icon



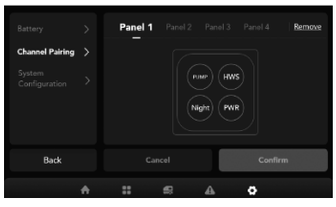
3 Click any button on the wireless panel twice, slowly.



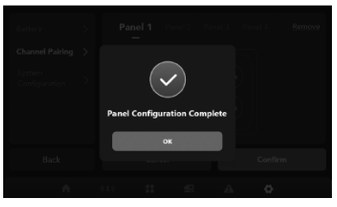
4 Click on the 'click' button to configure the function of the corresponding key



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'

9 SPECIFICATIONS

MODEL		PM535J	
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 Default Setting	13.7VDC	
	Charge current	30A	
	Total current of load and charging	30A	
	Maximum charging efficiency	96%	
	Temperature compensation Default Setting	-4mV/°C/cel	
	Voltage compensation	No	
Charger Mode	Charge algorithms	5 Stages	
	Battery type	AGM/GEL/LFP($LiFePO_4$)/WET	
	Start voltage	>2A	
	Bulk current	35A (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 Minimum battery capacity: Non-LFP 200Ah LFP 100Ah	
Power Supply Mode	Nominal output voltage	12.4VDC	
	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 ($LiFePO_4$)	11.2VDC (Default)
	Delay off time	60 sec	
	Reconnect voltage	Lead Acid	11.5VDC (Default)
		LFP ($LiFePO_4$)	12.2VDC (Default)

9 SPECIFICATIONS continued

MODEL		PM535J
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	14
	Rated current	15A
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 PM535J
	Ambient over temperature	Alarm
	Battery over voltage limits	Battery charger disconnected, Load disconnected
PHYSICAL SPECIFICATIONS		
Dimension	350mm*315mm*89mm	
Weight	3.3KG	
Enclosure	Metal & Plastic	
Battery Connector	Molex (42816-0612) (8mm²)	
Load Connector	TE 929504-7 (3mm²) TE 929504-6 (3mm²)	
Cooling	Forced cooling	
Protection category	IP20	
Approvals		
Electrical	AS/NZS 60335.2.29	
EMC	CISPR14	

10 ADD-ON ACCESSORIES

10.1 Projecta Accessory Range

The PM535J and PM635J support a range of additional Projecta accessories as listed below:
For details on how to connect accessories, refer to the connection diagram.

PMWSW4

4 POSITION WIRELESS SWITCH

Wireless switches make it easy to install additional switches if required. i.e. additional bedroom switch is easy as 2 screws for installation

PART No.	PMWSW4
Rated Volatge	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

10 ADD-ON ACCESSORIES continued

SC520/SC540

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	60 AMP
PART No.	**SC520**	**SC540**
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
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	
Cooling	Convection	

PMDCS30/PMDCS60

DC-DC 12V CHARGER

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

	30 AMP	60 AMP
PART No.	**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

10 ADD-ON ACCESSORIES continued

PMTPMS

TYRE PRESSURE MONITORING SYSTEM MODULE

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

PART No.	**PMTPMS** x 4 (one for each type)
PART No.	Reciever - **PMTPMS-R**
Input	6-24V
Working Current	30mA
Working Temperature	-40°C - 85°C
Humidity	<9S%
Recieving Frequency	433.910Mhz
Wired Communication	RS48S
Weight	1S0g

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

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°

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
Nomincal 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 ide to partner with high current drawing appliances such as 3000W inverters.

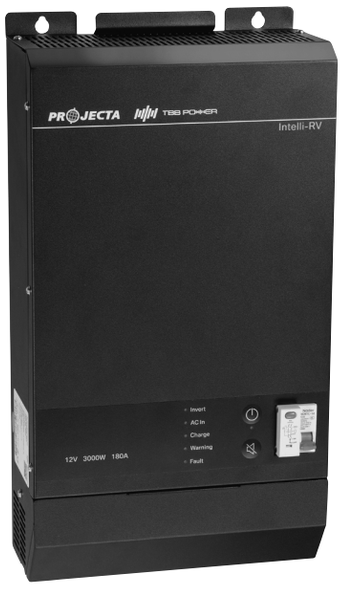
PART No.	**LB400-HD**
Nominal Voltage	12.8V
Nominal Capacity	400ah
Nomincal Energy	2560Wh
Charge Voltage	14.2V
Discharge Cut-Off Voltage	11.2V
Standard Charge Current	100 Amps
Maximum Charge Current	200 Amps
Maximum Discharge Current	200 Amps
Peak Discharge Current	300 Amps (10mins)
Operating Temperature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

10 ADD-ON ACCESSORIES continued

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.

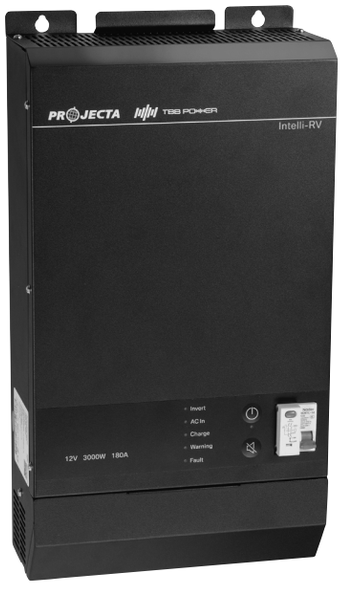


PART NO.	INVCHR2
240V Charging	
Charge Type	5 Stage Automatic
Input	240VAC, 50/60Hz, 32A(max)
Output	12V, 120A
Batteries Supported	GEL, AGM, Wet, Lithium
Temperature Compensation	Yes
INVERTER	
Input	12V (10.5~17V)
Output	220 / 230 / 240 VAC
Frequency	50/60 Hz
Output Power	2000W (4000W Peak)
Grid Boost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

INVCHR3

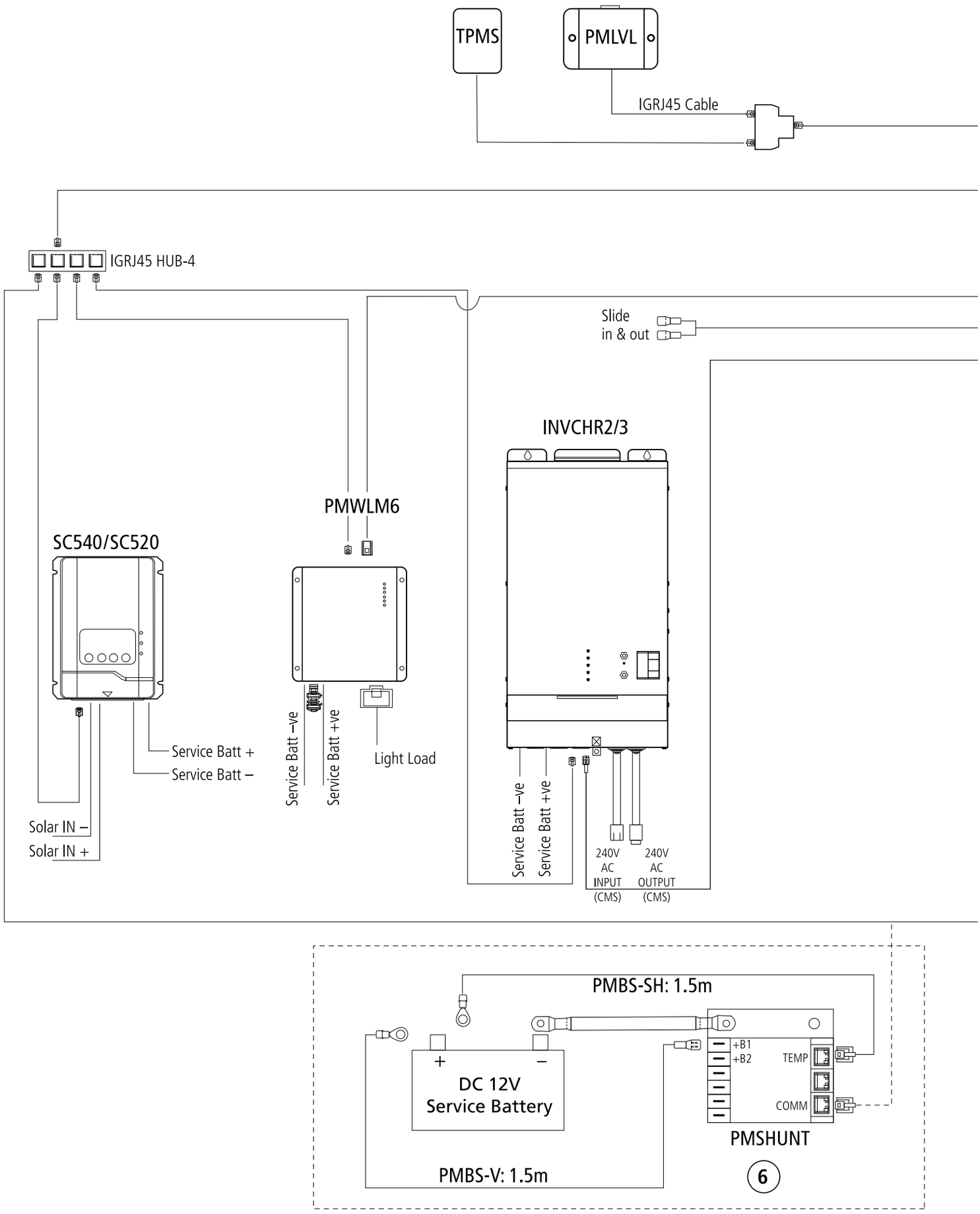
3000W 12V INVERTER/CHARGER

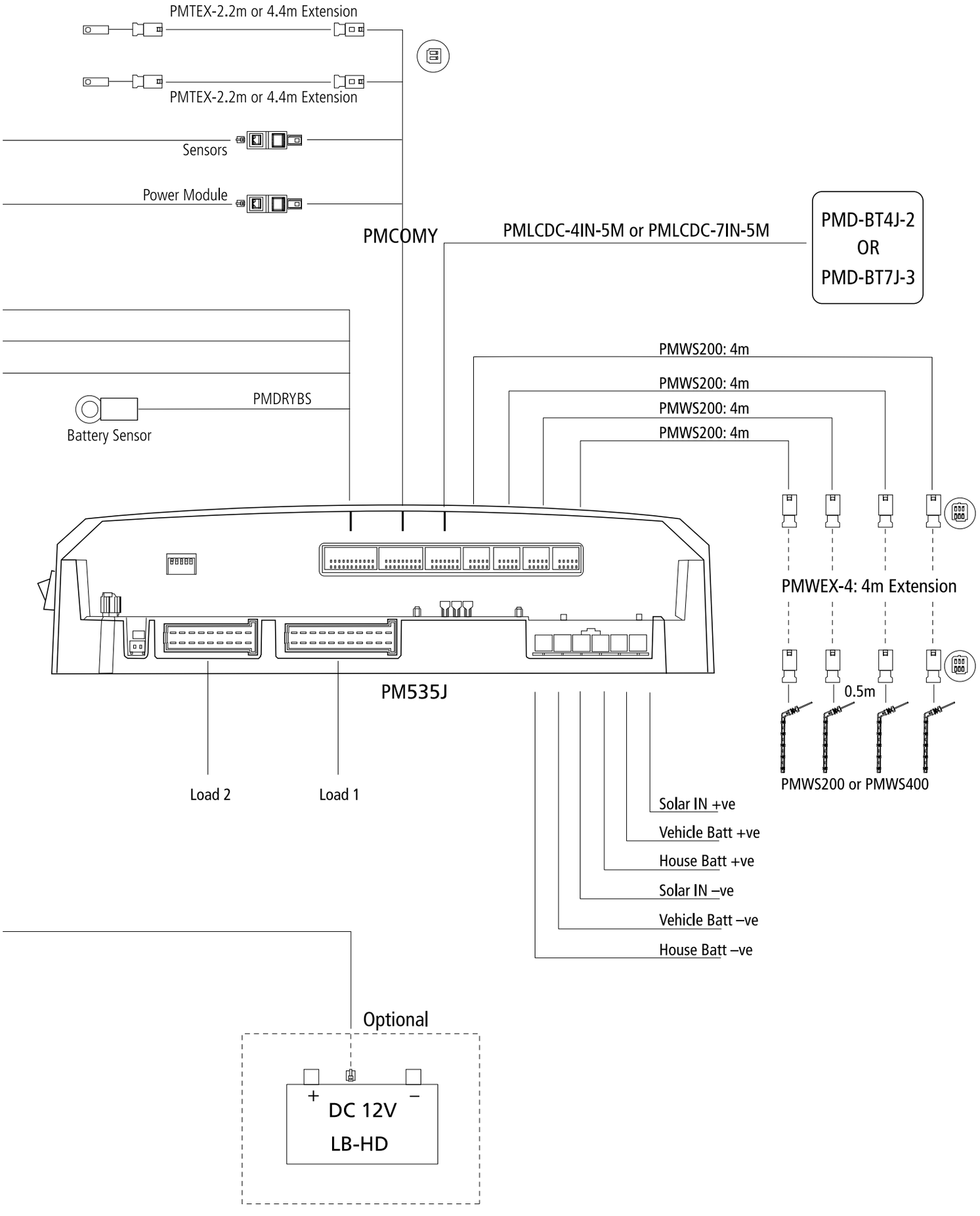
This 3000W Inverter/Charger is ideal for serious power hungry consumers who require lots of power for all their creature comforts on the road. An RCD (INVCHR3 only) is included to ensure maximum safety for the unit and operator.



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

10.2 PM535J Wiring Diagram with Add-on Accessories




PMTEX-2.2m or 4.4m Extension
PMTEX-2.2m or 4.4m Extension
Sensors
Power Module
PMCOMY
PMLCDC-4IN-5M or PMLCDC-7IN-5M
PMD-BT4J-2
OR
PMD-BT7J-3
PMDRYBS
Battery Sensor
PMWS200: 4m
PMWS200: 4m
PMWS200: 4m
PMWS200: 4m
PMWEX-4: 4m Extension
0.5m
PMWS200 or PMWS400
PM535J
Load 2
Load 1
Solar IN +ve
Vehicle Batt +ve
House Batt +ve
Solar IN –ve
Vehicle Batt –ve
House Batt –ve
Optional
+
DC 12V
LB-HD
–

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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