PROJECTA

INTELLI-RV

INSTRUCTION MANUAL

P/No. PM335C

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
- Connect the positive battery terminals before making any ground connections. The ground connection to the chassis should be made away from the battery and any fuel line. Only connect mains after the battery is connected.
- 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. Replace with a compatible earthed IEC cable immediately.
- 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 stored for 3 months or longer, it's advisable to disconnect all fuses from the battery. A full charge should be run every 3 months.

CONTENTS

1 Product Instructions

1.1 Overview

PM335C unit is designed for use in caravans or motor homes. It has the following functions integrated into the unit: battery charger, distribution blocks, MPPT solar charger controller, VSR, battery low voltage protection, water pump controller.

PM335C is designed for easy installation and has a user-friendly interface.

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

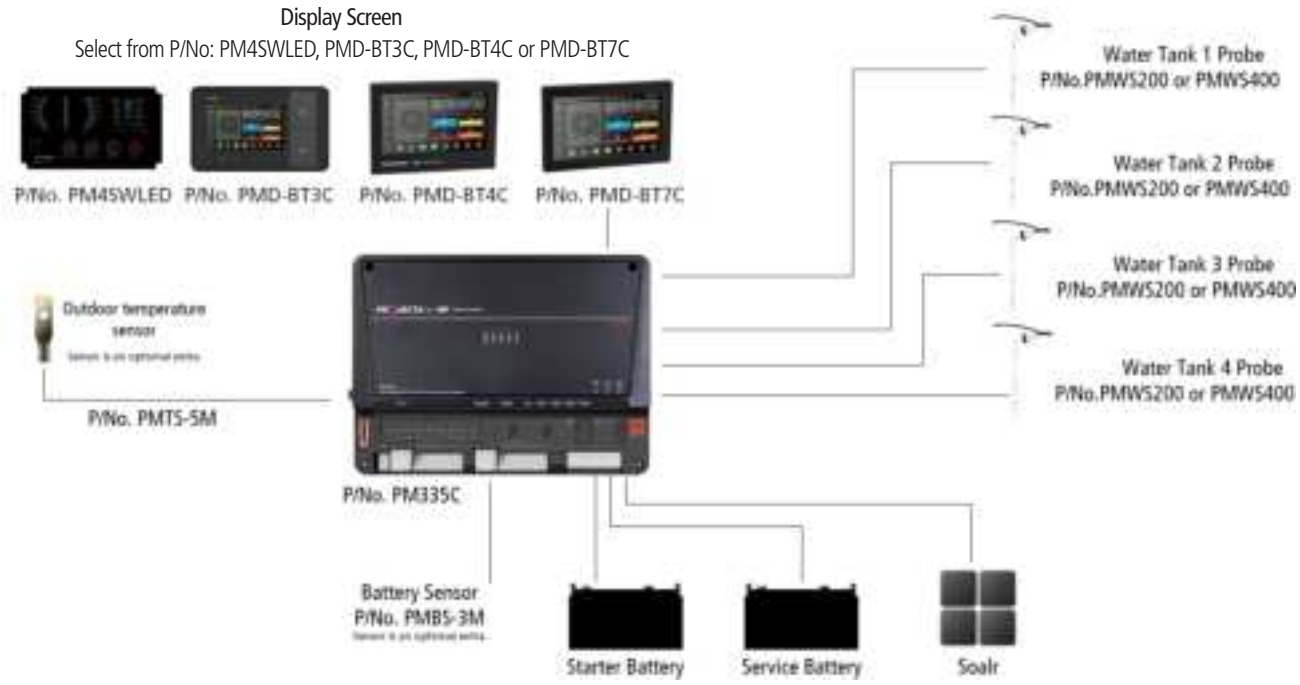


Figure 1 System Components

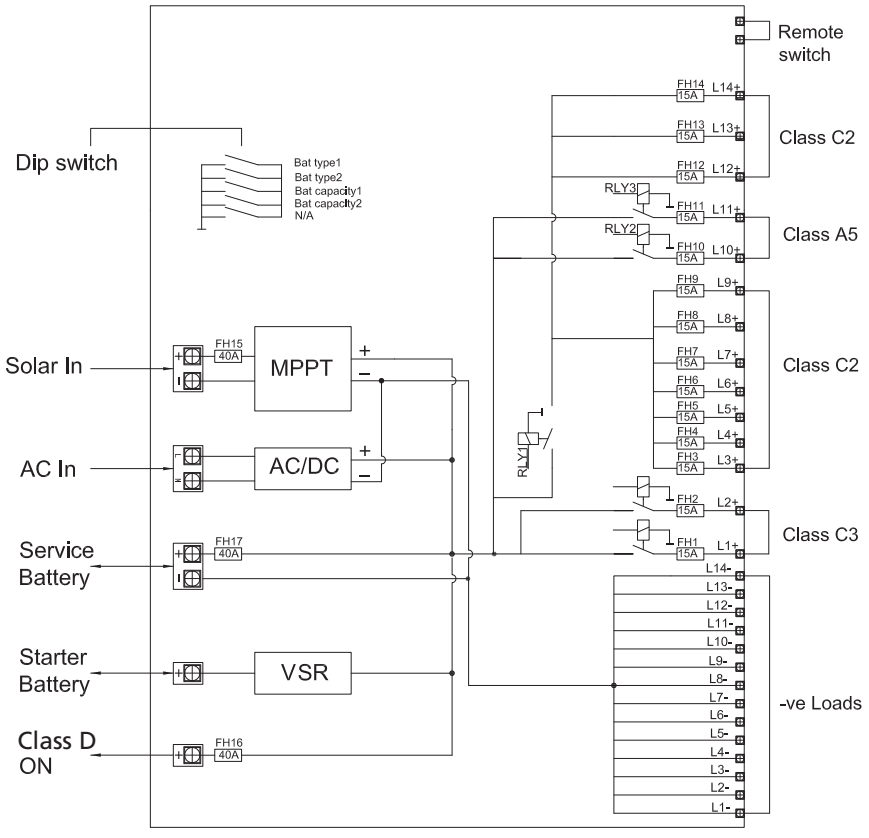
1.2 Features

PM335C has the following feature

- Smart battery charger 12V 30 Amp (35 Amp total supply for loads + charge)
  - Multistage adaptive charging algorithm
  - Active Power Factor Correction (PFC) charging
  - Temperature compensation charging
- Float charge for starter battery
- Solar charge controller (MPPT), 30A
- 15 built in fused outputs
- Built-in voltage sensing relay
  - for DC charge of up to 12V 60 Amps continuous with 80 Amp for up to 30 minutes
- 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 RF for wireless switches
- Water tank probe connectors and input screw terminals
- RS485 & 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



1.4 Water Tank Probe

PM335C 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

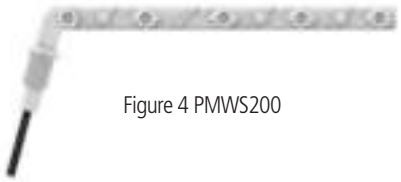


Figure 4 PMWS200

PMWS400:

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

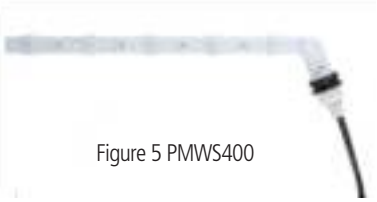


Figure 5 PMWS400

2 Key Feature and Functions

2.1 Multiple Inputs

PM335C 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.

Table 3 Source priority

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

2.2 Battery Charging of House/Service Battery

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

With multiple charging stages (Soft-start, bulk, absorption, float & recycle), the PM335C is designed to fully charge the service battery quickly. PM335C 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.

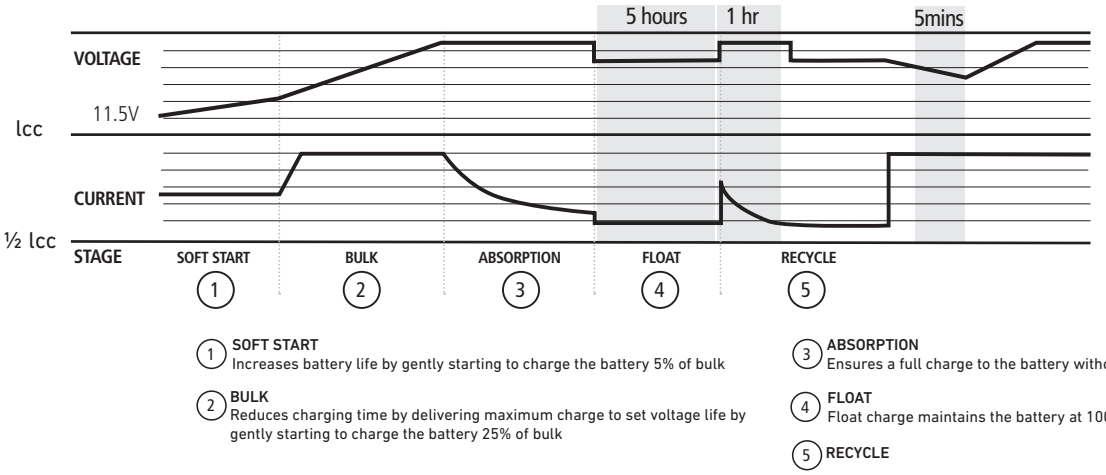


Figure 6
Charging Algorithm

Icc is the rated current.

1. **SOFT START**
   Increases battery life by gently starting to charge the battery 5% of bulk
2. **BULK**
   Reduces charging time by delivering maximum charge to set voltage life by gently starting to charge the battery 25% of bulk
3. **ABSORPTION**
   Ensures a full charge to the battery without overcharging
4. **FLOAT**
   Float charge maintains the battery at 100% charge
5. **RECYCLE**

Battery Temperature Sensor

The optional battery temperature sensor (P/N: PMBS-3m) can be used with the PM335C to measure the temperature of the battery, allowing the PM335C to to adjust, in real time, the charge to the battery, at a compensation rate of -4mv±10%/°c/cell. In installations where the BTS is not present, the PM335C 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 assures 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 PM335C can be configured to charge Lithium batteries. With Lithium batteries, the max charging current will automatically be set at 30% of battery capacity (Imax=0.3C)

2.3 Vehicle Battery Charger

Along with a powerful charger for the service battery, PM335C 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 starter battery is less than 12.4V, the PM335C starts charging after a 30 minute delay, and stops charging when the voltage reaches 12.8V

2.4 Power Supply Mode

If no battery is attached to PM335C Unit, it will automatically work as a power supply with a 12.8VDC output.

2.5 MPPT Solar Charger Controller

PM335C has a built-in MPPT charger for the service battery with:

- Max input voltage up to 50VDC
- Max charging current 30A
- Max supply current 30A

* PM335C may cause LiFePO4 BMS over-voltage protecting to trigger when charging through Solar. In this case, disconnect the solar charge fuse and discharge the battery.

2.6 Voltage charging relay (commonly known as VSR)

PM335C has a built-in voltage charging relay (also known as a VSR), which offers a convenient source to charge the service battery via the alternator whilst the engine is running or via an external DC-DC charger.

LEAD ACID BATTERY – When the starter battery reaches 13.4VDC with threshold time delay, the VSR will charge the service battery from the alternator. The VSR will continue the charging until the starter battery voltage drops under 12.8VDC.

LiFePO4 LITHIUM BATTERY – When the starter battery reaches 14.0VDC with threshold time delay, the VSR will charge the service battery from the alternator. The VSR will continue charging until the starter battery charging current less than 2A charge to the service battery with threshold time delay.

NOTE: The PM335C starter battery input does not provide 5-stage charging.

It takes whatever power is available from the alternator to charge.

It simply takes whatever power and charging is available from the alternator

NOTE: PM335C If your vehicle is fitted with a smart charging system (Variable Voltage or Temperature Compensating), the VSR charge system may not function correctly and the Projecta PMDCS range of DC-DC chargers are recommended.

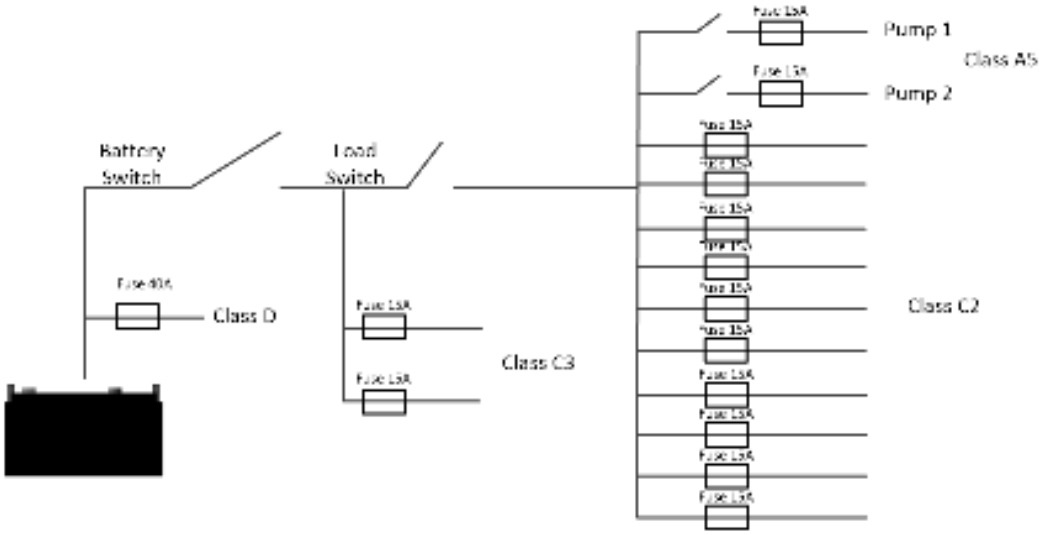
Please consult your local dealer or installer for further information.

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

PM235C/335C Load Output



2.8 Battery Low voltage protection (BLVP or commonly known as an LVD)

PM335C master power unit 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. This can be manually turned On/Off via the LOAD button on the LCD display.

NOTE: Class C3 will remain active as long as the battery switch is left on and Class D loads remain active all the time.

2.9 Battery switch

The PM335C unit 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. PM335C unit 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 energy resource for the load except the battery.

2.10 Precise Battery Measurement

PM335C unit 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, even small currents 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 the battery instead of PM335C Power Management System, the measurement will not be accurate.

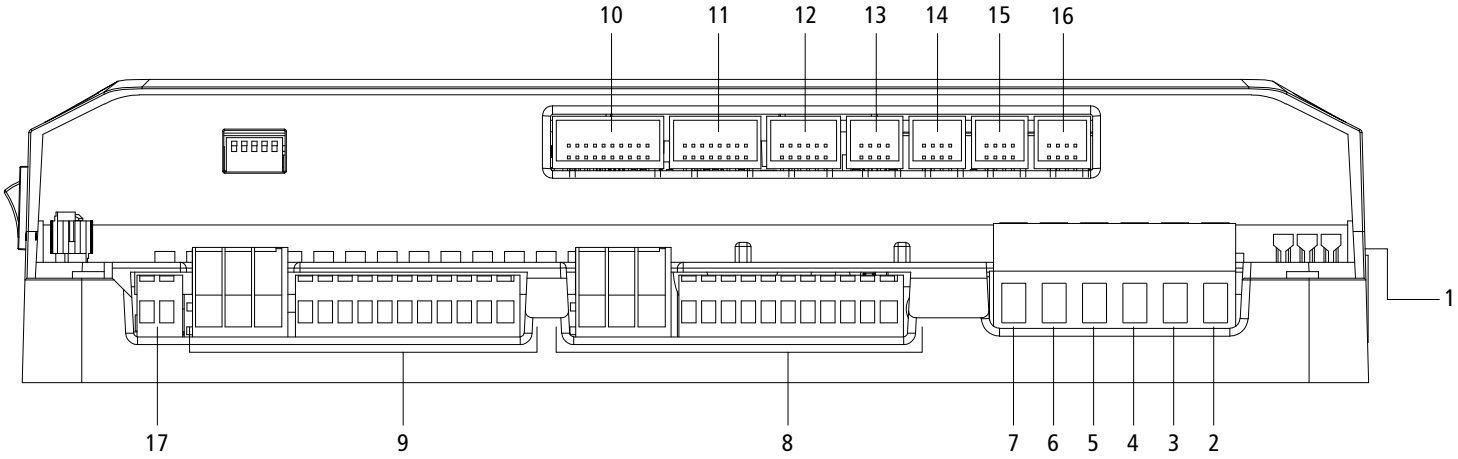
NOTE: P/No. PMSHUNT will be required for heavy loads designed to be connected direct to battery to ensure SOC% accuracy.

2.11 Night Mode

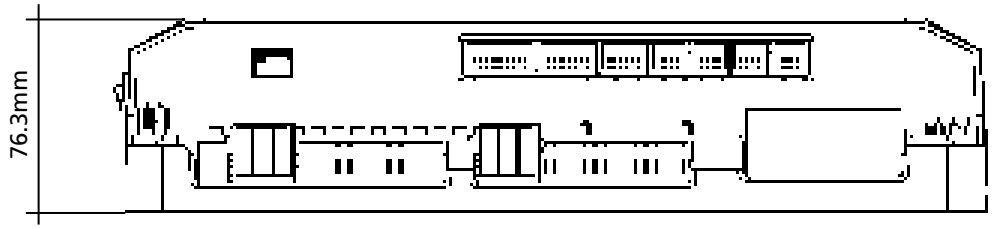
In Night Mode, the backlight of the monitor will turn off and the cooling fans will operate at a decreased speed. Charge current will be reduced to half rated selection when night mode is active.

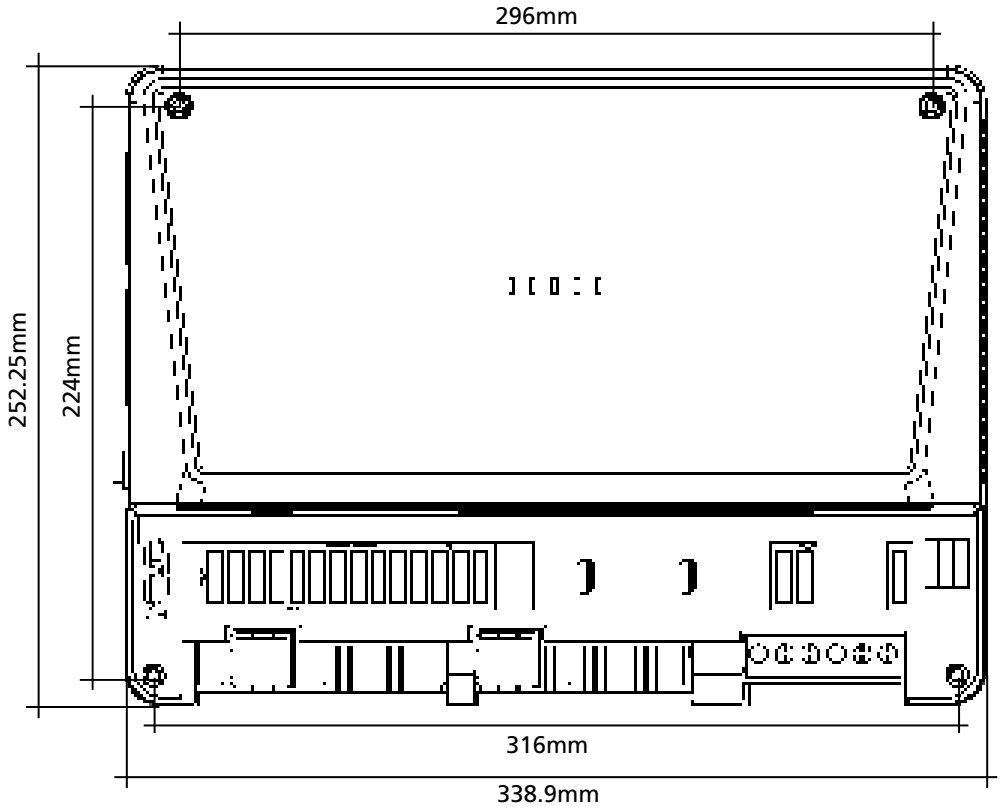
3 STRUCTURE AND INSTALLATION

3.1 PM335C Power Management System



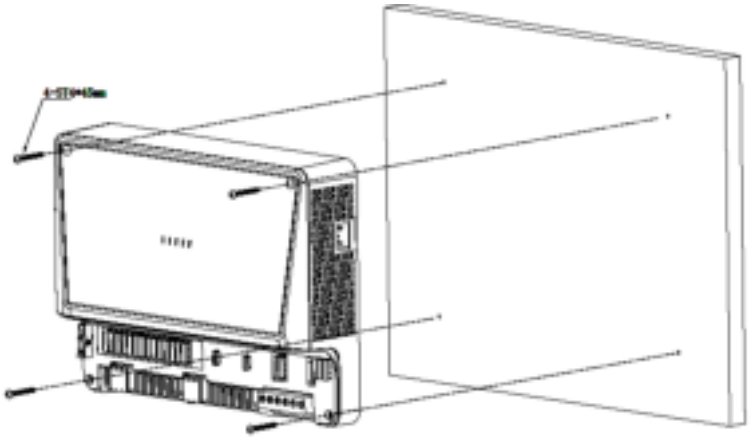
Nº	NAME	DESCRIPTION	TYPE
1	AC Input	AC input	IEC Socket
2	Solar+	Solar input Positive	Screw terminal
3	SBAT+	Starter BATT input Positive	
4	BAT+	Service BATT input Positive	
5	Always ON+	40A Always ON output Positive	
6	Solar-	Solar input Negative	
7	BAT-	Service BATT input Negative	
8	Load-	Load negative	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

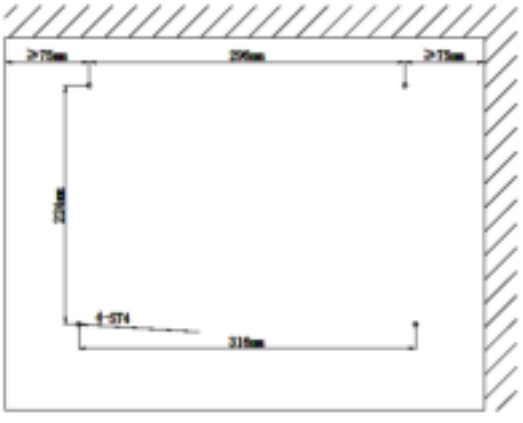




Installation:

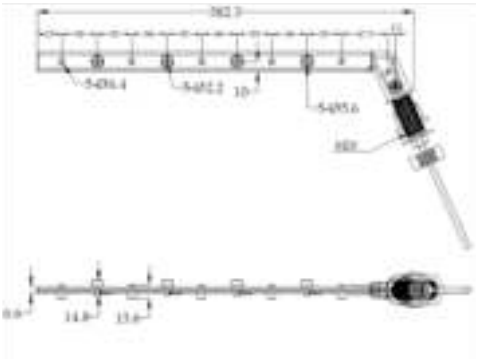
PM335C adopts fan-forced air cooling for heat dissipation. In order to ensure good heat dissipation, it is necessary to ensure that there is enough installation space. The installation space needs to keep a minimum distance of 50mm on the left and right of the unit to keep the vents clear. It is also recommended that the installation space has adequate ventilation to ensure effective airflow.
Recommended vent size: 144 x 54mm

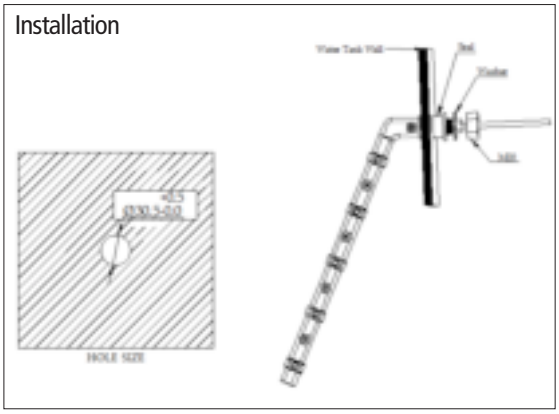




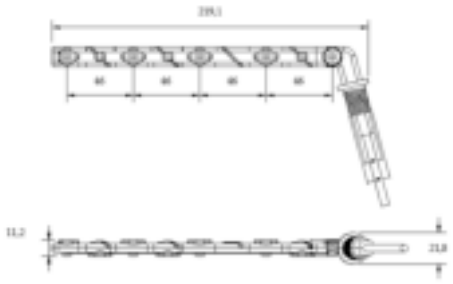
3.2 Water Tank Probe

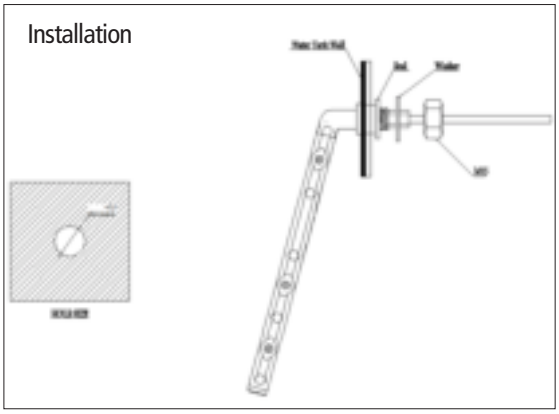
PMWS400 WATER TANK PROBE





PMWS200 WATER TANK PROBE



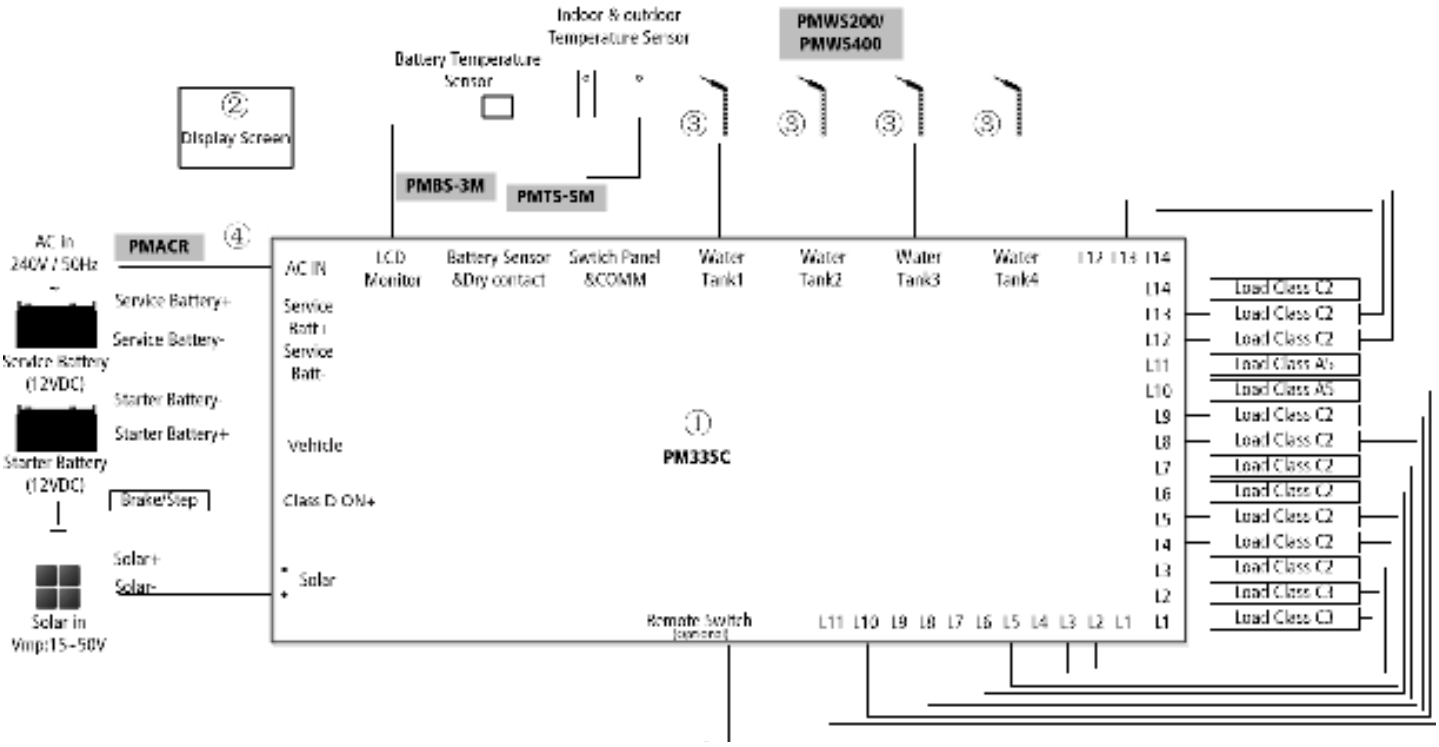


4 Wiring

4.1 System Components

CODE	NAME	MODEL/LENGTH	QTY	P/NO. ON DRAWING
1	Battery Management System	PM335C	1	1
2	Display Screen	PM4SWLED/PMD-BT3C/PMD-BT4C/ PMD-BT7C	1	2
3	Water Tank Level Sensor	PMWS200/PMWS400	4	3
4	AC Power Cable	0.3M	1	PMACR
5	Display Screen Cable	5M/10M	1	Refer To Display Manual and diagram on page 22-25
6	Battery Sensor Cable (Optional)	3M/10M	1	PMBS-3M/PMBS-10M

4.2 System Schematic



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

4.3 Preparation

PM335C system is designed with ease of installation in mind. To complete the easy installation, a screwdriver and DC cables are required. Follow Table 5 recommendation for minimum wiring sizes.

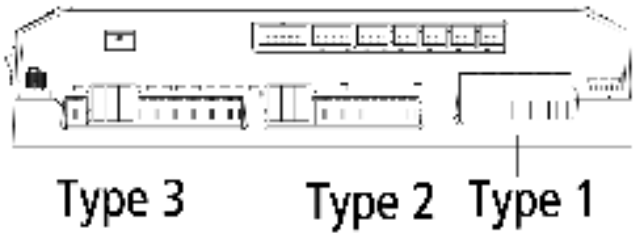
CURRENT	MINIMUM CABLE SIZE
0–5A	1.0mm^2 or 18 AWG
5–10A	2.0mm^2 or 14 AWG
10–15A	3.0mm^2 or 13 AWG
15–20A	4.0mm^2 or 11 AWG
20–25A	5.0mm^2 or 10 AWG
25–30A	6.0mm^2 or 9 AWG

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.

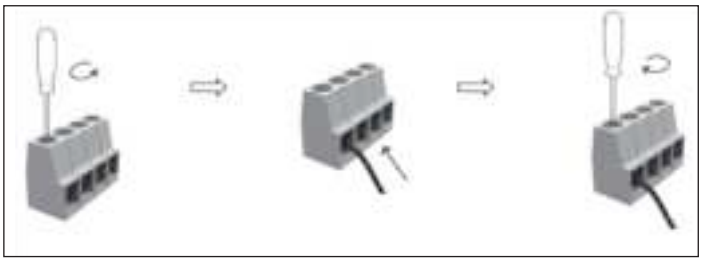
4.4 Connection

PM335C is designed with both spring and screw terminals. Please refer to following illustration below.
Each type of terminal is designed to fit a different range of cables.

TYPE	MINIMAL CABLE SIZE	SUITABLE CABLE GAUGE
Type 1	ERTB10-10.16	0.5mm^2 – 10mm^2
Type 2	Wago2604-111	0.2mm^2 – 4mm^2
Type 3	Wago2606-1103	0.25mm^2 – 6mm^2



TYPE 1 (SCREW TERMINALS)



TYPE 2 & 3 (SPRING TERMINALS)

5 Wiring

5.1 PM335C Master unit

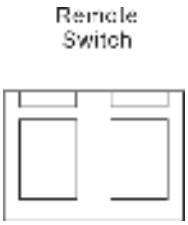
No.	LED	COLOUR	STATUS	DESCRIPTION
1	Mains	GREEN	ON	AC input OK
			OFF	AC disconnected
			Quick flashing	AC input abnormal
2	AUX		ON	Starter battery charging the battery
			Slow flashing (once every second)	The input of the Aux is normal but battery is charged by AC Mains
			Quick flashing (twice every second)	Starter Battery input error
			OFF	Starter Battery disconnected
3	Solar		ON	Solar charging the battery
			Slow Flash (once every second)	The input voltage of the PV is normal but Battery is charged by AC Mains
			Quick flashing (twice every second)	Solar input abnormal
			OFF	Solar disconnected
4	CHG		ON	Battery charging - Float Stage
			Slow Flash (once every second)	Battery charging - BULK, ABS Stage or VSR
			Quick flashing (twice every second)	Battery discharging
			OFF	Battery disconnected
5	FAULT	RED	ON	Short circuit
			1 flash	Service battery undervoltage
			2 flash	Service 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

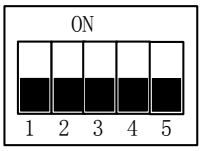
There is an ON/OFF switch on the side of the machine, which is used to control the whole machine to switch on/off when it is powered by battery alone, and to control the whole machine to enter into sleep mode when it is powered by mains power. This switch must be be "ON" in order for the Remote Switch to operate.

6.2 Remote Switch (Optional)



The remote switch terminals are located next to the positive 14 terminal. 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" in order 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 on the unit which is used for adjusting charging current and battery type. At this time, switch 5 is not used and should be in the "OFF" position

Note: These do not not to be adjusted if a digital screen is used

Pin 1-2 Definition

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

PM335C 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 input instead of solar every 2 weeks.

2: Fully charge the battery from mains at least once every 3 months, even in storage, unless required to earlier.

•Charge the battery with AC grid until the "CHG" LED on PM335C 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 grid
- Check the nominal battery is 12VDC
- Ensure the Space (50mm each side) beside the PM335C unit for the appropriate ventilation
- When replacing and existing battery, fully charge via AC grid to Float Stage to ensure SOC% is accurately calibrated.

Only the energy consumption of the loads connected on the PM335C is measured and calculated in the data on the Monitor. Unless a shunt is fitted. Projecta p/n PMSHUNT

For storage it is recommended to switch off the 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 SPECIFICATION

MODEL		PM335C	
ELECTRICAL SPECIFICATIONS			
Grid	Nominal input voltage (V)	240V ±10%VAC 50/60Hz	
	Power factor	0.95	
	Input current at full load	2.5A	
Battery	Starter Battery	12VDC	
	Starter battery voltage range	12.8-16VDC	
	Service battery	12VDC	
	Service battery voltage range	10.5-16VDC	
PV	Charger type	MPPT	
	Open circuit voltage	50VDC	
	Max supply current	30A	
	Max charging current	30A	
Charging Relay	Relay specification	12VDC@60a continuous DC charge, peak current 12VDC@80a (Peak for maximum of 30 minutes)	
	Connect voltage	Lead Acid: 13.4VDC, LiFePO4: 14VDC	
	Connect delay time	10 sec	
	Disconnect voltage	Lead Acid: 12.8V, LiFePO4: < 2A	
	Disconnect delay time	60 sec	
	High voltage limit	16VDC	
Charger Mode	Charge algorithms	5 Stages	
	Start voltage	>2A	
	Bulk current	30A (Max)	
	Absorption voltage	14.4/14.1/14.2/14.7VDC. Ensures a full charge to the battery without overcharging	
	Float voltage	13.5/13.5/13.5/13.7VDC. Float charge maintains the battery at 100% charge	
	Battery type	AGM/GEL/LFP(LiFePO4)/WET	
	Maximum battery capacity	1200Ah	
	Maximum battery quantity	Dependent on battery capacity	
Power Supply Mode	Nominal output voltage	14.4VDC	
	Rated output current	35A (Continuous)	
Efficiency		88%	
Battery Disconnect	Disconnect voltage	Lead Acid	10.5VDC (Default)
		LFP (LiFePO4)	11.2VDC (Default)
	Delay off time	60 sec	
	Reconnect voltage	Lead Acid	11.5VDC (Default)
		LFP (LiFePO4)	12.2VDC (Default)

MODEL		PM335C
ELECTRICAL SPECIFICATIONS		
Current draw on battery	Only Battery and Load switch ON	550mA
	Only Battery and Load switch OFF	300mA
	Only Battery, Voltage < LVD	180mA
	Power Switch OFF	< 1mA
Fused outputs	Numbers	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 PM335C
	Ambient over temperature	Alarm
	Battery over voltage limits	Battery charger disconnected, Load disconnected
PHYSICAL SPECIFICATIONS		
Dimension	339mm*252mm*76mm	
Weight	3.3KG	
Enclosure	Metal & Plastic	
Battery Connector	M4 Screw (16mm^2)	
Load Connector	Wago2604-111 (4mm^2) Wago2604-1103 (6mm^2)	
Cooling	Forced cooling	
Protection category	IP20	
Approvals		
Electrical	AS/NZS 60335.2.29	
EMC	CISPR14	

8 ADD-ON ACCESSORIES

8.1 Projecta Accessory Range

The PM235C, PM335C and PM435C support a range of additional Projecta accessories as listed below:
For details on how to connect these, refer to the connection diagram (Figure 25, page 22-25).

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 Volatge	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 DCDC 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

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.

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

Calibration

To calibrate the level sensor, the RV needs to be level in 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.

LB200-HD

12V HIGH DISCHARGE 200AH LITHIUM BATTERY

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

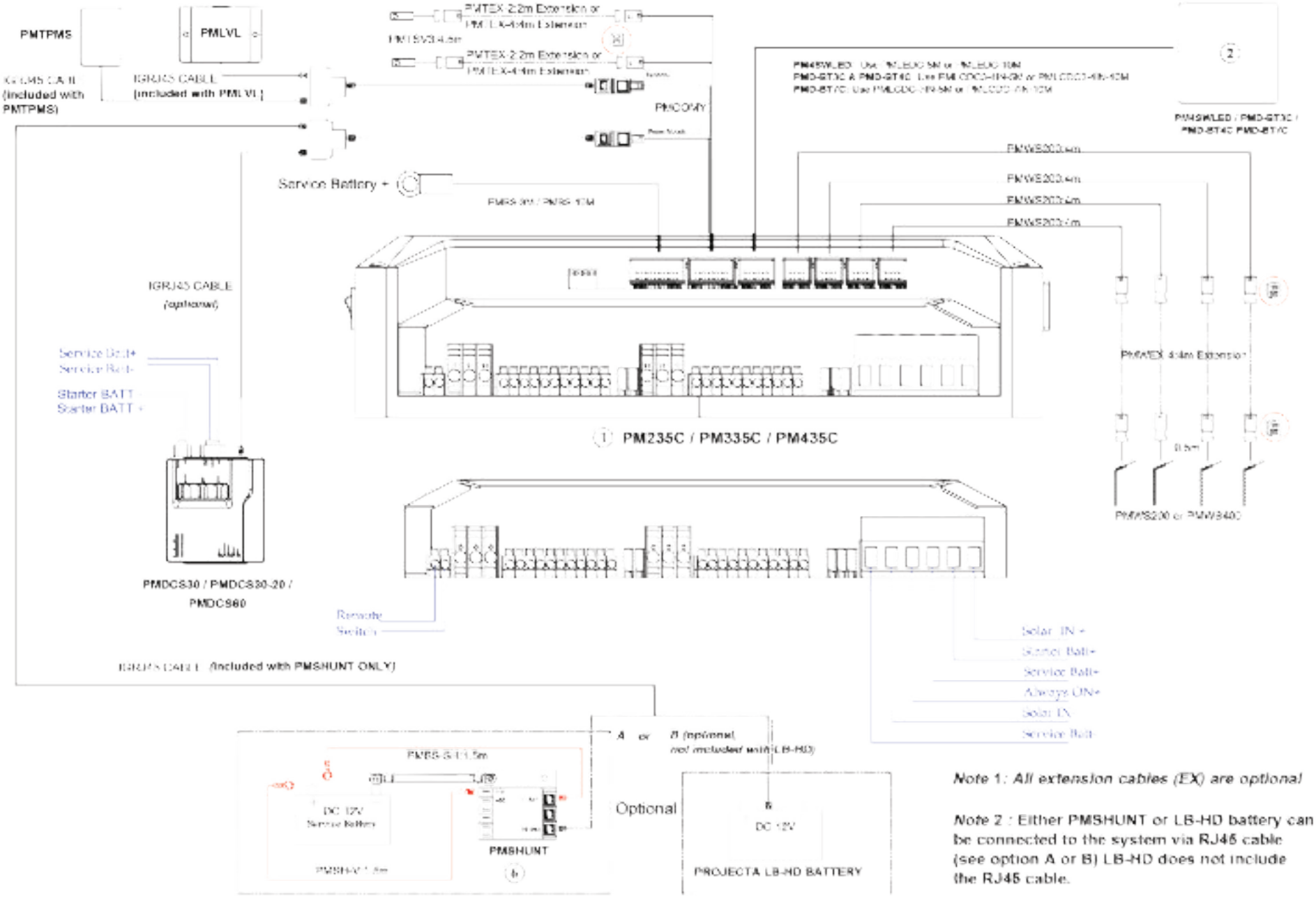
PART No.	**LB200-HD**
Nominal Voltage	12.8V
Nominal Capacity	200ah
Nomincal Energy	2560Wh
Charge Voltage	14.2V
Discharge Cut-Off Voltage	11.2V
Standard Charge Current	100 Amps
Maximum Charge Current	200 Amps
Maximum Discharge Current	200 Amps
Peak Discharge Current	300 Amps (10mins)
Operating Temperature	-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 ideal to partner with high current drawing appliances such as 3000W inverters.

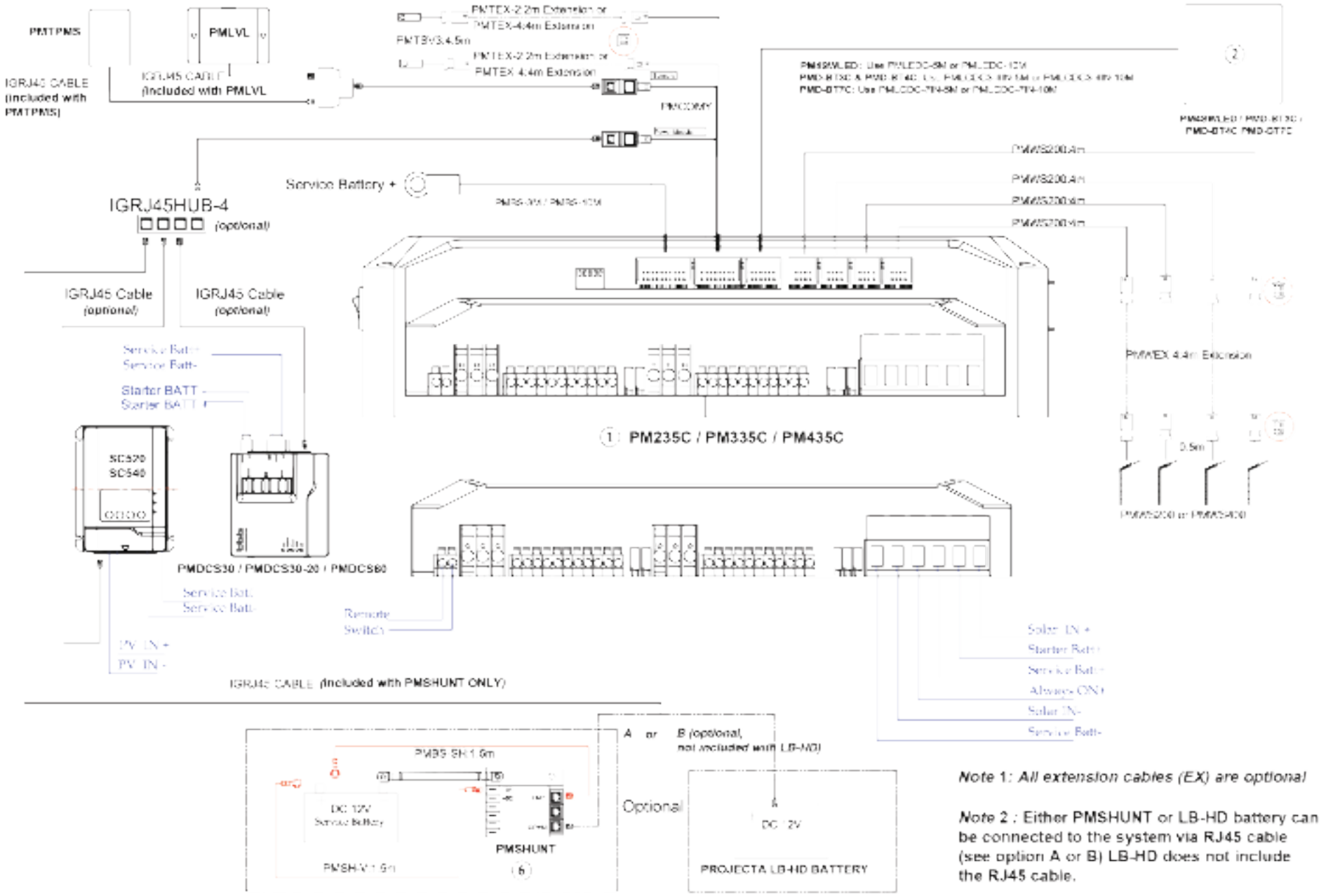
PART No.	**LB400-HD**
Nominal Voltage	12.8V
Nominal Capacity	400ah
Nomincal Energy	2560Wh
Charge Voltage	14.2V
Discharge Cut-Off Voltage	11.2V
Standard Charge Current	100 Amps
Maximum Charge Current	200 Amps
Maximum Discharge Current	200 Amps
Peak Discharge Current	300 Amps (10mins)
Operating Temperature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



Note 1: All extension cables (EX) are optional

Note 2 : Either PMSHUNT or LB-HD battery can be connected to the system via RJ45 cable (see option A or B) LB-HD does not include the RJ45 cable.

PROJECTA ACCESSORIES CONNECTION DIAGRAM (OPTION 1)



Note 1: All extension cables (EX) are optional

Note 2 : Either PMSHUNT or LB-HD battery can be connected to the system via RJ45 cable (see option A or B) LB-HD does not include the RJ45 cable.

PROJECTA ACCESSORIES CONNECTION DIAGRAM (OPTION 2)

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 one (1) year (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 isdetermined 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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