

OWNER'S MANUAL

J35 **A/B**

INCLUDING

JCONTROL



CONTENTS

Safety Precautions	3
About the J35 Series Power Supply	4
Description of Parts	5
Servicing, Features and Maintenance	10
Battery	13
System Status Indicator (J35)	19
Specifications	20
J35 After-Sales Service	21
JControl	23
Safety Precautions	25
About JControl	25
Glossary	26
Name and Function of Parts	26
Operation	28
Set-up Mode	32
New Battery Installation	37
Connectors	37
Installing JControl	37
JControl to J35 Wiring	39
Servicing	40
Specifications	40
After-Sales Service	40
Appendix 1: Advanced Menu	41
Warranty Terms & Conditions	42

Manual Part #031354
Rev 1A

The BMPRO **J35** is proudly Australian-made in Melbourne, Australia. Designed by Setec, one of Australia's leading power solutions experts. They represent a high quality product that will provide years of service.

Copyright © Setec 2017

Disclaimer

Setec accepts no liability for any loss or damage, which may occur as a result of improper or unsafe use of its products. Warranty is only valid if the unit has not been modified or misused by the customer.

SAFETY PRECAUTIONS

Please read the Safety Precautions carefully before using the **J35** power supply. Be sure to observe all precautions without fail.



WARNING

Failure to observe these instructions properly may result in personal injury or loss of life.

Ensure that there is always good ventilation for the battery and the **J35** power supply.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have given supervision or instruction concerning the use of appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance should not be made by children without supervision.

Batteries are electrically alive at all times and must be treated with extreme caution. They can supply high short circuit currents, even if they appear damaged.

Dropping or touching of metal objects onto the battery cell may cause short circuits.

Remove any personal metal adornment such as a chain, watch or ring, which could cause short circuits and personal injury



CAUTION

Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

Apart from correct installation, correct usage is a critical factor in ensuring the safe operation of the power supply. If every consideration of these instructions has been satisfied the power supply will be safe to operate.

Ensure that cable connections to batteries are always in the correct polarity and are protected against accidental short circuit.

Ensure that the shrouding supplied with the battery is always fitted to the terminals.

Before servicing a battery, consult caravan dealer or a qualified personnel.

Do not attempt to charge non-rechargeable batteries. Charging a non-rechargeable battery may result in the battery catching fire or possible explosion.



CAUTION

Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

Do not allow water or other liquids to enter the installation area.

ABOUT THE J35 SERIES POWER SUPPLY

J35 is a smart charger with a distribution system which has been designed for use in recreational vehicles. The **J35** can provide power from AC mains, Auxiliary and in the case of **J35-B** also from a solar input. The **J35** is also a battery management system equipped to keep a battery healthy for a long time.

This manual describes the **J35-A** and **J35-B** variants:

	J35 A	J35 B
Total current	20A*	35A*
Maximum charging current	15A	15A
Number of outputs	7	14
Data connection	✓	✓
Aux Input	✓	✓
Solar	x	✓

*The total current is shared between the output loads and the battery charging current.

All the necessary protection and operating features for the load and battery, i.e. thermal protection, over-current, over-voltage, multi-stage charging, low-voltage disconnect etc., are provided. **J35** uses electronic fuses to protect the loads. They are internally located and are not serviceable.

Refer to *Description of Parts* for more details.

DESCRIPTION OF PARTS

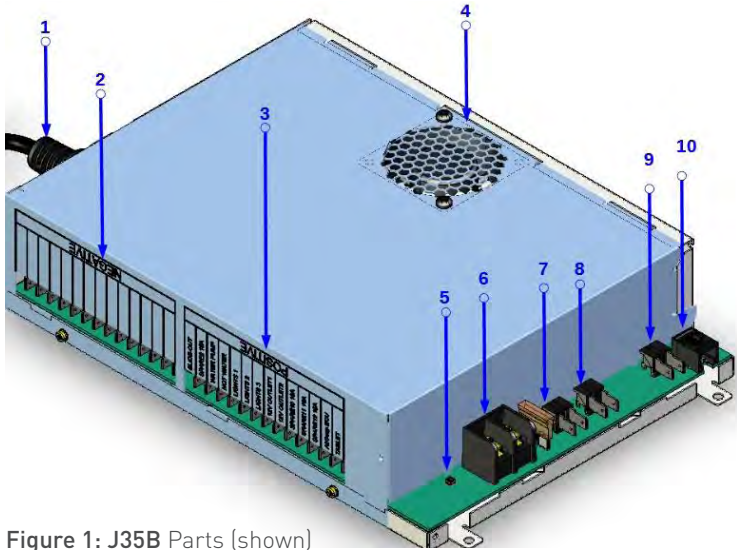


Figure 1: J35B Parts (shown)

- 1. **Mains Cable** (permanently connected)
240 VAC main input power for powering loads and/or charging the battery
- 2. **Load Terminal Block, Common Negative Connection**
Used for connecting the negative wire of the 12V loads
- 3. **Load Terminal Block, Positive Connection**
12V Load Outputs (Output labels show each current rating)

J35A

- 1. Lights 15A
- 2. Lights 15A
- 3. Pump 10A
- 4. HWS 10A
- 5. Stereo 10A
- 6. Spare 10A
- 7. Spare 10A

J35B

- | | | | |
|-----------------|-----|-----------------|-----|
| 1. Slide-out | 15A | 9. 12V Outlet 2 | 10A |
| 2. Spare 2 | 15A | 10. Spare 10 | 10A |
| 3. Water Pump | 10A | 11. Spare 11 | 10A |
| 4. Hot Water | 10A | 12. Spare 12 | 10A |
| 5. Lights 1 | 10A | 13. AirSusp ECU | 10A |
| 6. Lights 2 | 10A | 14. Tablet | 5A |
| 7. Lights 3 | 10A | | |
| 8. 12V Outlet 1 | 10A | | |

4. **Fan**
Fan to cool down internal temperature of **J35** when required.
5. **LED Indicator**
The LED is a status indicator. Refer to item *LED Output Status Indicator* for more details.
6. **BATT+ and BATT-**
Connection point for battery positive and negative terminal.
7. **SOLAR INPUT (J35B only)**
Connection point for external solar panel positive and negative wire.
8. **AUX INPUT (Auxiliary)**
Connection point for external DC input positive and negative wire.
9. **LOAD ISOLATION SWITCH**
Terminal block for connecting an optional remote switch. This switch is used to simultaneously disconnect the loads from all power.
10. **CAN Bus Communication**
CAN Bus Communication connection point between **J35** and the **JControl**

MAINS CABLE

WARNING

If the supply cord is damaged, it must not be replaced and the appliance should be scrapped.

This is pre-cabled and fitted with a mains plug. Ensure that the AC Mains source always has the earth terminal.

COMMON NEGATIVE CONNECTIONS

All load negative returns are connected directly to the **J35** negative terminals. All are terminated by using quick connect (QC). Dimension of the QC is specified in *Figure 2*.

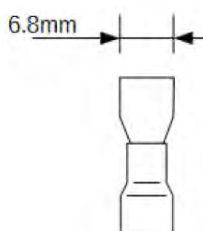


Figure 2: Quick Connect (QC) Dimension

12V LOAD OUTPUTS

Each load had been connected to a specific terminal. Load outputs are labelled accordingly. *Figure 1* provides the details of output labels and current limit of each output.

J35-B “SLIDE-OUT”

The Slide-Out output is different compared to the other outputs. Unlike the others, the Slide-Out output is always OFF whenever the auxiliary voltage is present, regardless if AC mains is ON or OFF. This is a safety mechanism of the **J35**. To prevent from accidentally engaging the Slide-Out while caravan is in transit, **J35** effectively inhibits the Slide-Out to engage if auxiliary input is ON. To operate the Slide-Out, turn OFF auxiliary input. Turning OFF the towing car engine should suffice.

J35-B “TABLET” (5A)

The TABLET output terminal is where the charger (12V input/5V output) for tablets or mobile phones can be connected to. When the caravan battery is running low and reaches 10.8V (Low Voltage Disconnect), all the outputs will turn OFF except the TABLET output. This means that in case of emergency, the last remaining charge from the caravan battery can be used to charge a mobile phone and ensure phone calls can be made.

J35-B “AIRSUSP ECU”

AirSusp ECU output is solely intended to power the ECU of Air Suspension. It is always ON whenever Aux input is engaged.

FAN



WARNING

Ventilation holes must never be blocked to ensure continuous air-flow.

Fan keeps the internal temperature to a safe and operational level. If there is blockage on the ventilation holes or the fan is externally prevented from operating, the internal temperature will rise. This may either cause the **J35** to shut-down or de-rate its current output from its maximum to a lower value, depending on the actual internal temperature.

LED

The LED indicates the status of the **J35** power supply. Refer to section *LED Output Status Indicator* for more details.

BATT+ AND BATT-

The terminal block with label Batt+ and Batt- is where the caravan battery connections are terminated.



WARNING

Terminating the battery negative return to any point other than the Batt- may cause the battery to overheat and be overcharged. It is imperative that the caravan battery negative return is not connected anywhere else, like earth ground or caravan chassis.

SOLAR INPUT (J35-B ONLY)

The power supply input terminal "SOLAR INPUT" provides an alternative option for charging the caravan battery. The solar source will not be active unless a battery is connected.

The **J35** System supports up to a nominal 300W of panels suitable for use with batteries (open circuit voltage between 18 and 28 VDC).

Depending on the available sun, size, cleanliness, shading and orientation of the panels and on how much load is being drawn, the battery will either be charging or discharging. Reducing loads will increase how much solar power is available for charging the battery. Ensuring the panels are clean, not partially shaded by trees or other interference will promote solar charging. If the battery voltage is too low, the system will enter storage mode and disconnect the loads. In this state if there is sufficient uniform sun on the panels they will charge the battery.

Solar regulator is limited to 20A input current or equivalent to 2x150W solar panel.

The recommended configuration is 1x150W panel/100AH battery (e.g. 2x150W Solar Panel, should charge a 200AH battery). It is important to remember that as solar panel wattage increases, the battery capacity needs to increase as well.

Note: **J35-B** solar input does not provide battery charging management (Bulk, absorption, float and periodic boost) when operating in this configuration.

AUX INPUT (AUXILIARY)

The power supply input terminal "AUX INPUT" provides an alternative option for powering the loads and charging the caravan battery when mains voltage is not present. This input is powered from a suitable +12 V system (e.g. your vehicle). The voltage of this external DC power source must not exceed 14.8V.

This input is isolated using an internal relay, so it is strictly an input. **J35** will never supply current to anything connected to this terminal.

Note: **J35** does not provide battery charging management (Bulk, absorption, float and periodic boost) when operating in this configuration. In this configuration, current and voltage control for the battery must be provided through the external source.

LOAD ISOLATION SWITCH

A pair of contacts, item **(9)** in *Description of Parts*, had been provided for connection to an external switch.

The Load isolation switch contacts allow for the **J35** to enter into storage mode. When no sources are available all outputs and the CAN power are turned OFF when these pins are shorted. If this switch is open, all** outputs and the CAN power will be turned back ON.

AirSusp ECU

If the Auxiliary input is present, i.e. auxiliary voltage >11V, then this output is left ON regardless of the status of the load isolation switch.

Tablet

If any source is present, then this output is left ON regardless of the load isolation switch.

Slide-Out

**the Slide-Out output will only turn back ON if the Auxiliary is NOT present. See *Slide-Out section (Page 7)* for more details.

Battery charging is not affected by this switch.

The actual load isolation switch may be located in the control panel inside a shelf in the caravan. Contact your caravan dealer if assistance is required in locating the actual load isolation switch (or control panel).

SERVICING, FEATURES AND MAINTENANCE

This product contains hazardous voltages and energy hazards, which can result in death or injury. Only qualified service personnel may service it. The only serviceable parts are the external fuses.

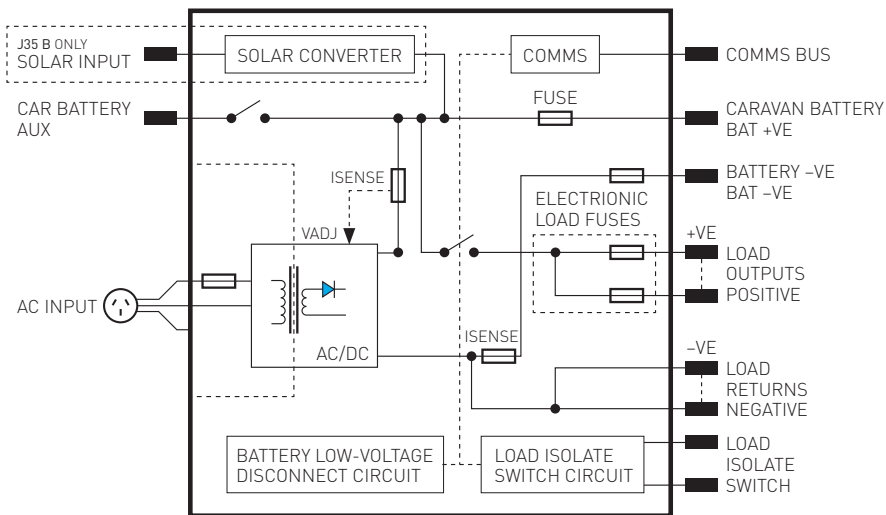


Figure 3: Functional Schematic J35 A/B

AC/DC POWER SUPPLY

J35 provides an isolated output for powering the loads and charging the battery. It enters into power supply mode if it is powered by AC mains without a battery, providing an output voltage of 12.8V. With a battery present, battery current is sensed and monitored by the power supply. Charging current is 15A maximum. Refer to *Battery Charging Management* for more details.

MULTIPLE INPUTS

J35-A may have two sources present AC mains or auxiliary.

J35-B may have three sources present, AC mains, auxiliary or Solar.

Priority of the sources are given below.

1. AC mains is the most dominant source for both variants and will be the only source even if other sources are available
2. In the case of **J35-B**, when only the auxiliary and solar are both available, both sources are turned ON at the same time, this allows for current to be drawn from both sources.

Note: The AC mains and Auxiliary will still independently power the unit and output loads even if a battery is not connected to the **J35**. In this situation where the AC mains and no battery mode, the output voltage is set to 12.8V.

FAULT PROTECTION

The power supply provides automatic protection for overload including short circuit, over-voltage and over-temperature.

During overload and short circuit conditions, the specific output will momentarily shut down. It will automatically attempt to restart every 30 seconds until the fault is removed.

An output over-voltage condition (could be caused by surge, lightning, etc.) or excessive internal temperature will latch the power supply OFF until the fault is removed and **J35** AC mains is cycled ON and OFF.

For Reverse Battery protection, two battery fuses are installed. (*Refer to item Battery Fusing*). If one or both of the fuses need to be replaced, contact your dealer for assistance.

FUSING

Electronic Load Fuses

Each load output is protected by an internal electronic fuse which turns OFF for currents above its programmed limits. (For current rating of each output, refer to item *Description of Parts*).

Electronic fuses are auto-recoverable and they eliminate the need for the user to replace blown fuses when the output is short-circuited (or overloaded). The status of the outputs can be checked through the state of the LED status indicator. In case of an output fault, the corresponding output will shut-down but will auto-recover once the fault has been removed.

BATTERY FUSING

Apart from the fuse along the Batt+ wire that is connected to the positive line of the battery, a 40A automotive fuse is also mounted in the PCB. In case there is a short circuit in the battery line, this may cause either (or both) the PCB mounted or the external battery fuse to blow. If the fuse/s need to be replaced, contact your dealer for guidance.

AUXILIARY (AX) FUSING

To protect the auxiliary input from excessive current, a fuse (rating not exceeding 30A) along the auxiliary input wire must be installed. If the fuse needs to be replaced, contact your dealer for guidance.

MAINS FUSING

The AC mains input is protected by an internal fuse. This is not serviceable. It is rated 250V 10A, quick acting, and high breaking capacity type.

BATTERY

CONNECTION / DISCONNECTION PROCEDURE

WARNING

Sparks have the potential to cause an explosion should combustible gases be present. The following procedures are designed to minimise the risk of spark generation while connecting or disconnecting the battery. The positive terminal of the battery must not be connected to the chassis of the vehicle.

BATTERY CONNECTION PROCEDURE

The caravan battery should be connected as per the following steps.

1. Remove input sources to **J35**
2. Disconnect all loads
Turn OFF all 12V equipment connected to **J35**
3. Connect the positive battery terminal
4. Connect the negative battery terminal

BATTERY DISCONNECTION PROCEDURE

The caravan battery should be disconnected as per the following steps.

1. Disconnect all loads
Turn OFF all 12V equipment connected to **J35** or disconnect the loads using the load isolation switch.
2. Remove input sources to the **J35**
3. Disconnect the negative battery terminal
4. Disconnect the positive battery terminal

BATTERY TYPES

Note: This battery charger is rated to charge lead acid battery banks of up to 300 Ah capacity. Charging current is limited to 15A. Refer to *About the J35 Series Power Supply*.

When using batteries other than what is originally installed by the caravan dealer, always consult with the battery manufacturer for a detailed description of the installation, uses and maintenance of the battery.

This product is suitable for charging 12V Sealed Lead-Acid (SLA) batteries including Valve-Regulated Lead-Acid (VRLA) batteries, both Absorbed Glass Mat (AGM) and Gel batteries.

PARALLELING BATTERIES

When paralleling multiple batteries, all batteries **MUST** be:

- of the same type, e.g. deep cycle battery
- of the same capacity, e.g. 100 Ah
- of the same manufacturer
- fully charged before connecting them together



Figure 4: Recommended wiring for connecting batteries in parallel.

Figure 4 is only a recommendation. A qualified auto-electrician may wire this differently depending on system requirements.

WARNING

Do not install battery in the same compartment where flammable material such as petrol is stored.

STORAGE

If the caravan is to be stored for a long period of time, fully charge the battery first and ensure all loads are disconnected. It is recommended to either:

1. Recharge the battery at least once every 6 months via AC Mains or AUX
2. Have Solar input power available continuously.

Regular recharging will prevent the battery from becoming deeply discharged—a condition which can significantly shorten battery life.

DEEPLY DISCHARGED BATTERIES

This battery charger is not designed to charge deeply discharged batteries. Its effectiveness in charging such a battery is a function of the depth of discharge and the battery size.

In normal use, a battery connected to **J35** should never become deeply discharged, so recharging it should never be a problem. If a battery has become deeply discharged though, **J35** will not charge it. Remove the battery and charge it with a stand-alone charger. Once the battery voltage has recovered to normal levels, it may be reinstalled. For guidance in reinstalling, refer to *Connection/Disconnection Procedure*.

BATTERY CHARGING FEATURES

J35 is a full battery management system with a multi-stage battery charger including bulk, absorption, float, and periodic boost charging modes to ensure long battery life. Charging current is limited to a maximum of 15A. Details of the charging process can be found in *Figure 5: Charging Algorithm*.

When powered by AC mains, the power supply is able to deliver 20A (**J35-A**) or 35A (**J35-B**) maximum to the battery and loads. The 15A battery charging rate is only possible if there are no load currents. If the load current is present, the maximum battery charging current may be reduced accordingly.

The maximum time that the **J35** will stay in each charging mode is as follows:

BATTERY CAPACITY	SOFT-START	BULK-ABSORPTION	FLOAT
≤ 100AH	6 Hours	5 Hours	6 Hours
150AH	6 Hours	7.5 Hours	6 Hours
200AH	6 Hours	10 Hours	6 Hours
250AH	6 Hours	12.5 Hours	6 Hours
≥ 300AH	6 Hours	15 Hours	6 Hours

Charging mode maximum time limit.

The Battery Capacity can be changed using a **JControl** if installed.

BATTERY HEALTH PRESERVATION

J35 preserves the health of the battery by inhibiting it from getting overly discharged. There are two stages in which this is achieved; via Low Voltage Disconnect and Storage Mode.

LOW VOLTAGE DISCONNECT

J35 disconnects the loads (except the TABLET output) from the battery when the battery is not charging and its voltage falls below 10.8V.

When the AC mains returns, the charging of the battery is commenced and the loads auto reconnect (turn back ON).

If instead of the AC mains, either the Aux or Solar Input (**J35-B**) is used to charge the battery after the **J35** system has gone through LVD, outputs will not turn back ON unless the Load Isolation Switch is switched to the OFF position for at least 4 seconds then turned back ON or the **JControl** "Battery Isolate" icon is pressed.

STORAGE MODE

All loads including the TABLET output are turned OFF when in this mode. When CAN power to the JControl is turned OFF it causes the communication between the **J35** and the **JControl** to be lost. **J35** enters into storage mode when the Load Isolation Switch is turned ON. To exit storage mode, turn OFF Load Isolation Switch.

Also, if caravan battery voltage has gone lower than 10.8V (LVD set voltage) and reaches 10.5V, **J35** consequently will be forced to enter storage mode. At this point, outputs will only turn back ON if:

1. Battery is charged by AC mains, or
2. Battery is charged by AUX and then Load Isolation Switch cycled.

When powered by AC mains, the power supply is able to deliver 35A (or 450W) maximum to the battery and loads. The 15A battery charging rate is only possible if there are no load currents. If the load current is present, the maximum battery charging current may be reduced accordingly.

EMERGENCY 2-MINUTE ON

When there is no source present and the system is either in LVD or Storage Mode, the outputs could still be momentarily turned ON for 2 minutes. This can be done by cycling the Load Isolation Switch for 4 seconds. This gives the user the ability to make use of the system even though the battery is already heavily discharged.



WARNING

Frequent use of the 2-minute Emergency Turn ON will cause the battery life to deteriorate rapidly.

BATTERY CHARGING MANAGEMENT

To maintain the battery in a good state of health, an intelligently controlled charging algorithm is used. The purpose is to ensure that the correct voltages are applied to the battery terminals at the appropriate times throughout its charging cycle. The basics of the charging algorithm are detailed in *Figure 5: Charging Algorithm*.

CHARGING ALGORITHM

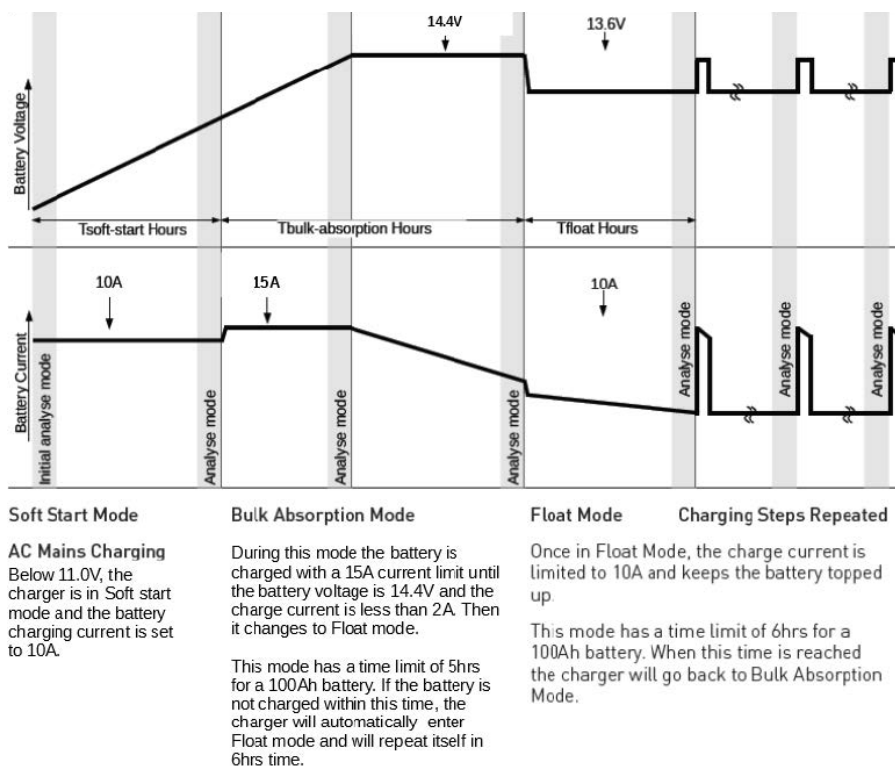


Figure 5: Charging Algorithm.

Analyse Mode: J35 assesses the battery, sources and time continuously at all times. In analyse mode the charger uses all information to decide what needs to be done next.

Note: Bulk-Absorption charging time can be changed by changing the battery capacity using the JControl

J35 will operate as described above if all loads are connected to the load terminals, not directly to the caravan battery. Charging time for the battery depends on the capacity of the battery installed. J35 auto detects the battery capacity and adjusts the time duration for Bulk/Absorption mode before it transitions to Float mode.

SYSTEM STATUS INDICATOR J35

The **J35** has a multi-colour LED which is located next to the 'battery' connection. This LED is used to display the status of the **J35** unit. Below is a table which covers the different states that might be shown by the LED:

		Colour Code	Flashing Status
WHITE	Internal Error	—————	On, Solid
	Identify Device	Flashes, 5 Times Quickly
	Storage Mode	■ ■ ■	Flashes Every 2min
YELLOW: CHARGING	AC, Charging Normally	—————	On, Solid
	AC, Low Battery Voltage	■ ■ ■ ■ ■	Flashes, 1 Time
	Solar, Charging Normally J35B Only	■ ■ ■ ■ ■ ■ ■ ■	Flashes, 2 Times Quickly
	Aux, Charging Normally	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■	Flashes, 3 Times Quickly
GREEN: OK	AC, Fully Charged or No Battery	—————	On, Solid
	Solar, Fully Charged J35B Only	■ ■ ■ ■ ■ ■ ■ ■	Flashes, 2 Times Quickly
	Aux, Fully Charged	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■	Flashes, 3 Times Quickly
	Normal, No source present	■ ■ ■ ■ ■	Flashes, 1 Time
RED: ERROR	One (or more) Output is Overloaded	—————	On, Solid
	Critical Fault	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■	Flashes, 4 Times Quickly
	Battery Fault	■ ■ ■ ■ ■ ■ ■ ■	Flashes, 2 Times Quickly
	Solar Fault J35B Only	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■	Flashes, 3 Times Quickly
	Over Voltage Fault, or High Temperature Fault	■ ■ ■ ■ ■	Flashes, 1 Time
	Unit is Not Powered	Off	Off

SPECIFICATIONS

J35 SYSTEM CHARGER	
Input Voltage Range:	240 VAC nominal, $\pm 10\%$, 50-60 Hz
Input Surge:	< 40 A (cold start)
Output Current:	J35-A 20A Continuous (load + battery current) J35-B 35A Continuous (load + battery current)
Factory Set Voltage:	13.65 V $\pm 2\%$ (Float voltage)
Output Ripple Voltage:	< 150 mV
Over Voltage Protection:	< 18 V
Over Current Protection:	J35-A 20A to 25A (load + battery current) J35-B 35A to 38A (load + battery current)
Battery Current Limit:	15A max
Low Voltage Disconnect:	10.8 \pm 0.2 V
Battery Drain after LVD:	< 8mA
Efficiency:	> 83 %
Cooling Fan:	Thermally controlled
Solar Input Current: (J35B only)	<20A
Solar Input Voltage: (J35B only)	15V to 25V
Ambient:	0°C – 50°C
Weight:	2 kg
Standards:	Safety: IEC60335-2-29, IEC62109-1, UL458, CSA; C22.2 No.107-1, EMC: CISPR 14, IEC61000-3-2, IEC61000-3-3 Approvals: RCM, UL, cUL

J35 AFTER SALES SERVICE



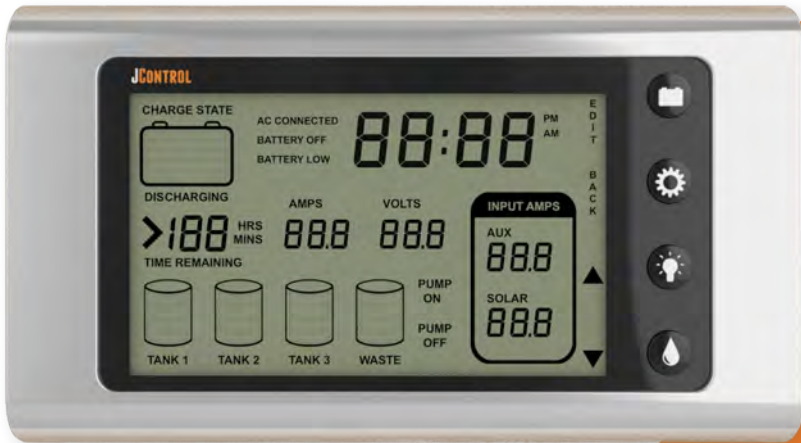
WARNING

Do not disassemble, modify or repair the unit.
Doing so may result in electric shocks or fire.

REPAIRS AND AFTER-SALES SERVICE

Consult your dealer.

JCONTROL



CONTENTS

JControl	23
Safety Precautions	25
About JControl	25
Glossary	26
Name and Function of Parts	26
Operation	28
Set-up Mode	32
New Battery Installation	37
Connectors	37
Installing JControl	37
JControl to J35 Wiring	39
Servicing	40
Specifications	40
After-Sales Service	40
Appendix 1: Advanced Menu	41
Warranty Terms & Conditions	42

Copyright © Setec 2017

Disclaimer

Setec accepts no liability for any loss or damage, which may occur as a result of improper or unsafe use of its products. Warranty is only valid if the unit has not been modified or misused by the customer.

Important Note

This product is only designed to work in conjunction with the **J35** supply/charger. It will not interact with other products.

SAFETY PRECAUTIONS

Please read the Safety Precautions carefully before installing the unit.



CAUTION

Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

Refer to the installation section before operating. Correct installation is the most critical factor in ensuring the safe use of the product. If every consideration of these instructions has been satisfied the product will be safe to operate.

As this unit is powered by a communication cable it is critical that all connections and cables are in a good and working order and properly connected.

Do not allow water or other liquids to enter the installation area.

ABOUT JControl

The **JControl** is a display and control unit that connects to a **J35** and displays a range of battery and water tank information. Its backlit LCD displays information including:

- Battery voltage
- Battery Current
- Charging and Discharging status
- Auxiliary and solar currents
- Battery charge bar graph
- Time remaining until battery is discharged
- Level indication for up to 4 water tanks
- Time
- Water pump status
- Battery on/off status

Features also include:

- Button to control a water pump through **J35**
- Button to disconnect the battery from the loads

GLOSSARY

Loads Consists of any appliance connected to the output terminal of the **J35** including lights, TV, radio, etc.

Sources Consists of any device that can supply power to **J35** and its loads, such as solar input, battery input, aux input and AC input.

J35 Integrated battery charger and power supply that converts 240VAC, Solar or Auxiliary DC power to 12V DC which powers loads or charges a battery and works with the **JControl**.

NAME AND FUNCTION OF PARTS



Figure 1: Name and Function of Parts

- ① **Charge Bar Graph**
- ② **Battery Charge State**
This shows if the battery is charging or discharging
- ③ **Time Remaining**
Time until battery flat
- ④ **Tank1, Tank2, Tank3 & Waste**
Water tank level indicators.
- ⑤ **Pump Status Indicator**
- ⑥ **Solar Current**
- ⑦ **Aux Current**
- ⑧ **Set-up Mode Indicators**
These indicators only appear when in set-up mode
- ⑨ **Water Pump Button**
Enables/disables the water pump
- ⑩ **Backlight Button**
- ⑪ **Settings Button**
Settings button is used for set-up functions
- ⑫ **Battery Isolate Button**
When paired with a **J35**, this switch will isolate the battery from the loads
- ⑬ **Set-up Mode Indicators**
These indicators only appear when in set-up mode
- ⑭ **Clock**
- ⑮ **Battery Voltage**
- ⑯ **Battery Current**
- ⑰ **Battery Low**
Appears only when Battery voltage is less than the low voltage warning threshold. This is set in the Battery alarm menu
- ⑱ **Battery Off**
Appears when the Battery is isolated
- ⑲ **AC Connected**

OPERATION

JControl is designed to interface with J35. The functionality described below assumes JControl has been correctly connected to J35.

ON POWER UP

On Power up JControl will display “Loading” until communication between JControl and J35 is established.

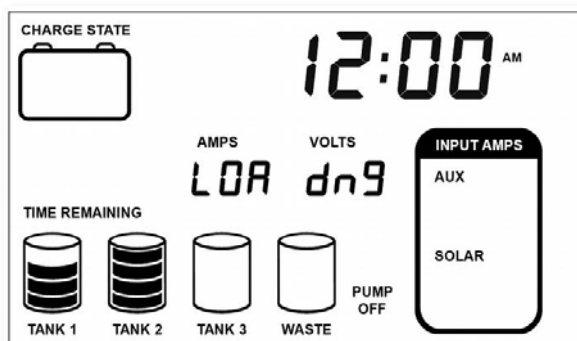


Figure 2: JControl display when first powered up

When communication between JControl and J35 is established, JControl will display information similar to *Figure 3*.

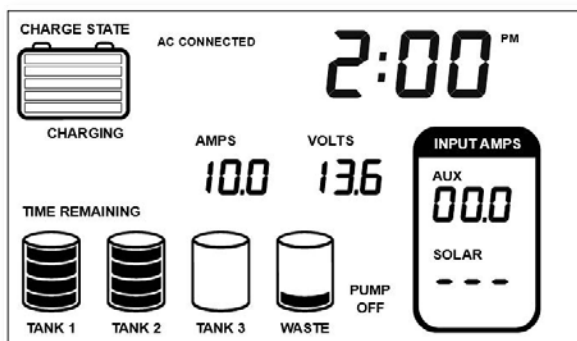


Figure 3: JControl display, Typical Home screen

If **JControl** cannot establish this communication within 30 seconds, then “Err to” will be displayed. If this occurs then there is a fault in the system. Check all connections.

DESCRIPTION OF DISPLAY ELEMENTS

Tank1, Tank2, Tank3 & Waste (4)

JControl can support up to 4 tank sensors. These indicate the approximate water level in each of the tanks.

By default, only Tank 1, Tank 2 and Tank 3 are set as fresh water tanks.

Tank 4 is set as a waste water tank and is labeled as “Waste”. All 4 tanks can be set as fresh water or waste water tanks

The display differences between fresh water and waste water tanks are as follows:

- Enabled as a fresh water tank: the bottom level-segment flashes when the tank is empty.
- Enabled as a waste water tank: all segments flash when the tank is full.
- Disabled: no level segments are displayed.

Note: The tank sensor value may take up to 20 seconds to give the correct indication.

Pump Status Indicator (5)

These indicators show if the pump installed is ON or OFF. This is controlled by the pump button (9)

Solar Current (6)

This is the current that is drawn from solar input of the **J35**. If solar is present but not used, the **JControl** will display “00.0”, while if there is no solar source available then “-- -” is displayed.

Aux Current (7)

This is the current that is drawn from the auxiliary(AX) input of the **J35**. If aux source is present but not used, the **JControl** will display “00.0”, while if there is no aux source available then “-- -” is displayed.

Battery Charge State And Bar Graph (1) (2)

A bar graph showing the state of charge of the battery. “CHARGING” or “DISCHARGING” is displayed under this bar graph.

Time Remaining (3)

Indicates the estimated time remaining for the battery to be discharged, assuming it continues to discharge at the current rate.

Time less than 180 minutes will be displayed in minutes, while if its greater then it will be displayed in hours. If the remaining time is greater than 199 hours, the display shows ">199 HRS".

Set-up Mode Indicators (8)

These indicators only appear when the **JControl** is in set-up mode. The icons indicate the functions of the buttons adjacent to it. The icons include edit, back, ▲ and ▼ symbol.

Battery Off (18)

This indicator is displayed when loads are disconnected from all sources including the battery. This is controlled by the battery isolate button and in conditions where the battery is too low to be used. All other segments will also be turned OFF to reduce current draw from the battery.

Battery Low (17)

This indicator is displayed when the battery voltage is at or below the low voltage warning threshold. For lead-acid batteries the default is 11V. It is recommended to charge the battery if this annunciator is seen.

This is user configurable, refer to the Set-up Mode section.

AC connected (19)

This indicator appears only when **J35** is connected to AC mains.

Volts (15)

Displays the battery voltage.

Amps (16)

Shows the charging or discharging current of the battery.

Clock (14)

Displays a 12 or 24 hour clock. This is user configurable, refer to the *Set-up Mode* section.

DESCRIPTION OF BUTTONS

Water Pump Button (9)

This button controls power to the water pump output on **J35**.

When **J35** and **JControl** are first powered, the outputs assigned for the pumps are ON and **JControl** displays "PUMP ON" (5)

To switch the pump ON/OFF press the water pump button (8) once In set-up mode the water pump button turns into the "▼ button".

Backlight Button (10)

Backlight button is primarily used to enable the backlight. In set-up mode the back light button is the "▲ button"

Backlight Functionality

Turn on backlight temporarily: Press any button to turn ON the backlight temporarily and will automatically turn off after 30 seconds.

Turn on nightlight: Press and hold the backlight button until the backlight blinks (approximately three seconds). The backlight will turn ON for 10 hours.

Turn off nightlight: Press and hold the backlight button until the backlight is OFF

Settings Button (11)

Pressing and holding the Settings button for approximately 3 second puts **JControl** into the set-up mode.

In set-up mode the Settings button is the "back button".

Battery Button (12)


The battery button is used to disconnect the battery, AC mains, auxiliary and solar sources from the loads. Pushing the battery button will toggle the loads ON and OFF.

When **JControl** is first turned ON the battery will power the loads and "BATTERY OFF" is NOT displayed. When the battery button is pressed, the loads are disconnected from the **J35** and "BATTERY OFF" will appear on the LCD, all other segments will be OFF.

In set-up mode the battery button is the "EDIT button".

SET-UP MODE

ENABLING SET-UP MODE

1. Ensure the display is in normal mode (not already in setting mode).
2. Press and hold the Settings button  (11) for at least 5 seconds.
3. "SETUP" will be displayed in (15-16) location
4. Now you are in set-up mode

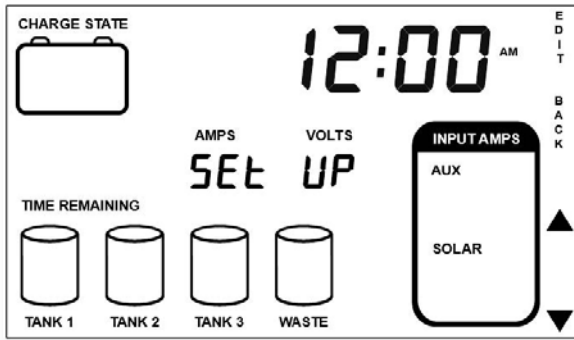
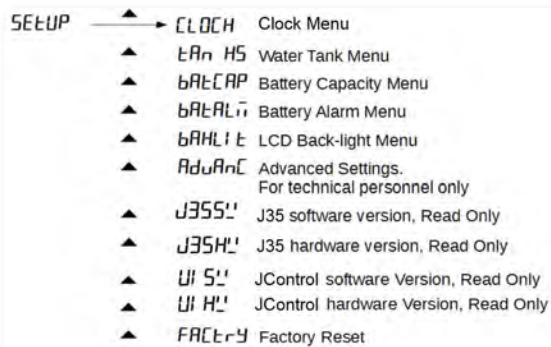


Figure 4: Set-up Mode

SET-UP MENU

When in set-up mode, the "▲" or "▼" button can be used to scroll through the set-up menu. The list of options in the set-up menu is as follows:



If the **JControl** discovers any other accessory that is compatible, it will display the ID of that device and its hardware and software version.

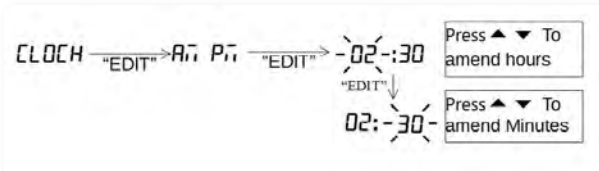
To exit menu, press and release the "Back" button a few times until the home screen is seen.

CLOCK MENU

Press and hold the Settings button  until you see S E t U P

Press and release the ▲ button a few times until you see C L O C K

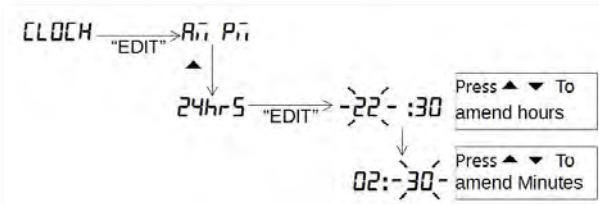
Set-up 12hr Clock



AM and PM annunciators will automatically change as the time changed from 11 to 12.

To exit menu, press and release the "Back" button a few times until the home screen is seen.

Set-up 24hr Clock



To exit menu, press and release the "Back" button a few times until the home screen is seen.

WATER TANK MENU

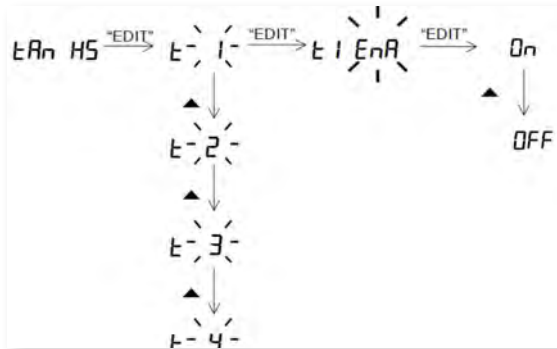
Water Tank Enable

This shows how to enable or disable the water tanks.

After enabling the required tank, allow for 15 seconds for the tank levels to update.

Press and hold the Settings button  until you see S E T U P

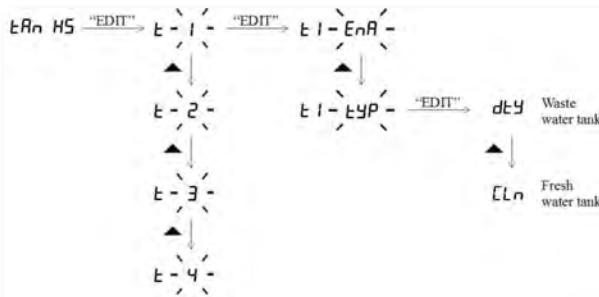
Press and release the  button a few times until you see t a n K S



To exit menu, press and release the “Back” button a few times until the home screen is seen.

Water Tank Type (Fresh/ Waste)

This shows how to change the water tank from a fresh water to waste water tank.



To exit menu, press and release the “Back” button a few times until the home screen is seen.

BATTERY CAPACITY MENU

When a new battery is fitted, set this to the nominal battery capacity (as marked on the battery); doing this will assist the software in determining the actual capacity.

This shows how to change the battery capacity in AH. The battery capacity can be incremented or decremented.

Press and hold the Settings button  until you see S E t U P

Press and release the  button a few times until you see b A t C A P

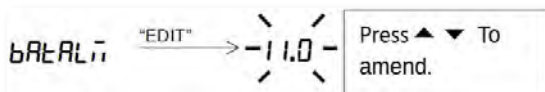


To exit menu, press and release the "Back" button a few times until the home screen is seen.

BATTERY ALARM MENU

This shows how to change the battery alarm. This parameter indicates when the Battery Low (17) annunciator starts to blink.

The alarm threshold can be incremented or decremented in steps of 0.5V. The alarm threshold can be adjusted from 10.0V to 14.6V.



To exit menu, press and release the "Back" button a few times until the home screen is seen.

LCD BACKLIGHT MENU

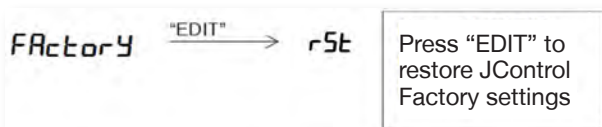
This shows how to change the LCD backlight brightness. The backlight brightness can be incremented or decremented in steps of 10%. The brightness can be adjusted from 0% to 100%.



To exit menu, press and release the "Back" button a few times until the home screen is seen.

FACTORY RESET MENU

This shows how to restore **JControl** back to factory settings.



WARNING

All saved settings will be erased.

To exit menu, press and release the "Back" button a few times until the home screen is seen.

NEW BATTERY INSTALLATION

JControl is a smart battery monitor that is able to display the battery state of charge and thus provide “Time Remaining” feedback to the user.

When an existing battery is replaced by a new one or if it is a new installation, check the capacity of the new battery and verify this in the **JControl** Battery Capacity Menu on page 15. Change this as required.

Fitting a new battery and doing nothing else will result in the “Time Remaining” display initially being inaccurate. It is recommended to charge the battery until **JControl** shows the charging current is less than 2A. Disconnect mains, solar and auxiliary before installing a new battery.

See **J35** installation instructions for more information on the installation of new battery.

CONNECTORS

At the rear of **JControl** are two connectors.

1. The communication bus connector which is a data cable can connect the **J35** to **JControl**.
2. The Tank Sensor connectors

INSTALLING JCONTROL

PERSONNEL

Installation is to be carried out only by suitably qualified personnel.

INSTALLATION ENVIRONMENT

JControl should be installed indoors where it will not be subject to water or other liquid spills or splashes.

MOUNTING

The **JControl** is designed to be mounted to the wall directly with screws. A hole for the connectors must be drilled before mounting, See Figure 5: Mounting Method Details

After fixing **JControl** to the wall, make all connections at the rear of the **JControl**, see **Figure 6: JControl Connections**, then clip on the provided front fascia cover to **JControl**. Finally remove the clear protective plastic from the front fascia.

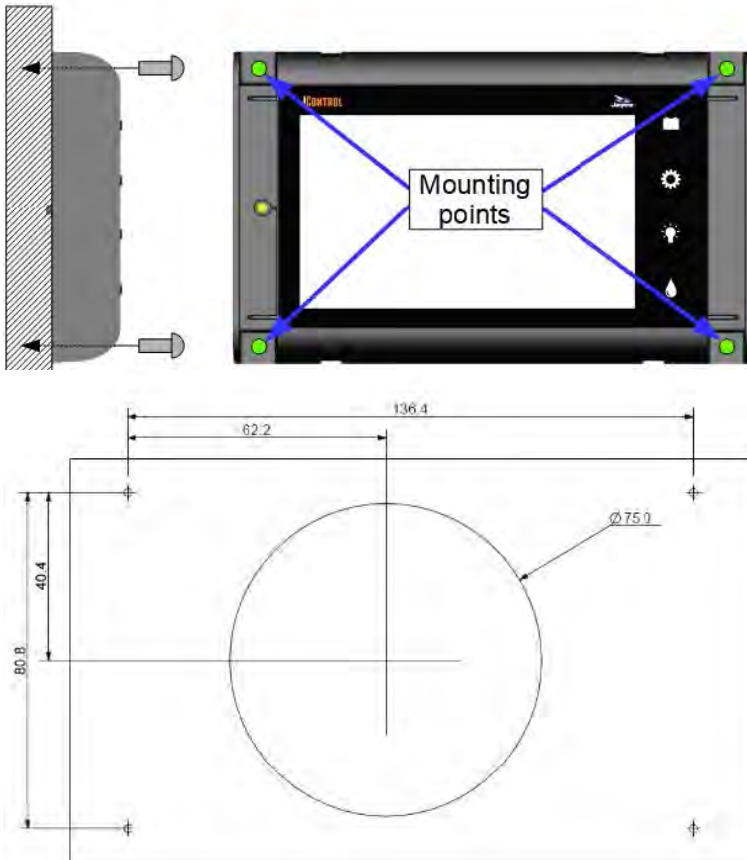


Figure 5: Mounting Method Details

Screw type required for mounting method: Flat head, Diameter: 4.0mm Max

JCONTROL TO J35 WIRING

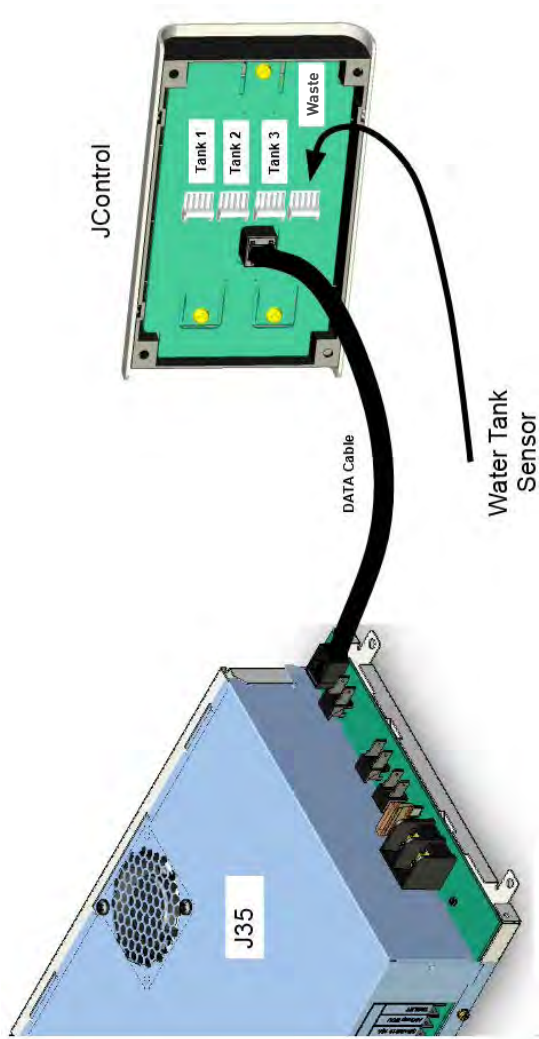


Figure 6: JControl Connections

SERVICING

There are no internal user serviceable parts.

SPECIFICATIONS

JControl	
Input Voltage Range:	8–15 Vdc
Battery Drain:	< 21 mA (backlight off)
Ambient Temperature:	0°C–50°C
Size:	W164 x H95 x D22mm

AFTER-SALES SERVICE



WARNING

Do not disassemble, modify, or repair the unit.
Doing so may result in electric shocks or fire.

REPAIRS AND AFTER-SALES SERVICE

Consult your dealer.

APPENDIX 1

ADVANCED MENU

WARNING

The advanced menu is reserved for technical personnel only and available features vary with some versions of the J35.

Incorrect use of this menu can over charge the battery and cause damage to property and cause personal injury. If unsure, do not change the default values.

The advance menu allows installers to fine tune the charging parameter, such as bulk voltage.

ADVANCED MENU ENTRY

WARNING

CONSULT BATTERY MANUFACTURER BEFORE CHANGING THIS PARAMETER.

Press and hold the Settings button until you see SEtUP

Press and release the ▲ button a few times until you see ADVANC

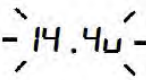
AdvAnC $\xrightarrow{\text{"EDIT"}}$ *CHARGE* Bulk Voltage Menu

Press "EDIT" to
select the required
category

To exit menu, keep pressing the "Back" button until the home screen is seen.

BULK VOLTAGE

The bulk voltage is the maximum voltage at which the battery will be charged. This voltage can be adjusted from 13.6V to 14.8V with increments of 0.1V.

CHARGE $\xrightarrow{\text{"EDIT"}}$  Press ▲ ▼ To
amend.

To exit menu, keep pressing the "Back" button until the home screen is seen.

WARRANTY TERMS AND CONDITIONS

Registering your BMPRO by Setec product is an important step to ensure that you receive all of the benefits you are entitled to. Please visit www.teambmpro.com to complete the online registration form for your new product today.

BMPRO by Setec goods come with guarantees that cannot be excluded under Australian Consumer Law. You are entitled to a replacement or refund for major failure and for compensation for any reasonably foreseeable loss or damage. You are 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. The benefits under this Warranty are in addition to your other rights and remedies under a law in relation to the goods to which this Warranty relates (the Australian Consumer Law).

Setec, as the manufacturer of BMPRO by Setec goods warrants products against defects for a period of two years, commencing from the original date of purchase. Proof of purchase is required before you can make a claim under this warranty.

HOW TO PROTECT YOUR RIGHTS UNDER THIS WARRANTY: The **J35** and **JControl** are designed to be installed by a suitably qualified installer. You or your installer should carefully inspect the products before installation for any visible manufacturing defects. We accept no responsibility in addition to our consumer guarantee obligations where a product has been installed incorrectly.

This warranty does not extend to product failures or defects caused by, or associated with, but not limited to; failure to install or maintain correctly, unsuitable physical or operating environment, accident, acts of God, hazard, misuse, unauthorised repair, modification or alteration, natural disaster, corrosive environment, insect or vermin infestation and failure to comply with any additional instructions supplied with the product.

Setec may seek reimbursement of any costs incurred by Setec when a product is found to be in proper working order or damaged as a result of any of the warranty exclusions mentioned above.

To enquire or make a claim under this warranty, please follow these steps:

- a. Prior to returning a BMPRO by Setec product, please email warranty@teambmpro.com to obtain a Return Material Authorisation (RMA) number
- b. Package and send the product to: BMPRO by Setec Warranty Department, 19 Henderson Road, Knoxfield, VIC 3180.
Please mark RMA details on the outside of the packaging
- c. Please ensure the package also includes: a copy of the proof of purchase, a detailed description of the fault and your contact details including phone number and return address

Setec will not be liable for any costs, charges or expenses incurred in the process of returning a product in order to initiate a warranty claim

SWITCH OFF. POWER UP.

BMPRO A Setec Brand

+61 3 9763 0962 | sales@teambmp.com

19 Henderson Rd, Knoxfield VIC 3180 Australia

www.teambmp.com