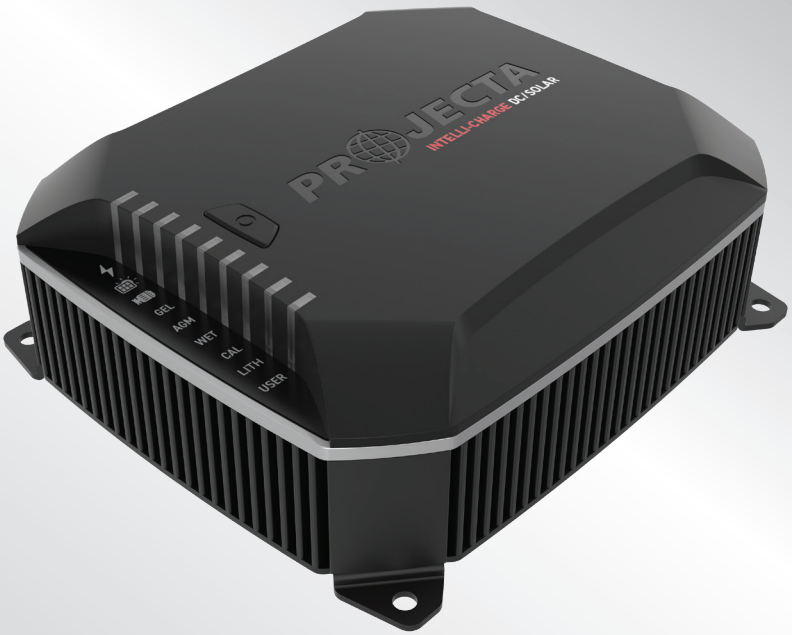
PROJECTA

INTELLI-CHARGE
DC/SOLAR BATTERY CHARGER
25A, LINBUS, MULTI-CHEMISTRY



WARNING: This is a HIGH current device.
It is the installer's responsibility to ensure all cabling meets the requirements as stipulated on page 6 of this installation manual to ensure a SAFE installation, particularly when upgrading with a higher capacity unit.
Failure to comply with the supplied installation instructions will void the warranty.

P/No. IDC25X

IMPORTANT SAFETY INFORMATION

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

WARNINGS

- Explosive gases may escape from the battery during charging. Prevent flames and sparks and provide adequate ventilation.
- Before charging, read the instructions.
- FOR CHARGING 12 VOLT AUTOMOTIVE BATTERIES ONLY.
- Do not attempt to charge non-rechargeable batteries.
- Never charge a frozen battery.
- Corrosive substances may escape from the battery during charging and damage delicate surfaces. Store and charge in a suitable area.
- This appliance is not intended for use by young children or infirm persons unless they have been adequately supervised by a responsible person to ensure that they can use the appliance safely.
- Young children should be supervised to ensure that they do not play with the appliance.
- Fit fuses as close to the batteries as possible to protect the cable in case of short circuit P/n: FK25A

FEATURES

The IDC25X charger is Intelli-Charge's next generation in DC-DC charging. It has been designed with next generation technology to ensure your DC-DC charging experience is unrivalled. The IDC25X features everything needed to maintain the auxiliary battery to its optimum condition and to prolong battery life.

DUAL INPUT OPERATION

- The IDC25X allows for simultaneous dual battery charging from both solar and alternator inputs with no manual switching required. The unit prioritises solar charging as its default and automatically adjusts to the alternator if sunlight is insufficient, reducing the power usage placed on the vehicle's electrical system.

TOUGH & RELIABLE

- IDC25X is rated to IP68 & IP69K, ensuring it can withstand the toughest of conditions. All connections into the IDC25X are done via brass posts and crimped terminals. Ideal for mounting in the engine bay. IDC25X use temperature compensation to ensure the battery receives the correct charge voltage regardless of ambient temperatures. It reduces the voltage in warmer climates to ensure the battery does not boil.

SMART DC-DC CHARGING

- IDC25X paired with Intelli-IQ supports advanced control of the dual battery system including Bluetooth connectivity to an iOS or Android device. Note Intelli-IQ is sold separately.

MULTI-CHEMISTRY CHARGING

- The IDC25X suits today's different battery technologies, including everyday automotive batteries and the newer lithium battery technology. For automotive batteries, multi-chemistry technology enables the user to tailor the charging profile to suit the battery type: AGM, GEL, WET, Calcium and $LiFePO_4$ batteries. For other types Lithium batteries, please check the battery's datasheet and see if IDC25X is suitable for the charging profile before connecting.

PARALLEL CHARGING

- IDC25X can be wired in parallel to provide more charging current for larger systems. This flexibility gives users the option to add another IDC25X into their system should power requirements change. For example, two IDC25X would provide a total charging current of 50A.

FUTURE PROOF

- IDC25X was designed to stand the test of time. When IDC25X is paired with an Intelli-IQ, the firmware can be updated via Bluetooth ensuring IDC25X software is always up to date with the latest features.

SOLAR MPPT

- The IDC25X utilises sophisticated MPPT (Maximum Power Point Tracking) solar regular technology. MPPT maximises the power generated from the solar panels to the auxiliary battery.

PROTECTIVE FEATURES

- The unit has a output capacitor inside, when a battery is connected to the AUX output, there will always be a small spark.

REVERSE CONNECTION PROTECTION

- The unit has a output capacitor inside, when a battery is connected to the AUX output, there will always be a small spark.

OVER AND UNDER VOLTAGE PROTECTION

- The charger will automatically shut down if there is an over voltage or under voltage problem.

OVER TEMPERATURE PROTECTION

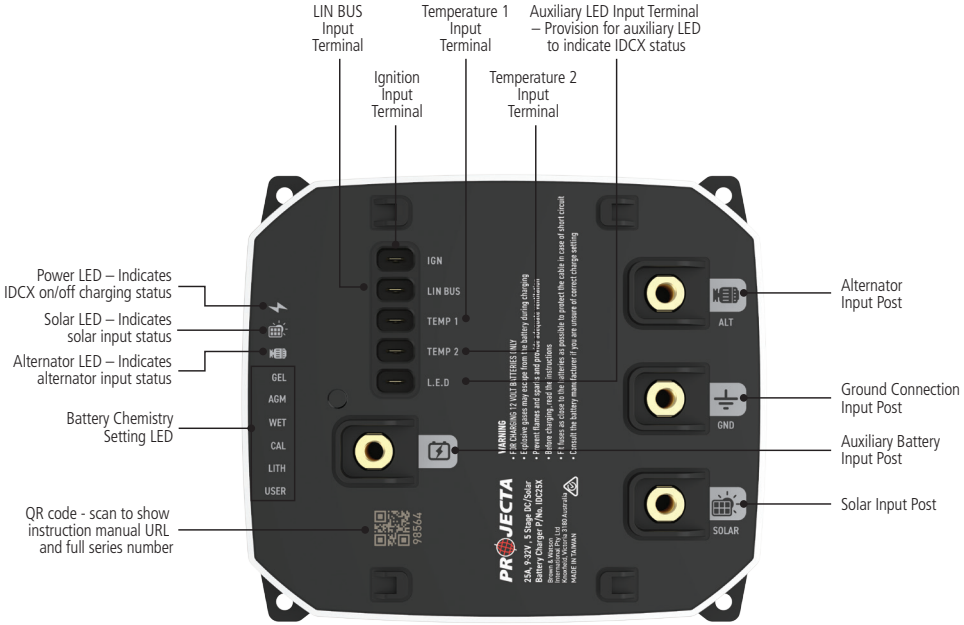
- The charger will lower its output current if the temperature of the unit begins to overheat.

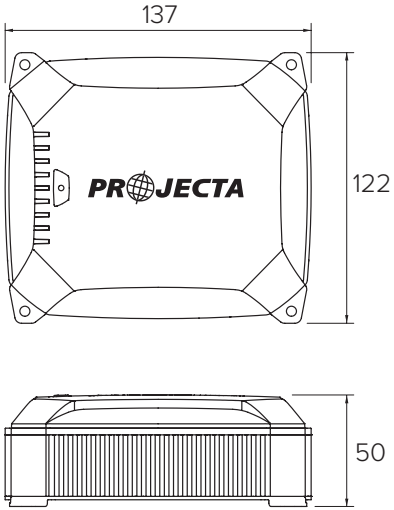
SPECIFICATIONS

P/No.	IDC25X				
Operating Conditions					
Alternator Input Voltage	9-32V				
Maximum Solar Input Voltage	32Vdc				
Maximum Input Current	35A				
Input Current (No Load)	8mA				
Back Drain on Auxiliary Battery	INPUT: 9-11Vdc 20A INPUT: 11-32Vdc 25A				
External LED Output – Constant Current	5mA				
Input Fuse Rating	50A (Not supplied) – FK25A Recommended				
Output Fuse Rating	50A (Not supplied) – FK25A Recommended				
Maximum Output Power	360W				
Size (mm)	137 x 122 x 50				
Weight (g)	1180				
Charge Control					
Charge Type	5 Stage				
Constant current up to	BULK *20A at 9-11Vdc, 25A at 11-32Vdc				
	GEL 14.1V	AGM 14.4V	WET 14.7V	CALCIUM 14.7V	$LiFePO_4$ 14.2V
Absorption	Constant voltage until current drop to 3.8A:				
	GEL 14.1V	AGM 14.4V	WET 14.7V	CALCIUM 14.7V	$LiFePO_4$ 14.2V
Float	GEL 13.7V	AGM 13.7V	WET 13.7V	CALCIUM 13.7V	$LiFePO_4$ 13.5V
Equalisation (Calcium Mode & Periodic Use Only)	2A Constant Current Charge up to 16V then hold for 30 min (5 hour timeout)				
Battery Range					
Battery Capacity	Please check the battery user manual				
Type of Batteries Supported	GEL, AGM, WET, CALCIUM & $LiFePO_4$				
Operating Mode					
Vehicle Voltage Range	12Vdc		24Vdc		
VSR Mode – Default (Ignition Override Not Connected)	Turn On 13.4-16.5Vdc	Turn Off <12.8Vdc	Turn On 26.8-32.0Vdc	Turn Off <25.6Vdc	
Low Voltage Mode – Ignition Override cable connected to ignition switch (Ignition On)	Turn On 12.2-16.5Vdc	Turn Off <11.9Vdc	Turn On 24.4-32.0Vdc	Turn Off <23.8Vdc	
Output Current	Input 9-11Vdc 20A Input 11-32Vdc 25A				
Standards					
EMC	AS/NZS CISPR11 Class B, R10				
IP Rating	IP68 & IP69K				

PRODUCT OVERVIEW

IDC25X





INSTALLATION

MOUNTING

- IDC25X's IP68 & IP69K tough & rugged design allows for the unit to be mounted where best suits the application. IDC25X entire PCB is potted using a high-quality thermal compound inside the aluminium extrusion; this ensures IDC25X is impervious to vibration, dust, moisture and extreme temperatures. Though tough, it is advisable however to keep the charger as far away from exhaust, turbos, or any other high temperature components to ensure improved performance.

WIRING

- To make reliable and durable electrical connections, battery cables will need to be made to the correct length. Reducing the wires' or cables' lengths properly will help to avoid unexpected voltage drops and noise. Cable lugs should be crimped and insulated to the cable before connection to the brass posts and spade terminals.

Minimal cable size for wiring up to 12m:

Input Name	Recommended Cable Size
Alternator Input Post	8mm² (8 B&S)
Solar Input Post	8mm² (8 B&S)
Auxiliary Output Post	8mm² (8 B&S)
Common Ground Output Post	8mm² (8 B&S)
Ignition Input Blade Terminal	1.0 – 1.5mm²
LIN BUS Input Blade Terminal	1.0 – 1.5mm²
Battery Temperature 1 Input Blade Terminal	1.0 – 1.5mm²
Battery Temperature 2 Input Blade Terminal	1.0 – 1.5mm²
Auxiliary LED Input Blade Terminal	1.0 – 1.5mm²

Please increase the cable size for cables beyond 12m length as required. Contact Technical Support for assistance on **1800 422 422**.

1. Disconnect the negative battery cable (Earth) from the vehicle's starting battery or disconnect power to the trailer. Note: To prevent the loss of vehicles electronic memories, radio pre-sets & security codes, it is recommended that an "Electrical System Memory Protector" be used.
2. Connect the Auxiliary Battery positive (+) terminal to the IDC25X auxiliary battery output post. Fit at a fuse (50A for IDC25X) to the cable as close as possible to the Auxiliary Battery positive (+) terminal.
3. Connect the Auxiliary Battery (-) terminal to the IDC25X common ground output post. Alternatively connect both Auxiliary battery negative (-) terminals and IDC25X common ground output post to the vehicle's chassis ground. After the Auxiliary battery has been connected, check LED indicators. Do not proceed if either there is Output Overvoltage alarm (red LED) or the LEDs do not turn ON.
4. Connect the Starter Battery positive (+) terminal to the IDC25X Alternator Input Post ( ). Fit at a fuse (50A for IDC25X) to the cable as close as possible to the Starter Battery positive (+) terminal.

5. If your vehicle has a fixed voltage or temperature compensating alternator installed, do not make connection to the Ignition Input Blade Terminal.

   If your vehicle has a smart (variable voltage) alternator installed, the Ignition Input Blade Terminal must be connected to the vehicle's ignition. At 12.2V ALT voltage, the IDC25X will only operate when the vehicle's ignition is turned on (may take up to 2 minutes to start charging). Fit a 1-2A fuse to the cable as close as possible to the vehicle's ignition.

   Consult the vehicles manufacture for type of alternator installed in your vehicle.

6. To add 12Vdc solar panels to the system connect the solar panel positive terminal (+) to the IDC25X solar input post ( ). Fit a fuse to the cable as close as possible to the Solar Panel positive (+) terminal (refer to the table below for fuse size).

   NOTE: No solar controller is required with the IDC25X. If using portable solar panels that include a solar controller, the controller will need to be bypassed.

   After the positive has been connected, connect the solar panel negative (-) terminal to the ( ) vehicle chassis ground.

Solar Panel Size	Fuse Size
120W	15A
160W	15A
200W	20A
240W	30A
360W	50A

7. The LED output terminal provides about 5mA constant current output. It can power an LED panel mount indicator without an external resistor.

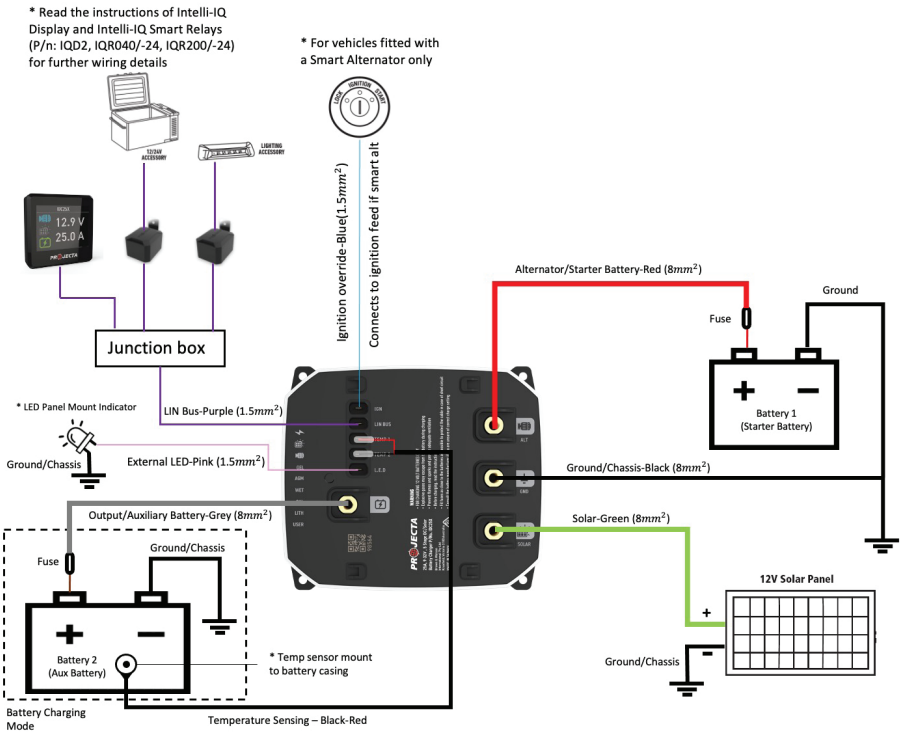
   This LED output terminal is not required to be wired into if you do not need an external LED indicator. If an external LED indicator is required, connect the positive (+) terminal of a LED Indicator to the LED input terminal (L.E.D).

   Connect the negative terminal of the LED indicator to the vehicle chassis ground.

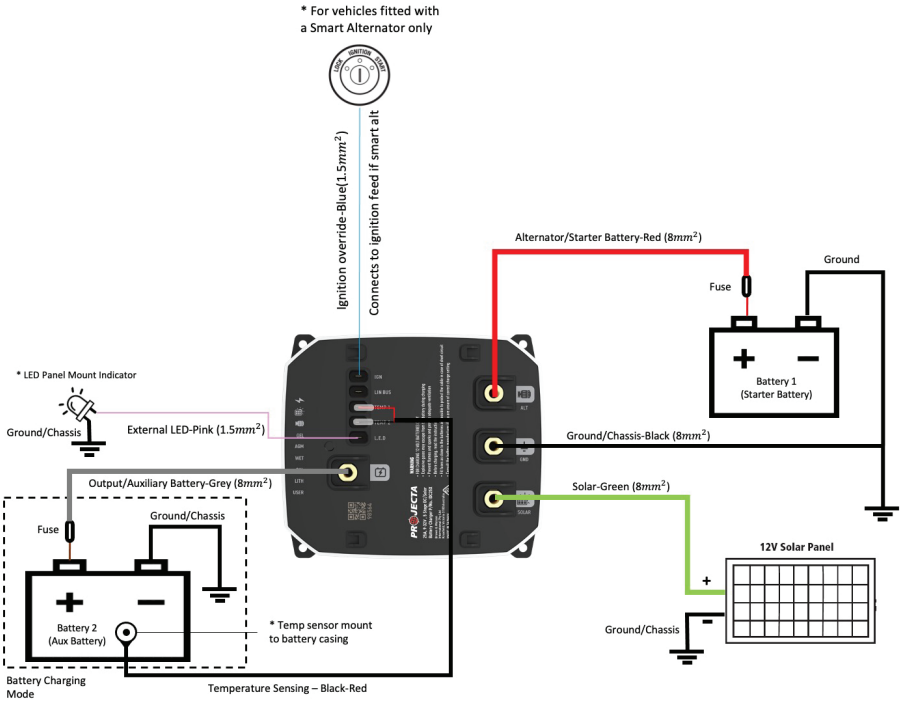
8. The TEMP1 & TEMP2 input terminals are used to provide temperature compensated battery charging. Attach the provided temperature sensing loom blade terminals to TEMP1 & TEMP2 inputs on IDC25X, the ports are dual polarity allowing the negative and positive to be plugged into either port. The temperature sensing loom is provided with 5m wire, please cut the excess length to minimize voltage drops and noise.

WIRING INSTRUCTION GUIDES

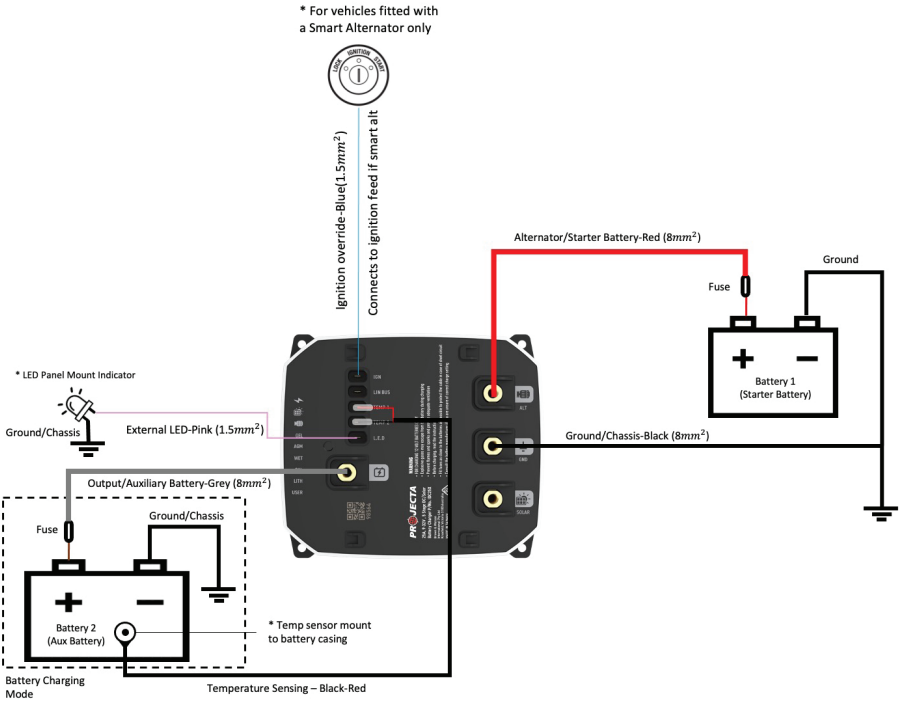
1. FULL SYSTEM WITH INTELLI-IQ CONFIGURATION



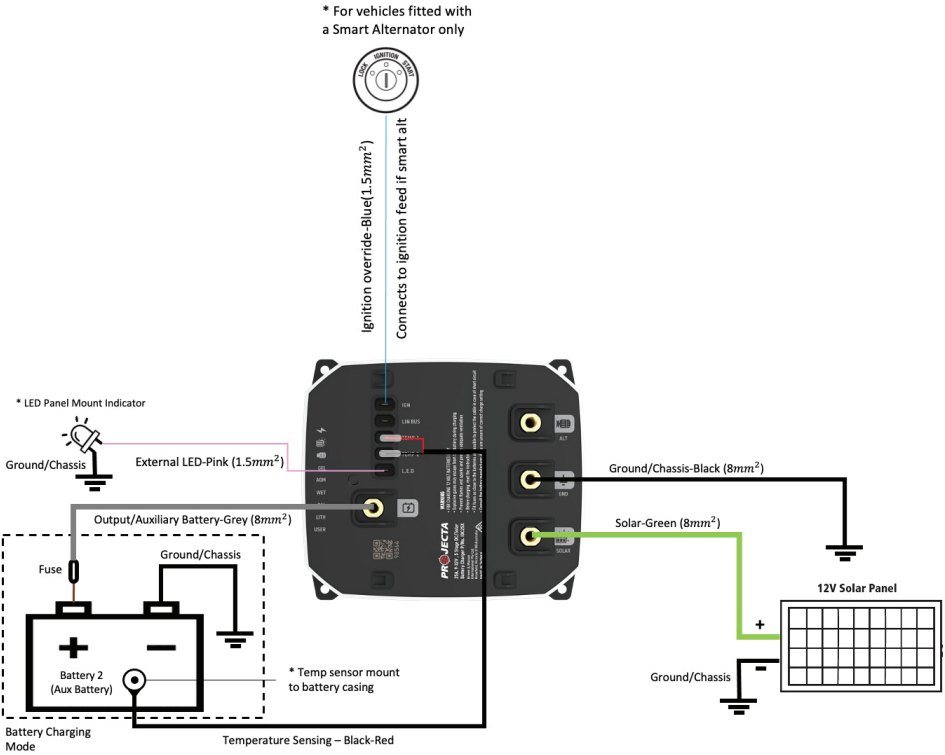
2. FULL SYSTEM CONFIGURATION



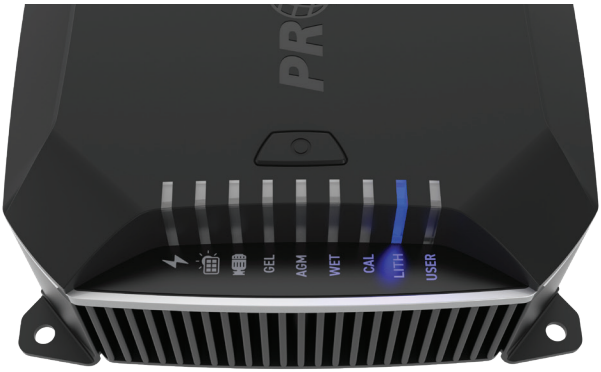
3. ALTERNATOR/STARTER INPUT ONLY CONFIGURATION



4. SOLAR & AUXILARY BATTERY INPUT CONFIGURATION



HOW TO READ LED INDICATORS



LED CHARGE INDICATORS

			DESCRIPTION
	Constant Green		Solar Present
		Constant Green	Alternator Present
Constant Red			IDC25X Faulty
	Constant Red		Solar Input Reverse Polarity
		Constant Red	Alternator Input Reverse Polarity
	Flashing Red		Solar Overvoltage
		Flashing Red	Alternator Overvoltage
Flashing Green	Constant Green		Charging from Solar
Flashing Green		Constant Green	Charging from Alternator
Fast Flash Amber			Bulk Time Out
Flashing Amber	Flashing Amber	Flashing Amber	Over Temperature

LED BATTERY CHARGE STATUS INDICATORS

	SELECTED BATTERY CHEMISTRY LED	DESCRIPTION
Constant Red	FLASHING BLUE	Output Reverse Polarity
Flashing Red	FLASHING BLUE	Output Overvoltage
Constant Amber	FLASHING BLUE	Output Open Circuit or Dead Battery
Flashing Amber	CONSTANT BLUE	Soft-start Timeout
Flashing Green	CONSTANT BLUE	Bulk Charging
Flashing Green	FLASHING BLUE	Absorption Charging
Constant Green	FLASHING BLUE	Equalisation Charging
Constant Green	CONSTANT BLUE	Float Charging (Charging Complete or time out)
Constant Red	ALL BATTERY MODE LED'S FLASHING	Output Short Circuit

HOW TO SELECT BATTERY CHEMISTY

IDC25X allows you to select the select the appropriate charge setting for your auxiliary battery.

To change the battery type, hold and press the Mode Button () for about 3 seconds. When the Charge LED turns OFF and the Battery Type LED will begin to flash, then release Mode button. After which, Mode Button () can be short pressed to select the Battery Type. When the Battery Type LED is in the correct Battery Chemistry for about 3 seconds, then that Battery Type chemistry is deemed selected.

To confirm you have selected the correct battery chemistry, press the Mode button ().

OUTPUT OVERRIDE

If Auxiliary battery has been heavily discharged, hold and press the Mode button () for about 10 seconds. When all Battery Type LEDS light up simultaneously, let go of the Mode Button. This will cause IDC25X to commence charging.

FREQUENTLY ASKED QUESTIONS

Q. Is the IDC25X waterproof?

A. The IDC25X was designed and engineered to the stringent ingress protection rating of IP68 & IP69K. This allows the IDC25X to meet the toughest of challenges whether that be river crossings, engine bay washing or direct high pressure washing of the unit.

Q. Why do the positive cables from the batteries need to be fused?

A. High-Capacity batteries can produce large amounts of power and are capable of melting cable insulation and catching fire in the case of a short circuit. Each positive (+) cable connected to the battery must be protected by a fuse located in close proximity to the battery.

Q. Is the IDC25X safe to use with modern 'electronic' vehicles?

A. The IDC25X has been designed to work with all vehicles, including new vehicles with EFI and computer management systems. The charger utilises sophisticated electronics that ensures complete safety for you and your vehicle.

Q. How do I know if the battery is charged?

A. Refer to diagram "LED BATTERY CHARGE STATUS INDICATORS" on page 13 to identify when the IDC25X is indicating battery charging is complete.

Q. I have connected the IDC25X properly but the power LED " " does not come on?

A. Check the cable size. The IDC25X is designed to power on and charge from an input source as little as 9V. If small size cables are used for wiring, the voltage might drop below 9V when IDC25X is attempting to start up. Please refer to Installation – wiring section for recommended cable size.

Q. I have connected the IDC25X to solar " " and alternator inputs " ", but LEDs do not come on?

A. In some cases batteries can be discharged to the point where they have very little or no voltage. This can occur if a small amount of power is used for a long time, for example a map reading light is left on for a week or more. The IDC25X is designed to charge an auxiliary battery from as little as 2 Volts. Refer to Page 13 Output Override for detailed instruction.

Q. Why does the IDC25X indicate the battery is fully charged straight away?

A. There are three possible reasons why the IDC25X indicated the battery is fully charged.

1. The battery is fully charged.

2. The battery has taken a surface charge.

3. The battery has a faulty cell.

Q. What is a "Surface Charge"?

A. Batteries unused or left discharged for some time build up a resistance to being recharged. When the charger is first connected, these batteries will take a surface charge, and the IDC25X LED's will indicate the auxiliary battery is fully charged within a short period of time. The battery however is not fully charged. The charger is voltage sensitive and cannot differentiate between a surface charge and a fully charged battery. After a few hours, the battery may start to accept some charge but most batteries with this condition may not recover.

Q. What is a "Faulty Cell"?

A. 12 Volt batteries contain 6 cells, and one faulty cell is enough to ruin your battery. If after twelve hours of charging your battery is still accepting charge, you should test the cells using a hydrometer. If one reading is lower than the rest, it indicates a faulty cell. It is pointless to continue charging; the battery needs replacing.

Q. Why is there no output at the IDC25X's auxiliary battery output "⚡"?

A. The IDC25X incorporates short circuit protection that makes it much safer to use. For this reason, the IDC25X will only output power when properly connected to a battery. To check if the IDC25X is functioning, follow the instructions to connect and operate the charger as normal on a flat battery. While the battery is charging measure the battery voltage with a volt or multi-meter. Charging can be confirmed if the voltage is increasing (within the voltage parameters set out in the specifications).

WARRANTY STATEMENT

Brown & Watson International Pty. Ltd. ("BWI") of 1500 Ferntree Gully Road, Knoxfield, Vic., telephone (03) 9730 6000, fax (03) 9730 6050, warrants that all products described in its current catalogue will under normal use and service be free of failures in material and workmanship for a period of five (5) year from the date of the original purchase by the customer as marked on the invoice (see elsewhere for specific warranty period). This warranty does not cover ordinary wear and tear, abuse, alteration of products or damage caused by the purchaser.

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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AUSTRALIA
Brown & Watson International Pty. Ltd.
Knoxfield Victoria 3180
Phone: (03) 9730 6000
Fax: (03) 9730 6050
National Toll Free: 1800 113 443

NEW ZEALAND OFFICE
Griffiths Equipment Ltd.
19 Bell Avenue,
Mount Wellington,
Auckland 1060, New Zealand
Phone: (09) 525 4575