



iTECHWORLD

# ITECHDCDC40

In vehicle DC battery charger



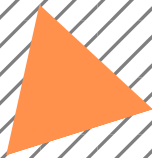

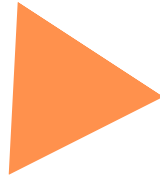
User Guide



# USER GUIDE

## KEY FEATURES

The iTECHDCDC40 is a sophisticated multi stage dual input charger. The iTECHDCDC40 utilizes push button switch mode to cater for Lead acid, AGM/GEL, calcium or lithium batteries.

- Heavy duty aluminium case and mounting brackets.
  - Microchip monitoring and control.
  - Fully automatic high frequency multi stage charging
  - Pulse mode technology that reduces oxidation, evens electrolyte consistency and minimizes temperate equating.
  - Easy push button charge profile select.
  - Internal charger temperature monitoring and power output control.
  - LED indicators showing state of charge.
  - Over charging, short circuit and temperature protection.
  - Reverse polarity protection.
  - Thermal overload protection.
  - Solar input overload protection.
  - MPPT solar input.
  - IP67 fully waterproof and dust proof.
  - Power cut memory function: Once selected the charger will remain on this battery type until it is changed.
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# USER GUIDE

## INSTALLATION

The iTECHDCDC40 must be installed by a qualified auto electrician. Installation of the iTECHDCDC40 will require twin core wiring and suitable connectors. Anderson plug type connectors are supplied in the kit.

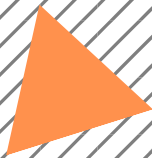

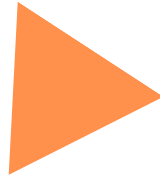
Any existing cables used in conjunction with the iTECHDCDC40 will require checking to ensure the gauge is correct.

- Locate where you are going to install the iTECHDCDC40.
- Ensure the iTECHDCDC40 is securely mounted using the brackets.
- Ensure all cabling meets specifications and will not be exposed to excessive heat/moving parts or abrasion.
- If the charger is located in a camper/caravan we recommend the use of an Anderson style plug between the tow vehicle and the camper/caravan.
- Fit the suitable connectors on either end of the twin core cables.
- The iTECHDCDC40 has a shared negative internally.
- Using twin core wiring between the auxiliary battery and iTECHDCDC40 connect the red (+) to the (+ blue cable) DC output terminal (Black anderson plug) and the black (-) to the (-) negative on the rear of the iTECHDCDC40. It is recommended to install a 50Amp circuit breaker/fuse (not included) on the positive cable between the auxiliary battery and the iTECHDCDC40. The circuit breaker/fuse should be located as close as possible to the battery.



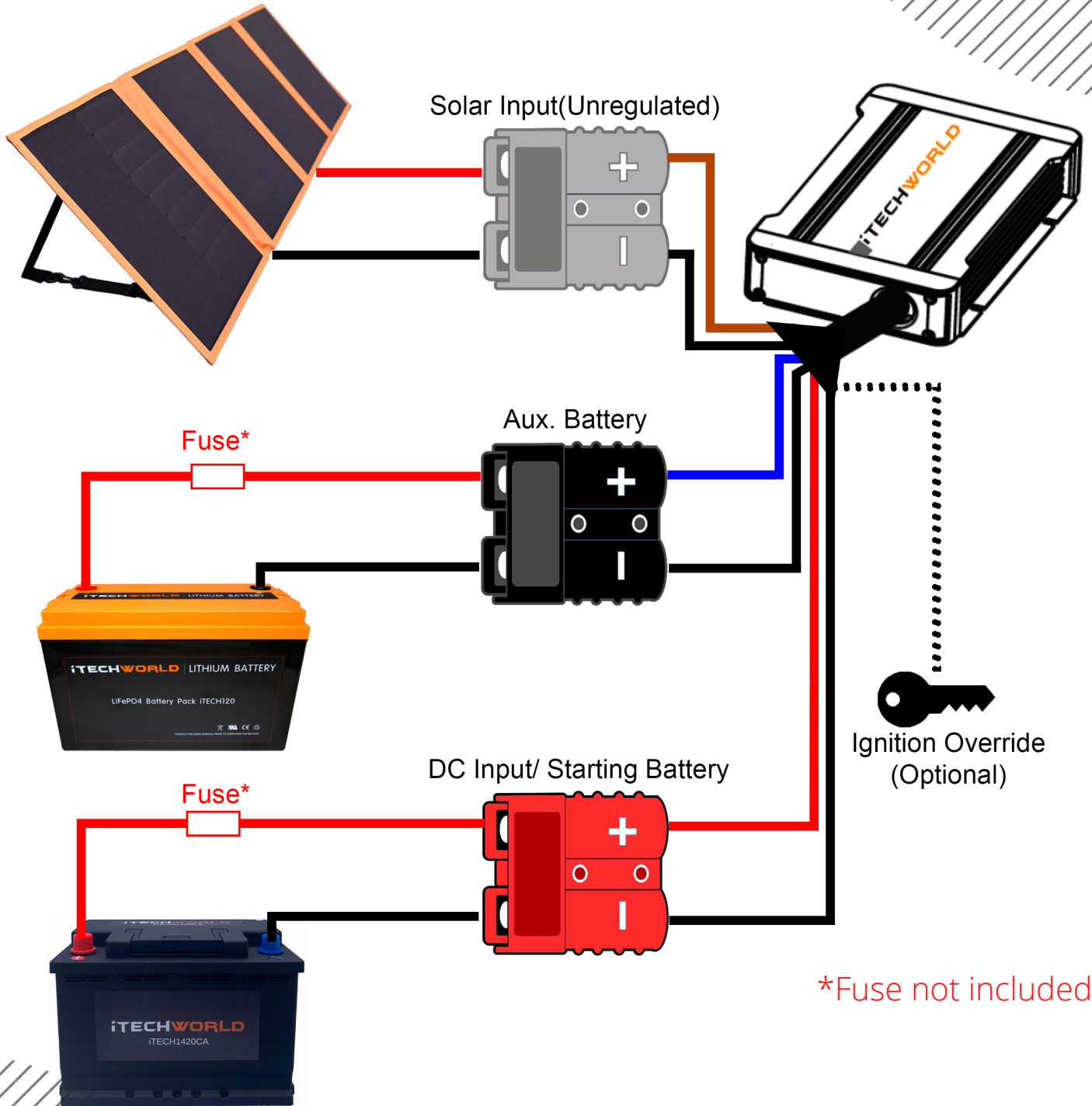
# USER GUIDE

## INSTALLATION CONTINUED

- Using twin core wiring between the main starting battery and iTECHDCDC40 connect the red (+) to the (+) DC input terminal (Red Anderson plug) and the black (-) to the (-) negative on the rear of the iTECHDCDC40. Finally, make the power connections to the main starting battery of the vehicle. It is recommended to install a 50Amp circuit breaker/fuse (not included) on the positive cable between the starting battery and the iTECHDCDC40. The circuit breaker/fuse should be located as close as possible to the battery.
  - The optional ignition override cable is used to wire into the ignition/acc of your vehicle if you have a smart alternator. This will force DC charge once the ignition is switched on, lowering the charge cut in voltage to 11.60V and low voltage cut off to 10.80V.
  - Check all connections are secure and tight.
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# USER GUIDE

## INSTALLATION CONTINUED



\*Fuse not included

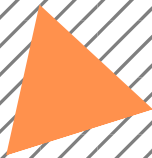

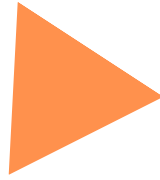


# USER GUIDE

## OPERATING THE ITECHDCDC40

### DC BATTERY

Once correctly installed, the iTECHDCDC40 is a simple set and forget system.

- Start the vehicle and let it idle.
  - The iTECHDCDC40 will now recognize that there is charge being applied to the main starting battery.
  - Once the main starting battery has reached 13v the charger will begin to charge the aux battery.
  - The initial default setting is for AGM/GEL batteries.
  - If you are charging a battery of a different chemistry, simply change the battery type by unplugging the aux battery, then press the battery type selector button on the front panel of the iTECHDCDC40 and reconnect the aux battery.
  - Once you have selected the new battery type the iTECHDCDC40 will remain on this battery type until it is changed. To change battery type the auxiliary battery must be disconnected from the iTECHDCDC40. This is a safety feature to stop you accidentally changing the battery charge profile.
  - The iTECHDCDC40 will continue to operate even after the vehicle has been switched off, however once the main starting battery falls below 12.4v the iTECHDCDC40 the charger will automatically switch off.
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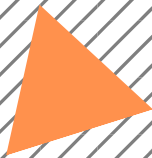

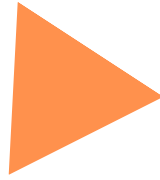


# USER GUIDE

## OPERATING THE ITECHDCDC40

### SOLAR INPUT

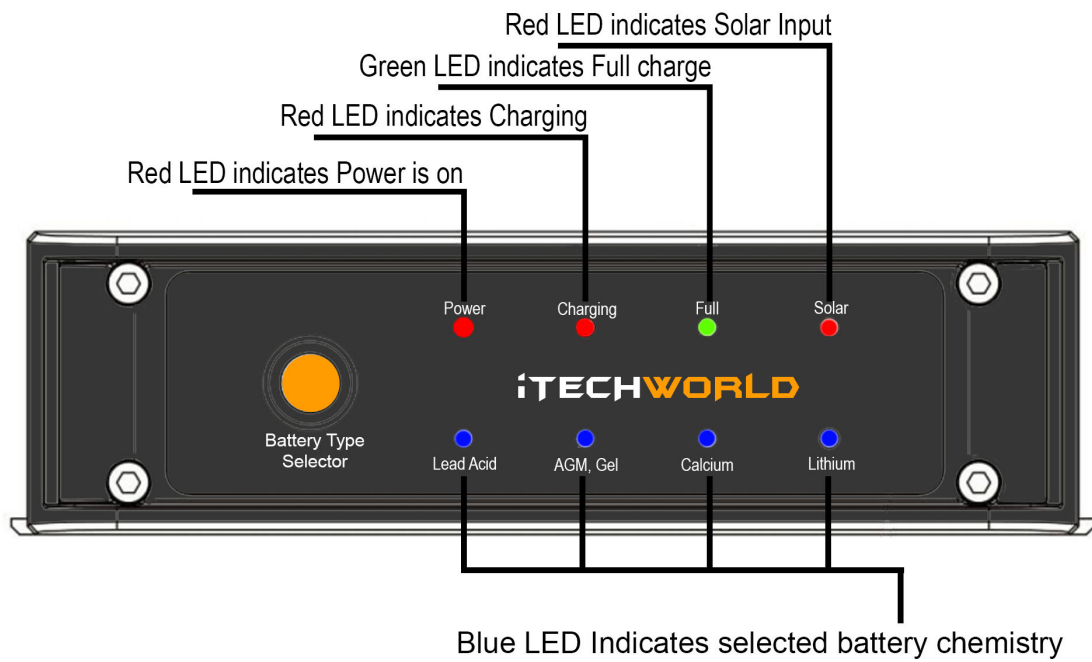
Once correctly installed, the iTECHDCDC40 has MPPT solar charging for increased solar efficiency.

- Once your solar panel has been connected to the solar input section of the iTECHDCDC40 the charger will transfer to solar mode when the vehicle is not running.
  - The initial default setting is for AGM/GEL batteries.
  - If you are charging a battery of a different chemistry, simply change the battery type by unplugging the aux battery, then press the battery type selector button on the front panel of the iTECHDCDC40 and reconnect the aux battery.
  - Once you have selected the new battery type the iTECHDCDC40 will remain on this battery type until it is changed.
  - Solar charging requires a solar input of 16 to 25v.
  - Your solar panel will need to be unregulated when connecting to the iTECHDCDC40.
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# USER GUIDE

## OPERATING THE ITECHDCDC40

### FRONT PANEL INDICATOR LIGHTS





# USER GUIDE

## OPERATING THE ITECHDCDC40

### FRONT PANEL INDICATOR LIGHTS



#### DC Charge

When charging is from the DC input of the iTECHDCDC40, the red charging LED will be lit.



#### DC Charge

When the auxiliary battery is full, the green Full LED will be lit. The iTECHDCDC40 will now enter maintenance mode and provide 100mA charging current. It will not return to the charging mode until the auxiliary battery is drained down to 12.4Volts. If you want to force start recharging the aux battery, simply disconnect and reconnect the aux battery from the iTECHDCDC40.

# USER GUIDE

## OPERATING THE ITECHDCDC40

### FRONT PANEL INDICATOR LIGHTS



#### Solar Charge

When charging is from the DC input of the iTECHDCDC40, the red charging and solar input LEDs will be lit.



#### Solar Charge

When the aux battery is full, the green Full LED will be lit. The iTECHDCDC40 will now enter maintenance mode and provide 100mA charging current. It will not return to the charging mode until the auxiliary battery is drained down to 12.4Volts. If you want to force start recharging the aux battery, simply disconnect and reconnect the aux battery from the iTECHDCDC40. Please note, the iTECHDCDC40 requires a minimum of 25Watts to maintain solar charge.

# USER GUIDE

## SPECIFICATIONS & WIRING GAUGE

|                                      |   |
|--------------------------------------|---|
| <b>Type:</b>                         | <b>Multistage</b>   |
| <b>Input:</b>                        | DC Battery: 12.4 – 16.0V  |
|                                      | Solar Input: 16.0 – 25.0V   |
| <b>Output/ Charging Voltage:</b>     | 13.5-15.4 Volts (the iTECHDCDC40 will stop charging when the alternator output or vehicle battery is below 12.40 Volts) |
| <b>Output Current:</b>               | DC Output: 35A – 40A  |
|                                      | Solar Output: 35A – 40A   |
| <b>Minimum Charge start voltage:</b> | 2.0 Volts on the Auxiliary battery  |
| Charge Control                       |   |
| <b>Soft Start</b>                    | Yes   |
| <b>Soft charge current</b>           | 35A   |
| <b>Bulk Charge Voltage</b>           | 14.7V(AGM/GEL) 14.4V(Lead Acid) 15.4V(Calcium)<br>14.4V(Lithium, LiFEPO4)   |
| <b>Absorption</b>                    | Constant voltage with automatic current control   |
| <b>Equalisation</b>                  | Automatic (Calcium battery only)  |
| <b>Float Charge Voltage</b>          | 13.5V(AGM/GEL) 13.5V(Lead Acid) 13.5V(Calcium)  |
| <b>Float Charge Current</b>          | 100mA   |
| Cable Length/ Twin Core              |   |
| <b>0-1 meters:</b>                   | 12 AWG  |
| <b>1-5 meters:</b>                   | 8 AWG   |
| <b>5+ meters:</b>                    | 6 AWG   |

# USER GUIDE

## CHARGING SPECIFICATIONS

### Charging voltages:

|          | AGM/GEL | LEAD ACID | CALCIUM | LITHIUM |
|----------|---------|-----------|---------|---------|
| BOOST    | 14.3V   | 14.0V     | 15.0V   | 14.0V   |
| CHARGING | 14.7V   | 14.4V     | 15.4V   | 14.4V   |

| INPUT                   | 12V INPUT     |           | SOLAR  |
|-------------------------|---------------|-----------|--------|
| Ignition override cable | Not Connected | Connected | N/A    |
| Turn ON Above           | 13.0V         | 11.60V    | 16V    |
| Turn OFF                | 12.40V        | 10.80V    | 10.50V |

# USER GUIDE

## FAULT FINDING

### Fault Finding



- » **Charger won't indicate charging.**
  - Charger not connected to battery.
  - Check terminal connection.
  - Battery is not 12V.

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- » **Battery won't charge.**
  - Verify that all wiring meets specifications.
  - Check condition of batteries.
  - Check performance of alternator.

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- » **Battery won't fully charge or hold charge.**
  - Batteries that are over 3 years old; severely discharged (or previously been severely discharged); not regularly recharged; over-heated; low in electrolyte; undercharged; overcharged or sulphated may not accept or hold a charge.

### ALARMS

- If the iTECHDCDC40 is beeping with no flashing lights, please check the polarity of your auxiliary battery
- If the iTECHDCDC40 is beeping and the red power LED is flashing, the iTECHDCDC40 has detected a fault with your auxiliary battery, please double check your wiring and electrical connections. It is possible that your battery will need to be replaced.