

Operating Instructions

DBLW Series



Important notes: *This device must only be used by qualified personnel for its specified application. Read the operating instructions carefully and always observe the battery manufacturer's safety instructions and specifications.*

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Device features:

- ✓ Extensive protection and self-protection functions
- ✓ Short-circuit and reverse polarity protection
- ✓ Option: Switchover to external power supply
- ✓ Option: Pb charging mode
- ✓ Option: Pb LTC charging mode
- ✓ Option: LiFePO₄ charging mode
- ✓ Option: LiFePO₄ LTC charging mode
- ✓ Cable compensation
- ✓ Vehicle electronics/airbag protection
- ✓ Protective function in the event of battery defects
- ✓ Spark suppression

1. GENERAL SAFETY INFORMATION

- The device must not be opened. Doing so will void the test certificate and warranty.
- This device is not intended for use by persons (including children) with restricted physical, sensory or mental capacities, or a lack of experience and/or knowledge, unless they are supervised by someone who is responsible for their safety or receive instruction from this person on how to use the device. Children should be supervised to ensure that they do not play with the device.
- The battery charger must only be used for its intended purpose.
- The battery charger must only be connected to vehicle batteries and on-board networks with a rated voltage of 12 V DC.
- The battery charger contains components that can generate electrical arcs and sparks. The machine must therefore be operated in a well-ventilated place intended for this purpose.
- Warning: explosive gases can develop during the charging process. Flames, naked lights and spark formation must therefore be avoided. Storing flammable material in the vicinity of the battery charger is prohibited.
- The battery to be charged must have a rated capacity of at least 1 Ah.
- Non-rechargeable batteries cannot and must not be charged with this device.
- Battery charging is only possible in the "CHARGE" program, since the parameters and monitoring functions required for a safe charging process are only activated in these programs.

WARNING: When in EPS (External Power Supply) mode, these monitoring functions are not active.

- Charging freshly charged or faulty batteries is expressly prohibited.
- Always note the instructions provided by the battery manufacturer.
- The power supply cable and charging cable / terminals must be suitable for use with the Deutronic battery charger and have a sufficient current carrying capacity (for more details, see the data sheet accompanying the charger and the applicable installation guidelines). All of the cables used in the device must be checked regularly for damage and must always be in an intact technical condition. Faulty cables must always be replaced immediately. Dirty charging terminals must be cleaned.
- WARNING fire hazard! If the battery charger is not being used, the charging terminals and battery adapter must be positioned so that there is no electrically conductive connection between the contacts.
- Please note: in industrial environments or in workshops, surfaces are often painted or coated with powder, and are therefore initially not conductive. However on contact with the charging terminals, the surface coating can be scratched off and the point of contact can become conductive. This represents a fire hazard.

2. IMPORTANT SAFETY INSTRUCTIONS

1. KEEP THIS SAFETY INFORMATION IN A SAFE PLACE.

This manual contains important safety and operating rules.

2. Do not expose the charger to rain or snow.
3. The use of accessories that are not recommended or sold by the manufacturer of the battery charger can lead to problems such as the risk of fire, electric shock or injury.
4. To reduce the danger of damaging the plug and/or cable, always disconnect the plug from the device by pulling on the plug itself. - Never just using the cable.
5. An extension lead should only be used if absolutely necessary. The use of an inappropriate extension lead increases the risk of fire and electric shock. If an extension lead must be used, please note the following:
 - a. The pins on the connection of the extension lead must be identical in terms of number, size and shape as those on the charger.
 - b. The extension lead must be properly wired and in good electrical condition.
 - c. The cable cross-section must be large enough for the alternating current specification of the battery charger.
6. The charger must not be used with a damaged connection cable or plug – if damaged, immediately replace the cable and plug.
7. Do not continue to use the battery charger if it has sustained a heavy blow, fall damage or has been damaged in any other way. In such a case, take the device to a qualified service technician.
8. The battery charger must not be opened. If a service or repair is required, the device must be sent to a qualified service technician. Incorrect assembly can cause electric shock or a fire.
9. To minimise the risk of an electric shock, the device must be disconnected from the mains before maintenance or cleaning. Switching off the device alone does not reduce the risk.

10. WARNING - DANGER OF EXPLOSIVE GASES

- a. IT IS DANGEROUS TO WORK AROUND BATTERIES: IN NORMAL OPERATION, BATTERIES GENERATE EXPLOSIVE GASES: IT IS THEREFORE EXTREMELY IMPORTANT TO READ THE OPERATING INSTRUCTIONS BEFORE EACH USE OF THE CHARGER AND TO FOLLOW THE INSTRUCTIONS PRECISELY.
- b. To reduce the risk of a battery explosion, these safety instructions, as well as the information provided by the battery manufacturer and the instructions of the manufacturers of any additional equipment, must be followed. The warning instructions on the device and its additional equipment must be checked carefully.

11. PRECAUTIONARY MEASURES FOR PERSONAL PROTECTION

- a. When working around batteries, there should be someone else within earshot or nearby in order to provide assistance if necessary.
- b. Keep plenty of fresh water and soap nearby in case battery acid comes into

- contact with the skin, eyes or clothing.
- c. Wear closed eye protection and protective clothing. Avoid touching the eyes when working near batteries.
 - d. If battery acid comes into contact with skin or clothing, wash immediately with soap and water. If acid comes into contact with the eyes, rinse them immediately with running cold water for at least 10 minutes and then seek medical assistance straight away.
 - e. NEVER smoke near batteries or the machine. Avoid naked flames or sparks around the battery or machine.
 - f. Be extremely careful when handling metal tools to ensure they do not fall onto the battery. This can produce sparks or the battery or another electrical component can short-circuit, which can lead to an explosion.
 - g. Metallic objects such as rings, bracelets, necklaces and watches must be removed from the body before handling the batteries. A battery can generate a short circuit current which is high enough to weld a ring or similar metallic object, causing serious burns.
 - h. Only use the charger to charge conventional lead or LiFe batteries. Always ensure to select the correct charging mode. The battery charger is not designed for supplying a further low-voltage network with energy in addition to the starter battery. Do not use the battery charger to charge dry batteries that are often used in home applications. These batteries can burst and cause personal injury and material damage.
 - i. NEVER charge a frozen battery.

12. PREPARATIONS FOR CHARGING MODE

- a. If the battery has to be removed from the vehicle for charging, always disconnect the earth of the battery first. Ensure that all consumers in the vehicle are switched off in order to prevent an arc.
- b. During charging, ensure that the environment is well ventilated. Any gas which is produced during the charging process can be blown away by forced ventilation by using a piece of cardboard or other non-metallic object as a fan.
- c. Clean the poles of the battery. Ensure that corrosion residue does not come into contact with the eyes.
- d. Fill each cells with distilled water until the battery acid reaches the value defined by the manufacturer. This helps to remove excess gas from the cells. Do not over-fill the batteries. For batteries without cell caps, follow the manufacturer's instructions for recharging carefully.
- e. Read all of the specific instructions of the battery manufacturer, such as whether or not to remove the cell caps during charging and the recommended charging rates, etc.
- f. To ensure that the voltage level is set to the correct value for a battery charger with an output voltage selector switch, determine the battery voltage by referring to the vehicle owner's manual. If there is no output voltage

selector switch, do not use the battery charger unless the battery voltage matches the specifications of the battery charger.

13. WHERE TO USE THE BATTERY CHARGER

- a. Place the battery charger as far away from the battery as the cable lengths allow
- b. Never position the battery charger directly above or below the battery to be charged; gases and liquids from the battery would corrode and damage the charger. Operate the battery charger as far away from the battery as the charging cable allows.
- c. When measuring the density of the acid or when topping up the battery, ensure that no battery acid drips onto the battery charger.
- d. Do not operate the battery charger in enclosed spaces and do not restrict the ventilation.
- e. Do not place any batteries on the charger.

14. PRECAUTIONARY MEASURES FOR DC CONNECTIONS

- a. Only connect and disconnect the charging clamps after all the switches on the device have been switched to the OFF position and the power cable has been disconnected from the plug socket. Ensure that the charging terminals are not touching each other.
- b. Connect the terminals to the battery and the chassis, as described in 15.e), f), 16.b) and d).

15. PERFORM THE FOLLOWING STEPS IF THE BATTERY IS BUILT INTO THE VEHICLE. A SPARK NEAR THE BATTERY CAN LEAD TO IT EXPLODING. TO REDUCE THE RISK OF SPARKS FORMING NEAR THE BATTERY:

- a. Route the power supply and charging cables so that there is a low risk of damage caused by the bonnet, door or moving engine parts.
- b. Maintain a safe distance from fans / rotor blades, belt pulleys, V-belt pulleys and other parts that can lead to injury.
- c. Check the polarity of the battery connections. The POSITIVE (POS, P, +) connection usually has a larger diameter than the NEGATIVE (NEG, N, -) battery connection.
- d. Determine which battery terminal is earthed (connected) to the chassis. If the negative terminal is earthed to the chassis (as is the case for most vehicles), see 15.e). If the positive terminal is earthed to the chassis, see 15.f).
- e. For vehicles which are earthed at the negative terminal, connect the positive (red) charging clamp of the battery charger to the POSITIVE (POS, P, +) non-earthed terminal of the battery. Connect the negative (black) charging clamp to the chassis or engine block. Do not connect the charging clamp to

the carburettor, fuel lines or other sheet metal parts. Connect it to a large, thick metal part of the frame or engine block.

- f. For vehicles which are earthed at the positive terminal, connect the negative (black) charging clamp of the battery charger to the NEGATIVE (NEG, N, -) non-earthed terminal of the battery. Connect the positive (red) charging clamp to the chassis or engine block. Do not connect the charging clamp to the carburettor, fuel lines or other sheet metal parts. Connect it to a large, thick metal part of the frame or engine block.
- g. To disconnect the battery charger, toggle the switch to the OFF position, remove the power cable, remove the charging clamps from the housing and then the battery terminals.
- h. For information on charging times please refer to the operating instructions.

16. PERFORM THE FOLLOWING STEPS IF THE BATTERY IS LOCATED OUTSIDE OF THE VEHICLE. A SPARK NEAR THE BATTERY CAN LEAD TO AN EXPLOSION. TO PREVENT SPARKS FROM FORMING NEAR THE BATTERY:

- a. Check the polarity of the battery connections. The POSITIVE (POS, P, +) connection usually has a larger diameter than the NEGATIVE (NEG, N, -) battery connection.
- b. Connect an isolated battery cable which is at least 60 cm long (size AWG 6) to the NEGATIVE (NEG, N, -) battery terminal.
- c. Connect the POSITIVE (red) charging clamp to the POSITIVE (POS, P, +) battery connection.
- d. Position yourself and the free cable end as far away from the battery as possible and then connect the free negative cable end (black) to the charging connections.
- e. Turn away from the battery as soon as the last connection has been made.
- f. When disconnecting the battery charger, always proceed in the reverse order compared to the connection process and disconnect the first connection when you are as far away from the battery as is practical.
- g. A marine (boat) battery must be removed and charged on land. Special equipment for maritime use is required to charge the battery on board.

17. THE USE OF AN ADAPTER IS NOT PERMITTED IN CANADA.

If there is no earth connection, only use this device if a suitable connection socket has been installed by a qualified electrician.

INSTRUCTIONS FOR EARTHING AND MAINS CONNECTION

Versions with a nominal connection voltage of **120 V**:

This battery charger is intended for use on a nominal 120 V mains supply and has a plug as illustrated in Figure 1 [A] below. If a suitable earthed connection is not available, an adapter can be used for a temporary connection, as illustrated in Figure 1 [B] and [C] in order to connect this plug to a two-pin plug socket, as shown in Figure 1 [B]. The temporary connection should only be used until a properly earthed plug socket has been installed by a qualified electrician.

DANGER - Ensure that the central screw of the connector plate is earthed before using the connection illustrated below. The rigid green cable coming out of the adapter must be connected to a properly earthed connection - make absolutely sure that it is actually earthed.

If necessary, replace the original cover plate screw with a longer screw which secures the adapter cable in place or remove the cover plate and connect the earth connection to an earthed plug socket.

Versions with a nominal connection voltage of **230 V**:

This battery charger is intended for use on power grids with voltages of more than 120 V and is supplied from the manufacturer with a special connector cable and matching plug which enables connection to appropriate supply circuits. Ensure that the charger is connected to a plug socket which has the same design as the plug (adapters must not be used with this battery charger).

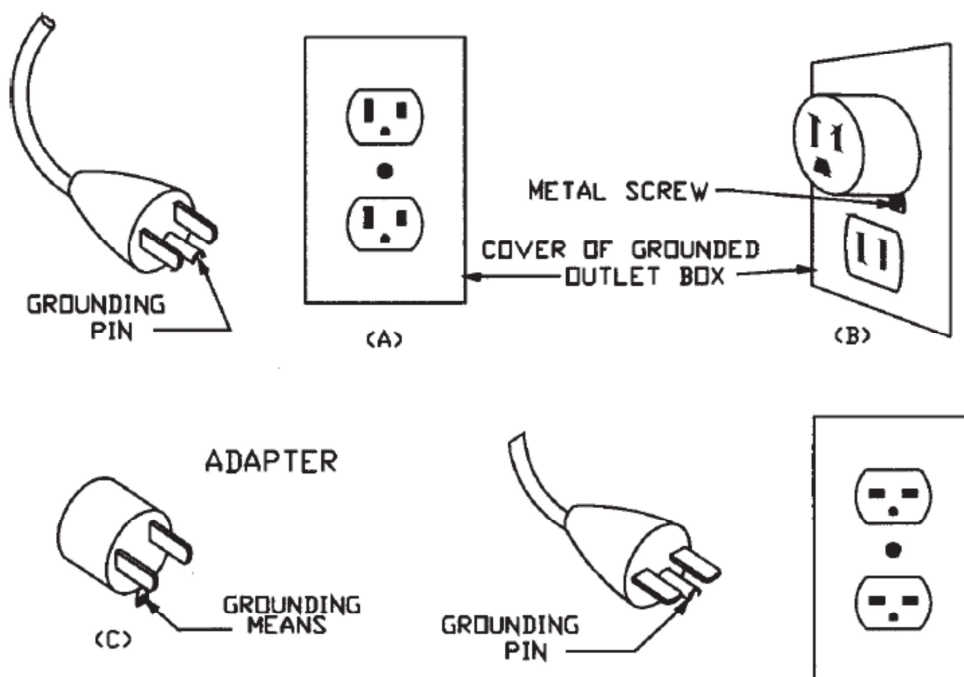


Figure 1 Earthing process
Source: UL1236 Battery chargers

3. Assembly instructions

Mains connection:

The device may only be used with a suitable power cable or country-specific adapter.

If an extension lead is used, the correct cable cross section must be selected according to the following table:

Table with the recommended AWG sizes as well as the minimum cable cross section for extension leads

Cable length [feet]	25	50	100	150
AWG sizes	18	16	12	10
Cable length [metres]	7	15	30	45
Cable cross-section [mm²]	1.0	1.5	4	6

Charging cable:

If the charging cable is changed, the cable compensation must always be performed. Even if the cable is replaced with a cable of the same type, the cable compensation should be performed (see 7.1).

4. Operating controls

4.1. Control panel

The diagram below shows the controls of the DBLW Series (including LEDs and buttons):

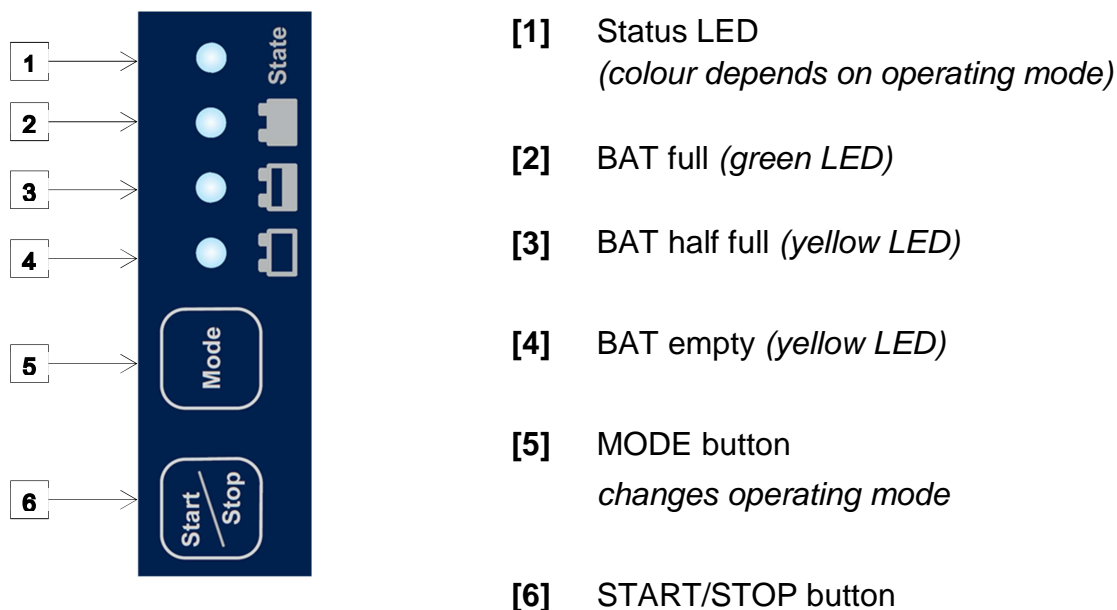


Figure 2 Control panel

4.2. Buttons

START/ STOP button:

In 'Standby' mode, pressing the START/STOP button will activate the selected operating mode. Pressing the button again will put the device back into "Standby" mode.

MODE button:

In 'Standby' mode, pressing the Mode button will change the operating mode.

Note: You cannot change operating modes when an operating mode is active.

4.3. Signals

Standby mode

Operating mode	Status LED	LED 2	LED 3	LED 4
Cable compensation	Solid violet	Flashing	Flashing	Flashing
Charge Pb LTC	Flashing orange	Flashing	Flashing	Flashing
Charge Pb	Solid orange	Flashing	Flashing	Flashing
Charge Li LTC	Flashing blue	Flashing	Flashing	Flashing
Charge Li	Solid blue	Flashing	Flashing	Flashing
PowerUp	Flashing green	Flashing	Flashing	Flashing
EPS	Solid green	Flashing	Flashing	Flashing

Active mode

Operating mode: Cable compensation

Status	Status LED	LED 2	LED 3	LED 4
<i>Load detection active</i>	Solid violet			Flashing
<i>Switch-on delay</i>	Solid violet			Flashing quickly
<i>Cable compensation active</i>	Solid violet	Running light (each LED lights up for 1 second)		

Operating mode: Charge Pb LTC

Status	Status LED	LED 2	LED 3	LED 4
<i>Load detection active</i>	Flashing orange			Flashing
<i>Switch-on delay</i>	Flashing orange			Flashing quickly
<i>Charging</i>	Flashing orange	Running light (each LED lights up for 1 second)		
Monitoring				
Battery full	Flashing orange	Solid		
Battery half full	Flashing orange		Solid	
Battery empty	Flashing orange			Solid

Operating mode Charge Pb

Status	Status LED	LED 2	LED 3	LED 4
<i>Load detection active</i>	Solid orange			Flashing
<i>Switch-on delay</i>	Solid orange			Flashing quickly
<i>Charging</i>	Solid orange	Running light (each LED lights up for 1 second)		
<i>EHL</i>	Solid orange	Running light (each LED lights up for 1 second)		
Monitoring / Battery full	Solid orange	Solid		

Operating mode: Charge LiFe LTC

Status	Status LED	LED 2	LED 3	LED 4
<i>Load detection active</i>	Flashing blue			Flashing
<i>Switch-on delay</i>	Flashing blue			Flashing quickly
<i>Charging</i>	Flashing blue	Running light (each LED lights up for 1 second)		
Monitoring				
Battery full	Flashing blue	Solid		
Battery half full	Flashing blue		Solid	
Battery empty	Flashing blue			Solid

Operating mode Charge LiFe

Status	Status LED	LED 2	LED 3	LED 4
<i>Load detection active</i>	Solid blue			Flashing
<i>Switch-on delay</i>	Solid blue			Flashing quickly
<i>Charging</i>	Solid blue	Running light (each LED lights up for 1 second)		
<i>EHL</i>	Solid blue	Running light (each LED lights up for 1 second)		
Monitoring / Battery full	Solid blue	Solid		

Operating mode: PowerUp

Status	Status LED	LED 2	LED 3	LED 4
<i>Load detection active</i>	Flashing green			Flashing
<i>Switch-on delay</i>	Flashing green			Flashing quickly
<i>Charging</i>	Flashing green	Running light (each LED lights up for 1 second)		

Operating mode: EPS

Status	Status LED	LED 2	LED 3	LED 4
<i>Load detection active</i>	Solid green			Flashing
<i>Switch-on delay</i>	Solid green			Flashing quickly
<i>Supply</i>	Solid green	Running light (each LED lights up for 1 second)		

Note:

The indicators of possible faults can be found in Section 8 "Error messages".

5. Operation

Connecting the device:

1. Choose the correct power cable for your country and connect it to the device.
2. Plug the power cable into a mains socket (100~240 V AC).
3. To signal that the device has started, LEDs 2–4 will illuminate in a running sequence.
4. By default, after being connected to the mains or after a restart, the device will enter the last used operating mode when put into active mode. When the device is switched on for the first time, it will enter cable compensation mode when put into active mode.
Note: You cannot change operating modes in active mode.
5. When switching the device on for the first time, perform the cable compensation, see Section 6 Initial setup.
6. Connect the charging clamps to the vehicle battery to be charged or to the charging points provided on the vehicle.
7. In 'Standby' mode, pressing the MODE button will change the operating mode. Pressing the START/STOP button allows the selected operating mode to be activated. Pressing the button again will put the device back into Standby mode.
8. The device will start itself with the supply or monitoring. (Depending on the operating mode set)

Note:

For devices in the DBLW charger series with an output greater than or equal to 750 W, the mains switch must be switched on before Point 3 above.

Separating the charging cables for use in showrooms:

The charging cables can be separated using the connector socket to facilitate placing the device underneath the vehicle. (See Figure 3)

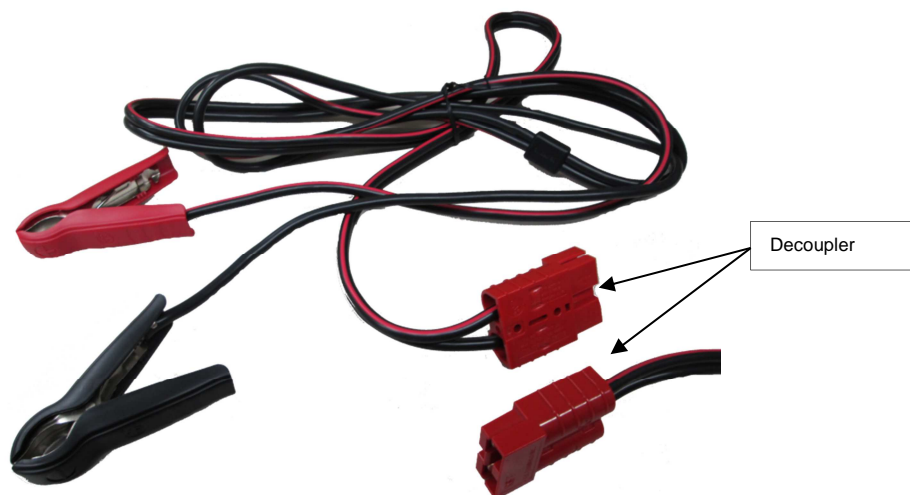


Figure 3 Charging cables in the DBLW series

ATTENTION: The charging cables may only be separated once the device has been switched off and unplugged from the mains.

Note: The charging cables show in Figure 3 are only used with DBLW301-14 and DBLW501-14. From DBLW751-14 upwards, charging cables without a decoupler are used.

Steps:

1. Disconnect the device from the mains socket.
2. Separate the charging cables at the connector sockets which are located in the middle of the charging cables.
3. Feed the free charging cable with the connector socket on it down through the engine compartment.
4. Connect the charging cable to the device at the connector socket.
5. Connect the charging clamps to the charging points provided on the vehicle
6. Plug the power cable into a mains socket (100~240 V AC).
7. To signal that the device has started, LEDs 2–4 will illuminate in a running sequence.
8. By default, after being connected to the mains or after a restart, the device will enter the last used operating mode when put into active mode. When the device is switched on for the first time, it will enter cable compensation mode when put into active mode.

Note: You cannot change operating modes in active mode.

9. When switching the device on for the first time, perform the cable compensation, see Section 6 Initial setup.
10. In 'Standby' mode, pressing the MODE button will change the operating mode. Pressing the START/STOP button allows the selected operating mode to be activated. Pressing the button again will put the device back into Standby mode.
11. For use in the showroom, a choice must be made between the operating modes Charge Pb-LTC and Charge Li-LTC.
12. The device will start itself with the supply or monitoring. (Depending on the operating mode set)

6. Initial setup

To signal that the device has been connected to the mains, the Status LED will perform a running sequence through its three colours (red, green, blue) and the three LEDs which display the state of charge will perform a running sequence (green, yellow, yellow). Once this internal test is complete, the device will enter the active operating mode "Cable Compensation" (see 7.1).

The cable compensation must be performed for the device to operate optimally. For this, both charging clamps must be shorted (see Figure 4). The measurement is signalled by a running sequence through LEDs 2–4. This process will take 30 seconds. Once complete, the device will enter "Standby" mode. The calculated cable resistance is then stored in the device. This value can only be overwritten by performing a new cable compensation. If the cable compensation needs to be repeated, the measurement can be repeated by pressing the Start button.



Figure 4 Charging clamps in a short circuit

IMPORTANT

With device types DBLW301-14 and DBLW501-14, the clamps must be clamped together at right angles so that the two jaws connected to the cables are placed on top of each other. (See Figure 4). With device types DBLW751-14 and larger, the clamps must be clamped straight into each other. Here too, the jaws that are connected to the charging cable must lie on top of each other. The clamps must remain connected for the entire process.

Once the cable compensation has been successfully performed, the device is ready for use.

7. Operating modes

Depending on the selected operating mode, the DBLW Series devices are designed for the following applications (depending on the device configuration, only certain modes are available):

If the device is connected to the mains, the device will enter the last selected active operating mode when started.

7.1. Cable compensation

The operating mode Cable Compensation is used for measuring and compensating the resistance value of the connected charging cable. This is necessary to compensate for the voltage drop across the charging cable.

The cable compensation will only start once a short circuit has been detected. This is achieved by clamping the charging clamps together. The whole process is described in Section 6.

7.2. EPS (external power supply)

The External power supply mode is used to provide power to vehicles' on-board networks when the vehicle starter battery is not connected. In other words, it takes care of the supply of power to vehicle consumers in support mode up to the device's power limit.

The operating mode ESP is signalled by the green status LED. If no valid battery load is present, the DBLW will start the load detection function. If this happens, LED 4 will also start to flash yellow. If a suitable voltage or load is detected for several seconds (switch-on delay), the device will start to supply voltage.

Important: Batteries may only be charged when the device is in the operating modes "CHARGE XX" or "XX-LTC", as the parameters and monitoring functions required for ensuring safe battery charging are only activated in these programmes. These monitoring functions are not active in the ESP (external power supply) operating mode.

7.3. Charge Pb-LTC/Charge LiFe-LTC

The XX-LTC operating mode is used for long-term charging and monitoring of vehicles in the showroom with lead (Charge Pb-LTC) and LiFePO₄ (Charge Li-LTC) starter batteries. In support mode, the device supplies the vehicle's electric loads until it reaches its power limit and any charge deficiencies in the vehicle battery are subsequently compensated. The charging process is interrupted at calculated intervals. During these monitoring

phases, the battery's SOC is analysed and the parameters for the next charging interval are calculated.

A full charge is load-dependent and therefore cannot be guaranteed.

If no battery is connected to the DBLW, it will enter load detection mode. This is signalled by LED4 flashing. If the charging clamps of the DBLW are connected with a battery voltage within a pre-defined range (Pb: 10.0V – 14.0V; LiFe: 11.0V – 14.0V), the charging process begins after the switch-on delay. Battery voltages outside the pre-defined ranges are either indicated as "Battery voltage too low" (status LED flashes red) or "Battery full" (status LED continues to indicate the selected mode. The green LED2 also lights up).

Once the charging cycle is complete, monitoring will begin. During monitoring, the battery status is signalled. The parameters of the subsequent charging cycle are calculated according to the duration of a monitoring phase. A charging process is signalled by the running light sequence of LEDs 4–2.

7.4. Charge Pb/Charge Li

In this operating mode, it is possible to charge either a battery which is installed in the vehicle or a "stand-alone" battery (lead-based battery or LiFePO₄ battery, depending on the operating mode).

If the charging clamps of the DBLW are connected to a battery voltage within a predefined range, the charging process will be started after the switch-on delay. The customer is able to select the switch-on voltage threshold. The exact voltage value can be found in the relevant Set file.

During the charging process, the battery terminals or charging points of the vehicle are supplied with a defined voltage. If the electricity requirement exceeds the maximum output current of the battery charger, the battery charger will switch to current regulation mode.

The battery charger has a smart temperature control. If the temperature of the battery charger exceeds a predefined value, the output of the battery charger will be reduced.

If the output current falls below a predefined threshold value during the charging process, the DBLW will switch to "trickle charging" mode. To reduce ageing of the batteries, the batteries are fed with a voltage below the charging voltage during trickle charging mode.

If the output current exceeds a defined threshold value during the trickle charging process, the device will switch to recharge mode. The output voltage is increased to the level of the charging voltage.

If the output current falls below 0.5 A during the trickle charging process, the device will signal that the battery is full and the DBLW will switch to monitoring mode. If the clamp voltage falls below a set value during monitoring, the charger will restart the charging process.

7.5. PowerUp

For lithium-ion batteries, under certain circumstances (e.g. deep discharge), the battery management system may open a relay to protect the battery. With the help of the PowerUp function, the relay can be closed again to restore the functionality of the battery (provided that the internal battery electronics allow this).

Before the actual PowerUp function is started, the battery undergoes testing for around 30 seconds.

The "PowerUp" operating mode is signalled by the green flashing status LED. The "PowerUp" process takes around 10 minutes. After a successful PowerUp, the DBLW will switch to "Standby" mode.

The PowerUp process will be aborted if the clamp voltage or output current falls below a certain value.

8. Error messages

Error	Status LED	LED 2	LED 3	LED 4	Troubleshooting
Reverse polarity <i>The output cables have been connected to the battery with the wrong polarity.</i>	Quickly flashing red	Off	Off	Off	Connect the cables the other way round. <i>Red clamp – positive pole Black clamp – negative pole</i>
User error	Flashing red	Depends on operating mode			See user errors
<i>Device fault (internal)</i>	Solid red light	Off	Off	Off	Service

User error

Operating mode: Cable compensation

Error	Diagnosis	Troubleshooting
Cable compensation will not start	External voltage detected	Remove charging clamps from battery

Operating mode: Pb LTC/LiFe-LTC *(optional)*

Error	Diagnosis	Troubleshooting
Status LED flashing red	Undervoltage/overvoltage	Replace battery
Status LED flashing red	Configured current limit exceeded	Remove short circuit
Status LED flashing red + Running light	Maximum temperature exceeded (from 80°C)	Reduce load; improve air circulation

Operating mode: ChargePb/LiFe *(optional)*

Error	Diagnosis	Troubleshooting
Status LED flashing red	Undervoltage/overvoltage	Replace battery
Status LED flashing red	Configured current limit exceeded	Remove short circuit
Status LED flashing red + Running light	Maximum temperature exceeded (from 80°C)	Reduce load; improve air circulation

Operating mode: PowerUp *(optional)*

Error	Diagnosis	Troubleshooting
Status LED flashing red	Configured current limit exceeded	Remove short circuit
Status LED flashing red + Running light	Maximum temperature exceeded (from 80°C)	Reduce load; improve air circulation

Operating mode: EPS

Error	Diagnosis	Troubleshooting
Status LED flashing red	Configured current limit exceeded	Disconnect and reduce load or resolve any short circuit
Status LED flashing red + Standby mode	Maximum supply time or supply capacity exceeded	Restart operating mode
Status LED flashing red + Running light	Maximum temperature exceeded (from 80°C)	Reduce load; improve air circulation

The following information must be observed when using the device:



Electrical loads on the vehicle, which cause a power consumption of approx. 1.2 A (e.g. headlights, interior lighting, etc.) must not be left on for extended periods (i.e. over several hours/days), as the DBLW can, in LTC mode, interrupt the supply on a short term basis to check the battery but will then resume supplying the vehicle battery with charge voltage – this can artificially age the battery and also damage it!

9. Service Centre/Repairs

Please observe the following information:

In order to ensure swift and seamless processing, it is imperative to enclose a completed repair return form (return service scripture) for each device sent in which details all relevant data (e.g. address, contact name, telephone number, etc.) as well as a detailed description of the error.

You can find the required repair return form as well as the worldwide service partner addresses on our web page www.deutronic.com under the menu item 'Service Worldwide'.

In order to assert warranty claims within the warranty period, it is absolutely necessary that the device in question is secured for transport and is in its original packaging or similar secure packaging when sent in for repair.

Note: Deutronic shall not perform warranty repairs on devices which have mechanical damage/have been damaged during transport.

10. Disclaimer

The customer is responsible for the intended use of the device. Deutronic assumes no liability for damage of any kind resulting from the use of the device.

11. Contact information

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