



Reaching the destination with full board battery

Optimum battery charging with characteristic line during driving

The problem is long-known, but even so annoying again and again: Despite powerful dynamo, the board battery is not charged fully, even when driving longer distances. This is caused by long cable paths, small cable cross-sections and strongly varying charging conditions of starter battery and board battery. Besides, supply of these consumers during driving is required.

This is resolvable by the VOTRONIC Charging Converters, charging the board battery quickly and gently according to the specifications of the battery manufacturers. Even at short distances, the battery will be charged with full charging current. Losses due to long charging cables in big vehicles, as well as voltage fluctuations at the dynamo (Euro 6) are compensated.

With the appropriate unit, optimum supply of vehicles with 12 V and 24 V board voltage is ensured. Of course, with galvanic isolation. This avoids voltage puncture in case of failure, undesirable back discharges and suppresses interferences of the board mains. The compact units are in no way inferior to the mains chargers of the same construction. Also here, an intelligent microprocessor controls the robust power electronics and ensures optimum charging and safe operation. The six phased charging current curve can be used on not only the more classical lead-acid, gel, and AGM batteries, but also on the more modern lithium (LiFePO₄) batteries. The simultaneous supply of the connected consumers is effected automatically, even in case of strongly loaded board mains. The automatic power control gives the required safety and ensures the vehicle's starting ability.

PRODUCT FEATURES

- Replaces conventional Cutoff Relay
- Suitable for any type of dynamo
- High charging capacity, already within short distances
- Full charging when driving longer distances
- Optimised characteristic lines of charging for acid, gel and AGM batteries adjustable as Lithium LiFePO₄-Batteries
- The energy balance of conventional generators is considerably improved
- Automatic power control
- Parallel operation for power increase possible
- Particularly suitable for vehicles with **standard Euro 6**
- Simple installation, no intervention into the starter circuit
- Small, lightweight and compact
- Inclusive Temperature Sensor 825

Series VCC (till 30 A)

B2B charging converter (battery to battery) for lead and LiFePO4 batteries

12V → 12V



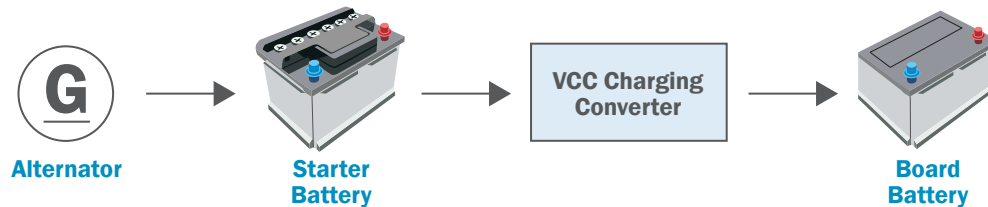
Available versions

VCC 1212-30 Input Voltage 12 V (Starter Battery) Output 12 V / max. 30 A

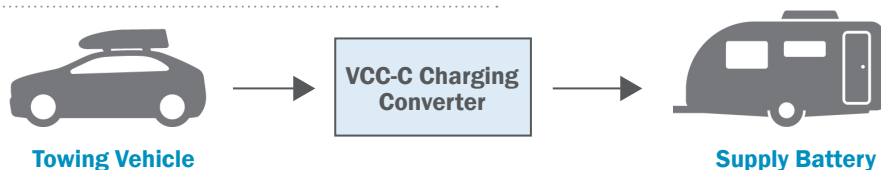
VCC 1212-20 C Input 12 V / max. 20 A (Towing Vehicle) Output 12 V / max. 24 A



Functionality Charging Converter Series VCC



Functionality Charging Converter Series VCC



! We recommend

The VCC charging converters are an optimum substitute for the existing cutoff relay and ensure a considerable improvement of the energy balance, even with conventional generators.

In contrast to conventional boosters, the charging converters VCC work with optimised characteristic lines of charging, automatically and unattended. Overcharging of the battery is excluded.

✓ Our tip

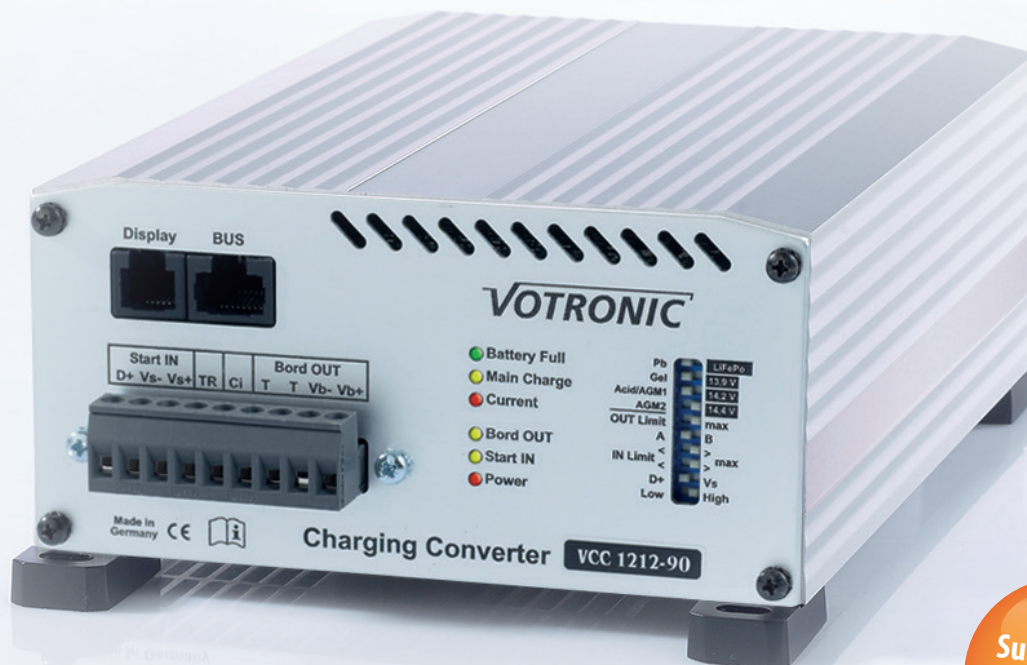
Particularly suitable for electroblock "EBL", "EVS" of the customer with further use of the customer's cabling.

» All technical data are listed on page 42

Series VCC (50 - 90 A)

Charging Converter B2B (Battery to Battery) without Galvanic Isolation

12V → 12V



Suitable for Euro 6

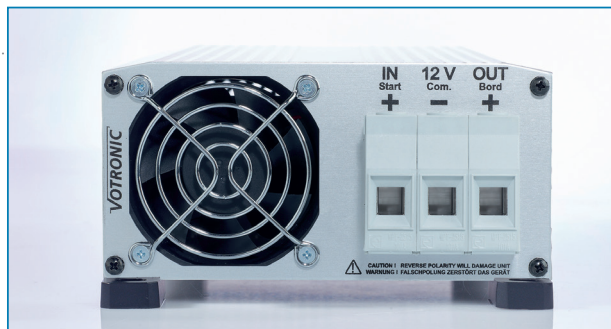
Available versions

Starter battery 12 V / bord battery 12 V:

- VCC 1212-50 charging current 50 A
- VCC 1212-70 charging current 70 A
- VCC 1212-90 charging current 90 A



Charging of lead batteries is strongly depending on the temperature. Therefore, a temperature sensor should be used for full charging of gel and AGM batteries, which is included in the delivery scope of all units.



» All units with technical data are listed on page 42.

Our tip

If the capacity of the electroblock "EBL", "EVS" is limited or in case of weak generator, the current draw of the unit can be adapted dynamically.

We recommend

The VCC charging converters are an optimum substitute for the existing cutoff relay and ensure a considerable improvement of the energy balance, even with conventional generators.

In contrast to conventional boosters, the charging converters VCC work with optimised characteristic lines of charging, automatically and unattended. Overcharging of the battery is excluded.

Series VCC (12 V / 24 V to 45 A)

Charging Converter B2B (Battery to Battery) with Galvanic Isolation

12 V → 24 V

24 V → 12 V

24 V → 24 V



Suitable for Euro 6

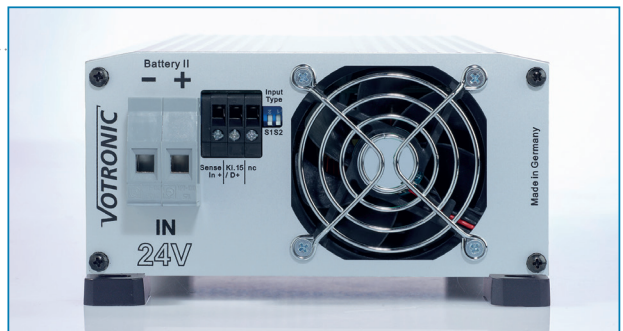
Available versions

max. charging current 25 A:

- VCC 1212-25 IUoU-Li Starter Battery 12 V / Board Battery 12 V
- VCC 1224-25 IUoU Starter Battery 12 V / Board Battery 24 V
- VCC 2412-25 IUoU-Li Starter Battery 24 V / Board Battery 12 V
- VCC 2424-25 IUoU Starter Battery 24 V / Board Battery 24 V

max. charging current 45 A:

- VCC 1212-45 IUoU-Li Starter Battery 12 V / Board Battery 12 V
- VCC 2412-45 IUoU-Li Starter Battery 24 V / Board Battery 12 V
- VCC 1212-45 Li Starter Battery 12 V / Board Battery 12 V
- VCC 2412-45 Li Starter Battery 24 V / Board Battery 12 V



» All units with technical data are listed on page 43.

Galvanic Isolation

The galvanic isolation between input and output ensures absolute separation of the battery circuits for outstanding suppression of failures, neat ground ratio on both sides (also with long supply cables), safety in case of failure (puncture 12 V/24 V or 24 V/12 V is not possible) and reliable prevention of undesirable back discharge.



Charging of lead batteries is strongly depending on the temperature. Therefore, a temperature sensor should be used for full charging of gel and AGM batteries, which is included in the delivery scope of all units.

Charging Converters without Galvanic Isolation

VCC 12 V



Unit Type	VCC 1212-20 C	VCC 1212-30	VCC 1212-50	VCC 1212-70	VCC 1212-90
Order No.	3321	3324	3326	3328	3329
Output: Nominal Voltage Lead-Acid/-Gel/-AGM / LiFePO4	12 V / 12.0-13.3 V	12 V / 12.0-13.3 V	12 V / 12.0-13.3 V	12 V / 12.0-13.3 V	12 V / 12.0-13.3 V
Charging Current adjustable Limit, max.	15 A ² / 24 A	20 A ² / 30 A	39 A / 50 A	50 A / 70 A	75 A / 90 A
Battery Capacity (recommendable) / up to	50-160 / 200 Ah	60-200 / 260 Ah	75-320 / 440 Ah	100-460 / 620 Ah	150-600 / 800 Ah
No. of charging program adjustable Lead-Acid/-Gel/-AGM	1, 2, 4	1, 2, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
Charging profiles for the latest LiFePO4 batteries with BMS	Li	Li	4x Li	4x Li	4x Li
Lead Temperature Compensation / LiFePO4 Protection	●/●	●/●	●/●	●/●	●/●
Input: Starter Battery / LiMa Voltage Range (Euro 6)	12 V (10.5-16.5 V)	12 V (10.5-16.5 V)	12 V (10.5-16.5 V)	12 V (10.5-16.5 V)	12 V (10.5-16.5 V)
Current max. / 3 Limits adjustable	20 A / –	39 A / –	68 A / 49 A / 42 A / 33 A	95 A / 77 A / 63 A / 50 A	125 A / 100 A / 82 A / 64 A
Automatic Activation D+, Ignition / Voltage controlled	●/●	●/●	●/●	●/●	●/●
Connections Sense Cable for Input / Output	–/–	–/–	●/●	●/●	●/●
Conservation of Charge for Starter Battery ¹	0 - 1 A	0 - 1 A	0 - 3 A	0 - 5 A	0 - 5 A
Connections Display / VBS2 / CI-Bus	●/–/–	●/–/–	●/●/●	●/●/●	●/●/●
Temperature Sensor 825 in Delivery Scope	●	●	●	●	●
Terminals, Control Front / power rear	0.5-2.5 / 4-10 mm ²	0.5-2.5 / 4-10 mm ²	0.5-2.5 / 4-25 mm ²	0.5-2.5 / 4-25 mm ²	0.5-2.5 / 4-25 mm ²
Dimensions* (WxDxH)	67x146x40 mm	67x146x40 mm	157x138x74 mm	227x138x74 mm	227x138x74 mm
Weight	280 g	280 g	950 g	1300 g	1480 g

Delivery Scope: Manual, 1 temperature sensor 825

Mark of Conformity: CE, ETest (EMV/automotive regulations)

¹ On mains or solar charge of the board battery ² When connecting the remote control Order No. 2076 or Order No. 1248

* Dimensions incl. mounting flanges/feet, without connections

Recommendable Accessories

for current Charging Converter without Galvanic Isolation

Order No. 2076
LED Remote Control SOrder No. 1248
LCD Charge Control S-VCC*More information you will find on pages 71/106.*

Charging Converters with Galvanic Isolation
VCC 24 V



Unit Type	VCC 1224-25 IUoU	VCC 2412-25 IUoU-Li	VCC 2424-25 IUoU	VCC 2412-45 IUoU-Li	VCC 2412-45 Li
Order No.	3311	3314	3313	3315	3309
Output: Rated voltage / Current	24 V / 25 A	12 V - 13,3 V / 25 A	24 V / 25 A	12 V - 13,3 V / 45 A	12 V - 13,3 V / 45 A
Battery Capacity (recommendable) / up to	50-170 / 220 Ah	50-170 / 220 Ah	50-170 / 220 Ah	90-300 / 400 Ah	90-300 / 400 Ah
No. of Charging Program adjustable (see p. 6)	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	–
Charging profiles for the latest LiFePO4 batteries with BMS	–	Li	–	Li	4x Li
Connections Sense Cable a. Remote Control	●	●	●	●	●
Lead Temperature Compensation	●	●	●	●	–
LiFePO4 Temperature Control, Protection	–	–	–	–	●
Temperature Sensor 825 in Delivery Scope	●	●	●	●	●
Input: Voltage V Euro 6/max. Current A	12 V (11-16)/68 A	24 V (22-32)/18 A	24 V (22-32)/33 A	24 V (22-32)/45A	24 V (22-32)/33 A
Automatic Activation D+, Ignition	●	●	●	●	●
Voltage Sensor Starter Battery	●	●	●	●	●
Terminals Front/Rear	4-16/4-16 mm ²	4-16/4-16 mm ²	4-16/4-16 mm ²	4-16/4-16 mm ²	4-16/4-16 mm ²
Dimensions* (WxDxH)	265x138x74 mm	265x138x74 mm	265x138x74 mm	265x138x74 mm	160x245x71 mm
Weight	1700 g	1350 g	1700 g	1700 g	1700 g

Delivery Scope: Manual, temperature sensor 825

Mark of Conformity: CE, E Test (EMV/automotive regulations)

* Dimensions incl. mounting flanges, without connections

Charging Converters with Galvanic Isolation
VCC 12 V



Unit Type	VCC 1212-25 IUoU-Li	VCC 1212-45 IUoU-Li	VCC 1212-45 Li
Order No.	3306	3308	3307
Output: Rated voltage / Current	12 V - 13.3 V / 25 A	12 V - 13.3 V / 45 A	12 V - 13.3 V / 45 A
Battery Capacity (recommendable) / up to	50-170 / 220 Ah	90-300 / 400 Ah	90-200 / 360 Ah
No. of Charging Program adjustable (see p. 6)	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
Charging profiles for the latest LiFePO4 batteries with BMS	Li	Li	4x Li
Connections Sense Cable a. Remote Control	●	●	●
Lead Temperature Compensation	●	●	●
LiFePO4 Temperature Control, Protection	–	–	–
Temperature Sensor 825 in Delivery Scope	●	●	●
Input: Voltage V Euro 6/max. Current A	12 V (11-16)/37 A	12 V (11-16)/63 A	12 V (11-16)/36 A
Automatic Activation D+, Ignition	●	●	●
Voltage Sensor Starter Battery	●	●	●
Terminals Front/Rear	4-16/4-16 mm ²	4-16/4-16 mm ²	4-16/4-16 mm ²
Dimensions* (WxDxH)	265x138x74 mm	265x138x74 mm	265x138x74 mm
Weight	1350 g	1700 g	1700 g

Recommendable Accessories

for Charging Converter with Galvanic Isolation



Order No. 2075
Remote Control S

More Information see page 106.