

*c-Go II*

**24V/6A**

**24V/8A**

**24V/10A**

**24V/12A**

# ***LiFePO4 Battery charger***

**GB**

Instruction manual

## Index

1. Product description .....	2
2. Safety advices .....	3
3. Quick start guide .....	4
4. Operation .....	4
5. Problem solving .....	6
6. Specifications .....	8

## 1. Product description

The *c-Go II* 24V charger series is designed for full automatic charging of 24V Lithium-iron-phosphate (LiFePO<sub>4</sub>) batteries. The charger contains the latest, state of the art power converter and the charge process is controlled by a microcontroller. If the safety precautions in this manual are observed and the charger is operated according to this manual, optimal and save charging of the battery is guaranteed.



The charger consists of:

1. A high quality plastic enclosure.
2. A battery cable with XLR connector for connecting to a battery or a means where the battery is integrated.
3. A mains cable for connecting to the public grid.
4. Three colour LEDs (Light Emitting Diodes) indicating the operation mode.

The charger operates automatically and needs no adjusting.

## Symbols:

	Read the safety advices carefully.
	Read the user manual before using the battery charger.
	For indoor use only
	Do not use the battery charger in a wet environment or in the rain.
	The battery charger and batteries are not to be discarded with normal household waste. Dispose properly according to the local regulations.
	The battery charger is a class II appliance (double insulated)
	The battery charger complies with the European CE requirements.

## 2. Safety advices

- **This battery charger may only be used to charge 24V/25.6V Lithium-iron-phosphate (LiFePO4) batteries. It must not be used to charge lead-acid (wet/gel/AGM) batteries.**
- 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 been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- Never use the charger in a wet environment (for example outside), spill fluids over the enclosure or submerge it in water.
- Do not use the charger if the cables are damaged, the enclosure is open, or the charger is damaged in such way that internal parts become accessible.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard. If the charger is defective, do not try to repair it.
- Make sure the charger is positioned stable.
- Keep a free zone of 10cm around the charger to ensure that heat, generated during operation, can be removed.
- The battery charger is suited for the Europe standard 220-240V/50Hz mains grid. Operating the charger in places where different mains voltages are applicable will damage the charger or render it unsafe. Please consult your supplier in case of doubt.
- Charge specified batteries only. Do not recharge non-rechargeable batteries.
- Charge the batteries only if there is proper ventilation. Especially around the batteries. While charging, a small amount of explosive gasses can be generated in the batteries. inadequate ventilation in combination with open fire or sparks can lead to dangerous situations.

- Do **not** connect or disconnect the battery while the battery charger is connected to the mains. E.g. to reduce risk of sparking. Always disconnect the mains, prior to connecting a battery.
- Batteries are capable of providing much energy in a very short time. Prevent short circuits any way. For example walking over the cables or damaging the cables or connector by improper use.
- Do not shorten the length of the charge cable.

### 3. Quick start guide

Important note: **Always disconnect the power supply / battery charger from the mains if the battery has to be installed or removed or replaced.**

The battery charger is very simple to operate.

1. Connect the battery cable to the battery to be charged..
2. Connect the battery charger to the mains. The orange LED marked  turns on. The green LED marked   starts blinking and the charging will start.
3. As long as the green LED marked   is blinking and it is not necessary to use the battery, it is recommended not to interrupt the charge process. Interrupted charges will shorten the battery life.
4. When the battery is full, the green LED, marked   is on continuously. The battery can be used now. However, if the battery will not be used directly, it is recommended to leave the charger connected. The battery charger will keep the battery in optimal charged condition.
5. If there is a problem, the charger will indicate this by quickly blinking the red LED  . Please consult the chapter "Problem solving".

### 4. Operation

#### Positioning:

The battery charger is not suited for outdoor use.

Put the charger on a steady place.

Keep at least an area of 10cm around the enclosure for proper battery charger cooling.

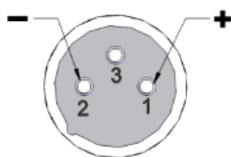
During charging, the enclosure can become hand warm. This is normal.

The 12A version is equipped with a built-in fan, operating automatically when the internal battery charger temperature increases. With insufficient cooling or too high ambient temperatures the output power will be reduced. The time required for the total charge process may increase. For this reason, do not subject the battery charger to direct sunlight.

## Electrical connections:

The battery charger is equipped with a EU plug for connection to the 220-240V/50Hz mains grid. By default the battery charger has a XLR connector for connecting to the battery.

XLR (male) front view:



Pins 1 is the plus (+) and pin 2 is the minus (-).

Pin 3 is the inhibit signal for preventing unsafe actions of the application to be charged.

It is possible that your supplier provided a different connection type. In this case, please consult the supplier for more information.

**It is important not to exchange plus and minus, because the charger does not have a protection against wrong polarity.**

## Operation:

Connect the battery cable to the battery or the equipment in which the batteries are mounted.

Connect the battery charger to the mains grid. The orange LED marked  turns on.

The charging process will start. The green LED marked  starts blinking. Also a clicking sound can be heard from inside the battery charger. This is normal.

## End of charge:

If the battery charger detects the battery is full, the green LED, marked  is on continuously.

After disconnecting the mains plug, the battery may be disconnected and used.

However, if the battery will not be used directly, it is recommended to leave the charger connected. The battery charger will keep the battery in optimal charged condition by applying a maintenance charge.

## LED indication overview:

Orange LED 	Description:
Off	1: Battery charger not connected to the mains. 2: Battery charger is defect
On	Battery charger connected to the mains.
Green LED 	Description:
Off	1: Battery charger not connected to the mains 2: Battery charger connected to the mains and no battery connected.
Blinking	The battery is being charged.
On	The charge has been completed.

Red LED 	Description:
Off	No problem.
Blinking	A problem occurred. See chapter "Problem solving"

**User tips:**

Prevent deep discharging of the batteries. The battery life will be reduced significantly. Charge a deep discharged battery as soon as possible.

Let the battery charger finish the charge cycle completely.

If the battery is not charged for a longer period, for example during winter, connect the battery charger every month to charge the battery. Battery self-discharge and the quiescent current of the connected users will drain the battery charge slowly.

It is also possible (and even better) to keep the battery charger connected to the battery and the mains during this period.

Do not charge batteries below 0°C. Move the battery to a warmer place and start the charge.

Keep the ventilation openings clean and free of accumulated dust. Blow away the dust and clean the battery charger enclosure with a slightly moistened cloth, if required.

**5. Problem solving**

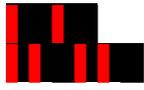
In case there is a problem or there is a suspicion the charger is not operating as expected, first check which of the indication LEDs are on.

Consult the next tables to diagnose the problem.

**Table 1: Fault diagnostics**

Problem	Possible causes	Solution
None of the LEDs are on	1. No mains voltage.	Check mains voltage.
	2. Battery charger or mains cable broken.	Consult Your supplier.
Mains and battery connected, orange LED  is on, but green LED  remains off. No start of charge.	1. Battery is full (voltage high)	Discharge the batteries (by riding the scooter a short distance) and try again.
	2. Bad connection to XLR socket of the scooter	Consult supplier of the scooter.
	3. Fuse defect at the batteries	Consult supplier of the scooter.
	4. Wrong polarity	Check +/- polarity
Mains and battery connected, orange LED  is on, green LED  is blinking irregularly, and frequently (relay) clicking sound.	1. Bad connection to XLR socket of the scooter	Consult supplier of the scooter.
	2. Bad battery	Consult supplier of the scooter.
Red LED  is blinking ( ½ second on, ½ second off followed by a 1 second pause).	See table 2: error codes	Count the number of flashes between the pauses and consult table 2

**Table 2: Error codes**

Error code(s) / LED blinking pattern	Description	Possible causes and solution(s)
1 	Internal battery charger problem.	Restart battery charger. If the error is repeated Consult your supplier.
4 	Temperature too low.	Move to a warmer environment and restart the charging.
5 	Temperature too high	Let the charger cool down for 15 minutes and restart the charging. If the problem persists please consult your supplier.
6 	Too many ampere hours charged.	1. Connected a battery with higher capacity than specified. 2. Defect battery. Please consult your supplier.
7 	Current too high.	Possibly short circuit in the battery cable. Please consult your supplier.
8 	Voltage increase insufficient.	Possibly a defective battery. Please consult your supplier.
10 	FAN blocked.	FAN does not function. Please consult your supplier.

11



BMS voltage too high.

The connected lithium battery detected a too high voltage. Please consult your supplier.

If the cause of the failure has been removed, the battery charger can be restarted by disconnecting and reconnecting the battery and the mains.

## 6. Specifications

<i>c-Go II</i> specifications/model	6A	8A	10A	12A
Supported batteries	Lithium iron phosphate (LiFePO4) 25.6V of 2 x 12.8V			
Battery capacity range	12-60Ah	16-80Ah	20-100Ah	24-120Ah
Mains voltage	220-240Vac (nominal) 176-264Vac (range)			
Mains frequency	50/60 Hz			
Output voltage nominal	24V			
Output voltage range	12-36V			
Output current range	0.25 – 6A	0.25 – 8A	0.25 – 10A	0.25 – 12A
Maximum output power *	180W	240W	300W	360W
Efficiency	> 90% at full load and 230Vac			
Protections	Polarity , Output voltage , Temperature			
Dimensions	210 x 175 x 65mm			
Charge status indication	3 LEDs			
Use	Indoor use only			
Operational temperature range *	0 – 40°C			
Storage temperature	-15 - +50°C			
Cooling	Passive	Passive	Active (Fan)	Active (Fan)
Maximum humidity	95% (non condensing)			
Safety class	II			
Regulations	CE (LVD, EMC, RoHS)			
Standards	EN60335-2-29 , EN12184 , ISO7176-21, EN60601-1-2, applicable RED directive standards			

\* At elevated ambient temperatures or if there is no sufficient cooling, the output current can be reduced.



## EC Declaration of conformity

**We:** IVRA Electronics B.V.  
**Address:** Delta 105  
6825 MN Arnhem, the Netherlands

herewith declare under our sole responsibility that:

**Product range:** c-Go II 24V/6A, 24V/8A, 24V/10A, 24V/12A battery chargers  
**Article numbers:** 526-25xx (xx=01~75)

to which this declaration relates, is in conformity with the requirements of:

**Directive:** *Applied specific European standards:*

**Low voltage  
(2014/35/EU)** EN-IEC60335-2-29:2021 + A1:2021  
Household and similar electrical appliances – Safety –  
Part 2-29: Particular requirements for battery chargers

**EMC  
(2014/30/EU)** EN-IEC60601-1-2:2015 + A1:2021  
Medical electrical equipment – Part 1-2:  
General requirements for basic safety and essential performance  
– Collateral standard: Electromagnetic disturbances –  
Requirements and tests

EN 301 489-1 V2.2.3  
EN 301 489-17 V3.3.1  
Electromagnetic Compatibility (EMC)  
standards for radio equipment and services

**Radio  
(2014/53/EU)** ETSI EN 300 328 V2.2.2:2019  
Wideband transmission systems;  
Data transmission equipment operating in the 2,4 GHz band;  
Harmonised Standard for access to radio spectrum.

**RoHS  
(2011/65/EU)**

provided that the equipment is installed and used according to our instructions.

**Date of issue:** 18<sup>th</sup> August 2025

**Signed:**  
(project manager)