

## GB Important Informations

### Multifunctional charger "V-Charge 240 Quadro"

Item no. 1489899



You can find the main operating instructions on the CD provided; it is available there in PDF format. To open the PDF, you need a suitable programme, e.g. "Acrobat Reader", which you can download free of charge from [www.adobe.com](http://www.adobe.com).

#### Intended Use

The charger "V-Charge 240 Quadro" has four independent charge/discharge channels that each have a two-line lit display and four operating buttons.

The charger is used to charge and discharge rechargeable batteries of the type NiMH/NiCd (1 - 15 cells), LiPo/Liion/LiFe/LiHV (1 - 6 cells) and lead batteries (1 - 10 cells, 2 V - 20 V).

The charging current for channels 1 and 2 can be set between 0.1 A and 12.0 A. The charging current for channels 3 and 4 can be set between 0.1 A and 6.0 A (each depending on the cell number/rechargeable battery voltage). The maximum total charging output is 240 W.

The discharging current for channels 1 and 2 can be set between 0.1 A and 5.0 A. The discharging current for channels 3 and 4 can be set between 0.1 A and 2.0 A (depending on the cell number/rechargeable battery voltage). The maximum discharge output for channels 1 and 2 is 10 W each; that for channels 3 and 4 is 5 W each.

For each of the 4 charge/discharge channels, there is a connection for a temperature sensor available for battery monitoring (not enclosed, can be ordered as an accessory).

For multi-cell lithium rechargeable batteries, each charge/discharge channel has a separate balancer. A matching balancer board is not part of the delivery in either case, but needs to be ordered separately.

The charger has an integrated mains unit to permit operation on mains voltage (230 V/AC, 50/60 Hz). The charger may, however, also be alternatively operated on a stabilised direct voltage of 11 - 18 V/DC (e.g. via an external vehicle lead battery or a suitable mains adapter).

The safety notes and all other information in these operating instructions always have to be observed!

Read the operating instructions carefully and attentively, and keep them for later reference. Only pass the product on to any third parties together with the operating instructions.

Use other than that described above can lead to damage to the product and may involve additional risks such as, for example, short circuits, fire, electrical shock etc. The entire product must not be modified or converted, and the casing must not be opened!

This product complies with the statutory national and European requirements.

#### Scope of Delivery

- Multifunctional charger
- 4x T-plug charging cable
- Mains cable
- CD with operating instructions



#### Current operating instructions

Download the current operating instructions via the link [www.conrad.com/downloads](http://www.conrad.com/downloads) or scan the QR code displayed. Observe the instructions on the website.

#### Symbol-Erklärung



The symbol with a lightning bolt in a triangle is used where there is a health hazard, e.g. from electric shock.



The exclamation mark in a triangle indicates important notes in these operating instructions that must be observed strictly.



The arrow symbol indicates that special advice and notes on operation are provided.



The product is intended for use in dry indoor rooms only; it must not become damp or wet.



Observe the operating instructions.

#### Safety Notes



Read the operating instructions attentively and particularly observe the safety notes. If the safety notes and the information in these operating instructions regarding proper handling are not observed, we assume no liability for any resulting injury/property damage. In such cases, the warranty/guarantee will also lapse.



##### a) General

- The unauthorized conversion and/or modification of the product is inadmissible because of safety and approval reasons. Never dismantle the product!
- Maintenance, adjustment, or repair work must only be carried out by a specialist/a specialist workshop. The device contains no parts that require servicing or adjusting by you.
- The product is not a toy and must be kept out of reach of children!

The product must only be set up, used or stored in places that are not accessible to children. The same applies for rechargeable batteries.

Pay particular attention when children are present! Children may change the settings or short-circuit the rechargeable battery/batteries, which may lead to fire or explosion. Danger to life!

- In schools, training centres, hobby and self-help workshops, the use of the product must be supervised by responsible trained personnel.
- In commercial institutions, the accident prevention regulations of the Employer's Liability Insurance Association for Electrical Systems and Operating Materials are to be observed.
- Do not leave packaging material lying around carelessly. It may become a dangerous toy for children!
- Handle the product with care; impacts, shock or fall even from low heights will damage it.
- If you are not sure about the correct operation or if questions arise which are not covered by the operating instructions, please do not hesitate to contact us or another specialist.

##### b) Mains cable/mains voltage

- Product setup corresponds to protection class I. It must only be connected to a proper protective contact mains socket. Observe that the housing or mains line insulation is not damaged or destroyed.
- The mains socket to which the plug-in mains unit is connected must be easily accessible.
- Do not pull the mains plug from the mains socket by pulling the cable.
- If the mains cable or charger are damaged, do not touch it. Danger to life from electric shock!

First switch off the mains voltage for the mains socket to which the mains cable is connected (switch off the corresponding circuit breaker or take out the fuse, then switch off the fault interrupter protection switch (FI circuit breaker) so that the mains socket is separated from the mains voltage on all poles).

Only then unplug the mains unit from the mains socket.

If the charger is damaged, stop operating it. Take it to a specialised workshop or dispose of it in an environmentally friendly way.

If the mains cable is damaged, dispose of the damaged mains cable in an environmentally compatible way. Do not use it anymore. Replace it with a new mains cable of the same specifications.

##### c) Location for Installation

- The charger is intended for dry indoor use only. It must not become damp or wet. Never set it up near a bathtub, shower or similar!
- If the charger is operated via the mains cable, there is danger to life from electric shock in case of moisture/wetness on the charger/mains cable!
- Avoid direct sun irradiation, strong heat or cold. Keep the charger away from dust and dirt. The same applies to any rechargeable battery that may be connected.
- Do not operate the charger inside of rooms or in bad ambient conditions where flammable gases, vapours or explosive dust may be or are present! There is a danger of explosion!
- Choose a solid, flat, clean and sufficiently large surface for the charger. Never place the charger on a flammable surface (e.g. carpet, tablecloth). Always use a suitable, non-flammable, heatproof surface.
- Keep the charger away from flammable or easily inflammable materials (e.g. curtains).
- Never cover the ventilation slits. There is a danger of overheating or fire. Never push any objects into the ventilation slots of the charger; There is a danger to life from electric shock! Never impair the function of the integrated fan.
- Do not place the charger on any valuable furniture surfaces without using a suitable protection. Otherwise, scratches, pressure points or discolourations are possible. The same applies to the rechargeable battery.
- Do not use the charger inside a vehicle.
- The charger must only be set up, used or stored in places that are not accessible to children. Children may change the settings or short-circuit the rechargeable battery/battery pack, which can lead to an explosion. Danger to life!



- Avoid setup in direct proximity of strong magnetic or electromagnetic fields, transmitter aeri- als or HF generators. This can affect the control electronics.
- Ensure that the cables are not crushed or damaged by sharp edges. Never place any objects on the cables.

- Do not place any containers filled with liquid, vases or plants, on or next to the charger/mains cable.

When these liquids get into the charger (or the plug connections of the mains cable), the charger will be destroyed and there is a most severe danger of potentially fatal electric shock or fire.

If the charger is operated via the mains cable, first switch off the mains voltage for the mains socket to which the mains cable is connected (switch off the corresponding circuit breaker or take out the fuse, then switch off the fault interrupter protection switch (FI circuit breaker) so that the mains socket is separated from the mains voltage on all poles). Only then unplug the mains plug of the mains cable from the mains socket.

If the charger is operated via the DC input (11 - 18 V/DC), disconnect the charger from the voltage/power supply.

Then disconnect the connected rechargeable battery from the charger. Do not use the charger again - bring it to a specialist workshop.

#### d) Operation

- The charger may be operated either via the mains voltage (230 V/AC, 50/60 Hz) or via a stabilised direct voltage of 11 - 18 V/DC (e.g. via an external vehicle lead battery or a suitable mains adapter).

Use only one of the two connection types, but never both at once. This may damage the charger.

- Do not wear any metal or conductive materials, such as jewellery (necklaces, bracelets, rings, etc.) while you are working with the charger or batteries. A short-circuit at the rechargeable battery or charging cable poses a danger of burns and explosion.
- Do not operate the product unattended. Despite a considerable number of protective circuits, it is impossible to exclude the possibility of malfunctions or problems during the charging process.
- Ensure that there is sufficient ventilation during operation. Never cover up the charger. Leave enough of a distance (at least 20 cm) between charger and other objects. Overheating causes a danger of fire!
- The charger must only be used to charge (or discharge) rechargeable batteries of types NiMH, NiCd, Lilon/LiPo/LiFe/LiHV and lead batteries. Never charge any other rechargeable battery types or non-rechargeable batteries. There is great danger of fire or explosion!
- Always connect the charging cable to the charger first. Only then must the rechargeable battery be connected to the charging cable.

When disconnecting, proceed in reverse order - first disconnect the rechargeable battery from the charging cable, then the charging cable from the charger.

If the order is chosen incorrectly, there may be a short-circuit of the charger plugs; there is a danger of fire and explosion!

- Never connect several charges to each other.
- The charger has four charging channels that are independent of each other, so that up to four rechargeable batteries/rechargeable battery packs can be charged (or discharged) at once. However, only connect a single rechargeable battery/rechargeable battery pack to each of the four charging channels. Never connect the charging channels to each other!
- Only operate the product in moderate climate, never in tropical climate. For more information on acceptable environmental conditions, see the chapter "Technical Data".
- Never operate the device immediately after it was taken from a cold room to a warm room. The resulting condensation may lead to malfunctions or damage!  
Let the product reach room temperature before taking it into operation again. This may take several hours!
- Avoid operation in direct proximity of strong magnetic or electromagnetic fields, transmitter aeri- als or HF generators. This can affect the control electronics.
- If you have reason to believe that the device can no longer be operated safely, disconnect it immediately and make sure it is not operated unintentionally.  
Disconnect the charger from the voltage/current supply. Do not use the product any more after this, but take it to a specialised workshop or dispose of it in an environmentally compatible manner.
- It can be assumed that operation without danger is no longer possible if the device has any visible damage, the device no longer works, after extended storage under unsuitable conditions or after difficult transport conditions.
- Keep the entire product at a dry, cool, clean site that is not accessible to children.

## Rechargeable Battery Notes



**Although use of rechargeable batteries in everyday life is a matter of course today, there are many dangers and problems. In particular, with LiPo/Lilon/LiFe/LiHV rechargeable batteries with their high energy content (in comparison with conventional NiCd or NiMH rechargeable batteries), various regulations must be observed in order to avoid the danger of explosion and fire.**

**For this reason, always ensure that you have read and understood the following information and safety information when handling rechargeable batteries.**

**If the manufacturer of the rechargeable battery has provided any other information, read it carefully and observe it!**

#### a) General

- Rechargeable batteries are no toys. Always keep batteries/rechargeable batteries out of the reach of children.
- Do not leave rechargeable batteries lying around openly. Children or pets may swallow them. If swallowed, consult a doctor immediately!
- Rechargeable batteries must not be short-circuited, taken apart or thrown into fire. There is a risk of fire and explosion!
- Leaking or damaged batteries/rechargeable batteries can cause chemical burns to skin when touched without the use of adequate protective gloves.
- Never recharge normal (non-rechargeable) batteries. There is a risk of fire and explosion!

Non-rechargeable batteries are meant to be used once only and must be disposed of properly when empty.

Only charge rechargeable batteries intended for this purpose. Use a suitable battery charger.

- Batteries must not get damp or wet.
- Place the charger and battery on a non-flammable, heat-resistant surface (e.g. stone tiles). Maintain enough distance from flammable objects. Leave enough distance between the charger and the rechargeable battery - never place the rechargeable battery on the charger.
- As both the charger and the battery heat up during the charge/discharge procedure, it is necessary to ensure sufficient ventilation. Never cover the charger or the rechargeable battery!
- Never use battery packs made up of different cells.
- Never leave the charging/discharging batteries unattended.
- Never recharge a battery directly in the model. Always remove the rechargeable battery from the model for recharging.
- Always observe correct polarity (plus/+ and minus/-) when connecting the rechargeable battery to your model or charger. Connecting the battery incorrectly will not only damage the model but also the rechargeable battery. There is a risk of fire and explosion!

This charger has a mechanism that protects against connecting the poles incorrectly. Nonetheless, it is possible that an incorrectly connected battery may lead to damage in certain situations.

- The charger has four charging channels that are independent of each other, so that up to four rechargeable batteries/rechargeable battery packs can be charged (or discharged) at once. However, only connect a single rechargeable battery/rechargeable battery pack to each of the four charging channels. Never connect the charging channels to each other!
- If the product is not to be used for an extended period of time (e.g. storage), disconnect any connected rechargeable battery from the charger and disconnect the charger from the voltage/current supply.

The charger has no mains switch. If you operate the charger via the mains cable, pull the mains plug from the socket when you no longer need the charger.

- Do not charge/discharge any battery that is still hot (e.g. caused by high discharging current from the model). Allow the rechargeable battery to cool down to room temperature before attempting to charge or discharge it.
- Never damage the exterior cover of a battery. There is a risk of fire and explosion!
- Never charge/discharge damaged, leaking or deformed batteries. This can result in a fire or explosion! Dispose of any unusable rechargeable batteries in an environmentally compatible fashion. Do not continue to use them.
- Remove the battery from the charger when it is fully charged.
- Recharge the rechargeable batteries about every 3 months. Otherwise, so-called deep discharge may result, rendering the rechargeable batteries useless.
- Keep rechargeable batteries in a suitable location. Use a smoke detector in the room. The risk of fire (or the occurrence of toxic smoke) cannot be excluded. Special rechargeable batteries for the model construction area are subject to great stress (e.g. high charging and discharging currents, vibrations, etc.).



## b) Additional Information about Lithium Batteries

Modern batteries with lithium technology do not only have a clearly higher capacity than NiMH or NiCd rechargeable battery packs but they also have a considerably lower weight. This makes this type of rechargeable battery very interesting for application in model construction; so-called LiPo batteries (lithium-polymer) are often used here.

Rechargeable lithium batteries require special care when charging/discharging, as well as during operation and handling.

For this reason, we would like to provide you with some information in the sections below about the dangers and how you can avoid them, thus helping such batteries to maintain their performance for an extended period of time to come.

- The outer shell of many rechargeable lithium batteries is only made of a thick foil and therefore very sensitive.

Never destroy or damage the battery, never let the battery fall and do not pierce the battery with any objects! Avoid any mechanical strain on the battery; never pull the connection cables of the battery! There is a risk of fire and explosion!

These guidelines must also be observed when the battery is inserted into the model or when it is removed from the model.

- Ensure that the battery does not overheat during usage, recharging, discharging, transport or storage. Do not place the battery next to sources of heat (e.g. speed controller, motor), keep the battery away from direct sunlight. There is a risk of fire and explosion if the battery overheats!

The battery must never heat up to more than +60 °C (observe any additional information from the manufacturer!).

- If the battery is damaged (e.g. after the crash of an aircraft or helicopter model) or the exterior cover is soaked/has expanded, do not use the battery. Do not charge it anymore. There is a risk of fire and explosion!

Handle the battery with care, use suitable protective gloves. Dispose of the rechargeable battery environmentally compatibly.

Never keep such rechargeable batteries in an apartment or a house/garage anymore. Damaged or bloated lithium rechargeable batteries may catch fire suddenly.

- Only use a suitable charger to charge lithium batteries or use the correct charging procedure. Due to a risk of fire and explosion, conventional chargers for NiCd, NiMH and lead batteries must not be used!

Always choose the right charging procedure depending on rechargeable battery.

- When charging a lithium battery with more than one cell, always use a so-called balancer (one is already integrated into the supplied charger).

- Charge LiPo batteries with a max. charging current of 1C (if not indicated otherwise by the battery manufacturer!). This means that the charging current may not exceed the capacity value imprinted on the battery (e.g. battery capacity 1000 mAh, max. charging current 1000 mA = 1 A).

With LiFe, Lilon and LiHV batteries, you must observe the instructions of the battery manufacturer.

- The discharging current must not exceed the value printed on the battery.

For example, if a value of "20C" is printed on a LiPo battery, the max. discharging current is 20 times the battery's capacity (e.g. battery capacity 1000 mAh, max. discharging current 20C = 20 x 1000 mA = 20 A).

Otherwise, the battery will overheat, causing deformation/bloating of the battery or explosion and fire!

The printed value (e.g. "20C") does not generally refer to the constant current, but to the maximum current that the battery is capable of producing in the short-term. The constant current therefore should not be higher than one half of the given value.

- Observe that the individual cells of a lithium rechargeable battery must not be deep-discharged. A deep discharge of a lithium rechargeable battery will lead to permanent damage/destruction of the rechargeable battery.

If the model does not provide protection against total discharge or possess a visual display indicating a low battery, remember to switch off the model in time.

## Disposal

### a) Product



Electronic devices are recyclable and should not be disposed of in household waste. Dispose of the product according to the applicable statutory provisions at the end of its service life.

### b) Batteries/Rechargeable Batteries

You as the end user are required by law (Battery Ordinance) to return all used batteries/rechargeable batteries. Disposing of them in the household waste is prohibited.



Batteries/rechargeable batteries that contain hazardous substances are labelled with the adjacent icon to indicate that disposal in domestic waste is forbidden. The descriptions for the respective heavy metals are: Cd = cadmium, Hg = mercury, Pb = lead (the names are indicated on the battery/rechargeable battery e.g. below the rubbish bin symbol shown on the left).

You may return used batteries/rechargeable batteries free of charge at the official collection points in your community, in our stores, or wherever batteries/rechargeable batteries are sold.

You thus fulfil your statutory obligations and contribute to the protection of the environment.

## Technical Data

Operating voltage ..... Mains voltage input: 230 V/AC, 50/60Hz

Direct voltage input: 11 - 18 V/DC



Never use both inputs at the same time. This may damage the charger. Loss of guarantee/warranty!

Charging/discharging channels ..... 4

Charge current channel 1 & 2 ..... 0.1 - 12.0 A (depending on the cell number and rechargeable battery type)

Charge current channel 3 & 4 ..... 0.1 - 6.0 A (depending on the cell number and rechargeable battery type)

Charging output ..... Charging channel 1, 2, 3 and 4: total max. 240 W  
Charging channel 1 and 2: max. 120 W each  
Charging channel 3 and 4: max. 60 W each  
Charging channel 1 and 3: total max. 120 W  
Charging channel 2 and 4: total max. 120 W

Discharge current channel 1 & 2 ..... 0.1 - 5.0 A (depending on the cell number and rechargeable battery type)

Discharge current channel 3 & 4 ..... 0.1 - 2.0 A (depending on the cell number and rechargeable battery type)

Discharge output channel 1 & 2 ..... max. 10 W each

Discharge output channel 3 & 4 ..... max. 5 W each

Suitable rechargeable batteries ..... NiMH/NiCd, 1 - 15 cells

LiPo/Lilon/LiFe/LiHV, 1 - 6 cells

Pb, 1 - 10 cells (rated voltage 2 - 20 V)

Discharge current for balancer ..... 500 mA per cell

Delta-U-recognition ..... yes (for NiMH/NiCd, adjustable)

Maintenance charge current ..... yes (for NiMH/NiCd, adjustable, can be switched off)

Safety timer ..... yes (can be switched off)

Rechargeable battery memory ..... 10

Fan integrated ..... yes (2)

Ambient conditions ..... Temperature 0 °C to +40 °C; humidity 0% to 90% relative, non-condensing

Weight ..... 1.62 kg

Dimensions ..... 205 x 180 x 70 mm (W x D x H)