



Off-Grid, Backup & Storage Systems

System examples







Freedom. Powered by know-how.

When you need power on a grid when you're off the grid,
it's good to know the power of know-how is by your side.

Energy. Anytime. Anywhere.





victron energy
BLUE POWER



OFF-GRID, BACKUP & STORAGE SYSTEMS

How do you build scalable, cost-effective and robust off-grid systems that provide peace of mind?

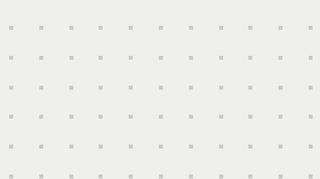
The solution is powered by know-how. With over 45 years of experience, we've learnt what it takes to build backup and off-grid systems that stand the test of time and the environment. Our customers value the reassurance that our power solutions deliver knowing they have our worldwide network of authorized dealers by their side. They know we don't cut corners, they know our family run business is built on a foundation of trust they can always depend on.

Energy. Anytime. Anywhere.









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Introduction to systems design and helpful resources

Victron Energy offers one of the largest product ranges in the market to cover almost every power challenge.

Admitted, choosing the right system concept and products can be overwhelming. This booklet intends to assist with basics in systems design, covering a number of different system concepts and solutions for Off-grid, Backup and Storage.

Alternatively, check our helpful resources or feel free to discuss your ideas with a local Victron specialist.

Check our [Off-grid, Backup and Storage](#) market webpage to explore our deep dive with example calculations.



Product & design information

Our [product pages](#) on the website provide all necessary product information, such as product data sheets, product manuals, more system examples, enclosure drawings and certificates.

Knowledge base & forum

Search in the [knowledge base](#) for questions and answers or ask our large and active community of experienced Victron users who can help answer your questions.

Victron Professional Training

Join the professionals and access a large range of on-line training courses. Training includes videos, reference resources and exams to test your knowledge. Successful completion is rewarded with a certificate. On-line training requires a free [Victron Professional](#) account.

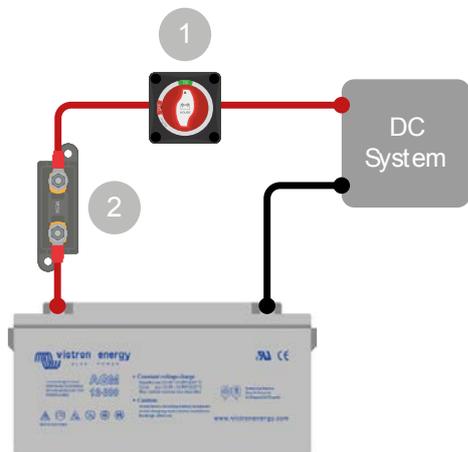
Energy Unlimited & Wiring Unlimited white papers

Understand the principles behind off-grid power systems and get your wiring right with Wiring Unlimited. Find these white papers and a large variety of technical papers and example system schematics in the [download section](#).

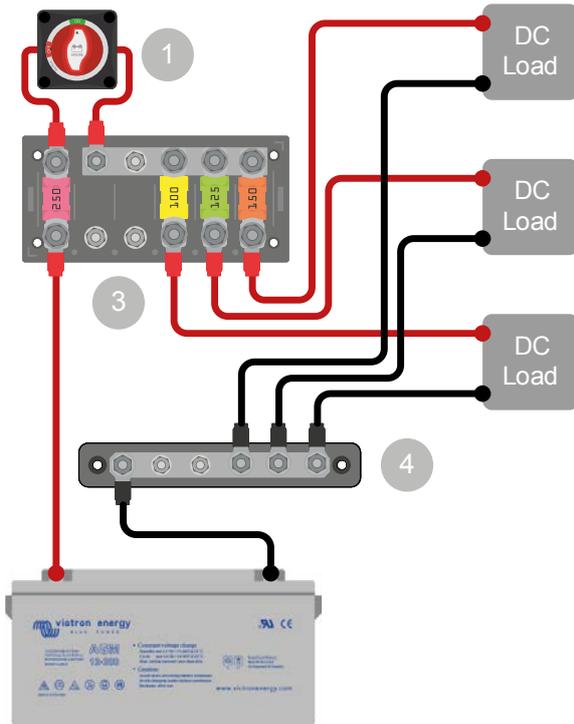
Contact your local Victron Energy dealer

Authorized [Victron Energy dealers](#) are trained with the highest level of know-how, so they can translate your exact needs into robust solutions. They are ready and happy to help you with system design and, of course, can provide all the necessary and correct Victron Energy products for your system.

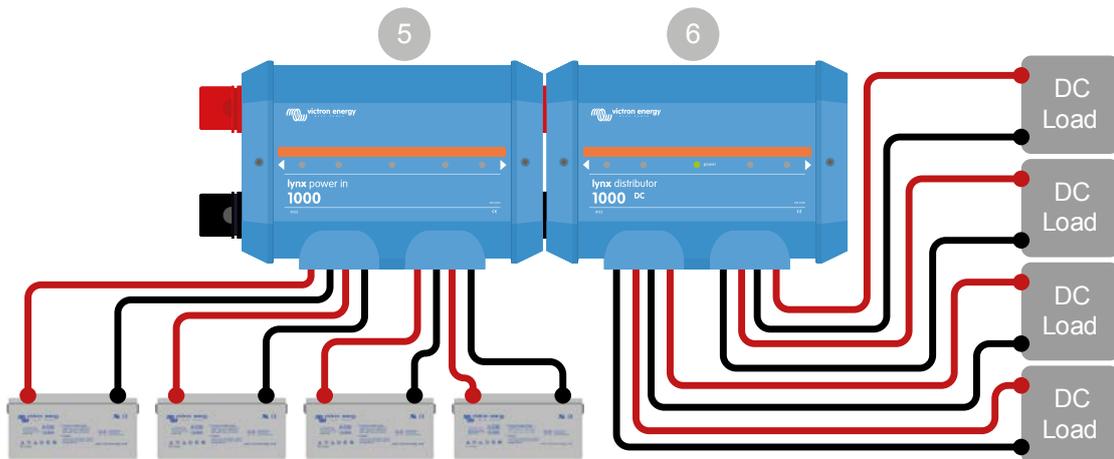




Battery system with DC fuse, DC battery switch and DC loads.



Battery system with Busbar, fuse box and DC loads

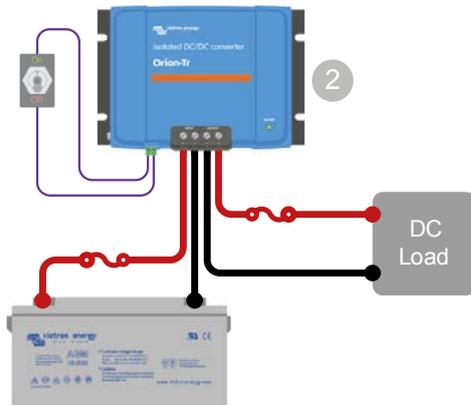
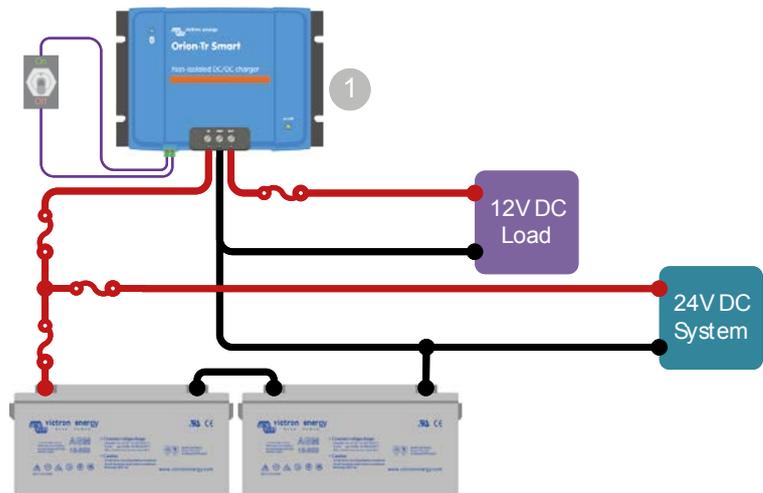


Lynx DC distribution system

ID	Items and notes
1	Battery Switch, rated 275A, suitable for 12, 24 or 48V systems.
2	Fuse holder with fuse.
3	Fuse box 6-way with a 250A busbar.
4	Busbar, available in 150, 250 or 600A rating. A variety of models with 4 up to 12 connection points.
5	Lynx Power In, contains a 1000A positive and negative busbar with connection points for 4 batteries or battery banks.
6	Lynx Distributor, contains a 1000A positive and negative busbar with connections for 4 fuses and their DC circuits.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

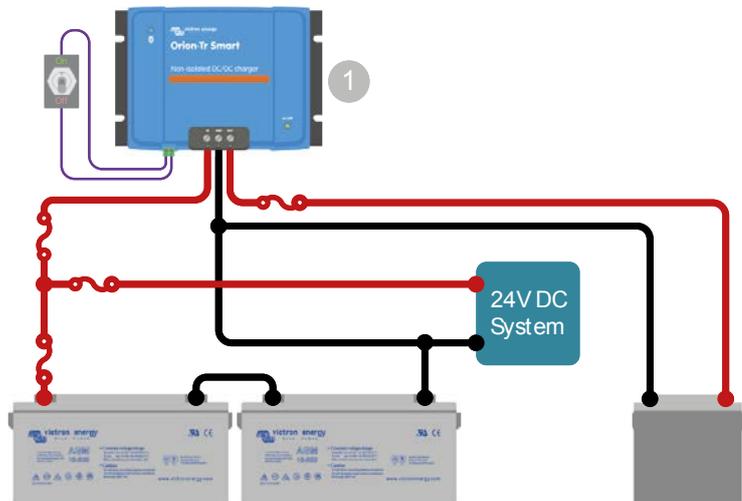


System with DC-DC converter, providing a different DC voltage to power a specific DC load or circuit. In this example powering 12V loads from a 24V battery bank.

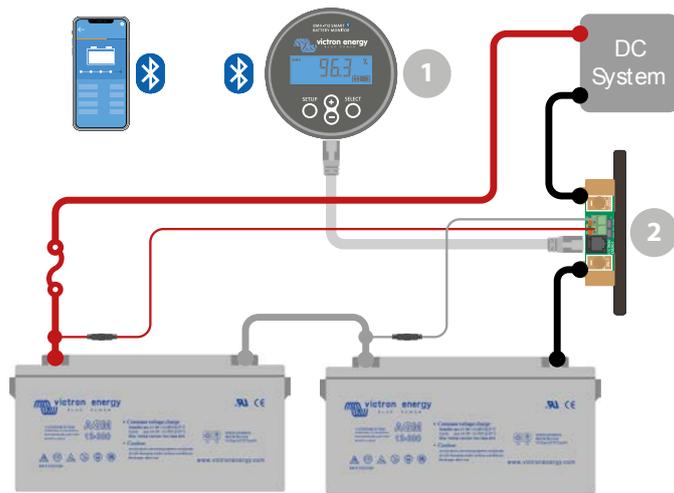


System with DC-DC converter, providing galvanic isolation between the battery and the DC load or circuit.

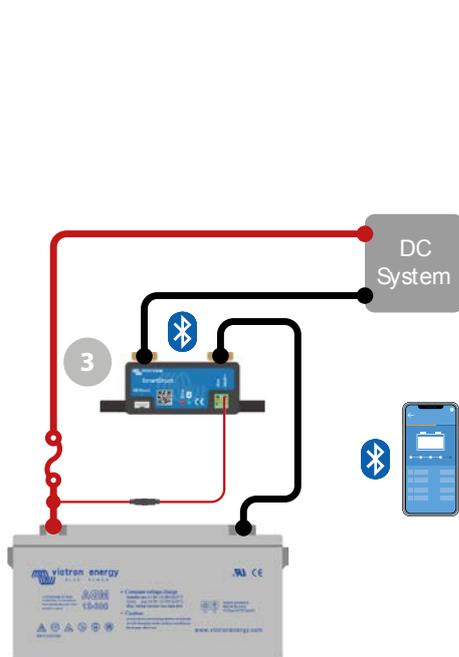
System with DC-DC converter, charging an additional battery at the same or a different voltage. In this example charging a 12V generator starter battery from a 24V battery bank.



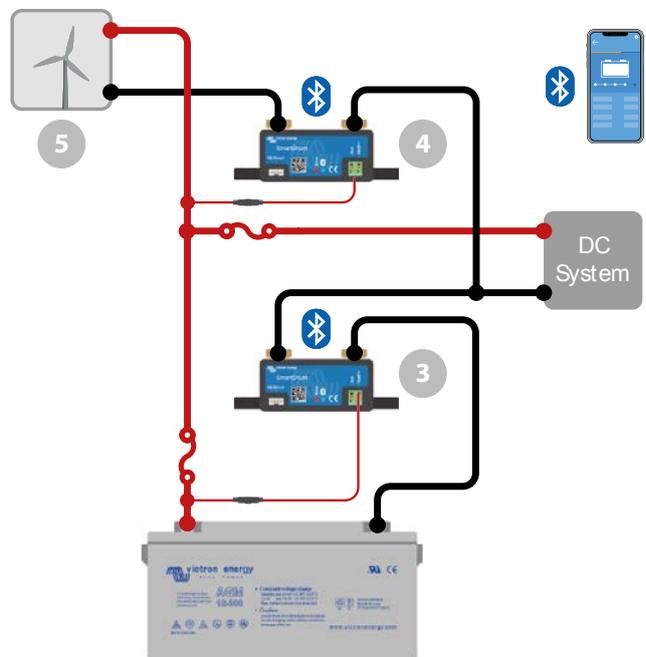
ID	Items and notes
1	Orion DC-DC Converter, isolated or non isolated, converts one voltage to another, can also be used to charge a battery.
2	Isolated Orion DC-DC Converter, a variety of models available with 12, 24 or 48V input and 12 or 24V output
	Optional on/off switch.
	Remote on/off signal wire.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .



System with a BMV-712 Smart battery monitor. The battery bank is monitored and the auxiliary connection is used to monitor the battery bank midpoint.

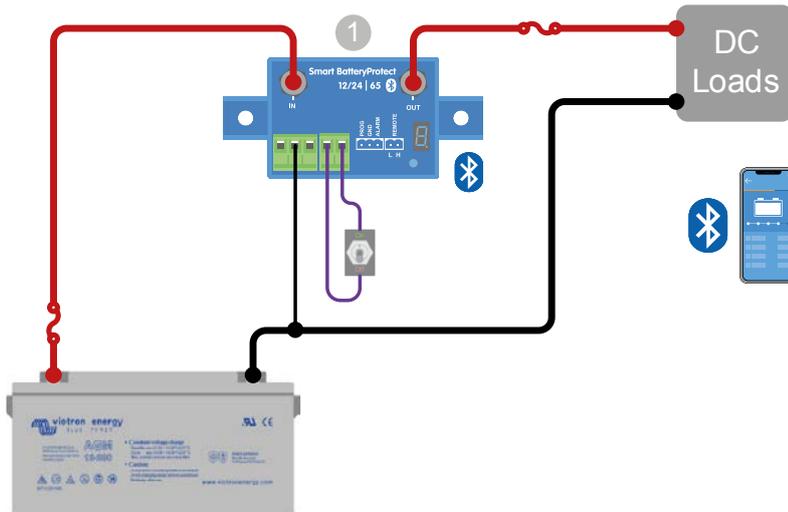


System with a SmartShunt battery monitor.

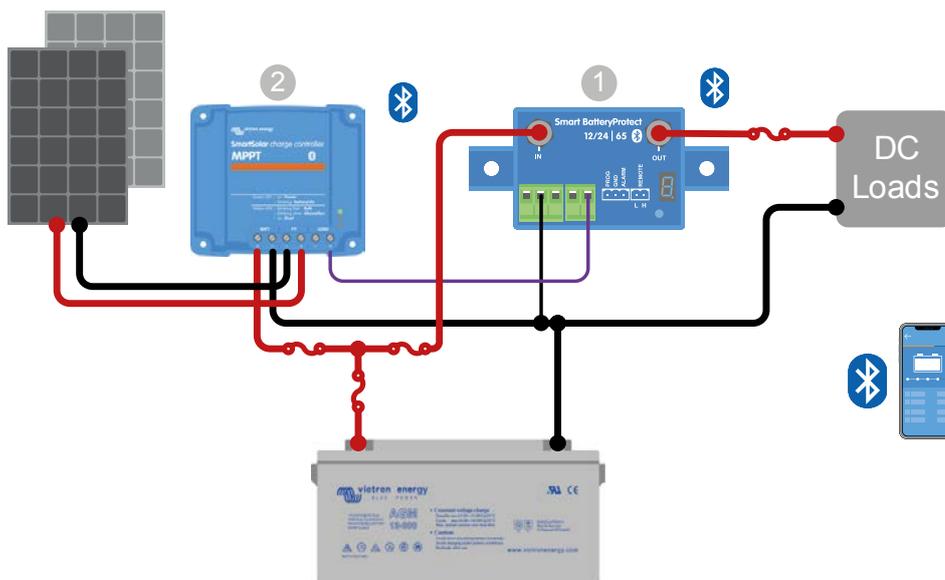


System with a SmartShunt battery monitor and a SmartShunt used as a DC meter.

ID	Items and notes
1	BMV-712 Smart battery monitor , available in various models, with and without auxiliary connection and/or Bluetooth.
2	Shunt for the BMV battery monitor, the shunt is included with the battery monitor.
3	SmartShunt battery monitor, available in 500A, 100A or 2000A model.
4	SmartShunt battery monitor configured as a DC meter, to measure the current from a DC charge source or DC load.
5	DC charge source, in this case a DC wind generator is used.
	RJ12 UTP cable (10m), included with the BMV battery monitor. Also available in lengths ranging from 30cm to 30m.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	Small DC fuse, included with the product.
	DC fuse .
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

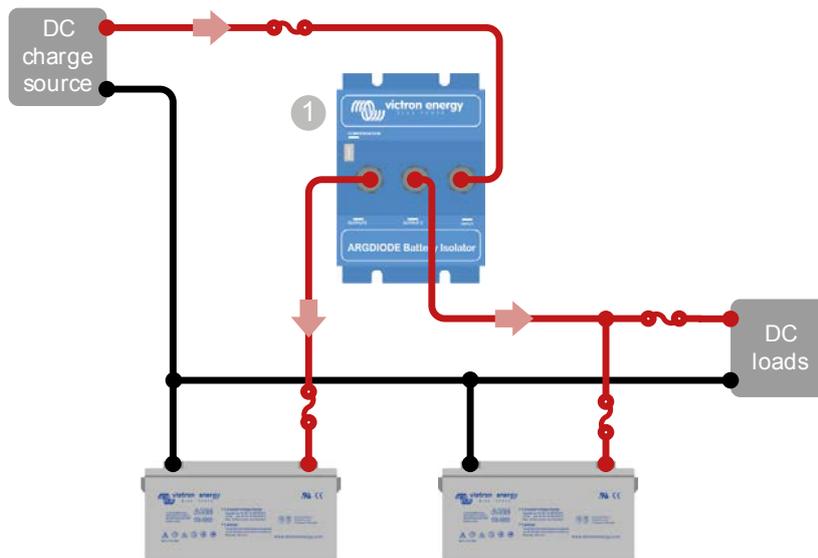


System with a BatteryProtect to protect the battery from being too far discharged by a DC load or DC circuit.

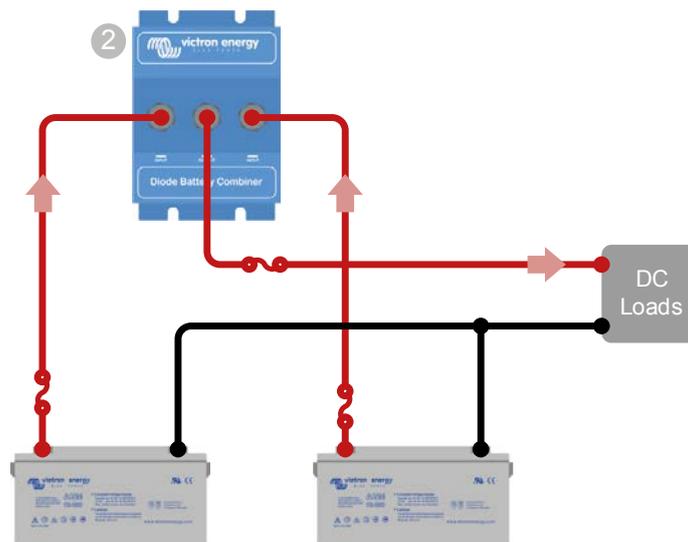


System with a small solar charger. The BatteryProtect is used to increase the load output current rating of the solar charger.

ID	Items and notes
①	BatteryProtect, available in 65, 100 or 220A models, for 12, 24 or 48V, with or without Bluetooth.
②	Solar charger with load output, available in 10, 15 or 20A models, for 12, 24 or 48V, with or without Bluetooth.
	Solar panel or solar array.
	Remote on/off signal wire.
	Optional on/off switch.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .



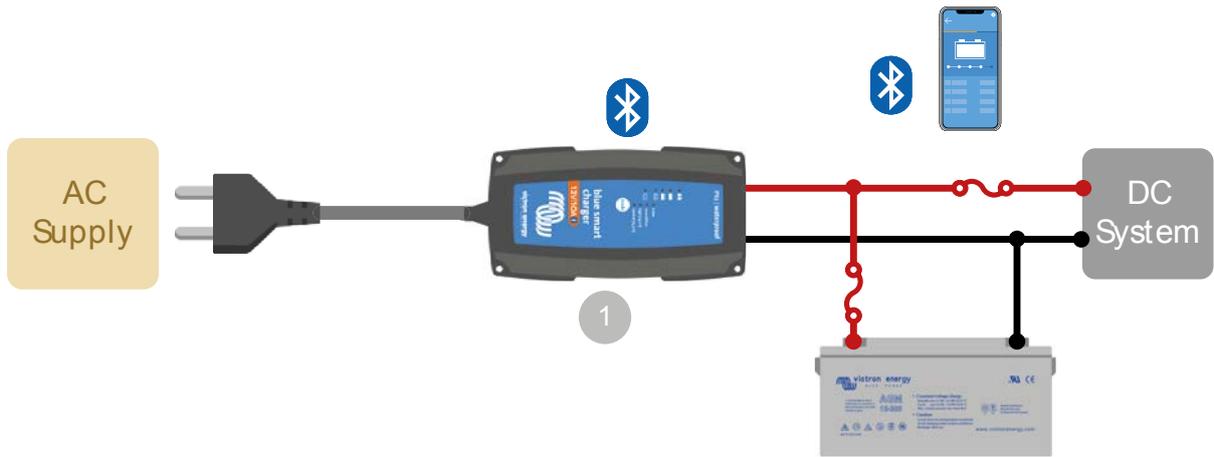
The Argodiode or Argofet battery isolator allows multiple battery banks to be charged from one charge source.



The Argodiode battery combiner combines two battery banks to supply a single DC load circuit. For example for use in DC backup systems.

ID	Items and notes
①	Argodiode or Argofet battery isolator , for 2 or 3 batteries, models ranging from 80 up to 200A, for 12 or 24V systems.
②	Argodiode battery combiner , 40A or 80A model, suitable for 12V or 24V systems.
	12 or 24V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse .
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .



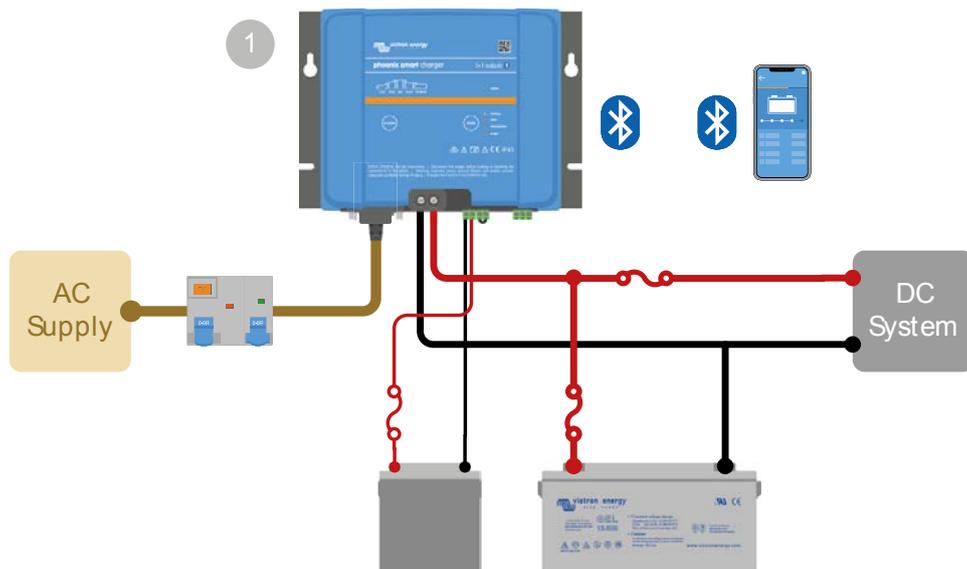


Battery charger used to charge a battery and providing power to DC loads.

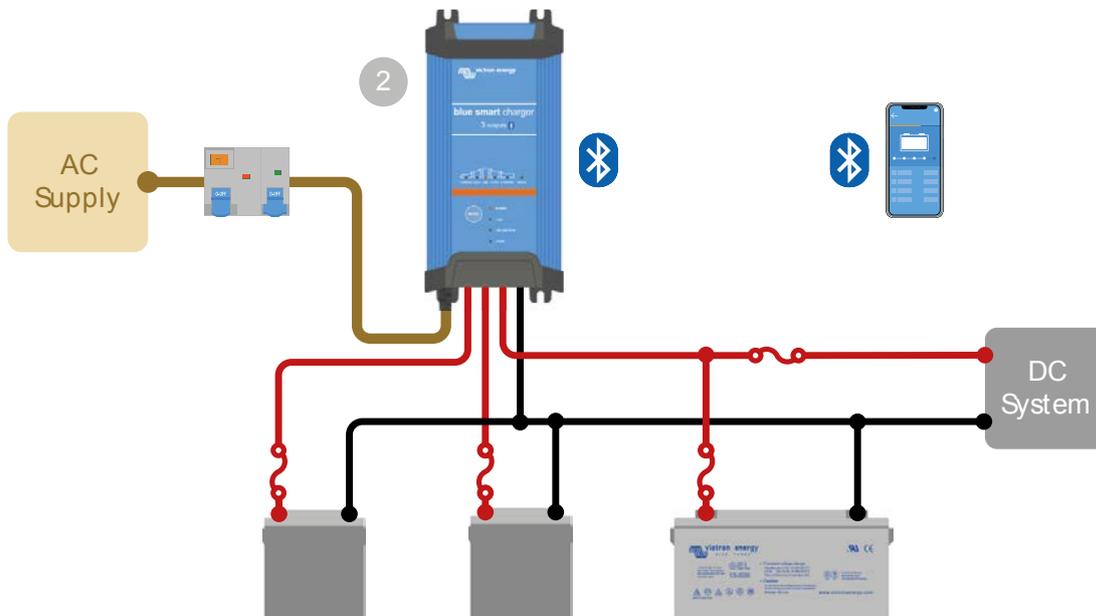


Battery charger used as a power supply.

ID	Items and notes
1	Blue Smart battery charger, available in 12 or 24V, up to 25A.
	AC plug and cable, available in EJR, UK, USA and AU/NZ versions.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

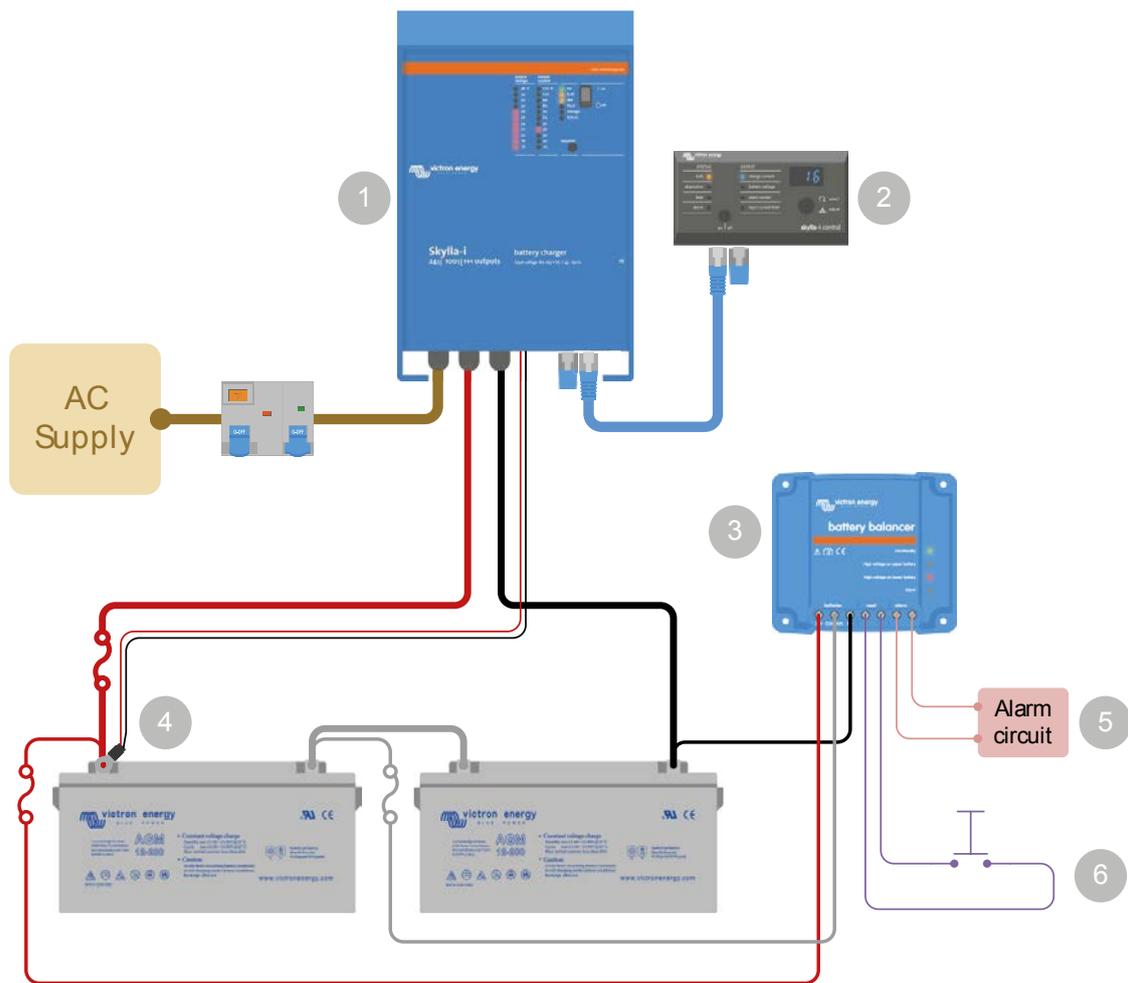


Battery charger used to charge a main battery and provides a maintenance charge to a smaller battery, like a generator starter battery.



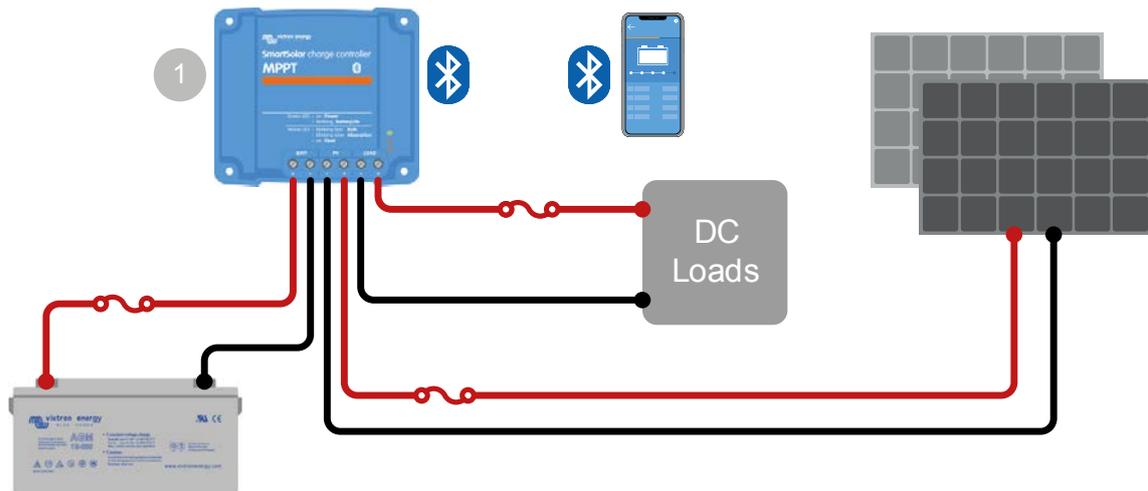
Battery charger with 3 full rated charge outputs, charging 3 batteries simultaneously.

ID	Items and notes
①	Phoenix Smart IP43 Charger , available in 1+1 models and in 3 output models in 12 or 24V up to 50A.
②	Blue Smart IP22 Charger , available in single output or 3 output models for 12 or 24V up to 30A.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

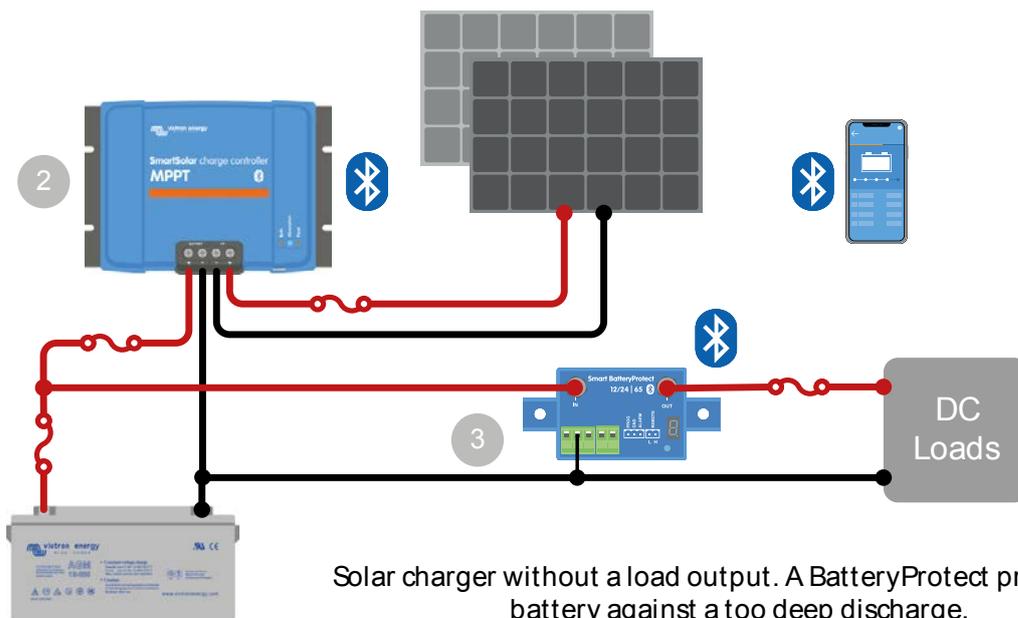


System with a Skylia battery charger and a battery balancer. The battery balancer ensures that both batteries in a 24V system are charged equally.

ID	Items and notes
1	Skylia-i battery charger, 24V up to 100A. Or use a Skylia-TG Charger , 24 or 48V up to 100A (also a 3 phase model).
2	The Skylia-i Control GX monitors and controls the Skylia-i battery charger.
3	Battery Balancer . Can be used in 24 or 48V systems. In case of a 48V system 3 balancers are needed.
4	Temperature sensor , ships together with the Skylia-i.
5	Alarm circuit, connected to the battery balancer alarm relay.
6	Alarm reset switch.
	RJ45 UTP cable , available in lengths ranging from 30 cm to 30m.
	VE.Can RJ45 terminator , 2 pieces are included with the VECan product.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	12 or 24V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse .
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .



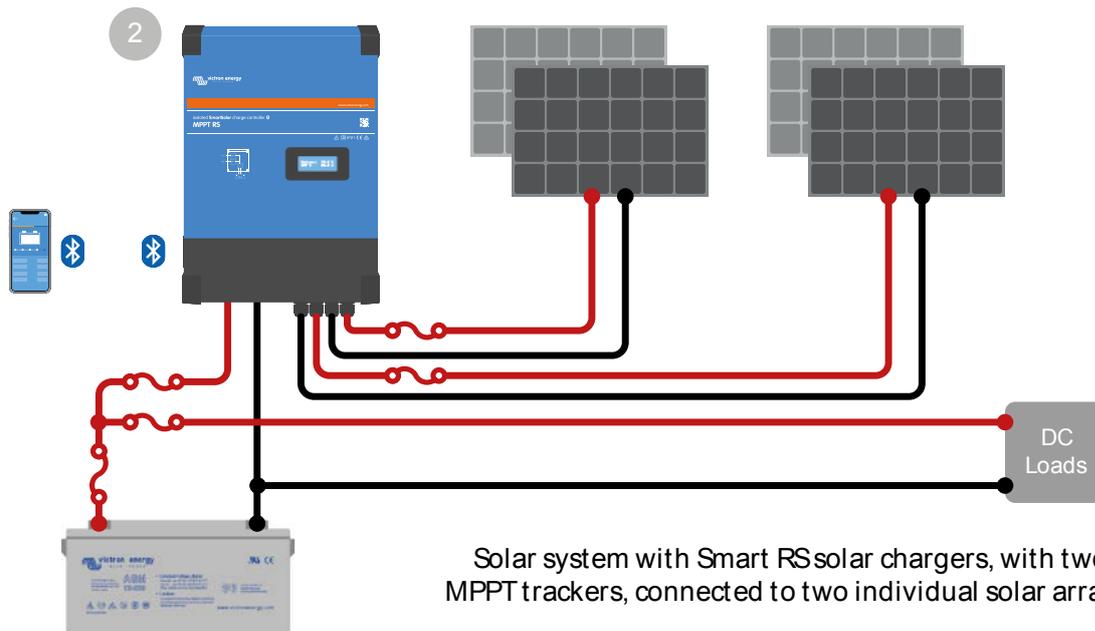
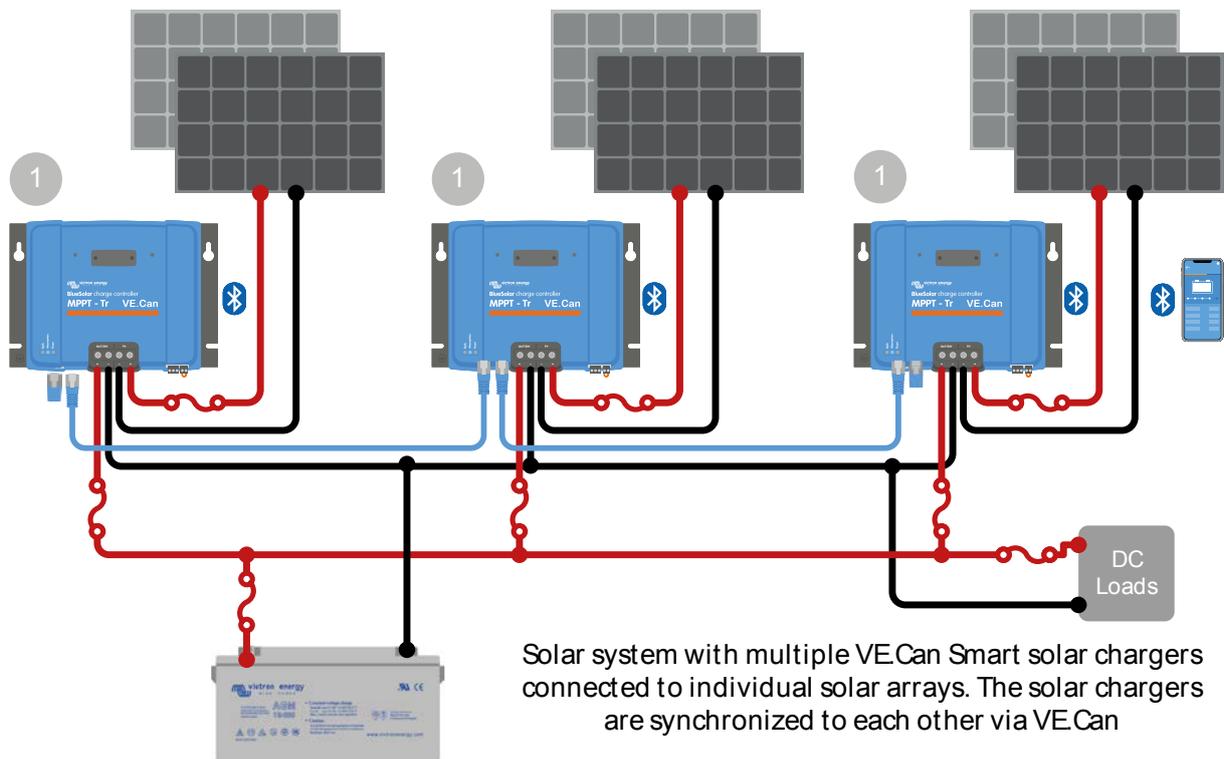
Solar charger with a load output. The load output protects the battery against a too deep discharge.



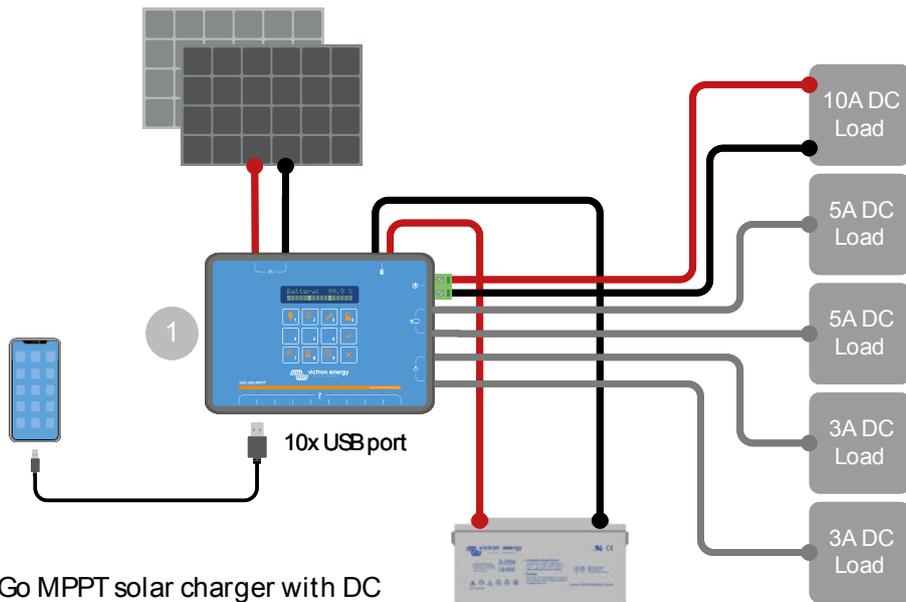
Solar charger without a load output. A BatteryProtect protects the battery against a too deep discharge.

ID	Items and notes
1	Solar charger with load output, available in 10, 15 or 20A models, for 12, 24 or 48V, with or without Bluetooth.
2	Solar charger, available up to 100A, for 12, 24 or 48V, with or without Bluetooth.
3	BatteryProtect, available in 65, 100 or 220A models, for 12, 24 or 48V, with or without Bluetooth.
	Solar panel or solar array.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

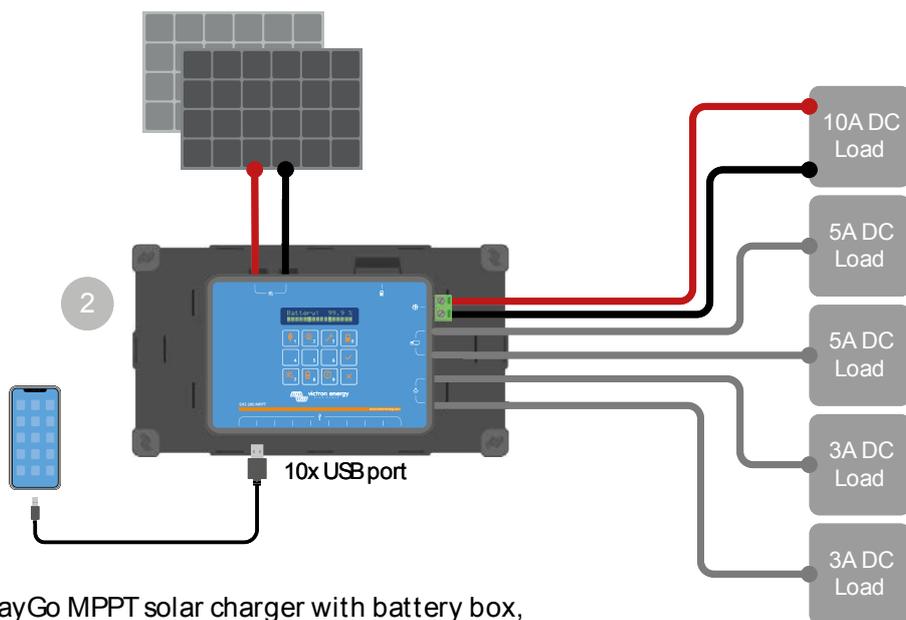




ID	Items and notes
①	SmartSolar MPPT VE.Can, for 12, 24 or 48V. Models ranging from 70A up to 100A for PV voltage 150 or 250V.
②	SmartSolar MPPT RS, for 48V systems, available in a 100A or 200A model, for PV voltages up to 450V.
	RJ45 UTP cable, available in lengths ranging from 30 cm to 30m.
	VE.Can RJ45 terminator, 2 pieces are included with the VE.Can product.
	Solar panel or solar array.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

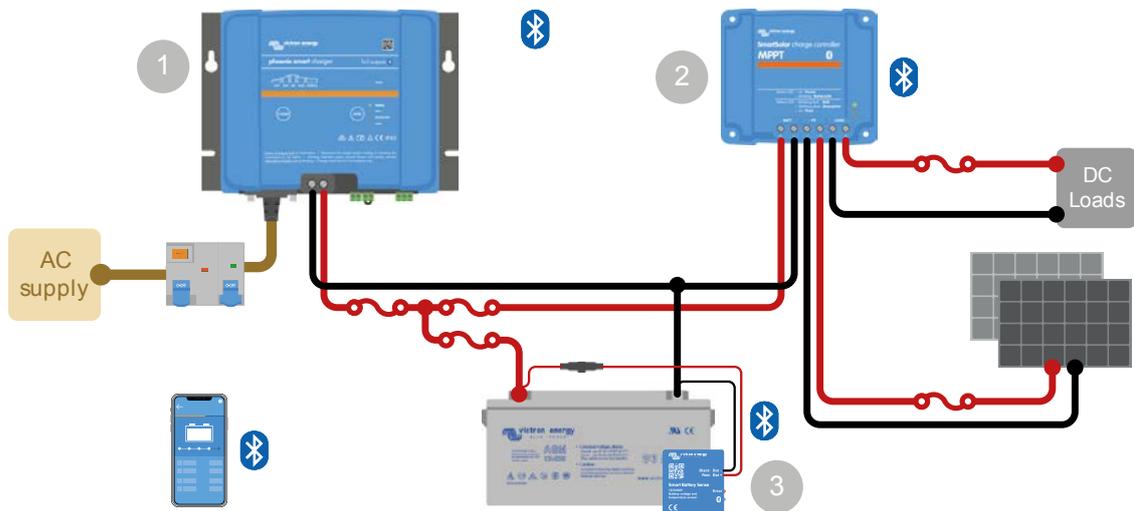


PayGo MPPT solar charger with DC distribution and USB charging ports.

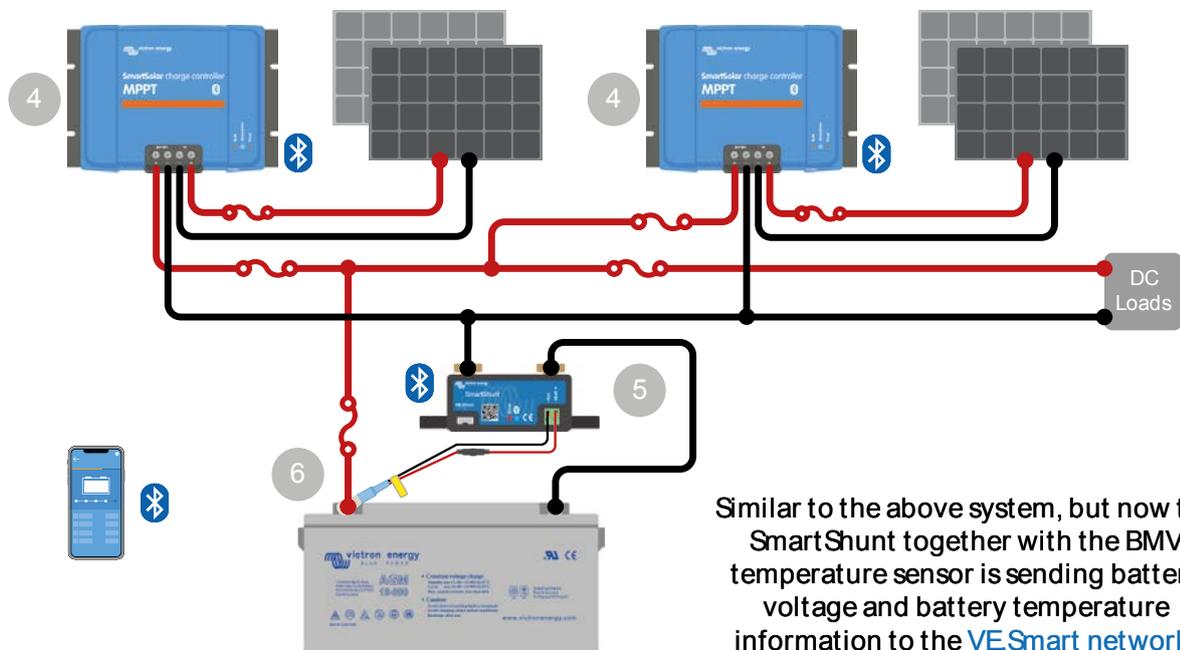


PayGo MPPT solar charger with battery box, DC distribution and USB charging ports.

ID	Items and notes
①	The SHS200 MPPT is a 200Wp MPPT solar charger for 12V batteries with DC distribution designed for PayGo operations.
②	The Battery Box for SHS200 is a dedicated battery box for the SHS200 MPPT.
	Solar panel or solar array.
	DC cable with barrel plug.
	12V battery or battery bank consisting of multiple batteries connected in parallel.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

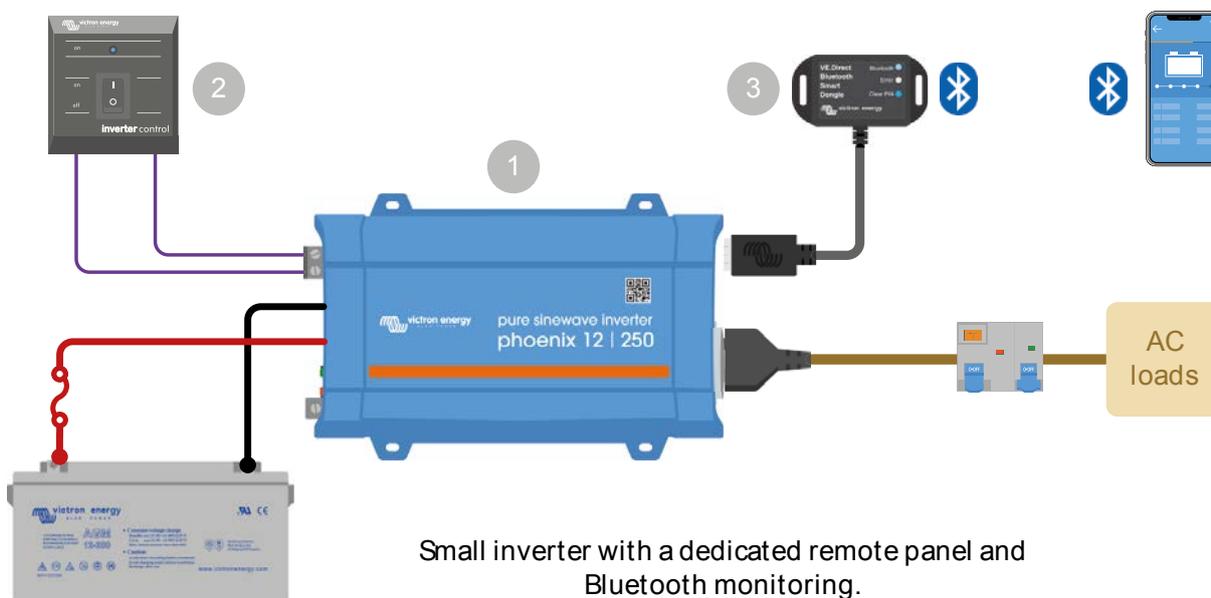
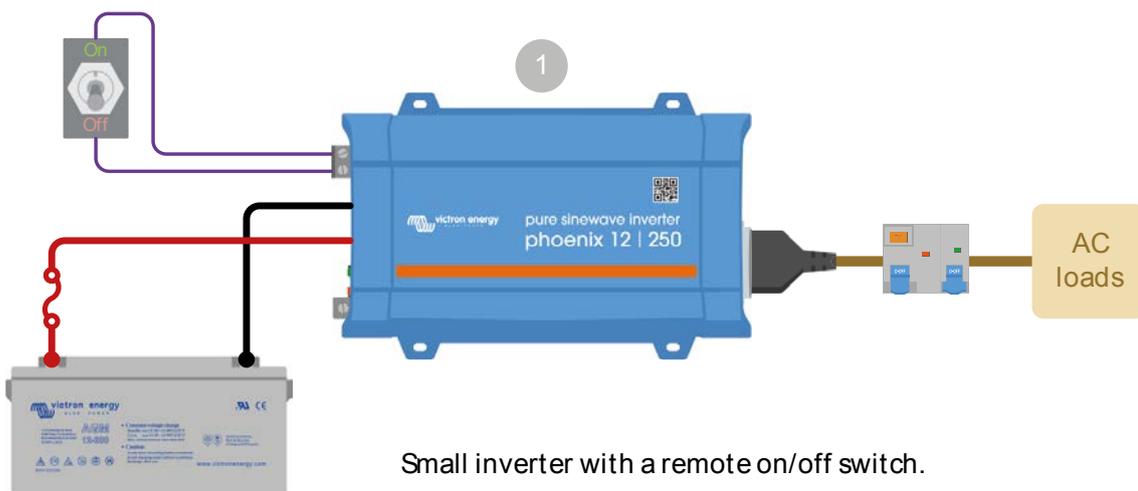


The Smart Battery Sense sends battery temperature and voltage information via Bluetooth and the **VE Smart Network** to the solar charger and the AC charger and is used for temperature and voltage compensated charging.



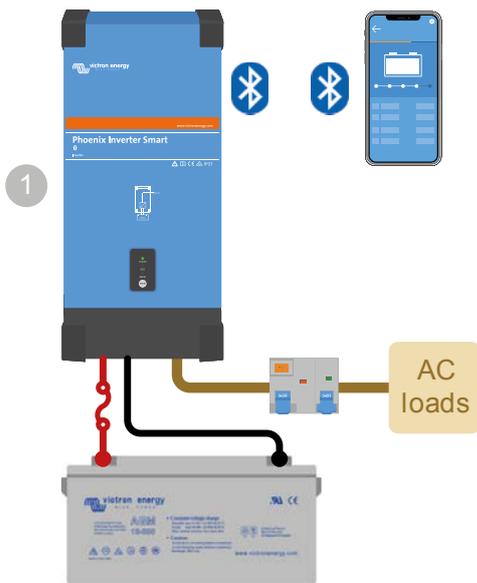
Similar to the above system, but now the SmartShunt together with the BMV temperature sensor is sending battery voltage and battery temperature information to the **VE Smart network**.

ID	Items and notes
1	12, 24 or 48V Battery charger.
2	Solar charger with load output, available in 10, 15 or 20A models, for 12, 24 or 48V, with or without Bluetooth.
3	Smart Battery Sense, a wireless battery voltage and temperature sensor.
4	Solar charger, available up to 100A, for 12, 24 or 48V, with or without Bluetooth.
5	SmartShunt battery monitor, available in 500, 100 or 2000A model.
6	Temperature sensor for BMV-712 Smart and BMV-702.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	Solar panel or solar array.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	Small DC fuse, included with the product.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

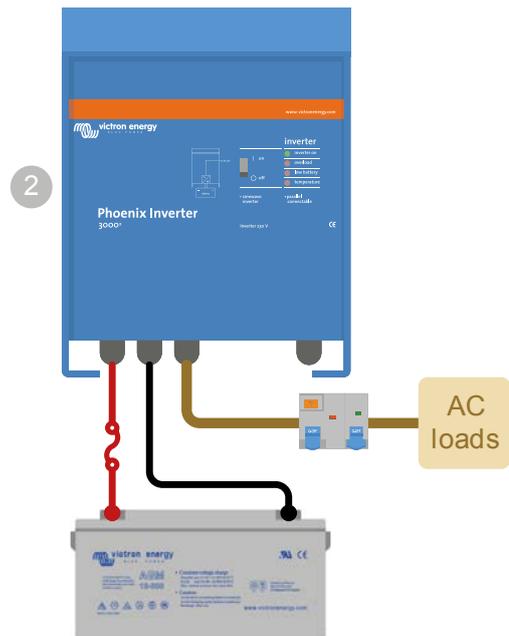


ID	Items and notes
①	Phoenix Inverter VE.Direct, available in 12, 24 or 48V models ranging from 250 up to 1200VA.
②	Phoenix Inverter Control VE.Direct for on/off control of the Phoenix VE.Direct inverter.
③	VE.Direct Bluetooth Smart dongle to enable a Bluetooth connection to the VictronConnect app.
	Optional on/off switch.
	Remote on/off signal wire.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

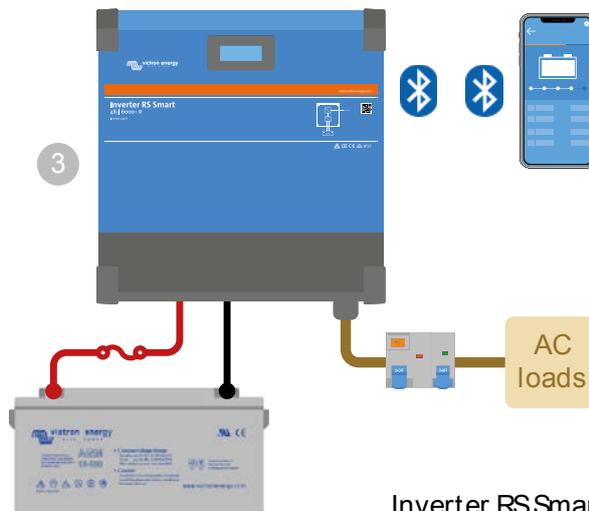




Phoenix Inverter Smart system.

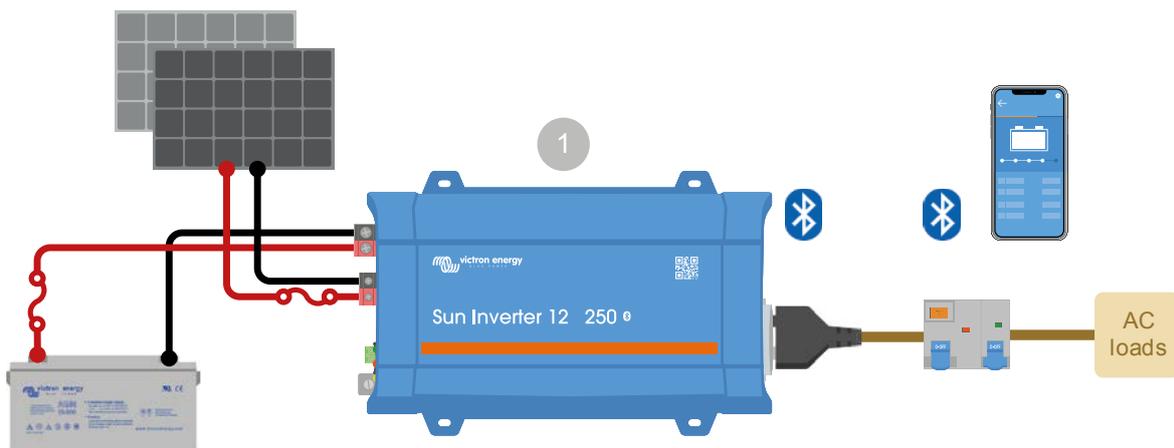


Phoenix Inverter system. Multiple inverters can be connected in parallel and/or in single or 3-phase configurations.

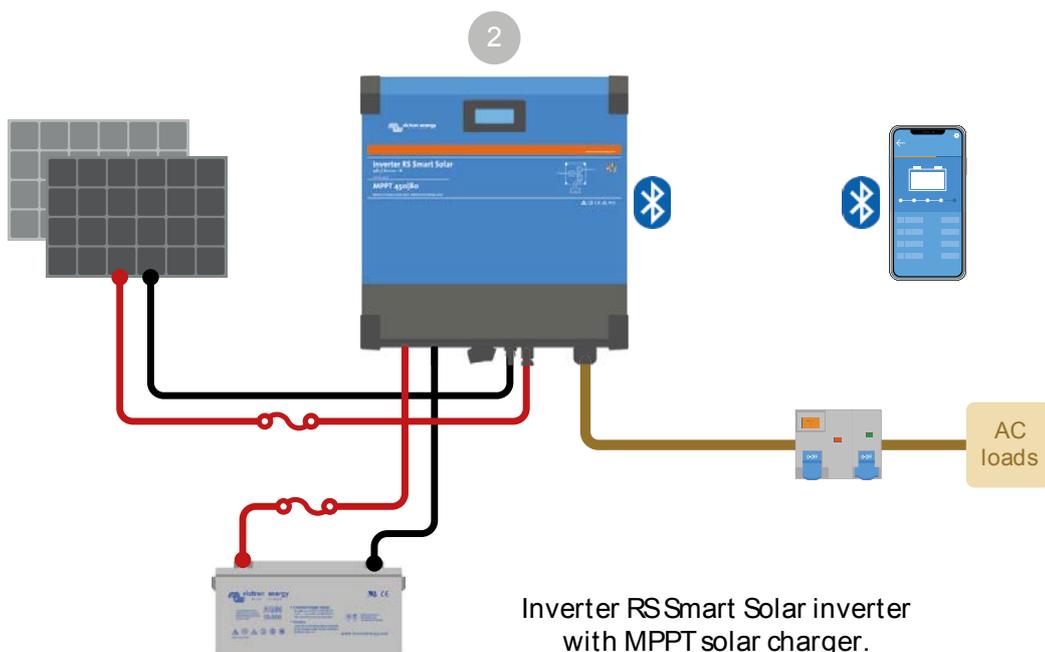


Inverter RS Smart system.

ID	Items and notes
1	The Phoenix Inverter Smart for 12, 24 or 48V systems, available in models ranging from 1600VA to 5kVA.
2	The Phoenix Inverter for 12, 24 or 48V systems, available in a 3 or a 5kVA model.
3	The Inverter RS Smart for 48V systems, available in a 6kVA model.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	Solar panel or solar array.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse .
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .



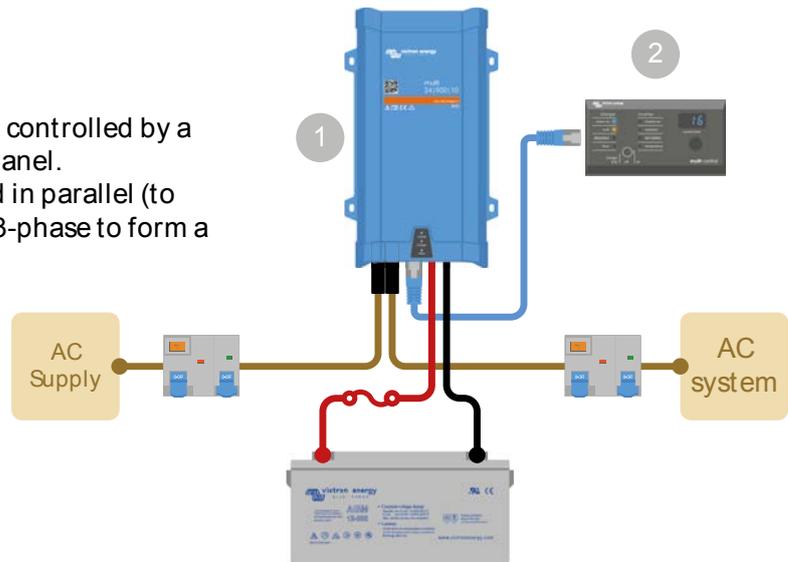
SUN inverter with PWM solar charger.



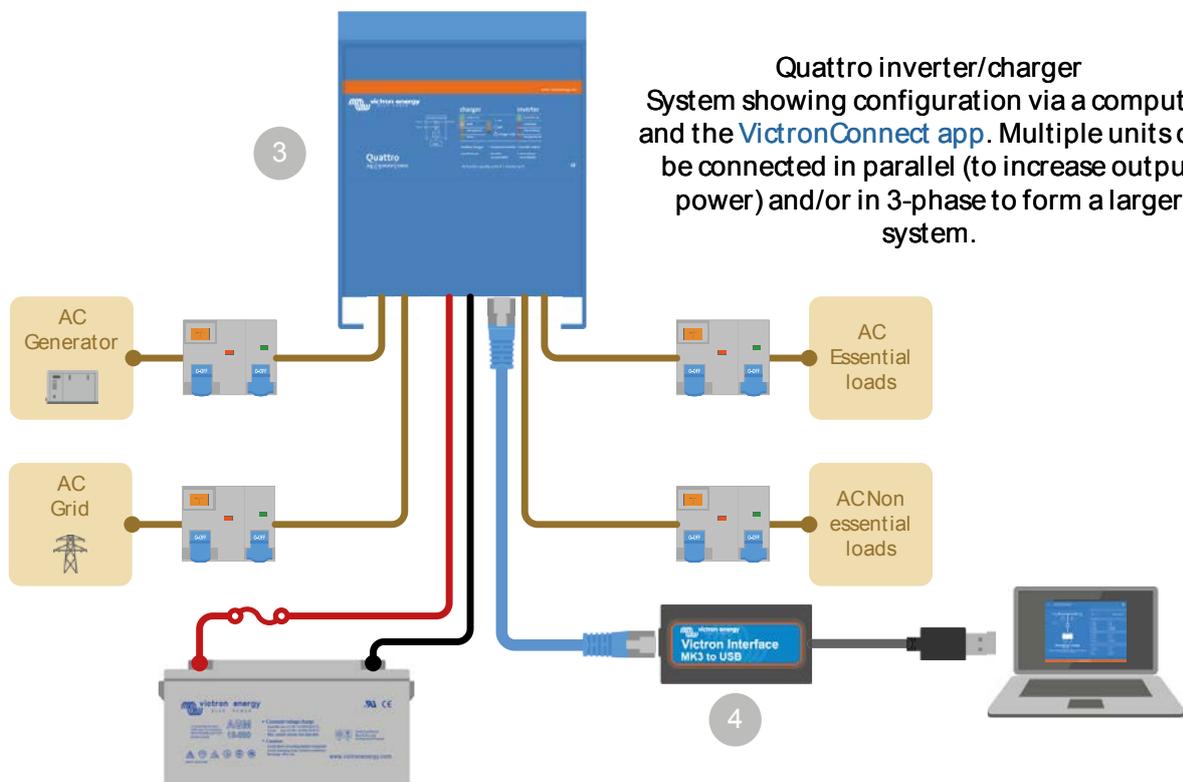
Inverter RS Smart Solar inverter with MPPT solar charger.

ID	Items and notes
①	SUN Inverter, a 12 or 24V, 250VA inverter with a PWM solar charger rated at 15A for 12V or 10A for 24V. (future product).
②	Inverter RS Smart Solar, a 48V, 6kVA inverter with a 80-450Vdc, 4kW MPPT solar charger.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	Solar panel or solar array.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

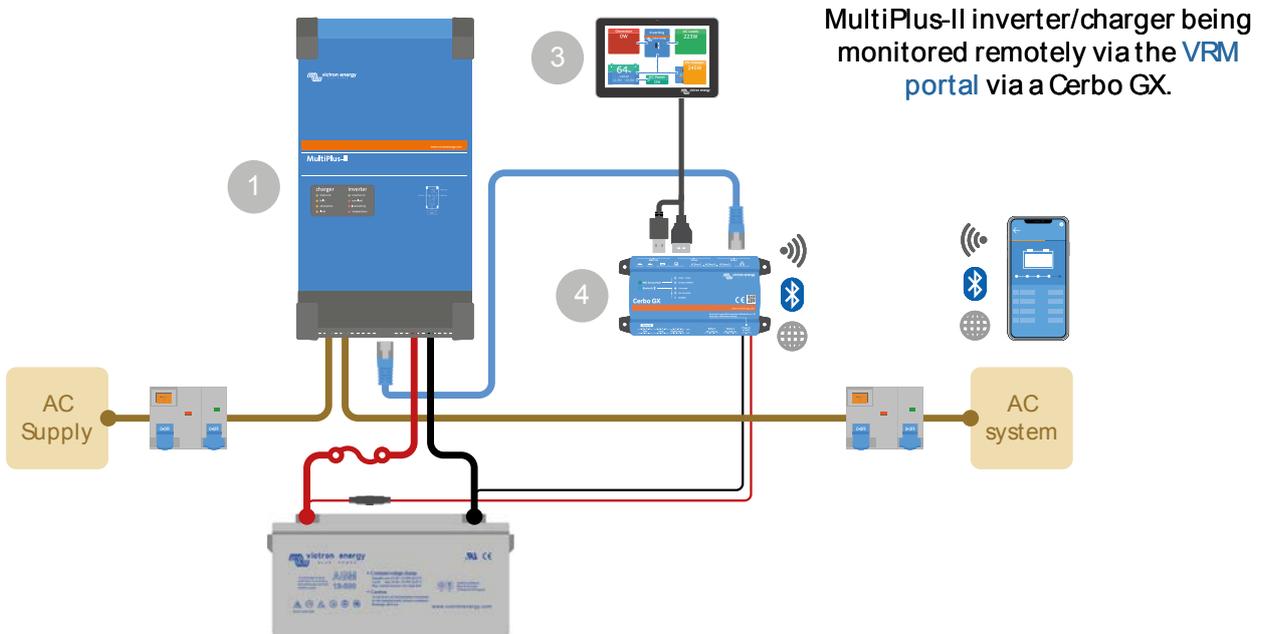
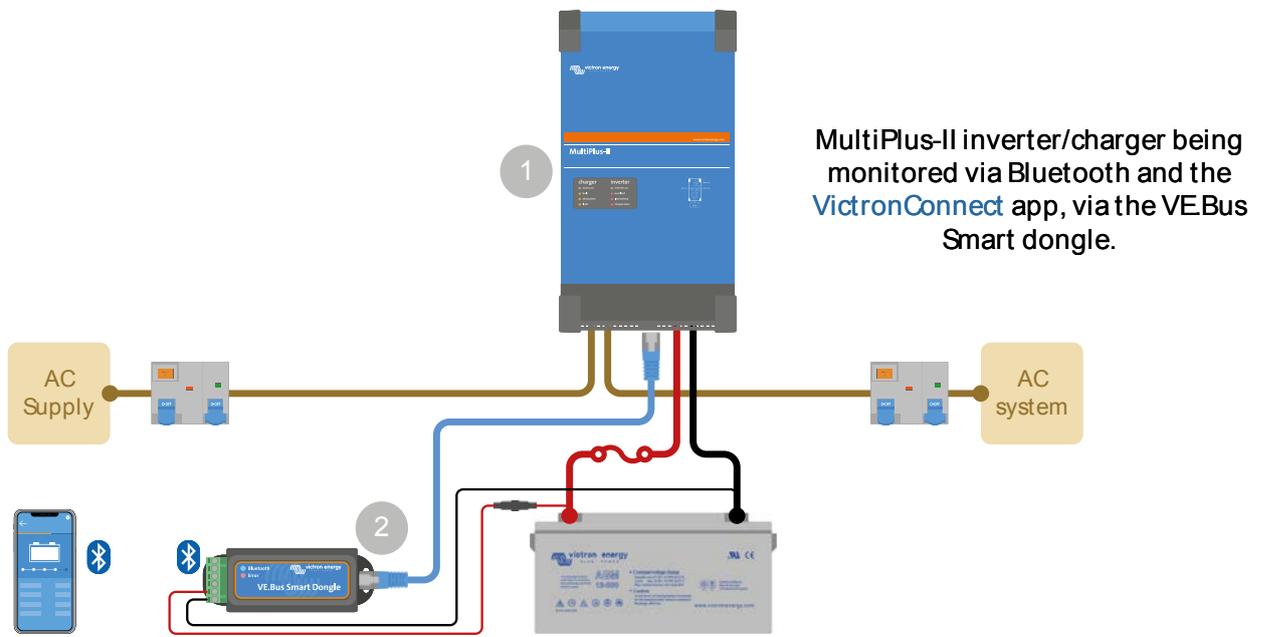
MultiPlus inverter/charger being controlled by a Digital Multi Control panel.
Multiple units can be connected in parallel (to increase output power) and/or in 3-phase to form a larger system.



Quattro inverter/charger
System showing configuration via a computer and the VictronConnect app. Multiple units can be connected in parallel (to increase output power) and/or in 3-phase to form a larger system.

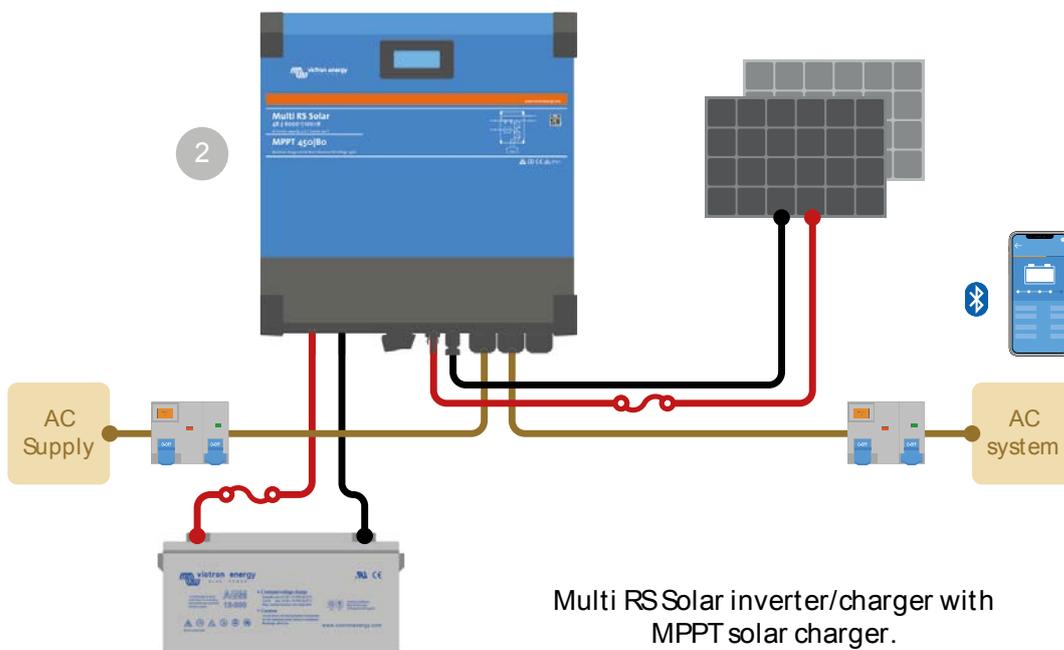
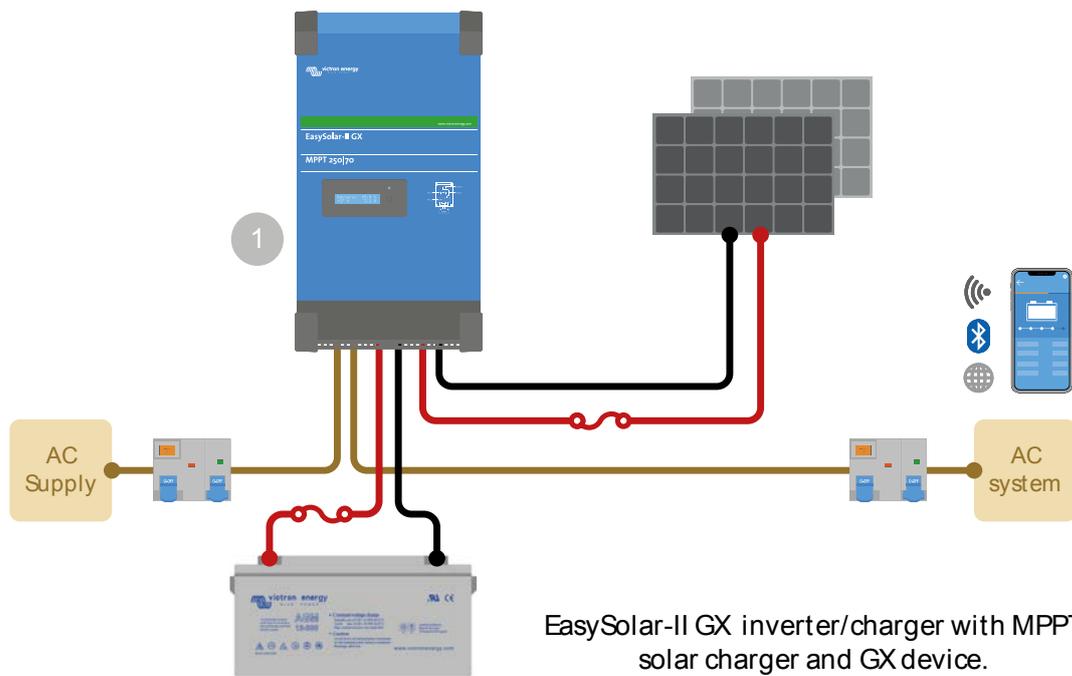


ID	Items and notes
1	MultiPlus or MultiPlus-II inverter/charger for 12, 24 or 48V systems, models ranging from 500VA up to 15kVA.
2	Digital Multi Control 200/200A GX, to remotely view and control the inverter/charger.
3	Quattro inverter/charger, for 12, 24 or 48V systems with power rating ranging from 3 up to 15kVA.
4	Interface MK3-USB for configuration of single and multiple inverter/charger systems via a computer.
	RJ45 UTP cable, available in lengths ranging from 30 cm to 30m.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

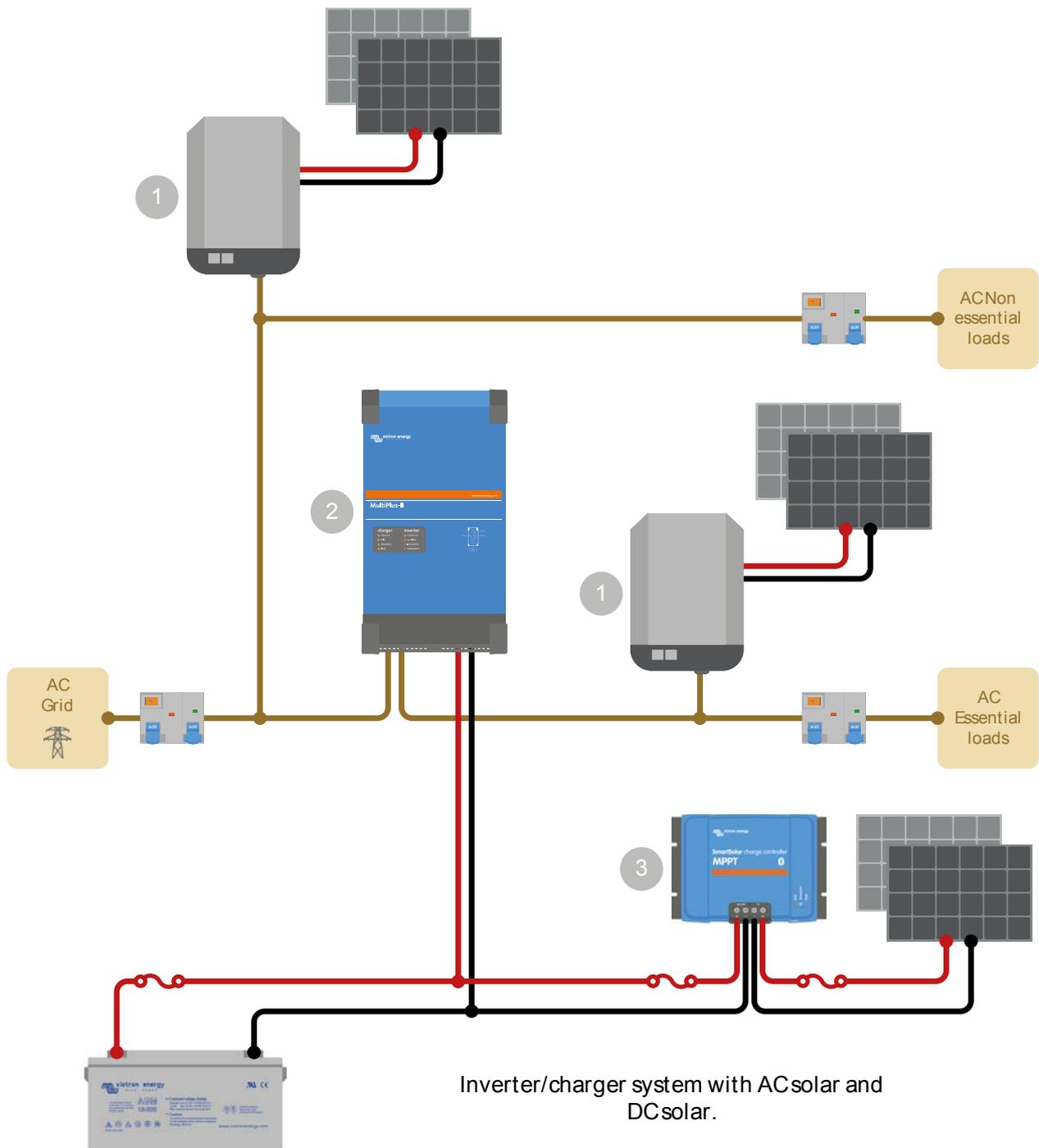


ID	Items and notes
1	MultiPlus or MultiPlus-II inverter/charger for 12, 24 or 48V systems, models ranging from 500VA up to 15kVA.
2	The VE.Bus Smart dongle for Bluetooth monitoring via the VictronConnect app.
3	GX Touch display gives an instant overview of your system.
4	Cerbo GX for local and remote system monitoring and configuration.
	RJ45 UTP cable, available in lengths ranging from 30 cm to 30m.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCBO or GFC).
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	Small DC fuse, included with the product.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book.



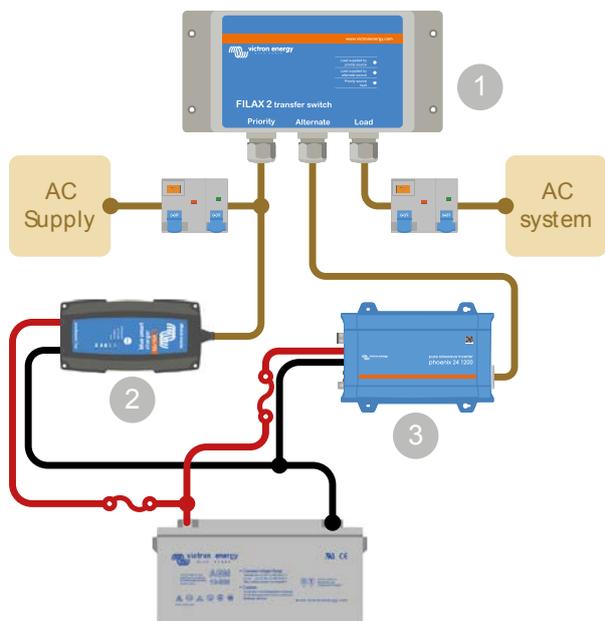


ID	Items and notes
1	EasySolar-II GX for 24 or 48V systems, 3 or 5kVA inverter with a 250Vdc, 70A or 100A MPPT solar charger and a GX device.
2	Multi RS Solar 48/6000 a 48V, 6kVA Inverter/Charger with 450VDC 4kWp PV input.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	Solar panel or solar array.
	24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

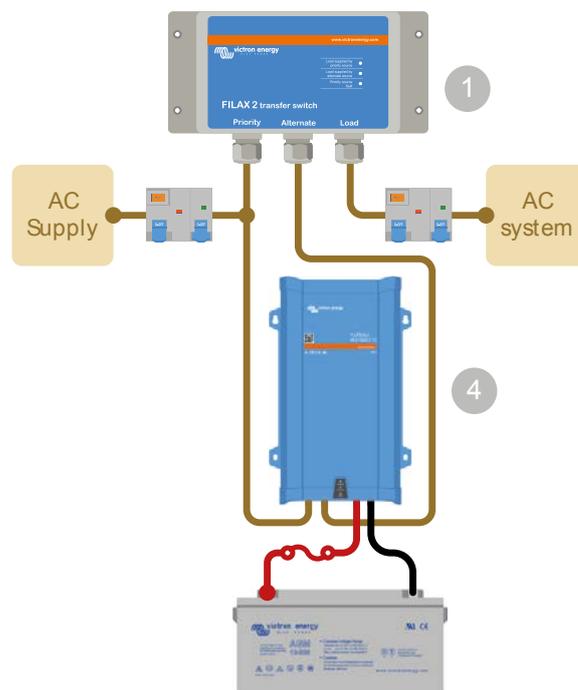


ID	Items and notes
①	ACPV inverter
②	MultiPlus(-II) or Quattro(-II) inverter/charger for 12, 24 or 48V systems, models ranging from 500VA up to 15kVA.
③	Solar charger , available up to 100A, for 12, 24 or 48V, with or without Bluetooth.
	Solar panel or solar array.
	AC cable and AC circuit breaker (CB or MCB) and/or AC earth fault detector (RCD, RCB or GFC).
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse .
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

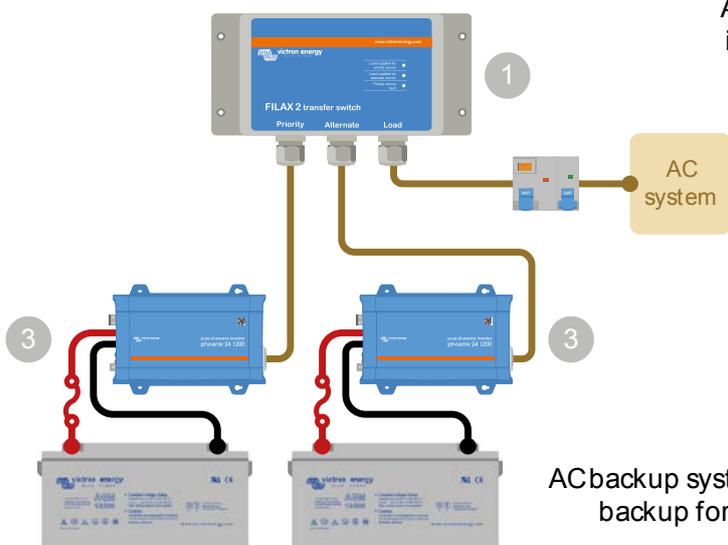




AC backup system, an inverter is the backup for the AC supply (grid or generator). The charger ensures that the battery is charged from the AC supply.

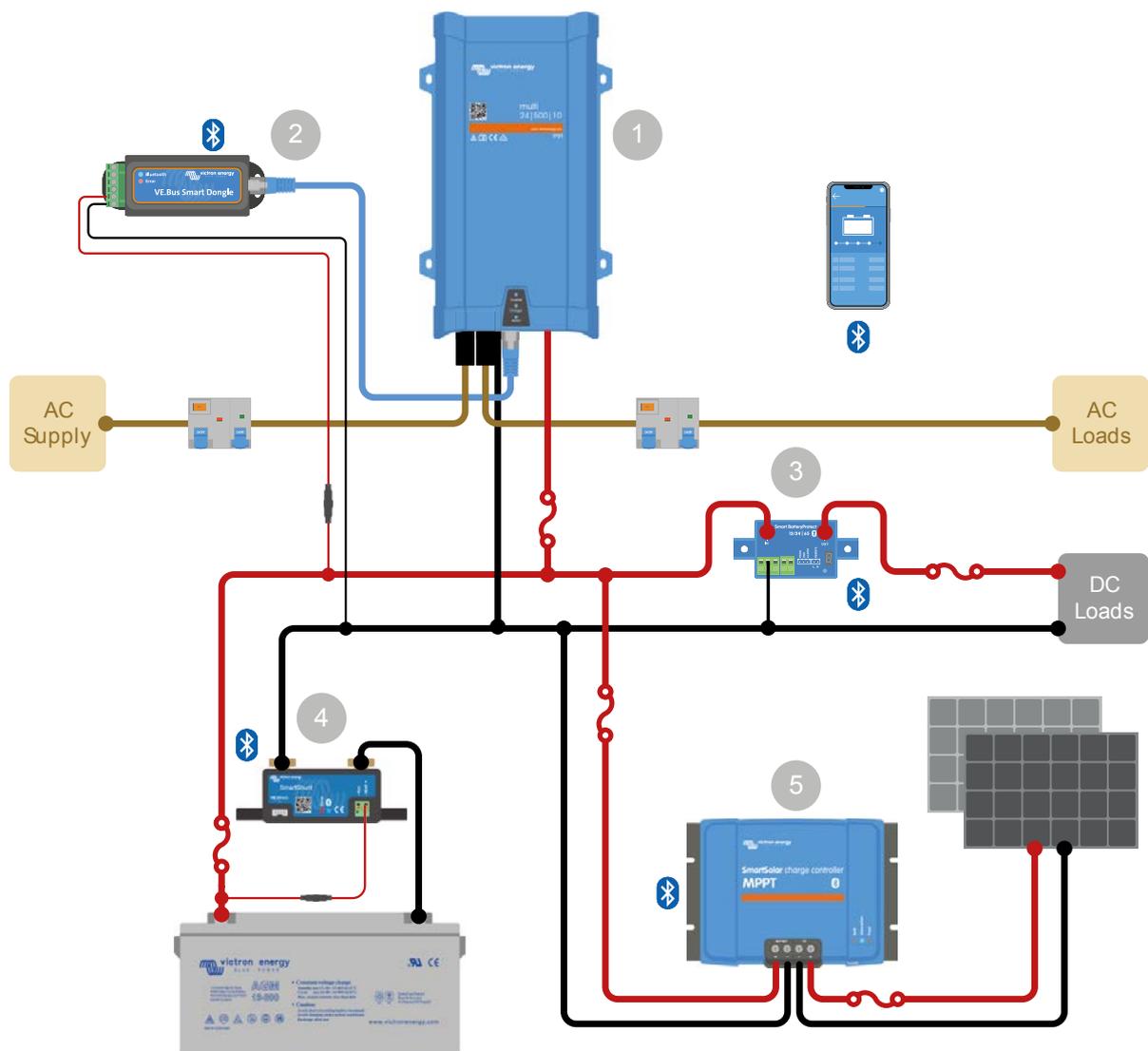


AC backup system, an inverter/charger is the backup for the AC supply (grid or generator).



AC backup system, One inverter is the backup for the other inverter.

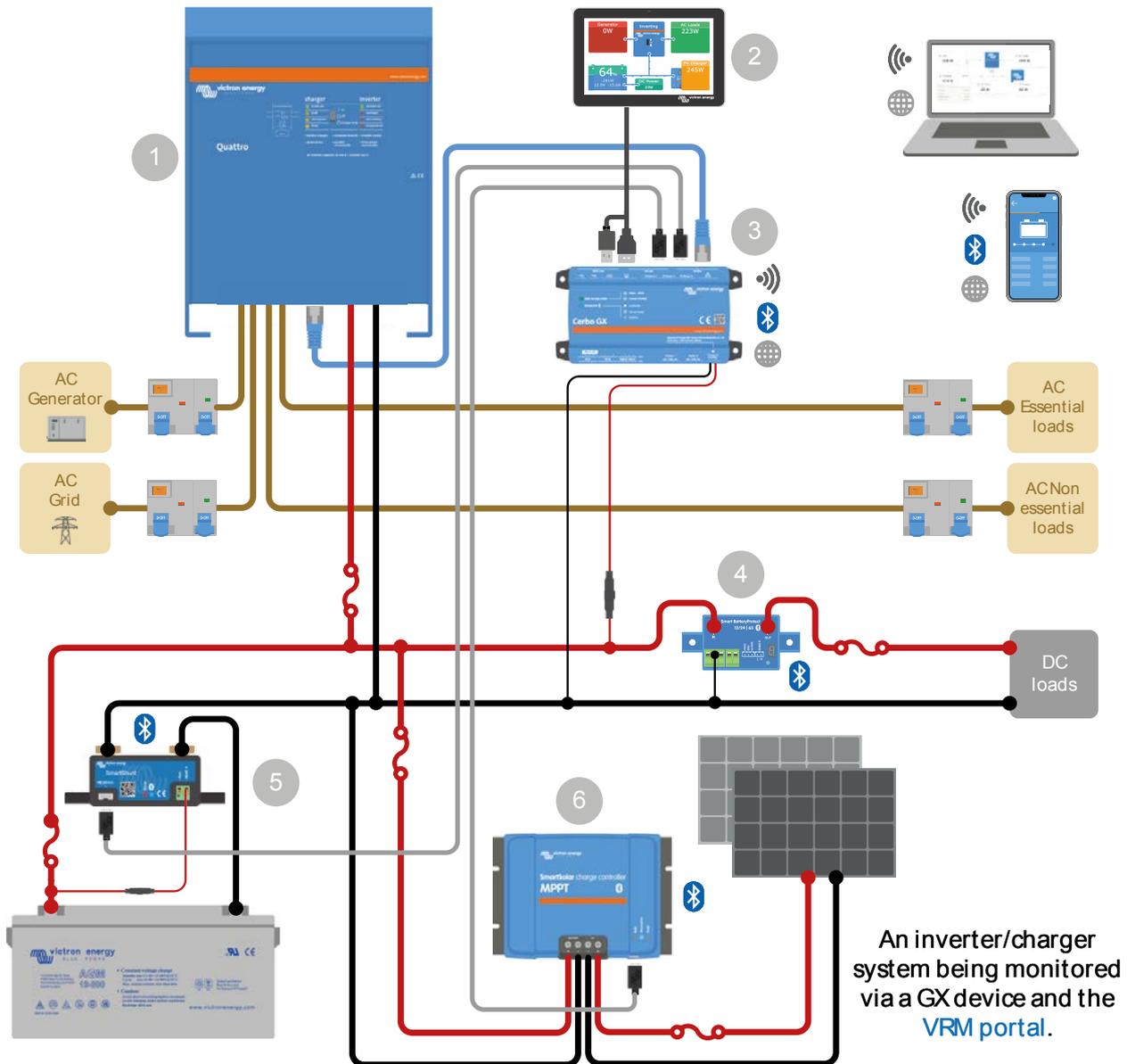
ID	Items and notes
1	The Filax 2 is an ultra-fast AC transfer switch, rated to 16A, available in a 230 and a 110Vac model.
2	Blue Smart battery charger or any other battery charger or solar charger can be used.
3	Inverter, any model up to 3kVA for 230Vac systems (or 1600VA for 110Vac systems) can be used.
4	Inverter/charger, any model up to 3kVA for 230Vac systems (or 1600VA for 110Vac systems) can be used.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	Solar panel or solar array.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .



An inverter/charger system being monitored via Bluetooth and the [VictronConnect](#) app, via the VE.Bus Smart dongle.

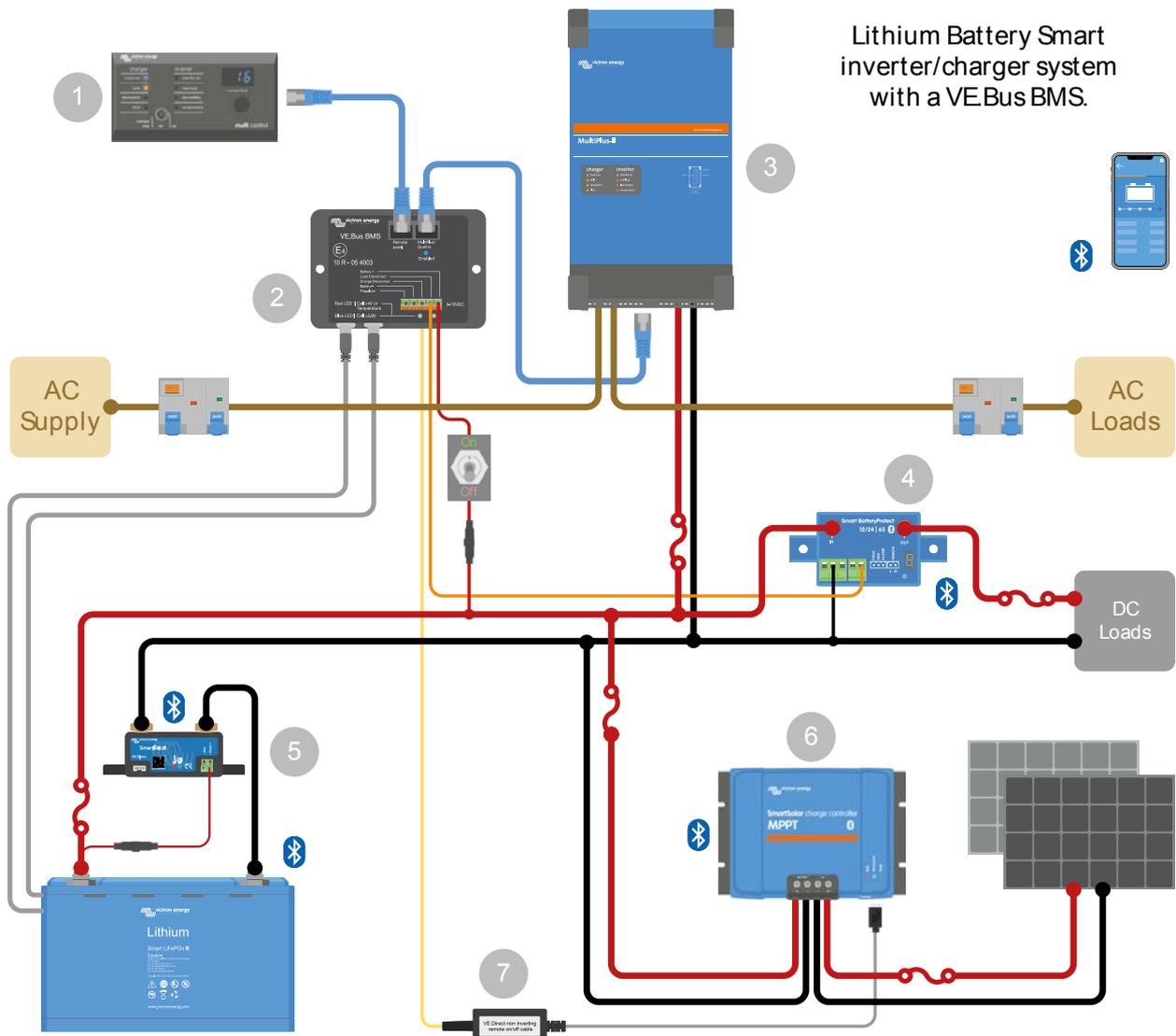
ID	Items and notes
1	MultiPlus or MultiPlus-II inverter/charger for 12, 24 or 48V systems, models ranging from 500VA up to 15kVA.
2	The VE.Bus Smart dongle for Bluetooth monitoring via the VictronConnect app.
3	BatteryProtect , available in 65, 100 or 220A models, for 12, 24 or 48V, with or without Bluetooth.
4	SmartShunt battery monitor, available in 500A, 100A or 2000A model.
5	Solar charger , available up to 100A, for 12, 24 or 48V, with or without Bluetooth.
	RJ45 UTP cable , available in lengths ranging from 30 cm to 30m.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	Solar panel or solar array.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	Small DC fuse, included with the product.
	DC fuse .
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book.





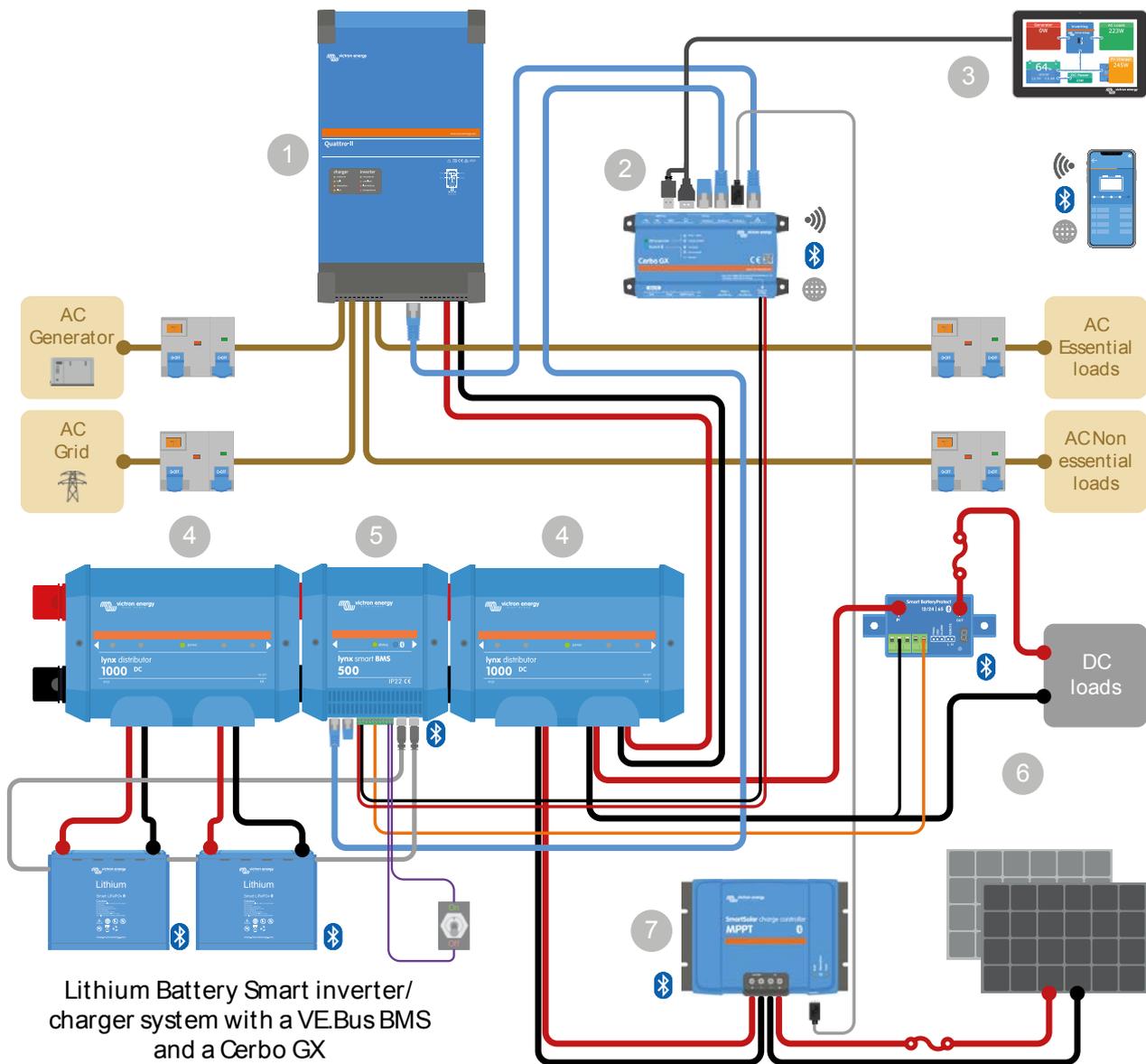
An inverter/charger system being monitored via a GX device and the VRM portal.

ID	Items and notes
1	MultiPlus(-II) or Quattro(-II) inverter/charger for 12, 24 or 48V systems, models ranging from 500VA up to 15kVA.
2	GX Touch display gives an instant overview of your system.
3	Cerbo GX for local and remote system monitoring and configuration.
4	BatteryProtect, available in 65, 100 or 220A models, for 12, 24 or 48V, with or without Bluetooth.
5	SmartShunt battery monitor, available in 500A, 100A or 2000A model.
6	Solar charger, available up to 100A, for 12, 24 or 48V, with or without Bluetooth.
	VE Direct cable is available in lengths ranging from 30cm to 10m.
	RJ45 UTP cable, available in lengths ranging from 30 cm to 30m.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	Solar panel or solar array.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	Small DC fuse, included with the product.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .



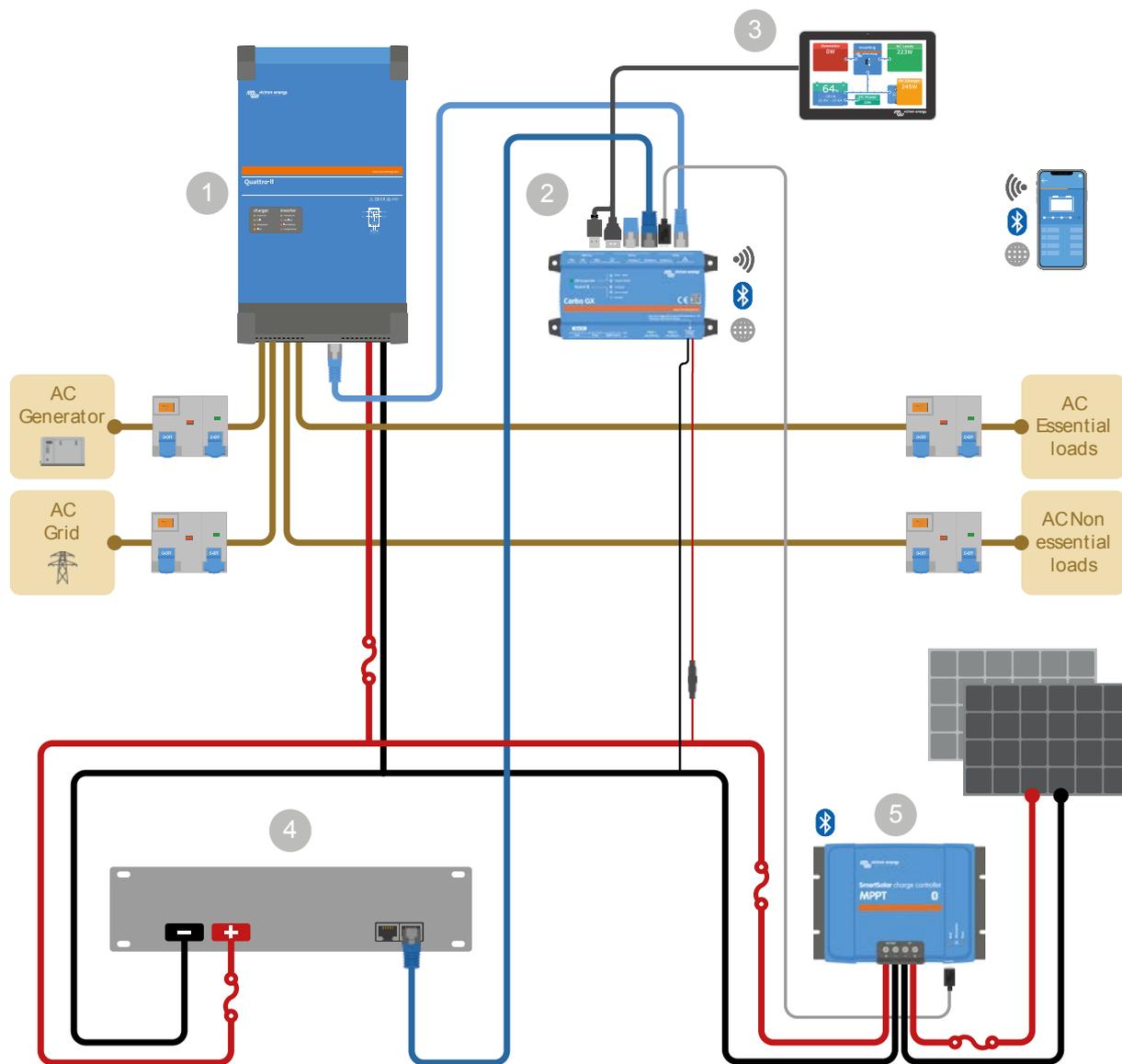
ID	Items and notes
1	Digital Multi Control 200/200A GX, to remotely view and control the inverter/charger.
2	The VE.Bus BMS directly controls inverter/chargers via VE.Bus in a 12, 24 or 48V Lithium Battery Smart system.
3	MultiPlus(-II) or Quattro(-II) inverter/charger for 12, 24 or 48V systems, models ranging from 500VA up to 15kVA.
4	BatteryProtect, available in 65, 100 or 220A models, for 12, 24 or 48V, with or without Bluetooth.
5	Smart Shunt battery monitor, available in 500, 100 or 2000A model.
6	Solar charger, available up to 100A, for 12, 24 or 48V, with or without Bluetooth.
7	VE.Direct non inverting remote on/off cable, to enable BMS control via the solar charger VE.Direct port.
	Lithium Battery Smart BMS communication cable is attached to the battery. Extension cables are available.
	RJ45 UTP cable, available in lengths ranging from 30 cm to 30m.
	Do not charge (yellow) and do not discharge (orange) signal wires.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	Solar panel or solar array.
	A single Lithium Battery Smart or multiples connected in series, parallel or series/parallel creating 12, 24 or 48V.
	Small DC fuse, included with the product.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .





Lithium Battery Smart inverter/charger system with a VE.Bus BMS and a Cerbo GX

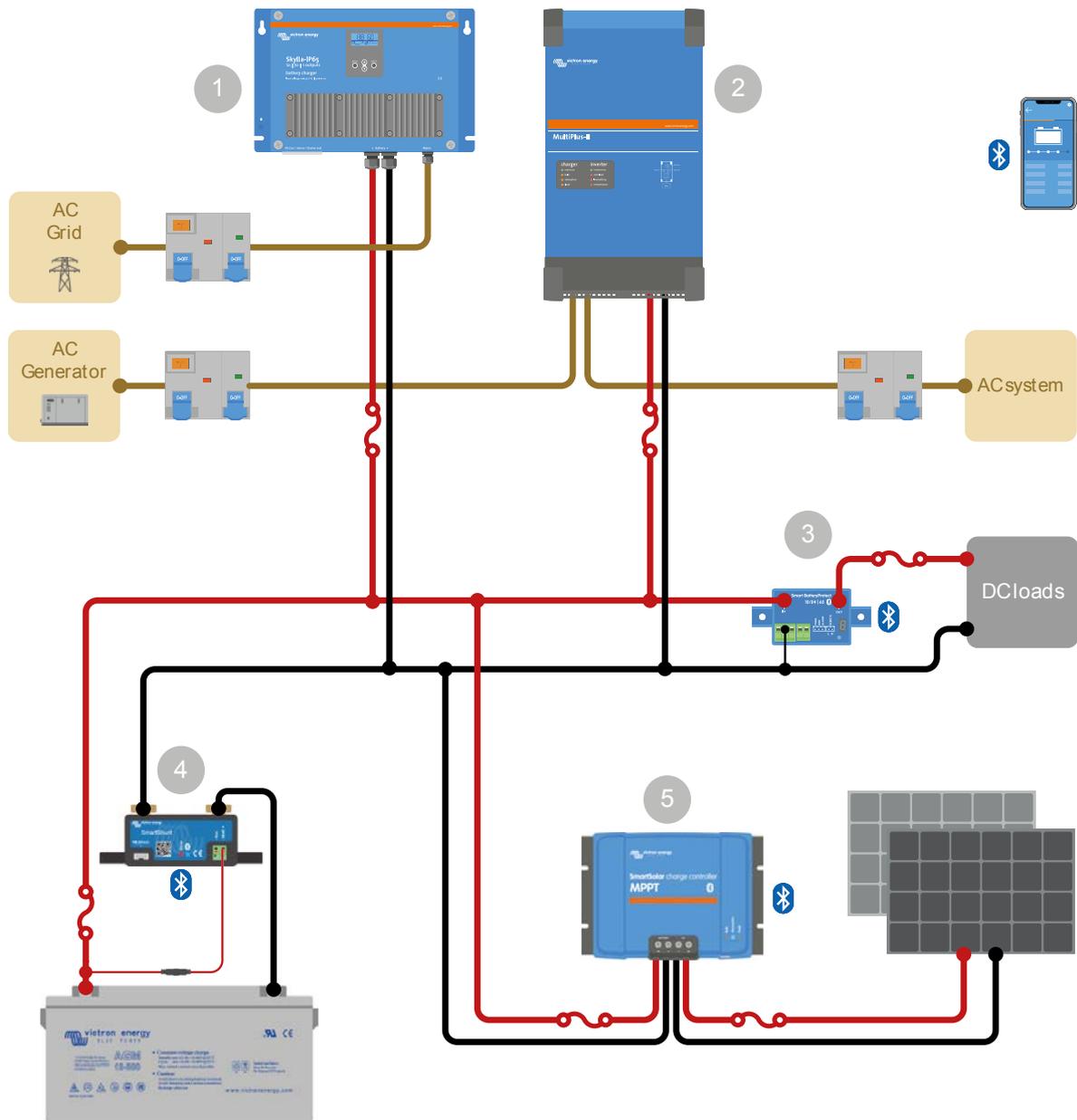
ID	Items and notes
1	MultiPlus(-II) or Quattro(-II) inverter/charger for 12, 24 or 48V systems, models ranging from 500VA up to 15kVA.
2	Cerbo GX for local and remote system monitoring and configuration.
3	GX Touch display gives an instant overview of your system.
4	The Lynx Distributor is a modular DC busbar with locations for four DC fuses and fuse status monitoring.
5	Lynx Smart BMS for 12, 24 or 48V, 500A rating with built-in contactor, battery monitor and GX device communication.
6	BatteryProtect, available in 65, 100 or 220A models, for 12, 24 or 48V, with or without Bluetooth.
7	Solar charger, available up to 100A, for 12, 24 or 48V, with or without Bluetooth.
	Lithium Battery Smart BMS communication cable is attached to the battery. Extension cables are available.
	RJ45 UTP cable, available in lengths ranging from 30 cm to 30m.
	VE.Direct cable is available in lengths ranging from 30cm to 10m.
	Do not discharge (orange) signal wire. Remote on/off signal wire (purple)
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	Solar panel or solar array.
	A single Lithium Battery Smart or multiples connected in series, creating 12, 24 or 48V.
	DC fuse.
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .



System with inverter/charger and a self managed battery and a Cerbo GX.

ID	Items and notes
①	MultiPlus(-II) or Quattro(-II) inverter/charger for 12, 24 or 48V systems, models ranging from 500VA up to 15kVA.
②	Cerbo GX for local and remote system monitoring and configuration.
③	GX Touch display gives an instant overview of your system.
④	Single or multiple self managed battery 12, 24, 48V.
⑤	Solar charger , available up to 100A, for 12, 24 or 48V, with or without Bluetooth.
	VE Can to CAN-bus BMS cable for communication between managed battery and GX device, available in type A or B.
	RJ45 UTP cable , available in lengths ranging from 30 cm to 30m.
	VE Can RJ45 terminator .
	Solar panel or solar array.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	Small DC fuse, included with the product.
	DC fuse .
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .





Inverter system decoupled from the grid, use when the grid is unsuitable as an input for an inverter/charger.

ID	Items and notes
1	12, 24 or 48V Battery charger .
2	MultiPlus(-II) or Quattro(-II) inverter/charger for 12, 24 or 48V systems, models ranging from 500VA up to 15kVA.
3	BatteryProtect , available in 65, 100 or 220A models, for 12, 24 or 48V, with or without Bluetooth.
4	SmartShunt battery monitor, available in 500, 100 or 2000A model.
5	Solar charger , available up to 100A, for 12, 24 or 48V, with or without Bluetooth.
	AC cable and AC circuit breaker (CB or MCB) and AC earth fault detector (RCD, RCB or GFC).
	Solar panel or solar array.
	12, 24 or 48V battery or battery bank consisting of multiple batteries in series, parallel or series/parallel.
	Small DC fuse, included with the product.
	DC fuse .
	Positive (red) and negative (black) DC cables. For the correct cable sizing see the Wiring Unlimited book .

Why Victron?

At Victron Energy we're as dedicated and driven to making and improving power solutions today as we were when we started in 1975. Thanks to our customer feedback loop, data and knowledge sharing, we innovate 24/7. We are powered by know-how, it keeps us going and our users going, ensuring peace of mind in off-grid for years to come.

01



It's not one thing that makes it all work.

Our modular, robust and connected off-grid systems have been proven to deliver unequalled reliability time and time again, even in the harshest of climates. But it's our unique combination of up-to-date hard- and software, intelligent monitoring apps, the network of highly trained authorized professionals and widespread repair centers that turns a Victron Energy system into an unbeatable system, that is Powered by know-how.

02



Reliability powers long service life cycles.

When making power supply investment decisions, calculations purely based on price can be deceptive. Their true performance and expected service life cycle are equally important. Good thing Victron Energy equipment lives up to their specifications, both in terms of performance and expected life cycle (when used as designed). Our 5 or 10 year warranty and fair and fast repair policies mean your investments are protected and under most circumstances, won't let you down.





03



How efficiency translates into great cost-effectiveness.

With battery-based systems, efficiency is always key to providing great levels of cost-effectiveness. From our incredibly efficient SmartSolar Charge Controllers to the way our inverter/chargers can provide a super-efficient Energy Storage or off-grid system, with a Blue Power system you can be sure that all the details are thought through. This, combined with our reputation for extreme resilience and expected life cycles, translates into cost-effective solutions, especially when compared to 'cheaper' options.

04



Intelligent monitoring means optimized systems.

Monitoring is crucial to fine tune and optimize energy harvest and use based on ever changing circumstances. With Victron you can experience the power of know-how right from your hand. Through our industry leading and free [Victron-Connect app](#), you always have perfect control over your system from wherever you are. With our app and [VRM portal](#) you can monitor the complete system, change settings and catch potential issues early by programming alerts and alarms.

05



Our worldwide network of Authorized dealers is by your side.

Our global network of ±1000 highly trained distributors, installers and service partners are always on hand to help. From stock advice, installation recommendations, after-care and technical support.

With the Victron Energy team, their partners and lively community you can always be sure the power of know-how is by your side.

OFF-GRID, BACKUP & STORAGE SYSTEMS

System schematic drawing & requirements



Always feel free to contact your local Victron dealer, they are happy to help and trained with the highest of know-how to translate your needs into a robust system. Find your local dealer at ['Where to buy'](#) on our website.





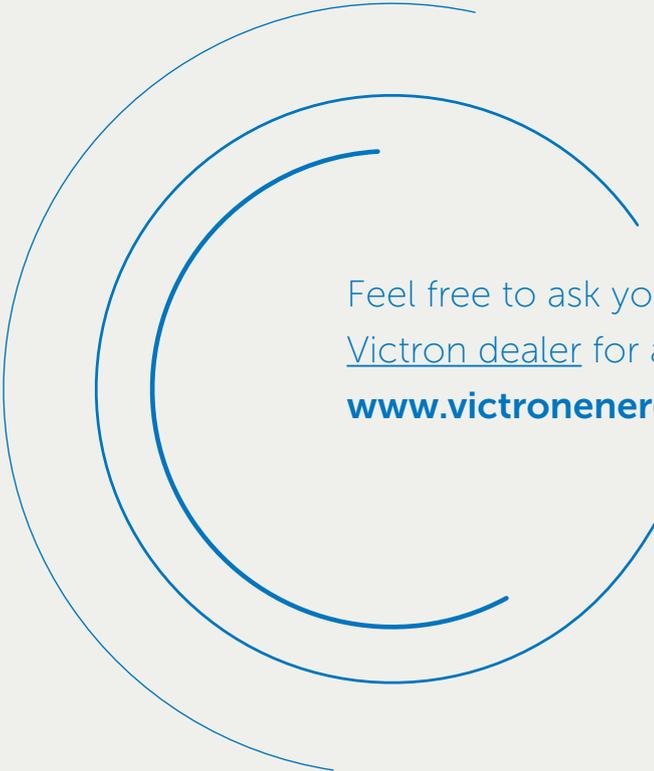




OFF-GRID, BACKUP & STORAGE SYSTEMS

Flexible building blocks to solve any kind of power challenge

With Victron Energy you have one of the widest ranges of robust connected power products that keep performing, even in the harshest of climates. Our up-to-date solutions counter most off-grid issues and can be fine-tuned to the most demanding and specific needs.



Feel free to ask your local
[Victron dealer](#) for advice.
www.victronenergy.com





Inverter/chargers



Inverter/charger/MPPT



Inverters



Solar chargers from small



...to large



Battery chargers



EV charging station



DC distribution systems



Battery Monitoring



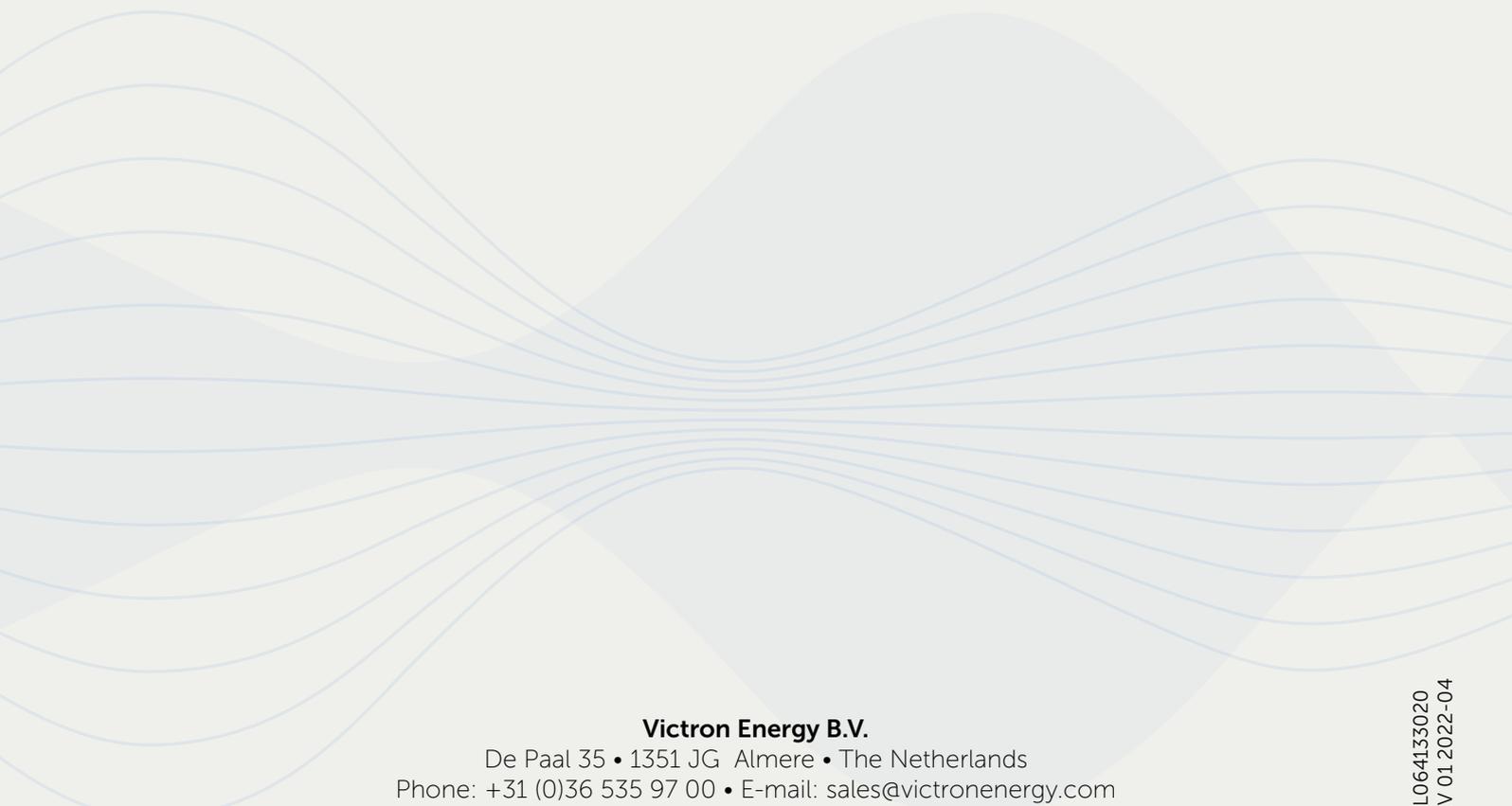
System monitoring

And more

Battery protection - DC-DC converters and chargers - Lithium batteries - AGM and GEL batteries - Battery Management Systems - Voltage sensitive relays - Fuses and fuse holders - Busbars - Battery switches

With the power of know
how by your side, you get
Energy. Anytime. Anywhere.

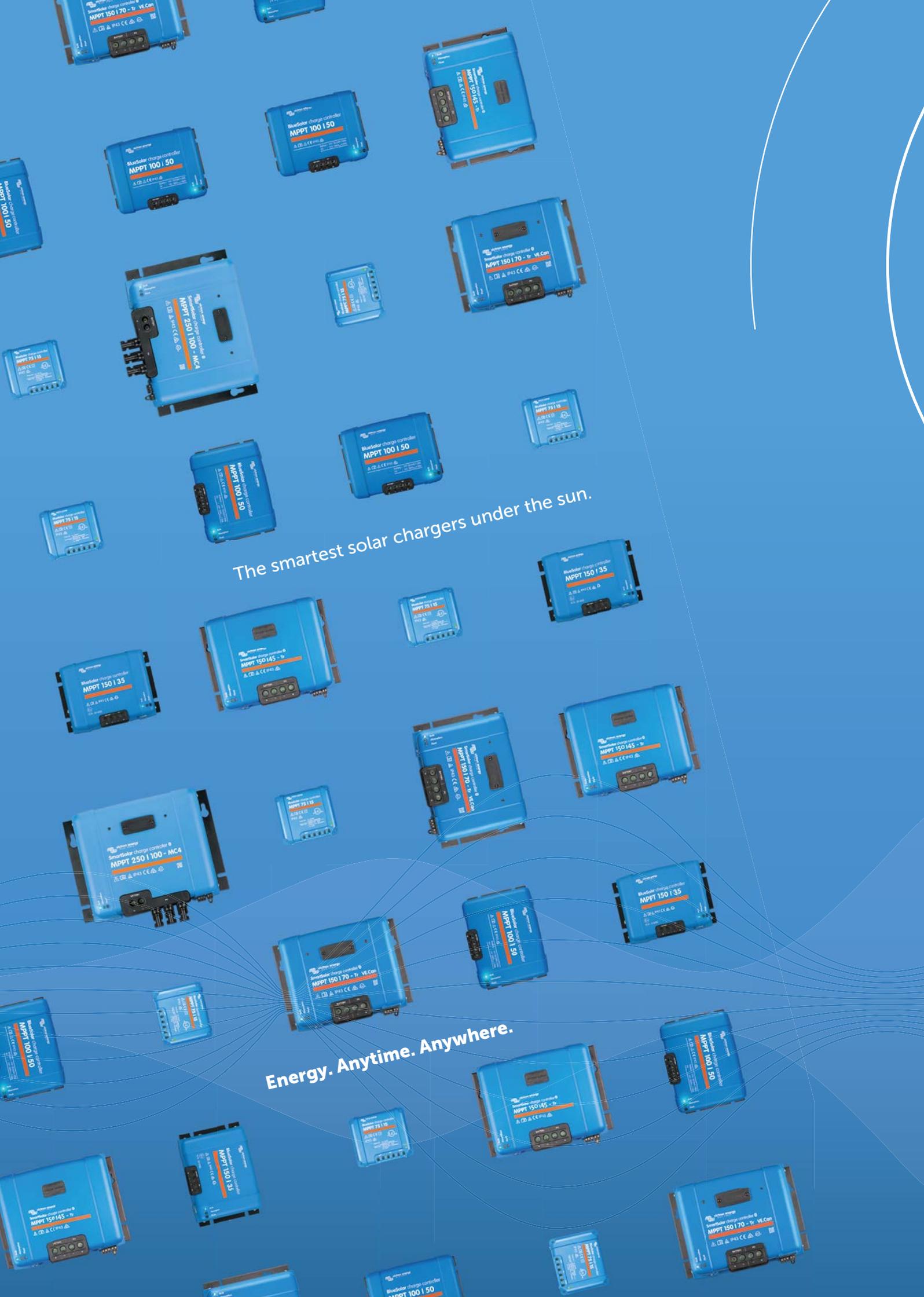




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SAL064133020
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