POWER PRODUCTS

SHIELD®

BATTERIES

Powering the Future Since 1910

www.shieldbatteries.co.uk

ABOUT US

Shield Batteries are a robust company with over 100 years of manufacturing and distribution experience in the UK. We are not only renowned as battery manufacturers, but also as distributors of batteries and other associated products from other industry leading brands.

Over the years Shield has developed many strong partnerships with manufacturers of quality equipment to augment and supplement Shield's own manufactured products.

Victron's products have been part of Shield's wider offering for over 10 years, and our product specialists have over 30 years experience with this range. We offer a comprehensive service to support this range, including system design, advice and support on installation, pre-application of settings relevant to your system if needed, along with warranty and RMA testing as required.

In addition to Victron's range, we also offer a range of flexible solar panels, cable and other installation accessories. This brochure provides information on these products, but our range is constantly evolving, so if you are unable to find an item that you need, please contact one of our branches, as we may have what you're looking for on the shelf.

Shield offer batteries and other products for a wide range of industries and applications, including:

Automotive, Accessories, Agriculture, Classic Car, Commercial Vehicles and PSV, Generators, Golf, Industrial/ Material Handling, Jetski, Lawnmower, Leisure, Marine, Medical, Mobility, Motorcycle, Motorsport/4x4, Rail, Plant equipment, Renewable/Solar, Specialist, Traffic/Signalling Management, Motive Power.

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Please use this contents page to navigate through the comprehensive range of Power Products featured in this catalogue.

PHOENIX VE DIRECT INVERTERS

An inverter takes energy stored in a battery and converts the DC voltage into AC, enabling 230V AC domestic or professional equipment to be powered where no grid is available. Victron's inverters utilize hybrid technology - full FET bridge and torroidal transformers - to produce high peak power and a genuine sinewave output that remains stable under varying loads. This technology has been proven for performance and reliablility, offering many years of service.

Features: • **Eco Mode** - inverter switches to standby when load drops below a preset level to save power. The inverter intermittently switches back to "on" after a timed period (adjustable) • **Remote on/off** - VE Direct inverters can be controlled remotely via a 2 pole connection. This can be via a switch or a device such as a Victron BMS • **VE Direct Port** - Can be used to connect a Bluetooth Smart Dongle which enables adjustments via VE Connect app, or connect directly to a laptop or PC

INVERTER **12V** **24V** **48V**	**12/250** **24/250** **48/250**	**12/375** **24/375** **48/375**	**12/500** **24/500** **48/500**	**12/800** **24/800** **48/800**	**12/1200** **24/1200** **48/1200**
Continuous power at 25C	250VA	375VA	500VA	800VA	1200VA
Continuous power at 25C/40C	200/175W	300/260W	400/350W	650/560W	1000/850W
Peak power	400W	700W	900W	1500W	2200W
AC output voltage, frequency (adjustable)	230VAC or 120VAC +/-3%, 50Hz or 60Hz +/-0.1%				
Input voltage range	9.2-17 / 18.4 - 34 / 36.8 - 62V				
Max efficiency	87 / 88 / 88%	89 / 89 / 90%	90 / 90 / 91%	90 / 90 / 91%	91 / 91 / 92%
No - load power	4.2 / 5.2 / 7.9W	5.6 / 6.1 / 8.5W	6 / 6.5 / 9W	6.5 / 7 / 9.5W	7 / 8 / 10W
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple				
Operating temperature range	-40 to +65°C (Fan assisted cooling), de-rate 1.25% per °C above 40°C				
	GENERAL				
Programmable relay	No				
Stop/start power ECO mode	Adjustable				
Bluetooth	Optional Bluetooth Dongle Required via VE Direct Port				
VE direct communication port	Yes, for Remote Monitoring and System Configuration				
Remote on/off	Yes				
	ENCLOSURE				
Material, colour	Steel Chassis / Plastic Cover, RAL5012				
Battery connection	Screw Clamped Terminals				
AC outlet	UK (BS1363) 3 pin socket. Other standard options available by request				
Protection category	IP21				
Weight (Kg)	2.4	3.0	3.9	5.5	7.4
Dimensions (mm) H x W x D	86 x 165 x 260	86 x 165 x 260	86 x 172 x 275	(12V) 105 x 230 x 325 (24V / 48V) 105 x 216 x 305	117 x 232 x 327

COMPACT AND VE BUS INVERTERS

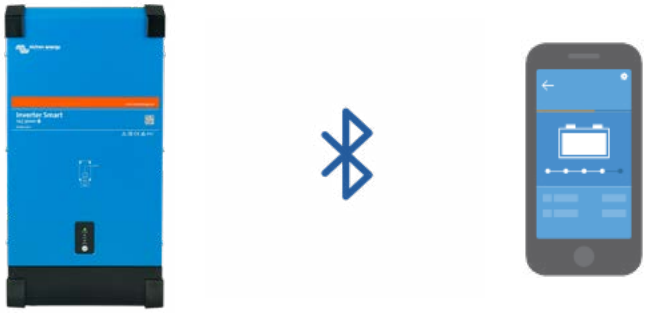
Victron's inverters have been developed for professional duty and are suitable for a wide range of applications. "Compact" and "VE Bus" inverters employ hybrid HF technology to produce a true sinewave output with high peak power capability, ideal for challenging and demanding loads including refrigerators, motors and suchlike.

Features: • **High start-up capability** with stable waveform under varying load conditions • **Parallel and 3-phase operation -** up to 6 units can work in parallel for high power requirements • **VE Bus -** settings can be applied using VE Connect or VE configure software via a Mk3 - USB interface • **Remote monitoring -** connect to a GX device using VE Bus connection for remote monitoring and/or remote control **Programmable Relay** - can be used for starting a suitable generator or for an external alarm

INVERTER 12V 24V 48V	**C12/1200 C24/1200**	**C12/1600 C24/1600**	**C12/2000 C24/2000**	**12/3000 24/3000 48/3000**	**24/5000 48/5000**
Parallel/3-phase operation	Yes, VE Bus connectivity, program via VE Quick Config and VE Config				
Continuous power at 25C	1200VA	1600VA	2000VA	3000VA	5000VA
Continuous power at 25C/40C	1000/900W	1300/1200W	1600/1450W	2400/2200W	4000/3700W
Peak power	2400W	3000W	4000W	6000W	10000W
AC output voltage, frequency (adjustable)	230VAC +/-2%, 50Hz +/-0.1% (adjustment for 240V and 60Hz)				
Input voltage range	9.5 - 17V / 19 - 33V / 38 - 66V				
Max efficiency	92 / 94%	92 / 94%	92 / 92%	93 / 94 / 95%	94 / 95%
No - load power	2 - 12W	2 - 12W	3 - 11W	8 - 25W	10 - 35W
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple				
Operating temperature range	-40 to +65°C (Fan assisted cooling), de-rate 1.25% per °C above 40°C				
	GENERAL				
Programmable relay	Yes (see data sheet or user manual for more info)				
Optional remote panel	Yes				
RJ45 ports for VB bus	Yes				
	ENCLOSURE				
Material, colour	Aluminium, RAL5012				
Battery connection	1.5m cable included		M8 Bolts	2 + 2 M8 Bolts	
AC outlet	G-ST18i Plug		Spring-clamp	Screw Terminals	
Protection category	IP21				
Weight (Kg)	10.0	10.0	12.0	18.0	30.0
Dimensions (mm) H x W x D	375 x 214 x 110		520 x 255 x 125	362 x 258 x 218	444 x 328 x 240

PHOENIX SMART INVERTERS

The Phoenix Smart inverter is built on Victron's proven efficient, reliable and field tested platform, now in a slimmer design with steel, powder coated casing. The range includes 1600VA, 2000VA, 3000VA and 5000VA models for 12V, 24V and 48V systems. Bluetooth is now built in to connect to the VE Connect app for settings and configuration, and a VE Direct Port is included for connection to a laptop or PC to configure same settings as via Bluetooth, or connect to a GX device. Installation is now easier than ever with improved access to terminals.



Features: • **Eco Mode** - inverter switches to standby when load drops below a preset level to save power. The inverter intermittently switches back to "on" after a timed period (adjustable) • **Programmable Relay** - can be used for starting a suitable generator or for an external alarm • **Remote on/off** - Smart inverters can be controlled remotely via a 2 pole connection. This can be via a switch or a device such as a Victron BMS

Inverter 12V 24V 48V	**12/1600 24/1600 48/1600**	**12/2000 24/2000 48/2000**	**12/3000 24/3000 48/3000**	**24/5000 48/5000**
Parallel/3-phase operation	No			
Continuous power at 25C	1600VA	2000VA	3000VA	5000VA
Continuous power at 25C/40C	1300/1200W	1600/1450W	2400/2200W	4000/3700W
Peakpower	3000W	4000W	6000W	10000W
AC output voltage, frequency (adjustable)	230VAC +/-2%, 50Hz or 60Hz +/-0.1%			
Input voltage range	9.3-17V / 18.6 - 34V / 37.2 - 68V			
Max efficiency	92/94%	92/94%	92/92%	94/95%
No - load power	2-12W	2-12W	3-11W	10-35W
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple			
Operating temperature range	-40 to +65 °C (Fan assisted cooling), de-rate 1.25% per °C above 40°C			
Humidity	max 95% non-condensing			
	GENERAL			
Programmable relay	YES (see data sheet or user manual for more info)			
Stop/start power ECO mode	Adjustable			
Bluetooth	Yes, for remote monitoring and system configuration			
VE Direct communication port	Yes, for remote monitoring and system configuration			
Remote on/off	YES			
	ENCLOSURE			
Material, colour	Steel, Blue RAL5012 and Black RAL 9017			
Battery connection	M8 Bolts	M8 Bolts	M8 Bolts (2x2 for 12V and 24V	M8 Bolts (2x2 for 24V)
AC outlet	Screw terminals			
Protection category	IP21			
Weight (Kg)	12.0	13.00	19.0	29/28
Dimensions (mm) HxWxD	485 x 219 x 125		533 x 285 x 150 (12V) 485 x 285 x 150 (24V/48V)	595 x 295 x160 (24V) 555 x 295 x 160 (48V)

BLUE SMART IP65 CHARGERS

Compact, professional and versatile battery charger range with built in Bluetooth. The Smart IP65 range can be used on vehicles, motorcycles, boats, caravans, campers or in a workshop or other professional application. IP65 chargers are water, dust and chemical resistant. The charging regime is a seven step smart charge algororithm which can facilitate recovery of fully discharged "flat" batteries (providing the battery is in a reasonable state of health). Power supply function (constant voltage) function. Severe Cold Performance (-30°C). Low Power Mode for charging small batteries, and a Lithium battery mode is also included.

12V 24V	12/4, 12/5, 12/7, 12/10, 12/15, 12/25		24/8, 24/13	
Input voltage range	180 - 265VAC			
Standby power consumption	0.5W		0.5W	
Efficiency	94%		95%	
Charge voltage absorption	High: 14.7V		High 29.4V	
	Normal: 14.4V		Normal 28.8V	
	Li-ion: 14.2V		Li-ion: 28.4V	
Charge voltage float	High: 13.8V		High: 27.6V	
	Normal: 13.8V		Normal: 27.6V	
	Li-ion: 13.5V		Li-ion: 27.0V	
Charge voltage storage	High: 13.2V		High: 26.4V	
	Normal: 13.2V		Normal: 26.4V	
	Li-ion: 13.5V		Li-ion: 27.0V	
Charge current (full)	4A, 5A, 7A, 10A, 15A, 25A		8A, 13A	
	2A, 2A, 2A, 3A, 4A, 10A		3A, 4A	
	GENERAL			
Can be used as a power Supply	Yes, selectable in app			
Protection	Short Circuit, Reverse DC Polarity (fuse), High Temperature			
Bluetooth	Built in, for connection to VE Connect app			
Humidity	95% max			
Operating temperature range	-40 to +60°C, full output current up to 30°C (cables retain flexibility at low temperature)			
Temperature compensation	16mV per °C, lead-acid only		32mV per °C, lead-acid only	
	ENCLOSURE			
Material, colour	Plastic, black with blue overlay			
Battery connection	1.5m cable (Red/Black) with in-line connector and sprung clips. Optional ring terminals available			
AC plug	UK (BS1363) 3 pin plug. Other standard options available by request/special order			
Protection category	IP65			
Weight (Kg)	4A, 5A, 7A, 10A, 15A	0.9Kg	8A	0.9Kg
	25A	1.9Kg	13A	1.9Kg
Dimensions (mm) H x W x D	12/4A, 12/5a		45 x 81 x 182	
	12V, 7A		47 x 95 x 190	
	12V/10A, 12V/15A, 24V/8A		60 x 105 x 190	
	12V/25A, 24V/13A		75 x 140 x 240	

BLUE SMART IP67 CHARGERS

Compact, professional and versatile battery charger range with built in Bluetooth. The Victron Smart IP67 range can be used on vehicles, motorcycles, boats (including RIBS, sports boats), caravans, campers or in a workshop or other professional application where a high level of IP rating is needed. Completely encapsulated: waterproof, shockproof and ignition protected, so water, oil or dirt will not damage the Blue Smart IP67 Charger. The casing is made of cast aluminium and the electronics are moulded in resin.

Features: • Water, dust and chemical resistant • Five step smart charge algorithm • Recovery of fully discharged "flat" batteries • Power Supply (constant voltage) function • Severe Cold Performance (-30°C) • Low Power Mode for charging small batteries • Lithium Battery Mode

12V, 24V	12/7, 12/13	12/17, 12/25	24/5	24/8	24/12
Input voltage range	180-265VAC 45-65Hz (also available with 100-135V AC input)				
Standby power consumption	0.5W				
Efficiency	93%	95%	94%	96%	96%
Charge voltage absorption	High: 14.7V		High: 29.4V		
	Normal: 14.4V		Normal: 28.8V		
	Li-ion: 14.2V		Li-ion: 28.4V		
Charge voltage float	High: 13.8V		High: 27.6V		
	Normal: 13.8V		Normal: 27.6V		
	Li-ion: 13.5V		Li-ion: 27.0V		
Charge voltage storage	High: 13.2V		High: 26.4V		
	Normal: 13.2V		Normal: 26.4V		
	Li-ion: 13.5V		Li-ion: 27.0V		
Charge current (full)	7A, 13A	17A, 25A	5A	8A	12A
Charge current (low)	2A, 4A	6A, 10A	2A	3A	4A
	GENERAL				
Charge algorithum	5-stage adaptive				
Can be used as a power supply	Yes, selectable in app				
Protection	Short Circuit, Reverse DC Polarity (fuse), High Temperature				
Bluetooth	Built in, for connection to VE Connect App				
Humidity	Up to 100%				
Operating temperature range	-30 to 60°C, full output up to 40°C. Derate 3% per °C above 40°C				
	ENCLOSURE				
Material, colour	Aluminium, blue RAL5012				
Battery connection	1.5 cables (Red/Black) with eyelets				
AC plug	UK (BS1363) 3 pin plug. Other standard options available by request/special order				
Protection category	IP67				
Weight (Kg)	7A, 13A	1.8Kg	5A	1.8Kg	
	17A, 25A	2.4.Kg	8A, 12A	2.4Kg	
Dimensions (mm) H x W x D	12V/7A, 12V/13A		85 x 211 x 60		
	21V/17A, 12V/25A		99 x 219 x 65		
	24V/5A		85 x 211 x 60		
	24V/8A, 24V/12A		99 x 219 x 65		

BLUE SMART IP22 CHARGERS

The Victron Blue Smart IP22 Chargers are a professional duty range with built-in Bluetooth and can be used in a workshop or engine room type environment for charging batteries on vehicles, including cars, vans, motorcycles, boats, campers and other applications where a high level IP rating is not needed. VE Smart Networking enables wireless connection of devices such as Smart Battery Sense, or linking multiple chargers to synchronise charge profiles to work more effectively in parallel. Single output or 3 output options available.




Features: • High efficiency, up to 94%, producing up to 4 times less heat compared with the industry standard • Fully programmable adaptive 6 stage smart charge algorithm, optimises charging process relative to how the battery is used • Recovery of fully discharged "flat" batteries • Power Supply (constant voltage) function • Low Power Mode for charging small batteries • Lithium Battery Mode • NIGHT and LOW settings can be used to reduce output current to 50% to make the charger virtually silent in quiet times

Blue Smart IP22 Chargers	12V Single Output 15A/20A/30A	12V Three Outputs 15A/20A/30A	24V Single Output 8A/12A/16A	24V Three Outputs 16A
Input voltage range	180-265VAC 45-65Hz			
Standby power consumption	0.5W		0.5W	
Efficiency	93%		94%	
Charge voltage absorption	High: 14.7V		High: 29.4V	
	Normal: 14.4V		Normal: 28.8V	
	Li-ion: 14.2V		Li-ion: 28.4V	
Charge voltage float	High: 13.8V		High: 27.6V	
	Normal: 13.8V		Normal: 27.6V	
	Li-ion: 13.5V		Li-ion: 27.0V	
Charge voltage storage	High: 13.2V		High: 26.4V	
	Normal: 13.2V		Normal: 26.4V	
	Li-ion: 13.5V		Li-ion: 27.0V	
Charge current (full)	15A, 20A, 30A		8A, 12A, 8A	
Charge current (low)	8A, 10A, 15A		4A, 6A, 8A	
	GENERAL			
Can be used as a power supply	Yes, selectable in app			
Protection	Short Circuit, Reverse DC Polarity (fuse), High Temperature			
Bluetooth	Built in, for connection to VE Connect App			
Humidity	98% max			
Operating temperature range	-40 to 60°C, full output up to 40°C			
	ENCLOSURE			
Material, colour	Aluminium, blue RAL5012			
Battery connection	Screw terminals for16mm² cables			
AC plug	UK (BS1363) 3 pin plug. Other standard options available by request/special order			
Protection category	IP22			
Weight (Kg)	1.3kg			
Dimensions (mm) H x W x D	235 x 108 x 65mm			

SMART IP43 CHARGERS

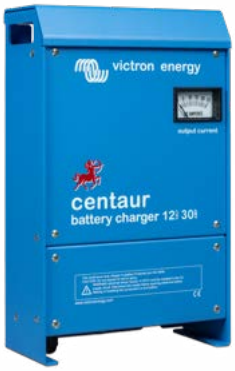
The Victron Smart IP43 Chargers have boat owners in mind, this adaptive 6-step charger can provide either 30A or 50A of charge to each of three battery banks. Or the "1+1" model provides 3A to the starter-battery, the rest to the 'house' bank. 24V models are available with 16A/25A charge. With Bluetooth enabled, you can monitor the charger and set alarms straight from your phone. Adaptive charge regime, intelligent and dynamic charge features, see data sheet for more information. **Note - The AC input cable for IP43 chargers needs to be purchased separately.**

Features: • High efficiency, up to 94%, producing up to 4 times less heat compared with the industry standard • Fully programmable adaptive 6 stage smart charge algorithm, optimises charging process relative to how the battery is used • Recovery of fully discharged "flat" batteries • Power Supply (constant voltage) function • Low Power Mode for charging small batteries • Lithium Battery Mode • NIGHT and LOW settings can be used to reduce output current to 50% to make the charger virtually silent in quite times • VE Smart Networking enables wireless connection of devices such as Smart Battery Sense, or linking multiple chargers to synchronise charge profiles to work more effectively in parallel • Single output or 3 output options available • Lithium Battery Mode

Smart IP43 Chargers	12V Two Outputs 30A/50A (1+1)	12V Three Outputs 30A/50A (3)	24V Two Outputs 16A/25A (1+1)	24V Three Outputs 16A/25A (3)
Input voltage range	210-250VAC, 45-65Hz. Also accepts 290-355VDC			
Standby power consumption	1.0W			
Efficiency	92%-94%			
Charge voltage absorption	High: 14.7V		High: 29.4V	
	Normal: 14.4V		Normal: 28.8V	
	Li-ion: 14.2V		Li-ion: 28.4V	
Charge voltage float	High: 13.8V		High: 27.6V	
	Normal: 13.8V		Normal: 27.6V	
	Li-ion: 13.5V		Li-ion: 27.0V	
Charge voltage storage	High: 13.2V		High: 26.4V	
	Normal: 13.2V		Normal: 26.4V	
	Li-ion: 13.5V		Li-ion: 27.0V	
Charge current (full)	30A, 50A		16A, 25A	
Charge current (low)	15A, 25A		8A, 12.5A	
Charge current (starter battery)	3A, 1+1 models only			
	GENERAL			
Can be used as a power supply	Yes, selectable in app via Bluetooth or VE Direct			
Charge algorithm	6-stage Adaptive (3 stage for Lithium)			
Protection	Short Circuit, Reverse DC Polarity (fuse), High Temperature			
Bluetooth	Built in, for connection to VE Connect App			
VE direct port	Yes, see data sheet for more information			
Remote on/off	Yes, 2 pole terminal			
Programmable relay	DC rating 5A up to 28V			
Humidity	95% max			
Operating temperature range	-20 to 60°C, full output current up to 40°C			
Temperature compensation	-16mV/°C		-32mV/°C	
	ENCLOSURE			
Material, colour	Aluminium, blue RAL5012			
Battery connection	Screw terminals for 16mm² cables			
AC connection	IEC Inlet with retainer clip. 2m lead with UK (BS1363) 3 pin plug. Supplied seperately. Other standard options available by request/special order			
Protection category	IP43			
Weight (Kg)	3.5kg			
Dimensions (mm) H x W x D	190 x 249 x 100			

CENTAUR CHARGERS

The Victron Centaur range of battery chargers features an auto-ranging input covering 90-265VAC 50/60Hz input meaning they can be used anywhere in the world. Unlike many other products that state "universal input", the Centaur range will maintain full output power within the entire specified input range. Other features include fully automatic three stage charge characteristic that ensures batteries are fully charged every time and three isolated charge outputs for multi battery configurations to suit the majority of typical installations.

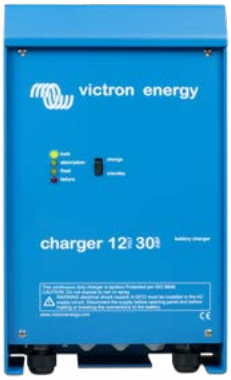


Features: • Universal input voltage range • Three stage automatic charging regime • Three independent outputs

Centaur Chargers	12/20	12/30 24/16	12/40	12/50	12/60 24/30	12/80 24/40	12/100 24/60
Input voltage range (AC)	90-265VAC 45-65Hz						
Input voltage range (DC)	90-400VDC						
Power factor	1						
Charge voltage absorption *	14.3V / 28.5V						
Charge voltage float *	13.5V / 27.0V						
Number of outputs	3, total current split between outputs						
Output current (total)	20A	30A/16A	40A	50A	60A/30A	80A/40A	100A/60A
Output ammeter	Yes, total output of 3 banks combined						
Change characteristic	3-stage, IUoUo						
Temperature sensor	Internal, -2mV / °C per cell						
Forced cooling	Temperature and current controlled fan						
Ignition protection	Yes						
	GENERAL						
Protection	Output Short Circuit, High Temperature						
Humidity	Up to 95% non-condensing						
Operating temperature range	-20 to 60°C, full output current up to 40°C. Derate 3% per °C above 40°C						
	ENCLOSURE						
Material, colour	Aluminium, blue RAL5012						
Battery connection	M6 Studs		M8 Studs				
AC connection	Screw clamp, 4mm²						
Protection category	IP20						
Weight (Kg)	3.8Kg		5.0Kg			12.0Kg	
Dimensions (mm) H x W x D	351 x 214 x 110		437 x 239 x 110			514 x 252 x 123	
*	Optimum voltages for lead-acid, AGM, GEL Selectable via dip-switch						

PHOENIX CHARGERS

Victron Phoenix chargers are a long standing and well proven part of Victron's charger range, with microprocessor control and power factor corrected input. Adaptive 4-stage charge characteristic: bulk - absorption - float - storage. Two full rated outputs and one 4 Amp output for a starter battery. Universal input 90-265V, 50/60Hz. The Charger features a microprocessor controlled adaptive battery management system that can be pre-set to suit different types of batteries. The adaptive feature will automatically optimise the charge process relative to the way the battery is being used.



Features: • Universal input voltage range • Microprocessor controlled 4 stage adapative charging • "Battery Safe" and "Storage" mode to help extend battery life. Storage mode is applied when the battery has not been discharged within 24 hours • A shorter absorption phase is activated once a week for cell equalisation, preventing sulphation and stratification when the battery is in standby • Battery Voltage sensing to compensate for voltage loss in cables ensures batteries receive the correct voltage • Temperature Compensation - chargers are supplied with a temperature sensor

Phoenix Chargers	12V 30A	12V 50A	24V 16A	24V 25A
Input voltage range AC	90-265VAC, 45-65Hz			
Input voltage range DC	90-400VDC			
Power factor	1			
Charge voltage absorption	14.4VDC		28.8VDC	
Charge voltage float	13.8VDC		27.6VDC	
Charge voltage storage	13.2VDC		26.4VDC	
Charge characteristic	4 stage adaptive, programmable			
Charge current (full, combined)	30A	50A	16A	25A
Charge current (starter)	4A			
Battery capacity (combined)	100-400Ah	200-800Ah	100-200Ah	100-400Ah
	GENERAL			
Can be used as a power supply	Yes			
Charge algorithm	6-stage Adaptive (3 stage for Lithium)			
Protection	Short Circuit, Reverse DC Polarity (fuse), High Temperature			
Bluetooth	Built in, for connection to VE Connect App			
Humidity	95% max			
Operating temperature range	-40 to 60°C, full output current up to 40°C			
Forced cooling	Temperature controlled fan			
	ENCLOSURE			
Material, colour	Aluminium, blue RAL5012			
Battery connection	M6 Studs (main outputs), screw clamp terminals 4mm (AC input)			
Protection category	IP21			
Weight (Kg)	3.8kg			
Dimensions (mm) H x W x D	350 x 200 x 108			

SKYLLA IP65 CHARGERS

The Victron Skylla IP65 chargers is a powerful, waterproof and intelligent battery charger with a 7-stage adaptive and programmable charge algorithm, suitable for a wide range of battery types and chemistries featuring a dedicated Lithium-ion charge regime. Available with 3 balanced outputs or 1 main output plus float charge for a starter battery. The wide range universal input voltage adds flexibility to the installation, the charger will maintain its full output power no matter where it is located in the world.

Features: • LCD display for staus monitoring and easy selection of charge algorithm to suit a specific battery and its conditions of use • IP65 epoxy powder coated steel case • Universal input voltage range • Microprocessor controlled 7 stage adapative charging • Synchronized parallel connection allows several chargers to be connecte together using RJ45 cables via CANBus connection • "Battery Safe" and "Storage" mode to help extend battery life • Battery Voltage Sensing to compensate for voltage loss in cables ensures batteries receive the correct voltage • Temperature Compensation - chargers are supplied with a temperature sensor

Skylla IP65 Chargers	12V 70A (1+1)	12V 70A (3)	24V 35A (1+1)	24V 35A (3)
Input voltage range AC	90-265VAC, 45-65Hz			
Power factor	0.98			
Charge voltage absorption	14.4VDC		28.8VDC	
Charge voltage float	13.8VDC		27.6VDC	
Charge voltage storage	13.2VDC		26.4VDC	
Charge characteristic	7 stage adaptive, programmable			
Charge current (full, combined)	70A		35A	
Charge current (starter)	3A	n/a	3A	n/a
Battery capacity (combined)	350-700Ah		150-350Ah	
	GENERAL			
Can be used as a power supply	Yes			
Protection	Short Circuit, Reverse DC Polarity (fuse), High Temperature			
Humidity	95% max, non-condensing			
Operating temperature range	-20 to +60°C, full output current up to 40°C			
Forced cooling	Temperature controlled fan, internal circulation			
	ENCLOSURE			
Material, colour	Powder Coated Steel, (RAL5012)			
Connections	M6 Studs (main outputs), screw clamp terminals 6mm (AC input)			
Protection category	IP65			
Weight (Kg)	6.0Kg			
Dimensions (mm) H x W x D	401 x 265 x 151mm			

SKYLLA TG CHARGERS

Vicron's Skylla TG chargers are are available in a wide range of outputs for 24V and 48V batteries. Built in Victron's traditonal aluminium powder coated IP21 cases, they are compact, lightweight and a well proven/established part of Victron's range. All Skylla TG models are microprocessor controlled and can be used as a power supply with no battery connected. Skylla TG models include a volt-free alarm contact, a temperature sensor and remote voltage sensing to ensure the battery receives optimum charge for the installation and environmental conditions. 24V models include a 4A float charge output for a starter battery.

Skylla TG Chargers	24/30	24/50	24/80	24/100	48/25	48/40
Nominal input voltage (AC)	120/230V†	230V*	230V	230V*	230V	230V
Input voltage range (AC)	185-264VAC 45-65Hz					
Input voltage range (DC)	180-400VDC					
Power factor	1					
Charge voltage absorption	28.5V				57.0V	
Charge voltage float	26.5V				53.0V	
Output current	30A	50A	80A	100A	25A	50A
Charge characteristic	3-stage, IUoUo					
Temperature sensor	Yes, included					
Forced cooling	Yes					
Can be used as a power supply	Yes					
†	Universal 1-phase AC input, 115-230V AC, 50-60Hz					
*	3-phase 320V-450V AC versions available, see data sheet for more info					
	GENERAL					
Protection	Output Short Circuit, High Temperature					
Humidity	Up to 95% non-condensing					
Operating temperature range	-40 to +50°C					
	ENCLOSURE					
Material, colour	Aluminimum, blue RAL5012					
Battery connection	M8 Studs					
AC connection	Screw clamp, 2.5mm²					
Protection category	IP21					
Weight (Kg)	5.5Kg		10Kg	10Kg	5.5Kg	10Kg
Dimensions (mm) H x W x D	365 x 250 x 147	365 x 250 x 147	365 x 250 x 257	365 x 250 x 257	365 x 250 x 147	365 x 250 x 257

SKYLLA I CHARGERS

The Skylla-i range is an evolution of the Skylla TG, offering improved functionality, a dedicated lithium charging regime and NMEA 2000 Canbus connection. The Skylla-i is built in an epoxy powder coated, IP21 aluminium case and the charging regime is adaptive 7 stage, controlled by microprocessor. Battery voltage sensing is included to compensate for voltage loss in cables, ensuring batteries receive the correct voltage. All Skylla-i chargers are also supplied with an external remote temperature sensor and volt-free contacts for remote alarm. Synchronised parallel operation is possible using VE Can.

Skylla i Chargers	24V 80A (1+1)	24V 80A (3)	24V 100A (1+1)	24V 100A (3)
Input voltage range (AC)	185-265VAC, 45-65Hz			
Input voltage range (DC)	180-350VDC			
Power factor	0.98			
Charge voltage absorption	28.8VDC			
Charge voltage float	27.6VDC			
Charge voltage storage	26.4VDC			
Charge characteristic	7 stage adaptive (3 stage LiFeP04 with on/off control or CAN bus control)			
Charge current (full, combined)	80A	80A (max, total)	100A	100A (max, total)
Charge current (starter)	4A	n/a	4A	n/a
Battery capacity (combined)	400-800Ah		500-1000Ah	
	GENERAL			
Can be used as a power supply	Yes			
Protection	Short Circuit, Reverse DC Polarity (fuse), High Temperature			
Humidity	95% max, non-condensing			
Operating temperature range	-20 to +60°C, full output current up to 40°C			
Forced cooling	Temperature controlled fan			
	ENCLOSURE			
Material, colour	Aluminimum, blue RAL5012			
Battery connection	M8 Studs (main outputs), screw clamp terminals 10mm² (AC input)			
VE Can communication port	2 x RJ45 connectors, NMEA 2000 protocol, galvanic isolated, integrated 12V CAN-bus power supply, 30V DC max			
Protection category	IP21			
Weight (Kg)	7kg			
Dimensions (mm) H x W x D	405 x 250 x 150mm			

MULTIPLUS 500-2000VA

The new style MultiPlus is set to replace the earlier MultiPlus Compact range. It is a powerful true sine wave inverter, a sophisticated battery charger that features adaptive charge technology and a high-speed AC transfer switch in a single compact enclosure. The 4 stage adaptive charging is microprocessor controlled and includes battery voltage sensing to compensate for voltage loss in cables, to ensure batteries receive the correct voltage. Temperature Compensation is also included with an external temperature sensor, along with volt-free contacts for a remote alarm. Settings can be adjusted using VE Configure via a MK3 - USB interface, using VE Connect via a VE Bus Smart dongle, or via "Remote Console" on VRM.

MultiPlus 12V MultiPlus 24V MultiPlus 48V	12/500/20 24/500/10 48/500/6	12/800/35 24/800/16 48/800/9	12/1200/50 24/1200/25 48/1200/13	12/1600/70 24/1600/40 48/1600/20	12/2000/80 24/2000/50 48/2000/25
PowerControl/PowerAssist	No	Yes	Yes	Yes	Yes
Parallel/3-phase operation	Yes	Yes	Yes	Yes	Yes
AC transfer switch rating	16A	16A	16A	16A	35A
	INVERTER				
Input voltage range (12V/24V/48V)	9.5-17V(12V) / 19-33V(24V) / 38-66V(48V)				
AC output voltage, frequency (adjustable)	230VAC +/-2%, 50Hz +/0.1%				
Continuous power at 25C	500VA	800VA	1200VA	1600VA	2000VA
Continuous power at 25C/40C	430/400W	700/650W	1000/900W	1300/1100W	1600/1400W
Peak power	900W	1600W	2400W	2800W	3500W
Max efficiency (12V/24V/48V)	90/91/92%	92/93/94%	93/94/95%	93/94/95%	93/94/95%
No-load power, on (standby/AES)	6W/6W/7W	7W/7W/8W	10W/9W/10W	10W/9W/10W	10W/9W/10W
No-load power, on (standby/AES)	2W/2W/3W	2W/2W/3W	3W/3W/3W	3W/3W/3W	3W/3W/3W
	CHARGER				
AC input	187-265VAC, 45-65Hz				
Charge voltage (absorption)	14.4V/28.8V/57.6V				
Charge voltage (float)	13.8V/27.6V/55.2V				
Charge voltage (storage)	13.2V/26.4V/52.8V				
Charge current - domestic battery	20/10/6A	35/16/9A	50/25/13A	70/40/20A	80/50/25A
Charge current - start battery	1A (12V and 24V models only)				
Battery type	Programmable/adjustable 4 stage adaptive charge regime to suit LFP, AGM/VRLA, FLA/SLA, GEL				
	GENERAL				
Programmable relay	YES (see data sheet or user manual for more info)				
Optional remote panel	YES				
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple				
Operating temperature range	-40 to +65°C (Fan assisted cooling), de-rate 1.25% per °C above 40°C				
Humidity	max 95% non-condensing				
RJ45 ports for VE bus	YES				
Remote on/off	on/off /charger only			on/off	
	ENCLOSURE				
Material, colour	Steel, ABS plastic (Blue RAL5012), IP21				Steel, Blue (RAL5012), IP22
Battery connection	16/10/10mm²	25/16/10mm²	35/25/10mm²	50/35/16mm²	M8 studs
AC outlet	G-ST18i plug				Screw clamps
Weight (Kg)	4.4	6.4	8.2	10.2	15.5
Dimensions (mm) HxWxD	311x182x100mm	360x240x100mm	406x250x100mm	470x265x120mm	506x236x147mm

MULTIPLUS & COMPACT

This range is the original generation of "MultiPlus" and "Compact" models up to 5000VA. The Multiplus is a combined inverter and charger with many features including UPS capability, PowerAssist, PowerControl plus multiple system integration features. 4 stage adaptive charging is microprocessor controlled and includes battery voltage sensing to compensate for voltage loss in cables. Temperature Compensation is also included with an external temperature sensor, along with volt-free contacts for a remote alarm. Settings can be adjusted using VE Configure via a MK3 - USB interface, using VE Connect via a VE Bus Smart dongle, or via "Remote Console" on VRM.

MultiPlus 12V MultiPlus 24V MultiPlus 48V	12/800/35 24/800/16	12/1200/50 24/1200/25	12/1600/70 24/1600/40	12/2000/80 24/2000/50	12/3000/120 24/3000/70 48/3000/35	24/5000/120 48/5000/70
PowerControl/PowerAssist	Yes	Yes	Yes	Yes	Yes	Yes
Parallel/3-phase operation	Yes	Yes	Yes	Yes	Yes	Yes
AC transfer switch rating	16A	16A	16A	30A	16A or 50A	100A
	INVERTER					
Input voltage range (12V/24V/48V)	9.5-17V (12V) / 19-33V (24V) / 38-66V (48V)					
AC output voltage, frequency (adjustable)	230VAC +/-2%, 50Hz +/0.1%					
Continuous power at 25C	800VA	1200VA	1600VA	2000VA	3000VA	5000VA
Continuous power at 25C/40C	700/650W	1000/900W	1300/1200W	1600/1400W	2400/220W	4000/3700W
Peak power	1600W	2400W	3000W	4000W	6000W	10000W
Max efficiency (12V/24V/48V)	92/94%	93/94%	93/94%	93/94%	93/94/95%	94/95%
No-load power, on (standby/AES)	8W/10W	8W/10W	8W/10W	92/11W	20W/20W/25W	30W/35W
No-load power, on (standby/AES)	5W/8W	5W/8W	5W/8W	9W/11W	15W/15W/20W	25W/30W
No-load power, on (search mode)	2W/3W	2W/3W	2W/3W	3W/4W	8W/10W/12W	10W/15W
	CHARGER					
AC input	187-265VAC, 45-65Hz, Power factor 1					
Charge voltage (absorption)	14.4V/28.8V/57.6V					
Charge voltage (float)	13.8V/27.6V/55.2V					
Charge voltage (storage)	13.2V/26.4V/52.8V					
Charge current - domestic battery	35/16A	50/25A	70/40A	80/50A	120/70/35A	120/70A
Charge current - start battery	4A (12V and 24V models only)					
Battery type	Programmable/adjustable 4 stage adaptive charge regime to suit LFP, AGM/VRLA, FLA/SLA, GEL					
	GENERAL					
Programmable relay	YES (see data sheet or user manual for more info)					
Optional remote panel	YES					
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple					
Operating temperature range	-40 to +65°C (Fan assisted cooling)					
Humidity	max 95% non-condensing					
	ENCLOSURE					
Material, colour	Aluminium (Blue RAL5012), IP20					
Battery connection	1.5m cables included			M8 Studs	M8 studs (2+, 2-)	
AC outlet	G-ST18i plug			Spring clamps	Screw clamps (13mm2)	M6 Studs
Weight (Kg)	10.0	10.0	10.0	12.0	18.0	30.0
Dimensions (mm) HxWxD	375x214x110mm			520x255x125mm	362x258x218mm	444x328x240mm

MULTIPLUS II

The MultiPlus-II is a multifunctional inverter/charger with all the same features of the MultiPlus, plus an external current sensor option which extends the PowerControl and PowerAssist function to 50A and 100A respectively. The MultiPlus-II is ideally suited for professional marine, yachting, vehicle and land based off-grid applications. It also has built-in anti-islanding functionality, and an increasingly long list of country approvals for ESS applications. Several system configurations are possible. For more detailed information see the ESS Design and configuration manual.




MultiPlus II 12V MultiPlus II 24V MultiPlus II 48V	12/3000/120-32 24/3000/70-32 48/3000/35-32	12/5000/220-50 24/5000/120-50 48/5000/70-50	48/8000/110-100	48/1000/140-100	48/15000/200-100
PowerControl/PowerAssist	Yes	Yes	Yes	Yes	Yes
Parallel/3-phase operation	Yes		3 Phase only		
AC transfer switch rating	32A	50A	100A	100A	100A
	INVERTER				
Input voltage range (12V/24V/48V)	9.5-17V (12V) / 19-33V (24V) / 38-66V (48V)				
AC output voltage, frequency (adjustable)	230VAC +/-2%, 50Hz +/0.1%				
Continuous power at 25C	3000VA	5000VA	8000VA	10000VA	15000VA
Continuous power at 25C/40C	2400/2200W	4000/3700W	6400/5500W	8000/7000W	12000/10000W
Peak power	5500W	9000W	15000W	18000W	27000W
Max efficiency (12V/24V/48V)	93/94/95%	95/96/96%	95%	96%	95%
No-load power, on	13W/13W/11W	15W/18W/18W	29W	38W	55W
No-load power, on (standby/AES)	9W/9W/7W	11W/12W/12W	19W	27W	39W
No-load power, on (search mode)	3W/3W/2W	3W/3W/2W	3W	4W	6W
	CHARGER				
AC input	187-265VAC, 45-65Hz				
Charge voltage (absorption)	14.4V/28.8V/57.6V				
Charge voltage (float)	13.8V/27.6V/55.2V				
Charge voltage (storage)	13.2V/26.4V/52.8V				
Charge current - domestic battery	120/70/35A	220/120/70A	110A	140A	200A
Charge current - start battery	4A (12V and 24V models only)				
Battery type	Programmable/adjustable 4 stage adaptive charge regime to suit LFP, AGM/VRLA, FLA/SLA, GEL				
Battery temp. sensor	Yes, included				
	GENERAL				
Programmable relay	YES (see data sheet or user manual for more info)				
Optional remote panel	YES				
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple				
Operating temperature range	-40 to +65°C (Fan assisted cooling)				
Humidity	max 95% non-condensing				
RJ45 ports for VE bus	Yes				
Remote on/off	Yes				
	ENCLOSURE				
Material, colour	Steel, powder coated (Blue RAL5012), IP22				
Battery connection	M8 Studs		4 x M8 Studs (2x positive, 2x negative)		
AC outlet	Screw terminals 13mm² (6AWG)		M6 Suds		
Weight (Kg)	19.0	33.0/30.0/30.0	42.0	49.0	80.0
Dimensions (mm) H x W x D	546x275x147mm 499x268x141mm 499x268x141mm	702x345x152mm 607x330x149mm 565x320x149mm	642x363x206mm	677x363x206mm	810x405x217mm

MULTIPLUS II GX

The MultiPlus-II GX integrates a MultiPlus-II inverter/charger and a GX device with a 2 x 16 character display. These models communicate with a solar charger, batteries, and other devices to control and/or monitor a grid-connected, off-grid, marine, mobile or remote power installation. Capable of parallel operation for increased power output, or higher battery charge-rates, the MultiPlus-II GX can also be configured for three-phase supply. A host of advanced features - such as uninterrupted power supply, setting load limits, and supplementing limited grid-power availability with battery power - can all be controlled straight from your phone or smart device.

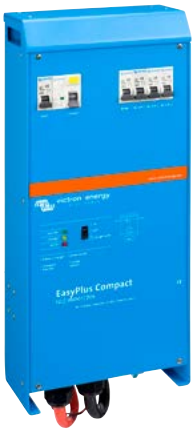



Multiplus II GX	24/3000/70-32	48/3000/35-32	48/5000/70-50
PowerControl/PowerAssist	Yes		
AC transfer switch rating	32A	32A	50A
	INVERTER		
Input voltage range	19-33V	38-66V	
AC output voltage, frequency	230VAC +/-2%, 50Hz +/-0.1% (adjustable)		
Continuous power at 25C	3000VA		5000VA
Continuous power at 25C/40C	2400/2200W		4000/3700W
Peak power	5500W		9000W
Max efficiency (12V/24V/48V)	94%	95%	96%
No-load power, on	13W	11W	18W
No-load power, on (standby/AES)	9W	7W	12W
No-load power, on (search mode)	3W	2W	2W
	CHARGER		
AC input	187-265VAC, 45-65Hz		
Charge voltage (absorption)	28.8V	57.6V	
Charge voltage (float)	27.6V	55.2V	
Charge voltage (storage)	26.4V	52.8V	
Charge current - domestic battery	70A	35A	35A
Charge current - start battery	4A	n/a	n/a
Battery type	Programmable/adjustable 4 stage adaptive for LFP, AGM/VRLA, FLA/SLA, GEL		
Battery temp. sensor	Yes, included		
	GENERAL		
Interfaces	BMS-Can, USB, Ethernet, VE Direct, WiFi		
External AC current sensor (optional)	50A		100A
Programmable relay	YES (see data sheet or user manual for more info)		
Optional remote panel	YES		
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple		
Operating temperature range	-40 to +65°C (Fan assisted cooling)		
Humidity	max 95% non-condensing		
RJ45 ports for VE bus	Yes		
Remote on/off	Yes		
	ENCLOSURE		
Material, colour	Steel, powder coated (Blue RAL5012), IP22		
Battery connection	M8 Studs		
AC outlet	Screw terminals 13mm² (6AWG)		
Weight (Kg)	20.0		31.0
Dimensions (mm) H x W x D	506 x 275 x 147mm		565 x 323 x 148

EASYPLUS

The EasyPlus is a multifunctional inverter/charger with all the features of the MultiPlus, including built in AC distribution/protection and pre-wired DC cables. This unit is designed to meet the requirements of small systems without having to spend time on installing additional separate external components, also saving space and cost. Float charge output for starter battery. Temperature and voltage sensing. RCD. 4 x MCB (16A, 10A, 10A plus 1 x 16A output live when mains available).

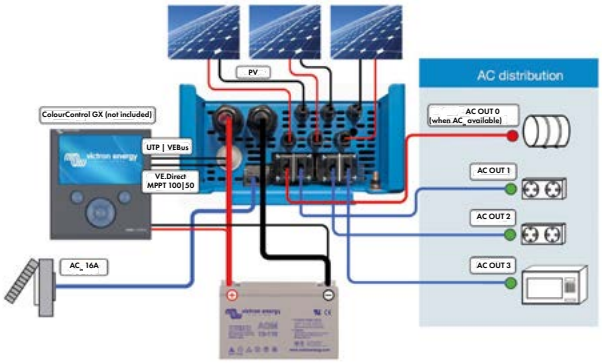
EasyPlus	12/1600/70-16
PowerControl/PowerAssist	Yes
AC transfer switch rating	16A
	INVERTER
Input voltage range	9.5- 17V
AC output voltage, frequency	230VAC +/-2%, 50Hz +/-0.1% (adjustable)
Continuous power at 25C	1600VA
Continuous power at 25C/40C	1300/1200W
Peak power	3000W
Max efficiency (12V/24V/48V)	92%
No-load power, on	8W
No-load power, on (search mode)	2W
	CHARGER
AC input	187-265VAC, 45-65Hz
Charge voltage (absorption)	14.4V
Charge voltage (float)	13.8V
Charge voltage (storage)	13.2V
Charge current - domestic battery	70A
Charge current - start battery	4A
Battery type	Programmable/adjustable 4 stage adaptive for LFP, AGM/VRLA, FLA/SLA,GEL
Battery temp. sensor	Yes, included
	GENERAL
Programmable relay	Yes (see deta sheet or user manual for more info)
Optional remote panel	Yes
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple
Operating temperature range	-20 to +50°C (Fan assisted cooling)
Humidity	Max 95% non-condensing
RJ45 ports for VE bus	Yes
Remote on/off	Yes
	ENCLOSURE
Material, colour	Aluminium power coated (Blue RAL5012), IP21
Battery connection	M8 Studs (1.5M cables with eyelets included)
AC Inlet/outlet	G-ST18i connector
Weight (Kg)	11.7
Dimensions (mm) H x W x D	510 x 214 x 110mm



EASYSOLAR

The EasySolar combines a MPPT solar charge controller, an inverter/charger and AC distribution in one enclosure. The product is easy to install, with a minimum of wiring. The EasySolar, much like the Multiplus includes PowerControl, PowerAssist, VE Bus connections, a programmable relay, 4 stage adapative and programmable charging regime (suitable for LFP), float charge output for starter battery, temperature and remote voltage sensing . Please see specifications below and data sheet for further information.

EasySolar	12/1600/70	24/1600/40
PowerControl/PowerAssist	Yes	
AC transfer switch rating	16A	
	INVERTER	
Input voltage range	9.5-17V	19-33V
AC output voltage, frequency (adjustable)	230VAC +/-2%, 50Hz +/-0.1%	
Continuous power at 25C	1600VA/1300W	
Continuous power at 25C, peak power	1200W/3000W	
Max efficiency (12V/24V/48V)	92%	94%
No-load power, on search mode	8W/2W	10W/3W
	CHARGER	
AC input	187-265VAC, 45-65Hz	
Charge voltage (absorption)	14.4V	28.8V
Charge voltage (float)	13.8V	27.6V
Charge voltage (storage)	13.2V	26.4V
Charge current - domestic battery	70A + 4A start	40A + 4A start
Battery type	Programmable/adjustable 4 stage adaptive charge regime to suit LFP, AGM/VRLA, FLA/SLA, GEL	
Battery temp. sensor	Yes, included	
	SOLAR CHARGE CONTROLLER	
Model	MPPT 100/50 (see data sheet for more info)	
Max. PV power	700W	1400W
	GENERAL	
Programmable relay	YES (see data sheet or user manual for more info)	
Optional remote panel	YES	
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple	
Operating temperature range	-20 to +50°C (Fan assisted cooling)	
Humidity	Max 95% non-condensing	
RJ45 ports for VE bus	Yes	
Remote on/off	Yes	
	ENCLOSURE	
Material, colour	Aluminium, powder coated (Blue RAL5012), IP21	
Battery connection	M8 Studs (1.5m battery cables with eyelet terminals included)	
AC outlet	G-ST18i connectors	
Weight (Kg)	15.0	
Dimensions (mm) H x W x D	745 x 214 x 110mm	



EASYSOLAR II GX

A new generation, more compact version of the original EasySolar with higher power ratings and addtitional remote monitoring functionality. The EasySolar II GX combines the features of the Easysolar with a GX device to provide an inverter-charger, AC changeover switch, solar charging and system monitoring in one convenient unit.
WiFi based system monitoring and a 2 x 16 character display built in.

EasySolar II GX	24/3000/70-32	48/3000/35-32	48/5000/70-50
PowerControl/PowerAssist	Yes		
AC transfer switch rating	32A	32A	50A
	INVERTER		
Input voltage range	19-33V	38-66V	
AC output voltage, frequency	230VAC +/-2%, 50Hz +/-0.1% (adjustable)		
Continuous power at 25C	3000VA		5000VA
Continuous power at 25C, peak power	2400/5500W		4000/9000W
Max efficiency (12V/24V/48V)	94%	95%	96%
No-load power, on search mode	13W/3W	11W/2W	18W/2W
	CHARGER		
AC input	187-265VAC, 45-65Hz		
Charge voltage (absorption)	28.8V	57.6V	
Charge voltage (float)	27.6V	55.2V	
Charge voltage (storage)	26.4V	52.8V	
Charge current - domestic battery	70A	35A	70A
Battery type	Programmable/adjustable 4 stage adaptive charge regime to suit LFP, AGM/VRLA, FLA/SLA, GEL		
Battery temp. Sensor	Yes, included		
	SOLAR CHARGE CONTROLLER		
Model	MPPT 250/70-Tr		MPPT 250/100-Tr
Max. PV Power	2000W	4000W	5800W
	GENERAL		
Interfaces	BMS-Can, USB, Ethernet, VE Direct, WiFi		
External AC current sensor (optional)	50A		100A
Programmable relay	Yes (see data sheet or user manual for info)		
Optional remote panel	Yes		
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple		
Operating temperature range/humidity	-20 to +45°C (Fan assisted cooling)/max 95% non-condensing		
	ENCLOSURE		
Material, colour	Aluminium, powder coated (Blue RAL5012), IP21		
PV connection	M6 Studs		
Battery connection	M8 Studs		
AC outlet	Screw terminals 13mm² (6AWG)		
Weight (Kg)	26.0		38.6
Dimensions (mm) H x W x D	499x268x237mm		604x323x253

QUATTRO

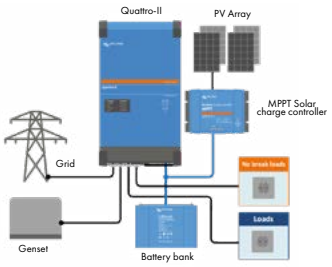
Similar to the MultiPlus, the Quattro is also a combined inverter and charger with the additional benefit that it can accept two AC inputs and automatically connects to the active source. Two AC outputs are also available for critical and non-critical loads. Features include adaptive charging, hybrid PowerAssist plus multiple system integration features such as three phase, split phase and parallel operation. Battery voltage sensing compensates for voltage loss in cables. Temperature Compensation - external sensor included. Settings can be adjusted using VE Configure via a MK3 - USB interface, using VE Connect via a VE Bus Smart dongle, or via "Remote Console" on VRM.




Quattro 12V Quattro 24V Quattro 48V	12/3000/120-50/50 24/3000/70-50/50	12/5000/220-100/100 24/5000/120-100/100 48/5000/70-100/100	24/8000/200-100/100 48/8000/110-100/100	48/10000/140-100/100	48/15000/200-100/100
PowerControl/PowerAssist	Yes				
Parallel/3-phase operation	Yes, 6 units parallel max (single phase), 4 units in parallel max (three phase)				
Maximum feed through current	50A	100A	100A	100A	100A
	INVERTER				
Input voltage range (12V/24V/48V)	9.5-17V (12V) / 19-33V (24V) / 38-66V (48V)				
AC output voltage, frequency (adjustable)	230VAC +/-2%, 50Hz +/0.1%				
Continuous power at 25C	3000VA	5000VA	8000VA	10000VA	15000VA
Continuous power at 25C/40C	2400/2200W	4000/3700W	6400/5500W	8000/7000W	12000/10000W
Peak power	5500W	9000W	15000W	18000W	27000W
Max efficiency (12V/24V/48V)	93/94/95%	96%	95%	96%	95%
No-load power, on	8W/10W	8W/10W	8W/10W	9W/11W	20W/20W/25W
No-load power, on (standby/AES)	5W/8W	5W/8W	5W/8W	7W/9W	15W/15W/20W
No-load power, on (search mode)	2W/3W	2W/3W	2W/3W	3W/4W	8W/10W/12W
	CHARGER				
AC input	187-265VAC, 45-65Hz				
Charge voltage (absorption)	14.4V/28.8V/57.6V				
Charge voltage (float)	13.8V/27.6V/55.2V				
Charge voltage (storage)	13.2V/26.4V/52.8V				
Charge current - domestic battery	120/70A	220/120/70A	200/110A	140A	200A
Charge current - start battery	4A (12V and 24V models only)				
Battery type	Programmable/adjustable 4 stage adaptive charge regime to suit LFP, AGM/VRLA, FLA/SLA, GEL				
Battery temp. sensor	Yes, included				
	GENERAL				
Programmable relay	YES, x3 (see data sheet or user manual for more info)				
Optional remote panel	Yes				
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple				
Operating temperature range, humidity	-20 to +60°C (Fan assisted cooling), max 95% non-condensing				
RJ45 ports for VE bus	Yes, for parallel and 3-phase operation, remote monitoring and system integration				
Remote on/off	Yes				
	ENCLOSURE				
Material, colour	Aluminium, powder coated (Blue RAL5012), IP20				
Battery connection	4 x M8 Studs (2x positive, 2x negative)				
AC outlet	Screw terminals 13mm² (6AWG)		M6 Suds		
Weight (Kg)	19.0	34.0/30.0/30.0	45.0/41.0	51.0	72.0
Dimensions (mm) H x W x D	362x258x218mm	470x350x280mm 444x328x240mm 444x328x240mm	470x350x280mm	470x350x280mm	572x488x344mm

QUATTRO II

Similar to the MultiPlus-II, the Quattro-II is also a combined inverter and charger with the additional benefit of ESS support funtionality. It can accept two AC inputs and automatically connect to the active source. Its many features include hybrid PowerAssist plus multiple system integration features such as three phase, split phase and parallel operation. An external current sensor can be added as an option which extends the PowerControl and PowerAssist function. Other standard features include battery voltage sensing, temperature compensated charging and programmable relay.

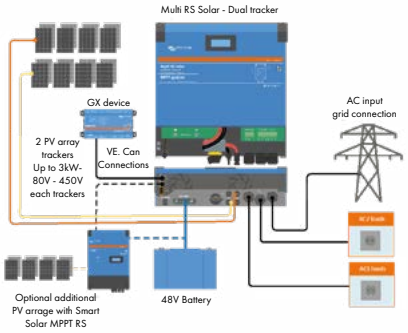


Application with MPPT solar charge controller

Quattro II 24V Quattro II 48V	24/5000/120-50	48/5000/70-50
PowerControl/PowerAssist	Yes	
Parallel/3-phase operation	Yes, see data sheet / user manual	
AC transfer switch rating	50A	50A
	INVERTER	
Input voltage range (24V/48V)	19-33V	38-66V
AC output voltage, frequency (adjustable)	230VAC +/-2%, 50Hz +/-0.1%	
Continuous power at 25C	5000VA	
Continuous power at 25C/40C	4000/3700W	
Peak power	9000W	
Max efficiency (12V/24V/48V)	96%	
No-load power, on	18W	
No-load power, on (standby/AES)	12W	
No-load power, on (search mode)	2W	
	CHARGER	
AC input	187-265VAC, 45-65Hz	
Charge voltage (absorption)	28.8V	57.6V
Charge voltage (float)	27.6V	55.2V
Charge voltage (storage)	26.4V	52.8V
Charge current - domestic battery	120A	70A
Battery type	Programmable/adjustable 4 stage adaptive charge regime to suit LFP, AGM/VRLA, FLA/SLA, GEL	
Battery temp. sensor	Yes, included	
	GENERAL	
Programmable relay	YES (see data sheet or user manual for more info)	
Optional remote panel	Yes	
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple	
Operating temperature range, humidity	-40 to +65°C (Fan assisted cooling), max 95% non-condensing	
RJ45 ports for VE bus	Yes, for parallel and 3-phase operation, remote monitoring and system integration	
Remote on/off	Yes	
	ENCLOSURE	
Material, colour	Steel, powder coated (Blue RAL5012), IP22	
Battery connection	4 x M8 Studs (2x positive, 2x negative)	
AC outlet	Screw terminals 13mm² (6AWG)	
Weight (Kg)	31.0	29.0
Dimensions (mm) H x W x D	607x329x149mm	565x320x148mm

MULTI RS SOLAR

The Multi RS Solar 48/6000 is a 48V 6kVA Inverter/Charger with two independent 3kWp PV 450V MPPT tracker inputs for 6kWp PV total (from mid 2023). Thanks to high frequency technology and a new design, this powerful inverter weighs only 12kg and has excellent efficiency, low standby power, and very quiet operation. 4 Operation modes (see data sheet), PowerControl, PowerAssist, Digital display, VE Can, Bluetooth, programmable relay, 4 stage adapative and programmable charging regime (suitable for all batteries including LFP), temperature and voltage sensing are all standard features.



Multi RS Solar	48/6000
PowerControl/PowerAssist	Yes
Parallel/3-ohase operation	3 phase support with one unit per phase, parallel operation not supported
AC in transfer switch rating	50A
	INVERTER
Input voltage range	38-62V
AC output voltage, frequency (adjustable)	230VAC +/-2%, 50Hz +/-0.1%
Continuous power at 25C	4800W (@46VDC) to 5300W (@52VDC)
Continuous power at 40C/65C	4500/3000W
Peak power	9000W (3 secs)
Max efficiency	96.5% (1KW load), 94% (5KW load)
No-load power, on	20W
	CHARGER
AC input	187-265VAC, 45-65Hz
Charge voltage (absorption)	57.6V
Charge voltage (float)	55.2V
Max charge current from AC	88A @ 57.6VDC
Battery type	Programmable/adjustable 4 stage adaptive charge regime to suit LFP, AGM/VRLA, FLA/SLA,GEL
Battery temp. sensor	Yes, included
	SOLAR CHARGE CONTROLLER (please see data sheet for more information)
Max VOC, max PV power	450V, 2x3KW
MPPT operating voltage range	65-450VDC
	GENERAL
Programmable relay	Yes (see deta sheet or user manual for more info)
Optional remote panel	Yes
Protection	Short Circuit, Overload, High/Low Temp, High/Low DC Voltage, Excessive DC Ripple
Operating temperature range, humidity	-40 to +65°C (Fan assisted cooling), max 95% non-condensing
RJ45 ports for VE bus	Yes for parallel and 3-phase operation, remote monitoring and system integration
Remote on/off	Yes
	ENCLOSURE
Material, colour	Steel powder coated (Blue RAL5012), IP21
Battery connection	M8 Studs
AC outlet	Screw terminals 13mm² (6AWG)
Weight (Kg)	12.3
Dimensions (mm) H x W x D	462x425x127mm

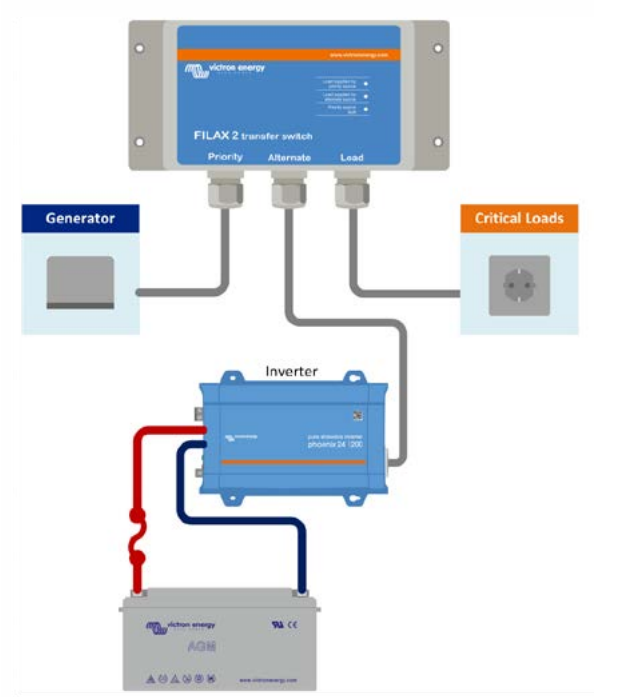
VE TRANSFER SWITCHES & FILAX 2

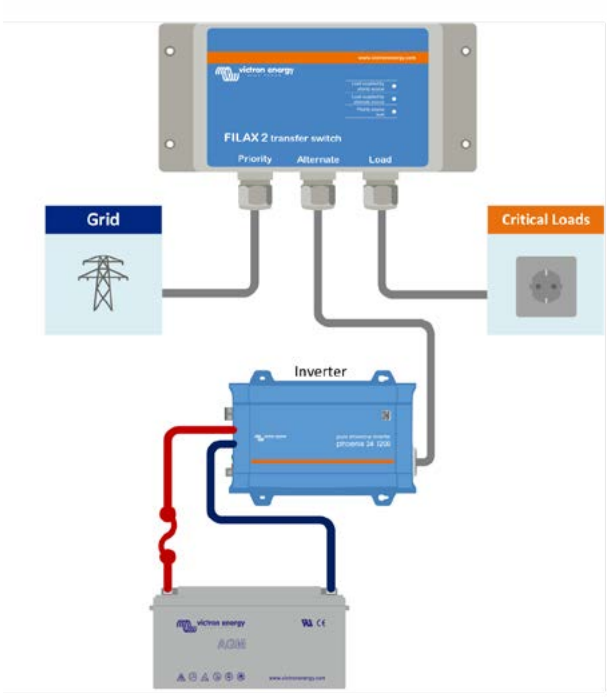
A Victron transfer switch has two inputs and one output, and automatically selects between the different AC sources according to priority, either generator and grid, generator and inverter or grid and inverter. The Filax 2 is designed to be a no-break supply for sensitive loads, rated up to 16A at 230V. The VE Transfer Switch is designed for high power loads but although the switching is 10-20 ms (usually fast enough to be deemed as a "no-break" supply) this is not guaranteed, so if running sensitive equipment such as PC's or other electronic equipment, data may be lost.





	VE Transfer Switch 5KVA	VE Transfer Switch 10KVA	Filax 2
Nominal input voltage	230V AC single phase		
Input voltage range	200-250V AC		190-260V AC
Current rating	20A	40A	16A
Frequency	50-60Hz		50Hz/60Hz (selectable)
Frequency monitoring	No		Yes (see data sheet)
Circuit protection/MCB/RCD	Not included		
	ENCLOSURE		
Material, colour	ABS plastic, light grey RAL 7035		
Protection category	IP54		IP65
AC connections	6mm² (10SAWG) screw terminals		
Weight (Kg)	1.9	1.7	0.8
Dimensions (mm) H x W x D	175x215x120mm	175x215x120mm	120x255x75
For further information on transfer switches and Filax 2, please see data sheets			





DC DISTRIBUTION

The Victron Lynx Distributor system is group of connectable bus-bar modules for primary DC power distribution, linking multiple power products and batteries together where high power/high currents are involved. They are available in two sets of current ratings, either 500A or 1000A, with M8 or M10 bolts respectively.

The range includes 5 models with different features and functionality depending on the system requirements.

A modular DC positive and negative bus bar used to connect batteries to the Lynx DC distribution system, available with either M8 or M10 bolts. Note that M8/M10 refers to the bus-bar connection joints where the modules are connected to each other. The fuse and cable connections are always M8.

Lynx Power In	M8/M10
Voltage and current rating	0-60V DC, 1000A continuous
Enclosure material, colour, IP	ABS Plastic, RAL5012, IP22
Dimensions (HxWxD)	290 x 170 x 80mm
Weight	2.1kg
Fuses	N/A
See user manual for more information	

The Lynx Class-T Power In connects and fuses up to two strings of Lithium batteries. It features a positive and negative bus-bar, connections for two Class-T fuses, and a connection to ground the DC system. Class T-fuses are available in 225A, 250A, 350A and 400A, must be purchased separately.

Lynx Class T Power In	M10
Voltage and current rating	0-60V DC, 1000A continuous
Enclosure material, colour, IP	ABS Plastic, RAL5012, IP20
Dimensions (HxWxD)	279 x 170 x 97mm
Weight	2.1kg
Fuses	2 x Class T
See user manual for more information	

A modular DC positive and negative bus-bar with spaces for four megafuses. It monitors the status of each fuse and displays its condition with an LED on the front of the case. The Lynx Distributor is available with either M8 or M10 bolts. Note that M8/M10 refers to the bus-bar connection joints where the modules are connected to each other. The fuse and cable connections are always M8.

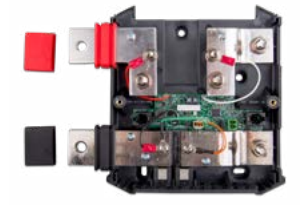
Lynx Distributor	M8/M10
Voltage and current rating	9-60V DC, 1000A continuous
Enclosure material, colour, IP	ABS Plastic, RAL5012, IP22
Dimensions (HxWxD)	290 x 170 x 80mm
Weight	2.2kg
Fuses	4 x megafuses
See user manual for more information	

The Lynx Smart BMS is a dedicated Battery Management System for Victron Lithium Smart Batteries. There are multiple BMS options available for Victron's Smart Lithium series of batteries, and the Lynx Smart is the most feature rich and complete option. It is available in several versions: 500A (with M8 busbar connections), 1000A (with M10 busbar connections) and "NG" works with the new generation Smart LFP batteries.

Lynx Smart BMS	500A/1000A/NG
Voltage and current rating	9-60V DC, 500A/1000A continuous
Enclosure material, colour, IP	ABS Plastic, RAL5012, IP22
Dimensions (HxWxD)	190 x 180 x 80mm/230 x 180 x 100mm
Weight	1.9/2.7kg
Fuses	Circuit breakers for ATC and ATD built in
See user manual for more information	

The Lynx Shunt VE.Can is an intelligent 1000A shunt with location for a fuse (not included), the built-in battery monitor accurately monitors the state of charge of your battery. Use a GX device (e.g. Cerbo GX) for reading out the information.

Lynx Shunt	M8/M10
Voltage and current rating	9-70V DC, 1000A continuous
Enclosure material, colour, IP	ABS Plastic, RAL5012, IP22
Dimensions (HxWxD)	190 x 180 x 80mm
Weight	1.4kg
Fuses	CNN, M8. 1000A max.
See user manual for more information	



ELECTRICAL ACCESSORIES

Busbars are used for primary high current distribution and can also provide a common connection point for grounding, or to avoid overloading battery terminals with too many connections on one post.

All busbars are constructed from tin plated copper with stainless steel studs and nuts, flat washers and spring washers, mounted on an ABS plastic base.

Busbar Model	Description	Dimensions (with cover) HxWxD	
150A/70V/4	150A max. rated, 4 x 1/4" studs, clear polycarbonate cover	45 x 153 x 32mm	
150A/70V/6	150A max. rated, 6 x 1/4" studs, clear polycarbonate cover	45 x 232 x 32mm	
150A/70V/2P+10	150A max. rated, 2 x 1/4" studs, 10 x 4.2mm screws, clear polycarbonate cover	45 x 153 x 32mm	
150A/70V/2P+20	150A max. rated, 2 x 1/4" studs, 20 x 4.2mm screws, clear polycarbonate cover	45 x 232 x 32mm	
250A/70V/4	250A max. rated, 4 x 8mm studs, black ABS plastic cover	48 x 237 x 70mm	
250A/70V/6	250A max. rated, 6 x 8mm studs, black ABS plastic cover	48 x 237 x 70mm	
250A/70V/2P+6	250A max. rated, 2 x 8mm studs, 6 x 4.8mm screws, black ABS plastic cover	65 x 216 x 86mm	
250A/70V/2P+12	250A max. rated, 2 x 8mm studs, 12 x 4.8mm screws, black ABS plastic cover	48 x 237 x 70mm	
600A/70V/4	600A max. rated, 4 x 3/8" studs, black ABS plastic cover	65 x 216 x 86mm	
600A/70V/8	600A max. rated, 8 x 3/8" studs, black ABS plastic cover	65 x 327 x 86mm	
Dual terminal stud (pair)	150A max rated, 2 x M8 studs, connecting link included, glass fibre reinforced nylon base	45 x 43 x 32mm	

ELECTRICAL ACCESSORIES

Isolation switches are used to isolate the battery from the load for maintenance, or to reduce the risk of potential unwanted current draw when the system is not in use for any extended period of time. It is important to ensure the switch suits the application and the current draw of the circuit.

Please call our technical team if you require any further help.

Victron Battery/Isolation Switch	Description	Dimensions HxWxD
	Up to 60V DC, 275A continuous rated, ignition protected, M10 studs, surface or panel mount, removable knob.	76 x 70 x 70mm
Durite Battery/Isolation Switch	**Description**	**Dimensions H x Dia**
	Up to 30V DC (24V nominal), 100A continuous rated, M8 studs, panel mount, splashproof cover, removable key.	75 x 52mm (without key)

Fuses provide protection against excessive current draw in a circuit in the event of a fault. There are many different types and sizes of fuses available. We offer midi-fuses, mega-fuses and ANL fuses along with associated carriers as they are popular in our core markets and suit a wide range of applications.

Fuse Type	Description	Dimensions
Midi-fuses	32V: 30 / 40/ 50 / 60 / 70 / 80 / 100 / 125 / 150A 58V: 30 / 40 / 50 / 60 / 100A (to order)	Width: 12mm Length: 42.3mm Hole centres: 29.3mm
Mega-fuses	32V: 100 / 125 / 150/ 200 / 225 / 250 / 300 / 400 / 500A 58V: 125 / 200 / 250 / 300A (to order)	Width: 19mm Length: 68.8mm Hole centres: 50.8mm
ANL fuses	80V: 300 / 400 / 500A	Width: 22mm Length: 81mm Hole centres: 61.7mm

Fuse holders/carriers for the fuses listed below.

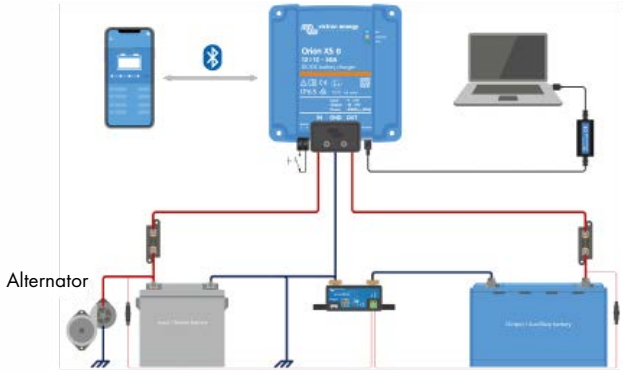
Fuse Holder	Description	Dimensions HxWxL
for Midi-fuse	Single fuse holder for Midi-fuse	25 x 30 x 52mm
for Mega-fuse	Single fuse holder for Mega-fuse	45 x 37 x 125mm
for Mega-fuse, 6 way	6 way fuse holder for Mega-fuse	51 x 88 x 182mm

DC-DC CHARGERS & CONVERTERS

The Orion XS 12/12-50 and new XS1400 are new to Victron's range, engineered from the ground up, the Orion XS redefines adaptive DC-DC battery charging. For use in dual battery systems charged with an (intelligent) alternator. This device not only ensures top-tier performance but also guarantees the safety of your system. The Orion XS serves as a DC-DC battery charger or as a power supply, offering a wide input and output voltage range. This new design also benefits from high efficiency and lower operating temperature. The XS1400 can be set for 12-24V input and/or output (so 12-12V, 12-24V, 24-12V or 24-24V) and delivers up to 1400W continuous charging power.

Features: • Adjustable input current and charge current limit • Smart alternator compatible • Adaptive 4-stage charge regime • Suitable for all battery chemistries • Low temperature shutdown and input undervoltage protection (LFP safe) • Remote on/off • Bluetooth built in • VE Direct port • DVCC • IP65 case

Orion XS	XS12/12-50	XS1400
Input voltage range	9-17VDC	9-35VDC
Output voltage range	10-17VDC	10-35VDC
Input and output current range	0-50A	1-50A
Max short circuit current	50A	50A
Continuous output power up to 40°C	700W	1400W
Max. efficiency	98.5%	98.5%
No-load power, on	<100mA	<100mA
Standbuy current consumption	<1.5mA	<1.5mA
Galvanic isolation	No	No
	COMMUNICATION	
Bluetooth	Yes	Yes
VE connect app	Yes	Yes
VE smart Networking	Yes	Yes
VE direct (including DVCC)	Yes	Yes
	GENERAL	
Operating temp. range	-20 to +60°C	-20 to +60°C
Temperature de-rating	1.5% per °C above 40°C	1.5% per °C above 40°C
Humidity	Max 95% non-condensing	Max 95% non-condensing
DC connections	Screw terminals	Screw terminals
Max cable cross section	4AWG (21mm²)	4AWG (21mm²)
Material, colour	ABS Plastic, Blue RAL5012	ABS Plastic, Blue RAL5012
Protection category	IP65	IP65
Weight (Kg)	0.3Kg	0.52Kg
Dimensions (mm) H x W x D	138 x 124 x 40mm	138 x 125 x 53mm

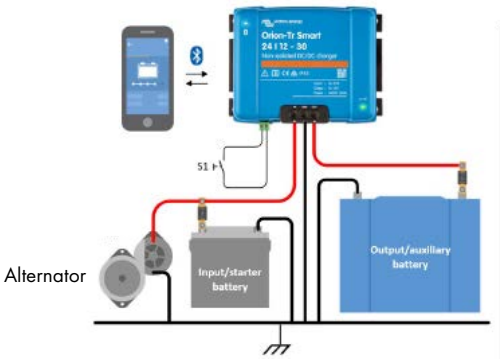


DC-DC CHARGERS & CONVERTERS

The Orion-Tr Smart non-isolated DC-DC charger serves as a DC-DC battery charger or as a power supply (it is also designed for use as a constant voltage source), offering a wide input and output voltage range.

Features: • Smart alternator compatible • Programmable 3-stage charge regime • Suitable for all battery chemistries • Can be parallel connected for higher current demands • Remote on/off • Bluetooth built in • IP43 case • Note - the case of these units is a heatsink, it is perfectly normal for these units to run at 60°C under high demand

Orion TR Smart Non-Isolated	12/12-30 (360W)	12/24-15 (360W)	24/12-30 (360W)	24/24-17 (400W)
Input voltage range	8-17VDC	8-17VDC	16-35VDC	26-35VDC
Output voltage range	10-15VDC	20-30VDC	10-15VDC	20-30VDC
Output current	30A	15A	30A	17A
Max short circuit current	60A	40A	60A	40A
Continuous output power up to 40°C	360W	360W	360W	400W
Max. efficiency	87%	88%	88%	89%
No-load power, on	<80mA	<100mA	<100mA	<80mA
Standby current consumption	<1mA	<1mA	<1mA	<1mA
Galvanic isolation	No	No	No	No
	COMMUNICATION			
Bluetooth	Yes			
VE connect app	Yes			
VE smart Networking	No			
VE direct	No			
	GENERAL			
Operating temp. range	-20 to +55°C			
Temperature de-rating	-3% per °C over 40°C			
Humidity	Max 95% non-condensing			
DC connections	Screw terminals			
Max cable cross section	6AWG (16mm²)			
Material, colour	Aluminimum heatsink, ABS Plastic, Blue RAL5012			
Protection category	IP22 (IP43 if installed vertically with screw terminals oriented downwards)			
Weight (Kg)	1.8kg	1.8kg	1.8kg	1.6kg
Dimensions (mm) H x W x D	130 x 186 x 80mm			

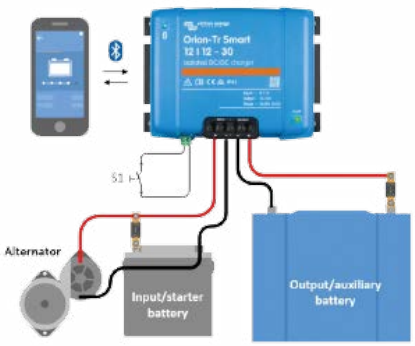


DC-DC CHARGERS & CONVERTERS

The Orion-Tr Smart isolated DC-DC charger serves as a DC-DC battery charger or as a power supply (it is also designed for use as a constant voltage source), offering a wide input and output voltage range.

Features: • Smart alternator compatible • Programmable 3-stage charge regime • Suitable for all battery chemistries • Can be parallel connected for higher current demands • Remote on/off • Bluetooth built in • IP43 case • Note - the case of these units is a heatsink, it is perfectly normal for these units to run at 60°C under high demand

Orion TR Smart Isolated	12/12-18 (220W)	12/24-10 (240W)	24/12-20 (240W)	24/24-12 (280W)
Input voltage range	8-17VDC	8-17VDC	16-35VDC	16-35VDC
Output voltage range	10-15VDC	20-30VDC	10-15VDC	20-30VDC
Output current	18A	10A	20A	12A
Max short circuit current	40A	40A	60A	40A
Continuous output power up to 40°C	220W	360W	360W	400W
Max. efficiency	87%	88%	88%	89%
No-load power, on	<80mA	<100mA	<100mA	<80mA
Standby current consumption	<1mA	<1mA	<1mA	<1mA
Galvanic isolation	Yes	Yes	Yes	Yes
	COMMUNICATION			
Bluetooth	Yes			
VE connect app	Yes			
VE smart Networking	No			
VE direct	No			
	GENERAL			
Operating temp. range	-20 to +55°C			
Temperature de-rating	-3% per °C over 40°C			
Humidity	Max 95% non-condensing			
DC connections	Screw terminals			
Max cable cross section	6AWG (16mm²)			
Colour	Aluminimum heatsink, ABS Plastic, Blue RAL5012			
Protection category	IP22 (IP43 if installed vertically with screw terminals oriented downwards)			
Weight (Kg)	1.3kg			
Dimensions (mm) H x W x D	130 x 186 x 80mm			

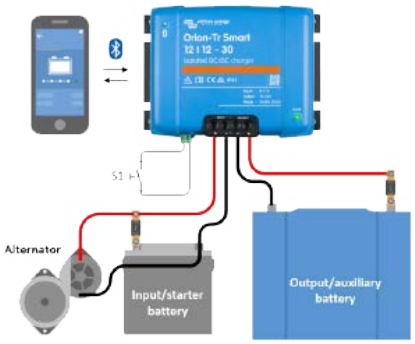


DC-DC CHARGERS & CONVERTERS

The Orion-Tr Smart isolated DC-DC charger serves as a DC-DC battery charger or as a power supply (it is also designed for use as a constant voltage source), offering a wide input and output voltage range.

Features: • Smart alternator compatible • Programmable 3-stage charge regime • Suitable for all battery chemistries • Can be parallel connected for higher current demands • Remote on/off • Bluetooth built in • IP43 case • Note - the case of these units is a heatsink, it is perfectly normal for these units to run at 60°C under high demand

Orion TR Smart Isolated	12/12-30 (360W)	12/24-15 (360W)	24/12-30 (360W)	24/24-12 (400W)
Input voltage range	10-17VDC	8-17VDC	16-35VDC	16-35VDC
Output voltage range	10-15VDC	20-30VDC	10-15VDC	20-30VDC
Output current	30A	15A	30A	17A
Max short circuit current	60A	40A	60A	40A
Continuous output power up to 40°C	360W	360W	360W	400W
Max. efficiency	87%	88%	88%	89%
No-load power, on	<80mA	<100mA	<100mA	<80mA
Standby current consumption	<1mA	<1mA	<1mA	<1mA
Galvanic isolation	Yes	Yes	Yes	Yes
	COMMUNICATION			
Bluetooth	Yes			
VE connect app	Yes			
VE smart Networking	No			
VE direct	No			
	GENERAL			
Operating temp. range	-20 to +55°C			
Temperature de-rating	-3% per °C over 40°C			
Humidity	Max 95% non-condensing			
DC connections	Screw terminals			
Max cable cross section	6AWG (16mm²)			
Colour	Aluminimum heatsink, ABS Plastic, Blue RAL5012			
Protection category	IP22 (IP43 if installed vertically with screw terminals oriented downwards)			
Weight (Kg)	1.8Kg	1.8Kg	1.8Kg	1.6Kg
Dimensions (mm) H x W x D	130 x 186 x 80mm			



DC-DC CHARGERS & CONVERTERS

Orion Tr DC-DC converters provide a stable 12V constant voltage output from a 24V system, making them ideal for providing power for small DC loads such as LED lights, electronics or radio equipment.

These simple units offer a reliable solution where a small 12V supply is needed from a larger 24V system.



Features: • Synchronous rectification with a full load efficiency of over 95% • IP43 protection when installed with terminals at the bottom

Orion DC-DC Converters, Non-Isolated	24/12-5	24/12-10	24/12-15	24/12-20
Input voltage range	18-35VDC	18-35VDC	18-35VDC	18-35VDC
Output voltage	12.7VDC	12.5VDC	12.5VDC	12.5VDC
Output current	5A	10A	30A	20A
Max short circuit current	7A	12A	20A	25A
Max. efficiency	95%	97%	97%	97%
Off-load current	<20mA	<45mA	<35mA	<35mA
Galvanic isolation	No	No	No	No
	GENERAL			
Operating temp. range	-20 to +55°C			
Humidity	Max 95% non-condensing			
DC connections	Screw terminals			
Max cable cross section	12AWG (3.3m²)	10AWG (6mm²)		
Material, colour	Blue RAL5012			
Protection category	IP22 (IP43 if installed vertically with screw terminals oriented downwards)			
Weight (Kg)	0.1Kg	0.2Kg	0.25Kg	0.25Kg
Dimensions (mm) H x W x D	53x51x27mm	73x94x37mm	73x94x45mm	73x94x45mm

Orion DC-DC converters with high power output are similar to the Tr models but with higher output current and some additional functionality.

Orion DC-DC Converters, Non-Isolated	24/12-25	24/12-40	24/12-70	12/24-8	12/24-10	12/24-20
Input voltage range	18-35VDC	18-35VDC	18-35VDC	9-18VDC	9-18VDC	9-18VDC
Output voltage	Adjustable 10-15V	13.2VDC	Adjustable 10-15V	24.0VDC	Adjustable 20-30VDC	Adjustable 20-30VDC
Output current	25A	40A	70A	8A	10A	20A
Max short circuit current	35A	55A	85A	20A	20A	30A
Max. efficiency	96%	95%	92%	95%	95%	93%
Off-load current	<15mA	<20mA	<20mA	<10mA	<15mA	<30mA
Galvanic isolation	No	No	No	No	No	No
	GENERAL					
Remote on/off	Yes	Yes	Yes	No	No	No
Operating temp. range	-20 to +55°C (de-rate 3% per °C over 40°C)					
Humidity	Max 95% non-condensing					
DC connections	6.3mm tabs	Twin 6.3mm tabs	M6 bolts	6.3mm tabs	6.3mm tabs	M6 bolts
Colour	Blue RAL5012					
Weight (Kg)	0.7Kg	0.9Kg	0.9Kg	0.4Kg	0.4Kg	0.9Kg
Dimensions (mm) H x W x D	65 x 88 x 160mm	65 x 88 x 185mm	65 x 88 x 195mm	45 x 90 x 115mm	45 x 90 x 125mm	65 x 88 x 195mm



DC-DC CHARGERS & CONVERTERS

Orion Tr Isolated DC-DC converters provide a stable constant voltage output from a DC system where the voltage can vary, making them ideal for providing power for DC loads such as LED lights, electronics or radio equipment. Isolated units offer true galvanic isolation between input and output (no line-conducted noise/ripple passes through) and provides a reliable solution with a larger range of DC voltage options including 12V-12V, 12V-24V, 12V-48V, 24V-12V, 24V-24V, 24V-48V, 48V-12V, 48V-24V and 48V-48V.

Features: • Remote on/off terminal • High temperature protection - output reduces in high ambient temperatures • IP43 protection when installed with terminals at the bottom • All models are short circuit protected and can be connected in parallel • Adjustable output voltage - (not intended for battery charging)

Orion TR DC-DC Converters, Isolated110-120W	12/12-9	12/24-5	24/12-9	24/24-5	24/48-2.5	48/12-9	48/24-5	48/48-2.5
Input voltage range	8-17VDC	8-17VDC	16-35VDC	16-35VDC	16-35VDC	32-70VDC	32-70VDC	32-70VDC
Output voltage range	Adjustable 10-15V	Adjustable 20-30V	Adjustable 10-15V	Adjustable 20-30V	Adjustable 40-60V	Adjustable 10-15V	Adjustable 20-30V	Adjustable 40-60V
Output current	9A	5A	9A	5A	2.5A	9A	5A	2.5A
Max short circuit current	32A	23A	39A	30A	19A	27A	25A	17A
Max. efficiency	87%	88%	85%	87%	88%	87%	86%	89%
Off-load current	<50mA	<80mA	<40mA	<60mA	<120mA	<50mA	<60mA	<80mA
Galvanic isolation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	GENERAL							
Remote on/off	Yes							
Operating temp. range	-20 to +55°C (de-rate 3% per °C over 40°C)							
Humidity	Max 95% non-condensing							
DC connections	6.0mm (10AWG) screw terminals							
Colour	Blue RAL5012							
Weight (Kg)	0.42Kg							
Dimensions (mm) H x W x D	100x113x47mm							

Orion TR DC-DC Converters, Isolated220-280W	12/12-18	12/24-10	24/12-20	24/24-12	24/48-6	48/12-20	48/24-12	48/48-6
Input voltage range	8-17VDC	8-17VDC	16-35VDC	16-35VDC	16-35VDC	32-70VDC	32-70VDC	32-70VDC
Output voltage range	Adjustable 10-15V	Adjustable 20-30V	Adjustable 10-15V	Adjustable 20-30V	Adjustable 40-60V	Adjustable 10-15V	Adjustable 20-30V	Adjustable 40-60V
Output current	18A	10A	20A	12A	6A	20A	12A	6A
Max short circuit current	40A	25A	50A	30A	25A	50A	30A	25A
Max. efficiency	87%	88%	88%	89%	89%	87%	89%	89%
Off-load current	<80mA	<100mA	<100mA	<80mA	<120mA	<80mA	<80mA	<80mA
Galvanic isolation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	GENERAL							
Remote on/off	Yes							
Operating temp. range	-20 to +55°C (de-rate 3% per °C over 40°C)							
Humidity	Max 95% non-condensing							
DC connections	6.0mm (10AWG) screw terminals							
Colour	Blue RAL5012							
Weight (Kg)	12V models 1.8Kg, all other models 1.6Kg							
Dimensions (mm) H x W x D	12V models 130x186x80mm, all other models 130x186x70							

DC-DC CHARGERS & CONVERTERS

The Orion isolated high power models in the first table below have similar features those on page 35. The Orion IP67 (non-isolated) is a completely encapsulated DC-DC converter designed for installation and use in harsh environmental conditions. Water, oil or dirt will not damage these models as the case is cast aluminium and the electronics are moulded in resin. The range includes 24-12V and 12-24V models. The pre-wired input and output cables on models up to 20A are 1.8M long. These units benefit from wide input voltage and operating temperature ranges.




Orion TR DC-DC Converters, Isolated 360-400W	12/12-30	12/24-15	12/48-8	24/12-30	24/24-17	24/48-8.5	48/12-30	48/24-16	48/48-8
Input voltage range	10-17VDC	10-17VDC	10-17VDC	20-35VDC	20-35VDC	20-35VDC	40-70VDC	40-70VDC	40-70VDC
Output voltage range	Adjustable 10-15V	Adjustable 20-30V	Adjustable 40-60V	Adjustable 10-15V	Adjustable 20-30V	Adjustable 40-60V	Adjustable 10-15V	Adjustable 20-30V	Adjustable 40-60VDC
Output current	30A	15A	8A	30A	17A	8.5A	30A	16A	8A
Max short circuit current	60A	40A	25A	60A	19A	25A	60A	40A	25A
Max. efficiency	87%	88%	89%	88%	89%	89%	87%	89%	89%
Off-load current	<80mA	<100mA	<220mA	<100mA	<80mA	<120mA	<80mA	<80mA	<80mA
Galvanic isolation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	GENERAL								
Remote on/off	Yes								
Operating temp. range	-20 to +55°C (de-rate 3% per °C over 40°C)								
Humidity	Max 95% non-condensing								
DC connections	6.0mm (10AWG) screw terminals								
Colour	Blue RAL5012								
Weight (Kg)	12V models 1.8Kg, all other models 1.6Kg								
Dimensions (mm) H x W x D	12V models 130x186x80mm, all other models 130x186x70mm								

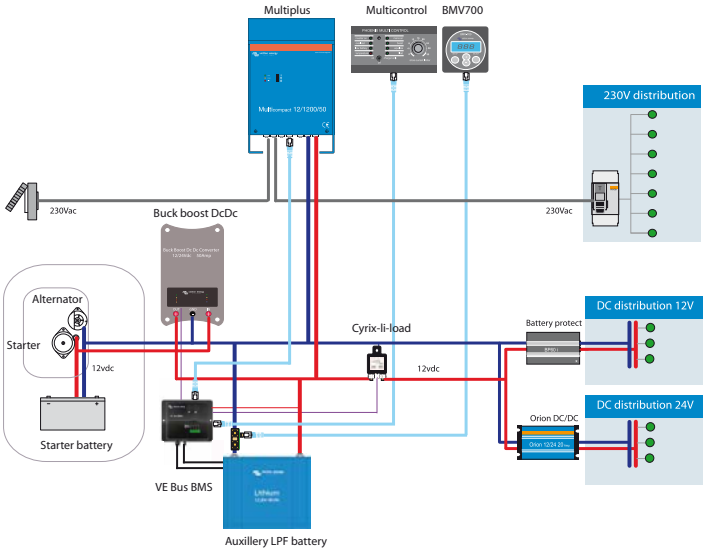
Orion IP67 DC-DC Converters, Non-Isolated	24/12-5	24/12-10	24/12-20	24/12-100	12/24-50
Input voltage range	15-40VDC	15-40VDC	15-40VDC	18-35VDC	10-15VDC
Output voltage range	12VDC + -3%	12VDC + -3%	12VDC + -3%	12VDC + -3%	24VDC + -3%
Max. continuous output current	5A	10A	20A	100A	50A
Max. short circuit current	35A	55A	85A	20A	20A
Max. efficiency	93%	93%	95%	96%	96%
No-load current	1mA	20mA	50mA	85mA	45mA
	GENERAL				
Remote on/off	No	No	No	No	No
Operating temp. range	-40 to +70°C (de-rate 3% per °C over 40°C)				
DC connections	0.8mm² cable included, 1.8m input and output	1.5mm² cable included, 1.8m input and output	2.6mm² cable included, 1.8m input and output	M6 bolts (no cable included)	M6 bolts (no cable included)
Case material/colour	Aluminium / Blue RAL5012				
Weight (Kg)	50g	300g	300g	2.15Kg	2.15Kg
Dimensions (mm) H x W x D	25 x 43 x 20mm	74 x 74 x 32mm	74 x 74 x 32mm	265 x 127 x 63mm	265 x 127 x 63mm

BUCK-BOOST DC-DC CONVERTERS

The Buck-Boost is a high power DC -DC converter for 12V or 24V systems, particularly useful for vehicles with a "smart" alternator. Available in 3 sizes, the Buck Boost is suitable for FLA/SLA, AGM, GEL and LFP batteries, with programmable settings using TS Config software (USB type A to type B cable required).

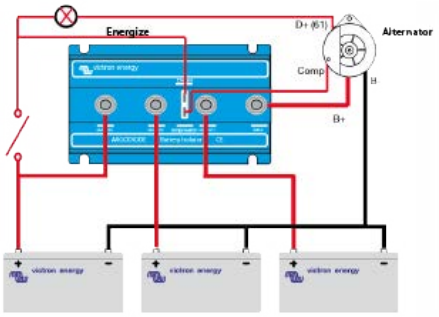
Features: • Three output ratings - 25A, 50A and 100A • 12V or 24V input, 12V or 24V output • Engine running detection by chassis vibration or voltage sensing • Programmable settings via TS Config PC app

Buck -Boost DC-DC Converters	25A	50A	100A
Input voltage range	10-30VDC		
Under voltage threshold	10V		
Output voltage range	10-30VDC		
Max. charge current 12V	25A	50A	100A
Max. charge current 24V	15A	25A	50A
No-load current consumption (power save mode)	7mA	7mA	7mA
	GENERAL		
Settings adjustment	Via TS Config software		
Galvanic isolation	No		
Operating temp. range	-25 to +60°C (max current up to 60°C)		
DC connections	M8 Studs		
Weight (Kg)	0.6mg	1.4Kg	4.1Kg
Dimensions H x W x D	165x120x30mm	213x120x30mm	288x162x95mm
	See user manual for further information		



SPLIT CHARGING

Argodiode Battery Isolators allow simultaneous charging of two or more batteries from one alternator, without connecting the batteries together. Discharging the accessory/domestic battery for example, will not result in discharging the starter battery. Some alternators require a voltage on B+ to start charging. This latest range features a special current limited connection to provide power to B+ when ignition is turned on.



Features: • Low voltage drop due to the use of high efficiency Schottky diodes • Various models available with 2 or 3 outputs and alternator energise connection • Ratings for 80A to 180A

Argodiode Battery Isolators	80-2SC	80-2AC	100-3AC	120-2AC	140-3AC	160-2AC	180-3AC
Maximum charge/alternator current	80A	80A	100A	120A	140A	160A	180A
Number of battery outputs	2	2	3	2	3	2	3
Nominal battery voltage	12V/24V	12V/24V	12V/24V	12V/24V	12V/24V	12V/24V	12V/24V
Alternator energise input	No	Yes	Yes	Yes	Yes	Yes	Yes
DC connections	M6 studs	M6 studs	M8 studs	M8 studs	M8 studs	M8 studs	M8 studs
Colour	Blue RAL5012						
Weight	0.5Kg	0.6Kg	0.8Kg	0.8Kg	1.1Kg	1.1Kg	1.5Kg
Dimensions H x W x D	60x120x75mm	60x120x90mm	60x120x115mm	60x120x115mm	60x120x150mm	60x120x150mm	60x150x200mm

Similarly to Argodiode Battery Isolators, Argofet Isolators allow simultaneous charging of two or three batteries from one alternator (or a single output battery charger), without connecting the batteries together. In contrast with Diode Battery Isolators, FET Isolators have virtually no voltage loss. Voltage drop is less than 0,02 Volt at low current and averages 0,1 Volt at higher currents. When using Argofet Battery Isolators, there is no need to also increase the output voltage of the alternator.

Features: • Virtually no voltage drop due to the use of FET technology instead of diodes • 4 models available including 2 or 3 outputs and 100A or 200A current ratings • Alternator energise connection included on all models

ArgoFET Battery Isolators	100-2	100-3	200-2	200-3
Maximum charge/alternator current	100A	100A	200A	200A
Number of battery outputs	2	3	2	3
Nominal battery voltage	12V/24V	12V/24V	12V/24V	12V/24V
Alternator energise input	Yes	Yes	Yes	Yes
DC connections	M8 studs	M8 studs	M8 studs	M8 studs
Colour	Blue RAL5012			
Weight	1.4Kg	1.4Kg	1.4Kg	1.4Kg
Dimensions H x W x D	65x120x200mm	65x120x200mm	65x120x200mm	65x120x200mm

CYRIX-CT & CYRIX-I

The Cyrix-ct is an intelligent, bi-directional voltage sensitive relay or "battery combiner" for 12V or 24V DC systems. The built-in microprocessor controls the heavy duty relay that automatically connects batteries in parallel when one of them has reached a pre-set voltage (indicating that the battery is being charged), and disconnects when the voltage decreases below float level (indicating that one or more batteries are being discharged). Cyrix Battery Combiners are an excellent alternative for diode isolators. The main feature is that there is virtually no voltage loss, so the output voltage of alternators or battery chargers does not need to be increased.

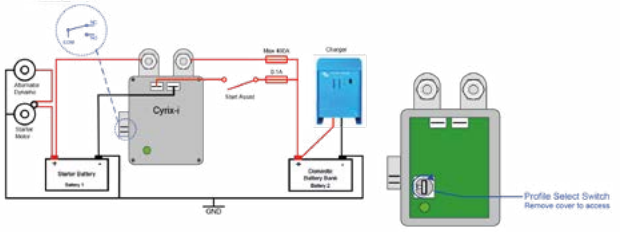
Features: • Virtually no voltage drop • Long bolts allow connection of more than one power cable • 3 models available, 120A, 230A and the Cyrix-i 400A • Bi-directional voltage sensing • Start-Assist for emergency parallel in the event of a problem with the starter battery

Cyrix-ct Battery Combiners	Cyrix-ct 12/24-120	Cyrix-ct 12/24-230
LED status indication	No	Yes
Continuous current	120A	230A
Cranking rating (5 secs)	180A	500A
Connect voltage	13V-13.8V and 26V-27.8V with intelligent trend detection	
Disconnet voltage	11V-12.8V and 22V-25.7V with intelligent trend detection	
Current consumption when open	<4mA	
Current consumption when closesd	12V:220mA, 24V:120mA	12V:320mA, 24V:180mA
Start assist	Yes, cyrix remains closed for 30 secs	
Control cable included	No	Yes, 1m
Protection category	IP54	
Weight	0.11Kg	0.27Kg
Dimensions H x W x D (mm)	46x46x80	65x100x50

The Cyrix-i 400A is a high current battery combiner for 12/24V and 24/48V. Similar to the Cyrix-ct with the additional benefit of 4 selectable connect/disconnect timing profiles. See data sheet for more information.

Features: • Virtually no voltage drop • 400A current rating • Bi-directional voltage sensing • Start-Assist for emergency parallel in the event of a problem with the starter battery • Select from 4 timing profiles for connect/disconnect

Cyrix-i Battery Combiner	Cyrix-i 12/24-400	Cyrix-i 24/48-400
LED status indication	Bicolour LED	Bicolour LED
Continuous current	400A	400A
Peak current rating (1 sec)	2000A	2000A
Connect voltage	See profiles on data sheet	
Disconnet voltage		
Over voltage disconnect	16V/32V/64V	
Current consumption when open	4mA	
Microswitch for remote monitoring	Yes	
Start assist	Yes, cyrix remains closed for 30 secs	
Weight	0.9Kg	0.9Kg
Dimensions H x W x D (mm)	78x102x110	78x102x110



CYRIX-LI

The Cyrix -li range provides disconnection of chargers or loads in the event of high/low voltage and temperature respectively, and are controlled by a Victron BMS. The range consists of 3 models, each available in 2 sizes (with voltage options). The most common application for these models is where a charger or load cannot be turned on/ off directly by a BMS.

• **Cyrix-li-load** will disengage when its control input becomes free floating. If the battery voltage recovers after disconnecting (which will happen when no other loads are connected to the battery), the output of the BMS will become high and the Cyrix will reengage after 30 seconds. After 3 attempts to reengage, the Cyrix will remain disengaged until battery voltage has increased to more than 13V (resp. 26V or 52V) during at least 30 seconds (which is a sign that the battery is being recharged). Alternatively, a BatteryProtect can be used. • The **Cyrix-li-Charge** will connect a battery charger with 3 seconds delay: - if the charge disconnect output of the VE.Bus BMS is high, and - - if it senses13,0 V (resp. 26,0 V or 52,0 V) or more on its battery charger connection terminal, and if it senses 2 V or more on its battery terminal (the Cyrix will remain open if not connect to the battery). The Cyrix-li-Charge will disengage immediately whenever its control input becomes free floating, signalling cell over voltage or cell over temperature. In general, a cell over voltage alarm will reset shortly after charging has been stopped. The Cyrix will then reconnect the charger after a delay 3 seconds When the Cyrix-Li-Charge is engaged (charger connected to battery) it will disengage after 1 hour to check if the charger is still enabled.. If, after the Cyrix has disengaged, the output of the battery charger immediately increases to 13,0 V or more, the Cyrix will reengage, with a 3 seconds delay. Note: In case of zero discharge current, or a small discharge current, the Cyrix will not disengage shortly after the charger has been switched off and/or disconnected, because battery voltage will remain higher than 13,5 V. • The **Cyrix-li-ct** has similar properties to the Cyrix-ct. The Cyrix-li-ct will parallel connect a lead acid starter battery and a LiFePO4 battery: - if the Charge Disconnect output of the VE.Bus BMS is high, and - if it senses 13,4V (resp. 26,8V) or more on one of its power terminals. The Cyrix will disengage immediately: - when its control output becomes free floating, signalling cell over voltage or cell over temperature, and/or - when battery voltage drops below13,2V. Start assist function: a short negative pulse will close the relay during 30 seconds. A built-in transient voltage suppressor will limit the voltage spike that may occur when the Cyrix suddenly disengages due to cell overvoltage or over temperature.

Cyrix Battery Combiner	Cyrix-li-Load 12/24-120 Cyrix-li Load 24/48-120	Cyrix-li-Charge 12/24-120 Cyrix-li Charge 24/48-120	Cyrix-li-ct 12/24-120	
			12V system	24V system
Continuous current and breaking capacity at 12V or 24V	120A	120A	120A	120A
Breaking capacity at 48V	40A	40A	n.a.	n.a.
Control input	The Cyrix engages when the control input is high (approximately battery voltage) The Cyrix disengages when the control input is left free floating or pulled low			
Connect voltage		13V	13.4V < V <13.7V: 120secs	26.8V < V < 27.4V: 120secs
	See description	26V	13.7V < V < 13.9V: 30secs	27.4V < V < 27.8V: 30secs
		52V	V > 13.9V: 4 secs	V > 27.8V: 4secs
Disconnect voltage	See description	11.5V < V < 11.0V: 10secs	13.3V < V < 13.2V: 10secs	26.6V < V < 26.4V:10secs
		V < 10.5V: immediate	V < 13.2V : immediate	V < 26.4V: immediate
Current consumption when open	<4mA			
Protection category	IP54			
Weight (Kg)	0.11Kg			
Dimensions H x W x D	46x46x80mm			

Cyrix Battery Combiner	Cyrix-li-Load 12/24-230 Cyrix-li Load 24/48-230	Cyrix-li-Charge 12/24-230 Cyrix-li Charge 24/48-230	Cyrix-li-ct 12/24-230	
			12V system	24V system
Continuous current and breaking capacity at 12V or 24V	230A	230A	230A	230A
Breaking capacity at 48V	80A	80A	n.a.	n.a.
Control input	The Cyrix engages when the control input is high (approximately battery voltage) The Cyrix disengages when the control input is left free floating or pulled low			
Connect voltage		13V	13.4V < V <13.7V: 120secs	26.8V < V < 27.4V: 120secs
	See description	26V	13.7V < V < 13.9V: 30secs	27.4V < V < 27.8V: 30secs
		52V	V > 13.9V: 4 secs	V > 27.8V: 4secs
Disconnect voltage	See description	11.5V < V < 11.0V: 10secs	13.3V < V < 13.2V: 10secs	26.6V < V < 26.4V:10secs
		V < 10.5V: immediate	V < 13.2V : immediate	V < 26.4V: immediate
Current consumption when open	<4mA			
Protection category	IP54			
Weight (Kg)	0.27Kg			
Dimensions H x W x D	65x100x50mm			

BATTERY MONITORS

The BMV-700 series is a range of high precision battery monitors that calculate the Ah consumed and the state of charge of a battery. The Ah used is calculated by accurately monitoring the current flowing into and out of the battery.

The range includes 5 models detailed in the table below, each with different features and/or functionality.

Features: • Basic display options including voltage, current, Ah consumed, state of charge, time to go, power consumption (W) • Additional input for voltage, battery temp or midpoint voltage (BMV702 only) • Bluetooth connectivity for VE connect using VE Direct bluetooth dongle (Bluetooth is built in on BMV712 Smart) • Shunt and connection cable (shunt to unit) included • Various VE Direct interface cables and other accessories available separately • Relay • See data sheet for further information

Battery Monitor	BMV-700	BMV-702 and BMV-702 BLACK	BMV-700H	BMV-712 Smart
Supply voltage range	6.5V-95V DC	6.5V-95V DC	60-385V DC	6.5V-70V DC
Current draw (back light off)	<4mA	<4mA	>4mA	<1mA
Input voltage range (auxilliary battery)	n.a.	6.5V-95V DC	n.a.	6.5V-70V DC
Battery capacity range (Ah)	1-999Ah			
Operating temperature range	-40-50°C			
Measures voltage of second battery, temp or midpoint	No	Yes	No	Yes
Temperature measurement range	-40-50°C	-40-50°C	n.a.	-40-50°C
VE direct port	Yes	Yes	Yes	Yes
Bluetooth	Optional with Bluetooth dongle	Optional with Bluetooth dongle	Optional with Bluetooth dongle	Built in
Relay	60V/1A Normally open (function can be inverted)			
	RESOLUTION & ACCURACY (with 500A shunt)			
Current	±0.01A			
Voltage	±0.01V			
Ah	±0.01Ah			
State of charge (0-100%)	±0.01%			
Time to go	±1min			
Temperature (0-50°C)	n.a.	±1°C	n.a.	±1°C
Accurancy of current measurement	±0.4%			
Accuracy of voltage measurement	±0.3%			
	INSTALLATION & DIMENSIONS			
Installation	Flush mount			
Front	63mm o/d			
Front bezel	69x69mm			
Shunt connection bolts	M10			
Body diameter and depth	52mm dia, 31mm depth			
Protection category	IP55 (not intended for outdoor use)			
	ACCESSORIES			
Shunt (included)	500A/50mV			
Cables (included)	10m 6 core UTP with RJ12 connectors and cable with 1A slow blow furse for "+" connection			
Temperature sensor	Optional (ASS000100000)			

BATTERY MONITORS

The SmartShunt is an all-in-one battery monitor, only without a display. Your smart-phone acts as the display. The SmartShunt connects via Bluetooth to the VictronConnect app on your phone (or tablet) and you can conveniently read out all monitored battery parameters, like state of charge, time to go, historical information and much more. Alternatively, the SmartShunt can be connected and be read by a GX device. Connection of the SmartShunt to a GX device is made via a VE.Direct cable.




Features: • The SmartShunt is available in 2 model types, either the standard IP21 for indoor use or an IP65 water resistant version for installation in damp/humid conditions • 4 current ratings are available, 300A, 500A, 1000A and 2000A

SmartShunt	SmartShunt 300A, 500A, 1000A, 2000A	2000A
Supply voltage range	6.5V-70V DC	
Current draw	<1mA	
Input voltage range (auxilliary battery)	6.5V-70V DC	
Battery capacity range (Ah)	1-999Ah	
Operating temperature range	-40-50°C	
Measures voltage of second battery, temp or midpoint	Yes	
Temperature measurement range	-20-50°C	
VE direct port	Yes	
Bluetooth	Built In	
	RESOLUTION & ACCURACY	
Current	±0.01A	
Voltage	±0.01V	
Ah	±0.01Ah	
State of charge (0-100%)	±0.01%	
Time to go	±1min	
Temperature (if optional temperature sensor connected)	±1°C	
Accurancy of current measurement	±0.4%	
Accuracy of voltage measurement	±0.3%	
	INSTALLATION & DIMENSIONS	
Shunt connection bolts	M8 (300A), M10 (500A, 2000A)	
Dimensions (HxWxD)	300A: 44x120x44mm 500A: 46x120x54mm 1000A: 68x168x75mm 2000A: 68x168x100mm	300A: 44 x 120 x 38mm 500A: 46 x 120 54mm 1000A: 68 x 168 x 75mm 2000A: 68 x 168 x 100mm
Protection category	IP21 (not intended for outdoor use)	IP65 (water resistant)
	ACCESSORIES	
Temperature sensor	Optional (ASS000100000)	




AGM DEEP CYCLE

AGM batteries utilize VRLA (valve regulated lead acid) technology, are hermetically sealed and are "maintenance free". The electrolyte is absorbed into matting material which surrounds the plates and compresses the cells into the case making them more resistant to vibration as well as offering enhanced performance. AGM batteries have lower internal resistance than flooded batteries making them particularly suitable for high current discharge applications, such as inverters, bow/stern thrusters and winches. They also offer a cycle life of more than double the equivalent flooded "leisure" battery, along with a lower rate of self-discharge, meaning a longer shelf life. The AGM Deep Cycle battery can deliver over 600 cycles to 50% DoD.




Features: • Copper terminals • CE and UL compliant • ABS containers • 2 year global warranty

6V/12V AGM Deep Cycle							
Model	C20 Capacity (Ah)	Voltaage (V)	Dimensions (LxWxH)	Weight (Kg)	CCA @ -17.8°C	Reserve Capacity @ 26.7°C	Terminals
AGM DC6-240	240	6	320x176x247mm	31	700	270	M8
AGM DC12-8	8	12	151x65x101mm	2.5	-	-	6mm tab
AGM DC12-14	14	12	151x98x101mm	4.4	-	-	6mm tab
AGM DC12-22	22	12	181x77x167mm	5.8	-	-	6mm tab
AGM DC12-38	38	12	197x165x170mm	12.5	-	-	M6
AGM DC12-60	60	12	229x138x227mm	20	280	80	M6
AGM DC12-90	90	12	350x167x183mm	27	400	130	M6
AGM DC12-110	110	12	330x171x220mm	32	500	170	M8
AGM DC12-130	130	12	410x176x227mm	38	550	200	M8
AGM DC12-165	165	12	485x172x240mm	47	600	220	M8
AGM DC12-220	220	12	522x238x240mm	65	650	250	M8
AGM DC12-240	240	12	522x240x224mm	67	650	250	M8 inset

AGM SUPER CYCLE

Features: • AGM Super Cycle batteries are the result of recent electrochemistry developments • The positive plate paste is less sensitive to softening and new additives to the electrolyte reduce sulphation, even under deep discharges • Other benefits over deep cycle AGM include slightly smaller size and weight, increased cycle life and abiltiy to withstand deeper discharge depth • The AGM Super Cycle range can deliver over 700 cycles to 60% DoD

12V AGM Super Cycle							
Model	C20 Capacity (Ah)	Voltaage (V)	Dimensions (LxWxH)	Weight (Kg)	CCA @ -17.8°C	Reserve Capacity @ 26.7°C	Terminals
AGM SC12-15	15	12	151x100x103mm	4.1	-	-	M5 inset
AGM SC12-25	25	12	181x77x175mm	6.5	-	-	M5 inset
AGM SC12-38	38	12	267x77x175mm	9.5	-	-	M5 inset
AGM SC12-60	60	12	224x135x178mm	14	300	90	M6 inset
AGM SC12-100	100	12	260x168x215mm	26	500	170	M6 inset
AGM SC12-125	125	12	330x171x214mm	33	550	220	M8 inset
AGM SC12-170	170	12	336x172x280mm	45	600	290	M8 inset
AGM SC12-230	230	12	532x207x226mm	57	700	400	M8 inset




GEL DEEP CYCLE

GEL Deep Cycle batteries utilize VRLA technology and differ from AGM in the respect that the electrolyte is immobilized in a silicone based gel. Gel batteries generally have a longer service life and better cycle life than AGM, but are more limited in capacity.

Features: • The charging voltages for GEL batteries are slightly lower than AGM and can be found on the data sheet. Gel batteries can deliver over 750 cycles to 50% DoD

12V GEL Deep Cycle							
Model	C20 Capacity (Ah)	Voltaage (V)	Dimensions (LxWxH)	Weight (Kg)	CCA @ -17.8°C	Reserve Capacity @ 26.7°C (80°F)	Terminals
GEL DC12-60	60	12	229x138x227mm	20	250	70	M6
GEL DC12-90	90	12	350x167x183mm	26	360	120	M8
GEL DC12-110	110	12	330x171x220mm	33	450	150	M8
GEL DC12-130	130	12	410x176x227mm	38	500	180	M8
GEL DC12-165	165	12	485x172x240mm	48	550	200	M8
GEL DC12-220	220	12	522x238x240mm	66	600	220	M8
GEL DC12-265	265	12	520x268x223mm	75	650	250	M8

LEAD CARBON

Lead-carbon batteries are VRLA. The active negative plate material (usually lead-oxide) is replaced with a lead-carbon composite material. The benefits of this include reduced sulphation, improved charge acceptance due to higher efficiency and reduced corrosion of the positive plate. The overall result is improved cycle life

12V Lead Carbon VRLA							
Model	C20 Capacity (Ah)	Voltaage (V)	Dimensions (LxWxH)	Weight (Kg)	CCA @ -17.8°C	Reserve Capacity @ 26.7°C (80°F)	Terminals
LC12-106	106	12	410x172x225mm	36	500	170	M8
LC12-160	160	12	532x207x226mm	55	600	290	M8

LITHIUM SUPERPACK

Lithium SuperPack batteries are extremely easy to install, not needing any additional components. The internal switch will disconnect the battery in case of over discharge, over charge or high temperature. Lithium SuperPack batteries can be connected in parallel. Series connection is not allowed.


Features: • Built in BMS protection for high/low voltage and temperature, overload and current limit • "Round trip" energy efficiency of over 90% even in partial discharge conditions • Over 2500 cycles to 80% DoD (25°C)

Lithium SuperPack	12.8/20	12.8/60	12.8/100 (high current)	12.8/200	25.6/50
Chemistry	LiFeP04 (LFP)				
Nominal voltage	12.8V				25.6V
Nominal capacity @ 25°C	20Ah	60Ah	100Ah	200Ah	50Ah
Nominal capacity @ 0°C	16Ah	48Ah	80Ah	160Ah	40Ah
Nominal energy @ 25°C	256Wh	768Wh	1280Wh	2560Wh	1280Wh
Cycle life @ 80% DoD and 25°C	2500				
Capacity and energy loss	(per 100 cycles, @25°C, 100% DoD} <1%				
	CHARGE AND DISCHARGE				
Max. cont. discharge current	30A	30A	100A	70A	50A
Peak discharge current (10 sec)	80A	80A	150A	100A	100A
End of discharge voltage	10V				20V
Charge voltage, absorption	14,2V-14.4V				28.4V-28.8V
Charge voltage, float	13.5V				27V
Max. cont. charge current	15A	30A	100A	70A	50A
	OPERATING CONDITIONS				
Parallel configuration	Yes, unlimited				
Series configuration	No				
Operating temperature	Discharge: -20°C to +50°C, Charge: 0°C to 45°C				
Storage temperature	-40°C to +65°C				
Max. storage time from full charge	1 year < 25°C, 3 months < 40°C				
Humidity	Max 95%				
	GENERAL				
Can be mounted on it's side	Please see data sheet for permitted orientations				
Terminal size (threaded insert)	M5	M6	M8	M8	M8
Dimensions (HxWxD)	167 x 181 x 77mm	213 x 229 x 138mm	220 x 330 x 172mm	208 x 520 x 269mm	220 x 330 x 172mm
Weight	3.5Kg	9.5Kg	14Kg	21Kg	14Kg

SMART LITHIUM

Victron Energy Lithium Smart batteries are constructed using Lithium Iron Phosphate (LiFePO4) cells and are available in 12.8V or 25.6V in various capacities. They can be connected in series, parallel and series/parallel so that a battery bank can be built for system voltages of 12V, 24V or 48V. The maximum number of batteries in one system is 20, which results in a maximum energy storage of 84kWh in a 12V system and up to 102kWh in a 24V and 48V system. They include active internal cell balancing and require the use of an external BMS for battery protection - 6 BMS options are available and listed on page 47. Please contact a member of our technical team if you would like any support with system design.

Features: • Built in Bluetooth enabling monitoring of cell voltages, temperature and alarm status via the Victron connect app • "Daisy chain" connection to BMS when used in series/parallel configuration • Maximum of 20 batteries can be used in a bank for 12V, 24V and 48V systems • See data sheets and manuals for further information

Smart Lithium	12.8/50	12.8/100	12.8/180	12.8/200	25.6/100	25.6/200-a
Chemistry	LiFePO4 (LFP)					
Nominal voltage	12.8V				25.6V	25.6V
Nominal capacity @ 25°C	50Ah	100Ah	180Ah	200Ah	100Ah	200Ah
Nominal capacity @ 0°C	40Ah	80Ah	150Ah	160Ah	80Ah	160Ah
Nominal energy @ 25°C	640Wh	1280Wh	2304Wh	2560Wh	2560Wh	5120Wh
	CYCLE LIFE					
80% DoD	2500					
70% DoD	3000					
50% DoD	5000					
	CHARGE AND DISCHARGE					
Max. cont. discharge current	100A	200A	360A	400A	200A	400A
Recommended continuous discharge current	<50A	<100A	<180A	<200A	<100A	<200A
End of discharge voltage	11.2V				22.4V	
Charge voltage, absorption	140.0V - 14.2V				28V - 28.4V	
Charge voltage, float	13.5V				27V	
Max. charge current	100A	200A	360A	400A	200A	400A
Recommended charge current	<30A	<50A	<90A	<100A	<50A	<100A
	OPERATING CONDITIONS					
Parallel configuration	Yes, max. 5					
Series configuration	Yes (max 4 x 12V), (max 2 x 24V). Maximum system voltage 48V nominal (51.2V)					
Operating temperature	Discharge: -20°C to +50°C, Charge: 5°C to 50°C					
Storage temperature	-45°C to +65°C					
Max. storage time from full charge	1 year < 25°C					
Humidity	Max. 95%					
	GENERAL					
Can be mounted on it's side	Yes, please see data sheet for permitted orientations				Yes, see data sheet	
Terminal size (threaded insert)	M8	M8	M8	M8	M8	M8
Dimensions (HxWxD)	199x188x147mm	197 x 321x152mm	237x 321x152mm	237x 321x152mm	197x 650x163mm	237x 650x163mm
Weight	7Kg	14Kg	18Kg	20Kg	28Kg	39Kg
NOTE	The Smart Lithium range of lithium batteries are not compatible with NG series batteries or BMS - please see data sheet or contact our technical team for further information					

SMART LITHIUM NG SERIES

Building on the success of the Smart Lithium range, the NG (Next Generation) series incorporates some significant enhancements. Tailored for those seeking advanced and reliable energy storage, the Lithium NG series marks a pivotal advancement in Victron's product lineup, ready to meet the demands of tomorrow.

Please contact a member of technical team if you require any advice or support on lithium batteries.

Features: • Multiple improvements in read-out of individual cell voltages and temperature • Maximum single bank size increased to 385kWh • Modules available in 12V, 24V and 48V • IP65 protection class • Bracket and strap mounting

Smart Lithium NG Series	12.8/100	12.8/150	12.8/200	12.8/300	25.6/100	25.6/200	25.6/300	51.2/100
Chemistry	LiFeP04 (LFP)							
Nominal voltage	12.8V	12.8V	12.8V	12.8V	25.6V	25.6V	25.6V	51.2V
Nominal capacity @ 25°C	100Ah	150Ah	200Ah	300Ah	100Ah	200Ah	300Ah	100Ah
Nominal energy @ 25°C	1280Wh	1920Wh	2560Wh	3840Wh	2560Wh	5120Wh	7680Wh	5120Wh
	CYCLE LIFE							
80% DoD	2500							
70% DoD	3000							
50% DoD	5000							
	CHARGE AND DISCHARGE							
Max. cont. discharge current (C rate)	100A (1C)	150A	200A (1C)	300A (1C)	100A (1C)	200A (1C)	300A (1C)	100A (1C)
End of discharge voltage	11.2V	11.2V	11.2V	11.2V	22.4V	22.4V	22.4V	44.8V
Charge voltage, absorption	14.0V-14.4V				28V-28.4V			46V-56.8V
Charge voltage, float	13.5V				27V			54V
Max. charge current	100A	150A	200A	300A	100A	200A	300A	100A
Self discharge rate	<3% per month @25°C							
	OPERATING CONDITIONS							
Series/parallel configuration	Yes, max. 50 blocks in system, max 48V nominal system voltage							
Operating temperature	Discharge: -20°C to +50°C, Charge: 5°C to 50°C							
Storage temperature	-45°C to +70°C							
Humidity	Max. 95%							
	GENERAL							
Can be mounted on it's side	Yes, please see data sheet for permitted orientations							
Terminal size (threaded insert)	M8 (threaded inserts with bolts)							
Protection Category	IP65							
Dimensions (HxWxD)	235x197x160mm	205x250x205mm	235x341x160mm	206x447x205mm	235x341x160mm	235x648x162mm	206x841x205mm	235x648x162mm
Weight	9Kg	14Kg	19Kg	29Kg	19Kg	37Kg	52Kg	37Kg
NOTE	NG series lithium batteries must be used with NG BMS only. Please see data sheet for further information							

BMS RANGE

A "Battery Management System" or BMS is a device that provides electronic control and protection for the cells in a lithium battery. Victron's "Superpack" batteries have a BMS built in, where the Smart and NG ranges require a separate BMS to be installed outside of the battery.

Victron offer a range of BMS options for the Smart lithium ranges to suit different applications.

The main advantage of Victron's external BMS is that it can be used to control chargers or loads in the system in the event of the battery temperature or voltage becoming out of tolerance. If you are unsure which BMS suits your needs or if you require any other assistance, please see Victron's data sheet or contact our sales team and we will be happy to help.

BMS Model	Description	
Small BMS with pre-alarm	An all in one BMS, suitable for 12V, 24V or 48V systems. Includes charger disconnect, load disconnect and pre-alarm outputs. Suitable for a variety of small system configurations, however the small BMS is not compatible for use with VE Bus Multiplus or Quattro inverter/chargers as it does not have a VE Bus interface connection. Also now available as an NG model which includes Bluetooth.	
Smart BMS CL 12/100	The Smart BMS CL 12/100 has been designed specifically for 12V systems that incorporate a 12V alternator. The BMS CL12/100 monitors and protects each invidual cell within the battery (or bank) and will disconnect the alternator, charge sources or DC loads in the event of high or low battery voltage or over-temperature. The dedicated alternator input provides current limiting and one-way traffic from the alternator into the battery, so any size alternator and start battery can be safely connected to the Smart Lithium battery. This BMS is also equipped with a remote on/off connection to turn the BMS (and the system) off via a remote switch, and a pre-alarm contact to provide a warning signal before the BMS disconnects the batteries from the system. Bluetooth is built in for monitoring and configuration via the VictronConnect app, and now with "Instant Readout" it is possible to read out the most important values in real time without the need to connect to the BMS, which enables diagnostics at a glance.	
Smart BMS 12/200	The Smart BMS 12/200 has been designed specifically for 12V systems that incorporate a 12V alternator, such as in vehicles and boats. The Smart BMS 12/200 monitors and protects each invidual cell within the battery (or bank) and will disconnect the alternator, charge sources or DC loads in the event of high or low battery voltage or over-temperature. It combines a current limiter, battery combiner and battery protector in a robust, compact solution and allows safe connection of any sized alternator, starter battery, loads and chargers to the Smart Lithium battery. The dedicated alternator input provides current limiting and one-way traffic from the alternator into the battery, so any size alternator and start battery can be safely connected to the Smart Lithium battery. This BMS is also equipped with a remote on/off connection to turn the BMS (and the system) off via a remote switch, and a pre-alarm contact to provide a warning signal before the BMS disconnects the batteries from the system. Bluetooth for monitoring and configuration via the VictronConnect app and with "Instant Readout" it is possible to read out the most important values in real time without the need to connect to the BMS, which enables diagnostics at a glance.	
VE Bus BMS V2	The VE Bus BMS V2 supersedes the original VE Bus BMS, and connects to a Multiplus, Quattro or Phoenix (VE Bus) inverter via the RJ45 port, providing control over the unit in the event of one of the cell parameters (voltage, temperaure) going out of tolerance. In addition, other products can also be controlled (on/off) via load disconnect and charge disconnect connections, and a pre-alarm connection is available for advanced warning of pending battery disconnect. This BMS has a dedicated power output terminal (GX-Power) for a GX device and an auxiliary power input terminal (Aux-In) for an external DC power source, such as an AC/DC adaptor. In the event of a system shutdown, the GX device will remain powered via the auxiliary power input or be disconnected to prevent further battery discharge.	
VE Bus BMS v2 NG	The VE Bus BMS V2 NG has the same connections, functionality and features as the VE Bus BMS V2 (above), but is designed for use with the NG Smart Lithium battery range only, and is not compatible with the original Smart Lithium range. As such, this model has bluetooth built in.	
Lynx Smart BMS	The Lynx Smart BMS is a dedicated Battery Management System for Victron Lithium Smart Batteries. The Lynx Smart BMS is part of the Lynx modular DC distribution system and is the most feature rich and complete option in the range. It is available in two versions: 500A (with M8 busbar connections) and 1000A (with M10 busbar connections). In addition to voltage and temperature protection, the Lynx Smart includes Bluetooth for use with Victron's VEConnect app, for setup and monitoring, including Instant Readout - key data of the BMS at-a-glance. Built in battery monitor, indicating state of charge percentage and more data. Built-in 500A or 1000A contactor used as a fallback safety mechanism and also suitable as a remote controllable main system switch.	
Lynx Smart BMS NG	The Lynx Smart BMS NG is a dedicated Battery Management System for Victron Lithium NG Batteries. The Lynx Smart BMS NG is part of the Lynx modular DC distribution system and with similar functionality to the Lynx Smart BMS, it is the most feature rich and complete option in the range. It is available in two versions: 500A and 1000A, both with M10 busbar connections. This version is specifically for use with the NG lithium battery range only.	

BATTERYPROTECT

The BatteryProtect and Smart BatteryProtect disconnect the battery from non-essential loads before it is completely discharged (which would damage the battery) or before it has insufficient power left to crank the engine.

The Smart BatteryProtect can also be used as a system on/off switch.

Features: • 12V/24V auto sensing • Separate 48V model also available • Easy programming • LFP setting - can be controlled by a Victron BMS • Ultra low current consumption • Ignition-proof (MOSFET switching, no relays) • Bluetooth (Smart version)

BatteryProtect	BP-65	BP-100	BP-220	BP-48V-100
Max. continuous load current	65A	100A	220A	100A
Peak current (30secs)	250A	600A	600A	250A
Operating voltage range	6-35VDC			24-64V
BatteryProtect current consumption	On:1.5mA, Off or low voltage shutdown:0.6mA			On:2mA, Off or low voltage shutdown 1.5mA
Smart BatteryProtect current consumption (BLE on)	On:1.4mA, Off or low voltage shutdown:0.9mA			voltage shutdown: 1.7mA
Smart BatteryProtect current consumption (BLE off)	On:1.2mA, Off or low voltage shutdown:0.7mA			voltage shutdown: 1.6mA
Alarm ouptut delay	12 secs			
Maximum load on alarm output	50mA (short-circuit proof)			
Load disconnect delay	90secs (immediate if triggered by BMS)			
Load reconnect delay	30secs			
Default thresholds	Disengage: 10.5V or 21V, Engage: 12V or 24V			Disengage: 42V, Engage: 48V
Operating temperature range	-40°C to +40°C (up to 60% of nominal load at 50°C)			
Protection category	IP67 body with electronics (potted), IP00 (connections)			
Connections	M6 plus terminal block	M8 plus terminal block	M8 plus terminal block	M8 plus terminal block
Weight	0.2Kg	0.5Kg	0.8Kg	0.8Kg
BatteryProtect dimensions (HxWxD)	40 x 48 x 106mm	59 x 42 x 115mm	62 x 123 x 120mm	62 x 123 x 120mm
Smart BatteryProtect dimensions (HxWxD)	48 x 55 x 106mm	61 x 41 x 164mm	60 x 123 x 121mm	62 x 123 x 120mm

SYSTEM MONITORING

Victron's GX range enables remote monitoring (via WiFi) and remote control of your system. The GX device collects data from the equipment connected to it and sends the information to the VRM website portal when WiFi is available, and the information can be monitored remotely from wherever you can connect to the VRM.

This system is widely used for marine, vehicle, industrial and home/off grid applications.

There are several GX models available with various options and connection ports to suit a wide range of products along with systems of different sizes/scales, details are listed below and more comprehensive information can be found on Victron's website and data sheets.

GX Model	Description	Connections/ports available
Cerbo GX	The Cerbo GX is a versatile communication centre that takes remote system monitoring to the next level, with all the hardware connection possibilities to fit your every need. Powerful dual-core processer, integrates with MFD's & NMEA2000, Bluetooth connection to VE Connect app, optional waterproof GX Touch displays.	Power input (8-70V DC), LAN/Ethernet x 1 (RJ45), HDMI x 1, USB x 3 (1 power), VE Direct x 3, VE Bus x 2, VE Can x2, BMS Can x2, programmable relay x2, resistive tank senders x4, temperature sensors x4, digital inputs x4, microSD card slot x1.
Cerbo GX mk2	The Cerbo GX mk2 has the same enclosure and almost the same design as the Cerbo GX, but with some electronic improvements - see data sheet for further details.	Power input (8-70V DC), LAN/Ethernet x 1 (RJ45), HDMI x 1, USB x 3 (1 power), VE Direct x 3, VE Bus x 2, VE Can x2, BMS Can x2, programmable relay x2, resistive tank senders x4, temperature sensors x4, digital inputs x4, microSD card slot x1.
Colour Control GX	Victron's first released GX product, the CCGX has a colour display and is controlled by push buttons.	Power input (8-70V DC), LAN/Ethernet x 1 (RJ45), USB x 2, VE Direct x 2, VE Bus x 2, VE Can x2, BMS Can x2, programmable relay x1.
Ekrano	The latest GX model with integrated 7" waterproof touch screen.	Power input (8-70V DC), LAN/Ethernet x 1 (RJ45), USB x 2, VE Direct x 3, VE Bus x 2, VE Can1 x2, VE Can2 x2, programmable relay x2, resistive tank senders x3, temperature sensors x2, digital inputs x2, microSD card slot x1.

The GX Touch 50 and Touch 70 are optional accessories for the Cerbo GX models, offering local monitoring and control for your system via a waterproof touch control display. The Touch 50 is a 5" waterproof screen and the Touch 70 is a larger 7" version. These units can be flush or wall/surface mounted and the respective mounting kits are available separately.

GX Model	Description	Connection/ports available
GX Touch 50	5" Touch screen for Cerbo GX and Cerbo GX mk2	HDMI, USB (power)
GX Touch 70	7" Touch screen for Cerbo GX and Cerbo GX mk2	HDMI, USB (power)
Flush mount kit for Touch 50	For flush mounting of Touch 50	Fixings included
Flush mount kit for Touch 70	For flush mounting of Touch 70	Fixings included
Wall mount kit for Touch 50	For wall/surface mounting of Touch 50	Fixings included
Wall mount kit for Touch 70	For wall/surface mounting of Touch 70	Fixings included

REMOTE PANELS

In many applications it is convenient to be able to switch a unit on or off, see the status of a unit or control other functionality in a location several metres away from where the unit is installed.

Victron offer a range of remote panels to suit.

Depending on the equipment and panel, the functions of the remote can include on/off switch, buttons, LED or digital status indications and variable controls for current limiting. Please see descriptions in the table below:

GX Model	Description	Connection/ports available	
Digital Multi Control	Control panel with AC current limit for Multiplus, aluminium fascia	RJ45 (cat5)	
Digital Multi Control (GX)	Control panel with AC current limit for Multiplus, plastic fascia, 90 degree RJ45 port (GX)	RJ45 (cat5)	
Phoenix inverter control	Control panel for Phoenix (VE Bus) inverter	RJ45 (cat5)	
Phoenix inverter control VE Direct (GX)	Control panel for Phoenix (VE Direct) inverter	screw clamp terminals, 2 wire	
Phoenix charger control	Control panel for Phoenix VE Bus battery charger	RJ45 (cat5)	
Skylla control	Control panel for Skylla TG chargers, aluminium fascia with LED's and current limit	screw clamp terminals	
Skylla-i control (GX)	Skylla-i control panel, plastic fascia (only for Skylla-i battery charger) GX type	RJ45 (cat5)	
Charger Switch	On/Off toggle switch and LED for Skylla TG charger	screw clamp terminals	
Battery Alarm (GX)	LED's for high/low voltage, audible alarm and alarm relay.	screw clamp terminals, 2 wire plus relay	
VE Net GMDSS panel	GMDSS control and monitoring panel, for Skylla TG 24/30 and 24/50 GMDSS only	RJ45 (cat5)	

Note: for other specific displays/monitors such as MPPT, PWM, they are listed on the product page.

ACCESSORIES/INTERFACES

A range of interfaces, meters, sensors and adaptors for connectivity of Victron products.

Please see the description in the table below for more information.

GX Model	Description	Connections/Cable Type	
GX Tank 140	The GX Tank 140 takes readings from up to four tank level sensors and connects to a GX device. It is compatible with current senders (4 to 20 mA) as well as voltage senders (0 to 10 V).	1.5m USB cable, 1 x 2 way terminal block (power), 4 x 3way terminal block (senders)	
VE Can resistive tank sender adaptor	Allows a standard resistive tank level sender to connect to the Color Control GX.	2 x sprung cable clamps, 2 x VE Can RJ45 ports (requires power from can network)	
VE Direct Bluetooth Smart Dongle	Enables Bluetooth connection to a non-Bluetooth product equipped with a VE Direct port.	VE Direct plug	
VEBus Smart Dongle	Can serve 2 purposes. Connects to VE Bus unit (QUA, PMP etc) to enable Bluetooth connection for VE Connect. Can also be used as a temperature/voltage sensor (built in) or can also connect to external temperature sensor (use BMV temperature sensor).	Screw clamps, RJ45 (cat5)	
MK3 - USB	Connects VE Bus products such as Multiplus, Multiplus II, Quattro, EasyPlus to a computer equipped with VE Configure software for adjustment of settings/configurations and other advanced functionality including firmware updates. Only for use by suitably trained/ experienced engineer/professional.	USB plug, RJ45 (cat5) port.	
VE Direct - USB interface	Connects products with a VE.Direct connection to devices with a USB port, for example a computer or GX device.	USB plug, VE Direct plug.	
Smart Battery Sense	Bluetooth enabled battery voltage and temperature sensor for Victron Smart/VE Direct MPPT Solar and Smart IP43 Chargers.	Pre-wired positive and negative cables with 8mm eyelets	
Temperature Sensor - QUA, PMP, GX	Temperature sensor for Quattro, Multiplus, Cerbo/Venus/CCGX/Ekrano, VE Can MPPT, Skylla-S, Skylla-I, Skylla TG, Lynx Shunt	Pre-wired cable	
Temperature Sensor - BMV	Temperature sensor for battery monitors with temperature support, 702, 712, SmartShunt and VE Bus Smart Dongle	Pre-wired cable	
Temperature Sensor - Type C	Temperature sensor for RS Smart Solar inverter	Pre-wired cable	
Battery Balancer	Equalizes the state of charge of two series connected 12V batteries, or of several parallel strings of series connected batteries, 24V	Screw clamp terminals	

SOLAR PANELS

A range of high quality solar panels from 20W to 360W, including Victron's monocrystalline rigid range, SEC Solar semi-flexible and MiPV CIGS thin film panels. Victron's aluminium framed rigid panels represent great value in terms of £ per watt and are widely used in marine, mobile and off-grid applications. Rear mounted cable junction box and all panels in this range over 90W include 900mm cables with MC4 connectors.
The SEC Solar semi-flexible panel is a popular choice for mobile (vehicle or marine use) due to versatile installation possibilties on curved surfaces and widely used by van converters for leisure and commercial vehicles.

Features: • Low voltage-temperature coefficient to enhance performance in high temperature operation • Sealed, waterproof junction box provides high safety level • High performance bypass diodes minimise loss of power caused by shade/dirt contamination • Advanced EVA encapsulation with triple layer back-sheet meets the most stringent safety requirements for high voltage operation • High quality, high transmission tempered glass provides enhanced stiffness and impact resistance • 90W+ models include 0.9m pre-wired cables with MC4 (PV-ST01) connectors

Victron BlueSolar Monocrystalline	20W	30W	40W	55W	90W	130W	150W	185W	215W	305W	360W
Open circuit voltage (Voc)	22.6V	22.87V	22.45V	22.9W	24.06V	22.83V	22.3V	24.11V	45.82V	39.7V	47.4V
Number of cells in series	36								72	60	72
Nominal power	20W	30W	40W	55W	90W	130W	150W	185W	215W	305W	360W
Maximum array system voltage	1000V										
Temperature range	-40°C to +85°C										
Length of cable/connector type	No cable				900mm/MC4						
Output tolerance	+/-3%	+/-3%	+/-3%	+/-3%	+/-3%	+/-3%	+/-3%	+/-3%	+/-3%	+/-3%	+/-3%
Product warranty	5 years										
Electrical performance warranty	10 years (90% output power), 25 years 80% output power										
Weight (Kg)	1.9	2.2	3.1	4.0	6.1	9.1	11.0	11.0	11.7	19.0	23.0
Dimensions L x W X H (mm)	440x350x25	560x350x25	425x668x25	545x668x25	780x668x30	1200x668x30	1485x668x30	1485x668x30	1580x705x35	1658x1002x35	1980x1002x40

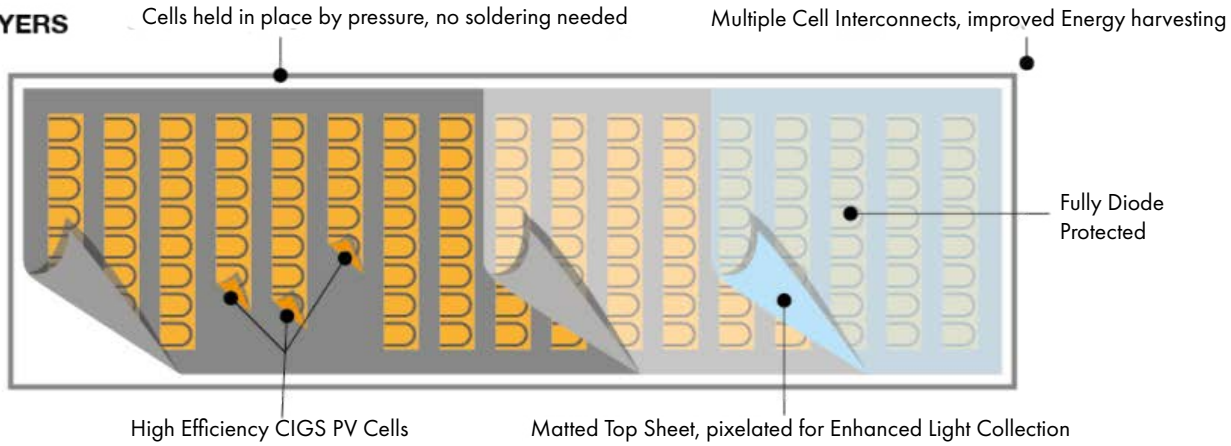
SEC Solar's 120W semi-flexible is a lightweight monocrystalline solar panel with flame-retardant ETFE coating on both the front and back sides which helps protect the solar cells from external impact. Its special grain design can reduce reflection of sunlight for improved energy absorbtion and also improved grip when walked on compared with smoother coatings. The bi-facial ETFE coating makes this panel suitable for harsh conditions, including marine environments. Black backing layer and top mounted junction box with 900mm cables and MC4 connectors.

SEC Solar semi-flexible	120W
Open circuit voltage (Voc)	22.3V
Number of cells in series	33
Junction box	Top mounted
Nominal power	120W
Maximum array system voltage	200V
Temperature range	-20°C to +75°C
Length of cable/connector type	900mm/MC4
Output power tolerance	+/-3%
Warranty	3 years
Cell type/efficiency	Monocrystalline / 22.7%
Weight (Kg)	3.9
Dimensions L x W X H (mm)	1120x580x4

SOLAR PANELS

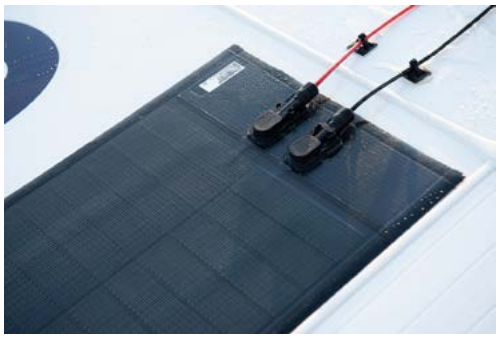
MiPV thin film panels are Shield's premium semi-flexible solar panel range, manufactured in the UK. These panels are based on CIGS technology (Copper Indium Gallium Selenide), providing more flexibilty, optimum low sunlight performance, higher output voltage and lighter weight than traditional silicone based technology, and are particulary resilient to fatigue caused by vibration in mobile applications.

MODULE LAYERS



Features: • Shield have selected the most popular range of sizes from MiPV's Flextron range, but custom sizes of single, double and triple lane options are available to special order, from 40W to 355W • All panels are supplied with "peel and stick" self adhesive backing with top mounted cable junction boxes for MC4 connectors, but rear mount are available, also to special order

MiPV CIGS	115W Single Lane	135W Double Lane	155W Double Lane	115W Triple Lane	140W Triple Lane
Open circuit voltage (Voc)	36.05V	42.72V	48.07V	36.05V	44.06V
Number of cells in series (CIGS)	54	64	72	54	66
Nominal power	115W	135W	155W	115W	140W
Maximum array system voltage	1000V				
Temperature range	-40°C to +84°C				
Connector type	MC4 junction box				
Output tolerance	+/-5%				
Product warranty	10 years				
Electrical performance warranty	25 years				
Protection category	IP67 junction box, IP68 cells				
Weight including adhesive backing	3.81Kg (per sq m)				
Height (mm)	4mm including adhesive backing, 19mm inc. junction box				
Dimensions LxWxH (mm)	2521x358mm	1557x674mm	1732x674mm	942x990mm	1118x990mm



SOLAR CHARGE CONTROLLERS

When using solar power to charge a battery, a charge controller must be installed between the PV array (solar panels) and the battery. The purpose of the charge controller is to ensure batteries are charged at the correct voltage and current, by regulating the power produced by the PV array. The two common types of charge controller available are PWM and MPPT. Victron offer a comprehensive range of PWM and MPPT solar charge controllers that are widely used in marine, vehicle, off-grid, industrial and domestic applications.

PWM-Pro charge controllers are a good choice for smaller systems with moderate PV temperatures. They offer a cost-effective solution with charge output currents from 5A to 30A for 12V and 24V systems.

Features: • Load output with streetlight function • 3 stage automatic charge regime • Optional remote control panel with LCD display • Optional external temperature sensor • . Programmable parameters using software (laptop/PC) or remote panel

PWM-Pro	12/24-5	12/24-10	12/24-20	12/24-30
Battery Voltage	12V or 24V with automatic system voltage detection			
Rated charging current	5A	10A	20A	30A
Automatic load disconnect	Yes			
Maximum PV voltage (Voc)	28V (12V) / 55V (24V). *for 12V systems use 36 cell solar panels, for 24V systems use 72 cell solar panels			
Self-consumption	<10mA			
Load output	Manual control + low voltage disconnect			
Protection	Battery reverse polarity (fuse), output short circuit, over-temperature			
Battery temperate sensor	Optional, use part number SCC940100100			
Temperature compensation	-30mV/°C (12V), -60mV/°C (24V), only with temperature sensor installed			
Remote panel	Optional, use part number SCC900300000			
Grounding	Common positive			
Operating temperature range	-20°C to +50°C			
Humidity	Max 98% (non-condensing)			
Terminal (cable) size	4mm²	4mm²	10mm²	10mm²
Protection category	IP30			
Weight	0.13Kg	0.13Kg	0.3Kg	0.5Kg
Dimensions (HxWxD)	138x70x37mm	138x70x37mm	160x82x48mm	200x100x57mm

SOLAR CHARGE CONTROLLERS

When using solar power to charge a battery, a charge controller must be installed between the PV array (solar panels) and the battery. The purpose of the charge controller is to ensure batteries are charged at the correct voltage and current, by regulating the power produced by the PV array. The two common types of charge controller available are PWM and MPPT. Victron offer a comprehensive range of PWM and MPPT solar charge controllers that are widely used in marine, vehicle, off-grid, industrial and domestic applications.

The PWM-Duo is a solar charge controller with the added benefit of 2 battery outputs - this model can charge 2 batteries simultaneously, providing an ideal solution in a small system, for example, charging a starter battery and service battery on a boat, camper or motorhome.

Features: • LCD Display for status monitoring and set-up • External temperature sensor included • Two 5V USB outputs (max current 2A combined)
• Programmable charging algorithms for AGM, GEL, Flooded lead-acid and LFP batteries (with built in BMS)

PWM-Duo	12/24-20
Battery voltage	12V or 24V with automatic system voltage detection (not automatic for LFP)
Rated charging current	20A
Automatic load disconnect	10.5V/21V
Maximum PV voltage (Voc)	28V (12V) / 55V (24V). *for 12V systems use 36 cell solar panels, for 24V systems use 72 cell solar panels
Self-consumption	10mA
Load output	2 x USB ports, 5V 2A
Protection	Reverse polarity (fuse), over-temperature
Battery temperate sensor	Yes, included
Temperature compensation	-30mV/°C (12V), -60mV/°C (24V), only with temperature sensor installed
LCD display	For status monitoring and system set-up
Grounding	Common negative
Operating temperature range	-35°C to +55°C (fulll load)
Humidity	Max 95% (non-condensing)
Terminal (cable) size	16mm²
Protection category	IP20
Weight	0.3Kg
Dimensions (HxWxD)	102x184x48mm

SOLAR CHARGE CONTROLLERS

Victron's BlueSolar MPPT (maximum power point tracking) solar charge controllers offer improved performance over PWM, particularly in varying environmental conditions such as low light and where partial shading may be a concern. MPPT technology enables the solar yield to be optimised, providing improved performance in low temperatures, with the added benefit that solar panels can be connected in series for higher input voltage, improving efficiency in cabling and also extending charging time through the day. The BlueSolar range can be upgraded to include Bluetooth connectivity using the optional VE Direct Bluetooth Smart Dongle, but the range is also available as "SmartSolar MPPT" with built in Bluetooth.

Features: • Load output (units up to 20A) • Streetlight function • Automatic battery voltage sensing and adjustable charging regime with selectable presets for flooded, AGM, GEL and lithium batteries • Optional remote control panel with LCD display • See table below and data sheets for other features

MPPT Model	Maximum PV Open Circuit Voltage	Rated Charge Current	Battery Voltage	BlueSolar / SmartSolar model available	PV nominal power @12V	PV nominal power @24V	PV nominal power @48V	Com Ports	Weight (Kg)	Dimensions HxWxD (mm)	Connections for PV
75/10	75V DC	10A	12/24V	Blue/Smart	145W	290W	n/a	VE Direct	0.50	100x113x40mm	Screw clamp 6mm²
75/15	75V DC	15A	12/24V	Blue/Smart	220W	440W	n/a	VE Direct	0.50	100x113x40mm	Screw clamp 6mm²
100/15	100V DC	15A	12/24V	Blue/Smart	220W	440W	n/a	VE Direct	0.60	100x113x50mm	Screw clamp 6mm²
100/20	100V DC	20A	12/24V/36V/48V	Blue/Smart	290W	580W	1160W	VE Direct	0.65	100x131x60mm	Screw clamp 6mm²
100/30	100V DC	30A	12/24V	Blue/Smart	440W	880W	n/a	VE Direct	1.30	130x186x70mm	Screw clamp 16mm²
100/50	100V DC	50A	12/24V	Blue/Smart	700W	1400W	n/a	VE Direct	1.30	130x186x70mm	Screw clamp 16mm²
150/35	150V DC	35A	12/24V/36V/48V	Blue/Smart	500W	1000W	2000W	VE Direct	1.25	130x186x70mm	Screw clamp 16mm²
150/45	150V DC	45A	12/24V/36V/48V	Blue/Smart	650W	1300W	2600W	VE Direct	1.25	130x186x70mm	Screw clamp 16mm²
150/60	150V DC	60A	12/24V/36V/48V	Blue/Smart	860W	1720W	3440W	VE Direct	3.00	185(Tr) or 215 (MC4)x250x90mm	Screw clamp 35mm² or MC4
150/70	150V DC	70A	12/24V/36V/48V	Blue/Smart	1000W	2000W	4000W	VE Direct	3.00	185(Tr) or 215 (MC4)x250x90mm	Screw clamp 35mm² or MC4
150/70 VE Can	150V DC	70A	12/24V/36V/48V	Blue/Smart	1000W	2000W	4000W	VE Direct/VE Can	4.50	185(Tr) or 215 (MC4)x250x95mm	Screw clamp 35mm² or MC4
150/85 VE Can	150V DC	85A	12/24V/36V/48V	Smart	1200W	2400W	4900W	VE Direct/VE Can	4.50	216 (Tr) or 246 (MC4)x 295x103mm	Screw clamp 35mm² or MC4
150/100 VE Can	150V DC	100A	12/24V/36V/48V	Blue/Smart	1450W	2900W	5800W	VE Direct/VE Can	3.00	216 (Tr) or 246 (MC4)x 295x103mm	Screw clamp 35mm² or MC4
250/60	250V DC	60A	12/24V/36V/48V	Smart	860W	1720W	3440W	VE Direct	3.00	185(Tr) or 215 (MC4)x250x95mm	Screw clamp 35mm² or MC4
250/70	250V DC	70A	12/24V/36V/48V	Blue/Smart	1000W	2000W	4000W	VE Direct	3.00	185(Tr) or 215 (MC4)x250x95mm	Screw clamp 35mm² or MC4
250/70 VE Can	250V DC	70A	12/24V/36V/48V	Blue/Smart	1000W	2000W	4000W	VE Direct/VE Can	3.00	185 (Tr) or 215 (MC4) x 250 x 95mm	Screw clamp 35mm² or MC4
250/85 VE Can	250V DC	85A	12/24V/36V/48V	Smart	1200W	2400W	4900W	VE Direct/VE Can	4.50	216 (Tr) or 246 (MC4) x 295 x103mm	Screw clamp 35mm² or MC4
250/100 VE Can	250V DC	100A	12/24V/36V/48V	Blue/Smart	1450W	2900W	5800W	VE Direct/VE Can	4.50	216 (Tr) or 246 (MC4) x 295 x103mm	Screw clamp 35mm² or MC4

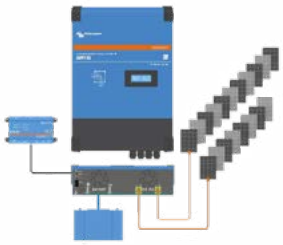
SMARTSOLAR MPPT RS

The SmartSolar MPPT RS solar charge controllers are Victron's solution for systems with large series connected PV arrays charging 48V DC battery banks. These products are perfect for large off-grid and grid connected battery systems.

Available in 5.76kW and 11.52kW models with improved safety and modernised presentation in line with the latest suite of Victron products.







Features: • Wide 65-450V DC operating solar voltage input, independent tracking inputs, full connectivity, isolated PV connections, display screen, fully programmable battery charging parameters and active cooling • New metal case design with fully covered electrical connections • Please see data sheet or user manual for more information

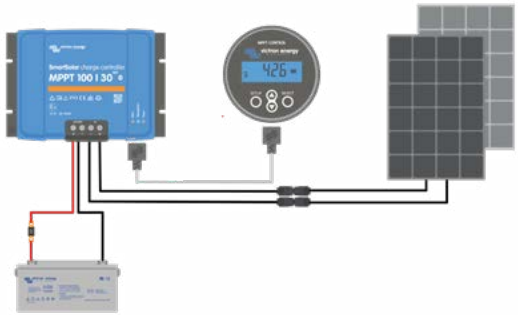
SmartSolar MPPT RS	450/100	450/200
	CHARGER	
Battery voltage	48V	48V
Rated charging current	100A	200A
Maximum efficiency	96%	96%
Self-consumption	15mA	15mA
Maximum charge power	5.8kW @ 57.6V	11.5kW @ 57.6V
Battery temperate sensor	Yes, included	Yes, included
Charge algorithm	Multi-stage adaptive (adjustable)	Multi-stage adaptive (adjustable)
LCD display	Status monitoring of battery and controller parameters	
Bluetooth	Built in, monitoring and system settings adjustable in Victron Connect	
	SOLAR	
Maximum PV voltage (Voc)	450VDC	
Start-up voltage	120V	
MPPT operating voltage range	65V - 450V	
Number of trackers	2	4
Max PV operational input current	16A per tracker	
Max PV short circuit current	20A per tracker	
Max PV array size per tracker	7200Wp (450V x 20A)	
	GENERAL	
Remote on/off	Yes	
VE Direct port	Yes	
Programmable relay	Yes	
VE Can ports	Yes x 2	
Synchonized parallel operation	Yes, up to 25 units connected via VE Can	
Protection	PV reverse polarity, output short circuit, over-temperature	
Operating temperature range	-40°C to 60°C (fan assisted cooling)	
Humidity	Max 95% (non-condensing)	
Battery connection	2 x M8 studs	4 x M8 studs
Protection category	IP21	IP21
Weight	7.9Kg	13.7Kg
Dimensions (HxWxD)	440 x 313 x 126mm	487 x 434 x 146mm

SOLAR ACCESSORIES

Solar cables are used for connecting solar panels in series/parallel and for connecting panels to a charge controller. They are high temperature rated with tinned copper conductors and fitted with MC4 connectors (male one end and female the other), which are the most common connectors used for this application. Solar cables are made up using quality materials and connectors and are available from 1-5m length in 4mm² and from 1-20m length in 6mm². Adaptors for M-F and "Y" splitter cables are also available.

Solar Cable	Description
1m x 4mm²	Solar cable with MC4 connectors fitted, 1 x M, 1 x F
3m x 4mm²	Solar cable with MC4 connectors fitted, 1 x M, 1 x F
5m x 4mm²	Solar cable with MC4 connectors fitted, 1 x M, 1 x F
1m x 6mm²	Solar cable with MC4 connectors fitted, 1 x M, 1 x F
3m x 6mm²	Solar cable with MC4 connectors fitted, 1 x M, 1 x F
5m x 6mm²	Solar cable with MC4 connectors fitted, 1 x M, 1 x F
10m x 6mm²	Solar cable with MC4 connectors fitted, 1 x M, 1 x F
20m x 6mm²	Solar cable with MC4 connectors fitted, 1 x M, 1 x F
Pair, loose MC4 connectors, M-F	MC4 connectors, black, plastic, 1 x M, 1 x F, crimp-on pins included, supplied as a pair
Solar splitter, pair, MC4 (Y)	Parallel connection adaptor 1 x M, 2 x F and 1 x F, 2 x M supplied as a pair

The MPPT Control lets you see the status of the solar charging system as well as setup all BlueSolar MPPT Charge Controllers that have a VE.Direct communications port. The MPPT Control is mounted in the familiar BMV-700 series housing, maintaining a consistent and professional look to your panels and systems monitoring equipment.



MPPT Control	Description
Display Data	PV voltage, PV power, PV daily yield, Battery charging status, Battery voltage, Charge current. Load output status, Load current
Installation	Flush mount
Front	63mm o/d
Front bezel	69x69mm
Body diameter and depth	52mm dia, 31mm depth
Protection category	IP55 (not intended for outdoor use)

ACCESSORY CABLES

For connecting certain Victron products, a range of specialist cables are available to ensure correct communication and functionality. Victron's cables are made up using quality cable and components, and while for certain cable types it may be possible to find cheaper alternatives, we recommend using Victron's cables as they have been tested and proven for quality, reliablility and longevity over many years of service.
Please see the description in the table below for more information.

The table below shows popular cable types and their common applications. Other specific cables are available, please contact our sales team for further information.

Cable	Description	Lengths available	Application	
RJ12	6 way UTP cable with connectors	0.3m, 0.9m, 1.8m, 3m, 5m, 10m, 15m, 30m	Connects BMV head unit to shunt.	
RJ45 (cat5)	8 way UTP cable with connectors (straight)	0.3m, 0.9m, 1.8m, 3m, 5m, 10m, 15m, 20m, 30m	Connects VE Bus products together including remote panel or Mk3 interface to Multiplus/ Quattro/GX	
VE Direct	4 way data cable with connectors	0.3m, 0.9m, 1.8m, 3m, 5m, 10m (right-angled connector version also available)	Control or monitoring of VE Direct compatible products, such as BMV, MPPT, small inverters, Orion XS	
VE CAN to BMS Type A	8 way UTP cable with connectors (note: special pin-out A, not "straight") current pylontech, byd etc	1.8m	Pylontech US2000C, US3000C, UP5000, US5000, Force-L, BYD B-Box to GX	
VE CAN to BMS Type B	8 way UTP cable with connectors (note: special pin-out B, not "straight")	1.8m	Pylontech US2000, US3000, UP2500 to GX	
Inverting on/off cable	One in two out signal cable	0.6m	Connects Phoenix inverters 12/180, 24/180, 12/350, 24/350 to VE Bus BMS. Also MPPT with load output	
Non-inverting on/off cable	One in two out signal cable	0.6m	Connects Skylla TG (and early BatteryProtect models) to a VE Bus BMS	
VE direct non inverting	One in two out VE Direct cable	2m	Remotely control BlueSolar and SmartSolar MPPT charge controller models	
Skylla-I remote on/off cable	One in two out signal cable (product specific)	0.6m	Connects Skylla-I to a VE Bus BMS.	

SHORE POWER CABLES & ACCESSORIES

Victron's range of shore power cables are highly recommended for use in marine and vehicle based applications where the boat or vehicle is plugged into a grid-based supply for battery charging and/or power consumption.

• The polyurethane outer sleeving is both flexible and durable, offering resistance to abrasion, oils and chemicals, and is proven to prevent growth and spread of bacteria, so is also commonly used in food production environments.

Shore Power cable	16A 15M	16A 25M	25A 15M	32A 25M
Current rating	16A	16A	25A	32A
Voltage rating	250V	250V	250V	250V
Plug type, colour	Moulded IEC 60309 2P+E, blue	Moulded IEC 60309 2P+E, blue	Moulded IEC 60309 2P+E, blue	Moulded IEC 60309 2P+E, blue
Plug type, colour	Moulded IEC 603909 3-pole, black/yellow	Moulded IEC 60309 3-pole, black/yellow	Moulded IEC 60309 3-pole, black/yellow	Moulded IEC 60309 3-pole, black/yellow
LED power on indicator	Yes, on female connector	Yes, on female connector	Yes, on female connector	Yes, on female connector
Protection cap	Yes, on female connector	Yes, on female connector	Yes, on female connector	Yes, on female connector
Cable type	H07BQ-F 3x 2,50mm² polyurethane sleeve	H07BQ-F 3x 2,50mm² polyurethane sleeve	H07BQ-F 3x 4.00mm² polyurethane sleeve	H07BQ-F 3x 6.00mm² polyurethane sleeve
Cable colour	Yellow	Yellow	Yellow	Yellow
Length	15m	25m	15m	25m
Note - All shore-power cables are supplied with a handy "organiser bag"				

• The table below includes power inlet sockets and adaptor cables, compatible with the shore power cables listed above:

Shore Power cable Accessories	Inlet SS-16A	Inlet SS-32A	Inlet PA6-16A	Plug for 16A Inlet	Plug for 32A Inlet	Adaptor Cord
Description	316 stainless steel power inlet with cover	316 stainless steel power inlet with cover	Polyamid (PA6) power inlet with cover	Fits 16A inlet, no cable	Fits 32A inlet, no cable	CEE 16A plug to CEE 32A coupling
Current rating	16A	32A	16A	16A	32A	16A
Voltage rating	250V	250V	250V	250V	250V	250V
Protection category	IP56	IP56	IP56	IP44	IP44	-

GALVANIC ISOLATION

Isolation Transformers are used to prevent electrolytic corrosion in marine applications by isolating the on-board system from the grid and above all, serves as a device to guarantee a safe electric system. Toroidal wound transformer technology for low noise and high efficiency.

Galvanic Isolators are used to Used to prevent electrolytic corrosion in marine applications by blocking low voltage DC currents between the on-board system and the grid. Galvanic isolators provide a simple and cost effective solution for galvanic isolation.




Features: • Eliminates any electrical continuity between AC shore power and the boat • Soft start circuitry will ensure that the shore circuit breaker will not trip when plugged in • 4 models available as detailed in the table below

Isolation Transformers	2000W(*)	3600W(*)	3600W Auto Input (*)	7000W
Input voltage	115 or 230V	115 or 230V	115 or 230V, with automatic switching	230V
Output voltage	115 or 230V	115 or 230V	115 or 230V	230V
Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Rating	17/8.5A	32/16A	32/16A	32A
Soft-start	Yes			
Transformer type	Torroidal, low noise, low weight			
Input circuit breaker	Yes			
Enclosure	Aluminium, Blue (RAL5012), IP21			
Weight	10Kg	23Kg	24Kg	31Kg
Dimensions (HxWxD)	375x214x110mm	362x258x218mm		
Safety	EN60076			
Note (*) - These transformers can be used as: 115V - 115V, 115V - 230V, 230V - 230V, 230V - 115V isolation transformers				

Features: • While they do not completely eliminate a connection between the boat and the shore like an isolation transformer, they are very effective in most installations, saving significant space, weight and cost • Available in 3 current ratings, detailed in the table below

Galvanic Isolators	VDI-16	VDI-32	VDI-64
Maximum current	16A	32A	64A
Peak current (20ms)	1600A	3200A	6000A
Connection	M6 stud with nut/washer	M6 stud with nut/washer	M6 stud with nut/washer
Material	Anodized Aluminium		
Protection category	IP67		
Weight	1Kg	2Kg	3.2Kg
Dimensions (HxWxD)	60x120x200mm	63x164x200mm	63x164x335mm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