

Victron MultiPlus

Inverter/Charger Battery Back-Up - 500VA to 3000VA

Revision: 8.5 - 2 April 2026

INTRODUCTION

The [Victron](#) range of Inverter/Chargers offers advanced, reliable solutions to ensure uninterrupted operation of Newton Pumping Systems during power outages. These units convert battery-stored DC energy into clean and efficient 230 VAC power, maintaining system functionality when mains power is unavailable.

The battery backup system includes carefully selected Inverter/Charger units along with a suite of ancillary components for enhanced control and telemetry. From Revision 8 onwards, the system features a significant upgrade: Victron Inverters are now paired with Victron batteries that support a greater depth of discharge than previous models. Combined with updated software, this allows for smaller, more cost-effective battery configurations while delivering improved resilience against extended power interruptions.

PRODUCT HIGHLIGHTS

- Powerful true sine wave inverters
- Sophisticated and powerful battery chargers featuring adaptive charge technology
- High-speed AC transfer switch <20 milliseconds
- Class-leading inverter efficiency
- Monitoring of battery health and recording of all power related events via Newton Cloud monitoring system where fitted
- High-grade components for dependable and reliable pumping during power outage
- Matched with class-leading Victron Super Cycle and Deep Cycle AGM Batteries of 38 to 115 Ah to ensure pumping of large volumes of water during power outages
- Protection measures to protect the person and the property from replicated grid mains risks are included



NEWTON CLOUD

Connection to the Newton Cloud, enabled through the optional Newton Pulse or Newton Bridge, provides comprehensive event recording, real-time monitoring, and advanced diagnostics for both the battery backup system and connected pumping systems. This integration enhances system visibility, supports proactive maintenance, and ensures optimal performance during critical power events.

PURCHASING

The Victron MultiPlus inverter/chargers featured within this document can be purchased individually, as a kit that includes all the equipment to safely install the inverter/charger, or as a full system that includes the matched Victron battery or just the inverter/charger where only replacement is needed. Purchase codes are confirmed within the table below.

	Multiplus 12/500/20	Multiplus 12/800/35	Multiplus 12/2000/80	Multiplus 12/3000/120
Inverter/charger only - No fuse supplied*	BB5	BB1	BB18*	BB3*
Battery backup kit - no battery	BB5K	BB1K	BB18K	BB3K
Full battery back-up system 38 Ah Battery	BB5K38	BB1K38	-	-
Full battery back-up system 60 Ah Battery	BB5K60	BB1K60	BB18K60	-
Full battery back-up system 115 Ah Battery	BB5K115	BB1K115	BB18K115	BB3K115

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TECHNICAL DATA - INVERTER/CHARGER UNITS

Inverter/Charger model	Multiplus 12/500/20	Multiplus 12/800/35	Multiplus 12/2000/80	Multiplus 12/3000/120
Inverter	Results			
Input voltage range (VDC)	9.5 - 17			
Output voltage (VAC ± 2%)	230			
Output frequency (Hz ± 0.1%)	50			
Continual output power at 25°C (VA)	500	800	2000	3000
Continual output power at 25°C (W)	430	700	1600	2400
Continual output power at 40°C (W)	400	650	1400	2200
Peak power (W)	900	1600	3500	5500
Maximum efficiency (%)	90	92	93	93
Zero load power (W)	6	7	10	13
Zero load in search mode (W)	2	2	3	3
Battery lead diameter mm ²	16	25	70	95
Internal fuse size (A)	125	150	None - Fuse is fitted to DC + cable	
Charger	Results			
AC input voltage range (VAC)	187-265			
AC input frequency (Hz)	45-65			
Charge voltage 'absorption' (VDC)	14.4			
Charge voltage 'float' (VDC)	13.8			
Storage mode (VDC)	13.2			
Maximum DC charge current (A)	20	35	80	120
Battery temperature sensor	Yes			
Maximum combined battery capacity	See Multiple Batteries section on Page 4			
Battery Charging	Results			
Battery Bank Size in Ah (Amp hours)	Time to fully charge a battery*			
38	5	5	5	5
60	5	5	5	5
100	5	5	5	5
200	10	5.7	5	5
400	20	11.4	5	5
800	40	22.8	10	6.7
General	Results			
V.E. Bus communication port	For remote monitoring and system integration			
Remote On/Off	No	Yes	On/Off	
Dip switches	Yes ⁽¹⁾		Yes ⁽²⁾	
Operating temperature (°C)	-40 to +65 (fan assisted cooling)			
Internal DC Fuse	125	150	No	No
Maximum humidity-non-condensing (RH)	95%			
Protection	Output short circuit; Overload; Battery voltage too high; Battery voltage too low; Temperature too high; 230 VAC on inverter output; Input voltage ripple too high			
Warranty (Years)	5			

*Charging amps restricted to 20% of Ah capacity. (1) Remote / battery charge voltage / inverter frequency / search mode. (2) Battery charge voltage / search mode

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Enclosure	Results			
	12/500/20	12/800/35	12/2000/80	12/3000/120
Construction	Steel/ABS			
Colour	Blue - RAL 5012			
Protection category	IP21			
Battery connection (mm ²)	16*	25*	70**	95**
230V AC connection (mm)	G-ST18i connector		Screw terminals	
Dimensions - H x W x D	311 x 182 x 100	360 x 240 x 100	506 x 236 x 147	546 x 275 x 147
Weight (kg)	4.4	6.4	15.5	19

*Post-fitted to quick connect terminals. ** Post fitted via supplied M8 bolts.

Standards	Results
Safety	EN-IEC 60335-1, EN-IEC 60335-2-29, EN 62109-1
Emission, Immunity	EN 55014-1, EN 55014-2, EN-IEC 61000-3-2, EN-IEC 61000-3-3, IEC 61000-6-1, IEC 61000-6-2, IEC 61000-6-3
Road Vehicles	ECE R10-5

Technical data - Batteries	38 Ah	60 Ah	115 Ah	Units
Newton product code	BB38	BB60	BB21/V	
Battery Type	Super Cycle AGM		Deep Cycle AGM	
Voltage	12			VDC
Battery storage capacity	38	60	115	Ah
Depth of Discharge (maximum)	0	0	0	%
Service design life	12+			Years
Weight	13	18	35	kg
Dimensions (L x W x H)	267 x 77 x 175	224 x 135 x 178	395 x 110 x 293	mm
Warranty	5			Years

NOTE: From Version 8.0, batteries have changed from FIAMM FIT to Victron AGM, inverters are programmed for 0% depth of discharge, effectively doubling water pumped per battery size. Although the 200 Ah battery is no longer listed, it remains available on request for those needing very high pumped volumes without using multiple batteries in parallel.

INVERTER SIZING & PUMP MATCHING

The recommended battery sizes below are based upon the expectation of 4 x pump starts per hour over a 24 hour period. Where protection against higher water volumes entering the structure or for extended periods of power outage, please refer to the **PERFORMANCE EXAMPLES** section on page 5.

Newton Pump	Inverter Model	Recommended battery size Ah
TAS250	MultiPlus 12/500/20	38
NP400 eco	MultiPlus 12/800/35	60
NP750 eco	MultiPlus 12/2000/80	115

MODEL ATTRIBUTES

The inverter sizes are identifiable by the model name which is expressed by DC battery voltage/AC output power/charger charging current. For example, with the 12/500/20 model:

- 12/XXX/XX - Units are to be used with 12 VDC batteries
- XX/500/XX - Output power in VA (volt amperes)
- XX/XXX/20 - Charger size in A (amps)

This data sheet covers the following models:

- 12/500/20 - 500 VA
- 12/800/35 - 800 VA
- 12/2000/80 - 2000 VA
- 12/3000/125 - 3000 VA

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FUSES - IMPORTANT

12/500/20 and 12/800/35

The main fuse for the units is pre-fitted inside the enclosure. Additional Mega-Fuse is not needed.

12/2000/80 and 12/3000/125 **DO NOT** have fuses fitted within the enclosure and so these units must have a Mega-Fuse fitted externally to the unit and these are included within the packaging of the Battery Back Up System, **but are not included** where only the Inverter/Charger is purchased as a replacement for use within an already fitted system. Please see **PURCHASING** section on page 1 for further information.

ITEMS INCLUDED WITHIN PACKAGING

500VA & 800VA - The inverter and ancillaries are supplied in one box.

2000VA & 3000VA - The inverter and ancillaries are supplied in two boxes.

The battery(s) are supplied in separate packaging.

DC CABLE SET 500VA & 800VA

- 1 x Positive DC cable - Red - 0.8 m
- 1 x Positive DC cable - Red - 0.45 m
- 1 x Negative DC cable - Black - 1.2 m
- 1 x DC Isolator switch

DC CABLE SET 2000VA & 3000VA

- 2 x Positive DC cable - Red - 0.35 m
- 1 x Positive DC cable - Red - 1.0 m
- 1 x Negative DC cable - Black - 1.7m
- 1 x DC Isolator switch
- 1 x Mega-Fuse & Holder 300A (2000VA) or
- 1 x Mega-Fuse & Holder 400A (3000VA)

ANCILLARIES - ALL MODELS

- RCD Fused Spur - 30 mA - 40 ms - with back box - Timeguard Valiance, Type A, RCD10WPVN
- AC Isolator switch
- 2 x Battery terminal safety caps

BATTERIES

The Victron Inverter/Charger units operate using 12-volt DC (VDC) batteries. These batteries supply power that the inverter converts into 230-volt AC (VAC) electricity, the standard for household appliances in the UK.

The batteries can be purchased in two ways:

1. Individually - using the product code list directly below
2. As part of a full battery backup system, which includes the inverter, ancillaries, protections and matched batteries (details on this are in the **PURCHASING** section on page 1)

Battery only codes:

- 38 Ah - 12 V - Super Cycle - Code BB38
- 60 Ah - 12 V - Super Cycle - Code BB60
- 115 Ah - 12 V - Deep Cycle AGM - Code BB21/V

Battery Backup for Pumping Systems – IMPORTANT: As of TDS Version 8.0, 04 January 2026, all inverters will be configured by Newton to allow 0% Depth Of Discharge (DoD). When replacing old batteries with Victron AGM Super Cycle or Deep Cycle AGM Batteries, to use the full battery storage capacity, the Depth Of Discharge will need to be adjusted from 50% to 0% using Victron VeConfig. The DoD is confirmed on the configuration label attached to the side of the inverter. Please contact Newton if assistance is required.

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Battery quality is critical to ensuring reliable pumping during power outages. Newton now supplies Victron Super Cycle AGM batteries in 38Ah and 60Ah, offering exceptional performance and durability with:

- Exceptional cycle life – Up to 300 full 100% depth-of-discharge (DoD) cycles, making them ideal for both occasional deep discharges and frequent cycling
- Compact and lightweight – Thanks to innovative electrochemistry, the Super Cycle batteries are smaller and lighter than standard deep-cycle AGM batteries, reducing installation footprint
- Low internal resistance – Enables faster charging and improved efficiency
- Advanced VRLA AGM design – Incorporates low-resistance separators and sealed construction for maintenance-free operation
- High-conductivity terminals – Equipped with M5 or M6 threaded inserts for secure, low-resistance connections
- Built-in safety features – Includes one-way gas relief valves and flame-retardant ABS casing for enhanced safety
- Flexible installation – Can be installed in any orientation except permanently inverted
- Temperature-compensated charging – Ensures optimal performance across a wide temperature range
- 100% recyclable – Environmentally responsible design

For full specifications, refer to the [Victron AGM Super Cycle Battery Datasheet](#).

BATTERY BACKUP PERFORMANCE

The Victron Inverter/Charger units and batteries have been selected to ensure continued operation of the pumping system during power outages. Pumping capacity is directly linked to battery size—larger batteries (measured in Amp-hours, Ah) store more energy and therefore pump more water. The ability to keep the basement dry depends on both battery capacity and system efficiency, including the conversion from DC to 230V AC. The systems outlined here use high-efficiency components to maximise water removal during outages.

Battery bank size (Ah)	Litres	Starts	Hours	Battery bank size (Ah)	Litres	Starts	Hours
38	6,019	80	24.5	200	31,680	420	130
60	9,504	126	39	400	63,360	840	260
115	18,216	241	75	800	126,750	1,680	520

Newton conducts regular performance testing of its pump and battery backup systems using a dedicated rig. The setup includes a 4-metre pumping head and simulates four pump starts per hour, each moving approximately 66 litres of water, replicating the operation of the Titan-Pro system. Flow rate and volume are measured via a flow meter, while battery charge, start/run currents, and depletion rates are monitored using the Victron Cerbo GX2.

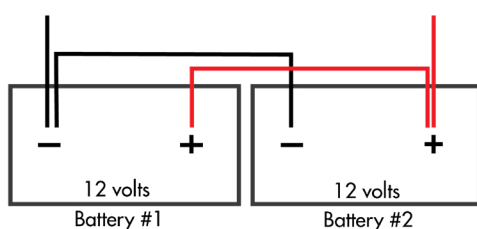
Tests using the TAS250 pump and a Victron inverter with a 10.8V cut-off show that 10 Ah of battery charge can pump 2189 litres continuously or 1584 litres with intermittent starts. Larger battery banks perform more efficiently due to better recovery and reduced discharge per cycle. All tests assume a 0% depth of discharge, a unique capability of Victron AGM Super Cycle Batteries.

MULTIPLE BATTERIES

Battery Backup System and Water Removal Capacity

The battery backup system removes water in proportion to the total power stored in the battery bank, measured in amp-hours (Ah). Adding batteries in parallel increases the available Ah, thereby increasing the system's water removal capacity. For example, two identical batteries in parallel double the available Ah. Three batteries triple it, and so on.

There is no fixed limit to the number of batteries that can be connected in parallel but where 4 or more batteries are considered, please contact Newton to discuss using 24v models which provide greater efficiencies with multiple batteries. Recharge time depends on the inverter's charging rate. If rapid recharging is needed for a large battery bank, consider using an inverter with a higher charge current. Refer to the Battery Charging section in the table on page 2 for more details. **Note:** Each additional battery connected in parallel requires its own set of battery link leads.



LINK LEADS & PURCHASE CODES

Inverter	Size (mm ²)	Code
12/500/20	16	BLL/16K
12/800/35	25	BLL/25K
12/2000/80	70	BLL/70K
12/3000/120	95	BLL/95K

CONNECTING BATTERIES IN PARALLEL

CUSTOM BUILDS

Newton can build battery backup systems to order. Examples of this are:

- Large inverter sizes of 3, 5, 10, and 15 kVA
- Large battery banks using multiple batteries attached in both series and parallel to match all back-up/redundancy requirements
- Rack-mounted, lithium-iron-phosphate battery banks
- 24 V and 48 V inverters
- Three-phase inverter systems
- Generator support for the above

SYSTEM CONFIGURATION

Each Victron MultiPlus Inverter/Charger is individually configured using Victron's VeConfig software to ensure compatibility and optimal performance with the connected battery system. Charge current settings are adjusted to match the recommended limits for the specific battery capacity, preventing overcharging and promoting efficient energy use. The depth of discharge is also set to zero, in line with the operational characteristics of Victron Super Cycle and Deep Cycle Batteries, to maximise cycle life and maintain reliable backup power availability.

To support quality control and system transparency, a configuration label is affixed to each unit. This label details the specific adjustments made during setup, including charge current limits and discharge parameters, providing clear reference for installers, service personnel, and end users.

TRAINING AND COMPETENCY OF THE USER

The Inverter/Charger units are mains powered and should be installed by persons who are aware of current electrical requirements and are electrically competent by way of appropriate training to either fit a fused plug or wire directly to a fused spur. Knowledge of DC input by battery and the connection of DC batteries leads to both the battery(s) and the Inverter/Charger is required.

In most cases these battery backup systems will be installed as part of the Newton CDM cavity drain waterproofing system by a Newton Specialist Basement Contractor (NSBC) who are trained and experienced in the installation of all Newton battery backup systems, pumps, pumping systems, panels and telemetry systems.

CONNECTING OTHER ELECTRICAL DEVICES

These battery backup systems are designed to maintain power to pumps, pumping systems, and associated equipment. If required, the inverter/charger's 230 VAC output can be connected to a small consumer unit to supply essential devices such as an internet router or emergency lighting. However, users should be aware that powering additional equipment will draw energy from the same battery system supporting the pumps. To preserve battery life, especially during extended outages or when charge levels fall below 50%, non-essential loads should be minimised. When used with the optional Newton Pulse or Newton Bridge monitoring systems, the Newton Cloud will provide regular updates on remaining and anticipated battery charge.

INSTALLATION INSTRUCTIONS

Please refer to the Quick Guide. [Quick Guide - Victron Battery Backup Systems](#)

SPECIFICATION

Newton Waterproofing Systems work in partnership with RIBA NBS who publish our products on [NBS Source](#). The platform integrates seamlessly into project workflows, providing all product data from Newton's NBS BIM Objects, NBS Plus Clauses and RIBA Product Selector into one single source of product information.

STORAGE

Inverter/Charger units, ancillaries and batteries must be installed in a dry internal environment or within specially designed outdoor enclosures.

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WARRANTY

INVERTER/CHARGER & OPTIONS

The Victron Inverter/Chargers are covered by a 5 year warranty. Warranty includes next-day on-site replacement (delivery and collection, not decommission and installation) of the Inverter/Charger units by a replacement of the same model.

BATTERIES

The batteries are covered by a 5 year warranty.

The warranty includes site replacement. A new battery will be delivered and the old battery collected (service does not include disconnection and re-connection). If the warranty claim is upheld, there is no charge for the exchange. If the warranty claim is not upheld, the client must decide the course of action, which will include the purchase of the replacement battery or the return of the original battery and payment of all of the costs associated with the failed warranty claim. The expected service life of the batteries is 12+ years.

HEALTH & SAFETY

Use appropriate PPE for the environment the system is installed within. Use products only as stated within the this Data Sheet and the Quick Guide. Read the SDS and Quick Guide before use.

Batteries are heavy. We recommend that a Manual Handling Risk Assessment is carried out in accordance with current Health & Safety Regulations on the sizing and installation of the battery(s).

Newton Waterproofing Systems reserve the right to update product literature at any time. Please always refer to our [website](#) for the latest versions.