

# 12,8, 25,6 & 51,2 Volt Lithium NG batteries

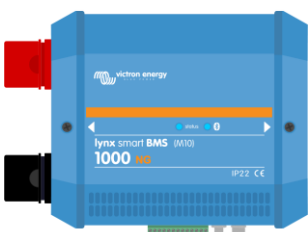
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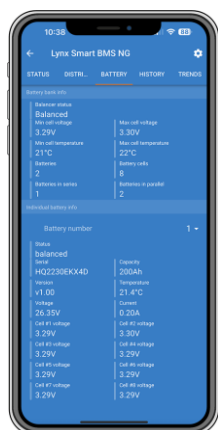
25,6 V 200 Ah Lithium NG battery



Secured with mounting brackets



Lynx Smart BMS NG 500 A & 1000 A



Complete overview of all battery data via VictronConnect (or a GX device and VRM)

Victron Energy Lithium NG batteries are Lithium Iron Phosphate (LiFePO<sub>4</sub> or LFP) batteries available in various capacities with nominal voltages of 12.8 V, 25.6 V and 51.2 V. They can be connected in series, parallel, or a combination of both to create battery banks for system voltages of 12V, 24V, or 48V. A maximum of 50 batteries can be used when configuring a bank with 12V or 24V batteries, while up to 25 batteries can be used with 48V batteries. This allows for a maximum energy storage capacity of 192 kWh with 12V batteries, up to 384 kWh with 24V batteries, and 128 kWh with 48V batteries.

## Key features:

### Integrated shunt

The battery data (battery voltage, current and temperature) are transmitted to the BMS and evaluated there, i.e. to calculate the state of charge, which can then be read out via VictronConnect or a GX communication centre, or to create and issue specific warnings and alarms.

### Automatic setup, monitoring and control via VictronConnect App or a GX device and the VRM Portal

All battery parameters are managed by the BMS automatically. The BMS automatically detects the system voltage and the number of batteries in parallel, series and series/parallel connection. The BMS (from now on Lynx Smart BMS NG 500 A/1000 A, further models to follow) is mandatory and must be purchased separately.

Monitoring and control take place via VictronConnect (every BMS model has Bluetooth), a GX communication centre or the VRM Portal. You can view battery parameters such as cell status, cell voltages, battery current and temperatures in real-time. The battery firmware is automatically updated by the BMS.

### Easy bracket mounting

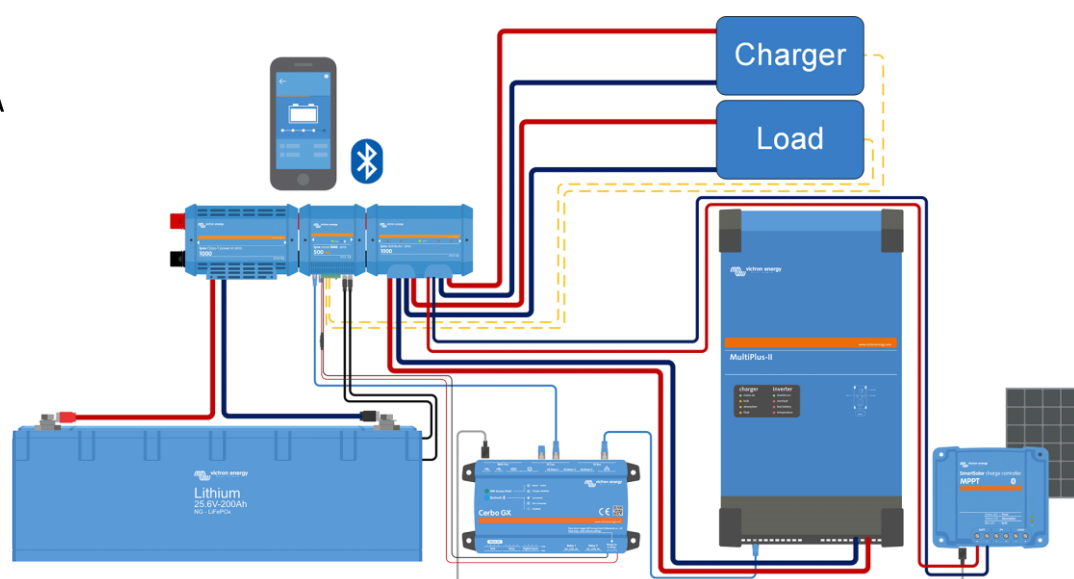
Mounting brackets make the installation easier and ensure that the battery is optimally secured against slipping and tipping over.

### Increased ingress protection (IP-rating)

The Lithium NG batteries are effectively sealed against dust and can withstand low-pressure water jets, making them suitable for environments where exposure to dust and water is a concern.

### Low self-discharge rate

The self-discharge rate has been significantly improved and is now a maximum of 2 % of the battery capacity per month. A low self-discharge rate contributes to the overall performance, longevity, and reliability of the NG batteries.



Typical system example with Lithium NG battery and Lynx Smart BMS NG

Our Lithium NG batteries have integrated cell balancing and cell monitoring. The cell balancing/monitoring cables can be daisy-chained and must be connected to a Battery Management System (BMS).

### Battery Management System (BMS)

The BMS will:

1. Generate a pre-alarm whenever the voltage of a battery cell decreases to less than 3.0 V.
2. Disconnect or shut down the load whenever the voltage of a battery cell decreases to less than 2.8 V.
3. Stop the charging process whenever the voltage of a battery cell increases to more than 3.6 V or when the temperature becomes too high or too low.

See the BMS datasheets for more features.

| Battery specification                                                                                                    |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|
| VOLTAGE AND CAPACITY                                                                                                     | LFP-12,8/100                                                                                                                                                                                                              | LFP-12,8/150                                             | LFP-12,8/200                                          | LFP-12,8/300                                             | LFP-25,6/100                                          | LFP-25,6/200                                          | LFP-25,6/300                                             | LFP-51,2/100                                             |
| Nominal voltage                                                                                                          | 12,8 V                                                                                                                                                                                                                    | 12,8 V                                                   | 12,8 V                                                | 12,8 V                                                   | 25,6V                                                 | 25,6 V                                                | 25,6 V                                                   | 51,2 V                                                   |
| Nominal capacity @ 25 °C*                                                                                                | 100 Ah                                                                                                                                                                                                                    | 150 Ah                                                   | 200 Ah                                                | 300 Ah                                                   | 100 Ah                                                | 200 Ah                                                | 300 Ah                                                   | 100 Ah                                                   |
| Nominal energy @ 25 °C*                                                                                                  | 1280 Wh                                                                                                                                                                                                                   | 1920 Wh                                                  | 2560 Wh                                               | 3840 Wh                                                  | 2560 Wh                                               | 5120 Wh                                               | 7680 Wh                                                  | 5120 Wh                                                  |
| Capacity loss                                                                                                            | (per 100 cycles, @ 25 °C, 100 % DoD): <1 %                                                                                                                                                                                |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Energy loss                                                                                                              | (per 100 cycles, @ 25 °C, 100 % DoD): <1 %                                                                                                                                                                                |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Round trip efficiency                                                                                                    | 92 %                                                                                                                                                                                                                      |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| *Discharge current ≤1C                                                                                                   |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| CYCLE LIFE (capacity ≥ 80 % of nominal)                                                                                  |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| 80 % DoD                                                                                                                 | 2500 cycles                                                                                                                                                                                                               |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| 70 % DoD                                                                                                                 | 3000 cycles                                                                                                                                                                                                               |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| 50 % DoD                                                                                                                 | 5000 cycles                                                                                                                                                                                                               |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| DISCHARGE                                                                                                                |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Max continuous discharge current (C-rate)                                                                                | 100 A (1C)                                                                                                                                                                                                                | 150 A (1C)                                               | 200 A (1C)                                            | 300 A (1C)                                               | 100 A (1C)                                            | 200 A (1C)                                            | 300 A (1C)                                               | 100 A (1C)                                               |
| Max pulse discharge current 10s (C-rate)                                                                                 | 200 A (2C)                                                                                                                                                                                                                | 300 A (2C)                                               | 400 A (2C)                                            | 600 A (2C)                                               | 200 A (2C)                                            | 400 A (2C)                                            | 600 A (2C)                                               | 200 A (2C)                                               |
| End of discharge voltage                                                                                                 | 11,2 V                                                                                                                                                                                                                    |                                                          |                                                       |                                                          | 22,4 V                                                |                                                       |                                                          | 44,8 V                                                   |
| Internal resistance                                                                                                      | 2 mΩ                                                                                                                                                                                                                      |                                                          | 1 mΩ                                                  |                                                          | 4 mΩ                                                  | 2 mΩ                                                  | 1 mΩ                                                     | 8 mΩ                                                     |
| CHARGE                                                                                                                   |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Charge voltage                                                                                                           | Between 14 V / 28 V / 56 V and 14,4 V / 28,8 V / 56,8 V                                                                                                                                                                   |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Float voltage                                                                                                            | 13,5 V / 27 V 54 V                                                                                                                                                                                                        |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Max continuous charge current (C-rate)                                                                                   | 100 A (1C)                                                                                                                                                                                                                | 150 A (1C)                                               | 200 A (1C)                                            | 300 A (1C)                                               | 100 A (1C)                                            | 200 A (1C)                                            | 300 A (1C)                                               | 100 A (1C)                                               |
| Max pulse charge current 10s (C-rate)                                                                                    | 200 A (2C)                                                                                                                                                                                                                | 225 A (1.5C)                                             | 400 A (2C)                                            | 450 A (1.5C)                                             | 200 A (2C)                                            | 400 A (2C)                                            | 450 A (1.5C)                                             | 200 A (2C)                                               |
| GENERAL                                                                                                                  |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| BMS-es                                                                                                                   | Lynx Smart BMS NG 500 A / 1000 A (M10 busbars), must be purchased separately                                                                                                                                              |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Cell measurements                                                                                                        | Cell voltages and temperatures, battery current                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Battery BMS interface                                                                                                    | Male + female cable with M8 circular connector with high-speed digital communication, length 50 cm<br><a href="#">M8 extension cables</a> are available separately for purchase in various lengths between 1 and 5 meters |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Alarm feature                                                                                                            | Pre-alarm contact on BMS                                                                                                                                                                                                  |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Bluetooth                                                                                                                | In the BMS                                                                                                                                                                                                                |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Max batteries per BMS                                                                                                    | 50 (up to 384 kWh per BMS <sup>3)</sup> )                                                                                                                                                                                 |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          | 25 (128 kWh per BMS <sup>3)</sup> )                      |
| Battery firmware updates                                                                                                 | Battery firmware automatically updated by BMS                                                                                                                                                                             |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Repairable                                                                                                               | Yes (cover can be removed with screws)                                                                                                                                                                                    |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| OPERATING CONDITIONS                                                                                                     |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Operating temperature                                                                                                    | Discharge: -20 °C to +50 °C   Charge: +5 °C to +50 °C                                                                                                                                                                     |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Storage temperature                                                                                                      | -45 °C to +70 °C                                                                                                                                                                                                          |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Humidity (non-condensing)                                                                                                | Max. 95 %                                                                                                                                                                                                                 |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Protection class                                                                                                         | IP65                                                                                                                                                                                                                      |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| MOUNTING                                                                                                                 |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Mounting options                                                                                                         | Strap or mounting brackets (brackets included)                                                                                                                                                                            |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Can be placed on their sides                                                                                             | Yes <sup>2)</sup>                                                                                                                                                                                                         |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| OTHER                                                                                                                    |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Self-discharge rate                                                                                                      | ≤ 3 % per month @ 25 °C                                                                                                                                                                                                   |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Power connection                                                                                                         | M8 (threaded inserts and bolts)                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Dimensions (h x w x d) mm                                                                                                | 235 x 197 x 160                                                                                                                                                                                                           | 205 x 250 x 205                                          | 235 x 341 x 160                                       | 206 x 447 x 205                                          | 235 x 341 x 160                                       | 235 x 648 x 162                                       | 206 x 841 x 205                                          | 235 x 648 x 162                                          |
| Weight (est.)                                                                                                            | 9 kg                                                                                                                                                                                                                      | 14 kg                                                    | 19 kg                                                 | 29 kg                                                    | 19 kg                                                 | 37 kg                                                 | 52 kg                                                    | 37 kg                                                    |
| STANDARDS                                                                                                                |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Safety                                                                                                                   | Cells: UL1973<br>UL9540A<br>IEC62619                                                                                                                                                                                      | Cells: UL1973<br>UL9540A<br>IEC62619 (all three pending) | Cells: UL1973<br>UL9540A<br>IEC62619                  | Cells: UL1973<br>UL9540A<br>IEC62619 (all three pending) | Cells: UL1973<br>UL9540A<br>IEC62619                  | Cells: UL1973<br>UL9540A<br>IEC62619                  | Cells: UL1973<br>UL9540A<br>IEC62619 (all three pending) | Cells: UL1973<br>UL9540A<br>IEC62619 (all three pending) |
|                                                                                                                          | Battery: IEC 62619 (pending)<br>UL 2054 <sup>4)</sup>                                                                                                                                                                     | Battery: IEC 62619 (pending)                             | Battery: IEC 62619 (pending)<br>UL 2054 <sup>4)</sup> | Battery: IEC 62619 (pending)                             | Battery: IEC 62619 (pending)<br>UL 2054 <sup>4)</sup> | Battery: IEC 62619 (pending)<br>UL 2054 <sup>4)</sup> | Battery: IEC 62619 (pending)                             | Battery: IEC 62619 (pending)<br>UL 2054 <sup>4)</sup>    |
| EMC                                                                                                                      | EN 61000-6-3, EN 61000-6-2                                                                                                                                                                                                |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Automotive                                                                                                               | ECE R10-6                                                                                                                                                                                                                 |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| Performance                                                                                                              | IEC 62620                                                                                                                                                                                                                 |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| <sup>1)</sup> When fully charged                                                                                         |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| <sup>2)</sup> The lithium battery can be mounted upright and on its side, but not with the battery terminals facing down |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| <sup>3)</sup> Up to 5 BMS-es can be paralleled. For more info, please see <a href="#">this announcement</a> .            |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |
| <sup>4)</sup> Certified with Lynx BMS NG                                                                                 |                                                                                                                                                                                                                           |                                                          |                                                       |                                                          |                                                       |                                                       |                                                          |                                                          |