CONTACT :

DEALER
CONTACT
INFORMATION

SCAN FOR TECHNICAL SPECIFICATIONS

RELATED MG PRODUCTS

- HE Series
- RS Series
- LFP Series
- Energy Monitor

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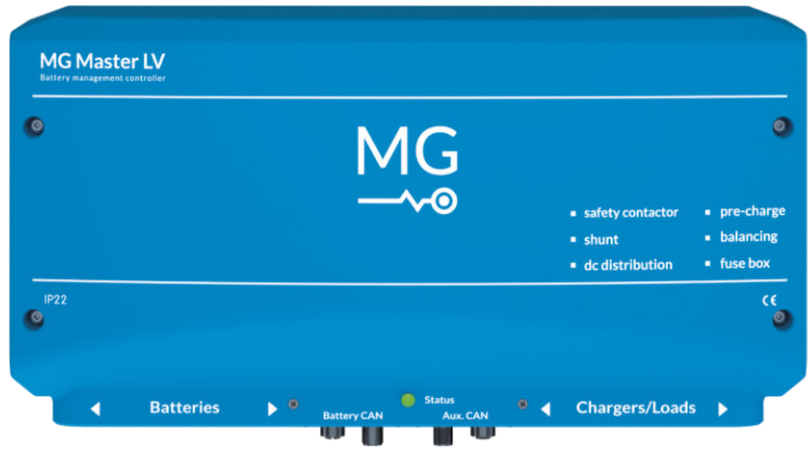
MG
Master LV



MG

MG
Master LV

The MG Master LV is the safety and control unit of the battery system in the range of 12 Vdc up to 96 Vdc.

This battery management controller is exclusively for low voltage systems. It protects the connected battery modules against over-charging, over-discharging, and temperature extremes. Furthermore the MG Master LV controls the balancing on cell and module level. Protecting, monitoring and controlling a battery system is essential for creating a safe, reliable and easy-to-use system.

Besides the safety function, the Master LV monitors and tracks all relevant parameters to give insight in the battery status and energy consumption. For instance, it collects information about the state of the battery system like State-Of-Health, State-Of-Charge and keeps track of all events.

ALL IN ONE DESIGN

The MG Master LV guarantees a safe operation of your MG battery system. All essential components for a safe and reliable battery system are integrated in this compact designed BMS. It contains a safety contactor, fuse holders and DC distribution to ensure safe operation of your MG energy system.

COMPACT DESIGN

- Fusebox
- DC Distribution
- Shunt

EASY INSTALLATION

The Master LV is easy to install in your MG battery system, thanks to the integrated safety components. It requires less cables and external equipment. This results in a quick Plug and Play installation. The integrated CAN-Bus protocol automatically detects the configuration and updates the firmware of the batteries when a new version is available.

MONITORING

MG BATTERY SYSTEM

Each battery system consists of the following

One or multiple battery modules
(HE Series, LFP Series, RS Series)

One or multiple Master BMSs
(MG Master LV or MG Master HV)

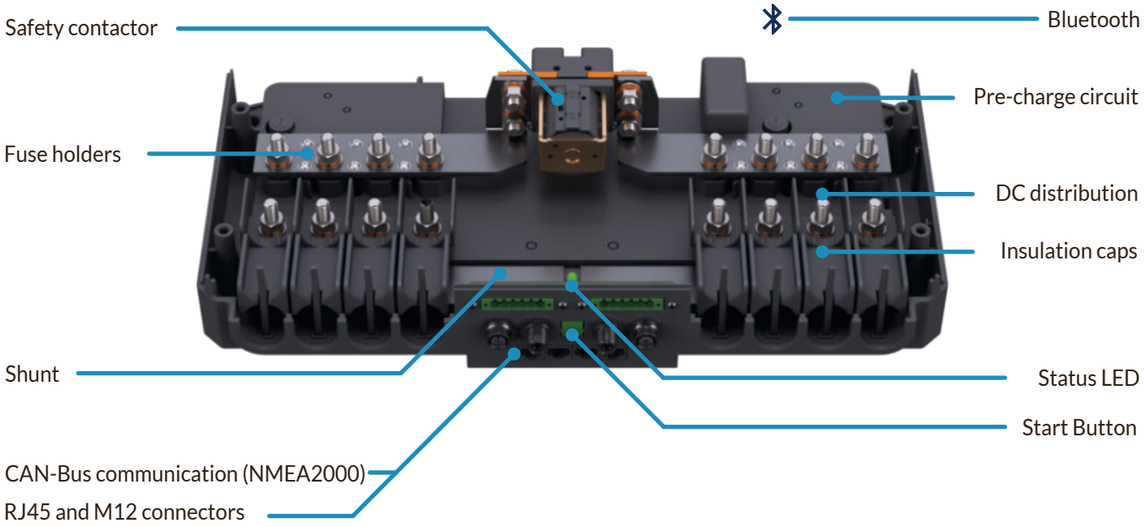
10+

YEARS OF EXPERIENCE

Over 10 years of experience in the field have resulted in an advanced BMS, seamless integration, and connectivity with other equipment. The broad range of products offers the best and safest storage solution for any type of application. From a small 12 Vdc battery system, to a class register type approved battery system, MG offers it all.

- REDUNDANT SYSTEM
- NMEA2000 CAN-BUS
- INTERNAL EVENT LOGGING
- BLUETOOTH
- I/O FOR CHARGERS AND LOADS
- MG DIAGNOSTIC TOOL
- SUPPORTS ALL MG BATTERIES
- IEC-EN 62619
- EASY INSTALLATION
- PLUG AND PLAY
- SAFETY CONTACTOR
- PRE-CHARGE CIRCUIT
- 12 Vdc UP TO 96 Vdc
- 150 A UP TO 1000 A

INSIGHT / INSIDE



SAFETY CONTACTOR

In order to guarantee a safe operation of the system, a safety contactor is integrated which can disconnect the batteries from the chargers and loads. This is a second layer of protection. The built-in pre-charge circuit prevents the safety contactor from sparks and welding.

FUSE HOLDERS

The fuse holders in the DC distribution system ensure maximum safety of your energy storage system. They protect the cables and components against excessive currents and short-circuits. Up to eight MEGA-fuses can be placed inside the MG Master LV.

SHUNT

The shunt measures the current from and to the batteries. This gives insight into the actual current when charging or discharging the connected batteries. Additionally, the shunt keeps track of the State-Of-Charge and protects the battery bank when there is an excessive charging current.

CAN-BUS COMMUNICATION (RJ45 AND M12)

Use the built-in RJ45 and M12 connectors for communication with the batteries, chargers/loads and third party devices. The two left side ports are reserved for communication with the batteries and the two right side ports are for auxiliary communication. Different CAN-Bus protocols can be used, however the main protocol is NMEA2000. The different connector options make it possible to connect batteries with M12 as well as RJ45-connectors.

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THE UNIQUE MG MASTER LV GUARANTEES A RELIABLE OPERATION OF YOUR MG BATTERY SYSTEM

BLUETOOTH

The bluetooth function makes it possible to monitor and control your battery system with your mobile phone or tablet. Use the MG Connect app to gain insight into the status of your MG battery system.

PRE-CHARGE CIRCUIT

Pre-charging increases the lifespan of electronic components and the reliability of the system. During the power-up procedure, the inrush current is limited to protect system components from damage.

DC DISTRIBUTION

The busbar system inside the MG Master LV acts as a DC distribution system. Connect the MG batteries on the left side of the Master LV. Connect your DC chargers and DC loads directly on the right side of this internal DC busbar. Examples of loads are an inverter, electric drive or electric pump.

START BUTTON AND STATUS LED

Easily press the button 3 seconds to turn the Master LV ON and OFF. This can either be done on the device itself or with a remote connected button. The Status LED indicates the state of the system.

SAFETY & PROTECTION

MONITORING AND CONTROL

Protecting, monitoring and controlling a battery system is very important to create a safe and reliable system. MG's system philosophy is to have one or multiple Master BMSs (e.g. MG Master LV) connected to the lithium-ion battery bank. Each MG battery module contains an integrated slave BMS. These slave BMSs monitor the battery cell parameters, like cell voltage, cell temperature and they control the cell balancing. All these parameters are sent to the MG Master LV over CAN-Bus. The MG Master BMS receives and evaluates the measured data to keep the entire battery system at the highest safety level.

SAFETY CONTACTOR

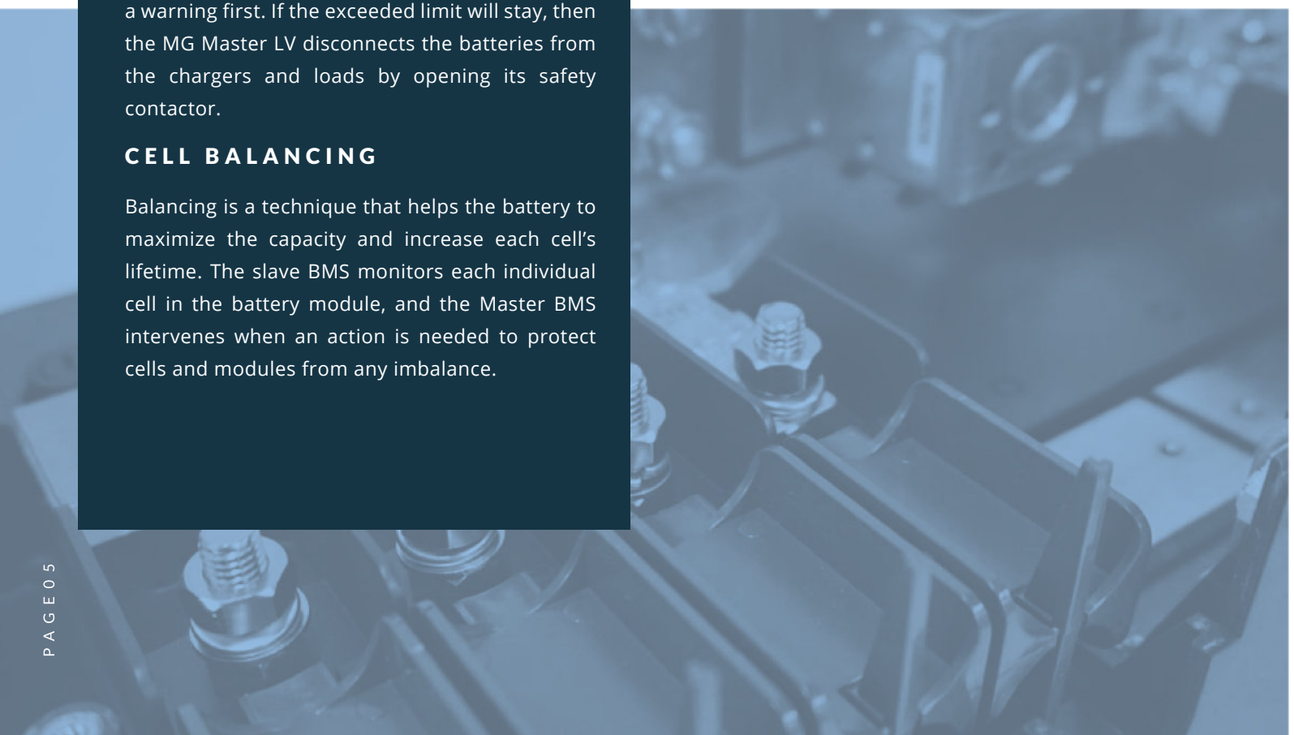
The main function of the MG Master LV is protection of all connected battery modules. The Master BMS collects all the data and constantly monitors critical parameters to detect any battery failures. This way, the Master BMS avoids electrical abuse of the battery cells. When a parameter exceeds the limit, the user will receive a warning first. If the exceeded limit will stay, then the MG Master LV disconnects the batteries from the chargers and loads by opening its safety contactor.

CELL BALANCING

Balancing is a technique that helps the battery to maximize the capacity and increase each cell's lifetime. The slave BMS monitors each individual cell in the battery module, and the Master BMS intervenes when an action is needed to protect cells and modules from any imbalance.

PROTECTION AGAINST

- OVERVOLTAGE
- UNDERVOLTAGE
- OVER TEMPERATURE
- UNDER TEMPERATURE
- IMBALANCE OF CELLS



MODELS

LV

Voltage: 12 Vdc
150 A / 400 A / 600 A / 1000 A

Voltage: 24 - 48 Vdc
150 A / 400 A / 600 A / 1000 A

Voltage: 72 - 96 Vdc
500 A

SCAN FOR MORE TECHNICAL SPECIFICATIONS

CHARGERS & LOADS

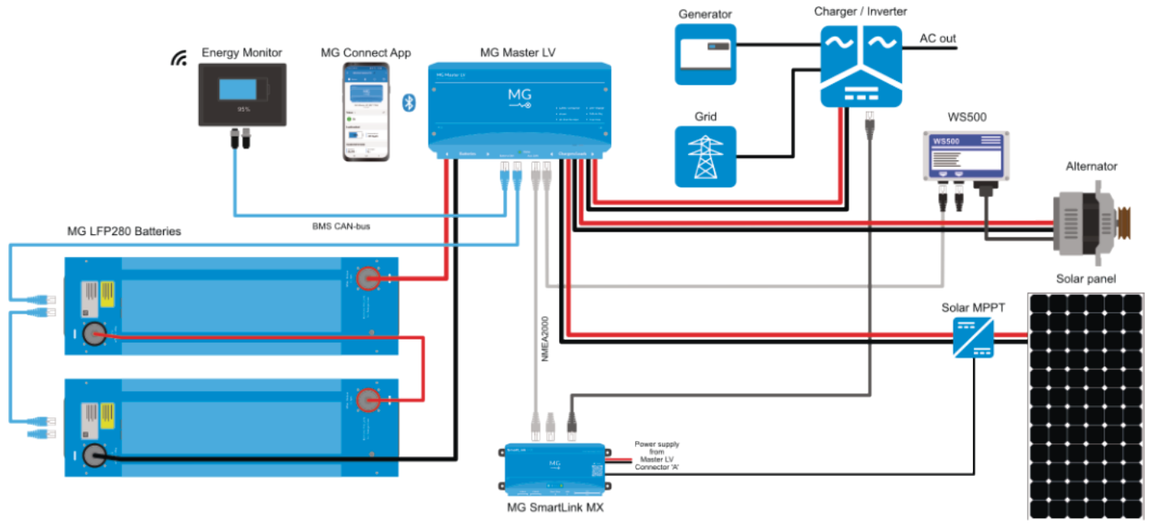
Charger
DC MOTOR 12 Vdc - 96 Vdc

Inverter
DC PUMP 12 Vdc - 96 Vdc

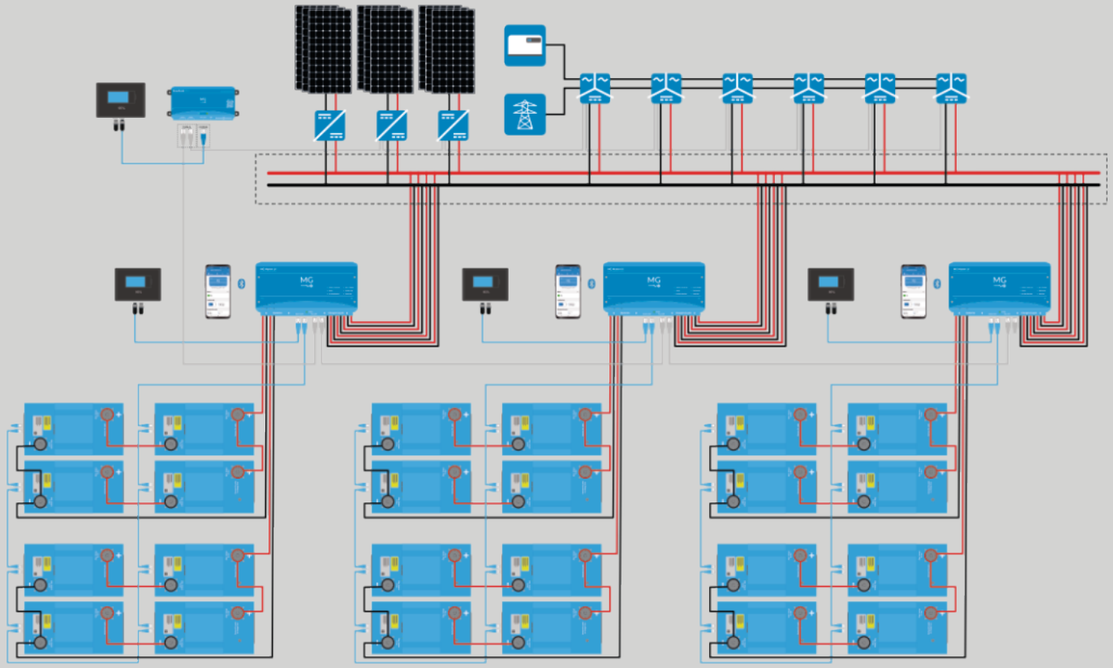
DC Solar
LED

MG Energy Systems offers the Master HV as the battery management controller for systems with higher voltages.

48 V SYSTEM EXAMPLE



SCALABLE ENERGY STORAGE SYSTEM



SMARTLINK

Use the SmartLink MX or PLC for battery systems with two or more MG Masters. The SmartLink collects and combines the data from all the MG Masters in your battery system. It transmits the combined data on to the CAN-Bus and makes this data available for third party devices. Furthermore, the MG SmartLink provides the necessary controls to start, stop and reset the battery system.

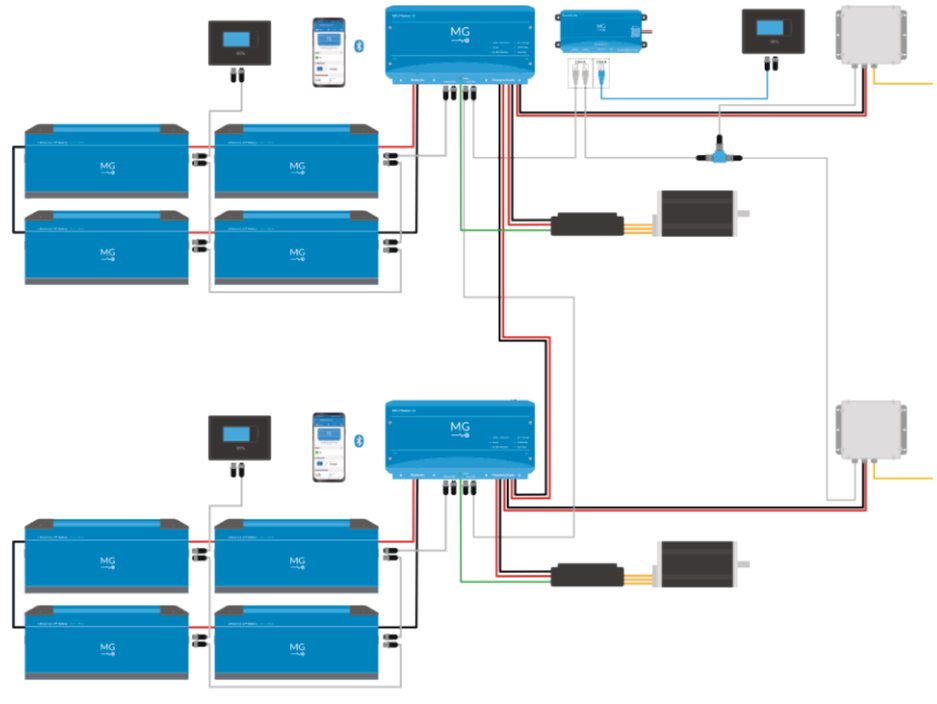
REDUNDANT SYSTEM SETUP

Another unique feature of the Master LV is the ability to create a redundant battery system. In order to achieve this, configure two or more MG Master LVs in “Combined mode”. The advantages of multiple Master LVs in combined mode are larger scalable storage systems and redundancy of your battery bank. This ensures that the battery system will always be operational and communication and power to the charger and loads will be maintained. In some applications it is required to have a redundant battery bank, for example in propulsion systems for commercial vessels.

CERTIFIED

The Master LV is tested to comply with several standards. This battery management controller complies with the IEC-EN 62619. This standard specifies requirements and tests for the safe operation of lithium batteries in energy storage systems used in industrial and stationary applications.

REDUNDANT SYSTEM EXAMPLE



MONITORING AND CONTROL

CONNECT AND BE IN CONTROL OF YOUR ENERGY

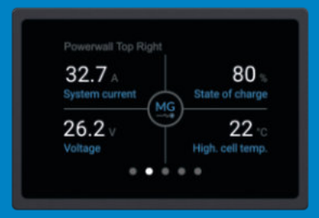
The MG Master LV monitors and tracks all relevant parameters to give insight into the battery status and energy consumption. Connect the following devices to get access to the available data.

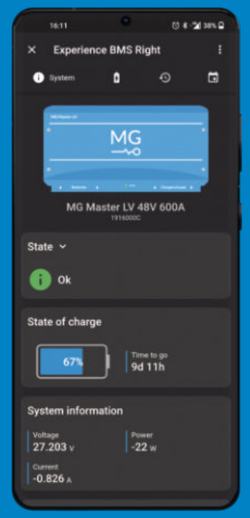
MG ENERGY MONITOR

The MG Energy Monitor is a fast and responsive touchscreen display that shows the status of your MG lithium-ion battery system. Scrolling through the status pages and changing settings is easily done by touch. This device is solely for local monitoring. It has Wi-Fi capabilities to communicate with the MG Energy Portal for remote monitoring.

MG CONNECT APP

The bluetooth connection makes it possible to monitor and control your battery system with your smartphone or tablet. Connect with the MG Connect app and get insight into the battery status and energy consumption. It is also possible to change settings, read the event log and update to the latest firmware.





DATA

DIAGNOSTIC TOOL

Having battery system diagnostics is important during commissioning, system testing, service, maintenance and troubleshooting. The diagnostic tool provides all the detailed information about the battery system. Main values, like voltage, temperature, current and State-Of-Charge can be viewed and logged to a file. In addition, daily reports, history values and stored events can be accessed from the Master. To create more flexibility, settings can be configured. For example CAN-Bus protocol selection or adding a function to a dedicated output.

ACCESS

MG ENERGY PORTAL

Remotely monitor and control your battery system with the MG Energy Portal. This web-based platform gives direct insight into all relevant data and essential battery parameters of your installation. It shows historical battery usage and the performance of each individual battery.