



BESS 200

HYBRID ENERGY MANAGEMENT PLATFORM



INTRODUCTION

BESS200 provides the intelligence layer that enables modern hybrid energy systems. Designed for power generation applications, BESS200 coordinates batteries, generators, grids and loads within a single energy architecture.

As an integral part of the Mecc Alte BESS sub-system, the controller can synchronise with and connect to a live grid. At the same time it can manage battery charging and discharging, deliver active power, and when needed, provide reactive power to support load power factor correction. In the event of a grid outage, the BESS200 operates independently and replaces the mains power or establishes a microgrid, even performing a black start when needed.

The controller supports CANBUS communication talking directly with renewable energy controllers, mains and genset controllers. This enables full coordination for power flow management, load sharing, peak shaving, load demand management, backup mode, spinning reserve, and other advanced operational strategies.

With a wide range of programmable digital and analogue inputs/outputs, together with internal PLC programming capabilities (including PID blocks), the BESS200 provides maximum flexibility to handle complex control situations and application-specific requirements. Multiple communication interfaces are provided as standard, with a variety of ports available for remote connectivity.

The BESS200 also features a large memory for the storage of time-stamped events and periodical data. The stored information can be viewed from the front display panel.

KEY FEATURES

HYBRID OPERATION

- Peak shaving
- Load levelling
- Generator support
- Renewable integration

GRID MANAGEMENT

- Grid forming
- Grid following
- Synchronisation
- Black start

ENERGY OPTIMISATION

- Demand management
- Spinning reserve
- Microgrid control
- Energy scheduling

EMBEDDED FUNCTIONS

- Communication with external 'Battery Management System' for maximum battery life and performance or built-in BMS for charging logic and battery level estimation and visualisation
- Control of the working mode of the inverter: automatic switching between grid forming and grid following according to the system conditions
- Automatic BESS system turn on/off, according to storage battery voltage and charge level or mains presence
- Power reserve for unexpected changes in load demand (backup mode)
- Peak shaving
- Load ramp for both load and unload
- Battery voltage and current compensation according to battery temperature
- Management of alternative solar energy sources thanks to the possibility of integrating up to 8 RN200 controllers
- Storage battery measurement visualisation
- Remote start and stop

BESS200 COMMUNICATIONS

- MODBUS RTU serial ports: RS232 and isolated RS485
- Ethernet port 10/100Mbps
- NTP, DHCP, DNS and SNMP Support
- USB function for configuration
- Internal clock with history log
- CANBUS J1939 interface
- Dedicated CANBUS (PMCBUS) for communication between Mecc Alte controllers
 - Up to 24 BESS200/GC600 controllers connected together
 - Up to 16 MC200 supported

OPTIONS

- Compatible with Mecc Alte's CL100: Device for GPRS/GSM/LTE connection to Mecc Alte SmartCloud® remote monitoring and control solution
- Compatible with Mecc Alte expansion module range: DITHERM, DIGRIN, DIVIT, DANOUT, DITEL
- CANBUS transducer for DC current/voltage measurements

TECHNICAL DATA

- **Supply voltage:** 8-32V DC
- **Power consumption:** typically, less than 6W (auto mode, standby, LCD lamp saving active)
- **Operating frequency:** 50Hz or 60Hz (AC reading only)
- **Graphic colour display resolution:** 480 x 272 pixel
- **Recommended operating temperature:** -30°C to +70°C
- **Storage temperature:** -30°C to +80°C
- **Protection degree:** IP65 (gasket included)
- **Weight:** 1100g
- **Overall dimension:** 244(w) x 178(h) x 83(d) mm
- **Panel cut-out:** 218(w) x 159(h) mm
- **Graphic display dimensions:** 95(w) x 54(h) mm
- **ECM:** conforms to EN61326-1
- **Safety:** built in conformity to EN61010-1

WHY IT MATTERS

- Improved energy efficiency
- Reduced fuel consumption
- Reduced emissions
- Increased system flexibility
- Optimised generator runtime
- Enhanced asset utilisation

ONE ECOSYSTEM. GREATER POSSIBILITIES.

When operating alongside Mecc Alte generator controllers, BESS200 can unlock advanced hybrid functionality through native controller-to-controller communication.

Potential benefits include:

- Reduced wiring
- Native load sharing
- Enhanced synchronisation
- Advanced peak shaving
- Improved backup performance
- Simplified start/stop logic
- Reduced engineering effort

NATIVE HYBRID POWER ARCHITECTURE



TECHNICAL DRAWING

