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MORNINGSTAR READYRAIL BATTERY MANAGEMENT SYSTEM INTERFACE ACCESSORY

Quick Start Guide

RB-BMS

INCLUDES: BMS Block; CAN Interface Cable; CANBus Terminator Plug

IMPORTANT SAFETY INFORMATION:



WARNING: Shock Hazard

The Morningstar ReadyBMS must be installed by a qualified technician in accordance with the electrical regulations of the location of installation.



WARNING: Shock Hazard

There are no user serviceable parts in the BMS Block. Do not disassemble or attempt to repair.



WARNING: Shock Hazard

Disconnect all power sources to the host and all other connected devices before installing the ReadyBMS. Do not install or remove a BMS Block while the host device is powered ON.



WARNING: Shock Hazard

Read all the instructions, warnings and cautions in the manual before starting the installation.



CAUTION: This guide must be used with the full product manual that includes important information. Carefully read the ReadyBMS product manual for all specifications, safety, regulatory and warranty information, and for all required instructions on installation procedures, configuration, and operation.

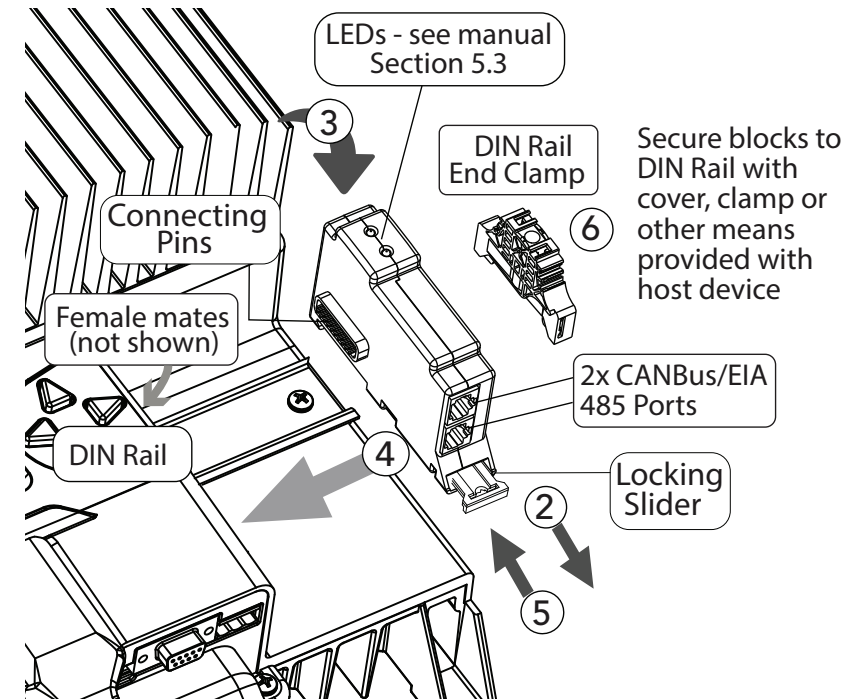
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The ReadyBMS requires a Morningstar ReadyRail™-enabled host device, e.g., GenStar controller or ReadyEdge Communications Center to provide a mounting surface, power, and programming capability.

FEATURES and MOUNTING (see installation detail illustration on p. 4 - opposite)

- 1) Power OFF host device;
- 2) Pull yellow slider out;
- 3) Fit Block slot downward onto DIN Rail;
- 4) Slide the Block to the left, **but before** joining the male and female mates, be sure that pin guards and pins are lined up correctly. **Carefully** slide the Block farther to the left to securely join the Block pins with host-device female mates.
- 5) Push yellow slider in, to secure Block on rail;
- 6) Secure Block(s) to DIN Rail with cover, clamp, or other means provided with host device.



CONNECTIONS

For CANBus-enabled batteries, use an 8-conductor straight-through RJ-45 cable, and attach one end to one of the RJ-45 ports on the BMS Block - see manual Figure 2-1. Attach the other end to a CANBus port on the BMS-battery. All supported batteries conform to CAN pin configuration - for details, see **CANBus-enabled Batteries** on p. 6 - opposite.

NOTE: If the BMS Block is used with the only controller in the system, or it is at the end of a CANBus Network, the BMS Block RJ-45 port not connected to the BMS-battery will require a terminator plug with a 120 Ohm terminator resistor installed across the CANL and CANH wires. A BMS Block communications terminator plug is included. For any BMS-battery side CANBus termination requirement, refer to your third-party BMS-battery manufacturer's documentation.

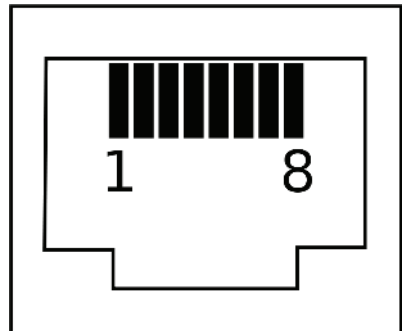
NOTE: For parallel battery configurations, refer to the BMS-battery manufacturer's documentation on how to connect the battery bank to the BMS Block.

CANBus-enabled Batteries

All currently supported batteries conform to CAN pin configuration. For an up to date list of battery storage products supported by the ReadyBMS, go to www.morningstarcorp.com. CANBus-enabled batteries will require a cable assembly with the configuration seen in the table and illustration below. Some BMS-battery systems may require a modified cable assembly - available separately.

BMS Block Pin	Connected to Battery BMS Pin
1	No Connect
2 GND	2
3	No Connect
4 CANH	4
5 CANL	5
6 GND	No Connect
7 RS485+	No Connect
8 RS485-	No Connect

CANBus Protocol Battery Cabling Pin-out



End of RJ-45 Plug - Conductor Profile

CONFIGURATION - first connect the battery to the host device to power the host device-BMS system

General

- The BMS Block is configured during commissioning of the host device, e.g., GenStar MPPT, via local display.
- Assignment of a compatible BMS-battery system is the only required configuration setting; but a BMS LVD-LVR Profile can also be configured during commissioning.
- The BMS Block will automatically receive and configure all external BMS-battery charging parameters.

Configuration Access-Changes

After commissioning, access and changes to MS battery type must be done on the local meter display with a factory reset (re-commissioning). Navigate to:

Commands\System\Reset to Factory Settings

LED INDICATIONS and TROUBLESHOOTING

Upper LED - Status; Lower LED - Comm	Indication
Interface fully configured and actively connected to battery	Lower LED blinking green
Interface fully configured but no connection to battery - controller will be faulted	Lower LED blinking red
Interface fully configured, but information not yet available to controller - controller will be faulted	Lower LED blinking yellow
Bootup Error - failed data check	Both LEDs solid yellow
Bootload Error - error encountered while attempting to bootload	Both LEDs solid red
BMS Block is in the process of bootloading	Upper and lower LEDs alternate red at 4Hz