

Specifications

Conditions of Sale

STANDARD: The seller's standard conditions of sale set forth in Price Sheet 150 apply, except as modified by the "WARRANTY QUALIFICATIONS" on page 2.

SPECIAL TO THIS PRODUCT:

INCLUSIONS: The GridMaster Microgrid Control System enables intelligent electronic devices to be incorporated into a microgrid. Each GridMaster microgrid controller operates as a member of a peer-to-peer network that ensures electrical demand is met while eliminating single points of failure. Microgrid controllers are used to monitor and switch new or existing renewable sources of energy, such as wind and solar; critical and non-critical loads (prioritized load shedding); utility and non-utility sources of generation; and energy storage to allow for islanding of electrical loads. The controller also can recognize when devices and equipment are unavailable and can compensate for such contingencies.

The control comes in two versions: a wall-mounted version that fits in most intelligent electronic device (IED) enclosures and a rack-mounted version to be installed in a standard 2U 19-inch (483-mm) equipment rack. Both versions provide a green LED power indicator and a recessed power switch.

Each controller within a microgrid control system contains a programmed, single-board computer that communicates over Ethernet. The embedded graphical user interface is browser-based and can be viewed using any standard Web browser. The interface gives operators visibility and access to all system data and can be customized to the user's preferences. Remote-access options are available that allow edits and adjustments during the microgrid-commissioning process.

The microgrid controller provides a power connection and has dual Ethernet ports and a port for connecting a GPS antenna. The power port accepts 12 to 36 Vdc. The main controller uses the GPS antenna to maintain system time in cases where the control network is isolated from the Internet. The microgrid controller can communicate with a wide variety of intelligent devices using a number of protocols, including DNP 3.0 and Modbus.

The GridMaster controllers communicate with each other via an encrypted proprietary protocol. The system normally uses IPv6 for controller-to-controller communications, although it can operate using the IPv4 standard. All data in motion between different controllers use 256-bit SSL encryption.

Each controller archives all the values it individually measures and calculates, along with all command decisions made and issued to the equipment. The data are stored in a report-by-exception format, meaning new values are only archived if they differ from the previous value by a given threshold. This is an efficient way of storing data and gives each controller the ability to store many years of data, depending on how many data streams it is recording and how often they change. The data can be downloaded from the GUI for analysis in spreadsheets or more powerful tools.

The microgrid control is passively cooled. The microgrid controller can be stored at temperatures between -40°C (-40°F) and +85°C (+185°F).

- The wall-mounted controller can operate at temperatures between -40°C (-40°F) to +65°C (+149°F) and at 95% non-condensing humidity. It can be applied at altitudes up to 2000 meters (6562 feet).
- The rack-mounted controller can operate at temperatures between -40°C (-40°F) to +50°C (+122°F) and at 95% non-condensing humidity. It can be applied at altitudes up to 3000 meters (9843 feet).

The GridMaster microgrid controller uses built-in cybersecurity that complies with the following applied security frameworks:

- NIST 800-82, Guide to Industrial Control System Security
- NIST 800-53, Risk Management Framework
- DoDI 8500.2, DoD IA Certification and Accreditation Process
- CNSSI 1253 App I, ICS Security Overlay



The GridMaster Microgrid Controller is supported by the following S&C Intelligent Electronic Devices:●

- Vista® Underground Distribution Switchgear
 - Vista® SD Underground Distribution Switchgear
 - S&C Metal-Enclosed Switchgear
 - IntelliRupter® PulseCloser® Fault Interrupters
 - ScadaMate® and ScadaMate® SD Switching Systems
 - SpeedNet™ Radios
 - IntelliTeam® SG Automatic Restoration System-enabled controllers
- GridMaster microgrid controllers are equipment-agnostic and can control a wide variety of devices not manufactured by S&C. The associated equipment type should be specified on the sales order.

EXCLUSIONS: GridMaster microgrid controllers do not include communication radios, connecting cable, antenna connections, or antennas.

WARRANTY QUALIFICATIONS: Warranty of GridMaster microgrid controllers is contingent upon the installation, configuration, and use of the control or software in accordance with S&C's applicable instruction sheets. This warranty does not apply to major components not manufactured by S&C, such as batteries, communication devices, and the IED associated with the microgrid controller. However, S&C will assign to the immediate purchaser or end user all manufacturers' warranties that apply to such major components.

Warranty of equipment/services packages is contingent upon receipt of adequate information on the user's distribution system, sufficiently detailed to prepare a technical analysis. The seller is not liable if an act of nature or parties beyond S&C's control negatively impact performance of equipment/services packages; for example, new construction that impedes radio communication, or changes to the distribution system that impact protection systems, available fault currents, or system-loading characteristics.

How to Order:

STEP 1. Select the catalog number of the desired GridMaster microgrid controller from Table 1.

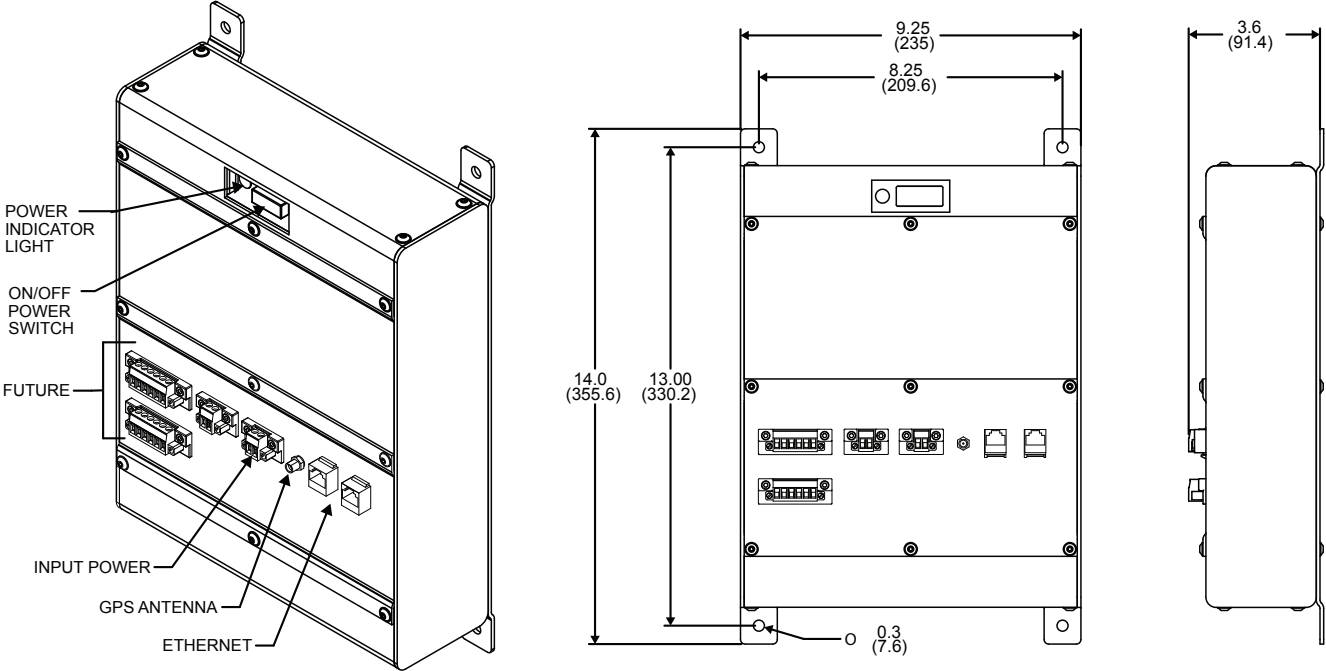
Catalog Number: - - -

Table 1. GridMaster Microgrid Controllers

Item	Catalog Number
Wall-mounted microgrid controller	GME-9000-W-1
Rack-mounted microgrid controller	GME-9000-R-1

Wall-Mounted GridMaster Microgrid Controller

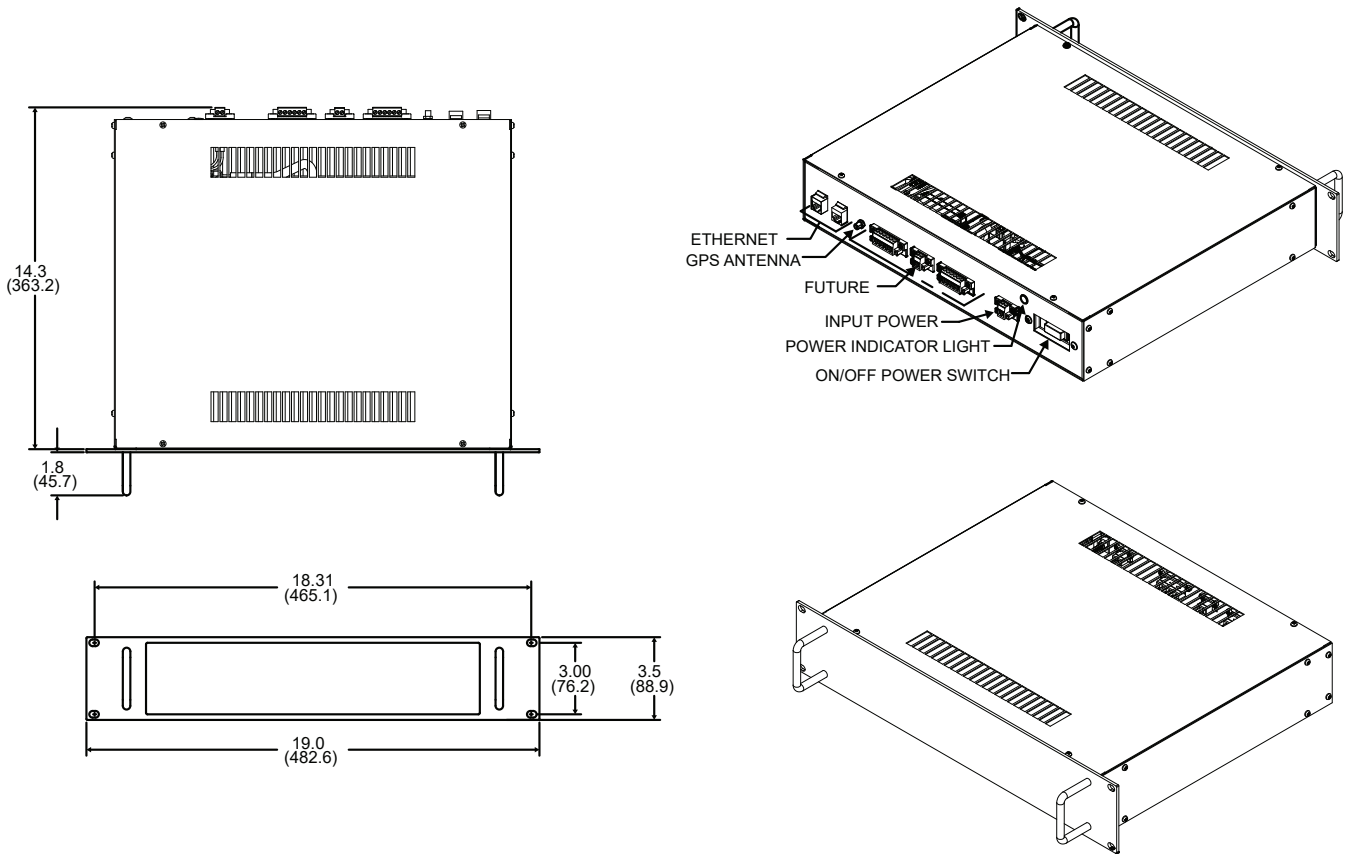
Dimensions in inches [mm]



Note: The wall-mounted enclosure weighs approximately 10 pounds (4.5 kg).

Rack-Mounted GridMaster Microgrid Controller

Dimensions in inches [mm]



Note: The rack-mounted GridMaster microgrid controller is a standard 2U unit. If a more detailed drawing is required, contact your local S&C Sales Office.