



Image shown may not reflect actual configuration

## Cat® Microgrid Master Controller (MMC) MMC-M

Caterpillar is leading the renewable microgrid market with hybrid power solutions engineered to deliver unmatched performance, reliability, durability, and cost effectiveness.

## Features

### General Description

The Cat® MMC is designed for large industrial/campus installations. The MMC-M will integrate a variety of traditional and renewable energy sources to provide overall monitoring and control of the assets. These assets may be either located at a common installation or dispatched over a wider region.

### Panel

- 914.4 mm (36 in) x 1217.3 mm (48 in) x 33.2 mm (1.3 in) NEMA 3R wall-mount control panel
- Industrial PC in a rugged metal enclosure, resistant to vibration and shock.
- 15.6" industrial touch-screen display that includes microgrid system one-line, control and monitoring of connected assets.
- Operating temperature: -10°C to 60°C (14°F to 140°F) at 5%-85% relative humidity (non-condensing)

### User Interface

Provides visual interface to all control elements to simplify operator interactions with the distributed energy resources. Includes system visualization and user interface for manual or automatic control of the distributed energy resources.

### Distributed Resource Dispatch

The distributed energy resources, including the photovoltaic (PV) system, energy storage system (ESS) and generator sets are controlled from the MMC. The MMC will determine the correct energy contribution from each of the distributed energy resources. Priority for distributed resource use can be changed from the MMC user interface.

### Asset Optimization

The MMC may be configured to optimize overall performance based on different user-defined criteria. The optimization can be based on a number of different parameters, such as minimizing fuel cost, optimizing engine operation, or maximizing system reliability. The system may also be configured to provide a minimum level of spinning reserve online to respond to sudden load transients.

### Grid Import/Export Control

The MMC will regulate the amount of real and reactive power contributed to the microgrid from the available utility service based on a programmable set point. This can be set to either import or export power based on the limit assigned by the system operator or utility.

## Features (continued)

### Black Start

The MMC is capable of manual black start operation to energize the microgrid from a de-energized (black) state. The operator will manually set up an island and enable the microgrid manual black start mode in the MMC. Loads can then be manually restored to the system with the MMC automatically adding generation to meet the load requirements.

### Remote Interface (SCADA)

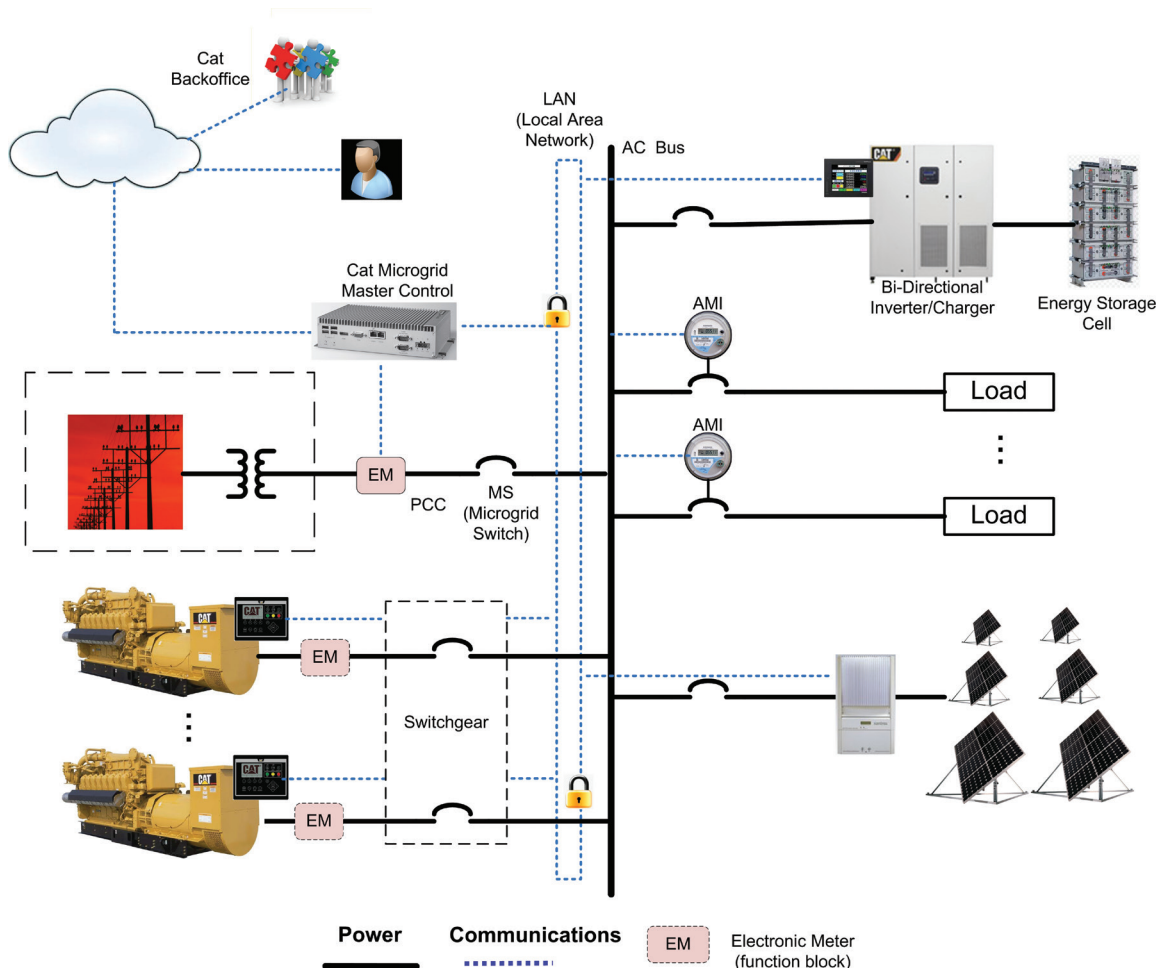
The MMC provides a Modbus TCP data link connection for customer monitoring and basic control of the complete microgrid.

### Enterprise Data Integration

The complete system is monitored remotely using Cat Connect Technology to provide real time monitoring of the performance and health of the installation. If an issue is detected, local technicians can be dispatched to resolve the problem.

### Worldwide Product Support

- Cat dealers provide extensive post-sale support including maintenance and repair agreements.
- Cat dealers have over 1,800 dealer branch stores operating in 200 countries.



### Questions? Contact:

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