Vertiv™ Liebert® iCOM™ CMS
GUIDE SPECIFICATIONS

1.0 GENERAL OVERVIEW

The Liebert® iCOM™ CMS is a unique way to stream real-time data from remote air conditioning equipment within Network Closets to a mobile device. The CMS is a web card that ties directly to the Vertiv™ Liebert® Mini-Mate2, Vertiv™ Liebert® DataMate, and Vertiv™ Liebert® SRC air conditioning systems. By incorporating the Liebert® iCOM™ CMS, we can now provide a way to remotely view, control, and monitor these Liebert air conditioning systems. The CMS provides mobile cloud access by allowing the User to register their corresponding air conditioning equipment to the CMS Administration Portal. Once registered, the User may download the Liebert® iCOM™ CMS Mobile Application, which will be managed by the Administration Portal. This read-only Mobile App provides real-time unit status and alarm notifications of each registered system. Alarm notifications can be sent to each User setup within the Administration Portal. Users' will also be able to remotely view the display of each air conditioning system by pulling up the individual unit URLs via the web. A User is defined as anyone who is utilizing the Liebert® iCOM™ CMS Mobile Application.

1.1 CMS Administration Portal (Mobile Cloud)

The CMS Administration Portal is designed to allow the User ease of management of all the air conditioning equipment that has been registered to the Mobile Cloud. From the Administration Portal the designated Administrator can add new Users, assign different Users' access to registered air conditioning equipment, assign registered equipment to different buildings, and assign different buildings to the particular divisions within the Organization. Once the assignments have been configured, the Mobile Application will then reflect the changes made.

1.2 CMS Mobile Application

The CMS Mobile Application provides real-time unit status and alarm status of each unit that has been registered to the Administration Portal. This read-only application provides push-notifications, which hands over up-to-date alarm notifications to each User assigned to the corresponding unit. Notifications may be sent out via SMS text message or email via the Mobile App. The "Liebert® iCOM™ CMS" app is available at the Apple Store for all iOS devices and the Google Play store for all Android devices.

1.3 CMS web interface

Included with the CMS board will be remote access to the unit level display via the world-wide web. By searching the assigned IP address (URL) of the unit using Google Chrome web browser only, the User will have read/write capability to each system. Allowable adjustments include setpoints, alarms, sensor calibration and other settings that can be found in the unit level display. Furthermore, the Web Interface is where the User can access the Cloud settings and register the device to the Mobile Cloud.

2.0 PRODUCT

2.1 CMS Hardware for Vertiv™ Liebert® Mini-Mate2 and Vertiv™ Liebert® DataMate

- CMS Control Board
- Control Board Enclosure
- Additional 40VA Transformer (depending on Unit model number, applied voltage)
- Communication Wiring Harness
- Power Wiring Harness
- Terminal Strip
- Wire splice connectors

2.2 Hardware connections

- **Ethernet Ports (x2)**

  Provide access points for Network communication, BMS connectivity; Modbus IP

- **USB Ports (x2)**

  Provide access point to which software can be loaded. The User may also backup & restore any display configurations to a USB drive.

- **CANbus Ports (x2)**

  Not used at this time

- **485 Ports (x2)**

  BMS connectivity, Modbus 485, air conditioning unit communication

- **Power**

  24vAC input to CMS control board

3.0 STANDARD CMS INTERFACES

3.1 Administration Portal Features

1. Summary Tab

Provides an overview of the current Organization containing cloud-registered air conditioning equipment, divisions within the organization, buildings assigned to a particular division, units assigned to different buildings, and the Users granted access within the organization.

2. Divisions Tab

The appointed Administrator may define different divisions within an organization.

3. Buildings Tab

The appointed Administrator may define the different buildings an Organization may have. Buildings may be assigned to a specific division. Information on the building includes name, address, city/state/zip.

4. Units Tab

Once an air conditioning system has been registered to the mobile cloud via the web interface, the unit will appear in this menu. Administrator can edit each unit and assign it to a specific building. Information of the unit includes unit name, description, registration date, and serial number of the CMS unit.

5. Users Tab

The appointed Administrator can create new users within the Organization. From here the User can then be assigned to specific air Divisions within the Organization and will be responsible for all air conditioning equipment assigned to that Division. Information on the User includes name, email address, direct phone number, mobile phone number, and position. There are three different User roles that can be setup:

- Admin
- Mobile User
- Contact (User who appears only as a contact in the CMS Mobile App)

The Administrator can also select the method of how alarms will be sent out to each User.

- Email
- SMS text message
- Push notifications enable/disable

3.2 CMS Mobile Application Features

1. Login Screen

User will be required to login upon opening the mobile app using the email address that has been registered to the Administration Portal.

2. Organization/Building Overview

Provides an alarm status summary of the units located within each building. User may navigate to any unit within the Organization from this screen.

3. **Individual Unit Summary Tabs**

   Each unit is represented by a tab that displays the unit name. Users' may scroll through each tab to view specific details pertaining to each unit.

4. **Unit Details Screen**

   Information shown; Unit ON/OFF status, current temperature/humidity setpoint, current temperature/humidity readings, fanspeed, hi-low temperature/humidity reading range over a defined period of time, alarm status from the last 7 days.

5. **Setpoints History**

   Displays the history of changes in temperature/humidity setpoints and fanspeed.

6. **Run Hours**

   Displays the total run hours of individual components with the air conditioning system.

7. **Event Log**

   Provides a list of all events that have taken place including alarms, warnings, setpoint adjustments, and alarm settings adjustments.

8. **Alarm Status Icon**

   Upon pressing the Alarm icon, user will navigate to a separate menu where they will be able to view all active alarms, active & accepted alarms, and cleared alarms. Information pertaining to each event includes specific details regarding the alarm, date & time, and which User has accepted the alarm.

9. **Messages Tab**

   Users' will receive messages pertaining to any air conditioning system that has been assigned to their watch via the Administration Portal. Messages will include active alarms, warnings, and any settings adjustments.

10. **Liebert Support Tab**

    In the event that the User requires additional assistance, the support tab provides contact information to our Vertiv Technical Support Department and Vertiv Service (if under a service agreement with Vertiv).

11. **Settings Menu**

    The Profile Settings allows the User to reset their login password. Under the display settings, Users' can specify the time period for which the Temperature/Humidity hi-low ranges are taken; 24 hours or 7 days. Users' may also select the measurement system that will be displayed; imperial or metric.

12. **Help Menu**

    The Help Menu provides a web link to the Administration Portal.

13. **About Menu**

    The User can view which version of Mobile Application software they are currently running and the date it was updated.

3.3 Web Interface Features

1. Password Protection

Upon logging into the Web Interface, the User is required to select one of three levels of access: User, Service, or Advanced; each containing a corresponding password. Each level of access provides specific parameters the User will be allowed to access.

2. User/Service/Advanced login

- **User level** allows for low-level access where the user can only view setpoints, event log, and current unit & alarm status.
- **Service level** allows for medium-level access. User can view/adjust temperature and humidity setpoints, set alarms, calibrate sensors, view & clear active alarms, edit run hours, setup BMS, register equipment to mobile cloud, backup & restore display settings, and load firmware.
- **Advanced level** allows access to all parameters within the control.

3. Unit Status

Provides information regarding current temperature/humidity readings, temperature/humidity setpoints, current fan speed, hi/lo temperature reading range, hi/lo humidity reading range, and the most recent events in the event log.

4. Alarm Summary

Menu provides a summary of details on the current Alarms & Warnings. Each event can be cleared from this screen.

5. Parameter Search

Any parameter located within the controller can be searched using the Search function.

6. Help & How-To Menu

Interactive menu that provides an explanation on how to adjust each parameter located within the controller.

7. Display Preferences

User may define the measurement system (imperial or metric), inactivity timer, Hi/Lo Temp/Humidity periods, date/time format.

8. Date/Time Setup

User may enable/disable NTP (Network Time Protocol), select the time zone, and set the date & time.

9. iCOM CMS Name

User may enter custom name for the corresponding air conditioning system (s).

10. Component Run Hours/ Maintenance Setup

Menu provides the current run hours on each individual mechanical component within the air conditioning system. Run hours can be reset from this menu. Maintenance Setup allows User to specify the last date of maintenance and select the date of the next maintenance.

11. Setpoints

Dedicated menu for adjusting the temperature/humidity setpoints & sensitivities. Restart time delay and current fanspeed may also be defined.

12. **Set Alarms**

    Dedicated menu for defining high/low temperature thresholds, high/low humidity thresholds, adjusting short cycle, loss of power alarms, and select custom alarms 1 & 2,

13. **Event Log**

    Provides a list of the most current alarm & warning events as well as the most recent parameter settings changes.

14. **Sensor Calibration**

    User can view current temperature/humidity readings and adjust their corresponding offset values.

15. **BMS Setup**

    User can enable BMS pass-through mode when utilizing both 485 ports on the CMS control board and the unit for Modbus.

16. **Cloud Setup**

    Dedicated menu provided for registering the unit to the Mobile cloud. Requires customer email address to register.

17. **Connection Settings**

    Dedicated menu for setting up the CMS control board on the customer network using the Ethernet ports. User may select between DHCP or Static IP.

18. **Backup & Restore**

    Dedicated menu for saving a copy of the controller settings in a file with the system name that has been assigned. Use a backup file to restore unit settings in the event of unit failure.

19. **Load Firmware**

    Dedicated menu for performing Vertiv™ Liebert® iCOM™ - CMS software updates. Software is an .xbp file which can be placed on a USB thumb drive and loaded via the USB ports on the CMS control board.

20. **Manage Passwords**

    User can define the passwords that correspond to the User, Service and Advanced levels.

21. **About Menu**

    This screen provides information regarding the latest version of Liebert® iCOM™ - CMS software that is operating.

22. **Support & Services Menu**

    Dedicated menu for providing contact information for Vertiv Technical Support and Vertiv Service.