Liebert®
iCOM CMS™

Installer/User Guide
Intelligent Communication & Monitoring for Liebert Mini-Mate2™
and Liebert DataMate™ Systems
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Technical Support Site

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1 GETTING STARTED WITH ICOM CMS

The web-based user interface for iCOM CMS offers the highest capability for unit control, communication, and monitoring of Liebert® Thermal Management units. It is available factory-installed on new units and assemblies or may be retrofitted in existing units. For details on first-time set-up and retro-fit installation, see Installing and Connecting iCOM CMS on page 39.

1.1 Liebert iCOM CMS has 3 Main Features

- A web-based user interface providing remote connectivity to a unit-level display with full read/write capabilities.
- BMS connectivity via Modbus RTU, Modbus TCP/IP and SNMP.
- Mobile cloud/Mobile app access to view status and notification information on a mobile device.

NOTE: You can control the unit using the web-based UI, including unit on/off, setpoints, and alarm set-up. The mobile app, however, does not allow unit control. It is a read-only interface for notifications.

1.2 What Features Would You Like to Use?

You can use one or all of these features, and the following sections provide an outline of the steps to set-up and get started using each one.

1.2.1 Access the web-based user interface

Place iCOM CMS on your corporate network by configuring the network settings using the Connection Settings menu. See Connection Settings on page 29.

Once set-up, everyone using a computer with corporate-network access and provided with the assigned IP address can open the web UI in a web browser.

1.2.2 Access the BMS protocols

To configure communication with your building-management system, use the BMS Setup menu. See External Monitoring and Building-management systems on page 26.

1.2.3 Access the mobile cloud/mobile app

Place iCOM CMS on your corporate network by configuring the network settings using the Connection Settings menu. See Connection Settings on page 29.

Then, register the iCOM CMS cooling unit using the Cloud Setup menu. See Registering with the Administration Portal to Allow Mobile-app Users Access on page 41.

- Once the unit is registered, the e-mail address you used to register the device will receive a password-change e-mail with the credentials to log-in to the iCOM CMS Administration Portal (www.icomcms.com) and the mobile app.
• Visit the Administration Portal at icomcms.com, and log-in to manage the registered devices and mobile-app users as follows:
  • Create a division.
  • Create a building and assign the building to a division.
  • Assign the registered iCOM CMS unit to a building.
  • Create users, define the user’s role (Administrator, Mobile-app only), set-up e-mail or SMS-text notifications, and assign buildings to the user, which determines what units they can view in the mobile app.
  • The mobile-app users will get an e-mail with log-in credentials, and can download the iCOM CMS mobile application and log in to receive notifications.

1.3 iCOM CMS web-based user interface

The web-based user interface speeds set up and installation and simplifies control of Liebert® cooling units.

  • User, service and advanced menus are password-protected to prevent unauthorized changes to cooling-unit operation. See Logging-on to iCOM CMS and Unlocking controls on page 9.
  • iCOM CMS ships with default settings for efficient and effective operation of most cooling-units and is easily configured to meet any need.
  • iCOM CMS requires a Google Chrome web browser version 50.0.xx or higher.

Figure 1.1 on the facing page, shows the controls and options available on the main display.
### Figure 1.1 iCOM CMS web-based user interface

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Menu icon. When unlocked, displays set-up, control options and menu depending on the password level used.</td>
</tr>
<tr>
<td>2</td>
<td>Status view. When you log on, the iCOM CMS-controlled units and their status are listed on the main display. Clicking the status icon toggles between the status and alarm summary.</td>
</tr>
</tbody>
</table>
| 3    | Settings view. When selected, the settings options are listed on the main display. Options are:  
  - Display Preferences, see Setting general display properties on page 10.  
  - Date/Time Setup, see Setting the date and time on page 10.  
  - iCOM-CMS settings are listed when you are logged-in at the “advanced” level, see:  
    - Setting the iCOM CMS Name on page 36.  
    - Setting the Managing Mode on page 36.  
    - Managing SSL Certificates on page 36. |
| 4    | Service view. When selected, the last and next preventive maintenance (PM) are listed next to the connected units.  
You must be logged-on at the “Service” or “Advanced” level to access the service icon. See Maintenance scheduling and component run hours on page 25. |
| 5    | Advanced view. When selected, advanced-level options are available on the menu.  
You must be logged-on at the “Advanced” level to access the advanced icon. See Logging-on to iCOM CMS and Unlocking controls on page 9. |
<p>| 6    | Search. Opens the “search” term-entry box. See Searching on page 11. |
| 7    | Lock/Unlock. Indicates that the options/menus at the level at which you are logged-on (user, service or advanced) are accessible. See Logging-on to iCOM CMS and Unlocking controls on page 9. |</p>
<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Secondary-content panel. When accessing settings/configuration via the menus, the settings display in the right, “secondary” panel.</td>
</tr>
<tr>
<td>9</td>
<td>Setpoint and Unit status summary. Summary display of setpoints and settings of the unit. See Unit Status on page 8.</td>
</tr>
<tr>
<td>10</td>
<td>Sensor status summary. Summary display of environmental conditions of the unit. See Sensor status on page 8.</td>
</tr>
</tbody>
</table>

### 1.3.1 Sensor status

The dial in the status panel displays environmental conditions for the unit at a glance.

**Figure 1.2  Status dial**

![Status dial](image)

### 1.3.2 Unit Status

The unit status list in the main status panel displays unit-specific settings and parameters at a glance.

**Unit-status list options**

**T Setpoint**
- Current temperature setpoint.

**H Setpoint**
- Current humidity setpoint.

**Fan**
- Current fan-speed setting.

**Power**
- Indicates the on/off status of the unit.
1.4 Logging-on to iCOM CMS and Unlocking controls

The factory-default password for user, service and advanced login are provided. We recommend you change passwords as necessary to prevent unauthorized changes. See Managing Access Permission and PINS on page 34.

- Default User password = 1490
- Default Service password = 5010
- Default Advanced password = 2210

To log-on and unlock iCOM CMS:

1. Open the iCOM CMS web interface in your browser.
   The log-in screen opens.
2. Type the password, and click Sign in.
   Depending on the user level selected, the user/service/advanced options are accessible. See Accessing the User, Service and Advanced functions on page 12.

1.4.1 Powering-on the cooling unit

1. In the unit list on the status panel, click
   The POWER UNIT CONTROL dialog opens.
2. Click On.
   The cooling unit starts.

1.4.2 Powering-off the cooling unit

1. In the unit list on the status panel, click
   The POWER UNIT CONTROL dialog opens.
2. Click Off.
   The cooling unit powers-off.

1.4.3 Logging out

To log-out, click the lock icon.
The log-in screen displays.
1.5 Setting general display properties

1. On the menu bar, click SETTINGS, then Display Preferences in the settings list. The DISPLAY PREFERENCES panel displays.
2. Select the settings and click Save.
   • Click Cancel to discard the changes.

Display-preferences fields

Theme
Selects the color theme for the display.

Measurement System
Selects the units of measurement.

Inactivity Timer
Time to elapse before display logs-off.

Hi/Lo Period
Period over which the high and low temperature and humidity readings are taken. The readings are displayed on the main display, see Unit Status on page 8.

Date Format
Display format for the date.

Time Format
Display format for the time.

1.6 Setting the date and time

The correct date and time is critical for warnings, alarms, and scheduling.

1. On the menu bar, click SETTINGS, then Date/Time Setup in the settings list. The DATE/TIME SETUP panel displays.
2. Select the settings.

NOTE: If NTP is enabled, the Set Date and Set Time fields are grayed out.

3. Click Save.
   • Click Cancel to discard the changes.

Date/Time set-up options

Time Zone
Selects the time zone.

Set Date
Selects the current date when NTP is disabled.
Set Time

Selects the current time when NTP is disabled.

NTP Enabled

Enables/Disables the network time protocol for clock synchronization.

NTP Server #X

When NTP is enabled, the address of the server(s) to which the unit refers for the time protocol, where X = designates a reference number for the server.

1.7 Searching

Use the display search to find the location of settings options.

1. On the menu bar, click SEARCH. The term-entry box opens.
   • Click Search again to close the term-entry box.
2. Type the term and press Enter. A list of locations that contain the searched term opens.
3. Click an item to open the panel for the selected location.

1.8 Using Context-sensitive Help

Clicking the Help icon, ?, on the right-hand side of the display opens the Help drawer with information about the panel or dialog currently on the display. You can use search in the Help to find further information.

To close the Help drawer, click the close arrow, ? again.

1.9 About iCOM CMS version

The version, build, and other firmware information may be helpful when servicing or troubleshooting.

1. Click The menu opens.
2. Click About. The ABOUT panel opens.
1.10 Accessing the User, Service and Advanced functions

The iCOM CMS operating functions that monitor and control a cooling unit are accessed via the icons in the header and the menus.

NOTE: You must be logged-in with the appropriate level and password to access the menu options for user-, service- and advanced-specific functions. See Logging-on to iCOM CMS and Unlocking controls on page 9.

To access menu functions:

Click the menu icon. Depending on the function level at which you are logged-in, the menu opens. The following lists describe the available options on each menu.

**User-level menu options**

- **Setpoints**
  - Opens the SETPOINTS panel. See Viewing setpoints for the cooling unit on page 17.

- **Event Log**
  - Opens the EVENT LOG panel. See Viewing the event log for a cooling unit on page 17.

- **About**
  - Opens the ABOUT panel. See About iCOM CMS version on page 11.

**Support & Services**

- Opens the SUPPORT & SERVICES panel.

**Service-level Menu Options**

- **Setpoints**
  - Opens the SETPOINTS panel. See Editing setpoints for the cooling unit on page 21.

- **Set Alarms**
  - Opens the SET ALARMS panel. See Managing Alarm and Warning Notifications on page 22.

- **Event Log**
  - Opens the EVENT LOG panel. See Viewing the event log for a cooling unit on page 17.

- **Sensor Calibration**
  - Opens the SENSOR CALIBRATION panel. See Sensor Calibration on page 24.
BMS Setup

Opens the BMS SETUP options:

- Modbus—See Modbus RTU Set Up on page 27.
- SNMP—See SNMP Set Up on page 29.

Cloud Setup

Opens the CLOUD SETTINGS panel. See Registering with the Administration Portal to Allow Mobile-app Users Access on page 41.

Connection Settings

Opens the DISPLAY CONNECTIONS panel. See Connection Settings on page 29.

Settings Management

Opens the SETTINGS MANAGEMENT options:

- Backup & Restore—See Backing-up and Restoring settings on page 30.
- Factory Reset—See Resetting hardware to factory defaults on page 32.

Load Firmware

Opens the FIRMWARE UPGRADE PARAMETERS panel. See Updating iCOM CMS firmware on page 33.

About

Opens the ABOUT panel. See About iCOM CMS version on page 11.

Support & Services

Opens the SUPPORT & SERVICES panel.
Advanced-level Menu Options

Setpoints
Opens the SETPOINTS panel. See Editing setpoints for the cooling unit on page 21.

Set Alarms
Opens the SET ALARMS panel. See Managing Alarm and Warning Notifications on page 22.

Event Log
Opens the EVENT LOG panel. See Viewing the event log for a cooling unit on page 17.

Sensor Calibration
Opens the SENSOR CALIBRATION panel. See Sensor Calibration on page 24.

BMS Setup
Opens the BMS SETUP options:
- Modbus—See Modbus RTU Set Up on page 27.
- SNMP—See SNMP Set Up on page 29.

Cloud Setup
Opens the CLOUD SETTINGS panel. See Registering with the Administration Portal to Allow Mobile-app Users Access on page 41.

Connection Settings
Opens the DISPLAY CONNECTIONS panel. See Connection Settings on page 29.

Settings Management
Opens the SETTINGS MANAGEMENT options:
- Backup & Restore—See Backing-up and Restoring settings on page 30.
- Factory Reset—See Resetting hardware to factory defaults on page 32.

Load Firmware
Opens the FIRMWARE UPGRADE PARAMETERS panel. See Updating iCOM CMS firmware on page 33.
Manage Passwords

Opens the MANAGE PASSWORDS panel. See Managing Access Permission and PINS on page 34.

About

Opens the ABOUT panel. See About iCOM CMS version on page 11.

Support & Services

Opens the SUPPORT & SERVICES panel. Includes the option to create a diagnostics report to help with technical-support calls. See Generating a Diagnostics Report on page 35.
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2 USER OPERATION

2.1 Viewing setpoints for the cooling unit

NOTE: User-level access allows only viewing of setpoints. To adjust setpoints, you must have service- or advanced-level access. See Editing setpoints for the cooling unit on page 21.

To view the setpoints:

1. Click \( \text{Setpoints} \). The SETPOINTS panel opens.
2. Click the name of the unit for the setpoints you want to see. The detail panel displays the setpoints for that unit.

Setpoints—user level

Temperature

Temperature that the unit maintains via cooling/reheat.

Temperature Sensitivity

Deviation from setpoint allowed before unit begins cooling/heating.

Humidity

Humidity level maintained by adding moisture to or removing moisture from the air.

Humidity Sensitivity

Deviation from setpoint allowed before unit begins humidifying/dehumidifying.

Restart Delay

Length of delay, in 6-second intervals, before the unit restarts automatically after a loss of main power. See Setting Restart Delay on page 21.

Fan Speed

Indicates the selected fan speed.

2.2 Viewing the event log for a cooling unit

The event log is a list by date/time, unit, event type for all generated events and alarms and includes the PIN ID for user-generated events and comments. Selecting an event log displays details about the event.

To view the event log:

1. Click \( \text{Event Log} \). The EVENT LOG opens.
2. Click an event to display the detailed information.
Event-log fields

When
The date and time the event occurred.

Unit
The cooling unit to which the event is associated.

Description
Description of the event.

PIN ID
The name of the user that made a user-generated event or comment.

Event details

Date/Time
The date and time the event occurred.

Unit
The cooling unit to which the event is associated.

Description
Description of the event.

PIN ID
The name of the user that made a user-generated event or comment.

2.3 Viewing cooling-unit alarms

The ALARMS SUMMARY lists active alarm and warning events for the cooling unit.

To view the alarm summary:

1. On menu bar, click STATUS, to toggle between the status and alarm summaries.
   The ALARMS SUMMARY displays in the primary panel, and the ALARMS list displays in the secondary panel.
2. Click an alarm to display the ALARM DETAILS panel, described in Alarm/Warning detail fields on page 19.

Alarm list fields

When
Time elapsed since the event was logged.

Description
Description of the event.
2.3.1 Clearing alerts for resolved conditions

Alarm notifications on the UI will remain active until cleared, even after the condition that triggered the alarm is resolved.

**NOTE:** Resetting/Clearing an alarm from the web-based UI does not clear it from the iCOM display.

To clear the alert(s):

On the ALL ALARMS panel, click *Reset*. Alerts for resolved events are cleared. If the condition that triggered the alarm is not resolved, the alert is not cleared.

2.3.2 Acknowledging alarms

Once acknowledged, an event remains active until the situation that triggered the event is resolved.

**NOTE:** The High Water alarm event and the Smoke Detected alarm event (if smoke-detector option is included) automatically power-off the cooling unit.

To acknowledge an alarm:

1. On the ALARMS list, click an alarm/warning. The alarm detail panel displays.
2. On the alarm-detail, click *Acknowledge*.

**NOTE:** Acknowledging alarm events does not clear them. To clear an issue, it must be corrected, reset automatically by the controller, or reset manually.

**Alarm/Warning detail fields**

- **Event Type**
  - The type of event.

- **Status**
  - Current status of the event.

- **Date/Time**
  - Date and time the event was logged.

- **Duration**
  - Length of time the event is active.

- **Threshold**
  - Setting at which the event was triggered.
3 SERVICE AND ADVANCED OPERATION

NOTE: With the exception of managing passwords, which is only available to the advanced-level user, the service and advance menu options are the same.

3.1 Editing setpoints for the cooling unit

Setpoints are the means by which cooling-unit operation is controlled.

NOTE: Setpoint adjustment is only available via the web-based UI (and the wall-mounted controller). You cannot modify setpoints using the mobile app.

To edit the setpoints:

1. Click ☰️ > Setpoints. The SETPOINTS panel opens.
2. Adjust the setpoint options, then click Save. The setpoint is updated.
   • Click Cancel to discard the changes.

Setpoint options

Temperature
Temperature that the unit maintains via cooling/reheat.

Temperature Sensitivity
Deviation from setpoint allowed before unit begins cooling/heating.

Humidity
Humidity level maintained by adding moisture to or removing moisture from the air.

Humidity Sensitivity
Deviation from setpoint allowed before unit begins humidifying/dehumidifying.

Restart Delay
Length of delay, in 6-second intervals, before the unit restarts automatically after a loss of main power. See Setting Restart Delay on page 21.

Fan Speed
Selects the fan speed.

3.1.1 Setting Restart Delay

Restart delay prevents multiple units from starting at the same time after a loss of main power. In multi-unit systems, program each unit with a different delay for automatic restart.

Setting the delay to 0 (zero) disables automatic restart and requires manually restarting the unit using the on/off button.
To set a delay:

1. Click ☐ Setpoints. The SETPOINTS panel opens.
2. Use the slider or –/+ buttons to select the Restart Delay, then click Save.

### 3.2 Managing Alarm and Warning Notifications

Events are notifications of operating status for the cooling unit, its components, and auxiliary devices. All events are recorded in the Event Log, and alarm and warning events are also displayed on the alarm summaries. See Viewing the event log for a cooling unit on page 17, and Viewing cooling-unit alarms on page 18.

**NOTE:** The High Water alarm event and the Smoke Detected alarm event (if smoke-detector option is included) automatically power-off the cooling unit.

The EDIT ALARMS panel lists the configurable notification events for the selected unit. You can modify these events and the criteria that trigger alarms including:

- Critical thresholds
- Time delays
- Enable/Disable alarm
- Enable/Disable trigger of common-alarm relay
- Adding custom alarms

**NOTE:** To adjust alarm settings, you must have service- or advanced-level access.

#### 3.2.1 Enabling alarm/warning notifications and editing settings

To adjust alarm settings, you must have service- or advanced-level access.

1. Click ☐ Set Alarms. The EDIT ALARMS list opens.
2. Click an alarm in the list. The EDIT ALARM panel opens.
3. Adjust the settings and click Save.

**Edit Alarm panel fields and options**

**Alarm/Warning switch**

Logging and notification level of the event.

**NOTE:** Warning events do not trigger alert notifications (via e-mail, SMS, and Push) on the mobile application.
Enabled/Disabled switch

Enables/Disables notification at the cooling unit’s iCOM display and on the web-based UI. Click the switch to set On or Off.

NOTE: When disabled, events are not logged or displayed and visual/audible alarm notifications are not made.

Relay On/Off

Defines whether or not the event triggers the Common Alarm Relay. Options are:

- Relay On = common-alarm relay is triggered.
- Relay Off = common-alarm relay is not triggered.

Threshold

Reading at which the alarm is triggered.

Alarm Delay

Time, in seconds, to delay notification after event trigger.

3.2.2 Setting-up custom-alarm events

Remote-alarm devices (RAD) are sensors and detectors outside the cooling unit that provide information about conditions and situations that may affect operation. RAD include smoke detectors, filter-condition, and valve status.

Two or three custom alarm events are included, depending on the tonnage of the cooling unit.

To set up a custom alarm event:

1. Click > Set Alarms. The EDIT ALARMS list opens.
2. Click a custom alarm in the list. The EDIT ALARM panel opens.
3. Use the EDIT ALARM panel to
   - Adjust the settings, described in Edit Alarm panel fields and options on page 22.
   - Select the custom-alarm type described in Table 3.1 below.
4. Click Save.

NOTE: Depending on customization, some events listed in Table 3.1 below may not be available with your system.

### Table 3.1 Custom input options

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoke Detected</td>
</tr>
<tr>
<td>Humidifier Problem</td>
</tr>
<tr>
<td>Loss of Airflow</td>
</tr>
<tr>
<td>Water Flow Loss</td>
</tr>
<tr>
<td>Filter Clog</td>
</tr>
<tr>
<td>Custom Text #1</td>
</tr>
<tr>
<td>Custom Text #2</td>
</tr>
</tbody>
</table>

### 3.3 Sensor Calibration

If you suspect that the temperature and/or humidity readings are not accurate, you can calibrate the sensors using a field-supplied, portable, calibrated test instrument.

NOTE: If the sensor measurements are subject to wide temperature or humidity swings, you may shorten cycling by increasing sensor time delay. Wide measurement swings will also occur if the sensors are too close to the unit’s discharge air. If this is the case, you may be able to reduce compressor cycling by increasing the sensitivity settings for temperature and humidity.

To perform sensor calibration:

1. Place a calibrated test instrument as close as possible to the cooling-unit sensor to obtain an accuracy reading for comparison.
2. Wait at least 15 minutes after the unit maintains stable operating conditions.
3. On the iCOM CMS interface, click > Sensor Calibration. The SENSOR CALIBRATION panel and the sensor-calibration PROPERTIES panel display.
4. Referring to the test instrument, click and drag the slider to adjust the offset so that the corrected reading matches that of the test instrument, and click Save.

**Sensor-calibration options**

**Temperature Sensor column**

Actual reading of the temperature sensor.

**Temperature Corrected column**

Adjusted reading of the temperature sensor based on the selected offset.
Humidity Sensor column

Actual reading of the humidity sensor.

Humidity Corrected column

Adjusted reading of the humidity sensor based on the selected offset.

Offset

Slider selects the plus or minus offset of the corresponding sensor.

3.4 Maintenance scheduling and component run hours

You can view and configure maintenance dates for each unit by clicking the Service button. The left panel displays each unit, along with the date of its last performed maintenance and next schedule maintenance.

Clicking a unit displays its components, along with each component's run hours, in the right panel. You can perform several service functions on the components. See Setting Maintenance Dates on page 25, and Setting run hours to zero on page 26.

Service panel fields

Unit

Unit name.

Last PM

Last scheduled maintenance for the unit.

Next PM

Next scheduled maintenance for the unit.

3.4.1 Setting Maintenance Dates

1. On the menu bar, click SERVICE.
   The SERVICE panel opens.
2. Click Maintenance Setup.
   The maintenance-setup panel displays.
3. In the COMPONENTS panel, select a date for the last and/or next scheduled maintenance, then click Save.
4. Click Close to return to the run-hours list.

Maintenance-date fields

Last Maintenance

Date of the previous scheduled preventive maintenance for the unit.

Next Maintenance

Date of the next scheduled preventive maintenance for the unit.
### 3.4.2 Setting run hours to zero

You can view and reset the run hours on unit components.

1. On the menu bar, click SERVICE, and select a unit in the SERVICE panel.
2. In the COMPONENTS panel, click to check the components for which you want run hours reset to zero.
   - Click Clear to clear all check marks.
3. Click Reset to Zero, then OK in the warning dialog.
   - Click Cancel to cancel the reset and clear all check marks.

### 3.5 External Monitoring and Building-management systems

NOTE: Some Building Management Systems can be configured to send continuous updates for setpoints, which often results in setting the same value. To avoid a back-up with iCOM CMS and loss or write values, configure the BMS to write device configuration no more than once per minute.

#### 3.5.1 BMS Passthrough Set Up

BMS support may be provided by an external IS-WEBADPT card.

NOTE: Only one type of serial communication may be used at a time. In the Web UI, enabling one of the serial communication methods, BMS pass-through or Modbus RTU, automatically disables the other. Enabling BMS pass-through will not affect Modbus TCP set up.

To set-up BMS passthrough:

1. Make sure the IS-WEBADPT card is connected to the RS485 port of iCOM CMS. See Setting Up BMS serial communication on page 42.

2. Click > BMS Setup.
   The BMS SETUP panel displays.
3. Select BMS Passthrough.
   The BMS PASSTHROUGH panel displays, Figure 3.1 on the facing page.
4. Click the BMS Pass-through Mode switch to select Enabled, then click Save.
5. Refer to the IS-WEBADPT user manual to set up third-party protocols.

Figure 3.1 BMS Passthrough panel

3.5.2 Modbus RTU Set Up

NOTE: Only one type of serial communication may be used at a time. In the Web UI, enabling one of the serial communication methods, BMS pass-through or Modbus RTU, automatically disables the other. Enabling BMS pass-through or Modbus RTU will not affect Modbus TCP set up.

NOTE: The protocol will not work with the control board’s default IP address: 169.254.24.7. Make sure a Static or DCHP address is set. See Connection Settings on page 29.

External monitoring can be performed via Modbus serial connection.

1. Click > BMS Setup. The BMS SETUP panel displays.
2. Select Modbus. The MODBUS panel displays.
3. In the Interface field, select Modbus RTU.
4. Select the Modbus RTU settings, then click Save.

Modbus RTU communication settings

Interface
Selects type of Modbus communication.

Access Level
Selects read-only or read/write access.

Node ID
Modbus node number (1 to 247).
Data Rate
- Selects rate of Modbus communication.

Parity
- Selects type of communication parity check.

Stop Bits
- Selects number of communication stop bits.

3.5.3 Modbus TCP Set Up
External monitoring can be performed via Modbus TCP connection.

NOTE: The protocol will not work with the control board’s default IP address: 169.254.24.7. Make sure a Static or DHCP address is set. See Connection Settings on page 29.

1. Click BMS Setup. The BMS SETUP panel displays.
2. Select Modbus. The MODBUS panel displays.
3. In the Interface field, select Modbus TCP.
4. Select the Modbus TCP settings, then click Save.

Modbus TCP communication settings

Interface
- Selects type of Modbus communication.

Access Level
- Selects read-only or read/write access.

Port
- Modbus port number.

Max Concurrent Clients
- Maximum number of users that may access the cooling unit via the remote application at the same time.

Network Access
- Selects the level of network access via Modbus.
  - Open = no access limits.
  - Same Subnet = only accessible by clients on the same subnet.
  - Trusted IP list = only accessible by trusted IP addresses, set in Trusted IP field.

Trusted IP #1 – 5
- IP addresses with “trusted” network access.
3.5.4 SNMP Set Up

1. Click ☐️ > BMS Setup > SNMP.
   The SNMP panel displays.
2. In the Enabled field select Yes, then click Save.
   The following options appear in the left panel:
   - SNMPv1V2c Access Hosts
   - SNMPv1 Trap Targets
3. Click SNMPv1V2c Access Hosts to view, edit, or add access hosts.
4. Click SNMPv1 Trap Targets to view, edit, or add trap targets.
5. In Authentication Trap, select Enabled, then click Save.

SNMP communication settings

**Enabled**
Enables/Disables SNMP communication option.

**SNMPv1/v2c Access**
Enables/Disables SNMP access.

**Authentication Trap**
Enables/Disables SNMP authentication traps.

**Device Name**
Object name of the managed device.

3.6 Connection Settings

Configures the Ethernet connection between the unit and the iCOM CMS interface(s).

1. Click ☐️ > Connection Settings.
   The DISPLAY CONNECTIONS list opens.
2. In the Connection Type list, select the connection to configure.
3. In the display-connection PROPERTIES panel, click to toggle DHCP or Static mode.
   - If you select DHCP, go to step 5.
   - If you select Static, continue with the next step.
4. For static mode, enter the address, netmask, gateway and DNS-server settings.
5. Click Save.

Display-connection options

**Mode**
IP assignment type.

**MAC Address**
Media access control (Read-only.)
IP Address
Network address of the iCOM CMS display/app.

Netmask
Divides IP addresses in subnet.

Gateway
IP address to the gateway to other subnets.

DNS Servers
IP addresses of the DNS servers for the organization.

3.7 Backing-up and Restoring settings
iCOM CMS settings may be saved to a local disk or USB drive, and the saved files may exported or imported to restore iCOM CMS if it is replaced or if a problem occurs. You can import and export configuration settings to apply the configuration to other units, and you can also return iCOM CMS to factory-default settings.

3.7.1 Backing-up iCOM CMS settings
Save a copy of the settings in a descriptively named file. Use a back-up file to restore the unit settings in the event of a failure.

NOTE: Backing-up the iCOM CMS settings does not save settings stored on the cooling unit’s iCOM display, including setpoints, alarm settings, and sensor calibration. The back-up file also does not save the cloud-registration status.

1. Click > Settings Management > Backup & Restore.
The BACKUP & RESTORE panel opens.
2. Select the Location to which the backup will be saved.

NOTE: Only a single back-up file may be saved in one location/on one USB drive. Saving to the same location/drive overwrites the previous file.

3. Click Backup in the lower-right corner, then OK in the confirmation dialog.
The back-up file is saved and a notification indicates that back up is successful.
   • Remove the USB drive from the port if used.
### 3.7.2 Restoring iCOM CMS settings

Copy the settings from a back-up file to return iCOM CMS function to what it was before the problem or failure. The settings may be restored from a file on the local disk or a USB drive.

1. Click > Settings Management > Backup & Restore. The BACKUP & RESTORE panel opens.
2. Click the Location from which the settings will be restored.
3. Click Restore in the lower-right corner, then OK in the confirmation dialog. The settings are restored from the file, a notification indicates that restoration is successful, and the display restarts.
   - Remove the USB drive from the port if used.

### 3.7.3 Exporting iCOM CMS settings

Export a copy of the settings to a descriptively named file. Use exported settings to import the configurations into other units.

**NOTE:** Exported settings do not include the settings stored on the cooling unit’s iCOM display, including setpoints, alarm settings, and sensor calibration.

1. Click > Settings Management > Import and Export. The IMPORT & EXPORT panel opens.
2. Select the Location to which the export will be saved.

**NOTE:** Only a single file may be saved in one location/on one USB drive. Saving to the same location/drive overwrites the previous file.

3. Click Export in the lower-right corner, then OK in the confirmation dialog. The export file is saved.
   - Remove the USB drive from the port if used.

### 3.7.4 Importing iCOM CMS Settings

Import the settings from another unit to simplify configuring multiple units. The settings may be imported from a file on the local disk or a USB drive.

1. Click > Settings Management > Import and Export. The IMPORT & EXPORT panel opens.
2. Click the Location from which the settings will be imported.
3. Click Import in the lower-right corner, then OK in the confirmation dialog. The settings are imported.
   - Remove the USB drive from the port if used.
3.7.5 Resetting hardware to factory defaults

There are two methods of performing a hardware factory reset, which returns the control board to the factory-default settings for panel customization, display network settings, BMS settings, and custom labels.

NOTE: The cloud registration status and connection settings are not reset when resetting to factory defaults.

- Hardware-button reset
- Factory reset via the web UI.

Hardware factory reset using the button on the control board

1. Locate the 2 buttons on the CMS control board, see Figure 3.2 below.
2. Press the right button (item 2), then immediately press-and-hold the left button (item 3) for at least 5 seconds.
   The LED on the control board (item 1) turns blue and flashes 5 times to indicate the 5-second countdown.
   The factory-default settings are restored and the display restarts.

Figure 3.2 Hardware-reset buttons on the control board

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LED</td>
</tr>
<tr>
<td>2</td>
<td>Button</td>
</tr>
<tr>
<td>3</td>
<td>Button</td>
</tr>
</tbody>
</table>
Hardware factory reset using the web UI

1. Click ⊚ > Settings Management > Factory Reset.
   The FACTORY RESET panel opens.
2. Click OK in the lower-left corner.
   The factory-default settings are restored and the display restarts.

3.8 Updating iCOM CMS firmware

The firmware may be updated by two methods:

- USB drive
- Drag-and-drop.

NOTE: If the update takes more than 1 minute, the interface may timeout before the firmware update completes.

3.8.1 Firmware update using USB drive

1. Download and extract the firmware file, .xbp, to a blank USB thumb drive.

NOTE: The USB thumb drive must be blank other than the .xbp firmware file.

2. Plug the USB drive directly into the USB port on the CMS control board.

3. On the iCOM CMS interface, click ⊚ > Load Firmware > USB.
   The USB panel displays. The control board reads the version information of the new firmware on the USB drive and displays it at the top of the screen, and the Start Upgrade field becomes accessible.

NOTE: Typically, the reading the new firmware version takes approximately 20 seconds, but may take longer.

4. Click Start Upgrade.
   The firmware is updated, the control board reboots, and the display restarts.

NOTE: The update process may take a few minutes to complete.

3.8.2 Firmware update using drag-and-drop

1. Download the firmware file, .xbp, and save to computer/laptop that is directly-connected to the CMS control board with an Ethernet cable and is used to access the web UI.

2. On the laptop/computer, open the folder in which the firmware file is located.

3. On the iCOM CMS web UI, click ⊚ > Load Firmware > Upload Firmware.
   The UPLOAD FIRMWARE panel displays.
4. Drag and drop the firmware file to the space outlined on the web interface. The control board reads the version information of the new firmware and displays it at the top of the screen, and the Start Upgrade field becomes accessible.

**NOTE:** Reading the new firmware version may take a few minutes.

5. Click **Start Upgrade**.

The firmware is updated, the control board reboots, and the display restarts.

**NOTE:** The update process may take a few minutes to complete.

### 3.9 Managing Access Permission and PINS

**NOTICE**

Risk of loss-of-access to iCOM CMS. Can cause operational problems.

When a PIN is changed, make sure you record the new PIN and inform authorized users.

Three roles with passwords/personal identification numbers (PINS) provide access permission and are set with factory-default values. You can change the value of each PIN so that only the users that know the current PIN may access the functions that it unlocks.

The factory-default PINS are:

- Default User PIN = 1490
- Default Service PIN = 5010
- Default Advanced PIN = 2210

**NOTE:** To change PIN values, you must use the currently-assigned Advanced PIN to display the Manage Passwords option on the menu.

To change a PIN:

1. Click ![Manage Passwords](image). The MANAGE PASSWORDS panel and secondary, properties panel open.
2. On MANAGE PASSWORDS, click the role to change.
3. On the secondary panel, type a new password then re-enter to confirm it, and click **Save**. The updated PIN is saved.
   - Click **Cancel** to discard the change.
3.10 Generating a Diagnostics Report

When logged-in as an advanced user, you can generate a diagnostics report that is helpful for troubleshooting when sent to technical support.

1. Click 
   Support & Services.
   The SUPPORT & SERVICES panel opens.
2. Click Generate Diagnostics in the lower-right corner.
   The report is generated with a “dump” extension and saved to the Download folder of the computer/laptop you are using to access the web UI.
   - The diagnostics file may be large and take several seconds to download.
3. When the diagnostic dump is complete, click OK.
   The Diagnostic Generation dialog closes.
4. Browse to the “Downloads” folder of the computer to open the generated .dump file in any text editor.

3.11 Setting unit name, location and serial number

When logged-in as an Advanced user, you can see a list of managed units and their enabled/disabled status. You can also set the unit’s name (displayed in the web UI), location, and serial number.

1. On the menu bar, click ADVANCED, and select a unit in the ADVANCED SETTINGS panel.
2. Enter the unit information in the secondary, properties panel, and click Save.

**Advanced property fields**

**Unit Name**

Descriptive name of the cooling unit displayed in mobile application and on the Admin Portal.

**Unit Location**

Descriptive location information for the cooling unit displayed in the web-based UI.

**Unit Type**

The Liebert® model of the cooling unit. See Setting the Managing Mode on page 36, to change the unit type monitored by iCOM CMS.

**Serial number**

Serial number of the cooling unit.

**Port**

Communication port of the cooling unit.
### 3.12 Setting the iCOM CMS Name

When logged-in as an Advanced user, you can update the name of the iCOM CMS displayed at the top of the web-based interface and passed to the cloud for display as the tab heading on the mobile application.

1. On the menu bar, click SETTINGS, then iCOM-CMS Name in the settings list. The iCOM-CMS panel displays.
2. Enter a name and click Save.
   - Click Cancel to discard the changes.

### 3.13 Setting the Managing Mode

When logged-in as an Advanced user, you can select the type of Liebert® unit that is being monitored by iCOM CMS: Liebert® Mini-Mate2/DataMate or Liebert® SRC.

1. On the menu bar, click SETTINGS, then iCOM-CMS in the settings list. The iCOM-CMS panel displays.
2. Click Switch Mode.
   - The SWITCH MANAGING MODE dialog opens.
3. Click OK, then OK again.
   - The mode switches and the iCOM user-interface restarts. It may take a few minutes before you can log-in again while the mode is switching.

### 3.14 Managing SSL Certificates

When logged-in as an Advanced user, you can generate or install and use an SSL certificate.

To install a certificate:

1. On the menu bar, click SETTINGS, then SSL Certificate in the settings list. The SSL CERTIFICATE panel displays.
2. Next to Certificate, click Choose File, browse and load the certificate.
3. Next to Key, click Choose File, browse and load the key.
4. Click UPLOAD CERT.

### SSL Certificate settings

**Issuer**

Issuing entity of the certificate

**Start Date**

Starting date of the certificate.

**End Date**

Ending date of the certificate.
Certificate
Selects a certificate for upload.

Key
Selects a certificate key for upload.

3.14.1 Generating a Certificate Signing Request
1. On the menu bar, click SETTINGS, then SSL Certificate in the settings list.
2. In the SSL CERTIFICATE panel, click NEW CSR.
3. Enter the information in the request, and click GENERATE.
   A certificate is generated and downloaded to the computer for retrieval/upload.

3.14.2 Generating a Self-signed Certificate
1. On the menu bar, click SETTINGS, then SSL Certificate in the settings list.
2. In the SSL CERTIFICATE panel, click NEW CERT.
3. Enter the Common Name and End Date, then click GENERATE and follow the prompts.
4 INSTALLING AND CONNECTING ICOM CMS

Before you begin:

- Make sure that Ethernet cables are run to the device for network connection.
- Obtain the e-mail address needed to register the device from the iCOM CMS administrator.
- If using a static IP address for network communication, obtain the following settings from the IT administrator:
  - IP address
  - Subnet mask
  - Gateway
  - DNS servers

4.1 Mounting iCOM CMS on Thermal-management Unit

To retro-fit a unit, refer to the installation instructions included with your iCOM CMS kit for the detailed steps to mount the enclosure on the unit.

When instructed to connect the wiring harness to the control board inside the iCOM CMS enclosure, refer to Figure 4.1 on the next page, and:

- Connect the communication cable to the 485 port for unit communication on the control board.
- Connect the power cable to the 24-VAC port on the control board.
4.2 Setting up Communication with the Web-based User Interface

To register the thermal-management unit and configure communication settings, set-up access to the control board.

NOTE: Only use the Google Chrome web browser to access the web UI.

1. Use a CAT5 Ethernet cable to connect a computer/laptop to an Ethernet port on the control board (see Figure 4.1 above).
2. Configure the computer to communicate with the control board by changing its network settings as follows:
   - Set the computer’s static IP address to: 169.254.24.10
   - Set the computer’s subnet mask to: 255.255.0.0
3. On the computer, open the Google Chrome web browser and enter the IP address of the control board in the address bar: 169.254.24.7
   The web UI opens.

NOTE: Before setting-up BMS protocols, you’ll need to change the IP address of the board from this default address. See Connection Settings on page 29.

4. Log-in to the web UI using the advanced password: 2210.
   You are ready to register the unit. See Registering with the Administration Portal to Allow Mobile-app Users Access on page 41.
4.3 Registering with the Administration Portal to Allow Mobile-app Users Access

Thermal-management units must be registered to provide data to the cloud so that mobile-app users will receive the notifications from the cooling unit.

Units are registered based on domain portion of the organization’s e-mail address. The domain is the part after the “@” symbol and is typically the name of the organization, for example: @company.com.

**NOTE:** When registering the cooling unit, be sure to use an e-mail address with the correct domain of the organization. If you register using an e-mail address with an incorrect domain, un-register and contact the administrator for the correct address.

**NOTE:** The mobile app is available for download from the Apple Store or Google Play Store depending on your mobile device. Look for “iCOM CMS.”

To register with the administration portal:

1. Obtain an e-mail address with valid domain from the iCOM CMS administrator who manages mobile-app access for the organization.

2. On the web UI, click > Cloud Setup. The CLOUD SETTINGS and REGISTER DEVICE FOR MOBILE APP ACCESS panels display.

3. In the register-device panel, type the provided e-mail address, then re-enter the e-mail address and click Register. The device is registered with the iCOM CMS Administration Portal, and the organization information displays in the register-device panel.

**Device-registration fields**

**Admin Email**

E-mail of the iCOM CMS device administrator.

**Re-enter Email**

E-mail of the iCOM CMS device administrator.

**Serial Number**

Serial number of the iCOM CMS device.

**Registration Code**

Code used to register the device with the Admin Portal.

4.4 Setting Up Network Communication

1. Use an Ethernet cable to an Ethernet port on the control board to the network (See Figure 4.1 on the previous page).

2. On the web UI, click > Connection Settings.

**NOTE:** For descriptions of the connection-settings panel, see Connection Settings on page 29.
3. Based on the information provided by the IT administrator, select the Mode used for IP-address assignment:
   - DHCP—a automatically assigns the settings from the organization’s network.
   - Static—requires that you enter a dedicated IP address, subnet mask, default gateway, and DNS servers.
4. If Static mode is selected, enter the settings obtained from the IT administrator:
   - IP address
   - Subnet mask
   - Gateway
   - DNS servers
5. Click Save.

4.5 Setting Up BMS serial communication

NOTE: Only one type of serial communication may be used at a time. In the Web UI, enabling one of the serial communication methods, BMS pass-through or Modbus RTU, automatically disables the other. Enabling BMS pass-through will not affect Modbus TCP set up.

NOTE: The protocol will not work with the control board’s default IP address: 169.254.24.7. Make sure a Static or DHCP address is set. See Connection Settings on page 29.

NOTE: For external monitoring via Ethernet connection, see Modbus TCP Set Up on page 28.

To set up the BMS connection:

1. Depending on the type of BMS serial connection:
   - For BMS pass-through: Make sure that an IS-WEBADPT card is connected to the correct 485 port (see Figure 4.1 on page 40) on the control board.
   - For Modbus RTU, connect a serial cable to the correct 485 port on the control board (see Figure 4.1 on page 40).

2. On the web UI, click BMS Setup, select the serial option to use, and configure the communication settings:
   - For BMS Passthrough, see BMS Passthrough Set Up on page 26,
   - For Modbus serial communication, see Modbus RTU Set Up on page 27.
APPENDICES

Appendix A: Technical Support and Contacts

A.1 Technical Support/Service in the United States

Vertiv Corporation
24x7 dispatch of technicians for all products.
1-800-543-2378

Liebert Thermal Management Products
1-800-543-2778

Liebert Channel Products
1-800-222-5877

Liebert AC and DC Power Products
1-800-543-2378

A.2 Locations

United States
Vertiv Headquarters
1050 Dearborn Drive
Columbus, OH, 43085, USA

Europe
Via Leonardo Da Vinci 8 Zona Industriale Tognana
35028 Piove Di Sacco (PD) Italy

Asia
7/F, Dah Sing Financial Centre
3108 Gloucester Road, Wanchai

A.3 How are we doing?

If you have comments or suggestions about iCOM CMS, please let us know. Send an email to feedback.icomcms@vertivco.com. We look forward to hearing from you.