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# CoreSense M10

## Release Notes

Software version 1.4.0.14



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# 1. CoreSense M10 Software

## 1.1 Version 1.4.0.14 [ 0048-00-3-00005-01 RevC ]

### 1.1.1 Available Packages

- [M10\\_WEB\\_UPDATE\\_1.4.0.14.zip](#): Web Update install package
- [M10\\_USBkey\\_UPDATE\\_1.4.0.14.zip](#): USB key Update install package
- [M10\\_USBkey\\_WIPE\\_INSTALL\\_1.4.0.14.zip](#): USB Key Wipe install package

### 1.1.2 Release summary

- **New Feature:**
  1. Each generated measurement now includes an internal quality index called residual ratio. Values with an attached bad quality status can now be rejected by the application. This function is the core of the source monitoring improvement (COREMX-2685)
- **Improvements:**
  2. Improved source health diagnostic to prevent premature or erroneous source failure (COREMX-2674, COREMX-2077)
  3. Minimum threshold parameter is now set to minimum detection limit value by default for new installation (COREMX-3583)
  4. Gas measurement algorithm is improved to version 1.4.2 (COREMX-3247)
  5. Added preliminary steps to check connection with the interface and sensor boards before launching the analysis sequence (COREMX-2905)
  6. The sensors displayed in the History view are expanded by default (COREMX-1349)
  7. When accessing the Events view, a custom date range is automatically preconfigured to include all unacknowledged events (COREMX-151)
  8. Local HMI touchscreen calibration is no longer required following Wipe Install (COREMX-1710)
- **Fixed Issues:**
  9. The FTIR instrument runs at an unexpected resolution, causing gas measurement failures (COREMX-2682)
  10. Source ID status possible values are not handled correctly and cause the instrument to consider the current source to be dead (COREMX-2677)
  11. The instrument's system status is green but does not acquire any data (COREMX-2584)
  12. Wait for the gas cell to reach its operational temperature before launching the analysis process (COREMX-2273, COREMX-2842)

- 13. Application configuration is kept after a software update (COREMX-2957)
- 14. Web page is not responding when there is no communication with the head unit (COREMX-2921)
- 15. Local HMI initialization waits for the web server daemon (COREMX-3169)
- 16. A Firmware Update event is generated even if the update process fails (COREMX-853)

### 1.1.3 Important notes for installation

- Use a USB key build with [M10\\_USBkey\\_UPDATE\\_1.4.0.14.zip](#) package to update a system and keep the CoreSense M10 database and configuration.
- Use [M10\\_WEB\\_UPDATE\\_1.4.0.14.zip](#) package to update a system remotely using the web interface and keep the CoreSense M10 database and configuration.
- Use a USB key build with [M10\\_USBkey\\_WIPE\\_INSTALL\\_1.4.0.14.zip](#) package for all new installation.
- Use a USB key build with [M10\\_USBkey\\_WIPE\\_INSTALL\\_1.4.0.14.zip](#) package for an installation that reset database and configuration of the CoreSense M10.

### 1.1.4 Installation procedure

Follow these steps to update the CoreSense M10 software. The update procedure consists of two main steps, which can either be executed remotely using the web interface or locally using a USB key.

#### 1.1.4.1 Update remotely using the web interface

CoreSense M10 software update:

1. Obtain the CoreSense M10 software images from ABB (see §1.1.3).
2. Open a web browser and enter the IP address of your system in the address bar. IP address is shown in the bottom of the CoreSense M10 local screen. Your computer must be configured in the same network subnet.
3. Click on **Settings** tab and then click on **System Logs**. Enter your password to gain access, factory password is *Admin*.

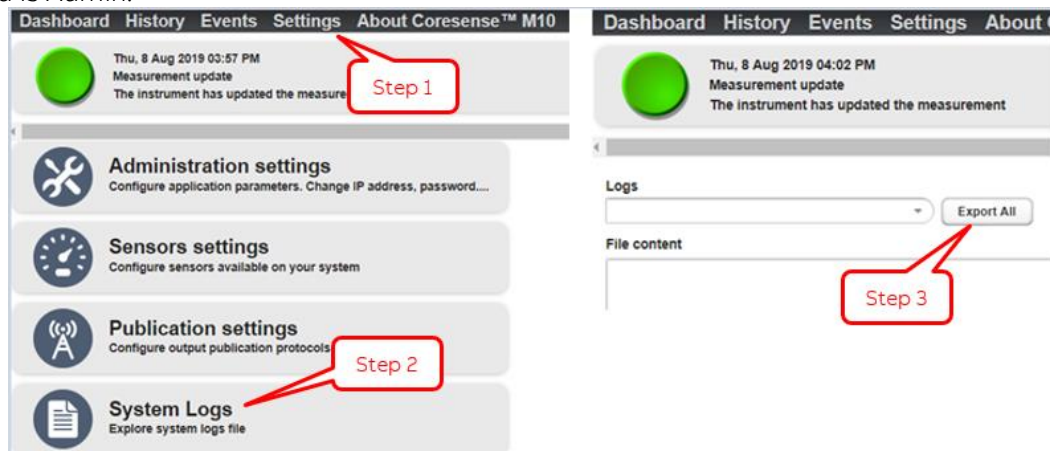


Figure 1. System logs.

4. Click on **Export all**. A download should start. Save and keep the *.zip* file as it may help ABB service in case a problem occurs during the update.
5. Click on **History** and on **fgs**→**Acetylene** and then on **Export**. A download should start. Save and keep the *.csv* history file.



Figure 2. History.

6. Click on **Settings** and on **Update firmware**. A new page appears.



Figure 3. Update firmware.

7. Click on **Choose File** and select the M10\_WEB\_UPDATE\_1.4.0.14.zip file. Click on **Open** and then on **Update**. The update process will start and can last for few minutes. Messages will appear in the **Status** pane during the process and “Rebooting instrument now” will appear at the end of the process. The update is complete once a “Session Expired” red banner appears on the top of the web page.

Note: Google Chrome browser is recommended for web update as it show the progress of the update process at the bottom left corner of the page.

8. Click on the refresh button of your web browser to refresh your web session.
9. To validate that the update process completed successfully, click on **About CoreSense™ M10** and validate that the version numbers are as follows:
  - BOOT.hddimg: 1.1.4.2
  - APP.img: 1.0.25
  - PERSISTENT.img: 1.0.4
  - MATLAB.img: 9.2.0
  - CS8\_APP.img: 1.4.0.14
  - CS8\_MODELS.img: 1.4.2
  - Sensor Board Firmware: 1.5.2331
  - Interface Board Firmware: 1.3.1412

### 1.1.4.2 CoreSense M10 software update using USB key

Important Note:

- If the update process does not seem to work on your CoreSense M10, try it again with a different USB key from another trademark or update remotely using the web interface (see §1.1.4.1).

Follow these steps to either wipe install or update the CoreSense M10 software:

1. Obtain the CoreSense M10 software images from ABB (see §1.1.3).
2. On the **USB key**, extract either the [M10\\_USBkey\\_UPDATE\\_1.4.0.14.zip](#) or the [M10\\_USBkey\\_WIPE\\_INSTALL\\_1.4.0.14.zip](#) package. **IMPORTANT:** make sure NOT to create a folder and to install at the root of the USB filesystem.
3. Open the CoreSense M10 cabinet.
4. Shutdown the instrument using the main power switch.



Figure 4. Instrument main power switch.

5. Insert the first USB key on the USB port of the CoreSense M10 cabinet.

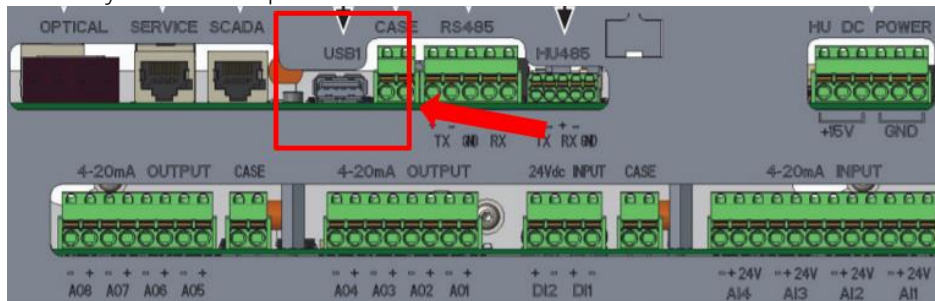


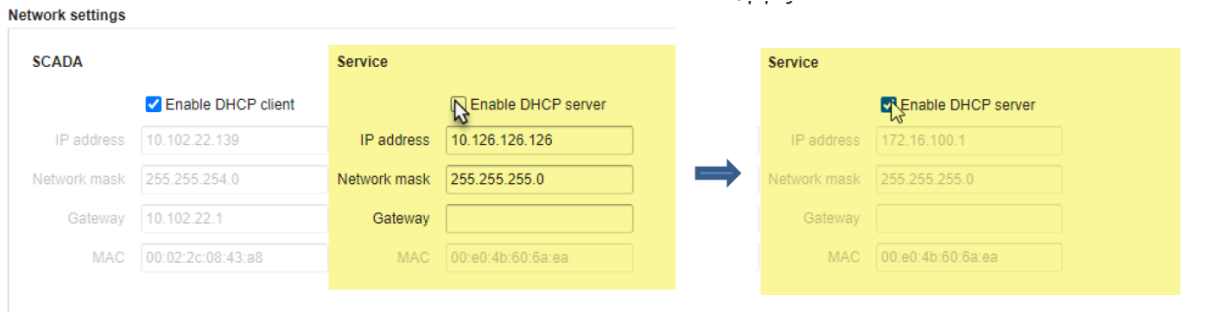
Figure 5. Instrument USB port.

6. Turn on the instrument using the main power switch (see Figure 4). The update process will start automatically.
7. Messages will appear on the local screen during the update process lasting for a few minutes. The update process is complete when a message indicating to remove the USB key and to reboot appears.
8. After the “remove USB key and reboot” message appear on the screen, remove the USB key and power cycle the instrument.
9. A complete system update will be done after this step. During the process, the instrument may reboot two or three times depending on the required updates for your system. Wait until the dashboard page is displayed for at least 4 minutes. (The dashboard might be empty for the first 20 minutes).

### 1.1.4.3 Enabling DHCP server on Service Port

To enable the DHCP server on the Service port (like any new system or after a Wipe Install), the steps to follow are:

- Access web page of the system
- Select **Settings->Administration settings**
- Click on **Enable DHCP server** check box and **Apply** button



### 1.1.4.4 Hydrogen sensor firmware update

Important Note:

- Your CoreSense M10 does not require a Hydrogen sensor firmware update if the version number is 3.966J, to verify click on **About CoreSense™ M10** and look for **“Hydrogen Sensor Firmware”**
- The hydrogen sensor update requires CoreSense M10 software version of 1.2.0.12 (or higher).

Follow these steps to update Hydrogen sensor firmware using web interface:

1. Click on **Settings** and on **Update firmware** (see Figure 3). A new page appears.
2. Click on **Choose File** and select the M10\_WEB\_H2SUpdate\_3.966J.zip file. Click on **Open** and then on **Update**. The update process will start and can last for few minutes. Messages will appear on the **Status** pane during the update process. It will be completed a few minutes after the “Rebooting instrument now” message. The update is complete once a “Session Expired” red banner appears on the top of the web page.
3. Click on the refresh button of your web browser to refresh your web session.
4. To validate that the update process completed successfully, click on **About CoreSense™ M10** and validate that the H2Scan version number is:
  - Hydrogen Sensor Firmware 3.966J
5. Verify that date and time is properly set and that the thermal pump is enabled in the **Settings->Administration** page. Refer to CoreSense M10 User Guide for further details.
6. Still in the **Administration** page, make sure NTP server is not enabled if you do not intend to use it.
7. Wait 20 minutes and check if the system LED is still green. If the system LED turns blue and an event “Golden reference check failed” is generated in the Events page, call service to get an extra tool to fix this issue.

Follow these steps to update Hydrogen sensor firmware using USB key:

1. On a **USB key**, extract M10\_USBkey\_H2SUpdate\_3.966J.zip making sure NOT to create a folder and to install at the root of the USB filesystem.
2. Shutdown the instrument using the main power switch (see Figure 4).
3. Insert the second USB key on the USB port of the CoreSense M10 cabinet (see Figure 5).

4. Turn on the instrument using the main power switch (see Figure 4). The update process will start automatically.
5. Messages will appear on the local screen during the update process lasting for a few minutes. The update process is complete when a message indicating that hydrogen sensor firmware updated successfully appears.
6. After the “update success” message appear on the screen, remove the USB key, and power cycle the instrument.
7. Using a computer, open a web browser and navigate to your CoreSense M10 web interface by entering its IP address in the address bar. IP address is shown in the bottom of the CoreSense M10 local screen. Your computer must be configured in the same network subnet.
8. To validate that the update process completed successfully, click on **About CoreSense™ M10** and validate that the version numbers are:
  - Hydrogen Sensor Firmware 3.966J
9. Verify that date and time is properly set and that the thermal pump is enabled in the **Settings→Administration** page. Refer to CoreSense M10 User Guide for further details.
10. Wait 20 minutes and check if the system LED is still green. If the system LED turns call your service center for assistance.



## 1.2 Version 1.3.1.9 [ 0048-00-3-00005-01 RevB ]

### 1.2.1 Release summary

- **New Features:**
  1. Transformer fluid selection is limited to the specific product configuration represented by the product number (COREMX-1838)
  2. Product configuration for the transformer fluid is stored on the head unit. As the head units are specifically configured according to the ordered fluid, CoreSense M10 verifies that head unit model matches the selected transformer fluid. On failure, Head model check fail ERROR will occur and the system status will change to FATAL (COREMX-1986, COREMX-2258)
  3. Iso-butane is added to the gas measurement algorithm as a potential contaminant. This ensures that gas measurement is performed when iso-butane is found inside the transformer fluid (COREMX-2244)
  4. Default Warning and Error thresholds are tailored for each transformer fluid types (COREMX-2087)
  5. Minimum threshold parameter is added to the advanced settings for each Sensor. When activated (value set > 0) any value lower than threshold value is set to 0. This corrected data is shown on dashboard, history data and published protocols. The raw data is still available in the csv file export (COREMX-2548)
- **Improvements:**
  6. The Gas LED on the instrument Head Unit will now follow ALL gas validation for Warning and Alarms (COREMX-1968)
  7. More configuration files have been added to the Getlog file package and the backup during Wipe Install using the USB key package. This gives more information to investigate anomalies in the instrument operation. More specifically the health monitoring history data and files for gas measurement algorithm configuration are among new files to be available for service technicians (COREMX-1972, COREMX-1973, COREMX-2001, COREMX-2364)
  8. Main web page interface esthetic enhancements. New top banner with software version display (COREMX-2213)
  9. About box contact information changed to display Hitachi Powergrids with phone number, hyperlink and email for service support (COREMX-2401)
  10. Head Unit SN on the About box is based on the actual serial number published on the head unit register. The old property file is used if no serial number is stored on the head unit (older instrument) (COREMX-286, COREMX-2214, COREMX-2067)

- **Fixed Issues:**

11. During a Wipe Install the process will no longer stop for missing Golden spectrum files. It will use default Golden files and resume the installation process (COREMX-2088)
12. Hydrogen measurement data is used only when status of the sensor is “Normal operation” (COREMX-2218)
13. Default Golden spectrum files changed for more representative spectrum curves. This corrects the situation where the intensity of the default Golden files was too high and triggered a source failure leaving the instrument unusable (COREMX-2215)[
14. Apply a fix for a missing file that prevent the instrument to start during first boot sequence when the hard drive is changed in the field (COREMX-2066)
15. Fix wrong error message text. The serial numbers were inverted on the Error Message for Golden verification when golden. This situation happened when serial number of the Golden spectrum did not match the instrument serial number (COREMX-877)
16. From the maintenance page, it is now possible to set the current pump selection to “NONE” without triggering a leak error (COREMX-1948)
17. Add H<sub>2</sub>O AW value in the Modbus TCP publishing. Data is available at startup (COREMX-2151, COREMX-2492)
18. Fix HMI bug with Golden checkbox (COREMX-1745)
19. Fix missing event log file inside the Getlog file package (COREMX-1766)
20. Fix Maintenance page FTIR tool unable to start (COREMX-1971)
21. Fix bug that causes Warning message from Sensor Proxy: Communication error [sb][[61]]: 00000011 (COREMX-2229)
22. Fix a situation where unwanted AT command characters were sent over RS485 port on startup (COREMX-2138)
23. Added tube 2 pressure in Maintenance – Pump page (COREMX-2097)

## 1.3 Version 1.3.0.6

### 1.3.1 Release summary

- **Fixed Issue:**
  1. Strict Mode for IEC61850 protocol is removed from configuration interface (COREMX-1770)

## 1.4 Version 1.3.0.5 [ 0048-00-3-00005-01 RevA ]

### 1.4.1 Release summary

- **New Features:**
  1. A DHCP server is now running on the Service Port. The system will provide an IP address to the client computer that can reach the CoreSense M10 interface on 172.16.100.1 (COREMX-1149)
  2. Moisture can now be display as AW (COREMX-1059)
- **Improvements:**
  3. Additional compounds are added to improve standard gas readings engine (COREMX-1085,1054)
  4. System warns the operator for data lost when the time is changed in the past (COREMX-1063)
  5. Local HMI time displays “UTC” label (COREMX-1088)
  6. Exported csv file has the column label with “UTC” (COREMX-1191)
  7. LEDs on the Head Unit are decoupled and can show states that are independent (COREMX-1066)
  8. More Events are created when actions are performed by the operator (COREMX-1061, 1207, 1307)
  9. Golden files are used if no first reference files are available on the system (COREMX-1056)
- **Fixed Issues:**
  10. Cold start pump heating (COREMX-1055,1065, 272, 1329)
  11. AW value on DNP3 publishing (COREMX-1058)
  12. Gas cell temperature control on 240Vac (COREMX-1057, 642, 1001)
  13. Database housekeeping script timeout (COREMX-1328)
  14. NaN value for Water Activity (COREMX-1298)
  15. Wrong Oil temperature over Modbus TCP/RTU (COREMX-742)
  16. Faulty configuration file management (COREMX-846, 847)
  17. Administration settings page error message (COREMX-1318)

## **1.5 Version 1.2.1.0 [ 0035-00-3-00003-01 Rev H ]**

### **1.5.1 Release summary**

- **New Feature:**
  1. None
- **Fixed Issues:**
  2. Remote Web HMI server display error HTTP 500
  3. Delay added prior to get pump speed status
  4. Bad Golden References detection regression



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