Beamex bMobile

User Manual

Applies to version 2.9.0

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Introduction

The **Beamex bMobile Calibration Application** is an intuitive, multi-platform solution for guided execution and documentation of field calibrations.

The following instrument types are supported:

- Standard industrial instruments, e.g. pressure indicators, temperature sensors and signal transmitters,
- Limit switches, e.g. pressure and temperature switches,
- Weighing instruments.

With **bMobile** you can also carry out maintenance inspections (checklists).

You can use either Beamex CMX or Beamex LOGiCAL Calibration Management Software to manage what to calibrate and when, and then assign the work and send the instruments to be calibrated to your mobile device running **bMobile**. Field calibrations can be executed offline with step-by-step guidance from **bMobile**. The application documents and stores the calibration results securely and, when online, results can be transferred back to Beamex CMX or LOGiCAL for further data analysis or calibration certificate printing. Together, **bMobile** and CMX form a powerful solution for maintenance-related inspections and weighing instrument calibrations and also reduce the risk of violating the ALCOA data principles by ensuring data integrity.

bMobile is available for iOS, Android[1] and Windows[2] 10 (and newer) platforms and can be downloaded for free from Apple App Store, Google Play, or the Beamex website Download Center. You can try out **bMobile** without CMX or LOGiCAL using the demonstration mode. **bMobile** is compatible with LOGiCAL and with CMX version 2.11 or later. Weighing Instrument Calibration, Maintenance Inspection and Beamex Mobile Security Plus options are supported in **bMobile** if activated in CMX.

Note: Beamex CMX and LOGiCAL are calibration management systems where you create, maintain and send instruments for calibration to **bMobile**. Instruments cannot be created, edited or copied in **bMobile**. Those utilities are available in CMX and LOGiCAL.

To fully utilize **bMobile**, you need to be familiar with instruments, calibration and calibration procedures.

[1] Android is a trademark of Google Inc.

[2] Windows is a trademark of *Microsoft Corporation*

bMobile and CMX Requirements

bMobile requirements:

- Screen size: 4 inch or higher.
- Network connectivity.
- CWSI Server or Beamex Sync configured, in use for communication between bMobile and CMX.
- Either a **Windows 10** *(1703 or newer) or a **Windows 11*** (tablet / desktop) and .net framework 4.6.1.

  Recommended hardware:

  - Intel® Quad-Core Atom processor, Z3795
  - 128 GB storage / 4 GB RAM
- or an **Android*** device, operating system version 7.0 or later.

  Recommended hardware:

  - Quad-core 2.5 GHz Krait 400
  - 16 GB storage / 3 GB RAM

> **Note:** Even though bMobile may still work with an older Android version, it is highly recommended to update your device to the version 7.0 or later.

- or an **iOS*** device, operating system version iOS 13, iPadOS 13 or later.

Requirements in CMX (version 2.11 or later):

- Weighing Instrument option for calibrating Weighing Instruments and
- Maintenance Inspection option for doing checklist runs.
- Mobile Security Plus option is not required, but recommended.

> **Note:** Instruments and checks are created in **CMX**. **bMobile** receives necessary data from **CMX** and communicates the results to **CMX**.

*) With above mentioned devices, there should not be any significant performance reduction when a device contains 50 instruments, 200 references, 30 users and 15 results. Less performant devices will work but can slow the performance down.

Installing bMobile

bMobile is available in Google Play store and in Apple App Store. Find the App there, select and download it. The installation should start automatically and **bMobile** is immediately available for use.

A Windows® version is also available. The installation software is available on the Beamex website in the **Download Center**. Install the software on your computer.

Note: See also chapter Windows® Installation Specifics.

Communicating With CMX

bMobile communicates with CMX Calibration Management Software. Supported communication methods are:

- CWSI (Calibration Web Service Interface)
- Beamex Sync

CWSI is provided by Beamex on CMX's Installation Disk. CWSI Server and CWSI Client are installed separately. The installation instructions are available in the *CMX Installation Guide*. The following subchapter covers the instructions related to CWSI communication. More about Beamex Sync and the instruction on how to set up the communication can be found in the *Beamex Sync Help*.

Communication Settings in CMX (CWSI)

When sending instruments to **bMobile**:

In CMX's **Send to Calibrator** window, select CWSI as **Protocol**. Then check the settings by clicking this button .

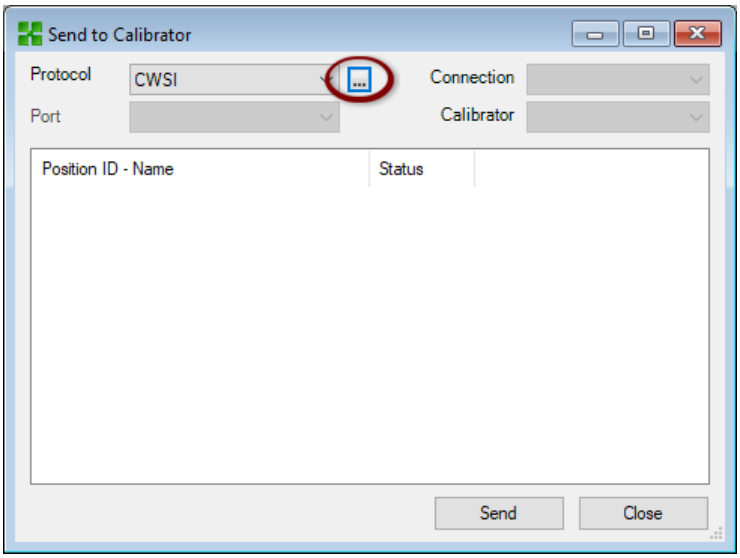


Figure 1: Send to Calibrator window

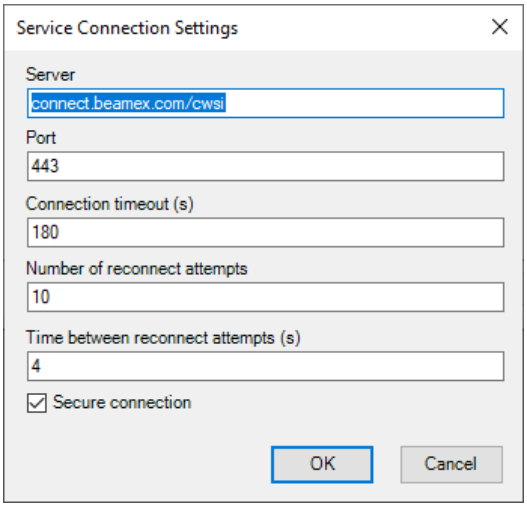


Figure 2: Service Connection Settings window

If you then get connected with **bMobile**, the **Connection** field shows your **User ID** and the **Calibrator** field shows **bMobile**.

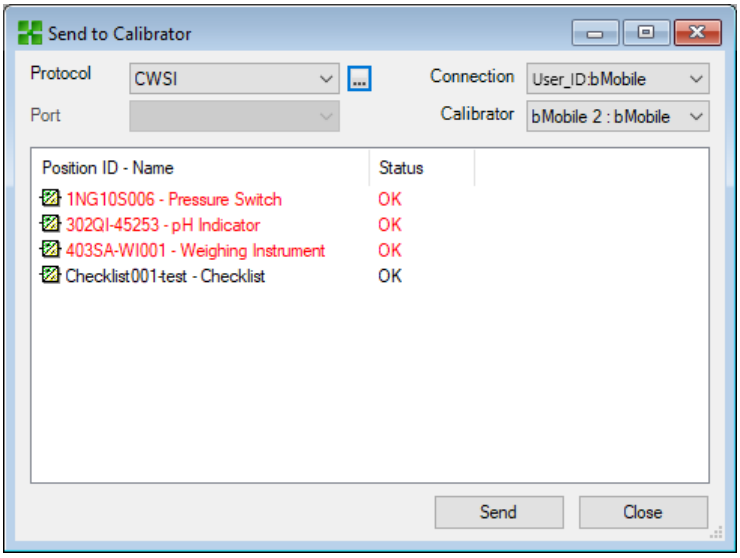


Figure 3: Send to Calibrator window after connecting

You can then send instruments from CMX to **bMobile** as it is normally done in CMX. Note however that when sending/receiving, you need to have the **Connection** window open in **bMobile**. See chapter Connect.

Receiving results to CMX is done similarly.

Note: The server address (connect.beamex.com/cwsi) may be replaced with the address where your organisation's own CWSI server is installed.

Note: For more information, see *CMX Installation Manual* and the Appendix of this document.

About Instruments

An instrument in the Beamex product ecosystem refers to an entity that can be calibrated. It includes details about:

- Physical location
- Properties of exact physical device
- The quantity and range that the device measures
- The error limits that define the pass/fail status of the calibration
- The calibration schedule, test points and other details

Variants

Instruments come in two main variants:

Variant	Description
Instrument	An instrument is a device that is attached to a physical location (position). An instrument can be attached to the plant structure.
Free device	A free device is an instrument that is not attached to a position. A concrete example is a device that has been detached from a position for maintenance (or calibration) and then later re-installed to a position. A free device can be attached to the plant structure. **Note:** LOGiCAL and bMobile only support creation and editing of free devices, not attaching to/detaching from a position.

Position

A position defines where the instrument is installed or located within the facility. The properties include a unique position ID, name, and optionally, the location within the plant structure.

Device

A device defines properties of the exact physical device. The properties include manufacturer, model, serial number, and a device ID. The device ID typically follows the position ID but can also be set to any value.

Function

A function defines the type of quantity that the device measures (i.e. pressure, temperature) and the output it produces based on it. A single device can have one or more functions (see chapter Extending instruments on how to add functions to a device).

Main types of functions that can be configured and calibrated:

- **Transmitters**

  A transmitter measures a quantity and produces another quantity based on selected transfer function.

  Example: Pressure transmitter, temperature sensor

- **Indicators**

  Indicators and readouts measure a quantity and display the value in analog or digital display.

  Example: Pressure indicator

- **Switches**

  A switch opens or closes when defined amount of quantity, such as voltage or temperature, is reached.

  Example: Temperature switch

- **Weighing instruments (CMX only)**

  Weighing instruments measure a load and typically display it with digital display.

  Example: Analytical laboratory scale

- **Checklists (CMX only)**

  Checklists include checks within check groups. A checklist can be used to carry out a maintenance inspection.

Error Limit

During calibration, Beamex bMobile calculates errors for each calibration point based on the given input and output values. If the calculated error for any calibration point exceeds the instrument's error limit, the calibration fails. A calibration passes if all calibration points are within the error limits.

Error unit allows selection of **error calculation method**, which defines three options:

Error Unit	Description
% of span	The **constant error limit** over the span of the instrument. The error limit is “flat” and the same for any input/output value within the span of the instrument. See Figure 4: Constant error limit (% of span). An additional, relative component may be added.
% of reading	The **relative error limit** is relative to the reading within the span of the instrument. See Figure 5: Relative error limit (% of reading). • If set to zero, the error limit is constant (“flat”) over the span. • A value more than zero yields a conical shape in the error limit, which allows less error in lower range and more error in upper range of the span.
Engineering units (absolute error)	Allows an absolute value of a quantity to be used as error limit. An additional, relative error component may be added.

A **single error limit** defines a continuous error limit across span of the measurement range. The constant and relative error limits define the extent and shape of the limit.

- Figure 4: Constant error limit (% of span) shows an error limit with constant error limit of 2 and relative error limit of 0.
- Figure 5: Relative error limit (% of reading) shows an error limit with constant error limit of 2 and relative error limit of 5. Notice the difference in shapes of the limits.

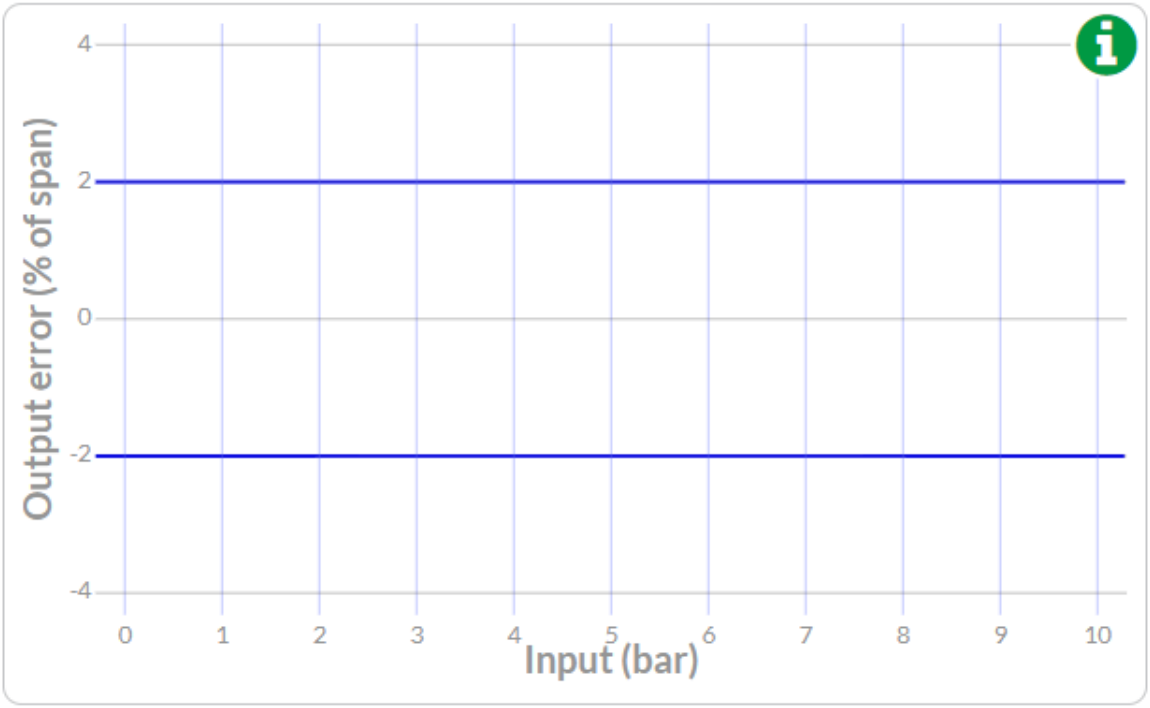


Figure 4: Constant error limit (% of span)

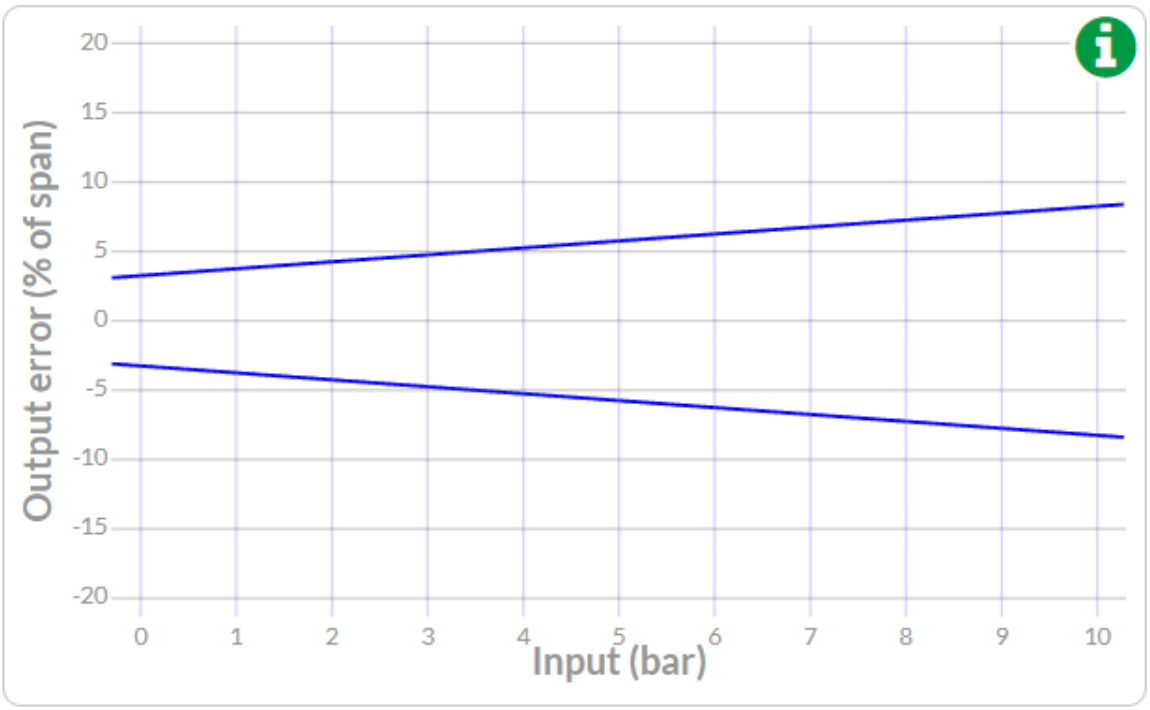


Figure 5: Relative error limit (% of reading)

Multiple error limits define a variable error limit across the span of measurement range. As an example, see the figure below.

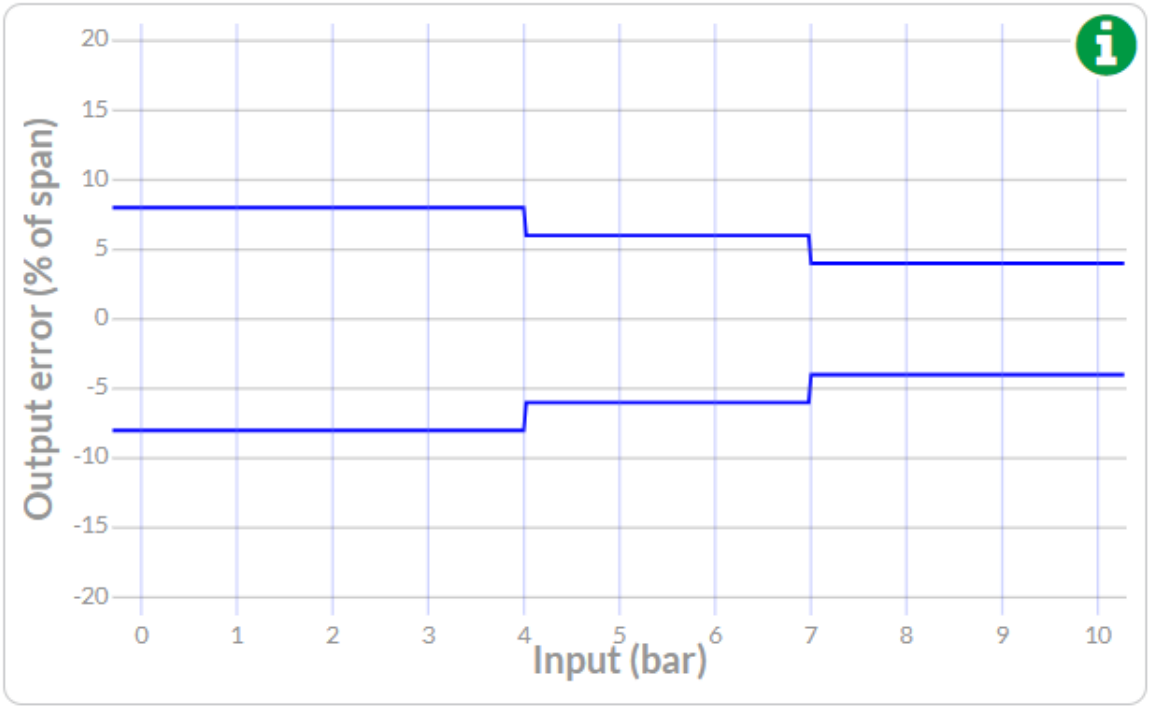


Figure 6: Multiple error limits

Asymmetric error limit allows error limits to have a positive or negative side offset, so that either more or less error may be allowed on positive or negative side. As an example, see the figure below where asymmetricity allows more error on the negative side.

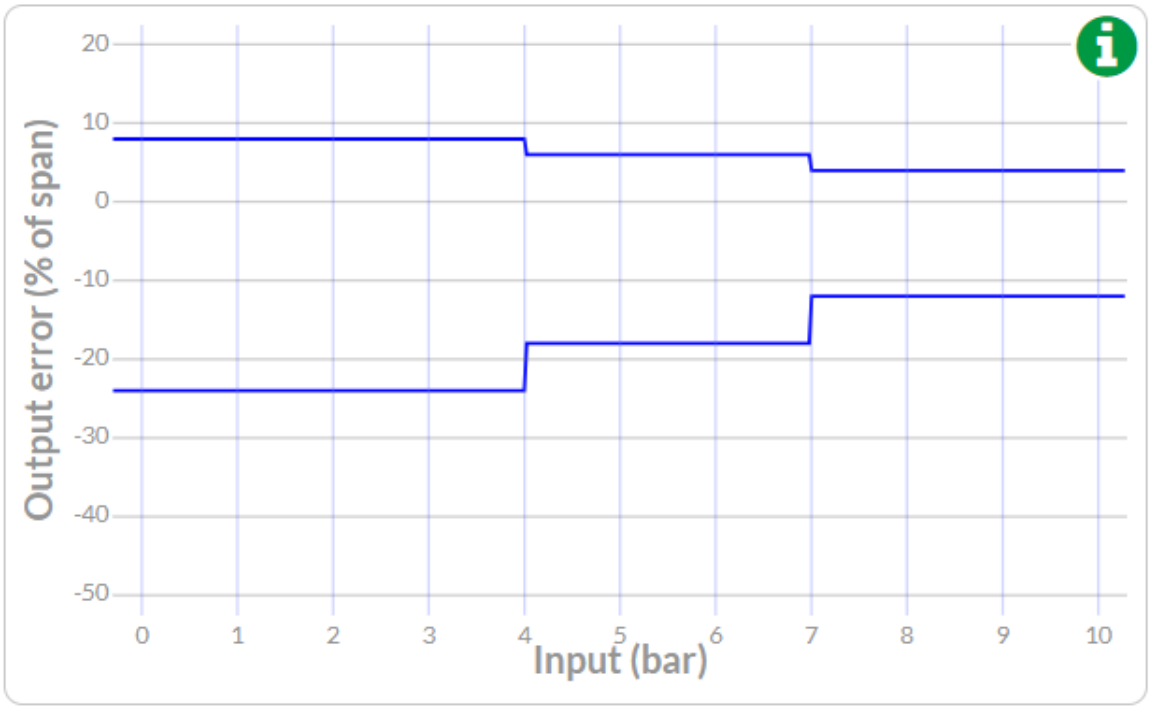


Figure 7: Asymmetric error limit

Additional error limits are optional error limits which help the calibration technician to decide whether the instrument should be adjusted.

Limit	Description
Adjust if error > (% of Reject if Error)	When error exceeds the limit, adjustment is recommendable.
Don’t adjust if error < (% of Reject if Error)	When error is below the limit, adjustment is not needed.
Adjust to < (% of Reject if Error)	When adjusting, the maximum error after adjustment should be below this value.

Additional error limits are visualized in the error graph below, having values set to:

- 75% “Adjust if error”
- 75% “Don’t adjust if error”
- 50% “Adjust to error”

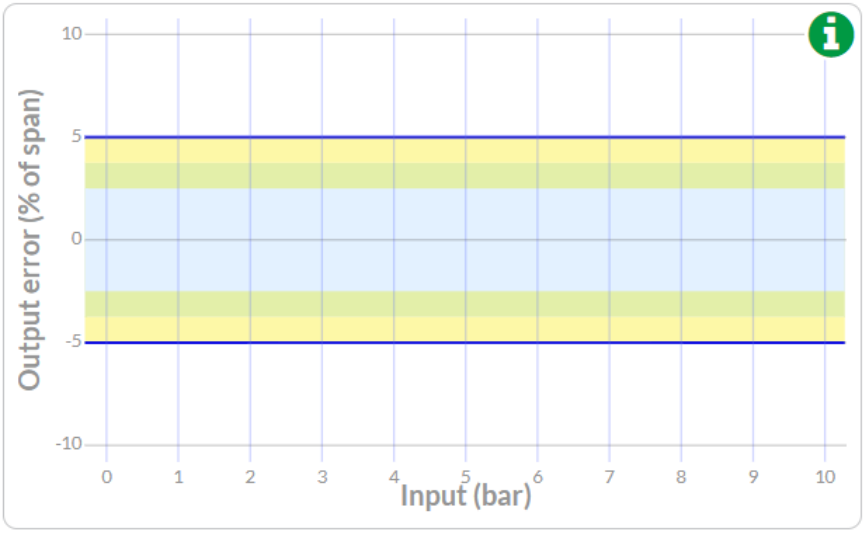


Figure 8: Additional error limits

Such configuration would mean:

- If calibration point error hits the yellow area nearest to the error limit, the instrument should be adjusted.
  - After the instrument is adjusted, its errors should stay within the blue area.
- If calibration point error hits the green area or is less than that, the instrument should not be adjusted.

Procedure

A procedure defines the instrument's calibration schedule and calibration test points.

Additional notes for the calibration technician can be given to be shown before, during and after the calibration run.

Plant Strucutre

The **plant structure** consists of **plant nodes,** defining a hierarchical structure to which instruments can be attached. The plant structure should represent the organization's sites and their respective structure. As an example, see the figure below.

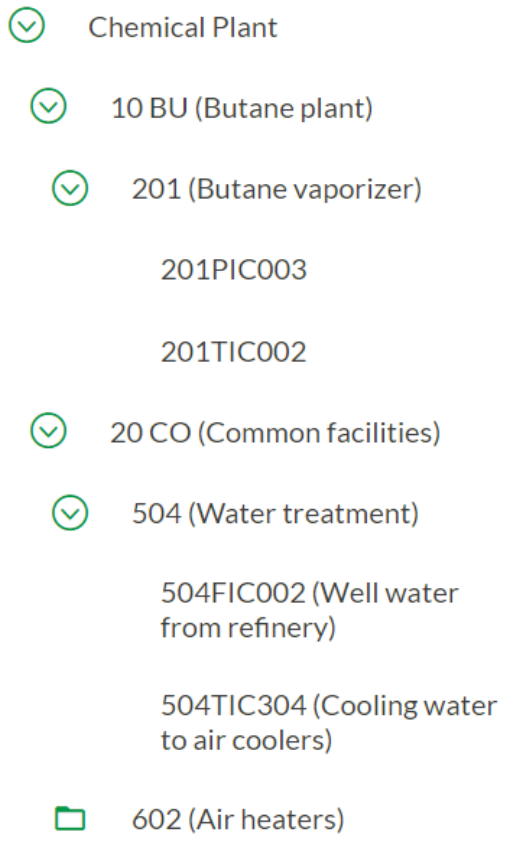


Figure 9: Example plant structure

Starting bMobile

bMobile communicates with two Beamex Calibration Management Systems: CMX and LOGiCAL. CMX supports communication over Sync (see *Beamex Sync Help*) and CWSI interfaces (see chapter Calibration Web Service Interface (CWSI)), while LOGiCAL only supports communication over the Sync interface. This initial selection defines which application and communictation mode will be used. See following subchapters for more specific information about both systems. To change previously selected communication mode, see chapter Settings.

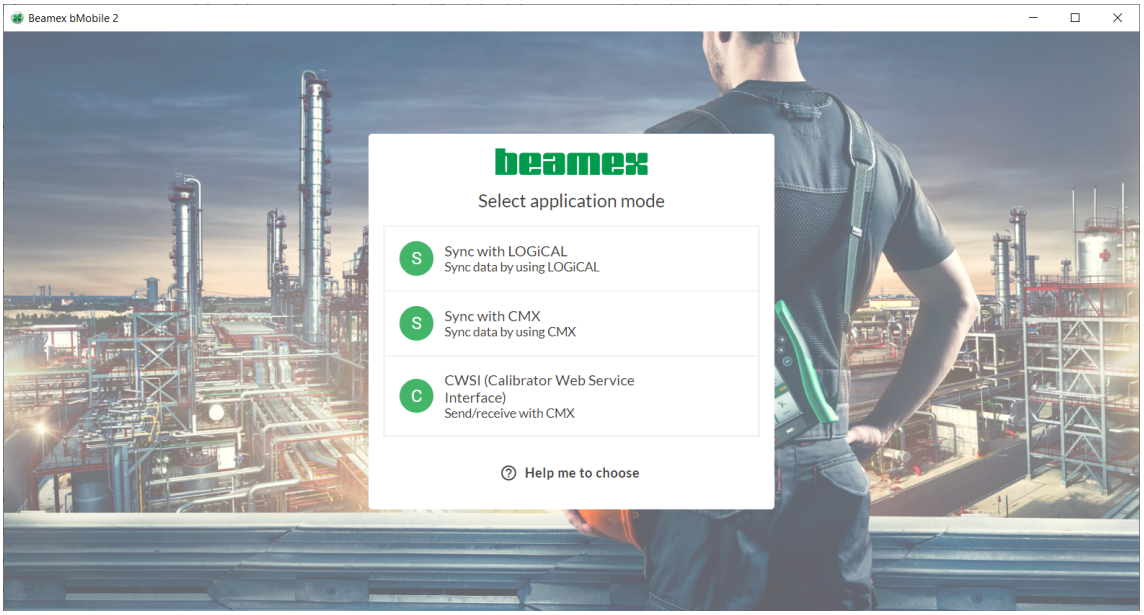


Figure 10: Communication mode selection screen

CMX with CWSI

This operating mode requires that your organization utilizes CMX with CWSI. For more information, see the *CMX Installation Guide* and the Appendix of this document.

Starting **bMobile** varies depending on whether there are any instruments or users available.

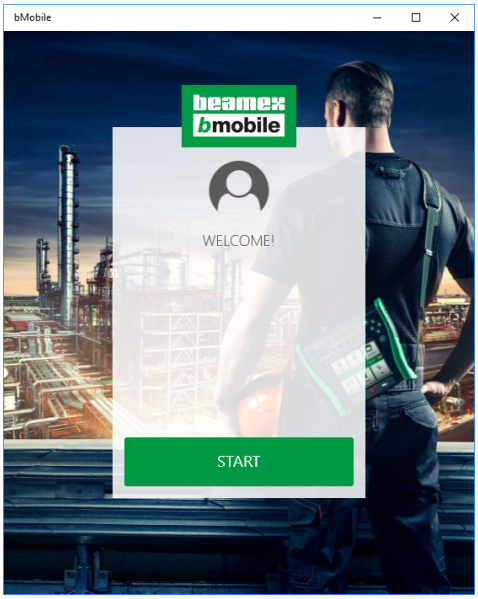


Figure 11: Welcome screen, when no instruments or users are available

Additionally, the startup depends on whether **Mobile Security Plus** option is installed in CMX.

No Mobile Security Plus

When Mobile Security Plus option is not installed/active, the logon screen is simple. Select user and login to open Home View/Instrument List.

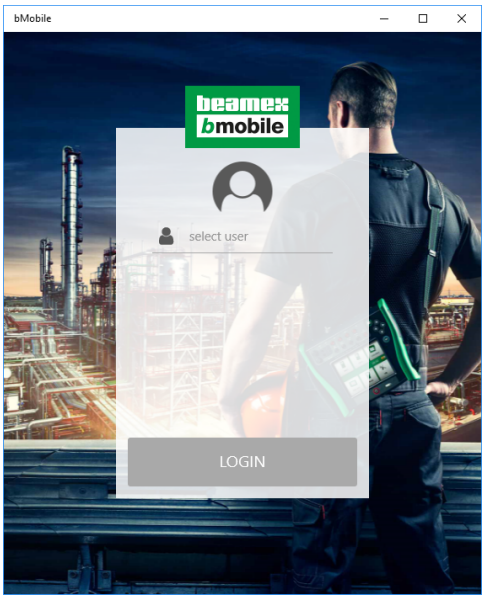


Figure 12: Login when there is no Mobile Security Plus

Mobile Security Plus In Use

When Mobile Security Plus option is active, the logon screen depends on whether the settings in CMX require that the user enters the User ID or whether the User ID can be selected from a list.

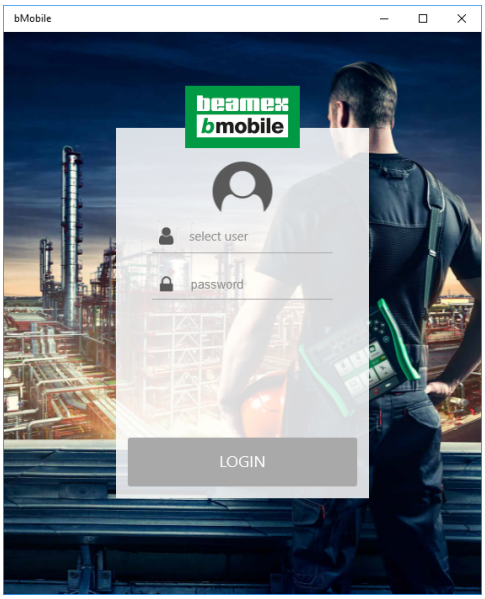


Figure 13: User ID available in list

In both cases, when necessary data is entered/selected: Tap on **Login** button to continue to Home View/Instrument List.

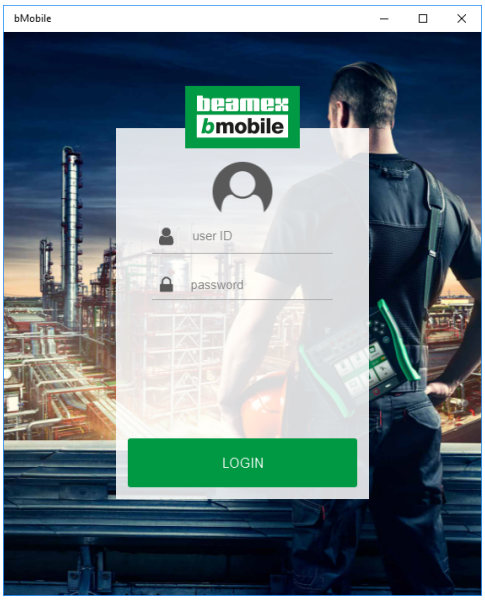


Figure 14: Login when User ID has to be entered

Solving Login Problems

In case the data in your application is not accessible, you must click/tap **Connect** or **Forgot Your Password?** link to continue. The shown screen depends on whether Mobile Security Plus is in use or not.

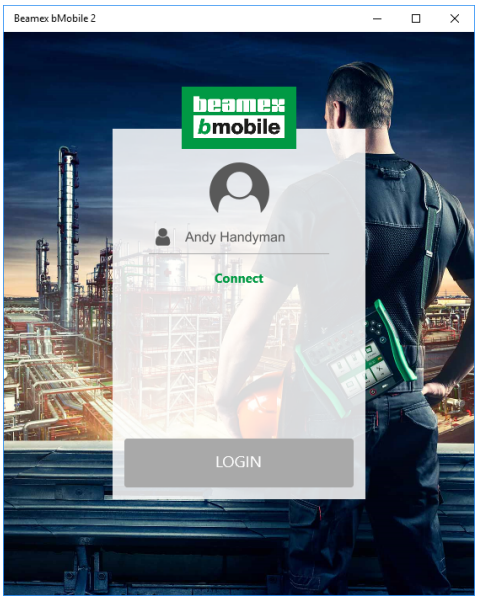


Figure 15: Connection problem when Mobile Security Plus is NOT in use

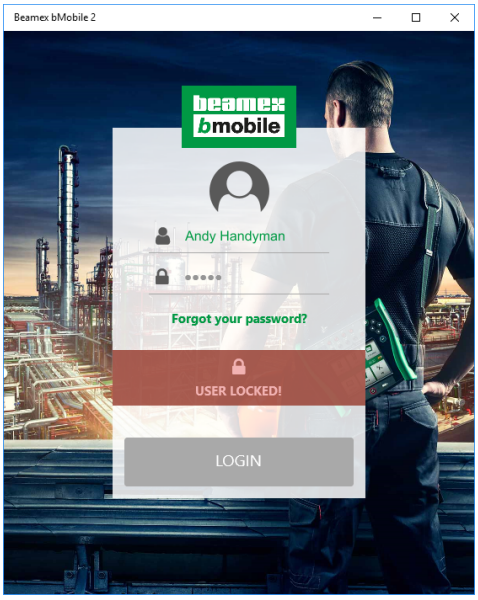


Figure 16: Connection problem when Mobile Security Plus IS in use

Note that the picture above also applies to the situation where the password is forgotten. The way to reconnect is similar in all the above mentioned situations

Note: If an instrument data sent from CMX does not include users, a dialog opens asking you to resend the instruments/users.

After clicking/tapping on **Connect** or **Forgot Your Password?**, the following window opens:

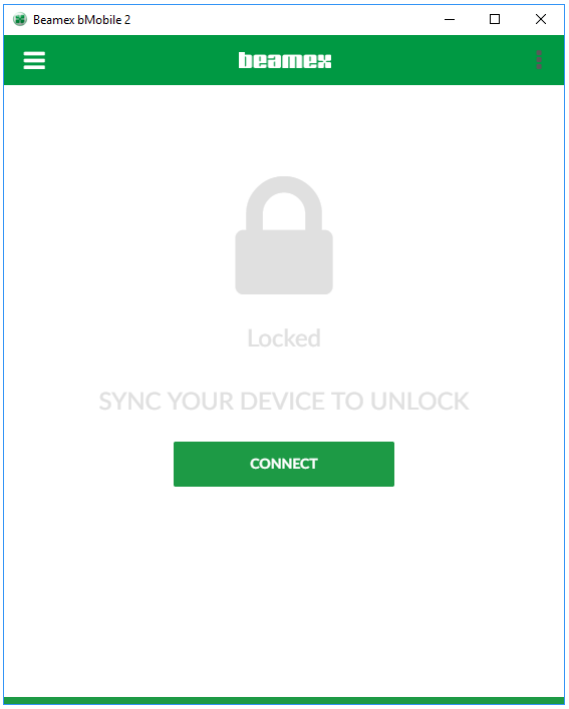


Figure 17: Lock window

The lock symbol means that there are instruments/results in **bMobile** that are not accessible without login.

Tap **Connect** in the **Lock** window or select **Connect** from the menu to reconnect (and unlock the password).

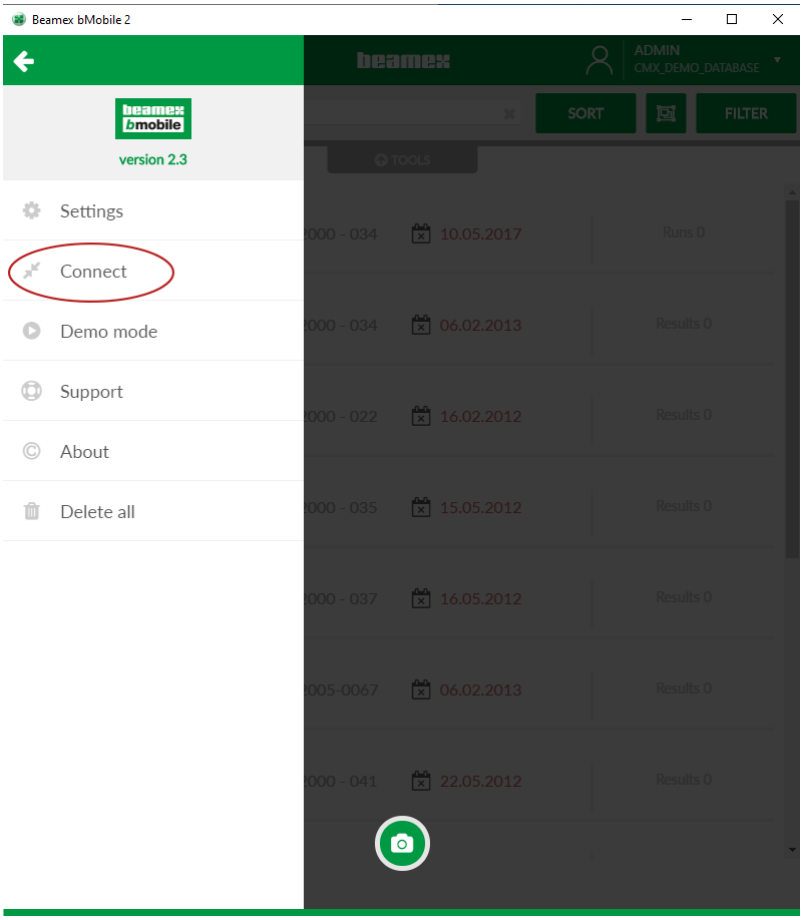


Figure 18: Menu with Connect option highlighted

Note: If you have totally forgotten your mobile password, reset it in CMX, then reconnect and send an instrument to **bMobile**.

CMX with Beamex Sync

This operating mode requires that your organization utilizes CMX with Beamex Sync. For more information, see *Beamex Sync Help*.

LOGiCAL Operating Mode

This operating mode requires that your organization utilizes LOGiCAL. For more information about getting started, visit the Beamex website.

By selecting LOGiCAL operating mode as described in Starting bMobile, **bMobile** will communicate with LOGiCAL. Beamex **LOGiCAL** is a cloud-based calibration management software. You can store your instruments and references in the LOGiCAL database and use them as a basis for calibration tasks. The intuitive dashboard will let you know when your instruments are due for calibration.

You can plan your calibration work in LOGiCAL and assign the work to people doing the calibration. Once the calibration work is done, the results can be synchronized from the calibrator or mobile device to LOGiCAL.

You can find more information about LOGiCAL on the Beamex website.

If you wish to exit LOGiCAL mode, see chapter Settings.

Sync

The following chapters cotain information about Sync and how to sync data.

About Sync

Sync is an asynchronous, cloud-based communication method for transferring data between LOGiCAL and bMobile or CMX and bMobile.

Syncing Data

Sync must be started manually, but the sync process is fully automatic. If any user action is needed, it will be instructed within the sync progress screen.

In **desktop mode**, start sync by clicking the highlighted button in the toolbar (see figure below).

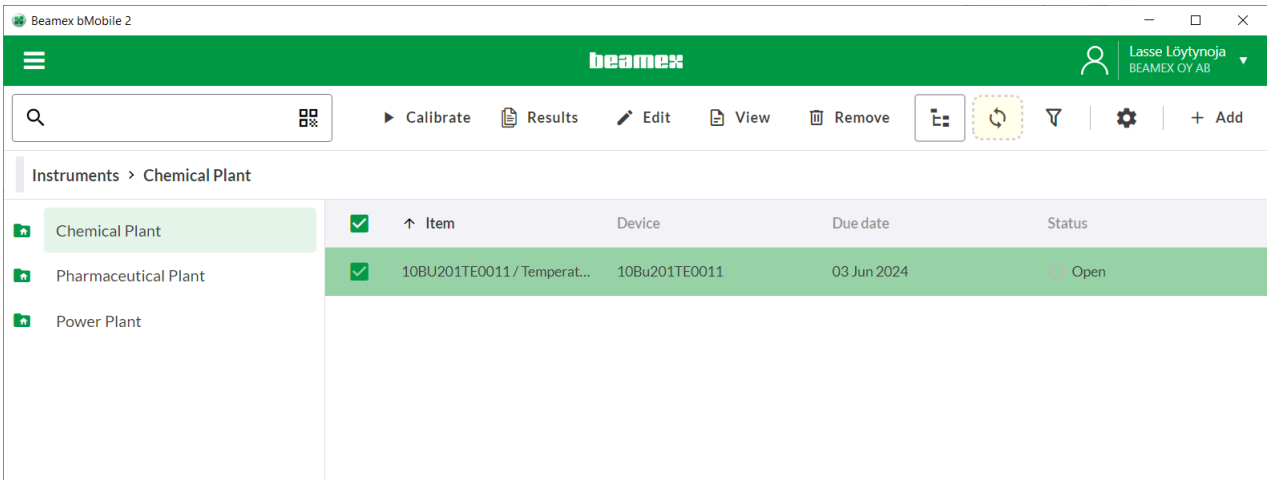


Figure 19: Sync on desktop

On a **mobile device**, press menu **(1)** and select Synchronize **(2)** (see figure below).

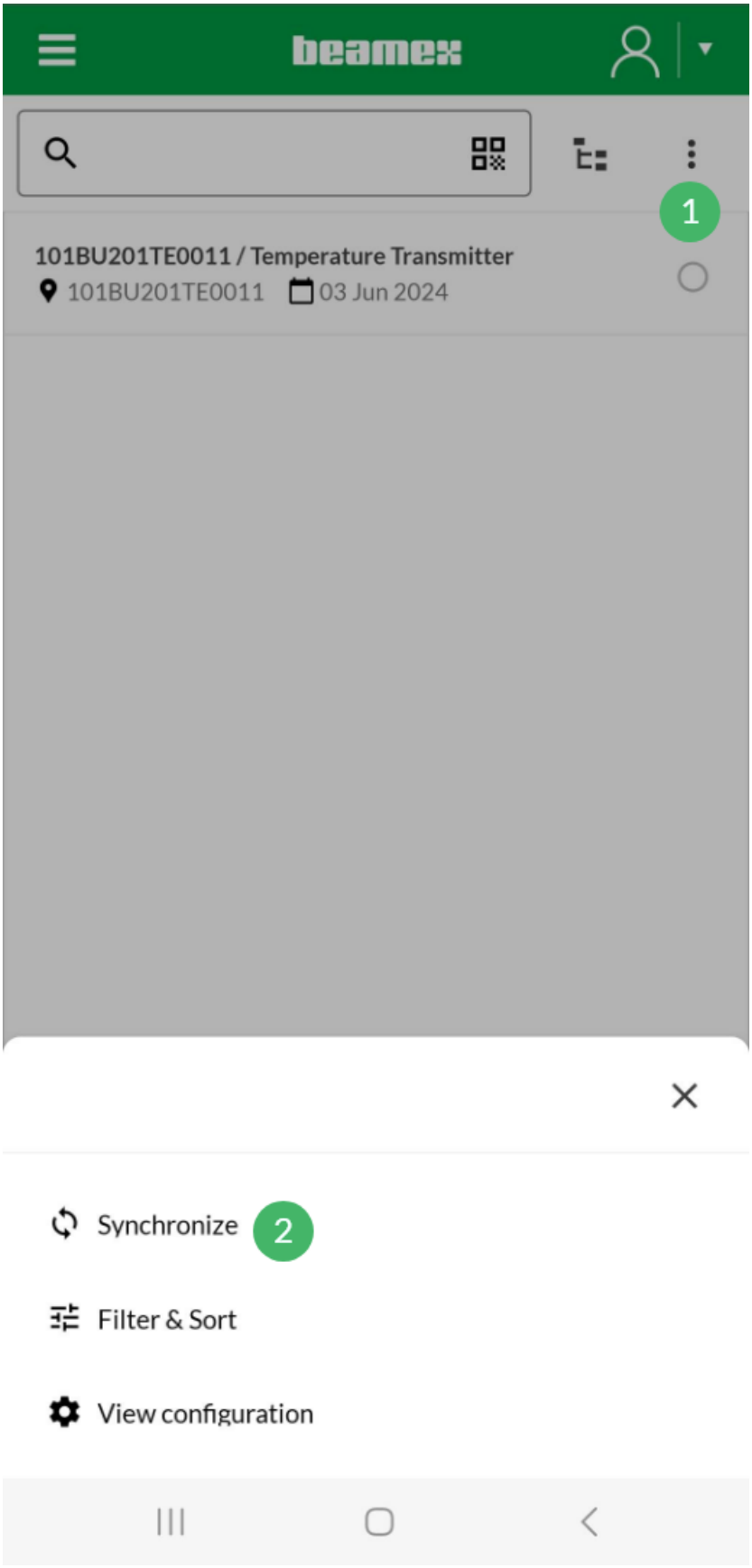


Figure 20: Sync on mobile device

Roles and Permissions

bMobile enforces the roles and permissions configured in LOGiCAL.

- bMobile supports Site-Based Access Control (different permissions for different sites within plant structure).
- If access control is not enabled in LOGiCAL, no access control is applied to bMobile either.
- An Organization Administrator (set in MyBeamex) has no access restrictions in application.

The table below explains how permissions affect bMobile:

LOGiCAL Permission Group	Effect
Instruments	Defines access for creating, editing, removing and reading instruments.
Plant structure	Defines access for creating, editing, removing and reading plant nodes.
Results	Defines access for creating (calibration), removing and reading results.

About the User Interface

One of the frequently seen elements in **bMobile**'s user interface is the expansion panel. An expansion panel can be identified from its gray bar. It shows/hides data presented below the expansion panel's gray bar/tab.

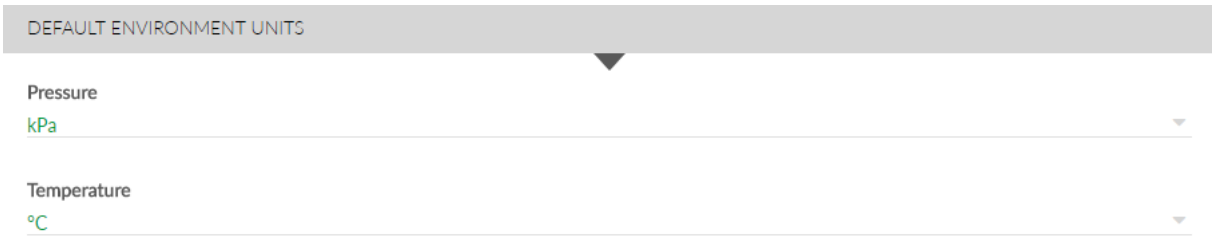


Figure 21: Default Environment Units expansion panel opened

Tap/click the gray bar/tab to open a hidden expansion panel. Similarly, close the expansion panel by tapping/clicking the gray bar/tab.

Home View Menus

Main Menu

Main menu opens from Home View's upper left corner ( ). The menu may be closed, when needed, using the back arrow that replaced the ( ).

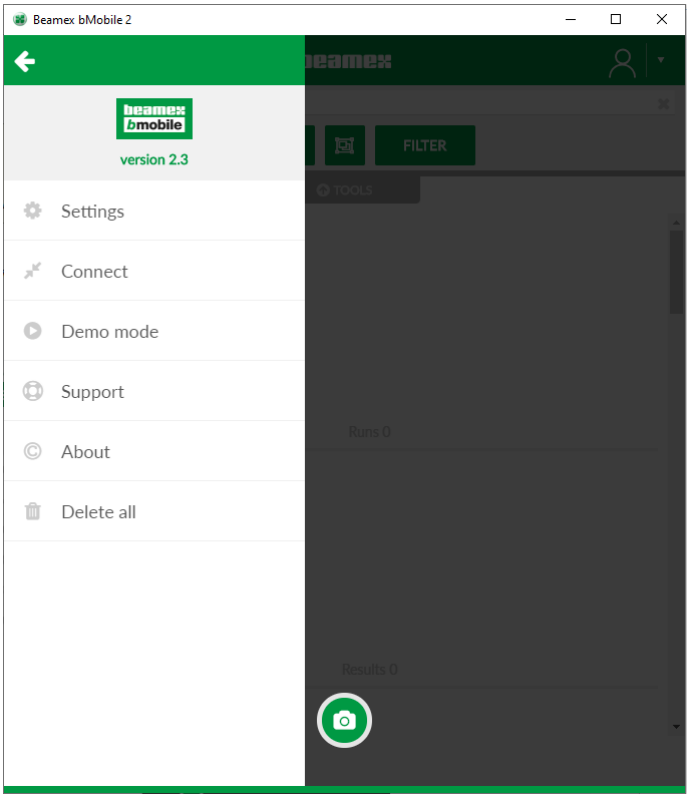


Figure 22: Main menu opened

Note: Whenever you need to return to Home View, use the back arrow(s).

The main menu items are explained in the chapters below.

Settings

Main Menu's **Settings** option opens a window for defining **bMobile's** settings:

General:

- **Language**.

  Select the User Interface language.

- **Checklist execution**.

  Decide on how the checklist runs advances: automatically or manually. If the checklist requires comments for all checks, use manual advancement to be able to add the required comments.

- **Date format**.

  Select a suitable date format from the available options.

- **Time format**.

  Select either 12 h or 24 h format.

- **Zoom level**.

  Select one of the available zoom levels:

  70 %, 85 %, 100 %, 115 % or 130 %.

- **Show Graph**.

  Define whether the calibration graph is shown simultaneously while entering numeric calibration results. Options:

  No, *Yes* or *Auto*.

  The visibility also depends on the size of the used screen. The graph can always be seen by using the graph toggle button.

- **Show barcode reader**.

  Choose whether the scan tool on Home View will be shown or not.

- **Reference selection**.

  Choose the default value when selecting references. Options:

  Not defined, *All points* or *This point*.

- **Restore factory settings**

  To switch between CMX and LOGiCAL operating modes, a “Restore Factory Settings” action needs to be performed. You will lose all the information after restoring. Access that setting from the context menu (three dots at the top right corner), see Figure 23: Settings window.

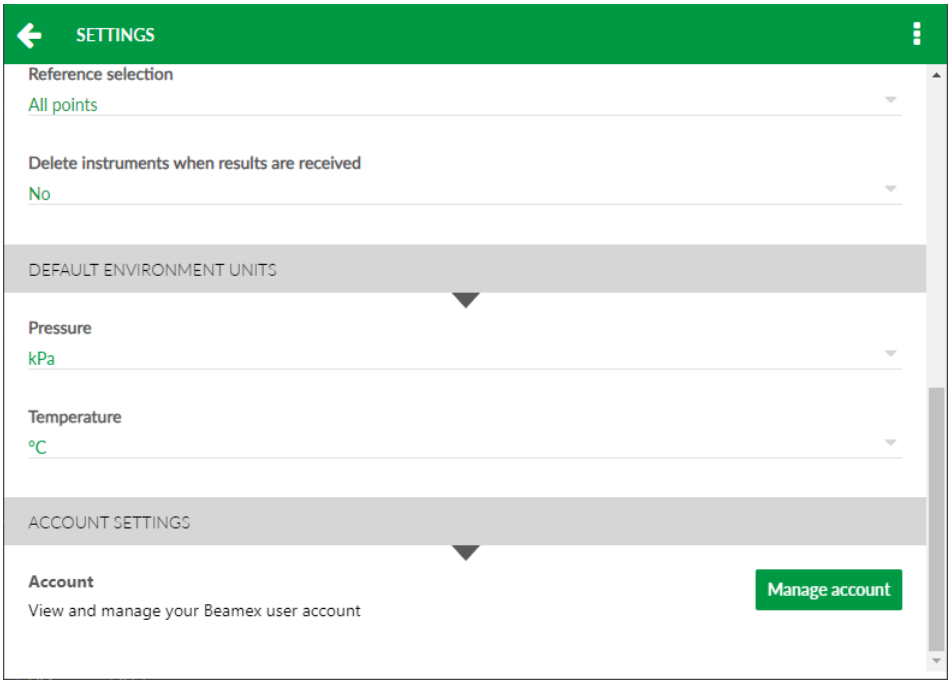


Figure 23: Settings window

Default environment units:

- **Pressure**.

  The atmospheric pressure unit.

- **Temperature.**

  The default temperature unit.

> **Note:** In order to establish a secure connection, CWSI server needs to have an official certificate installed.

Account Settings:

- **Account**.

  Press **Manage account** button to view and manage your Beamex user account.

  User account settings are opened in a new browser window.

Backend Settings:

- **Server address***.

  Default value: connect.beamex.com.

  Optionally: The location (url) where your own CWSI server resides.

- **Port***.

  Default value: 443.

- **Endpoint***.

  Default value: cwsi.

- **CMX User ID**

  Default value: admin.

- **Description**.

  Default value: bMobile.

- **Secure connection***.

  Default value: On.

  See also note below.

- **Secret**.

  Password for connecting to cwsi/CMX.

  Required when connecting to default server.

Note: If Mobile Security Plus is in use, Mobile Supervisors are the only ones allowed to change bMobile's communication settings, marked with an asterisk (*) in the above list. See also Windows® Installation Specifics.

Connect

This screen allows to connect or disconnect to/from CWSI server. **Connect window must be open, when receiving instruments from CMX and sending results to CMX**.

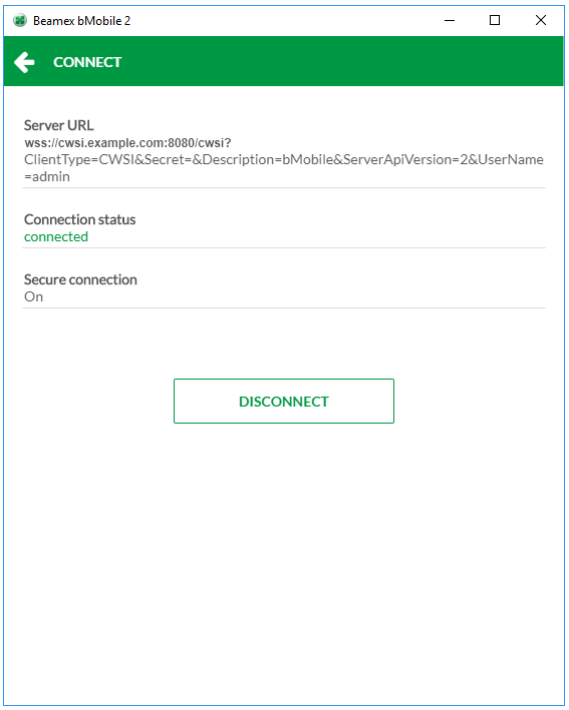


Figure 24: Connect window

All settings are defined in the **Settings** page. The server url and the connection type are presented in the read-only mode.

Note: This menu item is not visible when in the **Demo mode**.

Demo mode

The demo mode allows you to test **bMobile**'s functionality locally, without a connection to CWSI/CMX.

It includes some example instruments and a checklist to experiment with the **bMobile**. Demo mode can also be used for training purposes.

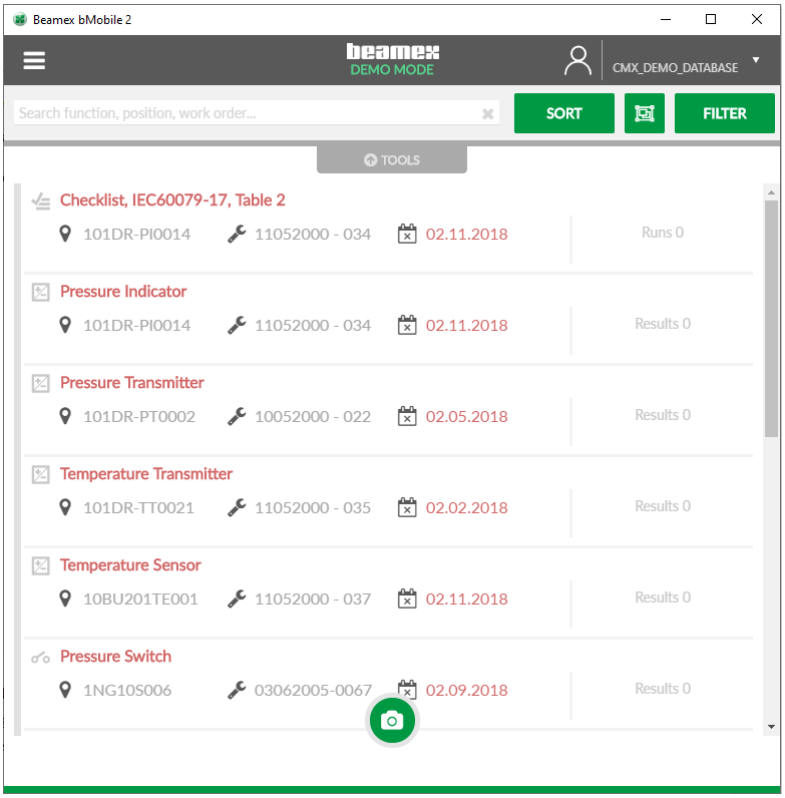


Figure 25: Demo mode window

Note: To indicate that you are in the Demo Mode, **bMobile**'s upper banner is gray. When not in the Demo Mode, Home View's upper banner is green. When ending the Demo Mode, all demo instruments' results are cleared. The instruments seen in the Demo Mode cannot be transferred to CMX.

Support

This menu item presents contact information to Beamex headquarters in Finland and to Beamex subsidiaries.

Support window also includes links to the manual, Beamex Youtube page and Beamex blog page.

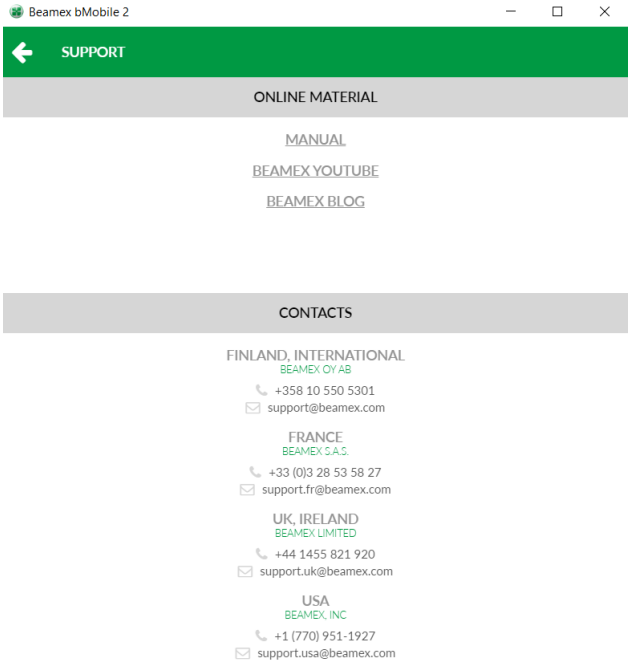


Figure 26: Support window

About

The About window presents information of the **bMobile** software at hand.

The serial number (highlighted in the picture) is unique for each user/installation.

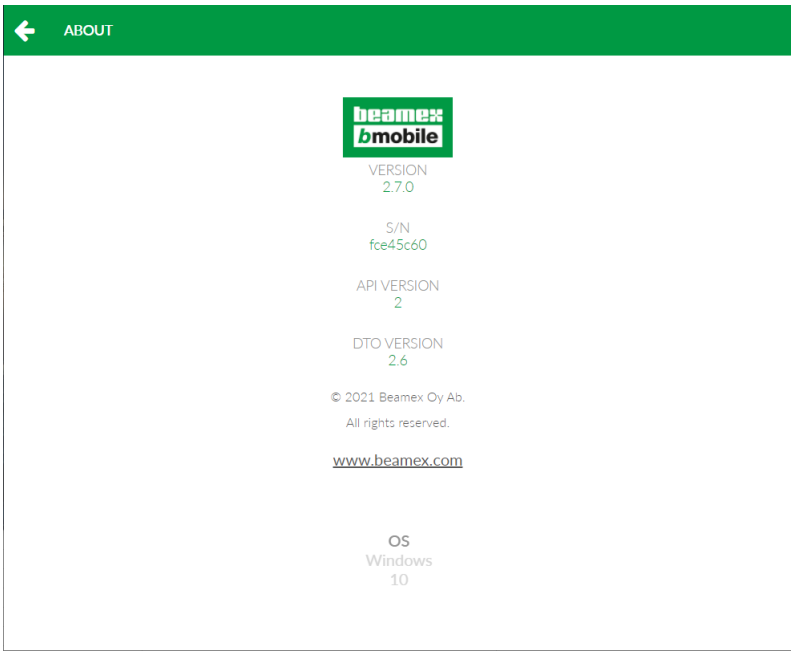


Figure 27: About window of bMobile

The serial number is shown in CMX's send /receive window, when connecting to **bMobile**. This identifies the connection, when, e.g. multiple **bMobile** software are connected to CMX.

Sign Out

Signs user out from **bMobile**.

Context Menu

A Context menu is available in Home View's upper right corner ( ). The Context menu is also available elsewhere in **bMobile**.

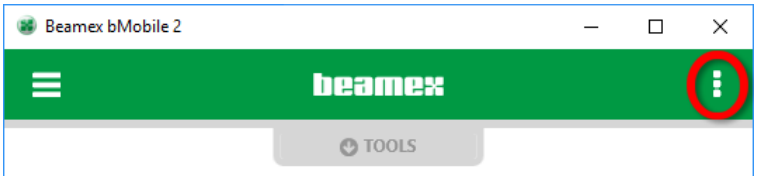


Figure 28: Context menu button highlighted

The context menu's available items depend on the situation. The context menu often it includes a possibility to delete instrument(s) from **bMobile**, provided you have the rights to do it.

Note: CMX's **Mobile Security Plus** settings may prevent you from opening this menu or may require your password before opening the menu.

Managing Instruments

The following chapters contain information about how to manage instruments.

Instrument Management View

The instruments in your device are listed in the instrument management view. A row in the list represents a function that can be calibrated.

In **desktop mode**, the controls are as follows (see figure below):

1. Search field
2. Basic instrument management view controls
3. Show/hide the plant structure explorer
4. Sync with LOGiCAL or CMX
5. Show/hide the grouping and filtering controls
6. Open column configurator
7. Add instrument
8. Breadcrumb for plant structure
9. Instrument list columns

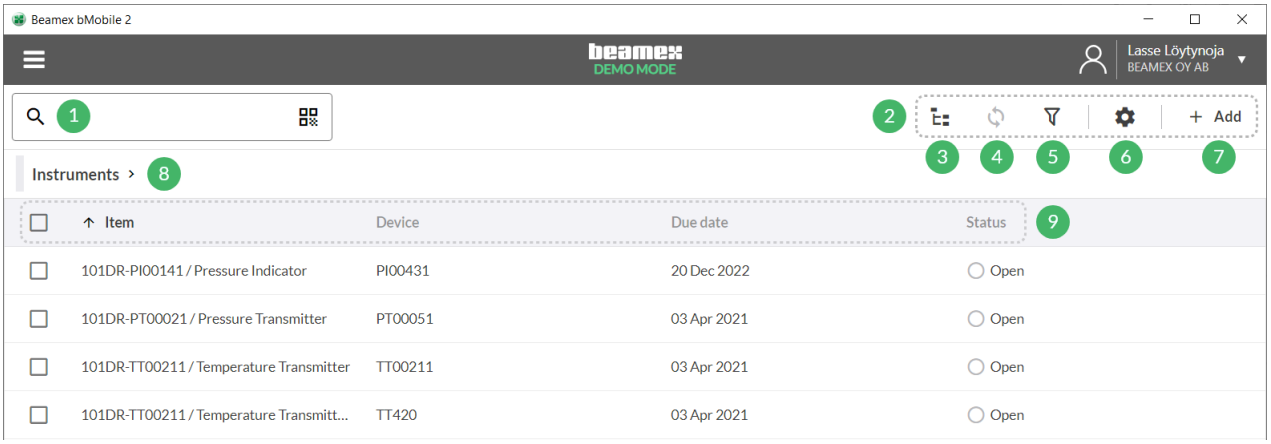


Figure 29: Instrument management view in desktop size

The instrument list columns are:

Item combines the position ID and the function name. If the instrument is a free device, then position ID is replaced with text “Free device”.

Device is the device ID of the instrument.

Due date is the calibration due date of the instrument.

Status represents the state that instrument is in:

- **Open** – The instrument doesn’t have any calibration started nor completed yet.
- **In progress** – The instrument has an ongoing calibration that has been paused.
- **Passed** – The latest calibration result for the instrument has status “Passed”.
- **Failed** – The latest calibration result for the instrument has status “Failed”.

With **mobile devices**, the controls are (see figure below):

1. Search field
2. View plant structure browser
3. Menu containing sync, grouping and filtering, and column configuration controls
4. Breadcrumb showing current active plant structure level
5. Item combines position ID and function name
6. Device ID of the instrument
7. Calibration due date of the instrument
8. Instrument status (see desktop mode for explanation) in order from top: Open, In Progress, Passed, Failed
9. Add instruments

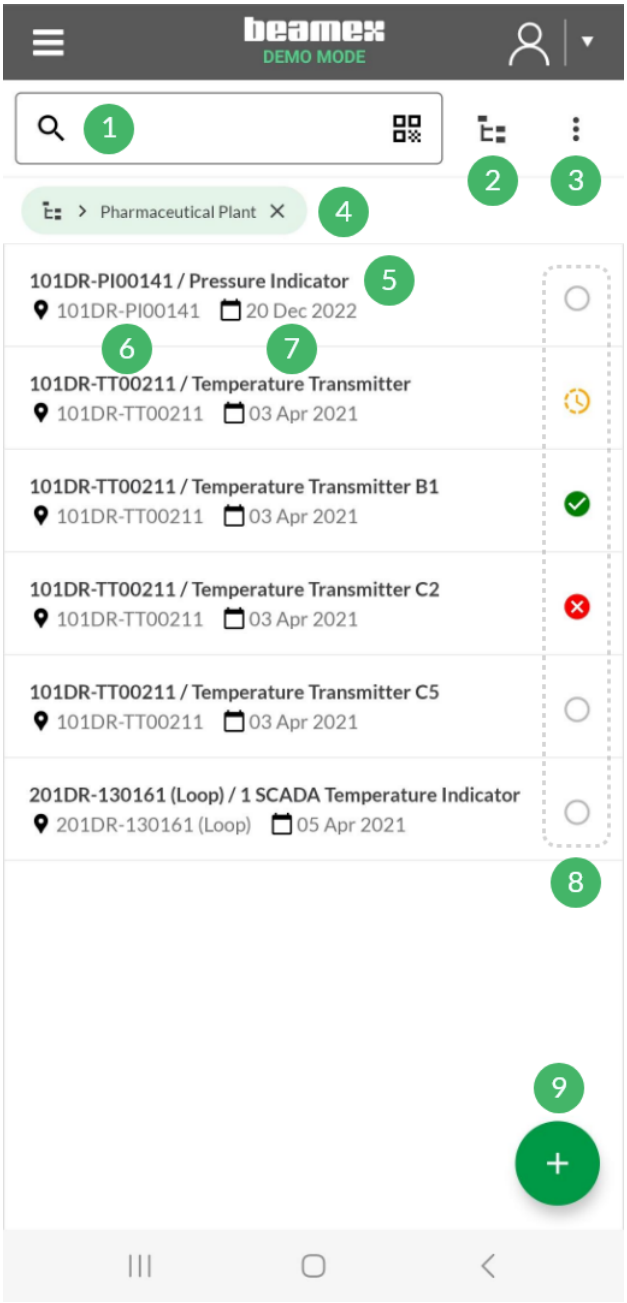


Figure 30: Instrument management view with mobile device

Note: Adding instruments and viewing a plant structure are features only available in LOGiCAL mode.

Note: You can select what columns are included in instrument list with column configurator.

Note: To filter, sort or group the data to effectively find what you need, read more in chapter Finding What You Need.

Starting Calibration

In **desktop mode**, calibration can be started in two ways (see figure below):

- Click a row to activate it and select “Calibrate” in the toolbar
- Alternatively, right click on an instrument and select "Calibrate” in the context menu

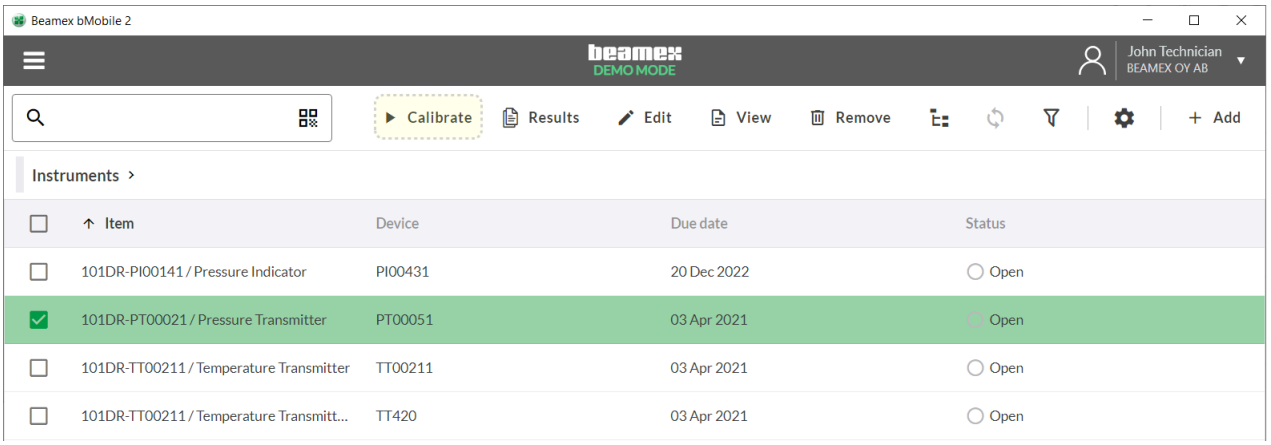


Figure 31: Starting calibration in desktop mode

On a **mobile device**, start a calibration by pressing a row and click the green “Calibrate” button in the dialog that opens (see figure below).

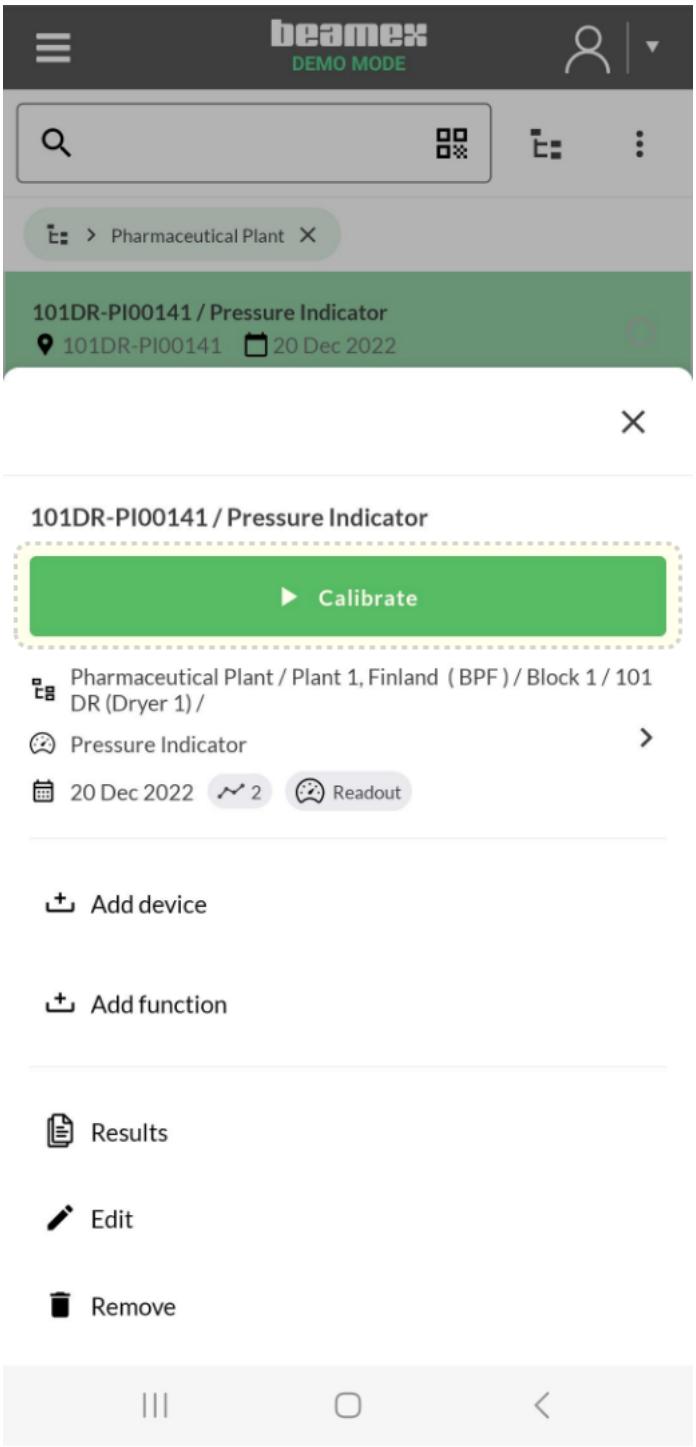


Figure 32: Starting calibration with mobile device

Viewing Instrument Details

You can view full details of an instrument (see figure below).

In **desktop mode**:

- Click a row to activate it and select “View” in the toolbar
- Alternatively, right click on instrument and select “View” in context menu

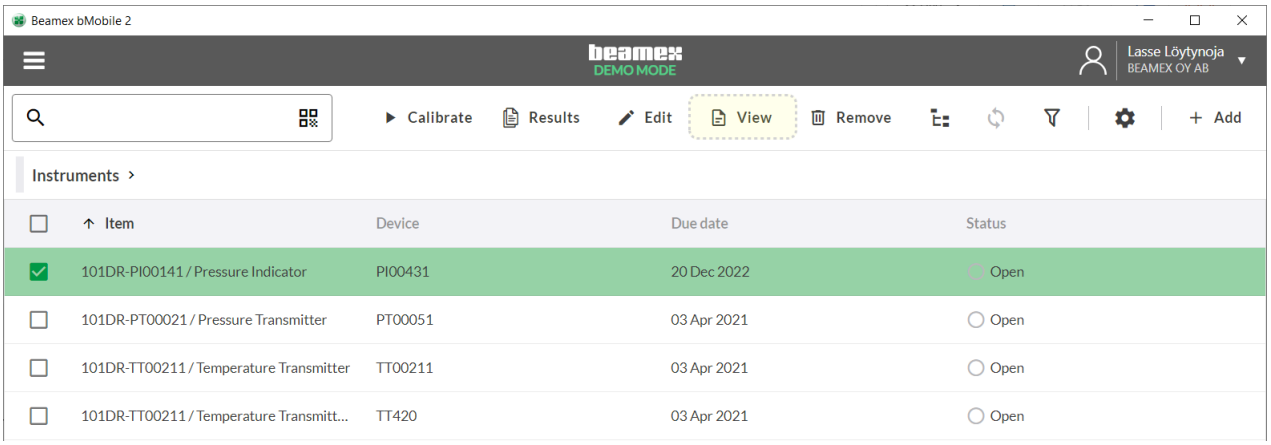


Figure 33: Viewing instrument details on desktop

On a **mobile device**, view instrument details by pressing a row and click the control that shows the instrument details in the dialog that opens (see figure below).

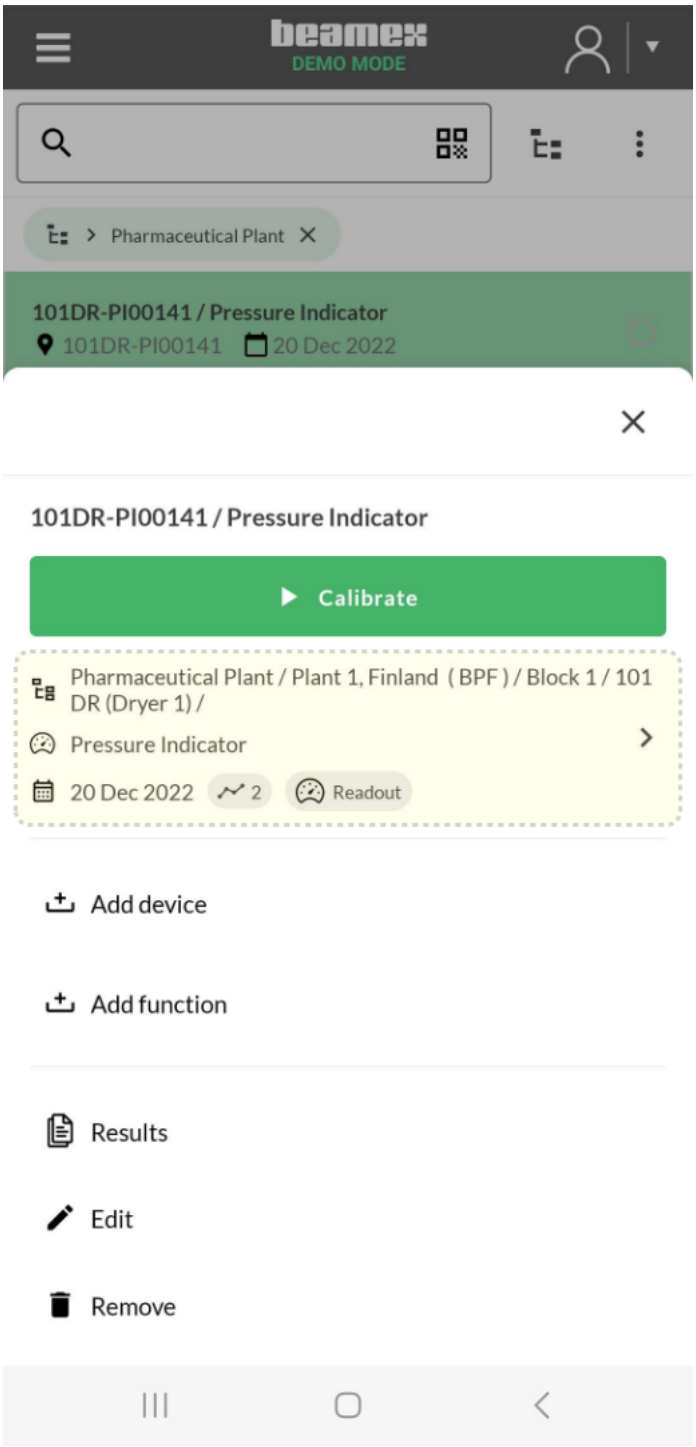


Figure 34: Viewing instrument details on mobile device

Viewing Calibration Results of an Instrument

If an instrument has calibration results, you can view full details of the result (see figure below).

In **desktop mode**:

- Click a row to activate it and select “Results” in the toolbar
- Alternatively, right click on an instrument and select “Results” in the context menu

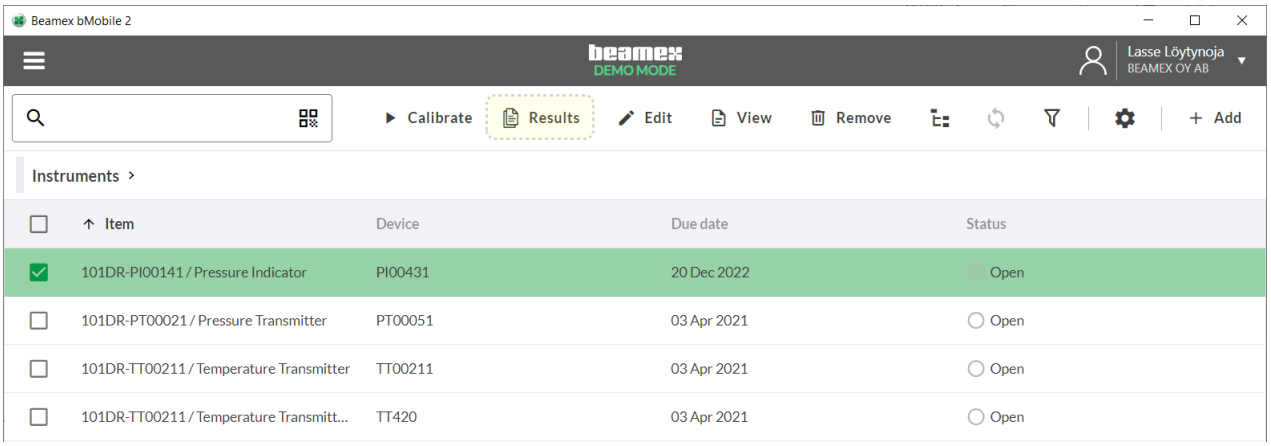


Figure 35: Viewing calibration results on desktop

On a **mobile device**, view results of an instrument by pressing a row and then press “Results” (see figure below).

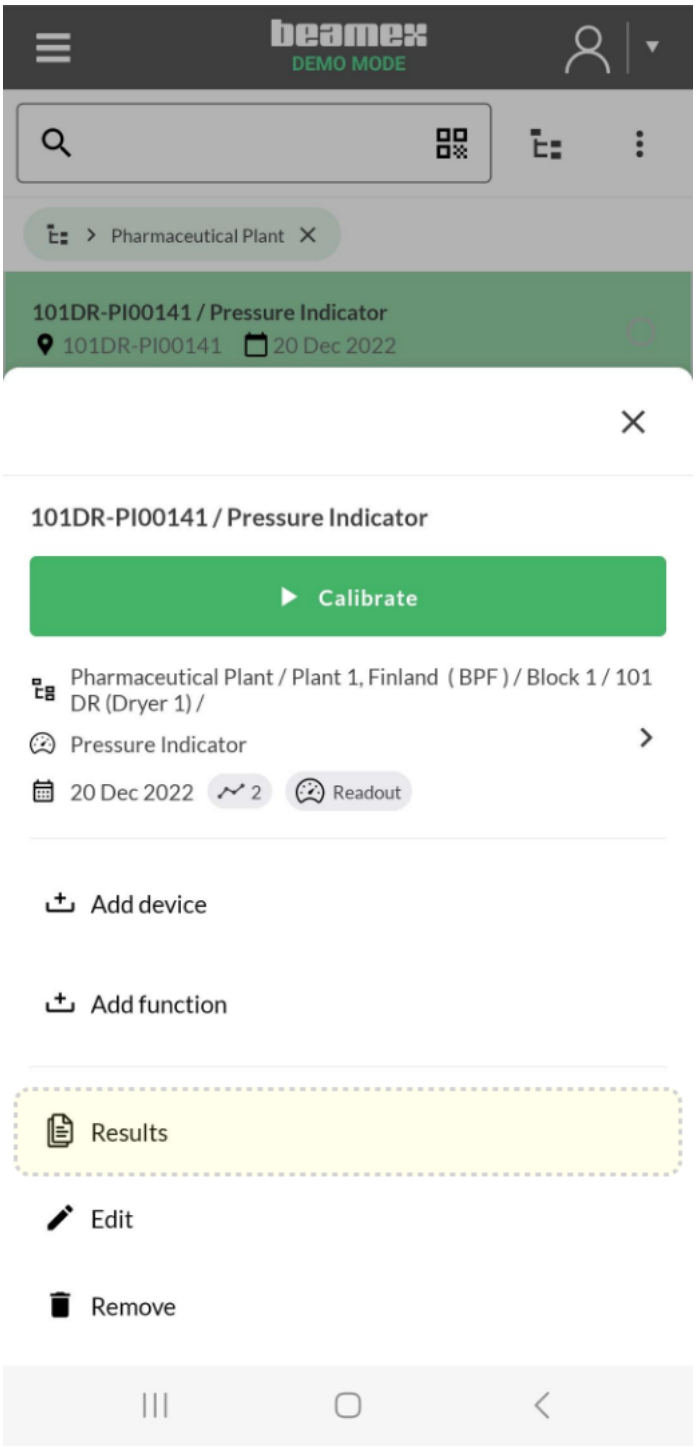


Figure 36: Viewing calibration results on mobile device

Creating and Editing Instruments

Instruments can be created and edited in bMobile (see figure below).

Note: This feature is only available in LOGiCAL mode. If an instrument is synced in LOGiCAL or the instrument has a calibration result, the following fields are locked and cannot be edited in bMobile:

- Position ID
- Device ID
- Output category does not allow major type change (transmitter to switch, swith to transmitter)

In **desktop mode**:

- To **create** an instrument, click “Add” in the toolbar:
  - Select either “Add instrument” or “Add free device” in the menu
- To **edit** an existing instrument:
  - Click a row to activate it and select “Edit” in the toobar
  - Alternatively, right click on instrument and select “Edit” in context menu

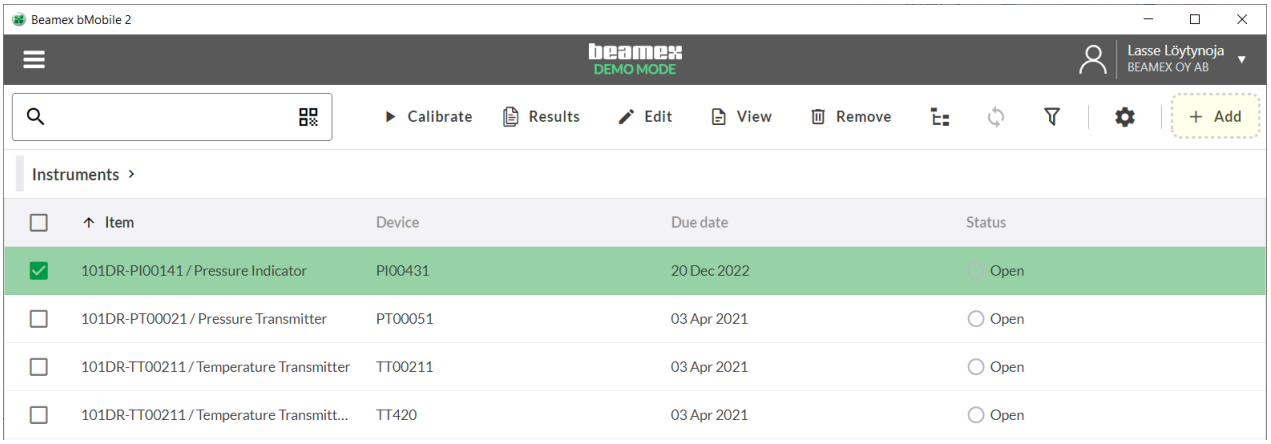


Figure 37: Creating instrument on desktop

On a **mobile device**:

- To **create** an instrument, press the big green button at the bottom of the screen (see figure below).
  - Select either “Add instrument” or “Add free device”

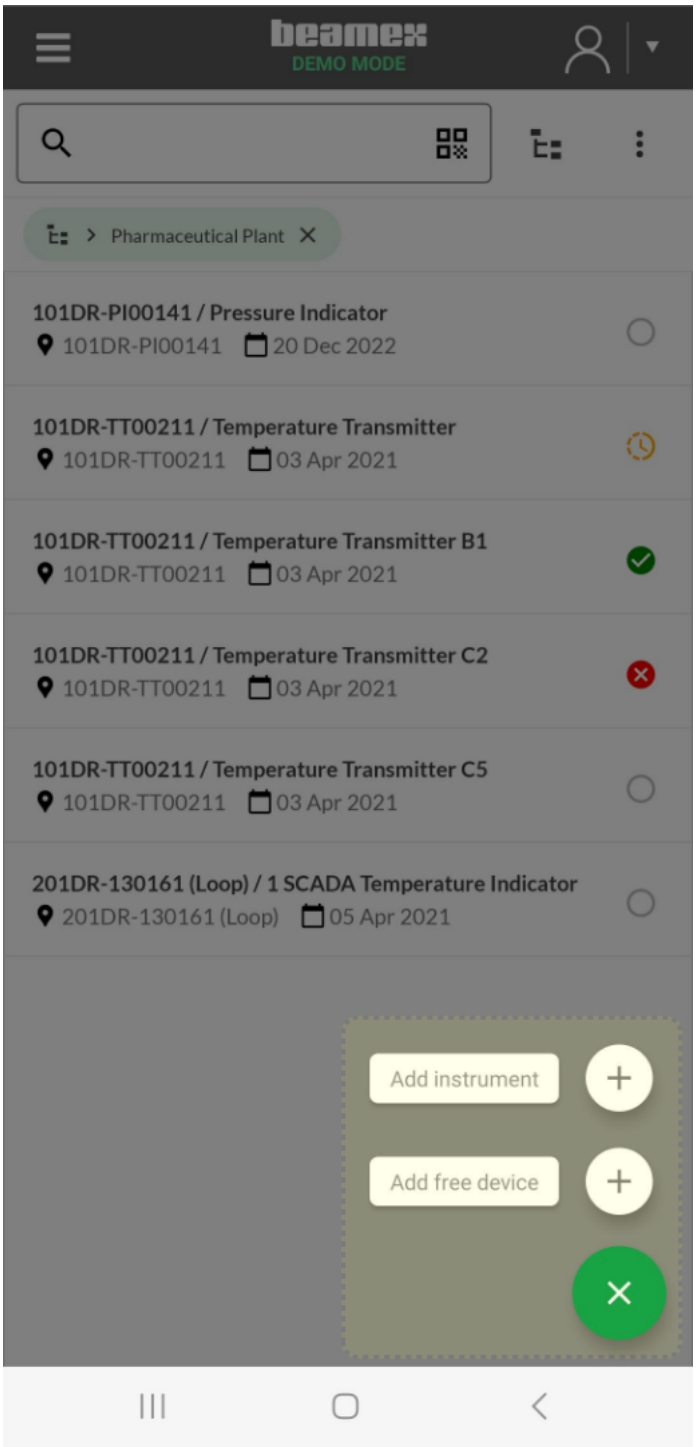


Figure 38: Creating an instrument on mobile device

- To **edit** an existing instrument, press a row and then press “Edit” (see figure below).

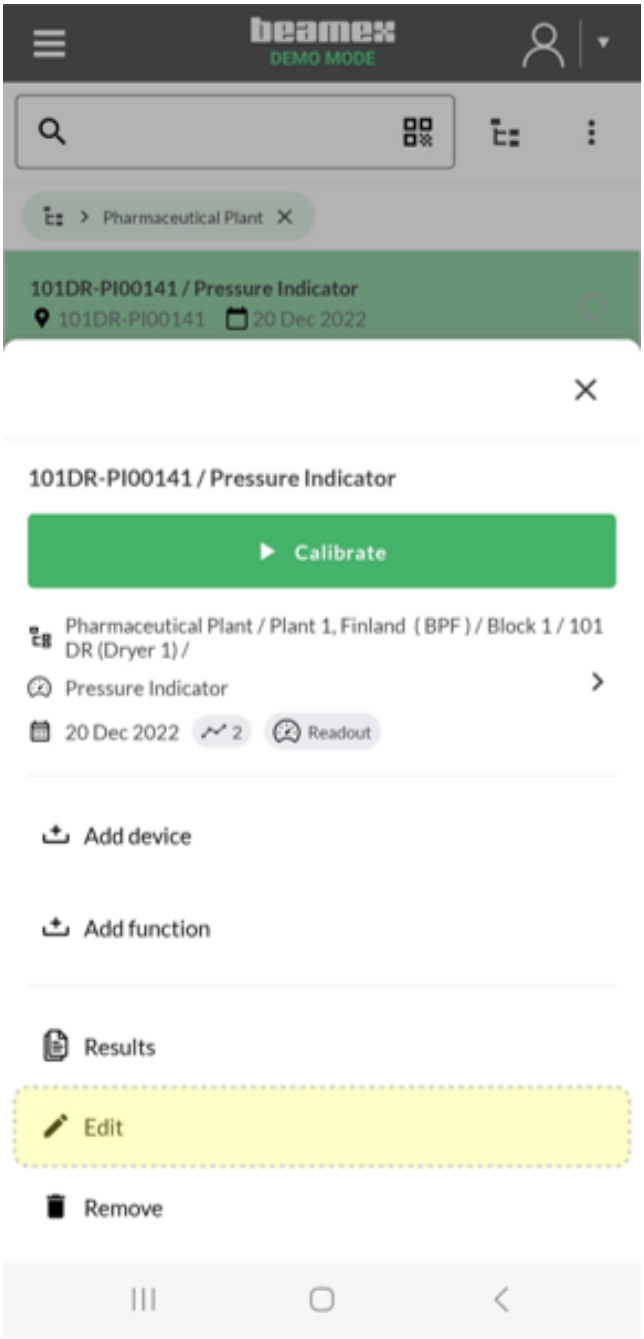


Figure 39: Editing an instrument on mobile device

Extending Instruments

An instrument can be extended by:

- Adding a device to a position. In practice this means that a single position would host more than one physical device.
- Adding a function to an instrument or a free device. In practice this means that a single device would host more than one calibratable measurement channel/capability.

Note: This feature is only available in LOGiCAL mode.

In **desktop mode** (see figure blow):

- Right click on an instrument and select “Add device” or “Add function” in the context menu.

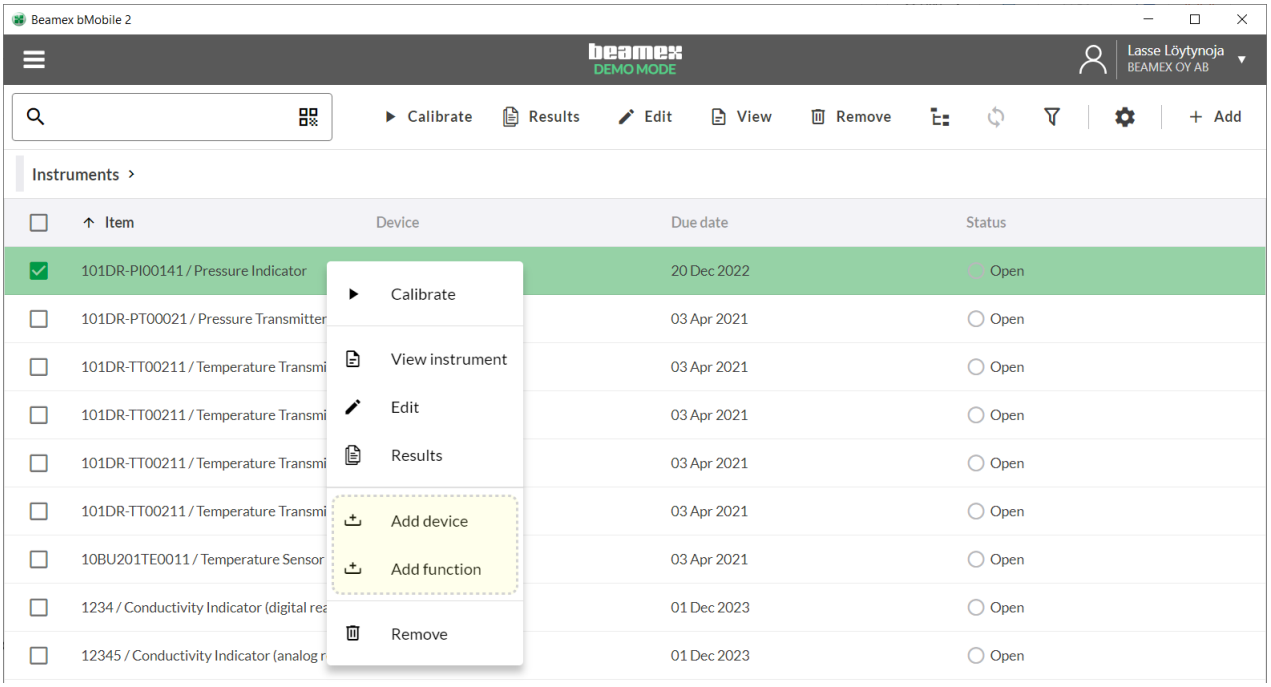


Figure 40: Extending an instrument on desktop

On a **mobile device**, extend an instrument by pressing a row and then press “Add device” or “Add function” in the dialog (see figure below).

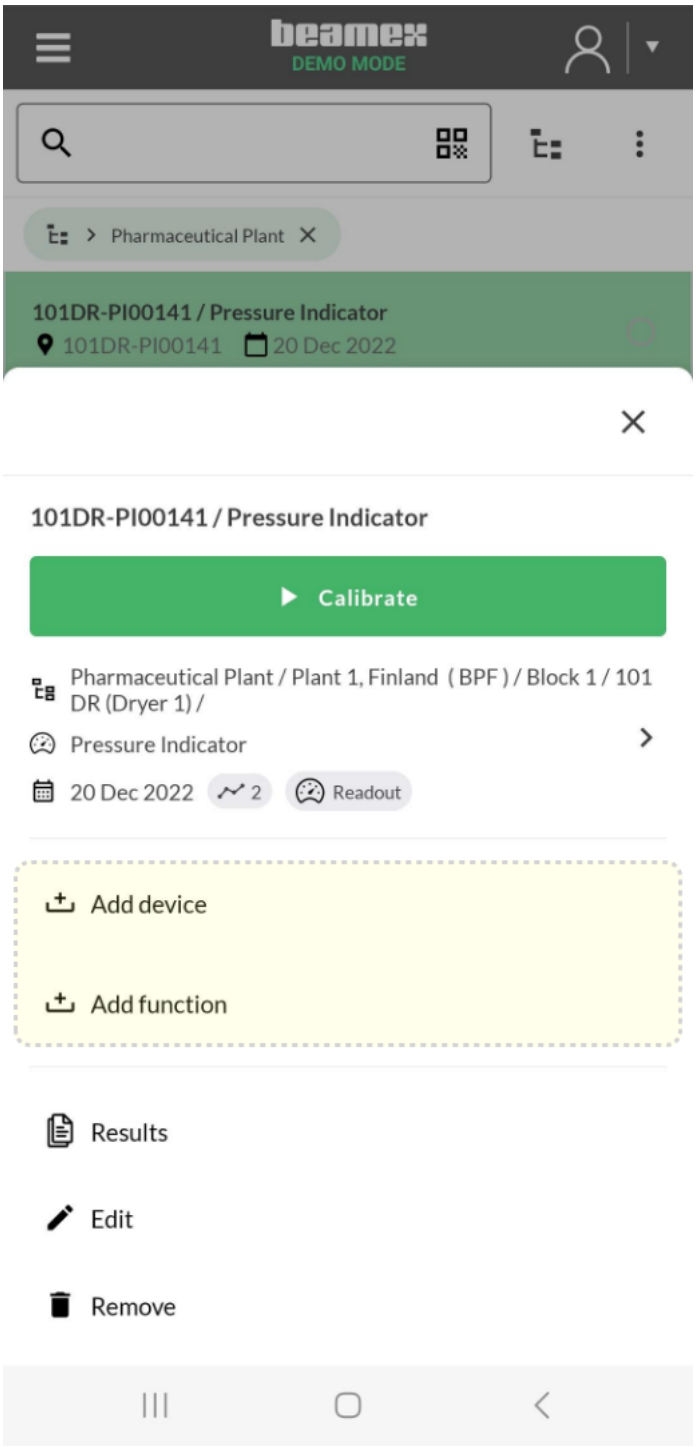


Figure 41: Extending instrument on mobile device

Removing Instruments

An instrument and all its results can be removed.

In **desktop mode** (see figure below):

- Click a row to activate it and select “Remove” in the toolbar
- Alternatively, right click on an instrument and select “Remove” in context menu

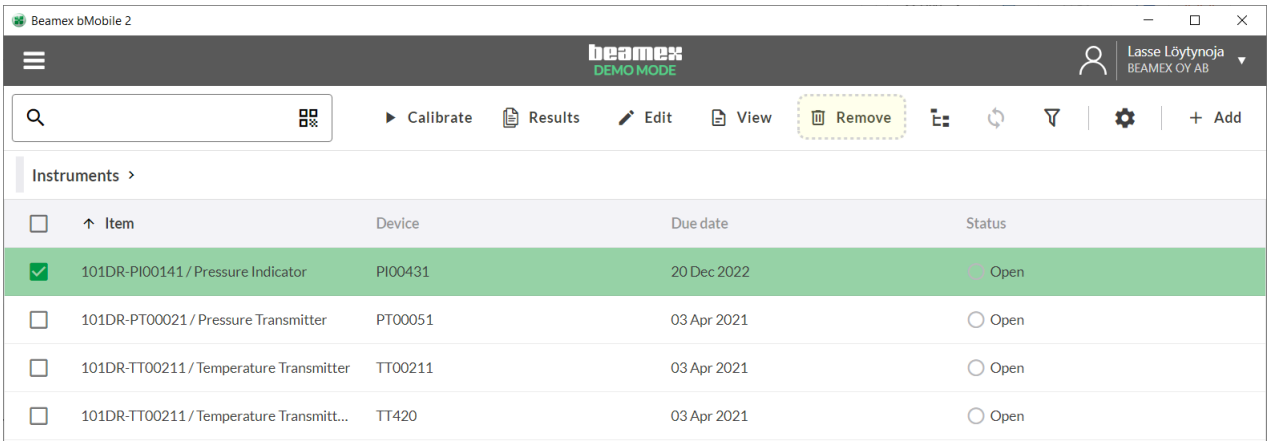


Figure 42: Remove result on desktop

On a **mobile device**, remove results of an instrument by pressing a row and then press “Remove” (see figure below).

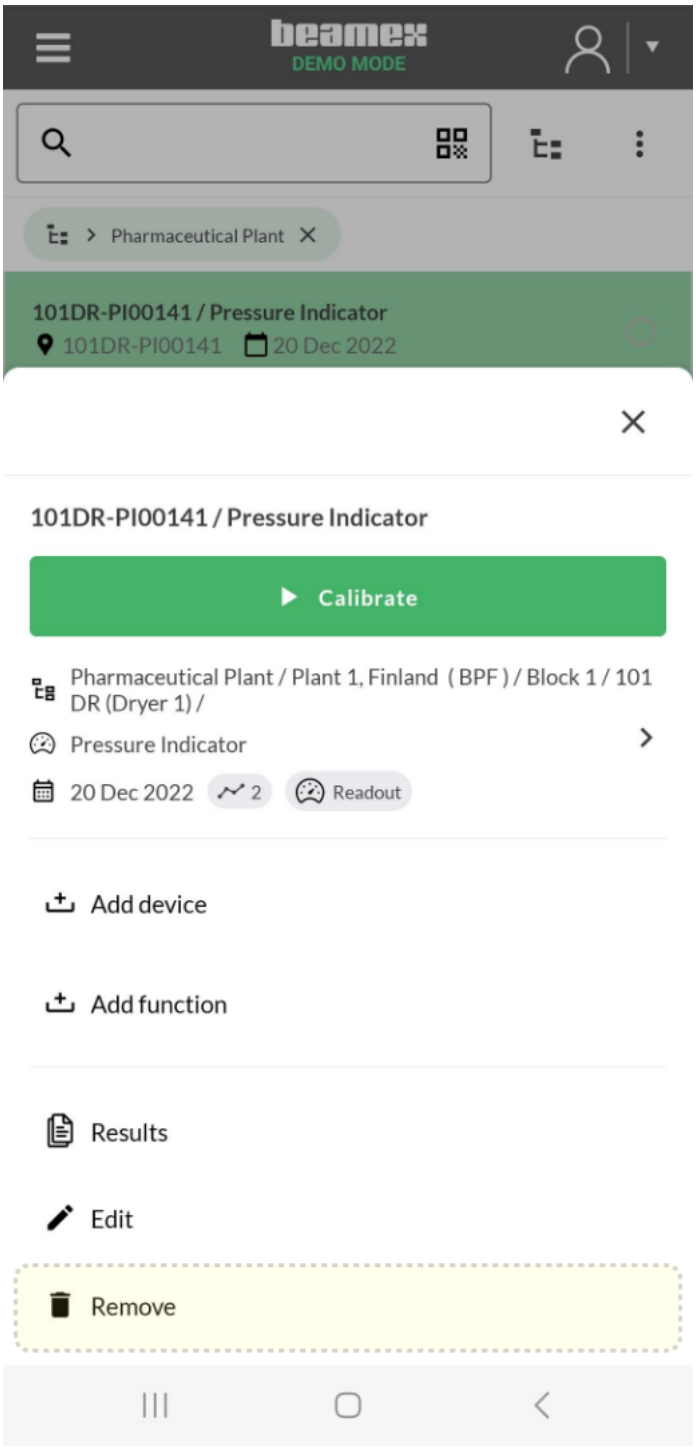


Figure 43: Remove instrument on mobile device

Note: Removing an instrument that has been synced in LOGiCAL will not remove the instrument from LOGiCAL. The instrument is only removed from your device.

Note: LOGiCAL access control affects the availability of instrument removal controls.

Note: Mobile Security settings in CMX affect the availability of instrument removal controls.

Managing Plant Structure

If your organization uses the plant structure, bMobile will receive it on the first sync. You can add, edit and remove plant nodes in bMobile, if sufficient permissions are granted in LOGiCAL.

To open the plant browser in **desktop mode** (see figure below):

- Click **(1)** to show the plant browser **(2)**
- Click Edit **(3)** to open the plant editor

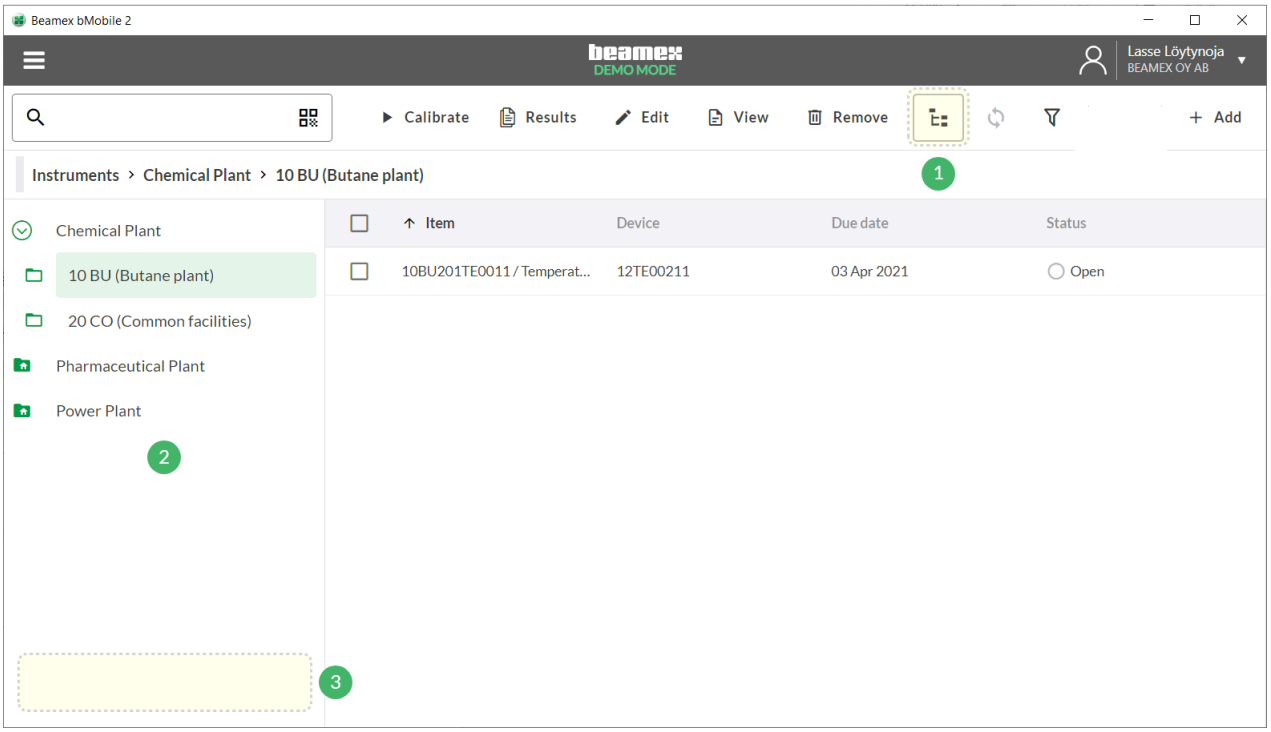


Figure 44: Manage plant structure on desktop

To open the plant browser on a **mobile device** (see figure below)

- Click **(1)** to show the plant browser **(2)**

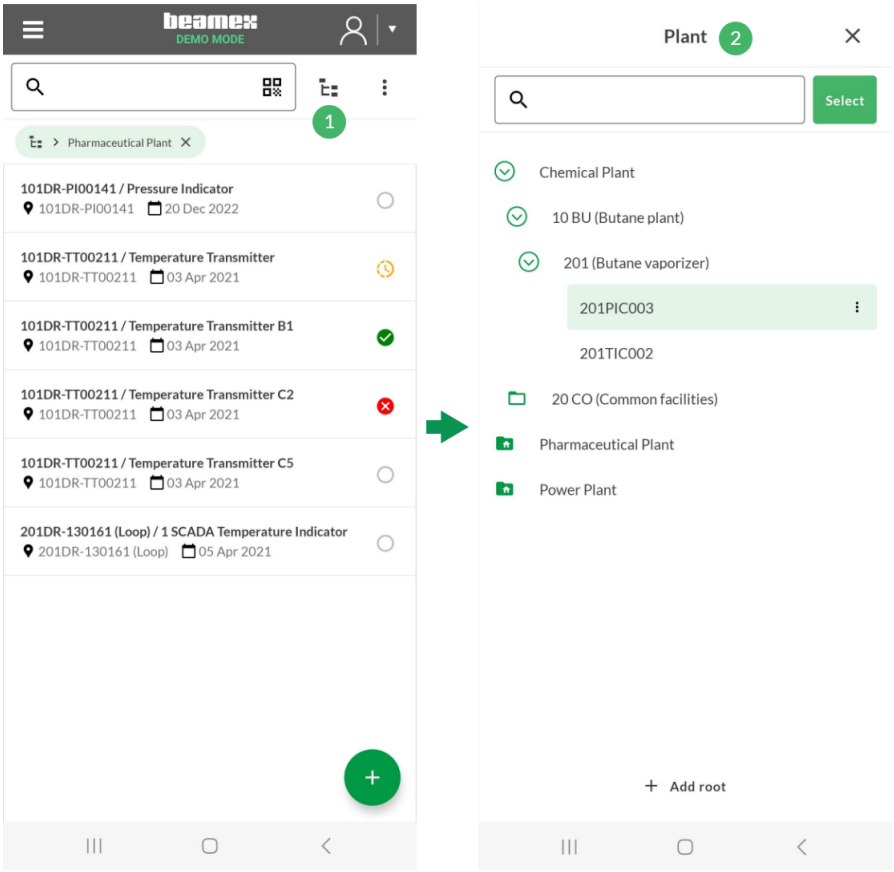


Figure 45: Manage plant structure on mobile device

Adding, Editing and Removing Nodes

In the plant editor view, select a node and open the menu in the end of the highlighted row. In the context menu **(1)** you can select:

- **Edit** – Edit plant node details like name, description, and parent node, if you wish to move the node.
- **Add** – Add new plant node. The node will be a child node for the selected node.
- **Remove** – Remove plant node. If a node does not have child nodes nor instruments tied to it of any of its children, it can be removed.
- **View** – View plant node details.

From **Add root** button **(2)** you can add a new root node to the plant structure. A root node is a first-level node like Chemical Plant or Power Plant, shown in the figure below.

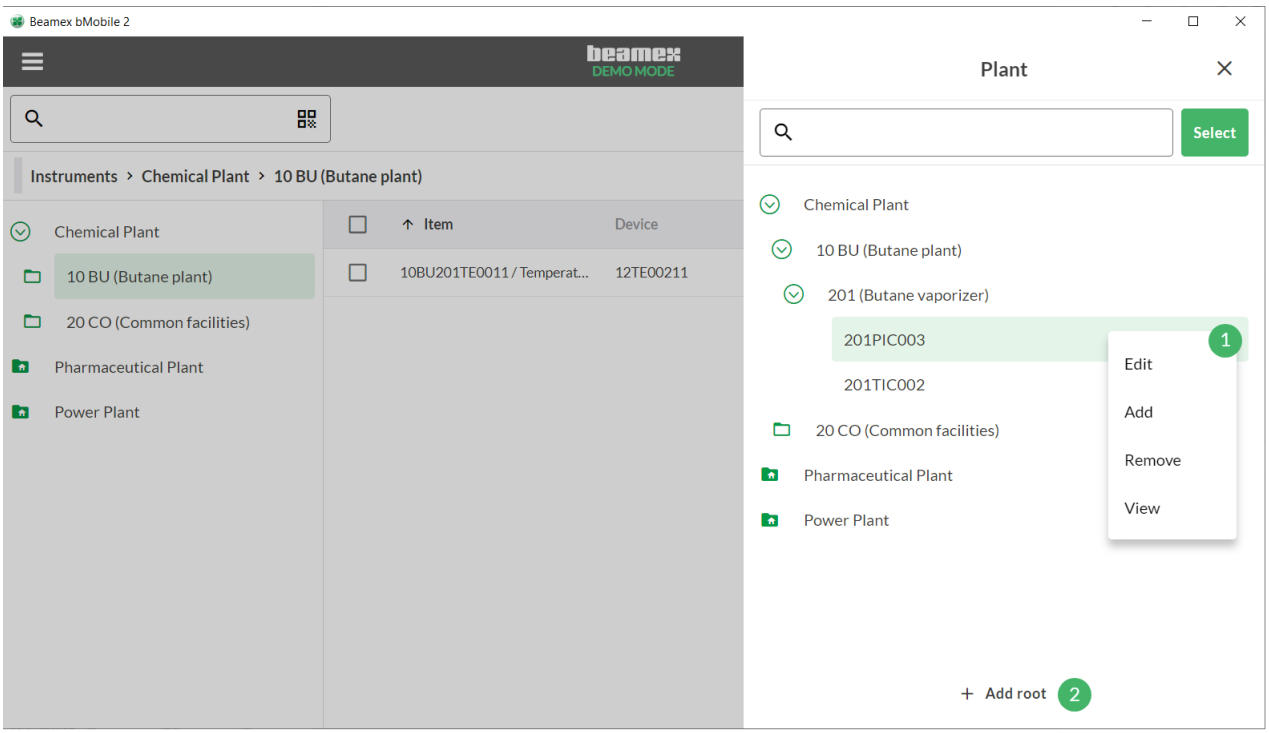


Figure 46: Plant node context menu on desktop

On a **mobile device**, the plant editor view is similar to the desktop view (see figure below).

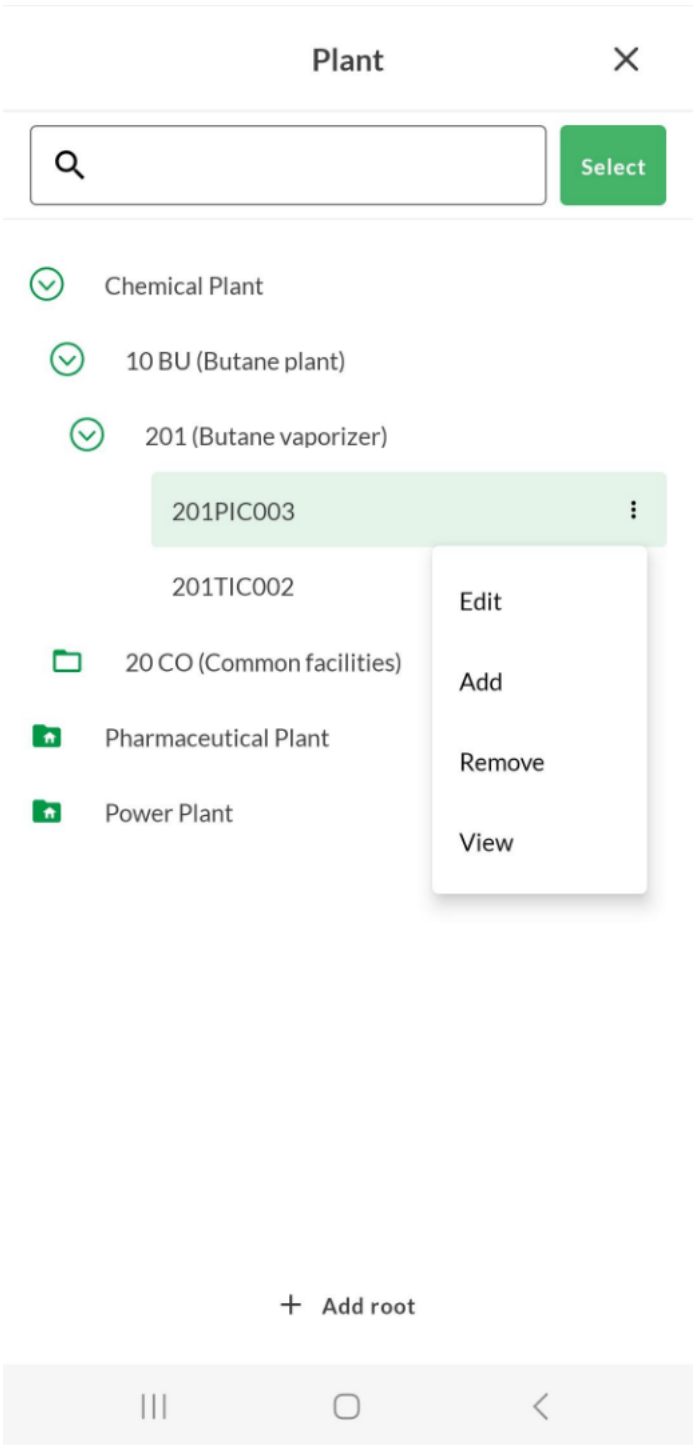


Figure 47: Plant node context menu on mobile device

Finding What You Need

This chapter explains the search, sort, filter and grouping capabilities that bMobile offers.

Plant Structure Filter

In **desktop mode**, plant filter can be applied (see figure below).

- Show plant browser by pressing **(1)**.
- Select a plant node to filter **(2)**. In the figure below, 10 BU (Butane plant) has only one instrument **(3)**.
  - Selecting the root node of the site, like **Chemical Plant**, shows all instruments belonging to that site. To narrow down the selection, select plant node deeper in the structure.
- Selected plant path is reflected to breadcrumb **(4)**. Any part of breadcrumb can be clicked to change the active node.
- To reset the plant filter and show all instruments in the device, click on “**Instruments**” in breadcrumb.

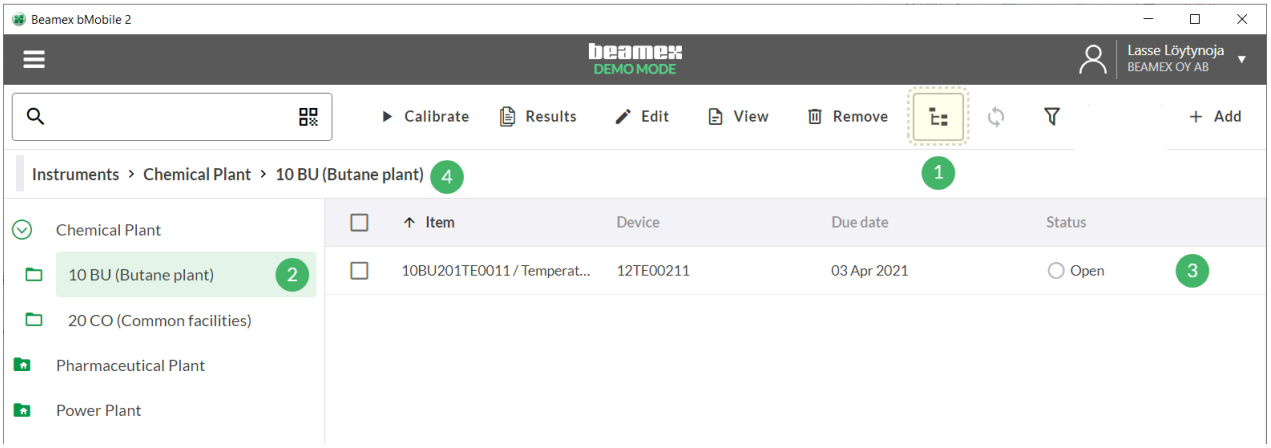


Figure 48: Plant filter on desktop

On a **mobile device** (see figure below):

- Show plant browser by pressing **(1)**.
- In plant browser **(2)**, select a plant node to filter by and apply filter by pressing “Select” **(3)**. In the figure below, 10 BU (Butane plant) has only one instrument **(4)**.
  - Selecting the root node of the site, like **Chemical Plant**, shows all instruments belonging to that site. To narrow down the selection, select plant node deeper in the structure.
- Selected plant path is shown in the breadcrumb **(5)**. The number in the breadcrumb indicates how many nodes are hidden in-between.
- To reset the plant filter and show all instruments in the device, click on the small “X” at the end of the breadcrumb.

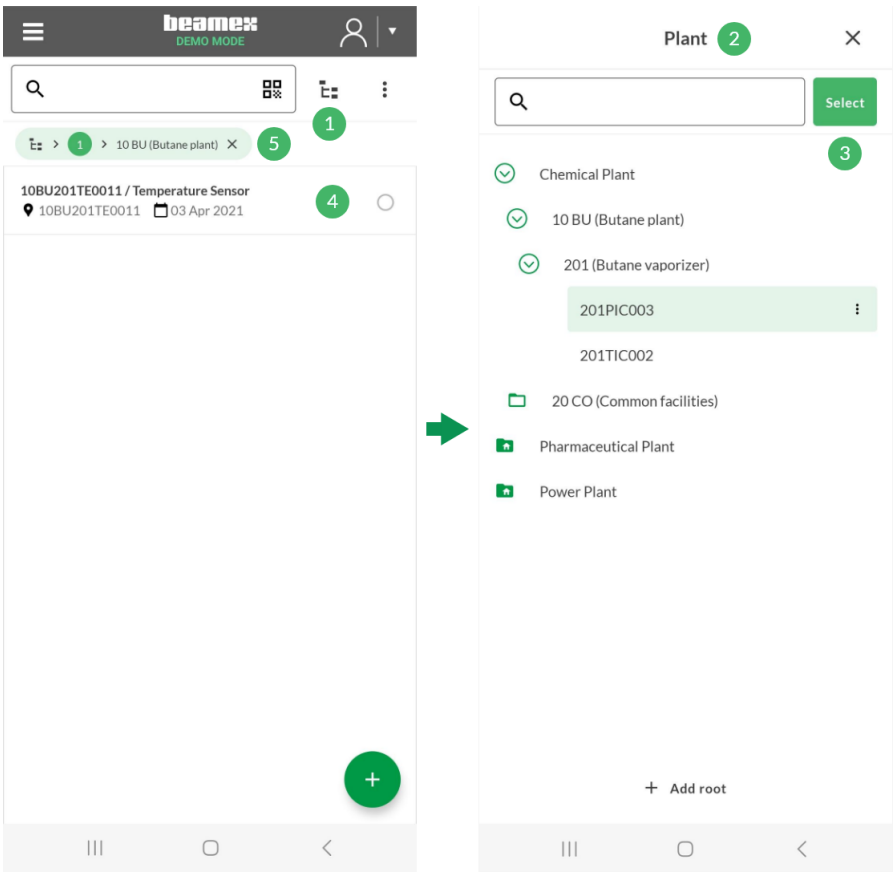


Figure 49: Plant filter on mobile device

Searching

To search for an instrument by item, device or work order ID, enter the search term in the search field and click enter (see figures below - desktop and mobile device).

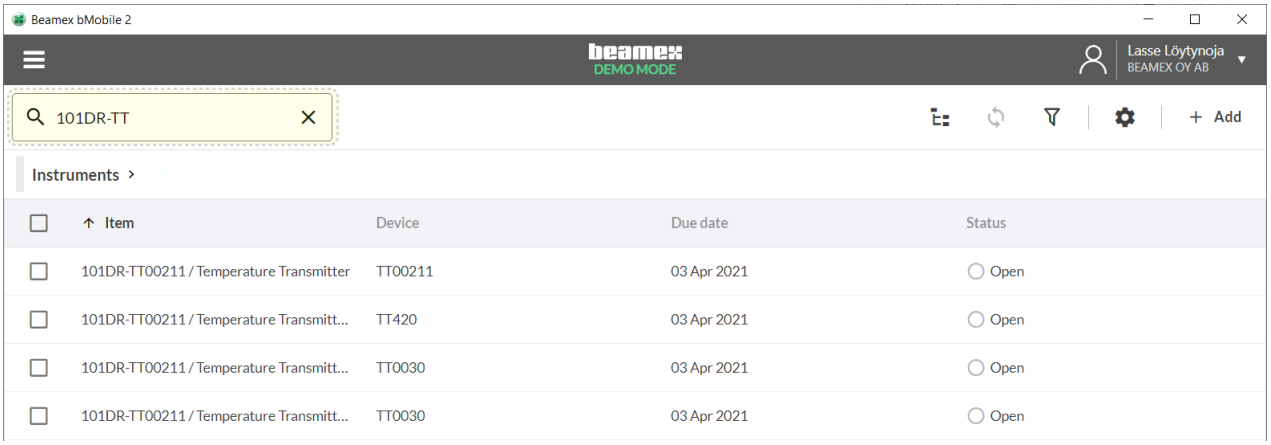


Figure 50: Search on desktop

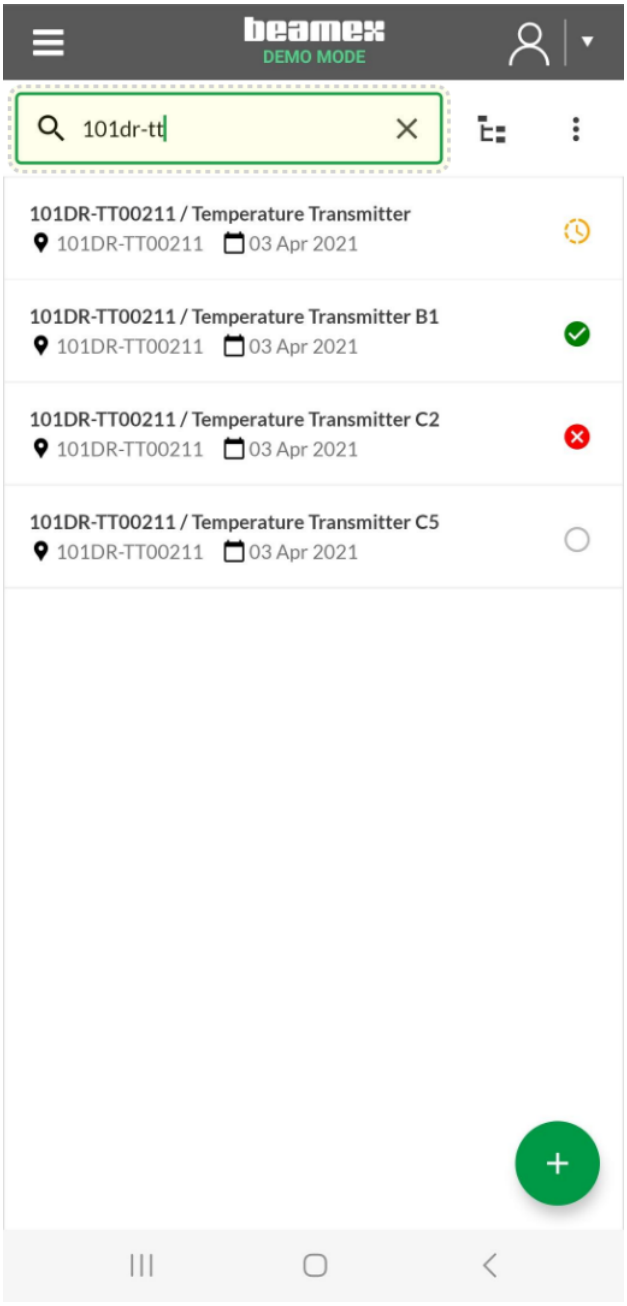


Figure 51: Search on a mobile device

Sorting

The instrument list can be sorted by any column, in ascending or descending order (see figure below).

In **desktop mode**, sorting can be done in the following way:

- Click on any of the column headers. The arrow indicates the ascending or descending order.

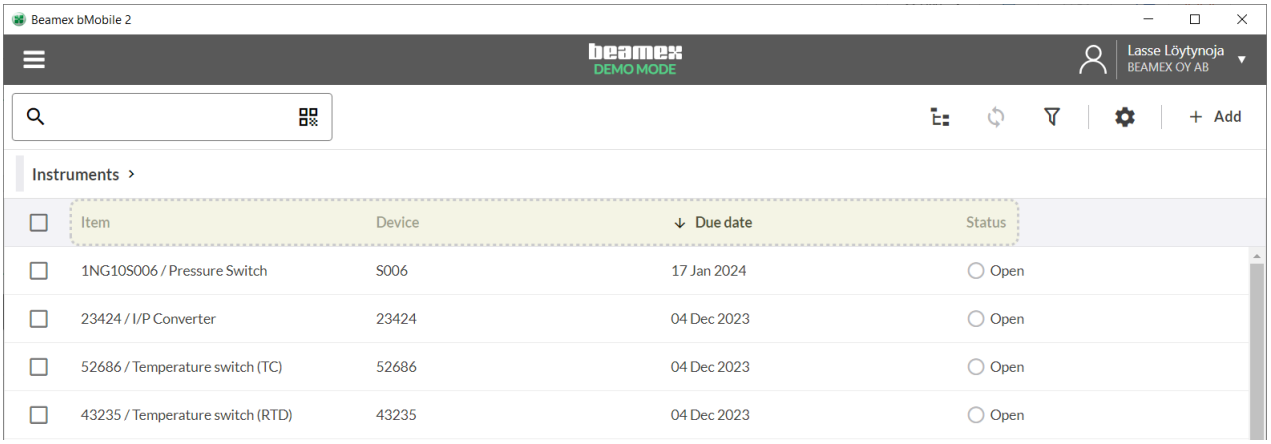


Figure 52: Sorting on desktop mode

On a **mobile device**, enable sorting in the following way (see figure below):

- Press menu **(1)** and select Filter & Sort **(2)**.
- From dialog, select property to sort by **(3)**.
  - Press property again to change sort order.

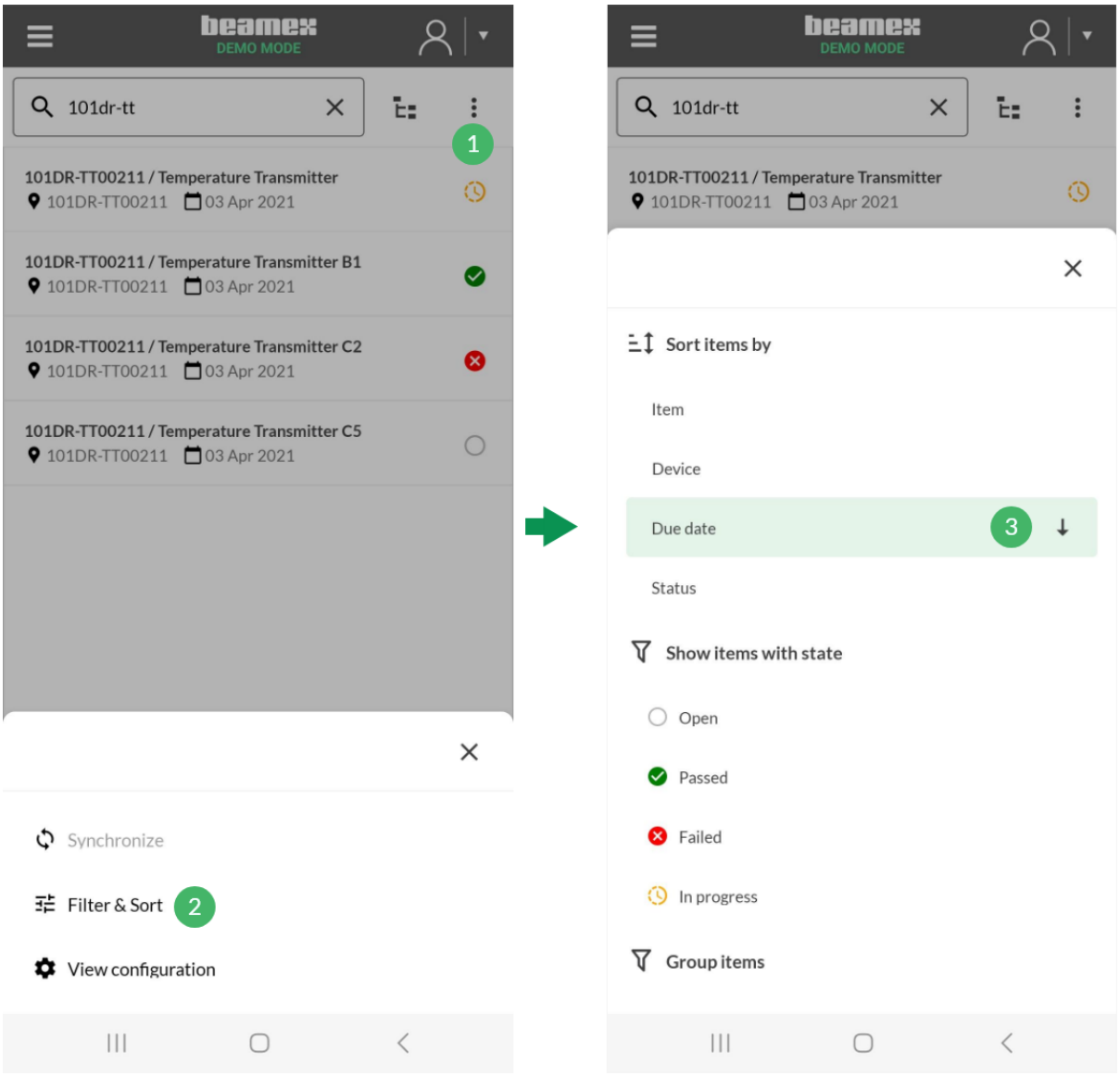


Figure 53: Sorting on mobile device

Filtering and Grouping

Filtering and grouping can be applied to the instrument list (see figure below):

- Filtering can be done by instrument state – for example set filter to “Open” to only see instruments that are in “Open” state.
- Grouping:
  - **Group by position** – Visually group all functions that belong to same position.
  - **Group by device** – Visually group all function that belong to same device.

In **desktop mode**, filtering and grouping can be done in the following way:

- Click on **(1)** to show the filter & grouping sidebar **(2)**.
- Apply state filter **(3)** and/or enable grouping **(4)**.
- Active filtering and grouping are always shown as chips below toolbar **(5)**.
- If Group by Position is enabled, the groups are presented in an instrument list **(6)**.

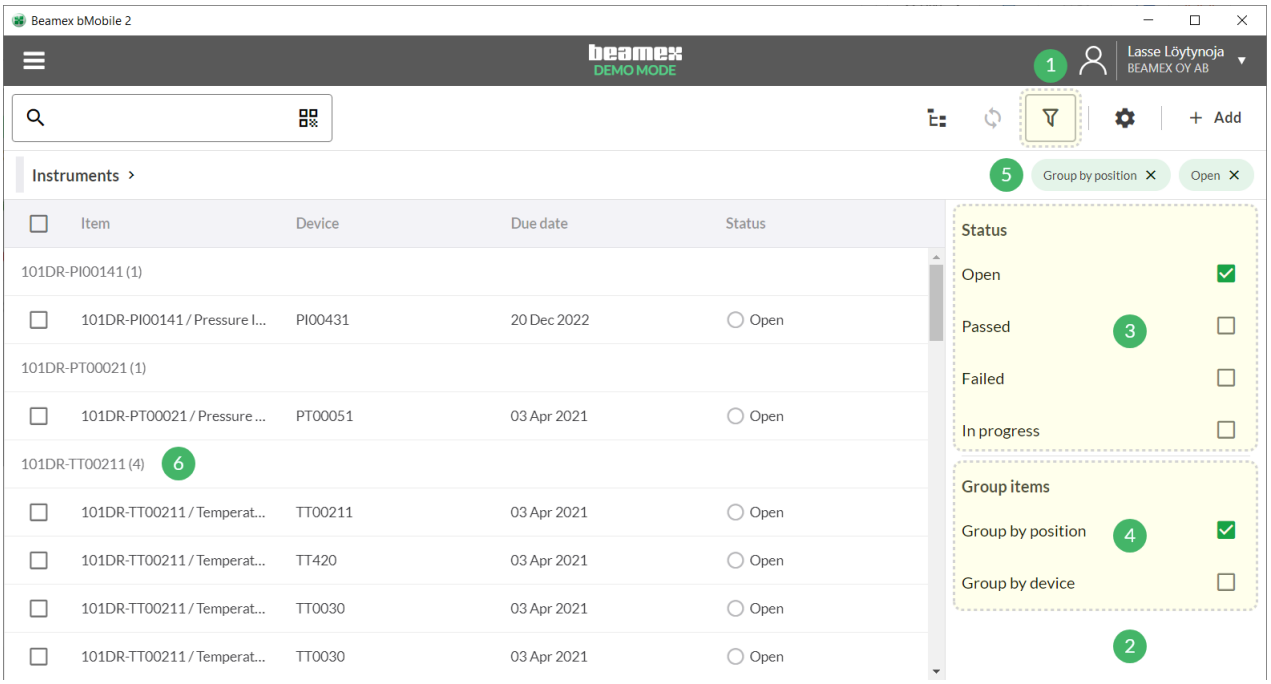


Figure 54: Filtering and grouping on desktop

On a **mobile device**, filtering and grouping can be done in the following way (see figure below):

- Press menu **(1)** and select Filter & Sort **(2)**
- In dialog, select:
  - State to filter **(3)**
  - Type of grouping **(4)**

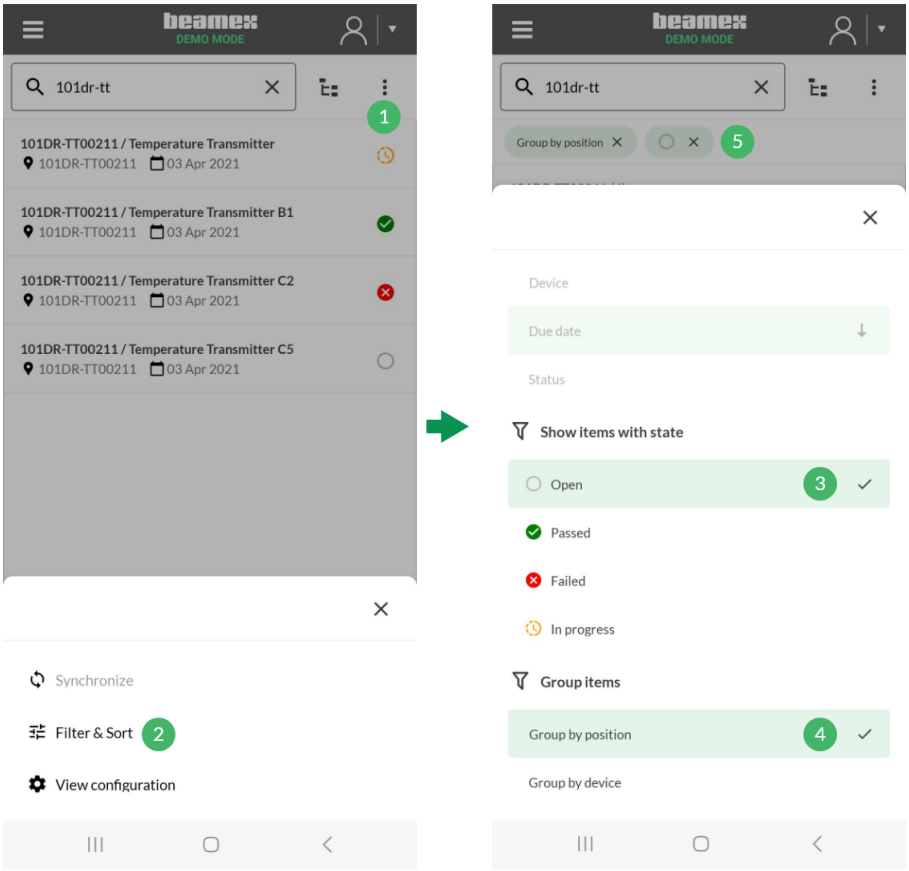


Figure 55: Filtering and grouping on mobile

QR/Barcode Reader

If your device has a camera, it can be used as a barcode reader to find instruments from your device.

To use the barcode reader on desktop and mobile devices, follow these steps (see figure below):

- Click on the QR symbol in the search field.
- When the camera is open, point it to the code you want to read.
- When the code is read successfully, the value of the code is applied as a search string and the instrument list is filtered with it.

Supported barcode types are QR, EAN128, CODE128, UPC-A.

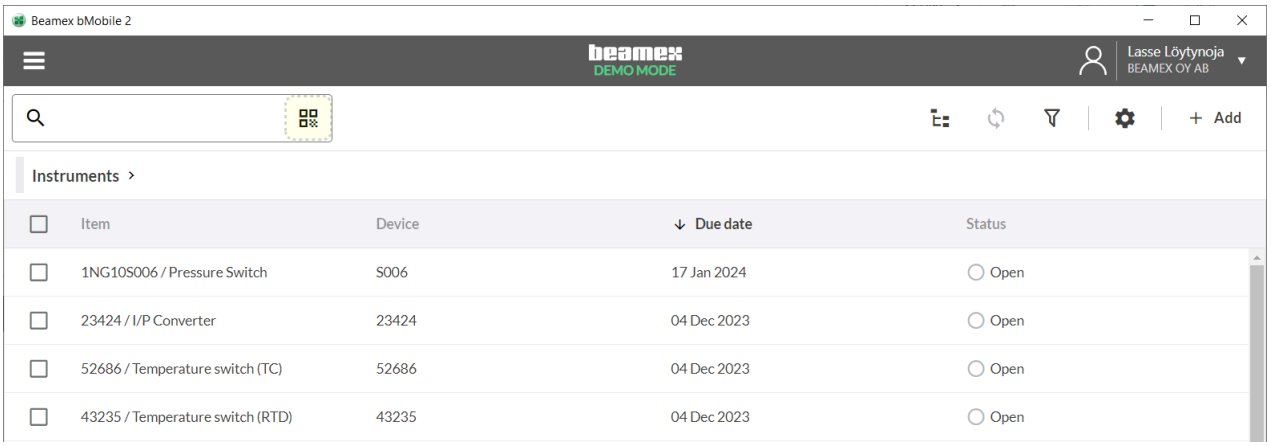


Figure 56: QR/barcode reader on desktop

Calibration/Checklist run

When you have selected an instrument or a checklist from the instrument list, the instrument overview window opens. Select the start button to start the Calibration/ Checklist run.

bMobile supports calibrating/checking many types of instruments. The user interface adapts to the instrument at hand during Calibration/Checklist run. Each case is presented further on.

Common Features

Details expansion panels

When calibrating/checking an instrument, the **Details** expansion panels at the top of the window contains instrument data retrieved from CMX. It is always available during Calibration.

If there is more data for, e.g. a function, than can be seen, scroll the lowermost data row horizontally to see more.

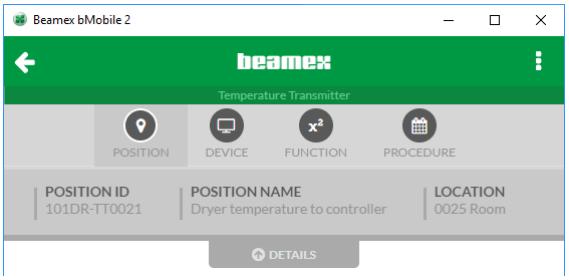


Figure 57: Opened Details expansion panels

Notes and Calibration History

When viewing an instrument overview window, before starting the calibration, **Notes** and **Calibration History** buttons are available.

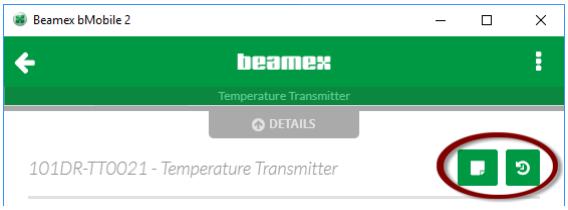


Figure 58: Notes and Calibration History buttons

When tapping the leftmost button, you can view Notes written for the current instrument. See chapter Notes .

When tapping the rightmost button, you can view calibration history currently available in **bMobile**. More on calibration history in the chapter Calibration History Window.

Note: The Calibration History button is not available during a Calibration/ Checklist run. The viewed calibration history data is in read-only mode.

Common Elements Seen During a Calibration/Checklist Run

The following elements are seen in a calibration window's upper part during Calibration/ Checklist run (left to right):

- **References** button. A link to a window where you can define used references (calibrators). See also Adding References. Exceptions:
  - When calibrating Weighing Instruments, the references button is replaced by a **Weight Sets** button.
  - The References button is not available when doing a checklist run.
- **Notes** button. Allows you to write comments on calibration point level. When a note has been written, the button displays an exclamation point:

See also chapter Notes .

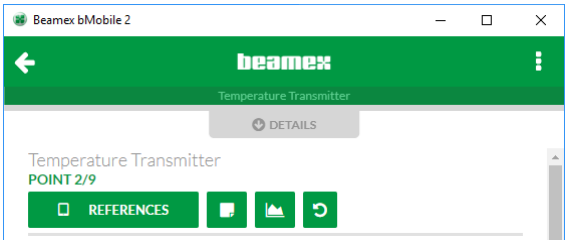


Figure 59: Upper part of a calibration window

- **Graph** toggle button. A possibility to view a graph of the current calibration. When the graph is open, the keyboard button returns you to the numeric data entry window.

  Exceptions:

  - When calibrating Weighing Instruments, the graph is seen during Weighing test only.
  - No graph during a checklist run.

- **Undo** button. A possibility to undo current calibration point. See also note below. Not available when doing a checklist run.

The following elements are seen in a calibration window's upper part during Calibration/ Checklist run (left to right):

- **Back** button. Transfers you back to the previous calibration point. The current results are not deleted. Compare with **Undo** button, which does delete current point's results. See also adjacent note.
- **Skip Point** button. Skips the current calibration point and advances to next calibration point without saving the current point's results. See also note below.

  Exception:

  - When doing a checklist run, the skip point button is "raised" to join other buttons being part of a checklist run. More of it in chapter Doing a Checklist run.

- **Advance** button. Moves you to next calibration point. This button is enabled when necessary data has been entered.

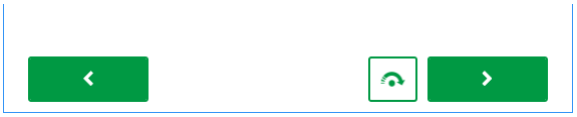


Figure 60: Lower part of a calibration window

Note: Depending on available CMX options and configuration, the following buttons in bMobile may be disabled:

- Undo,
- Back and
- Skip

Notes

As previously mentioned, you can enter notes during a Calibration/Checklist run.

Additionally, if any instructions/notes are added to an instrument in CMX, they are delivered to **bMobile**. Instructions or notes are displayed at the appropriate moment during Calibration/Checklist run.

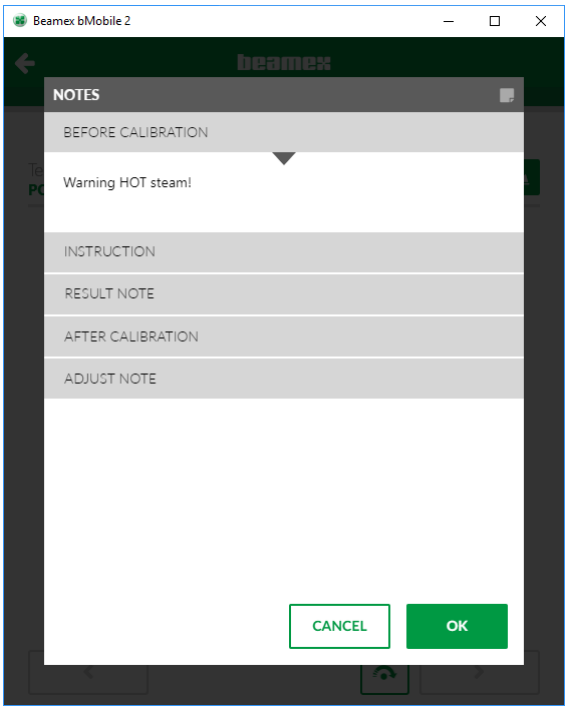


Figure 61: Before calibration note shown in bMobile

Note: In CMX: It is possible to configure a checklist to require comment for passed, skipped or failed checks individually.

Entering Readings to Calibrations

When you tap on a numeric field, a numeric keypad opens, where you can enter the reading.

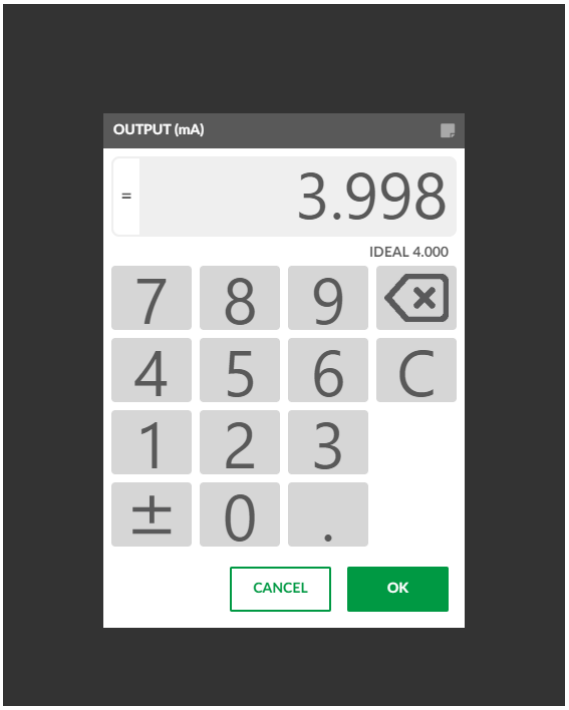


Figure 62: Numeric keypad

Note: When you enter an **input** reading and press **OK**, the numeric keypad stays open and waits for you to enter the corresponding **output** reading.

If the reading is unstable, tap on the equal sign located beside the entered value. The equal sign changes to a tilde (~) sign. See the detail picture below.

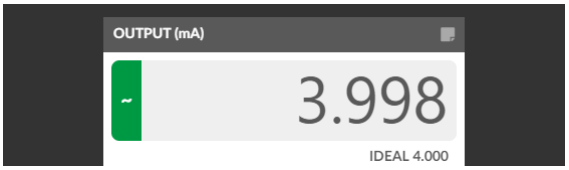


Figure 63: Unstable reading

If the reading is for some reason abnormal, tap on the tilde sign, which changes to an "x". The value is removed and dashes are shown instead. See the detail picture below.

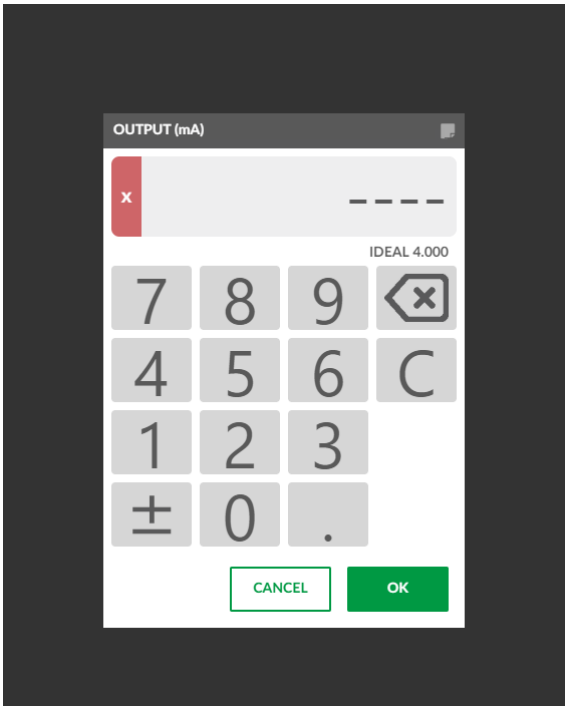


Figure 64: Abnormal reading

Pausing a Calibration/Checklist Run

Tapping the back arrow during a Calibration run opens a pop-up menu. Together with the possibility to reject the calibration or aborting & saving an incomplete calibration, you may pause the calibration and return to the Home View/Instrument List.

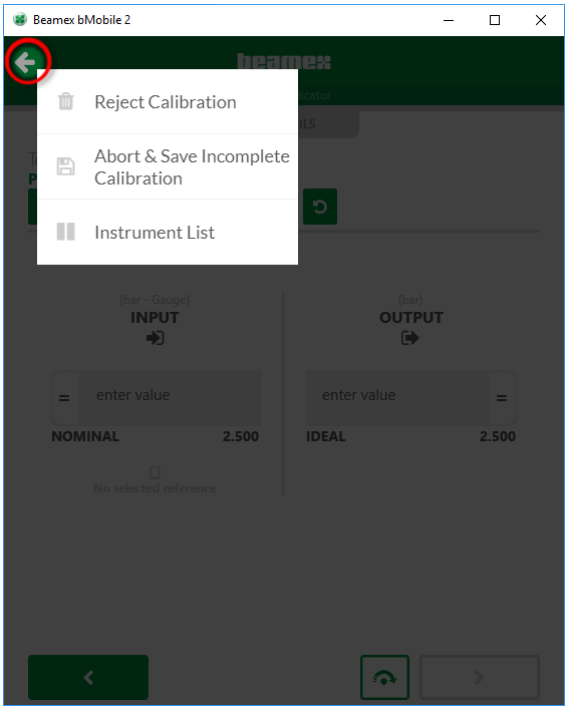


Figure 65: Menu during Calibration run

During a Checklist run, no pop-up menu appears. Instead the Checklist, Start page opens. There you can either continue the Checklist run or return to the Instrument List.

Note: In Instrument List:

If you have activated group view, the paused Calibration/Checklist run is seen in the "In Progress" group.

To continue the Calibration/Checklist run, tap on the instrument in the Home View/Instrument List.

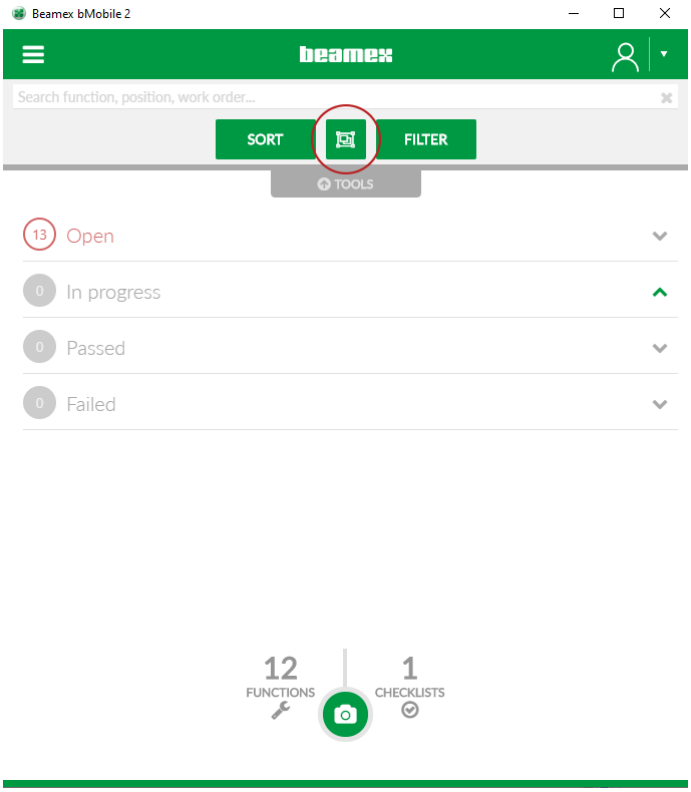


Figure 66: Grouping tool button highlighted

In group view:

Instrument's state changes from **Open** to **In progress** in the following cases:

- **Checklists**:

  When the first check value (to any check) is set.

- **Standard intruments** and **Weighing Instruments** when:
  - Input and output values of the first point are entered and user moves to the next point or
  - the first point is skipped.
- **Switches** when:
  - Set and reset values of the first point are entered and user moves to the next point or
  - the first point is skipped.

Adding References

When tapping on the **References** button in the Calibration/Checklist run window, the references pop-up window opens.

Note: For, e.g. indicators there is no possibility to select output reference, because there is none. For checklists, there are no possibility to select references, because it is not relevant.

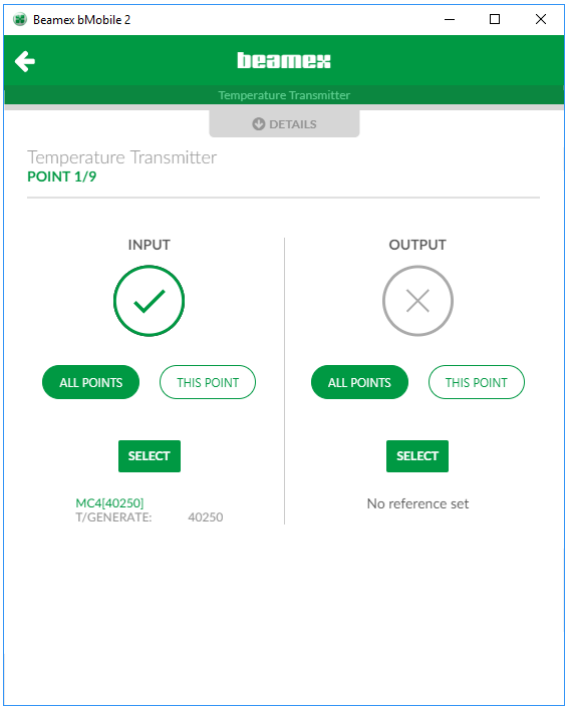


Figure 67: Selecting what the reference applies to: Input or Output, Current or All point(s)

Note: Depending on CMX's settings, adding references may be required. When references are required, both calibrator and module must be selected.

First, select whether the reference applies to input or output, for current calibration point only, or to all calibration points (see picture below).

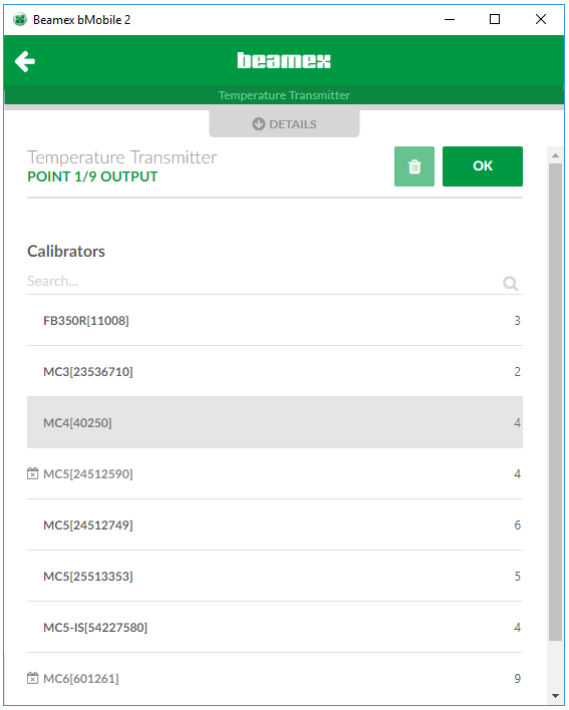


Figure 68: Selecting the reference

Note: If the reference's calibration due date has passed, it is shown in red in the list of references. **bMobile** warns you if you try to use an overdue calibrator.

When a calibrator is selected, one or more of the modules it contains can be selected.

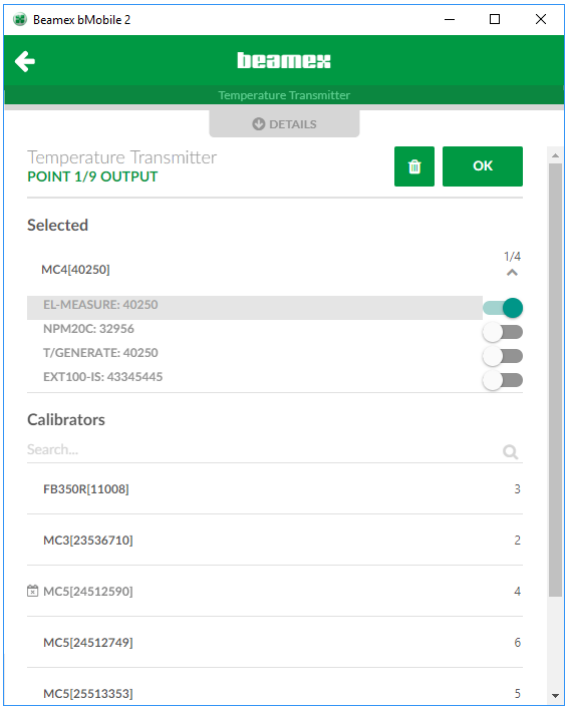


Figure 69: Selecting the module

Calibrating Standard Instruments

The Figure 70: Calibrating a temperature transmitter presents the calibration of a temperature transmitter. The input reference is already defined but the output reference is not. Make sure the references are entered if you want CMX to calculate the uncertainties based on the calibration results.

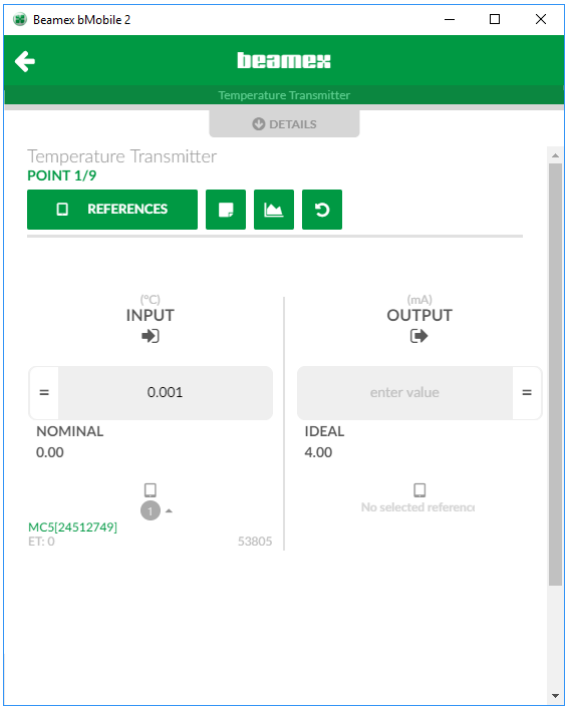


Figure 70: Calibrating a temperature transmitter

Once the references are defined, enter input and output readings. Then the advance button becomes active and you can start entering the readings of the next calibration point.

As the calibration advances, you can see from the text in the upper part of the window, which point you are currently entering results for:

"**POINT 1/9**".

If you change to the graph view, the graph looks something like the picture below.

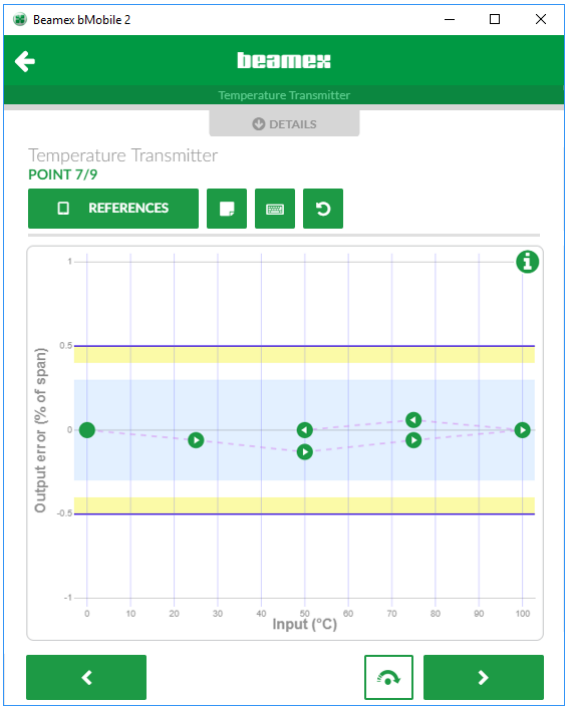


Figure 71: Calibration graph

Note: Tap on a point in graph to see the point details. Tap on the info button to see the reference details.

Continue through all calibration points to advance to Ending a Calibration/Checklist run.

Note: All indicators may be calibrated the same way as this temperature transmitter, except there is no need to select an output reference. Just enter the output reading.

Calibrating Switches

The Figure 72: Calibrating a switch presents the calibration of a pressure switch. The set point reference is already defined but the reset point reference is not. Make sure the references are entered if you want CMX to calculate the uncertainties based on the calibration results.

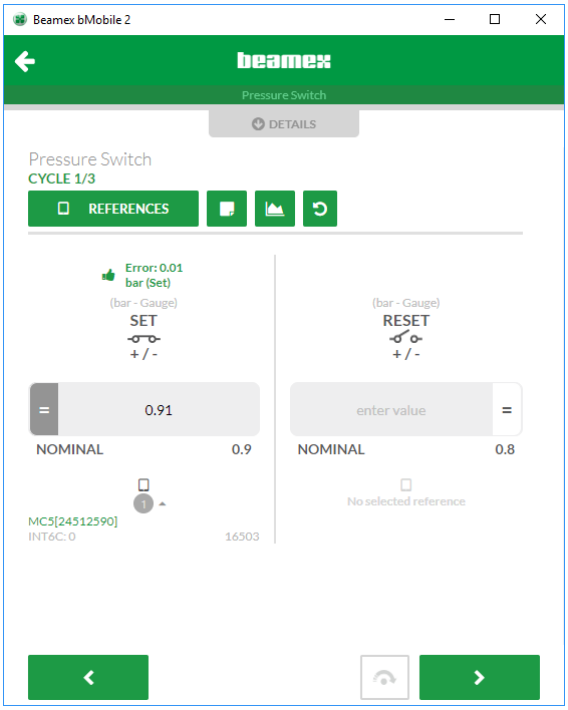


Figure 72: Calibrating a switch

Once the references are defined, enter the set point and the reset point readings. Then the advance button becomes active and you can start entering the readings of the next calibration point.

As the calibration advances, you can see from the text in the upper part of the window, which point you are currently entering results for:

"**CYCLE 1/3**".

If the set point or the reset point reading is unstable, tap on the equal sign located beside the entered value. The equal sign changes to a tilde (~) sign. See the set point value in the picture above.

If you change to the graph view, the graph looks something like the below picture.

Figure 73: Calibration graph for a switch

Continue through all calibration points to advance to Ending a Calibration/Checklist run.

In the graph above:

A closed circle = switch "closed"

An open circle = switch "opened"

The upper part of the graph always presents the set point data and the lower part presentes the reset point data.

Calibrating Weighing Instruments

Weighing instruments have four types of tests. Select the test to be done first. Then start the calibration.

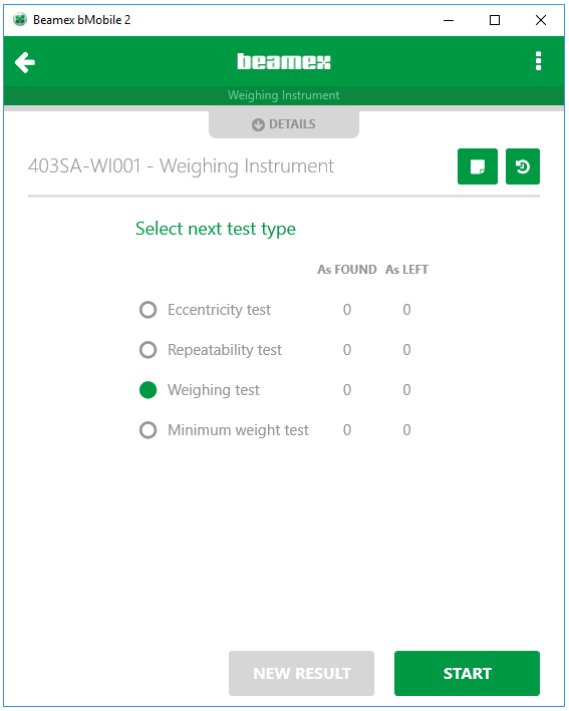


Figure 74: Types of weighing tests

Note: Weighing Instrument calibration requires applicable option in CMX.

You can do one As Found test and one As Left test for Eccentricity, Repeatability, and Weighing tests. You may however do several As Found and As Left Minimum Weight tests. After the first As Left test is saved, you may only do As Left tests.

The graph of a weighing test looks as shown in the picture below.

Figure 75: Weighing test graph

Weighing test is the one that is similar to the calibration of, e.g. a standard indicator. Although the other tests are somewhat different, the actual test points require the same procedure:

- Selecting the weights (references) used for the current test point.
- Entering the output reading.

See the picture below.

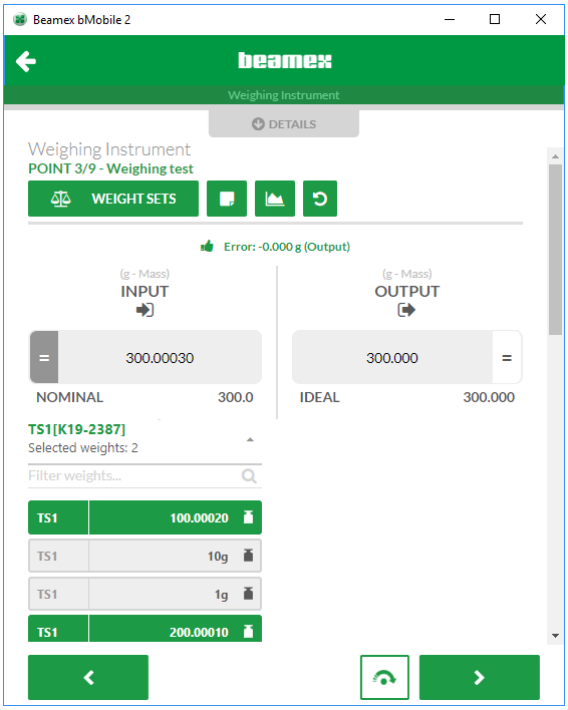


Figure 76: Weighing test of a weighing instrument

During the eccentricity test **bMobile** indicates the location/order of the test points. You may also define which point is the centric point.

Figure 77: Centric point selected in eccentricity test

Doing a Checklist run

Checklist runs differ from calibrating instruments. Instead of going through measurements, each check is presented with the possibility to enter the test's status as Pass, Fail or Skip. Tap Start to begin the checklist run.

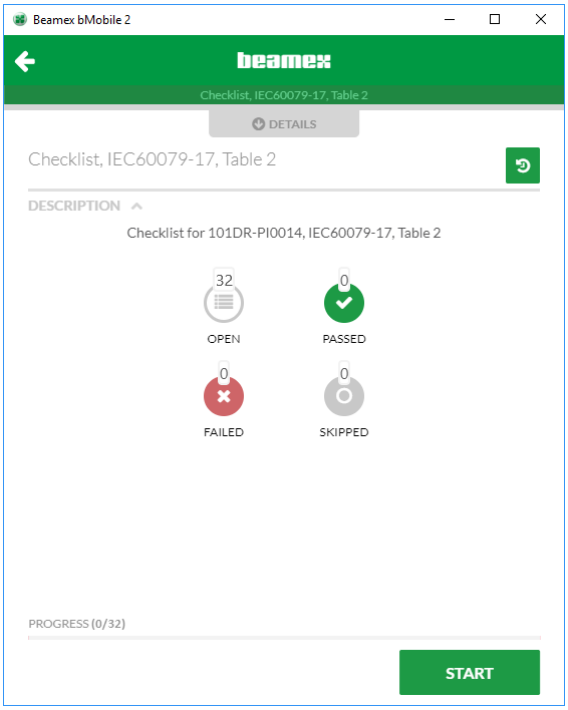


Figure 78: Checklist start page

Note: Doing checklist runs requires Maintenance Inspection option in CMX.

Depending on the settings in CMX, there is a possibility that skipping points is not allowed. You may have to add notes to all passed skipped and/or failed checks.

During Checklist run:

As long as you are not pressing the Advance button, you are able to change the status.

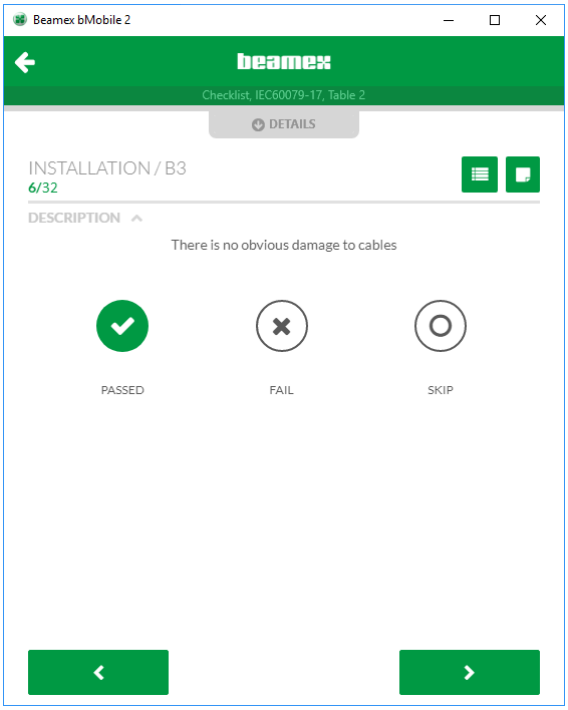


Figure 79: Passed check

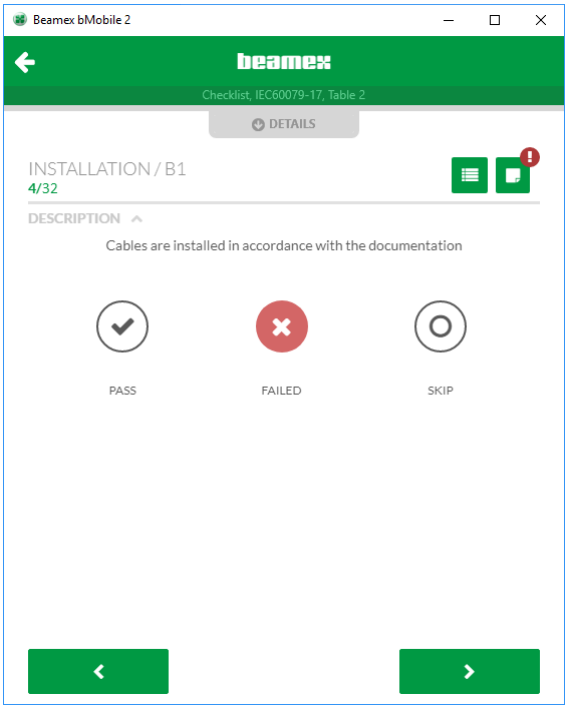


Figure 80: Failed check with an added note

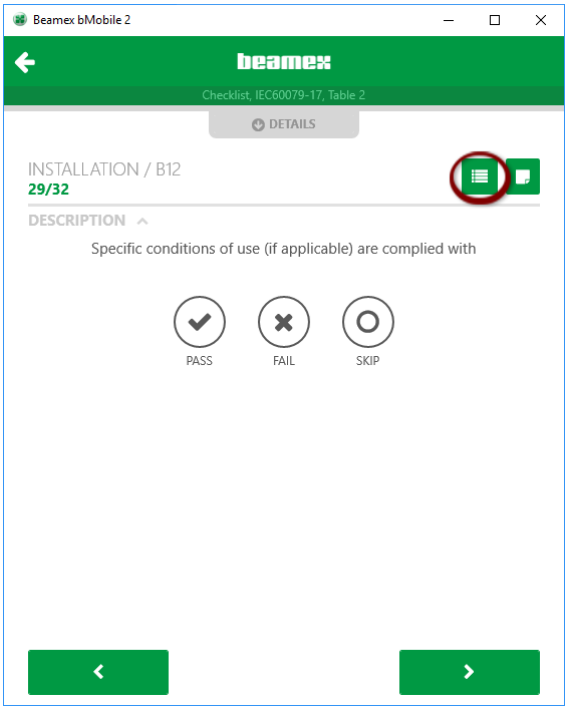


Figure 81: At check B12, 29 of 32, Overview button is highlighted

During a checklist run, you may look at the overview of the checklist by tapping the button highlighted in the picture above.

The overview window is presented in the picture below. You may return to the check view using the check view button highlighted in the picture below.

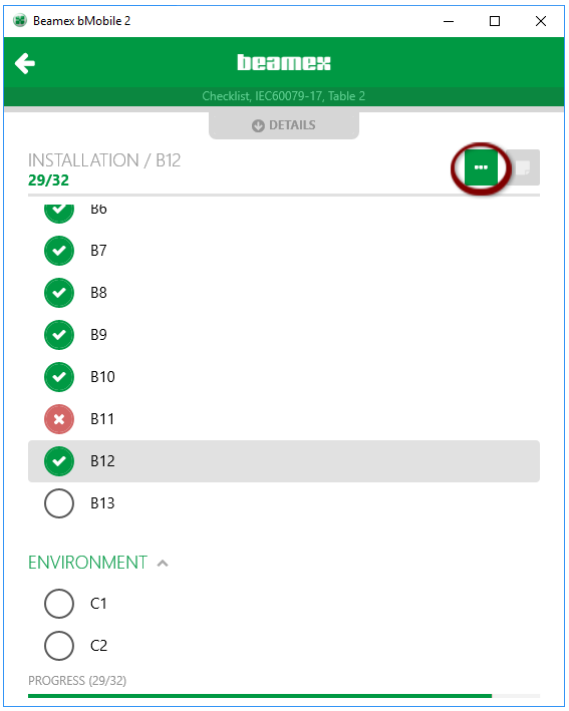


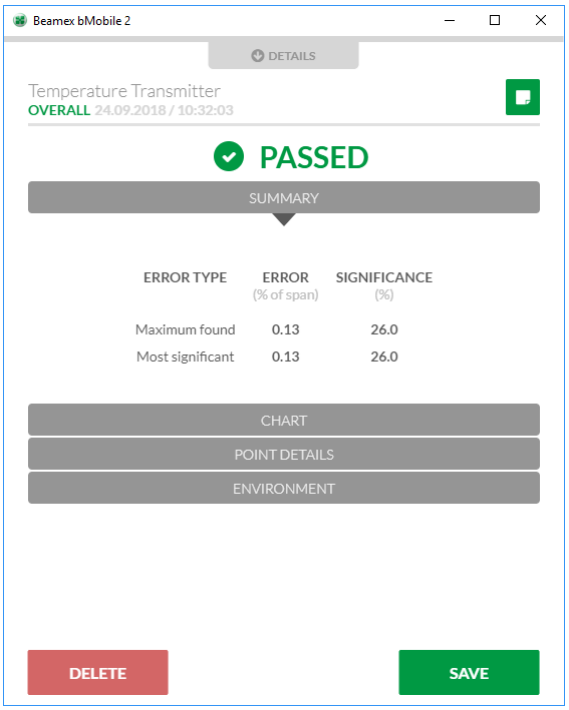
Figure 82: Overview selected. Check view button is highlighted

Continue through all checks to advance to Ending a Calibration/Checklist run.

Ending a Calibration/Checklist run

The picture below is an example of an overall calibration result window, after a calibration run. Here you can enter the environment data, check the point details and view the calibration graph. Then either save or delete the results. See also the note below.

Figure 83: Calibration summary for a temperature transmitter



For checklist runs, the overall checklist results looks as shown below. After entering the environment data, enter the master pass or fail verdict by tapping one of the buttons.

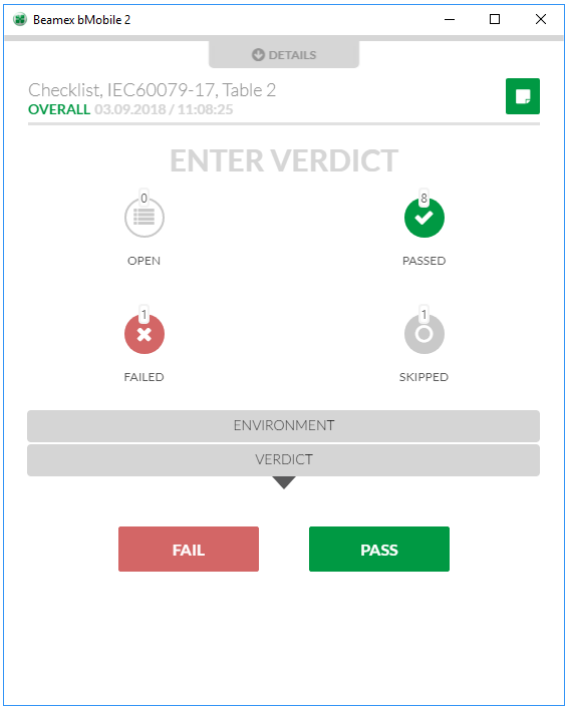
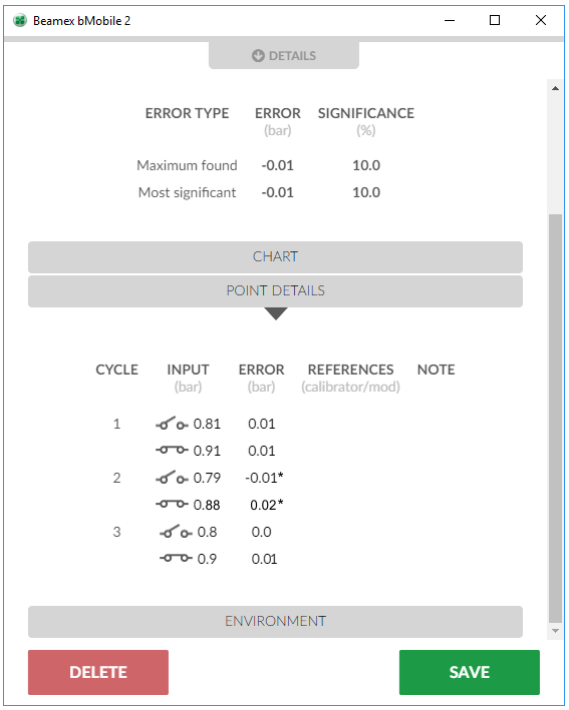


Figure 84: Checklist run's overall view



Note: An asterisk (*) in Switch point detais indicates that the error is not relevant (defined in CMX).

Deleting calibration results may be restricted based on the settings in CMX's **Mobile Security Plus** option.

For calibrations, other that checklist runs, a save pop-up dialog opens. See picture below.

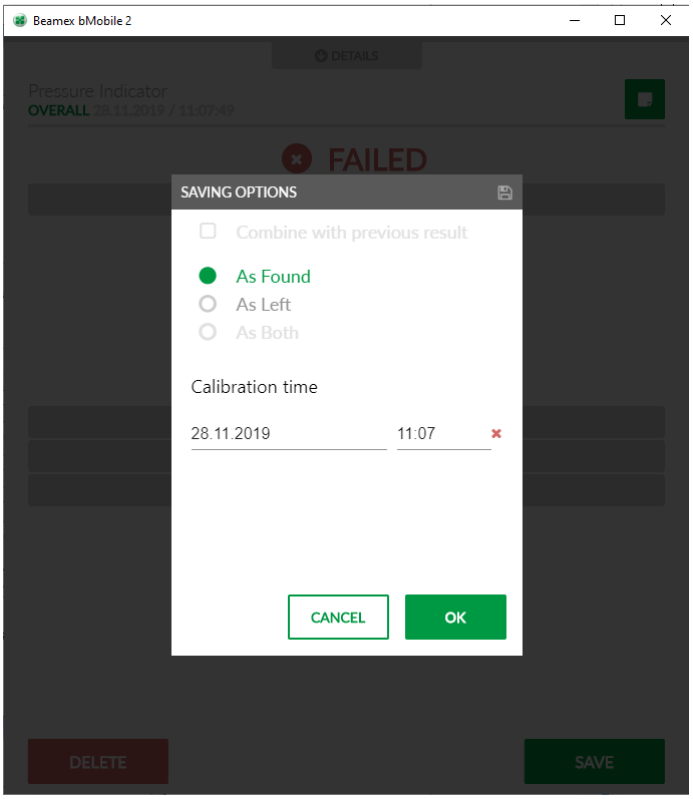


Figure 85: Options for saving a calibration

Change of calibration time from present to past is possible (with CMX version 2.12 or later), but the availability of this feature depends on "Manual Entry - Calibration time edit" user group permission and *Mobile Security Plus* license option. For more information see *CMX User Manual*.

Calibration History Window

As previously mentioned, before starting a Calibration/Checklist run, while looking at the instrument's overview window, a calibration history button is available. See picture below.

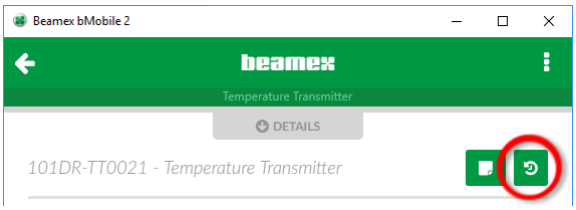


Figure 86: Calibration history button highlighted

Tapping the calibration history button opens the calibration history window. An example of a calibration history window is presented in the picture below. There is a pressure transmitter with two failed as found calibrations and two passed as left calibrations.

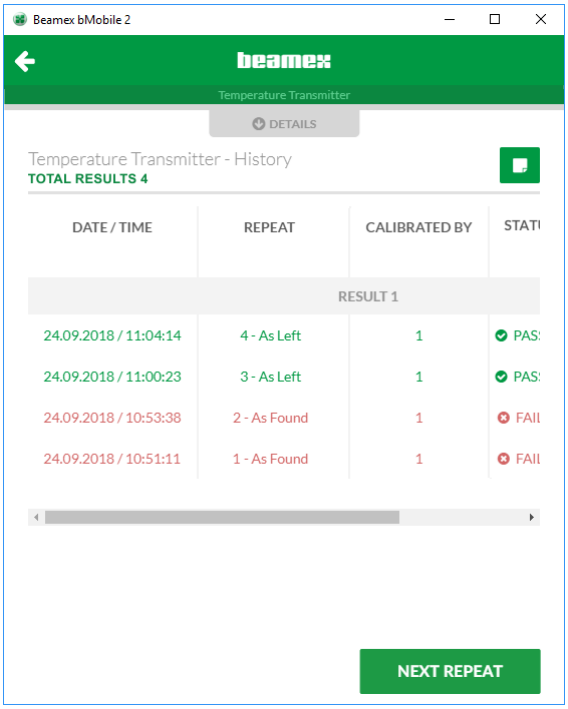


Figure 87: Calibration history for a Temperature transmitter

From the calibration history window, you can also return to the instrument overview window (back arrow) or start a new Calibration/Checklist run.

Click on one of the rows to see detailed information of that particular calibration. The window is similar to the overall view shown after a Calibration/Checklist run, except all data is read-only now. No environment data etc. may be edited anymore.

Among numeric calibration results: Tap on a calibration result's reference icon to see reference info. See the picture below.

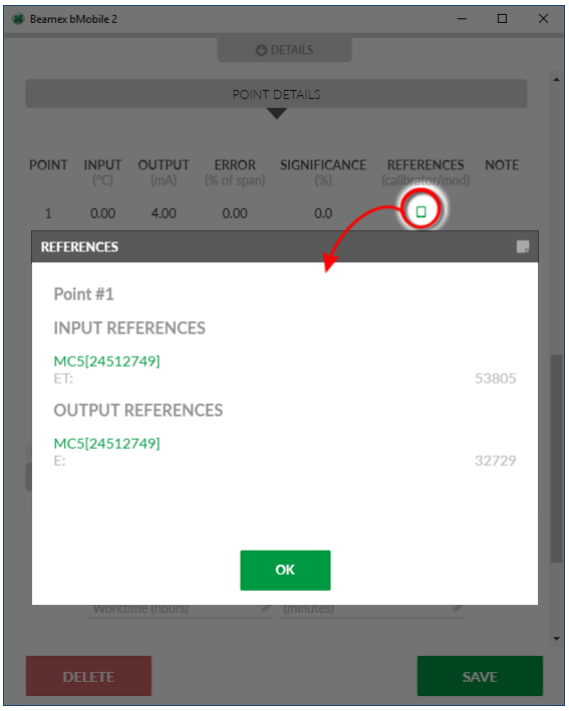


Figure 88: Numeric results with reference info opened

Tap on a point in a graph to see the point details. Tap on the info button to see details of error limits. See the picture below.

Figure 89: Graphic results with info pop-up opened

Appendix

The following section presents additional information related to **bMobile**. Topics presented in this section:

- **Windows® Installation Specifics**
  - **Default Settings**
  - **Silent Install**
- **Calibration Web Service Interface (CWSI)**,
- **CMX and CWSI** and
- **Troubleshooting**

Windows® Installation Specifics

Overriding Default Settings During Installation

The application can be installed with specific values, overriding the default ones. This needs to be done from the command prompt (Powershell).

Open up a command prompt in the directory containing the bmobile2Setup.msi file. Run command:

```
msiexec /i bmobile2Setup.msi /quiet PARAMETER="value"
```

Available parameters are:

- **INSTALLFOLDER**
- **SERVERADDRESS**
- **PORT**
- **ENDPOINT**
- **SECURECONNECTION**
- **DEFAULTPRESSUREUNIT**
- **DEFAULTTEMPERATUREUNIT**
- **DATEFORMAT**
- **BARCODEREADERVISIBILITY**
- **REFERENCESELECTION**
- **APPLICATIONMODE**

Command example for changing the target installation directory:

```
msiexec /i bmobile2Setup.msi /quiet INSTALLFOLDER="c:\path"
```

Command example using all available parameters:

```
msiexec /i bmobile2Setup.msi /quiet
        INSTALLFOLDER="c:\path"
        SERVERADDRESS="connect.beamex.com"
        PORT="443"
        ENDPOINT="cwsi"
        SECURECONNECTION="true"
```

```
DEFAULTPRESSUREUNIT="kPa"
DEFAULTTEMPERATUREUNIT="°C"
DATEFORMAT="YYYY.MM.DD"
BARCODEREADERVISIBILITY="true"
REFERENCESELECTION="1"
APPLICATIONMODE="logical"
```

Note: The whole command should be written in one line.

Overriding Default Settings After Installation

When **bMobile** is installed, a file called **"defaultsettings.xml"** is located in the installation folder. Editing this file before starting **bMobile** for the first time allows you to create custom default settings.

If you do multiple installations, copy the customized **"defaultsettings.xml"** to all devices where you have installed **bMobile**. Remember not to start **bMobile** before the customized custom default settings are saved on the device.

Default path:

```
C:\Program Files (x86)\Beamex\bMobile 2\defaultSettings
```

Example of **defaultsettings.xml**:

```
<?xml version="1.0" encoding="utf-8"?>
    <configuration>
     <backendSettings>
      <serverAddress>connect.beamex.com</serverAddress>
      <port>443</port>
      <endPoint>cwsi</endPoint>
      <secureConnection>true</secureConnection>
     </backendSettings>
     <environmentSettings>
      <defaultPressureUnit>kPa</defaultPressureUnit>
      <defaultTemperatureUnit>°C</defaultTemperatureUnit>
     </environmentSettings>
     <generalSettings>
      <dateFormat>DD.MM.YYYY</dateFormat>
      <barcodeReaderVisibility>true</barcodeReaderVisibility>
      <referenceSelection>1</referenceSelection>
      <applicationMode>cmx</applicationMode>
     </generalSettings>
    </configuration>
```

Available Default Settings and Their Options

The following options are available when installing bMobile using MSIEXEC in command prompt or in "**defaultsettings.xml**". See chapters Overriding Default Settings During Installation and Overriding Default Settings After Installation.

Parameter in bMobile User Interface	Options in User Interface	Parameter Name when using MSIEXEC	Parameter Name in XML	Corresponding options in MSIEXEC and XML
Date Format DD = Numeric date MM = Numeric month MMM = Alphabetic month, e.g. "April" YYYY = Numeric year	DD.MM.YYYY MM.DD.YYYY YYYY.MM.DD DD/MM/YYYY MM/DD/YYYY YYYY/MM/DD DD-MM-YYYY MM-DD-YYYY YYYY-MM-DD DD MMM YYYY MMM DD YYYY	DATEFORMAT	dateFormat	DD.MM.YYYY MM.DD.YYYY YYYY.MM.DD DD/MM/YYYY MM/DD/YYYY YYYY/MM/DD DD-MM-YYYY MM-DD-YYYY YYYY-MM-DD DD MMM YYYY MMM DD YYYY
Show barcode reader	Yes No	BARCODEREADERVISIBILITY	barcodeReaderVisibility	true false
Reference selection	Not defined All points This point	REFERENCESELECTION	referenceSelection	0 1 2
Pressure	kPa hPa Pa mbar mmHg torr inHg psi atm	DEFAULTPRESSUREUNIT	defaultPressureUnit	kPa hPa Pa mbar mmHg torr inHg psi atm
Temperature	°C °F	DEFAULTTEMPERATUREUNIT	defaultTemperatureUnit	°C °F
Server address	*Address to any server where CWSI server is installed.*	SERVERADDRESS	serverAddress	*E.g. "connect.beamex.com", a string*
Port	*Port available in CWSI server.*	PORT	port	*E.g. "443", a number*
Endpoint	*Endpoint defined in CWSI server.*	ENDPOINT	endPoint	*E.g. "cwsi", a string*
Secure connection	On Off	SECURECONNECTION	secureConnection	true false
Application mode selection	CMX/LOGiCAL	APPLICATIONMODE	applicationMode	undefined cmx logical cmxSync

Calibration Web Service Interface (CWSI)

These instructions are written for the Calibration Web Service Interface (CWSI) shipped with CMX.

Architecture

CWSI includes two components: the **CWSI Client**, which is installed locally on every computer that is physically connected to a calibrator and the **CWSI Server**, which is a common gateway for all CWSI Clients. In addition to this, CWSI support is implemented into the CMX Client, which enables CMX to communicate with calibrators connected to CWSI clients via the familiar Send/Receive window.

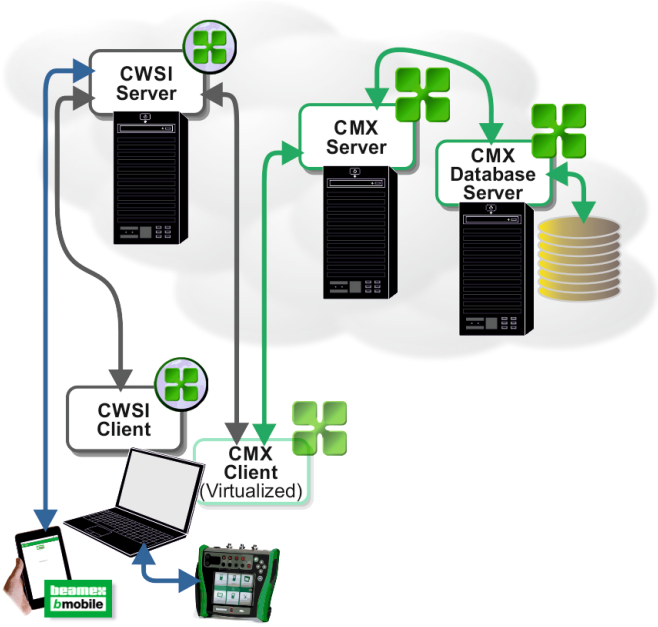


Figure 90: CWSI Structure

It is recommended to virtualize the CMX Client to reduce latency for database communication. While the CWSI Client must be installed on multiple computers, only one CWSI Server installation is needed. The CWSI Server can be installed on e.g. same server as CMX Server. CWSI Server is installed as a Windows Service, just like the CMX Server.

Communication between CWSI client, CWSI server and CMX client utilises the WebSocket protocol (RFC 6455, http://tools.ietf.org/html/rfc6455), which enables two-way communication without the need for complex Firewall rules.

Instructions on how to install CWSI Server and CWSI Client are included in the **CMX Installation Guide**.

Note: bMobile includes in its software the CWSI Client. To communicate with a CWSI Server, enter the server URL and parameters as described in chapters Settings and Connect and also chapter CWSI Server.

CWSI Server

The CWSI Server consists of two executables:

- **Beamex.CWSI.WebSocketServer.Service.exe**, which is installed as a Windows Service (CWSI service).
- **Beamex.CWSI.Server.Configurator.exe**, which is a graphical tool to configure parameters for the Windows Service.

Configuring CWSI Server

To configure the CWSI Server service, start "**CWSI Server Configurator**". Use Windows' search tool to locate CWSI Server Configurator.

The way of invoking the search tool depends on the operating system version.

The picture below presents the search tool from Windows® 10.

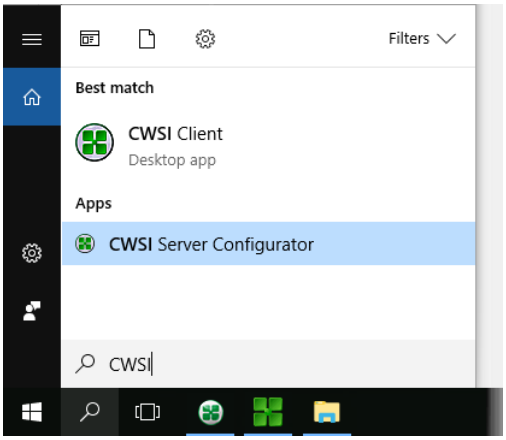


Figure 91: Windows search tool

CWSI Server's Settings

Available CWSI Server settings:

- **Port**, this is the TCP port that the server is listening on. Make sure that no other applications on the same machine is listening on the same port.

  The default port is **8080**.

- **Endpoint**, this is the endpoint that the server is listening on.

  The default value is **cwsi**.

- **Allow Cross-User communication**, if checked, this provides the opportunity for a user with supervisor privileges in CMX to communicate with all CWSI Clients connected to the CWSI Server.

- **Secure connection**, if checked, communication will be secured using SSL/TLS protocol. A X.509 Certificate is required. This is highly recommended when this product is in use.

- **Certificate type**, if secure connection is checked, a X.509 Certificate is required. A certificate can either be loaded from a Certificate Store or from a Local File. This file is recommended for test use only.

- **Store Parameters**
  - **Location**, specifies the X.509 Certificate Store Location to be used as a search parameter. Local Machine is recommended, since Current User can only be used if the CWSI Server Configurator and CWSI Server Service is executed as the same user.
  - **Name**, specifies the X.509 Certificate Store Name to be used as a search parameter.
  - **Certificate**, specifies the X.509 Certificate to be used. Please note that the CN attribute specified in the certificate's subject distinguished name must match the server location used by CWSI client and CMX.

- **File Parameters**
  - **File**, the absolute path to the pfx-file. Please note that the CN attribute specified in the certificate's subject distinguished name must match the server location used by CWSI client and CMX. |keyword=File Parameters,File |keyword=CWSI Server,File Parameters,File
  - **Password**, the password for the pfx-file. Please note that this password is stored in plain text on the machine running the CWSI Server. This option should therefore be used with caution.

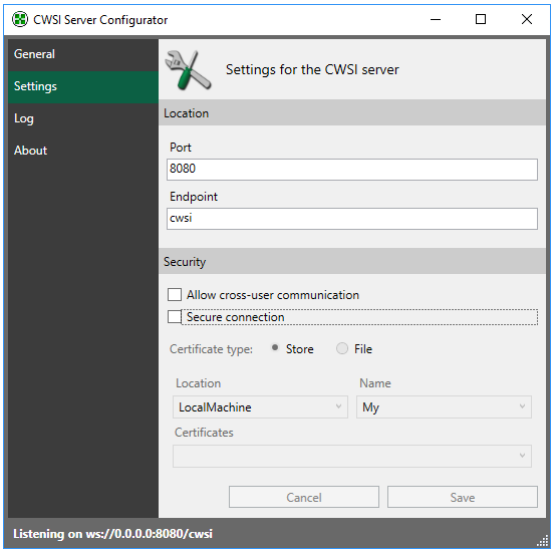


Figure 92: CWSI Server Configurator's Settings page

Note: Please note that any changes made to the configuration won't be taken into use until the CWSI Server Service is restarted.

Starting and Stopping CWSI Server

Starting and stopping the CWSI Server service can be done either via the CWSI Server Configurator or via the Services snap-in in Microsoft Management Console.

For advanced startup configuration (startup type, logon, etc.), use Services snap-in in Microsoft Management Console. Look for "Beamex CWSI Server Service".

CMX and CWSI

CWSI is integrated as a new protocol (Web Service) in both the **Send** and **Receive** windows of **CMX**. To configure the CWSI parameters, open Send or Receive window, select CWSI as protocol and click the three dots button located next to the protocol:

- **Server**, this specifies the location of the CWSI Server (including the endpoint specified in server). If secure connection is used, this would most likely correspond to the CN of the Certificate's subject distinguished name used by the server.
- **Port** specifies the TCP port that the CWSI Server is listening on.
- **Connection timeout** specifies the amount of seconds the CMX will wait before cancelling a request.
- The **Number of reconnect attempts** and **Time between reconnect attempts** settings don't normally need to be changed. The IT specialist may want to change these settings if faced with communication problems.
- **Secure Connection** specifies if the server is using secure connection (SSL/TLS). This must correspond to the CWSI Server settings.

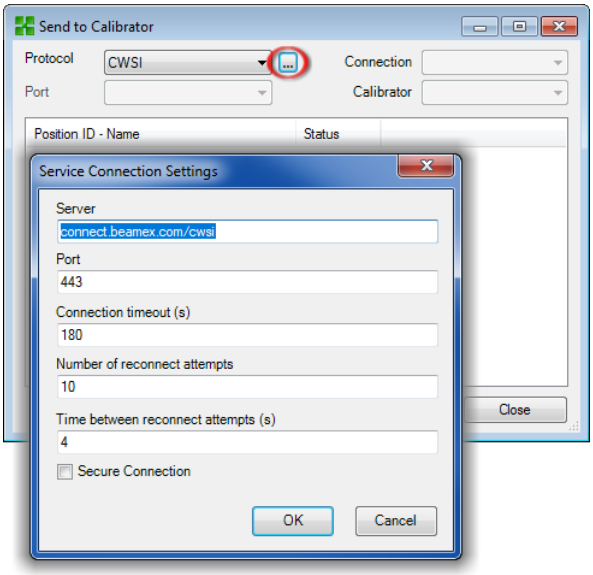


Figure 93: CWSI communication settings in CMX

When CWSI is correctly configured, and one or more matching CWSI Clients are found (e.g. the **CMX user id** in CWSI is the same as the **User ID** in CMX), they are listed in the **Connection** combo box. Each connected calibrator of the CWSI Client is listed in the Calibrator combo box. Both Send and Receive window can be used normally.

If the CWSI Client has a secret specified, the secret is prompted when selecting the client connection.

Troubleshooting

The following chapters contain information about how to troubleshoot the CWSI server and CMX.

CWSI Server

If the server is having issues loading a configured X.509 certificate, please note that CWSI Server Configurator and CWSI Server Service might be executed as different users. By default, the CWSI Server Service is configured to be executed by the LocalSystem Account and might not have access to the configured file.

This might also be an issue if Certificate Store Location is set to Current User.

CMX

All configuration changes made in CMX are stored individually per user under location shown below:

```
%APPDATA%\Beamex Oy Ab\... CMX Calibration Management Software\...
<version>\ServiceConnectionSettings.xml
```

Where:

%APPDATA% is currently logged user's application data directory. **<version>** is the current software version number of CMX.

If CMX for some reasons crashes during opening of Send or Receive window, try to delete the above file in order to load the factory default settings.

To copy CWSI settings between user profiles, simply copy the ServiceConnectionSettings.xml between the user profiles.

To modify the default CWSI settings, modify the ServiceConnectionDefaults section in the file BxbMUIPD.exe.config located in the CMX installation directory.

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jwt-decode

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