Image Manual
X2 web

MAEN341
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Foreword

The information in this document is valid for the latest versions of the panel images at the time the document was released. For information and updates, see https://www.beijerelectronics.com.

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Table of Contents

1. Introduction

1.1. Safety Precautions

Both the installer and users of the HMI panel must read and understand this manual.

1.2. References

Name	Description
MAEN215	Installation Manual X2 control/motion 7 - B2
MAEN221	Installation Manual X2 control/motion 10 - B2
MAEN225B	Installation Manual X2 control/motion 15 - B2
MAEN251B	Installation Manual X2 extreme 7 HP
MAEN256B	Installation Manual X2 extreme 12 HP
MAEN261B	Installation Manual X2 extreme 15 HP

The installation, technical data, as well as cutout and outline dimensions of the panels, are described in the Installation Manual for each HMI panel. Please refer to the Installation Manual for further information.

> **NOTE**
> Current documentation and software updates can be found on https://www.beijerelectronics.com

1.3. Open Source Software Notice

To obtain the source code under GPL, LGPL and other open source licenses that are contained in this product, please contact opensource@beijerelectronics.com. In addition to the source code, all referred license terms, warranty disclaimers and copyright notices may be disclosed upon request.

2. Boot

1. Apply power to the HMI panel.
2. Within 15–20 seconds, the **Browser** will appear.

If a start address is defined in the configuration, it will be loaded automatically. Otherwise, you will be directed to the configuration.

The X2 web is pre-configured from factory with a URL to a HTML5 demo page.

2.1. First Time Boot

When powering up the X2 web device, first time from delivery, a dialog is shown in order to change the default Configtool user password, or PIN. The procedure is as follows:

1. At **Login as ConfigTool User**, input the factory default PIN (The default password from factory is 1234).
2. In the subsequent step, it is required to input the **Admin password**. This password is an additional password, similar to the PUK code on a mobile phone SIM card. The Admin password is printed on the flyer, included in the shipment.

> **NOTE**
> The admin password can later be changed in the Settings.

3. With correctly stated Admin password, input the new PIN/Configtool User password, two times consecutively.

The PIN/Configtool User password is now changed.

3. Navigation

To reach the **right-click context menu**, tap the touch surface and keep it pressed for at least 1.5 seconds. A drop-down menu will show with navigation commands.

The following commands are currently implemented:

- Back
- Forward
- Reload

The **right-click context menu** can be disabled or enabled from the **Settings**.

4. Settings

Normally, the X2 web device will browse the default URL on startup.

To access the device settings:

1. Touch the upper, approximately one centimeter area, of the display, and hold it for at least 1.5 seconds.
2. After holding the touch for 1.5 seconds, a button will appear in the upper central part of the screen.
3. Tap/Click on the button to go to **Settings**. Tap/Click outside the button to make the **Settings** button disappear again.
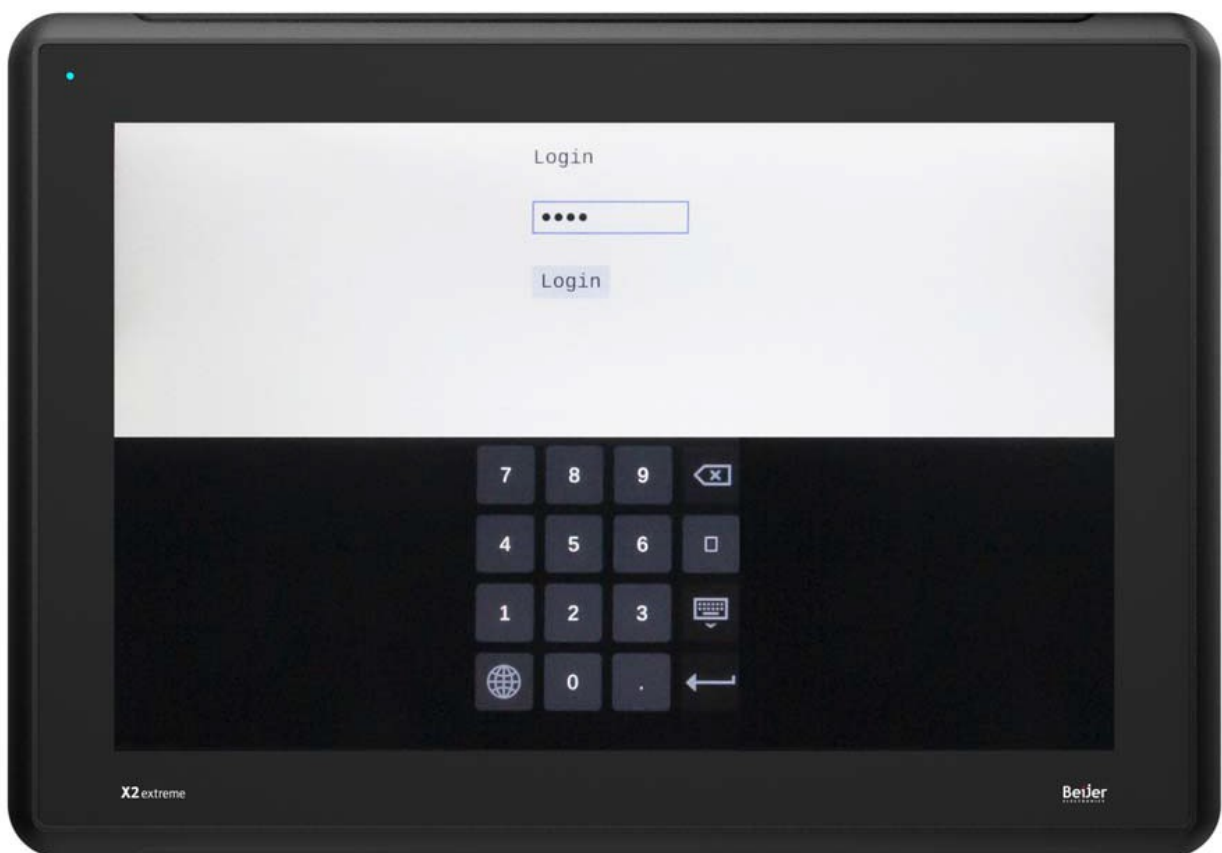
X2 extreme 15 web
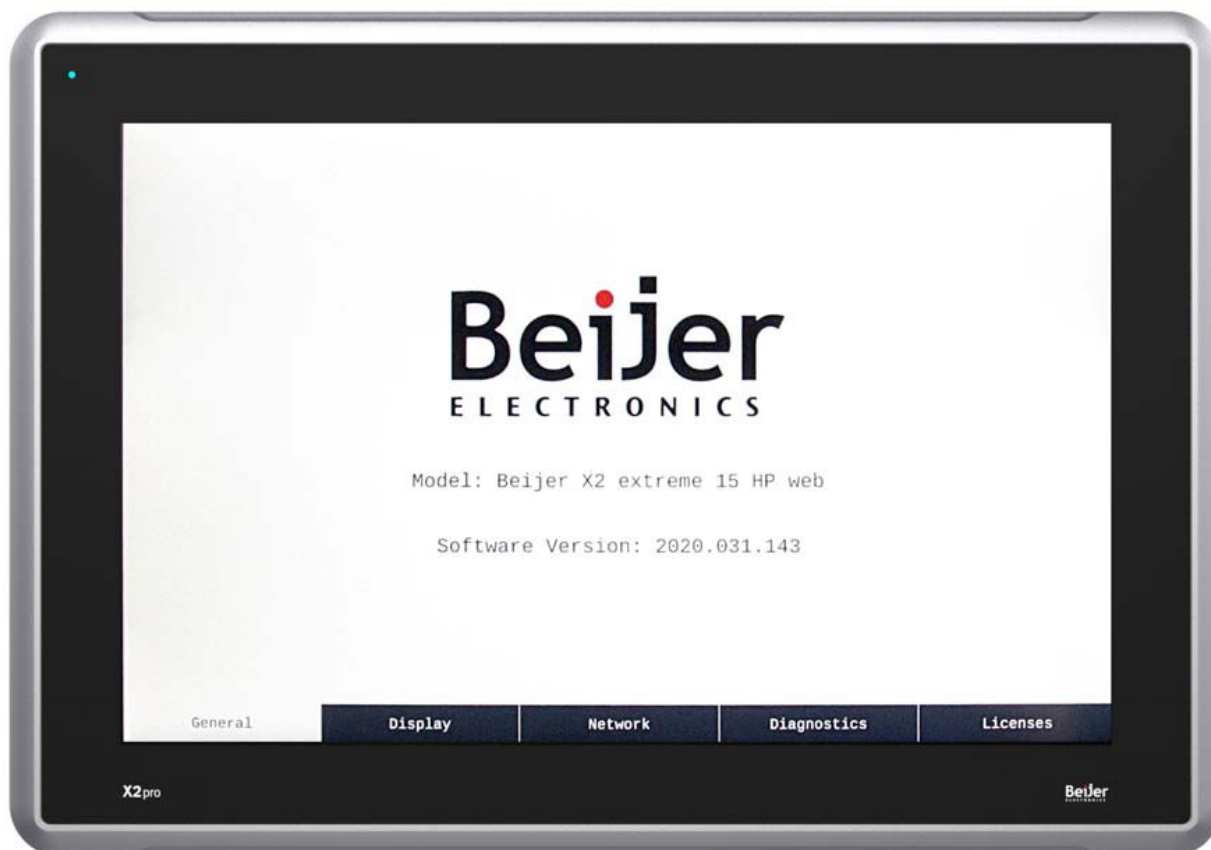
X2 pro 15 web

4.1. Change Passwords

To change the config tool user password, in the **Settings** menu, go to the **Display** tab and click the **Change configtool password** button. The change password feature requires being logged in as admin. The application will restart and prompt the user to select either **admin** or **configtool** user followed by input of the old password.

Changing the **configtool** user password, requires the **admin** password, followed by the new password entered twice.

The new password entered must be at least four characters in length. There is no limitation on the maximum password length.

> **NOTE**
> Any limitations stated above are reflected in the config tool app for changing passwords. If using the OS built in 'passwd' command, there are no limitations.

4.2. Change Settings From Terminal

The X2 web has some additional settings, some of which are only available to be edited from a terminal. The built-in editor in X2 web is *vi*. A basic manual for the various *vi* commands can be found here: https://cs.stanford.edu/people/miles/vi.html

The file */etc/beijer/misc.conf* contains general settings.

> **NOTE**
>
> Any changes made to the OS, file system etc, is solely on behalf of the owner. Beijer Electronics AB shall not be held responsible for any damages caused by connecting to the device as a root user.
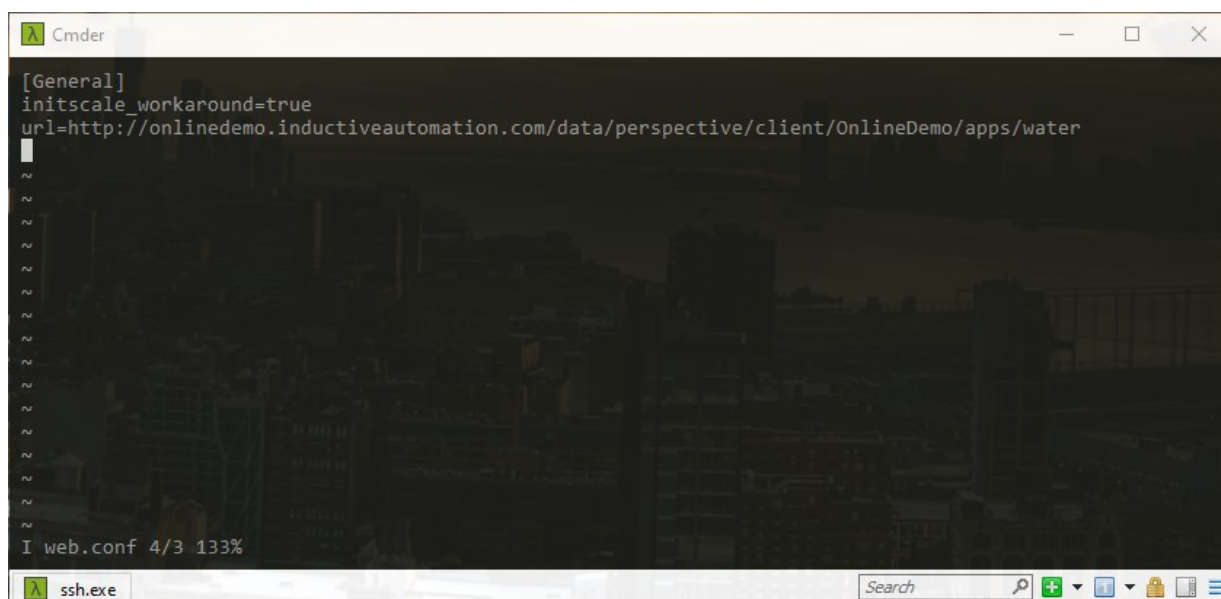
misc.conf

Setting parameter	Type, interval	Comment
brightness	Integer [0, 100]	Controls the backlight brightness level. If the screen was mistakenly set to 0, from the config UI, this parameter can be edited from the terminal to solve the problem.
login_valid_sec	Integer [0, N] Rec. [120, N]	Controls the time until the user is automatically logged out from the config UI.
screen-saver_timeout	Integer [0|1, N]	Controls the screen saver timeout. If 0, the screen saver is disabled.
update_dirs	String, comma separated	The paths control which mounted interfaces are allowed for updating the firmware.
drawer_open_direction	string	Controls swiping direction for opening the Config [Down, Right, Left].

web.conf

Setting parameter	Type, interval	Comment
initscale_workaround	Bool [true, false]	Controls whether the workaround for known issues with progressive apps (also WebVisu SP14 zoom issues).
url	String	Address to the web server. Editing this parameter from terminal may be a better option in various deployment scenarios.
disable_con- text_menu	Bool [true, false]	Enables or disables the long touch menu as referred in section 3.

The file */etc/beijer/touch.conf* only contains the result from touch calibration. It is recommended to use the built-in touch calibration app instead.

4.2.1. Network

The following parameters can be set:

- IP address
- Subnet mask
- Default gateway
- DNS settings for the Ethernet port on the HMI panel
- LAN A / LAN B – One config per port (separate tabs in the top of the UI)
  - Method – DHCP or Static.
  - IP
  - Net mask
  - Gateway
  - DNS 1
  - DNS 2
  - Save – Saves the new settings.

The default setting is DHCP.

4.2.2. Diagnostics

Displays the following list of parameters for the panel:

- CPU load
- System uptime
- Memory total
- Memory usage

4.3. Settings Tabs

4.3.1. General

- Model – Model name of the device model.
- Software Version – Currently installed software version.

4.3.2. Display

Tab	Description
URL	Start page
Load page	Makes the browser go to the URL.
Default scale fullscreen	Controls the zoom level and stretching of the web application. This is workaround for known issues in, for instance, Codesys WebVisu. If there are issues with the graphics, setting or resetting this parameter may help solve the problem.
Brightness	Brightness setting for the display (scale 0-100).
Screensaver timeout	Set time before screen saver activates, 30 sek - 10 min.
Activate	Start the screen saver immediately.
Calibrate touchscreen	Will initialize the calibration of the touch. The touch calibration screen enables the function to recalibrate the touch screen. The recalibration consists of nine steps, where a crosshair on the screen is pressed and held. Take care and try to do this as precise as possible, an incorrect calibration makes it hard to use the HMI panel.
Change password	Click button to change passwords/PIN.
Disable context menu	When checked, the long-press context menu in the browser is disabled.
Certificate Util/ Allowlist	Utility to control white listed URL's as well as adding server certificates from either USB or SD-card.
Ping	Configure firewall to allow for Ping (ICMP) calls.
SSH	Configure firewall to allow for terminal connection over SSH.
Docker	Enable or disable Docker runtime.
Docker Config	Utility menu for Docker, like pruning unused containers etc.
Touch mouse emulation	Emulate touch as mouse input. When enabled, this feature changes the behavior of the touch and only allows for tap/click, i.e., no scrolling or gestures.
Logout	Logout or change current user.

Tab	Description
Save button	Saves the URL, your brightness and screen time out.

> **NOTE**
> Depending on the size of the screen, users may have to scroll down to find all setting parameters in the Display tab.

4.3.3. Network

The following parameters can be set:

- IP address
- Subnet mask
- Default gateway
- DNS settings for the Ethernet port on the HMI panel
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The default setting is DHCP.

4.3.4. Diagnostics

Displays the following list of parameters for the panel:

- CPU load
- System uptime
- Memory total
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4.3.5. Licenses

Shows a full table of all the licenses used in the software in terms of:

- Package
- Version
- License

5. Image Update

The HMI panel comes pre-loaded on delivery with an image.

5.1. Updating the Panel Image Using USB/SD Card

To update the image in an HMI panel, use a USB flash drive or an SD card. This makes it possible to upgrade the panel image without the use of a PC.

Do the following:

1. Download the *system-beijer.raucb* file and store it in the root on a USB flash drive or SD card.
2. Attach the USB flash drive or SD card to the device, a dialog will show to install the new version.
3. A dialog will notify when the update is finished.
4. Detach the USB flash drive or SD card and reboot the device.
5. Check the new version number in the **Settings**.

> **NOTE**
> The X2 web allows updating either from USB, SD card or via file transfer and manual install, using the command `rauc install system-beijer.raucb`.

6. Certificate Utility and Allowlist

Connecting the X2 web browser to a server over TLS, which lacks a CA root authority signed SSL certificate is prohibited. To bypass X2 web from blocking, either the URL can be added to a whitelist or users can install the server certificate on the X2 device as a valid server certificate. If a user connects to a web server, where the server lacks a valid certificate, the user will be notified by a message on the screen, 'Insecure Page'. The notifier will be displayed for 10 seconds.

6.1. Adding Certificate From File

In order to add certificates from a file, the following has to apply:

- The USB flash drive or SD card is either vfat or ext3 formatted.
- The USB flash drive or SD card contains a certificate folder with *.crt files.

Attach the USB flash drive or SD card to the X2 web device and go to the **Certificate Util/Allowlist** dialog. All certicates found on the drive will be listed in the upper list. Select which certificate to be added, followed by clicking on the **Add** button. If the operation succeeded, the browser will restart. If the operation failed, users will be notified.

6.2. Add Current URL to the Allow List

To add the current URL address to the allow list, simply check the **Add current URL to allowlist** checkbox, followed by clicking the **Add** button. White-listed URL domain addresses are listed in the lower list box. Existing, white-listed, URLs can be removed by selecting it and clicking the **Remove** button.