Gate ~ FMCU ~ Benutzerhandbuch/en

Inhaltsverzeichnis

Introduction

The document describes the functions and configuration options of the software **F**acility **M**anagement **C**ontrol **U**nit.

The Facility Management Control Unit is software for access control management. It can be used in an enclosed area such as a sports or entertainment center, an airport zone, universities or security areas. The main components of the software solution are:

- An automated passage control with two-part door and signal lighting
- Barcode (or/and RFID) scanners that read identification data from the customer's ticket or card
- Tracking cameras observing the passage of customers
- Info screens showing inbound and outbound information to the customer
- One or more external speakers
- One or more additional monitors with content tailored to customer needs

The main features are:

- Opening access control upon successful ticket validation
- Interaction with customer in response to various events through:
  - Light effects
  - Voice prompts through internal or external speakers
  - Acoustic confirmation of the reading process from barcode scanners
  - Visual content displayed on an info screen
  - Safe opening and closing of the swing doors by monitoring the passage area

Supported operating modes:

- Normal
- Service
- Fire alarm
- Emergency

The variants of Entry Tickets:

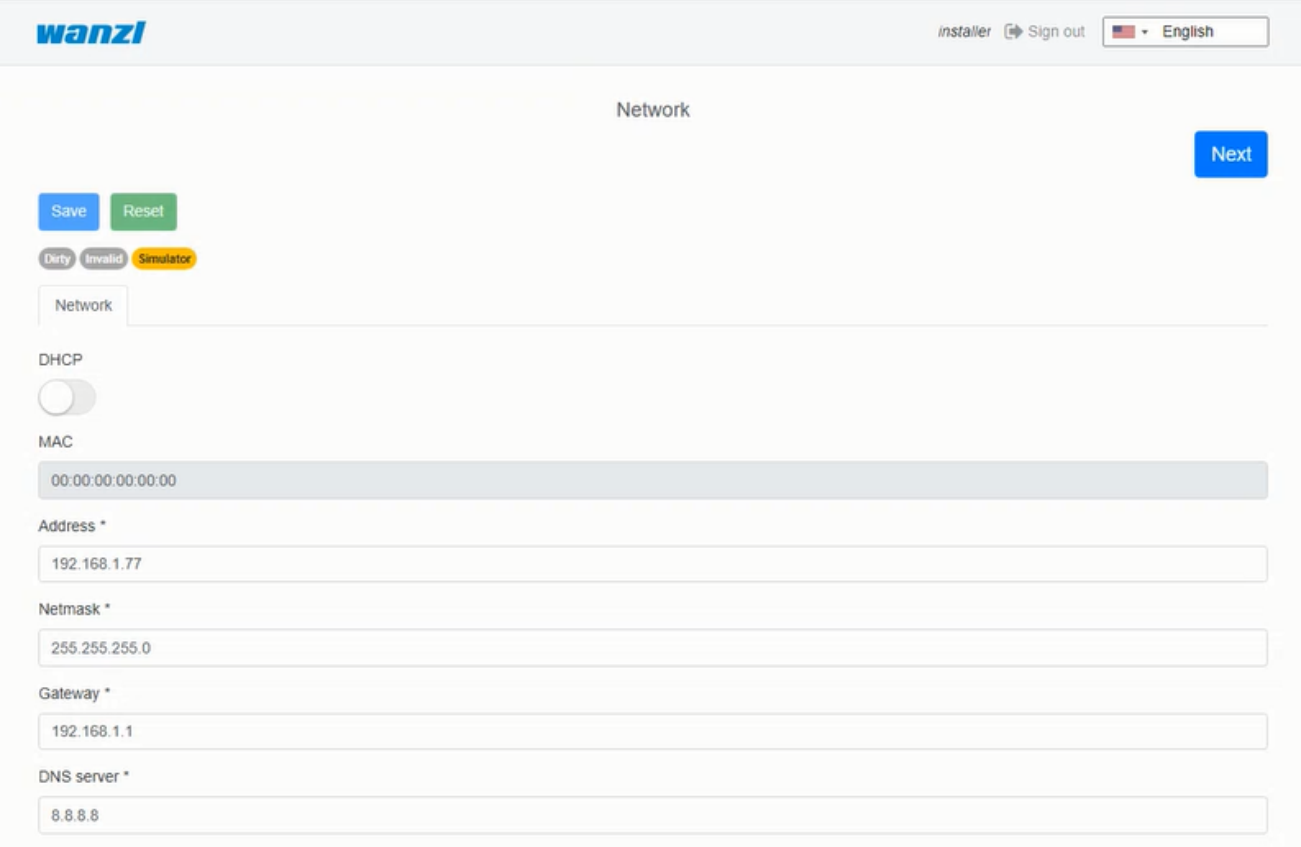
- Single entry ticket with closing of access control after passage of one person
- Multiple entry ticket with permanent access control
- Adjustable time intervals
- Consideration of additional conditions about potential-free contacts

Initial Configuration

After the software has been downloaded and transferred to the eMMC card according to the documented procedure, see also here Galaxy Gate Inbetriebnahme/en, the login screen appears after the first start. After logging in with the user *Installer*, configuration wizard will be started.

Network

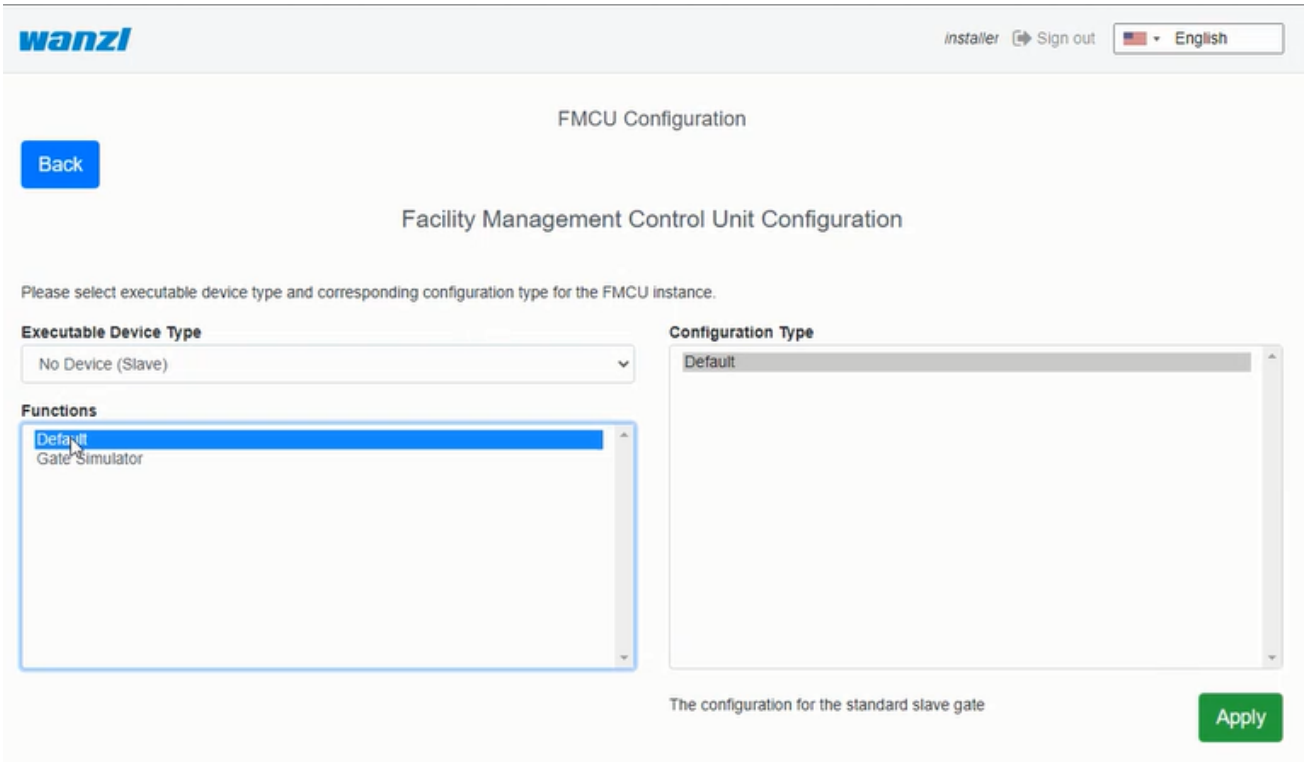
First step is the network settings configuring



Parameter	Description	Default Value
Address	IP-Address of access control	192.168.1.100
Mask	Network-Mask	255.255.255.0
Gateway	Gateway-Address	192.168.1.1
DNS-Server	DNS-Server for name resolution	192.168.1.1

FMCU Configuration

Next step is selecting FMCU Configuration



NOTE

The configuration always starts with the "Slave" side of the Galaxy Gate. This selection is preset in the assistant "No Device Slave".

As a type, you can basically make this selection in the assistant.

Configuration of the Facility Management Control Unit

Selection	Description
No Device Slave	Slave Unit (Default Selection)
Galaxy Gate (Modbus Serial)	Master-Unit mit serieller Verbindung zu Slave-Unit
Galaxy Gate (Modbus TCP)	Master-Unit with network connection to Slave-Unit
Galaxy Port (Modbus Serial)	Unit with serial connection to Slave-Unit
Galaxy Port (Modbus TCP)	Unit with network connection to Slave-Unit

Functions

Function	Description
AEA	Configuration for Boarding Gates
Immediate Closure	Closing the swivel arms without swivel range monitoring
Multiple Opening	Swivel arms remain open when multiple input signals are present
Personal Protection	Closing the swivel arms with swivel area monitoring

One-time opening	Single pass even when several input signals are present
Trolley Case	Support of trolley case without alarm
Wheelchair	Assistance from wheelchair without alarm

After the function has been selected, the combination of functions results in corresponding configuration types. The function selection is a filter for the resulting configuration type.

Configuration type from combination of functions

Configuration Type	Description
AEA	Configuration for Boarding Gates
One-time opening Personal Protection	Closing the swivel arms with swivel area monitoring
One-time opening Immediate Closure	Closing the swivel arms without swivel range monitoring
One-time opening Trolley Case	Single passage with trolley case even when several input signals are present
One-time opening Wheelchair	Single passage with a wheelchair even if several input signals are present
Multiple opening personal protection	Closing the swivel arms with swivel area monitoring
Multiple opening instant closure	Closing the swivel arms with swivel area monitoring
Multi-opening trolley case	Swivel arms remain open when several people with wheeled suitcases pass through
Multiple opening wheelchair	Swivel arms remain open when several people with wheeled suitcases pass through

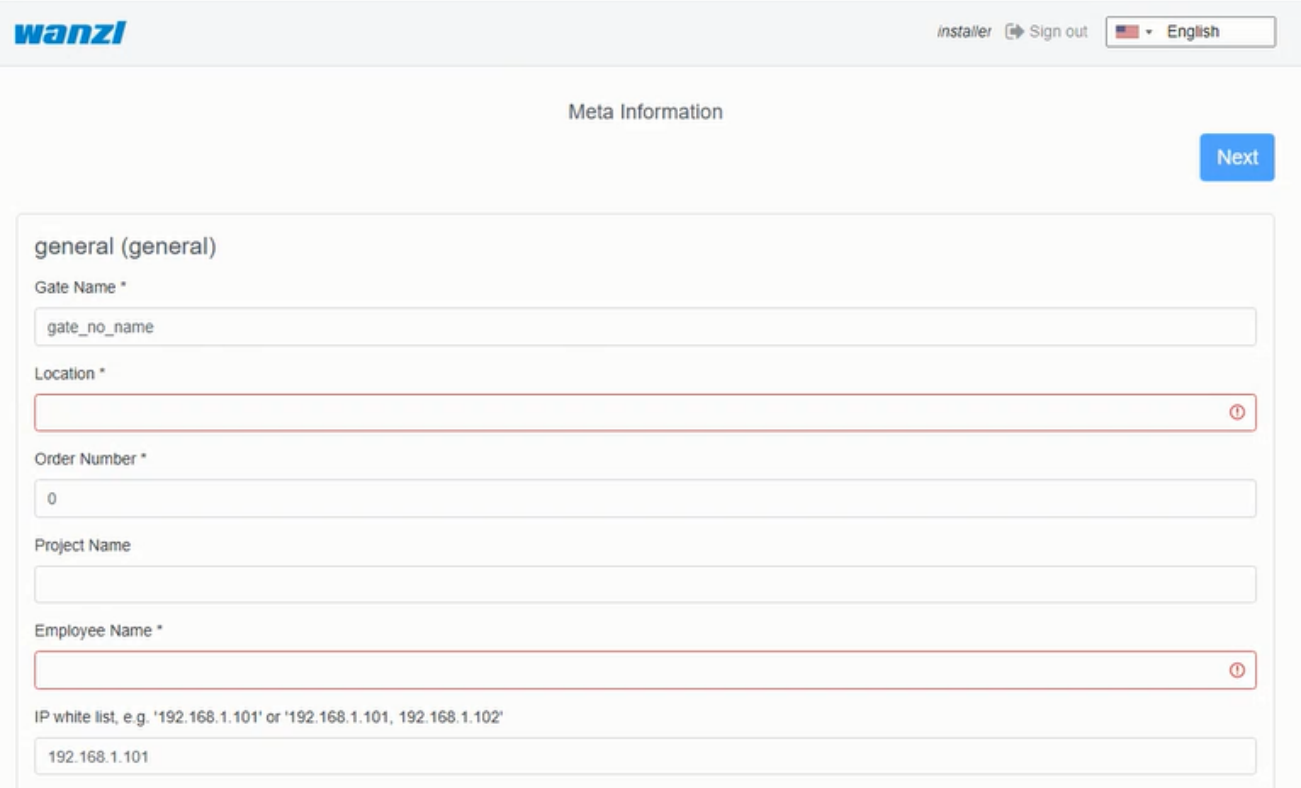
After choosing from the three lists, click on **Apply**, the application will be restarted, you have to wait for the start-up process to be completed. After logging in again, this screen appears.

NOTE

If you adjust the IP address in the configuration, you must also align the URL in the browser to the new IP address.

Meta information

Next step is filling meta information about FMCU

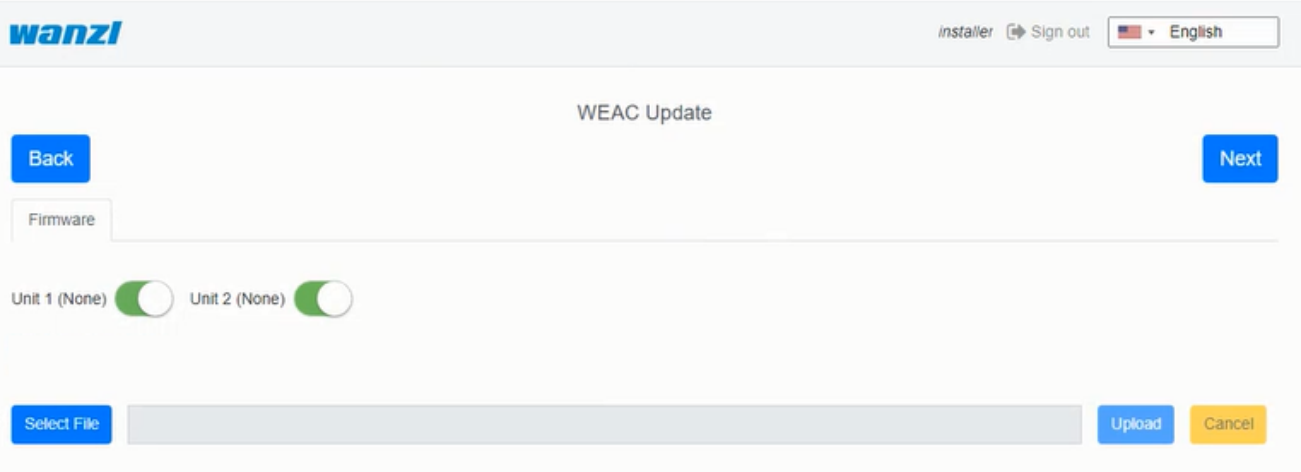


After the input fields have been filled in, you can click on **Next** to reach the next page of the wizard.

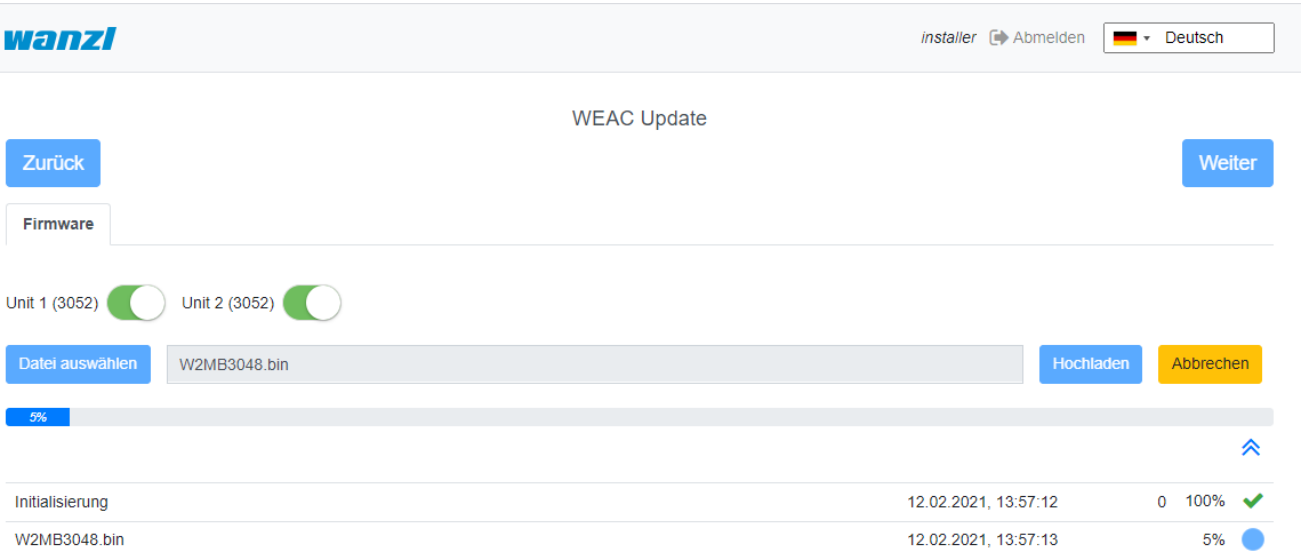
Configuration of Gate

WEAC Firmware Update

The current WEAC firmware is displayed on the next page of the wizard. If necessary, you can down or upgrade the firmware.

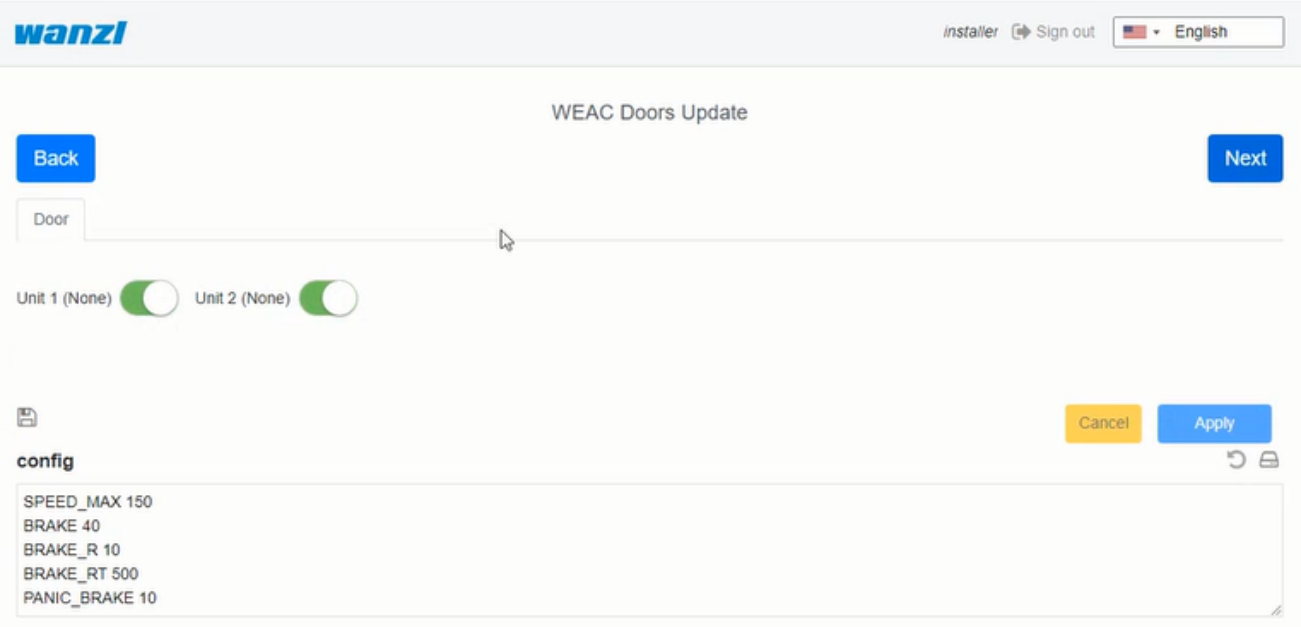


The firmware version for each unit is listed as a label next to the activation button. The navigation options are deactivated during the update process. The update process takes about 3 minutes for both units.

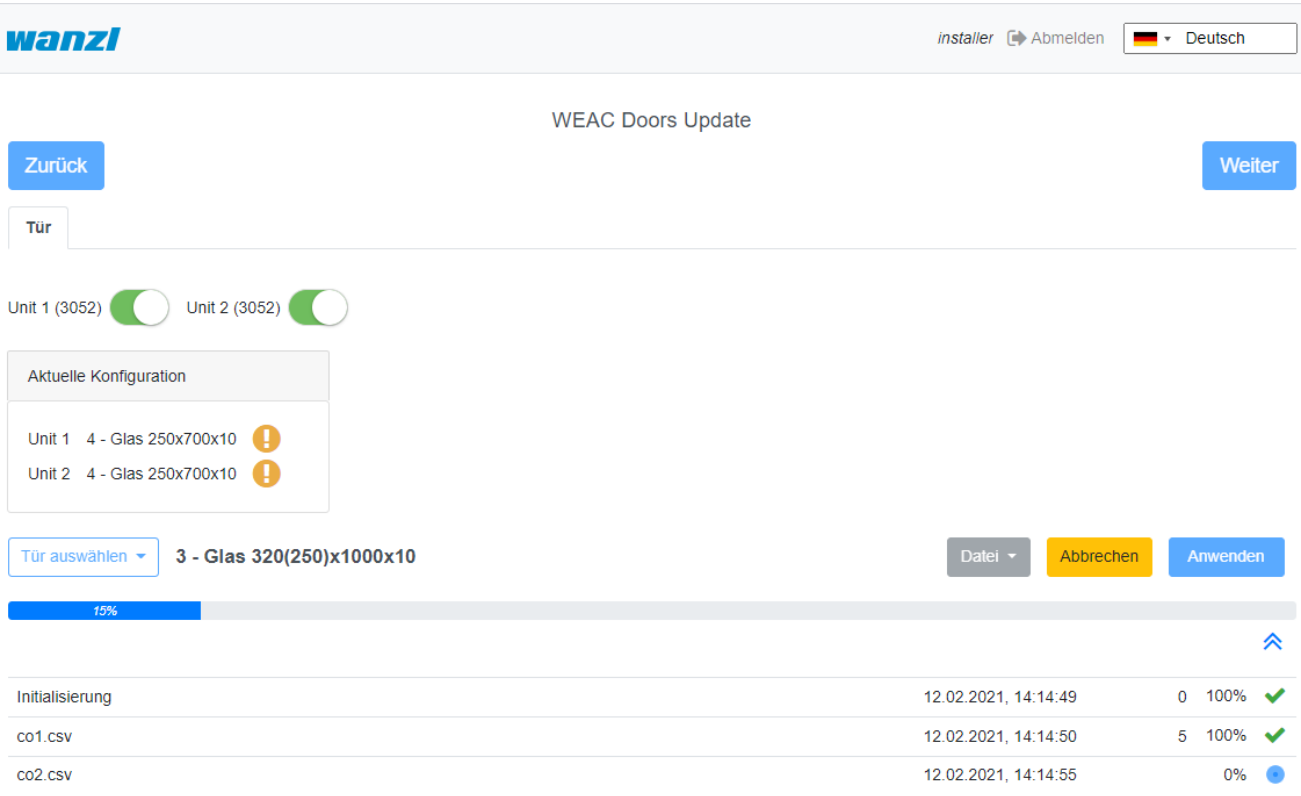


After checking the WEAC firmware, the swing doors are configured. It is automatically checked whether the minimum requirements regarding the firmware are met. You will be informed on the surface if the firmware has to be updated first.

WEAC Doors Update

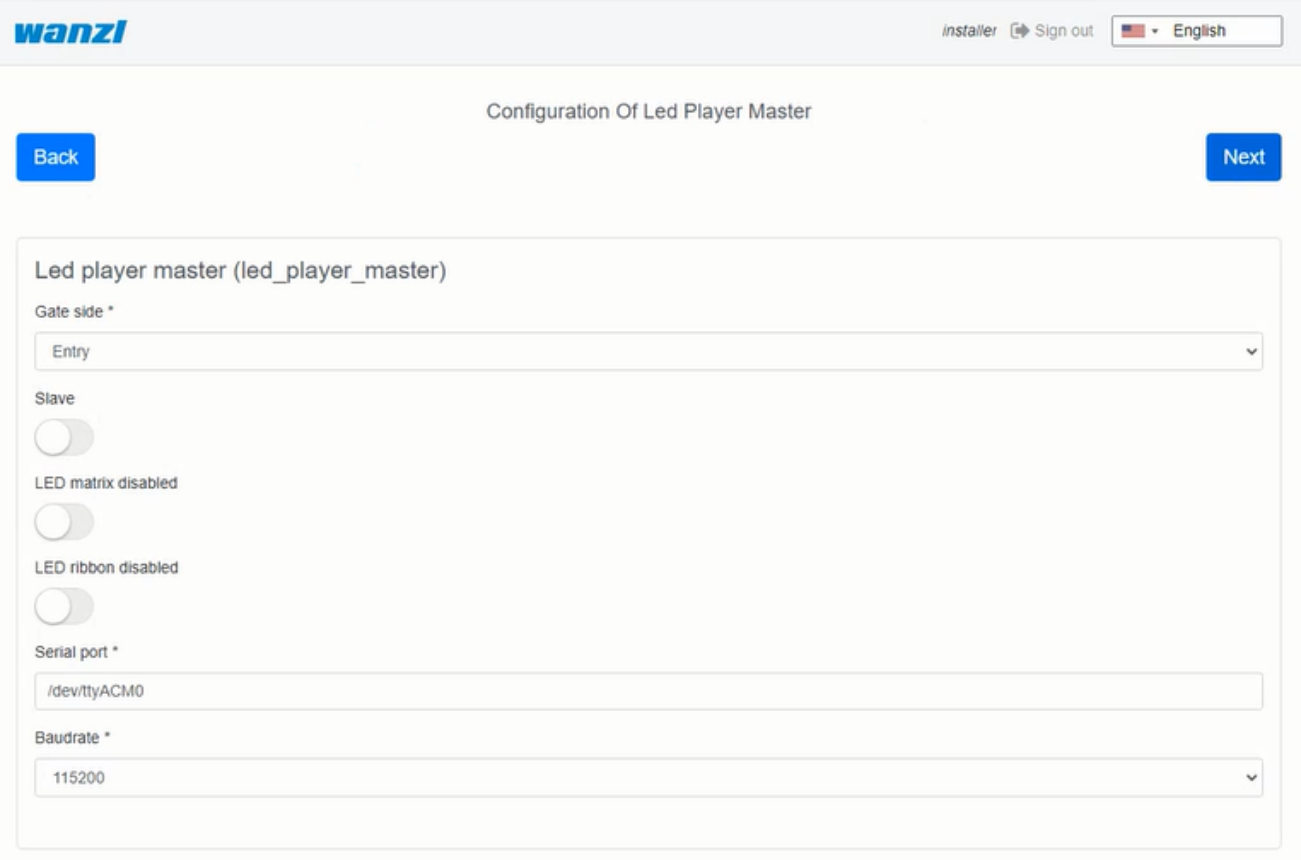


If the requirements are met, you can select the swing doors and apply them to the gate.

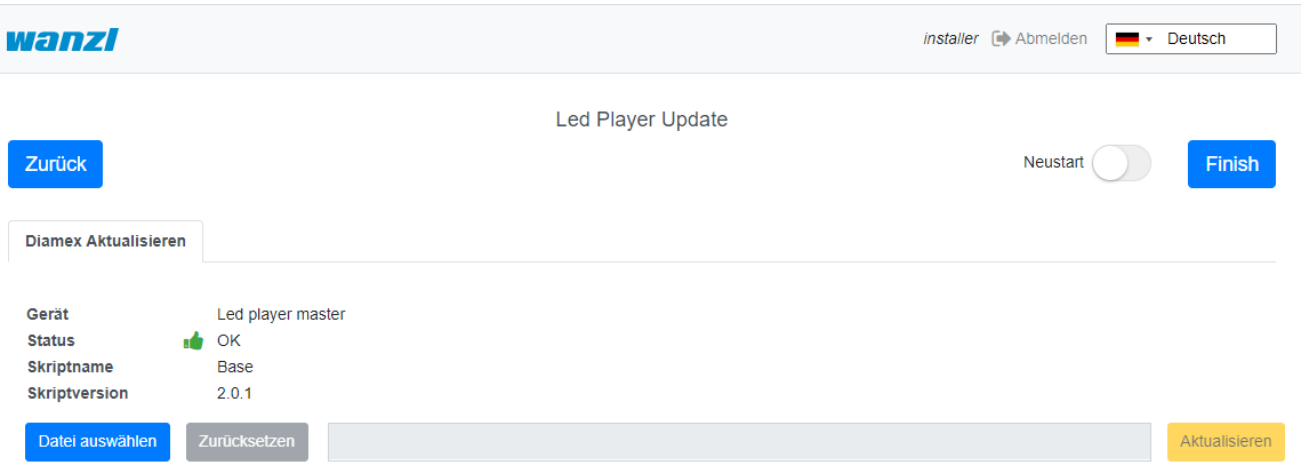


Configuring the Led Player

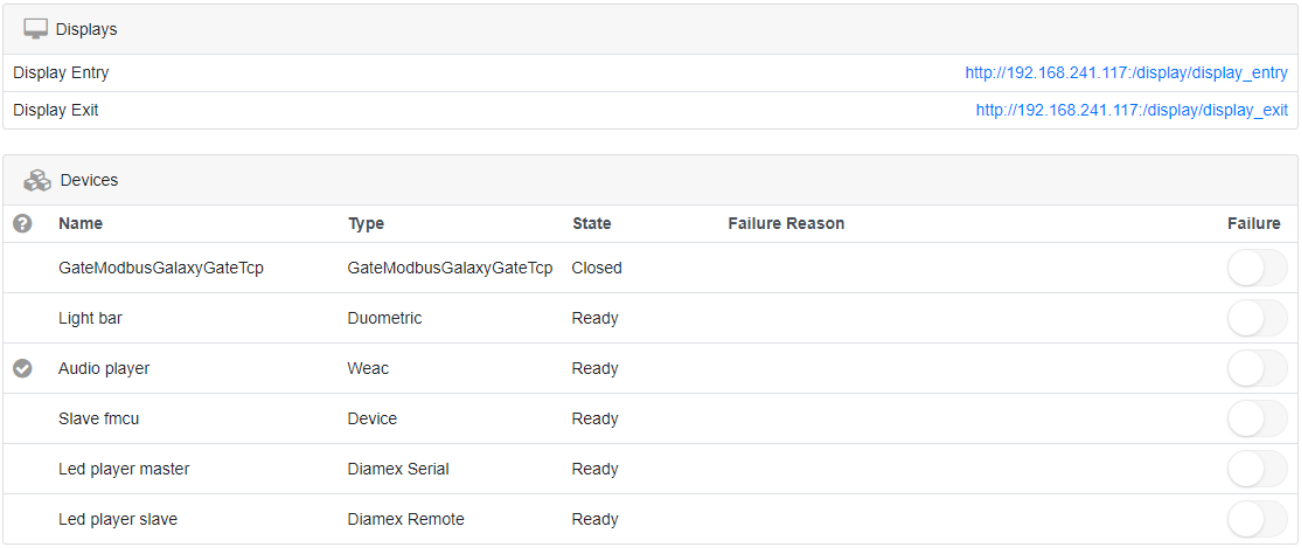
The next step is to configure the LED player for both units (Master and Slave) accomplished. If necessary, you can adjust the parameters. If the status is **ready for use**, no modifications are necessary.



The current firmware of the LED player is shown again on the last page of the assistant. Optionally, you can end the configuration with a restart. However, this is only necessary if IP addresses or interface information have changed.



After clicking **Finish** you can log in again as certain user and work with the Galaxy Gate. If you log in again as user *installer*, you get a graphical overview, can find out about the status of the access control and can carry out updates if necessary. So you complete the setup of the access control.

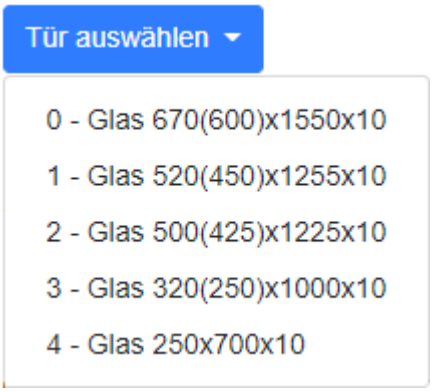


You can now log in with a service account and carry out further tests.

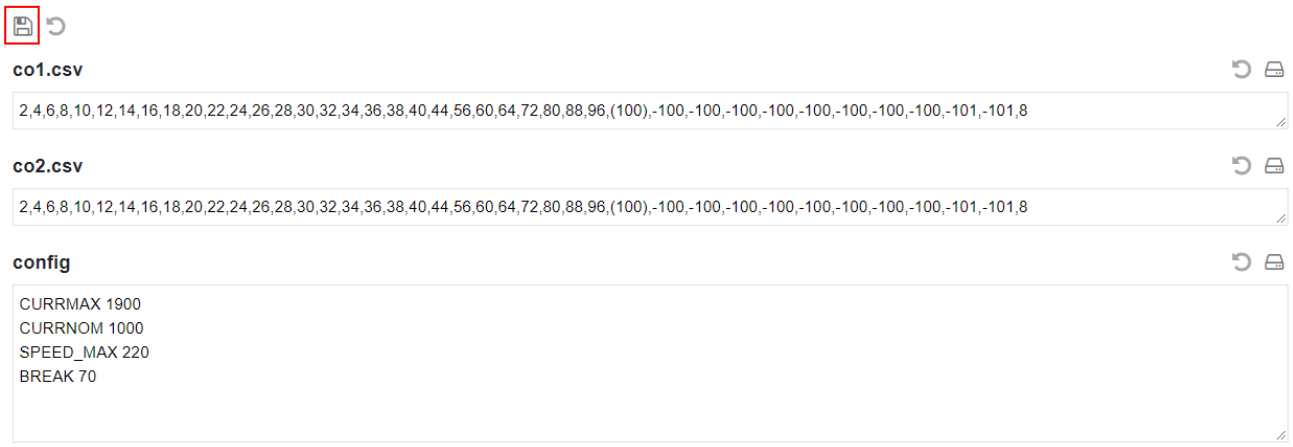
Operation Manual

Configuration of the Swing Doors

The swing doors can have different dimensions. Depending on the width and height, this results in other target parameters for optimal curve passage.



After a type has been selected, all parameters can be adjusted according to the needs in the interface before they are then activated via the button **Apply** in the configuration on the access control. If you change individual values in the display, the settings must first be saved. To do this, click on the diskette symbol on the left of the interface above the file list.

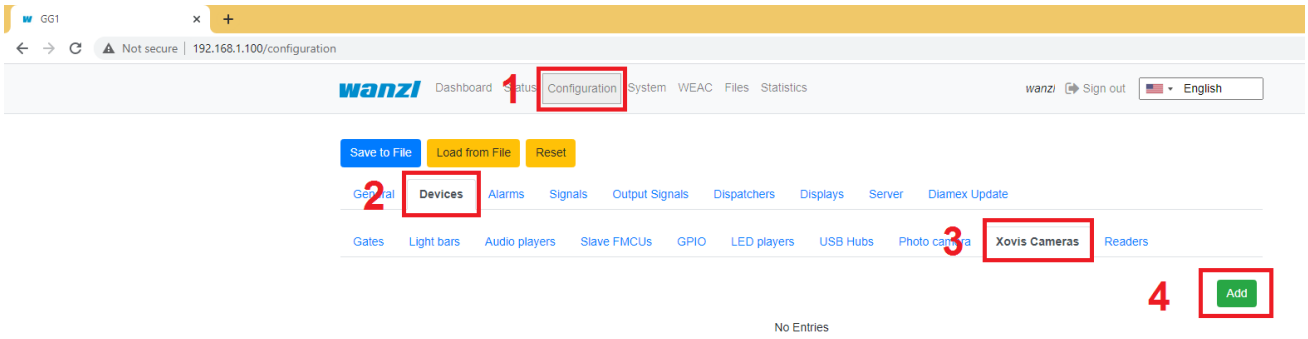


After the changes have been saved, you can activate them using the Apply button.

Configuration of the XOVIS Sensors

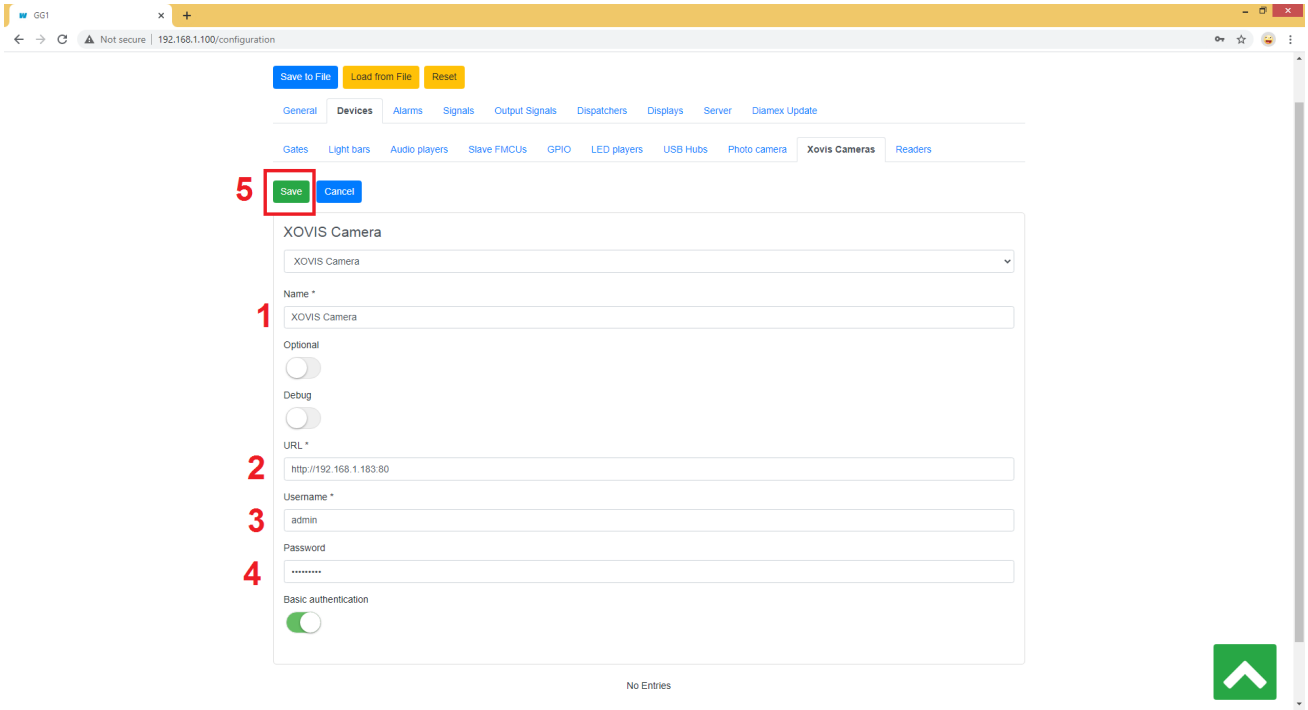
Add XOVIS-Sensor

Navigate to "Configuration" -> "Devices" -> "Xovis Cameras" and then click on the "Add" button



The following fields are filled in the order shown:

1. Name
2. URL
3. Username
4. Password

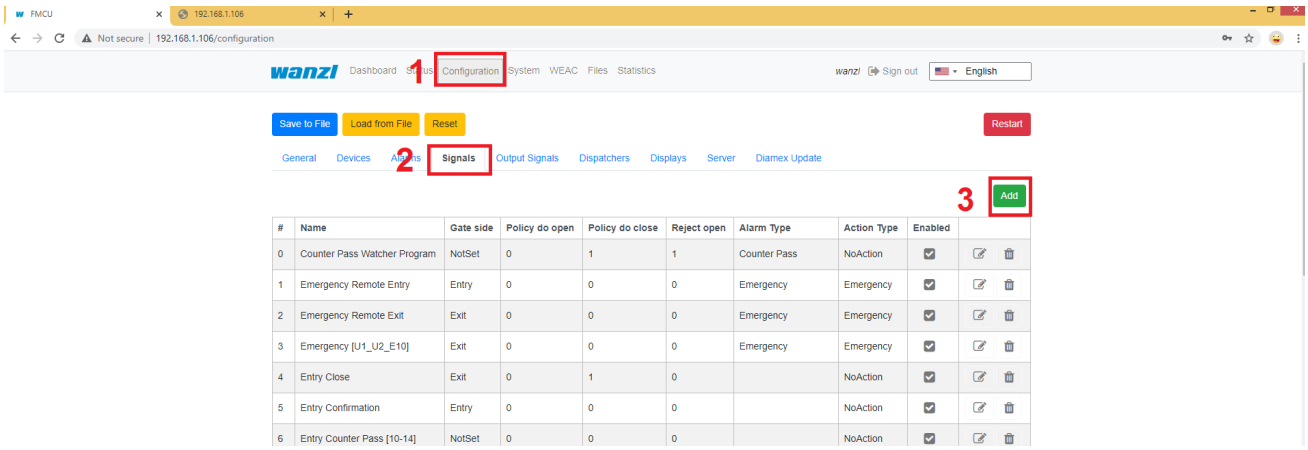


The configuration is saved by clicking the **Save** button.

> **NOTE**
>
> After adding the XOVIS sensor, the **FMCU** must be restarted before proceeding with the configuration.

Add XOVIS monitoring area as alarm signal

Navigate to "Configuration" -> "Signals" and then click on the "Add" button

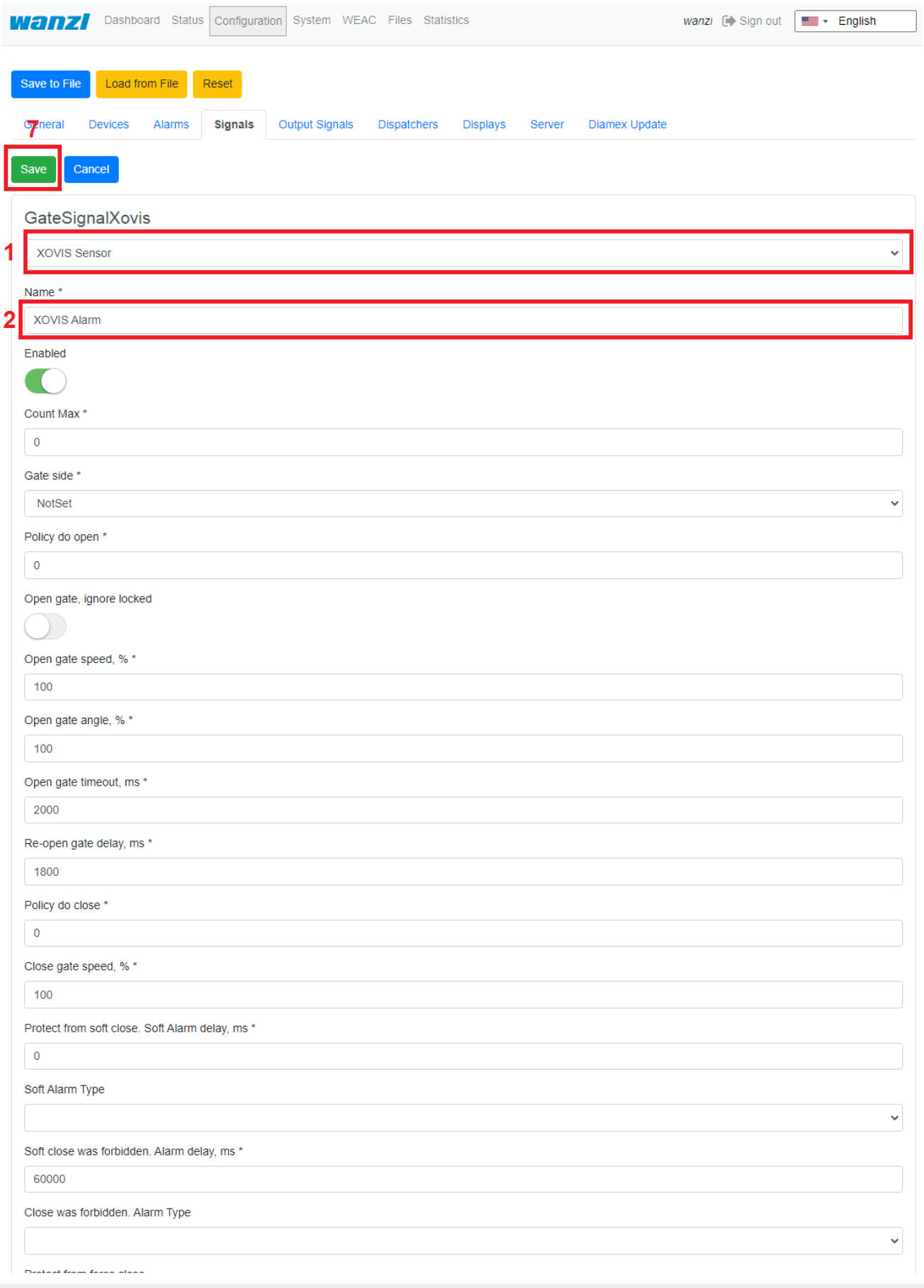


The following fields must be filled in here:

1. Select type "XOVIS Sensor"
2. Specify the name of the signal (e.g. "XOVIS ALARM")
3. Set the minimum number of people in the alarm zone to trigger an alarm (e.g. 2)
4. Select the alert type (e.g. "Unauthorized Access")
5. Determine a list of alarm zones (e.g. "AlarmZone")

6. Select the XOVIS sensor added to.

The configuration is saved by clicking the **Save** button.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Signals
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Dispatchers
Displays
Server
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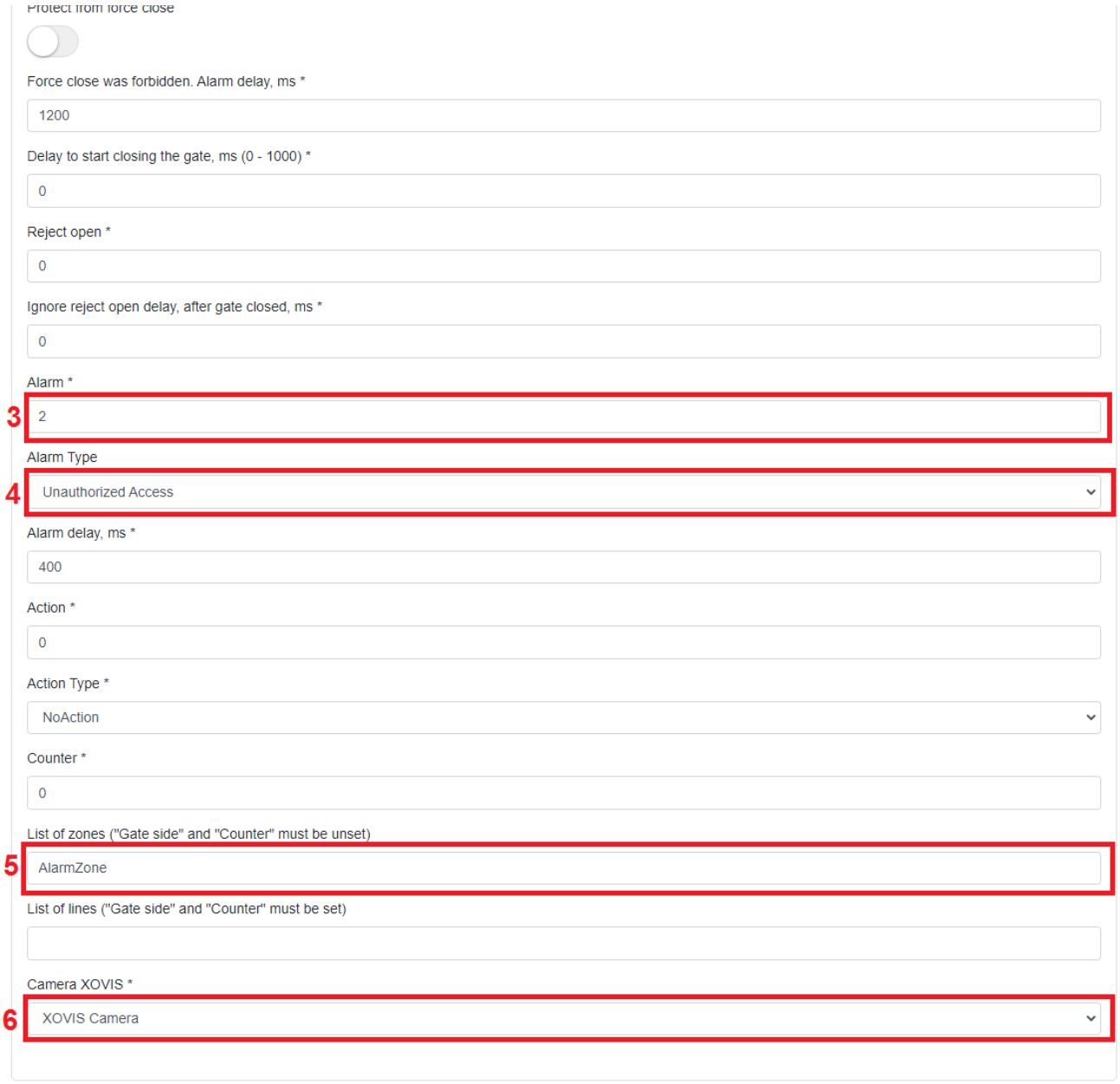
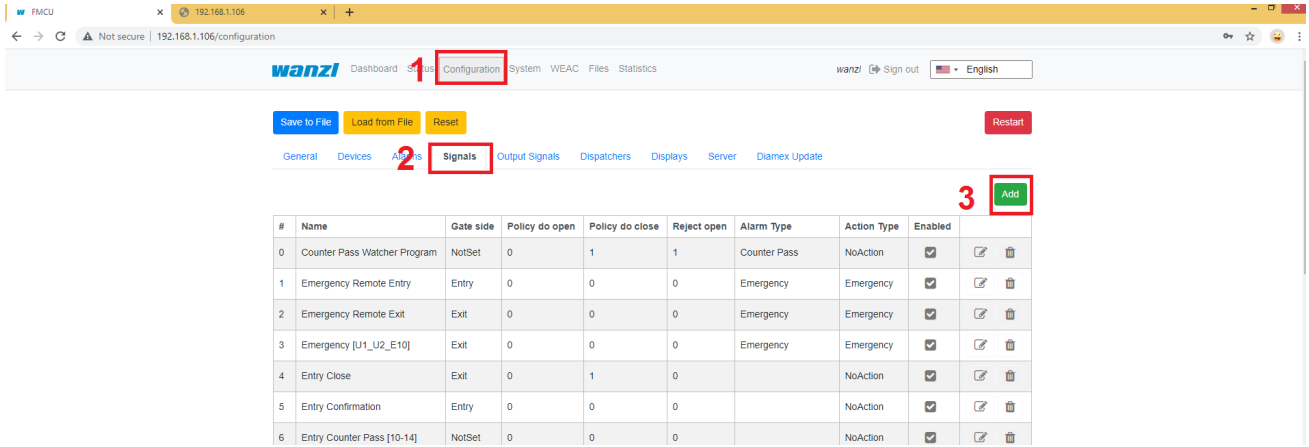
7
Save
Cancel
GateSignalXovis
1
XOVIS Sensor
Name *
2
XOVIS Alarm
Enabled
Count Max *
0
Gate side *
NotSet
Policy do open *
0
Open gate, ignore locked
Open gate speed, % *
100
Open gate angle, % *
100
Open gate timeout, ms *
2000
Re-open gate delay, ms *
1800
Policy do close *
0
Close gate speed, % *
100
Protect from soft close. Soft Alarm delay, ms *
0
Soft Alarm Type
Soft close was forbidden. Alarm delay, ms *
60000
Close was forbidden. Alarm Type



Add XOVIS counter

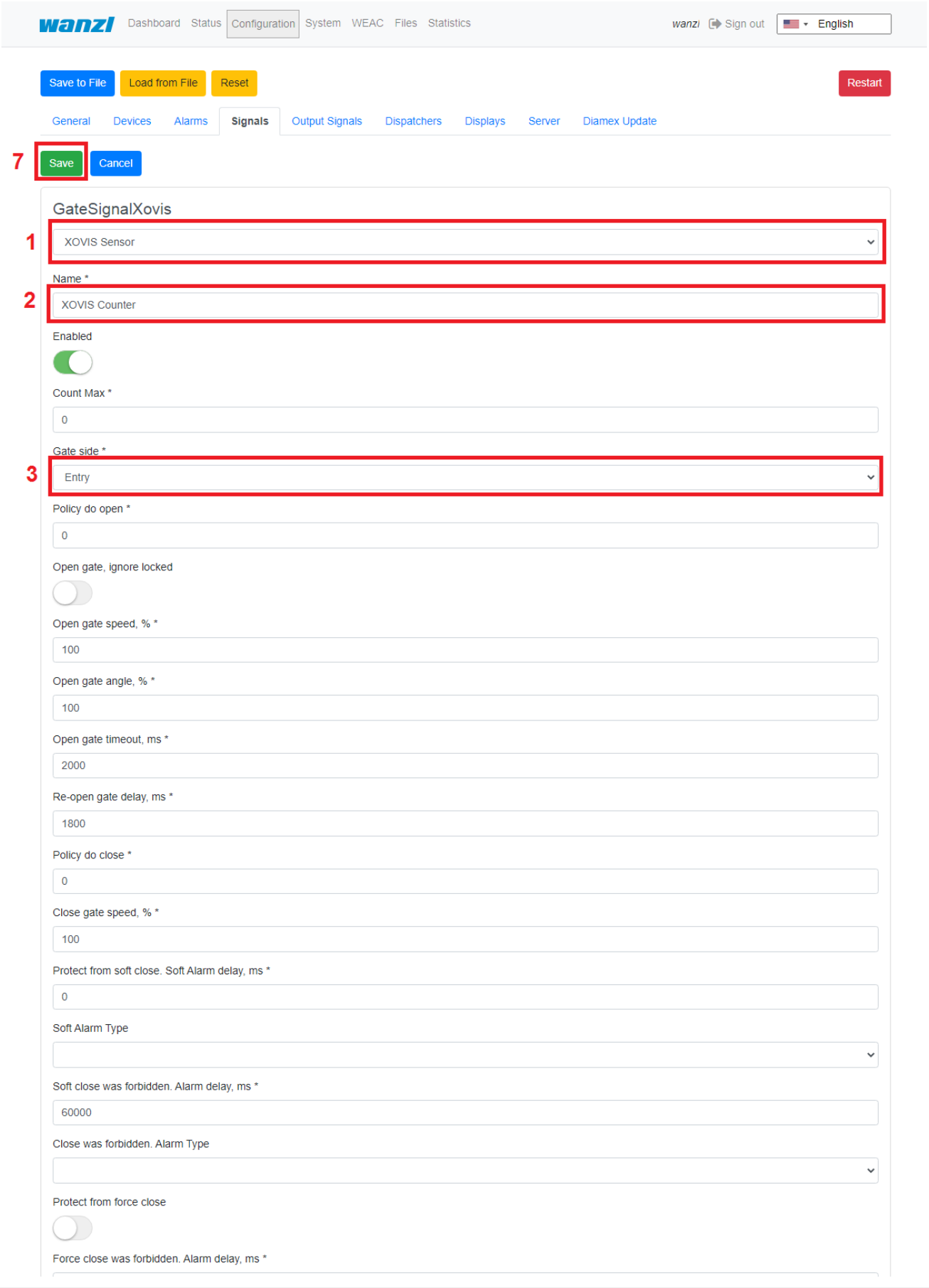
Navigate to "Configuration" -> "Signals" and then click on the "Add" button



The following fields must be filled in here:

1. Select type "XOVIS Sensor".
2. Specify the name of the signal (e.g. "XOVIS Counter")
3. Specify the side of the gate (e.g. "Entrance")
4. Set the value "Counter".
5. Specify a list of lines(e.g. "EntryLine")
6. Select the XOVIS camera that you added earlier.

The configuration is saved by clicking the **Save** button.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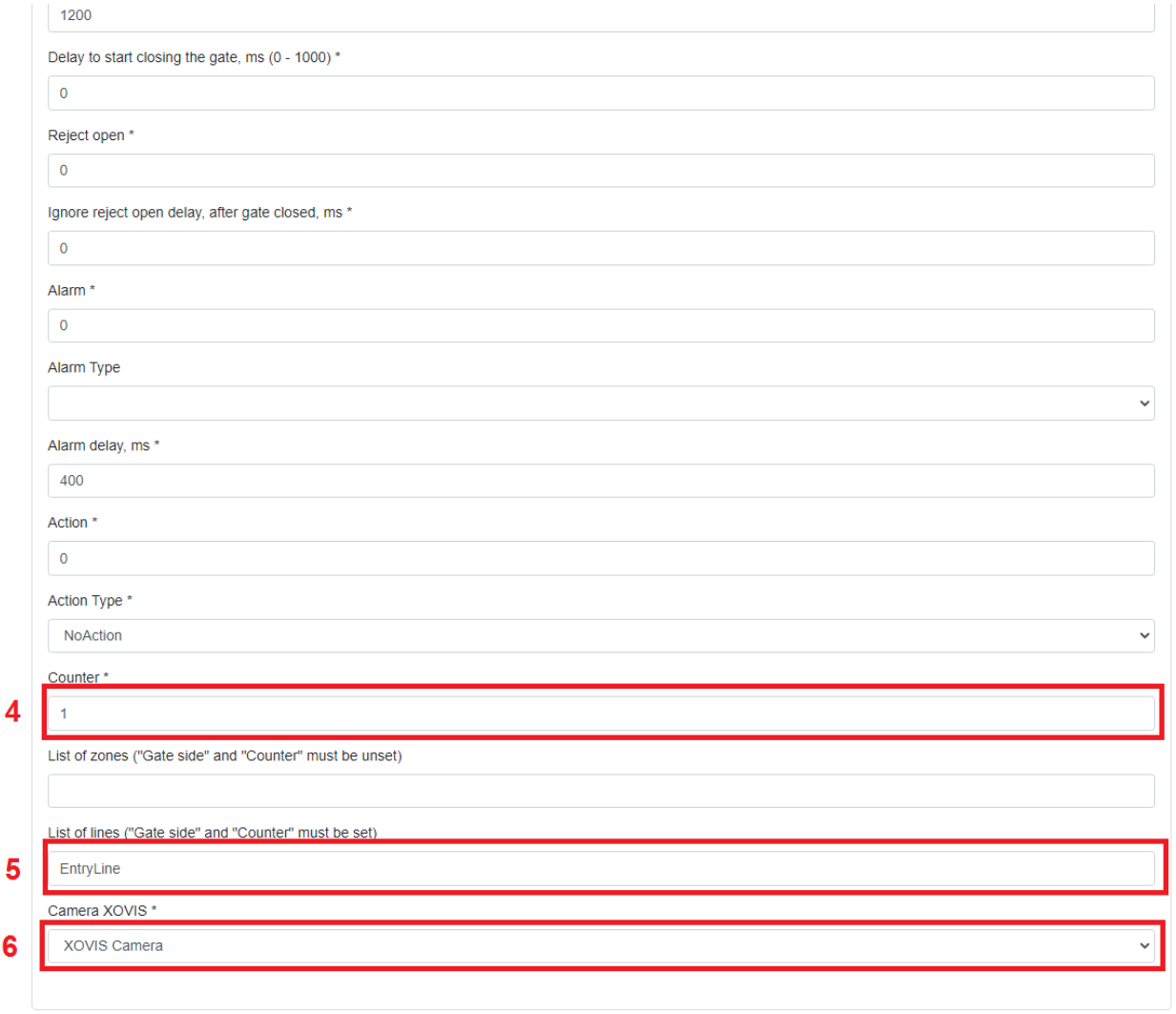
Devices
Alarms
Signals
Output Signals
Dispatchers
Displays
Server
Diamex Update
7
Save
Cancel
GateSignalXovis
1
XOVIS Sensor
Name *
2
XOVIS Counter
Enabled
Count Max *
0
Gate side *
3
Entry
Policy do open *
0
Open gate, ignore locked
Open gate speed, % *
100
Open gate angle, % *
100
Open gate timeout, ms *
2000
Re-open gate delay, ms *
1800
Policy do close *
0
Close gate speed, % *
100
Protect from soft close. Soft Alarm delay, ms *
0
Soft Alarm Type
Soft close was forbidden. Alarm delay, ms *
60000
Close was forbidden. Alarm Type
Protect from force close
Force close was forbidden. Alarm delay, ms *

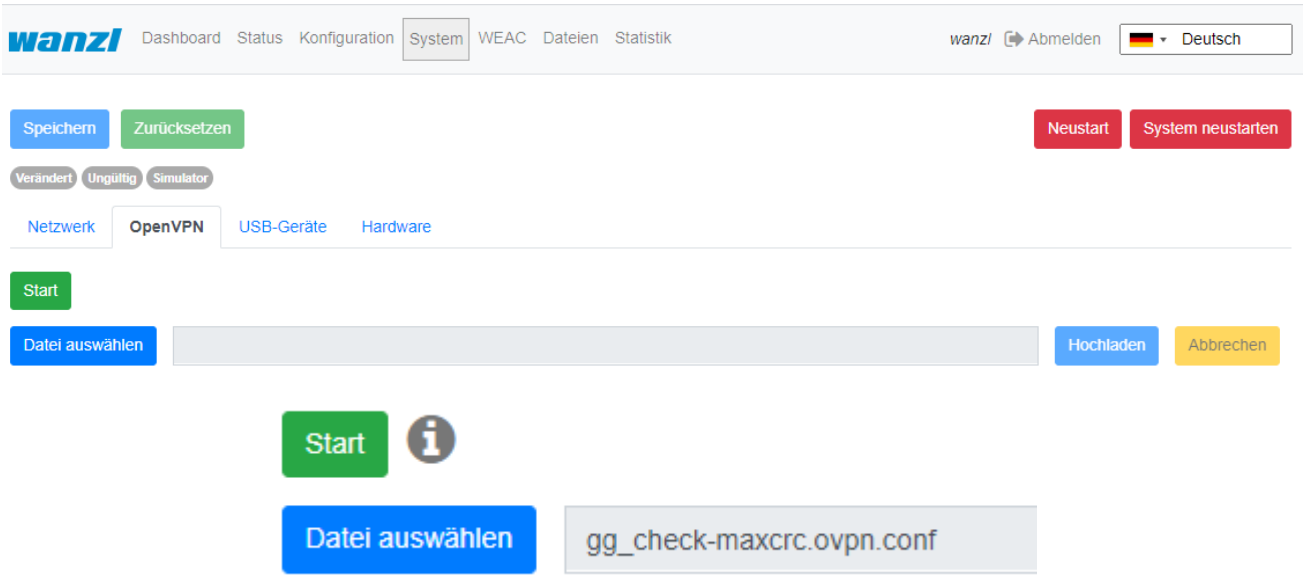


Store VPN key

A VPN key is required to use remote maintenance. This key can be requested from maxcrc support (support@maxcrc.de) by specifying the project name (Configuration->General view).

After the key file (*.opvn.conf) is available, you can import via the System->OpenVPN page. The following steps are necessary for this.

Navigating to the **System-OpenVPN** page.

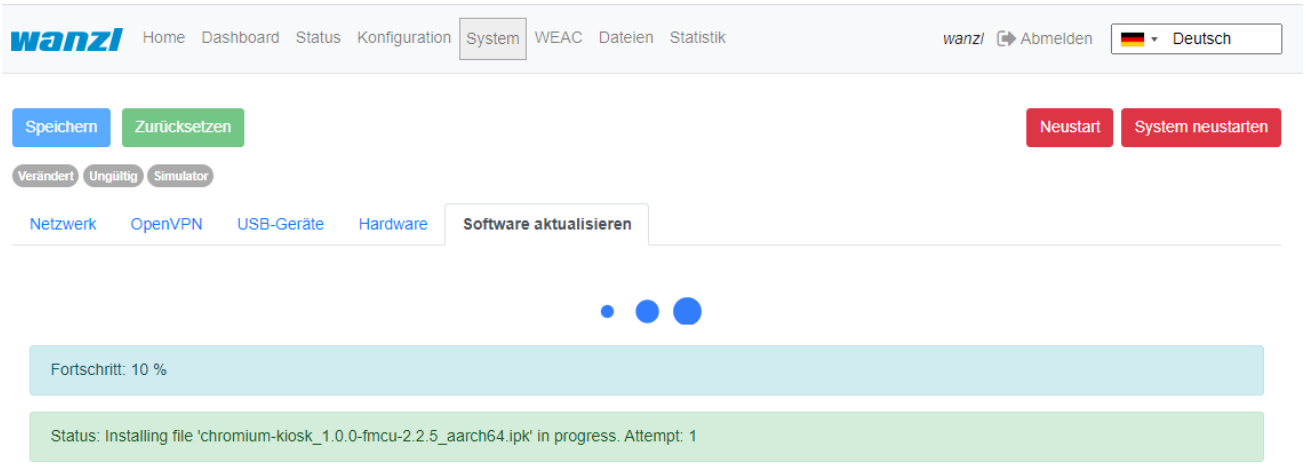


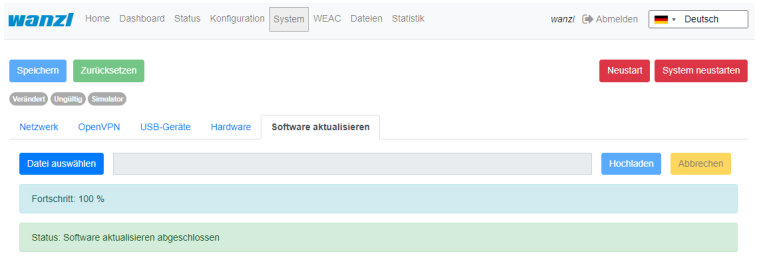
This file is now specified via the **Select file** button in the file selection dialog. Then click on **Upload**. When the process has been successfully completed, an info icon will appear next to the start button. This means the file has been uploaded successfully, the OpenVPN client can now be activated by clicking on **Start**.

If the start was successful, the color changes from green to red and the label from start to stop. The status of the OpenVPN client and the IP address for access in the VPN network for this gate are displayed to the right of the info symbol. You can disable remote access by clicking the **Stop** button.

Update Software

If there is no Internet connection, individual package installations can be carried out using the **System->Update software** menu. You should have a zip archive with the packages to be installed. It must be ensured that no relative paths are used in the archive. Then you can insert the archive into the input line via **Select file** and start the update procedure with **Upload**. The progress of update process is displayed:

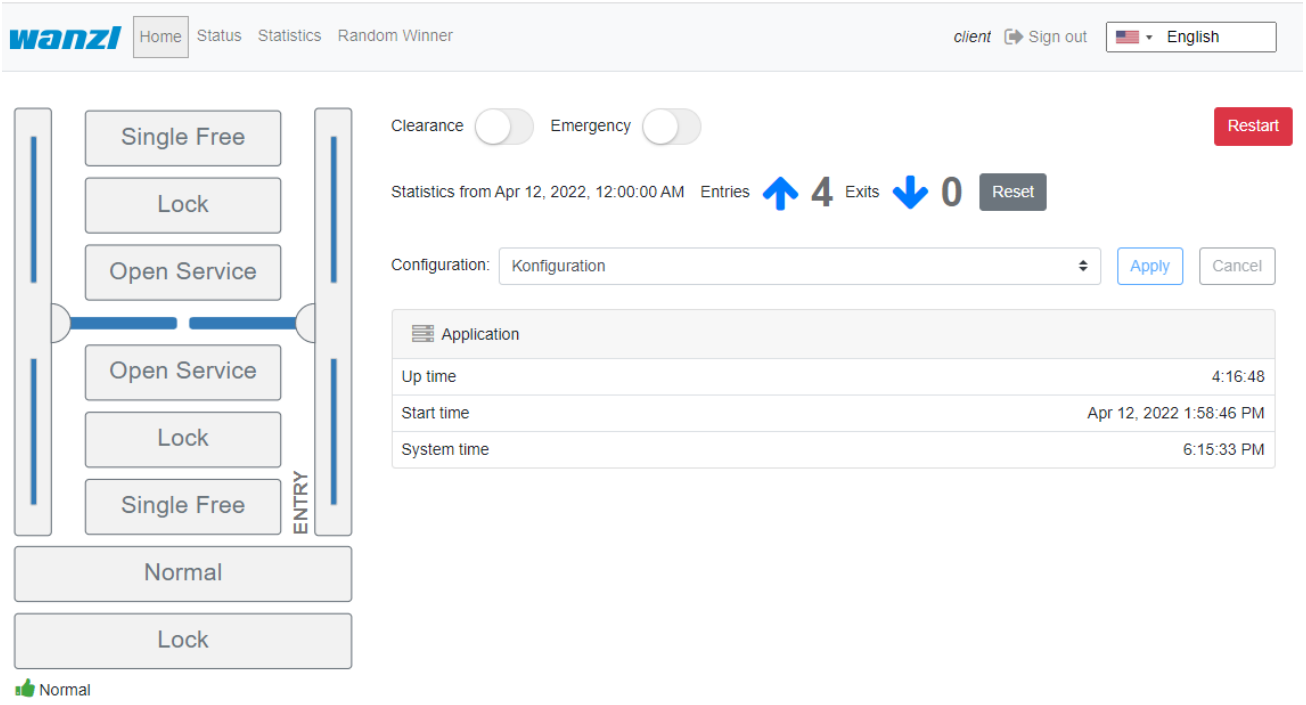




If necessary, the application can be restarted.

Customer Role

When you log in as user *client*, a simplified interface appears with "Home", "Status", "Statistics" configuration menus.



In this view you can administrate the access control, but you cannot make any configuration adjustments. The current statistics are displayed directly on the interface, a complete overview of the accesses can be viewed in the **Statistics** tab and exported if required. The current status of the individual access control components can be viewed in the **Status** tab. The **Clearance** option disables all alarms to make the cleaning staff's job easier. The **Emergency** option supports the user in opening the access control immediately.

Standard Assignment Connection Board

Unit 1

Port	Function	Description
LSU (E1)	LS Middle *Center Light barrier*	NO *Normally Open Contact*
LSV (E2)	LS Entry *Photocell Input*	NO *normally open contact*
E3	Open Entry *Single free entry direction Impuls 0,1-1,0 Sek.*	NO *Normally Open Contact*
E4	Open Exit *Single free exit direction Impuls 0,1-1,0 Sek.*	NO *normally open contact*
LSH (E5)	NA *not connected*	
E6	State bit 0 *Status bit 0*	NO *normally open contact*
E7	State bit 1 *Status bit 1*	NO *normally open contact*
E8	Fire Alarm *fire alarm system (BMA)*	NC *normally closed contact*
E9	Open Entry 70% *Einzelfrei 70% Input Direction Impuls 0,1-1,0 Sek.*	NO *normally open contact*
E10	Emergency Open Button *emergency button*	NC *normally closed contact*

A8	Entry Confirmation *Confirmation of passage entry direction Impuls 0,5 Sek.*	+12 VDC
A9	Exit Confirmation *Confirmation of passage exit direction Impuls 0,5 Sek.*	+12 VDC

Unit 2

Port	Function	Description
LSU (E1)	NA *not connected*	
LSV (E2)	NA *not connected*	
E3	Open Entry *Single free entry direction Impuls 0,1-1,0 Sek.*	NO *normally open contact*
E4	Open Exit *Single free exit direction Impuls 0,1-1,0 Sek.*	NO *normally open contact*
LSH (E5)	LS Exit *Photocell exit*	NO *normally open contact*
E6	State bit 2 *Status bit 2*	NO *normally open contact*
E7	State bit 3 *status bit 3*	NO *normally open contact*
E8	Fire Alarm *fire alarm system (BMA)*	NC *normally closed contact*
E9	Open Exit 70% *single free 70% exit direction Impuls 0,1-1,0 Sek.*	NO *normally open contact*
E10	Emergency Open Button *emergency button*	NC *normally closed contact*

A8	Alarm Impuls *Alarm Impuls 0,5 Sek.*	+12 VDC
A9	Gate State Error *error condition Durchgang*	+12 VDC

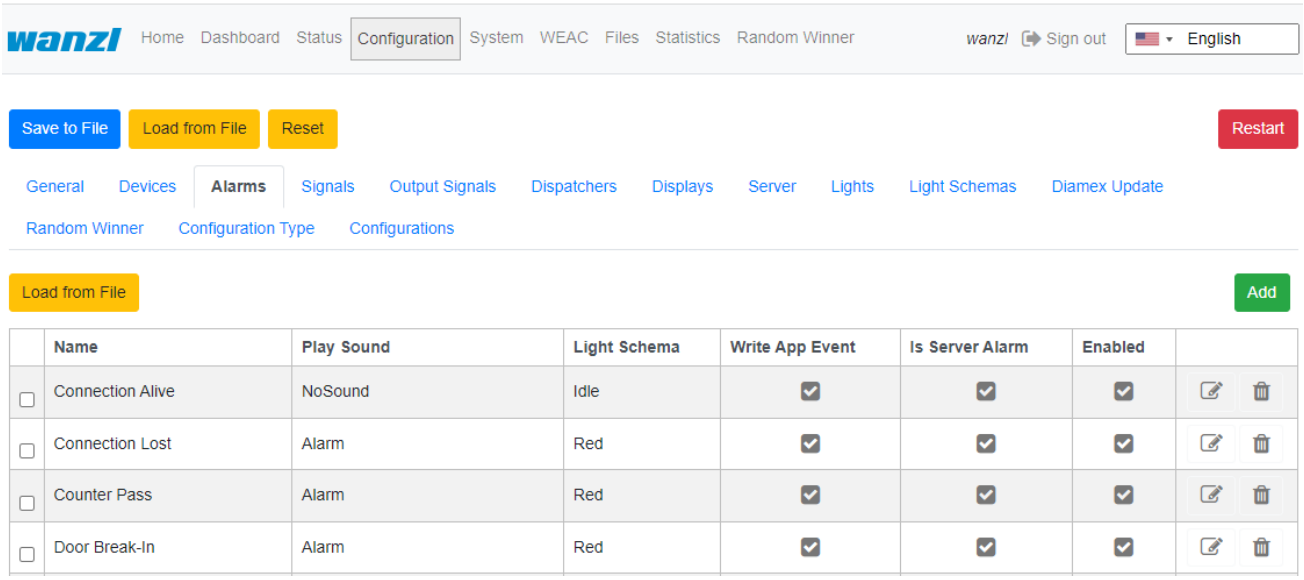
Status Bits

Status	Unit 1 E6 Bit 0	Unit 1 E7 Bit 1	Unit 2 E6 Bit 2	Unit 2 E7 Bit 3
Normal *Normal*	**0**	**0**	**0**	**0**
Free Entry *Entrance permanently free*	**1**	**0**	**0**	**0**
Lock Entry *entrance blocked*	**0**	**1**	**0**	**0**
Service Entry *Permanently open entry direction*	**1**	**1**	**0**	**0**
Free Exit *Exit permanently free*	**0**	**0**	**1**	**0**
Free Entry/Exit *Input/Output permanently free(**Not implemented**)*	**1**	**0**	**1**	**0**
Lock Entry / Free Exit *Entrance blocked / exit permanently free*	**0**	**1**	**1**	**0**
tbd	**1**	**1**	**1**	**0**
Lock Exit *exit blocked*	**0**	**0**	**0**	**1**

Free Entry / Lock Exit *Entrance permanently free / exit blocked*	**1**	**0**	**0**	**1**
Lock *Gesperrt*	**0**	**1**	**0**	**1**
tbd	**1**	**1**	**0**	**1**
Service Exit *Permanently open exit direction*	**0**	**0**	**1**	**1**
tbd	**1**	**0**	**1**	**1**
tbd	**0**	**1**	**1**	**1**
Self Test *self test*	**1**	**1**	**1**	**1**

Alarms Definition

An alarm is triggered as a follow-up action from signals or other sources (e.g. devices). Navigate to "Configuration" -> "Alarms".



To create the alarm click on the "Add" button:

An alarm has several general characteristics: Name, Enabled Status, Priority, Sounds settings, Light settings, etc.

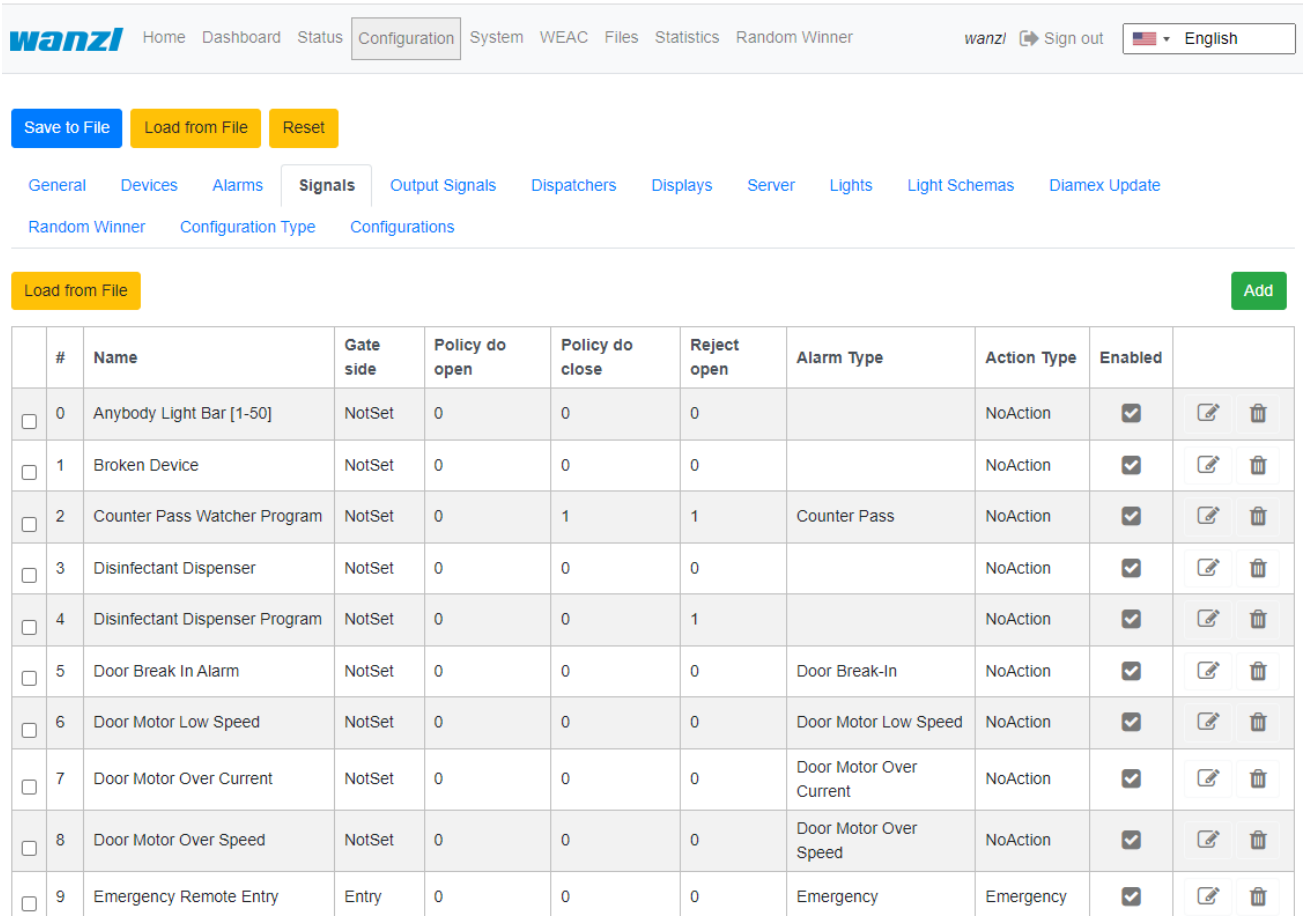
In the table below there are descriptions of existing alarms.

Definition	Description	Status
Connection Alive	monitors connection to external application	on/off
Connection Lost	monitors connection to external application	on/off
Counter Pass	is set by anti-rotation protection is activated	on/off
Door Break-In	Door is forcibly moved when closed	on/off
Emergency	is set if the signals on unit 1 E8 or unit 2 E8 are not active (opener).	on/off
Fire Alarm	is set if the signals on unit 1 E10 or unit 2 E10 are not active (opener).	on/off
Invalid Ticket	is set if ticket validation fails	Impuls
	is set when an object is in the	

Motionless Object	gate area for more than a defined period of time and closing is prevented by a timeout.	on/off
No Alarm	is set if no alarm is defined for signals	on/off
Proceed Alarm	analogous to Motionless Object with a different time span and other actions without light indication	on/off
Server Alarm	is triggered in the FMCU server	on/off
Tailgating	is set if more than one person is in the gate area	on/off
Unauthorized Access	is set if a person is in the gate area when the gate is closed	on/off
Valid Ticket	is set if the ticket validation was successful (trigger beep)	Impuls

Signals

The information in this section is based on FMCU software v2.3.7 and WEAC version 32.14.

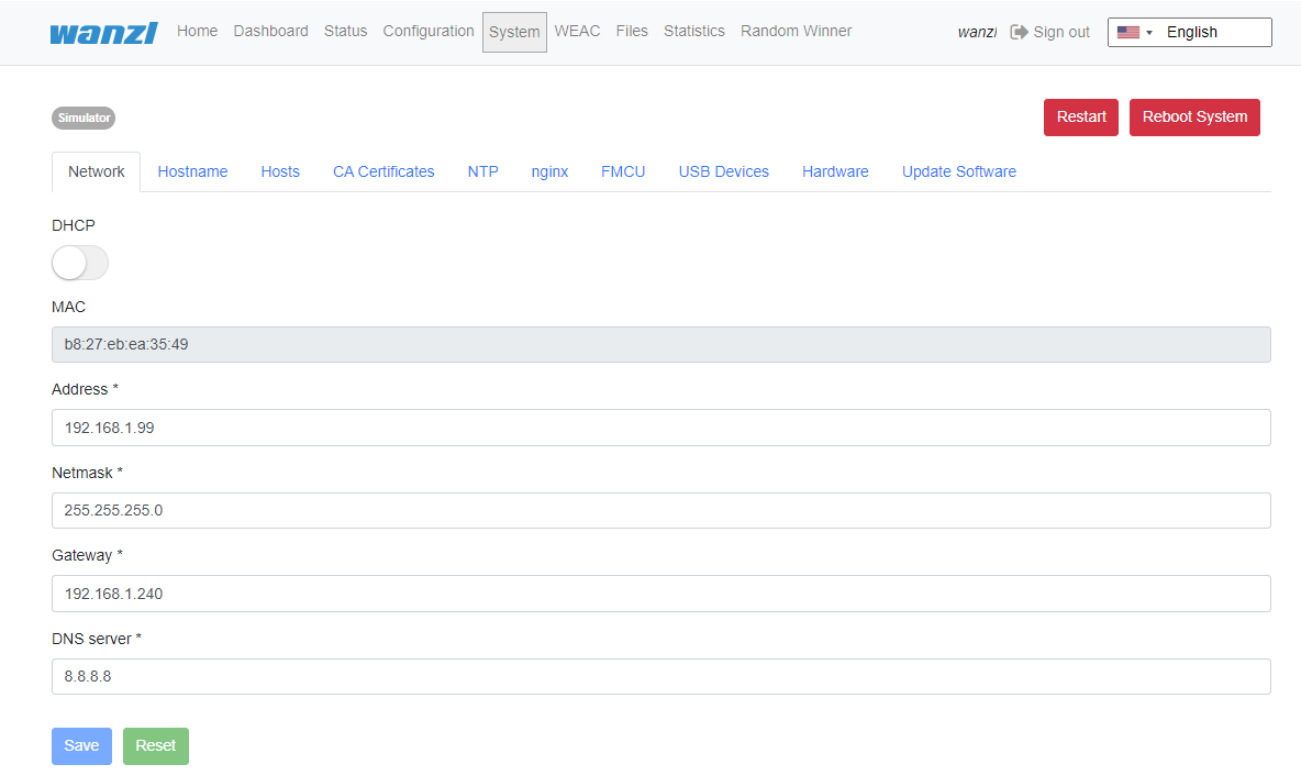


	#	Name	Gate side	Policy do open	Policy do close	Reject open	Alarm Type	Action Type	Enabled	
☐	0	Anybody Light Bar [1-50]	NotSet	0	0	0		NoAction	☑	✎ 🗑
☐	1	Broken Device	NotSet	0	0	0		NoAction	☑	✎ 🗑
☐	2	Counter Pass Watcher Program	NotSet	0	1	1	Counter Pass	NoAction	☑	✎ 🗑
☐	3	Disinfectant Dispenser	NotSet	0	0	0		NoAction	☑	✎ 🗑
☐	4	Disinfectant Dispenser Program	NotSet	0	0	1		NoAction	☑	✎ 🗑
☐	5	Door Break In Alarm	NotSet	0	0	0	Door Break-In	NoAction	☑	✎ 🗑
☐	6	Door Motor Low Speed	NotSet	0	0	0	Door Motor Low Speed	NoAction	☑	✎ 🗑
☐	7	Door Motor Over Current	NotSet	0	0	0	Door Motor Over Current	NoAction	☑	✎ 🗑
☐	8	Door Motor Over Speed	NotSet	0	0	0	Door Motor Over Speed	NoAction	☑	✎ 🗑
☐	9	Emergency Remote Entry	Entry	0	0	0	Emergency	Emergency	☑	✎ 🗑

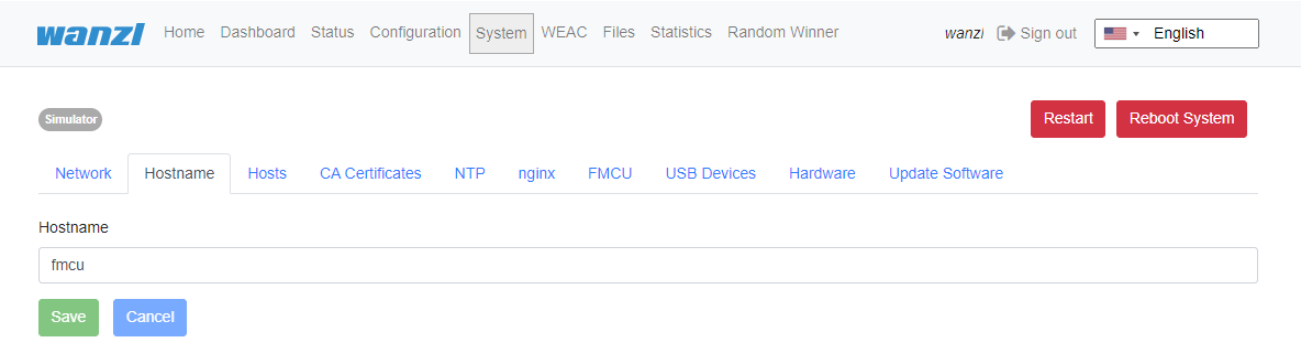
System

The information in this section is based on FMCU software v2.6.14.

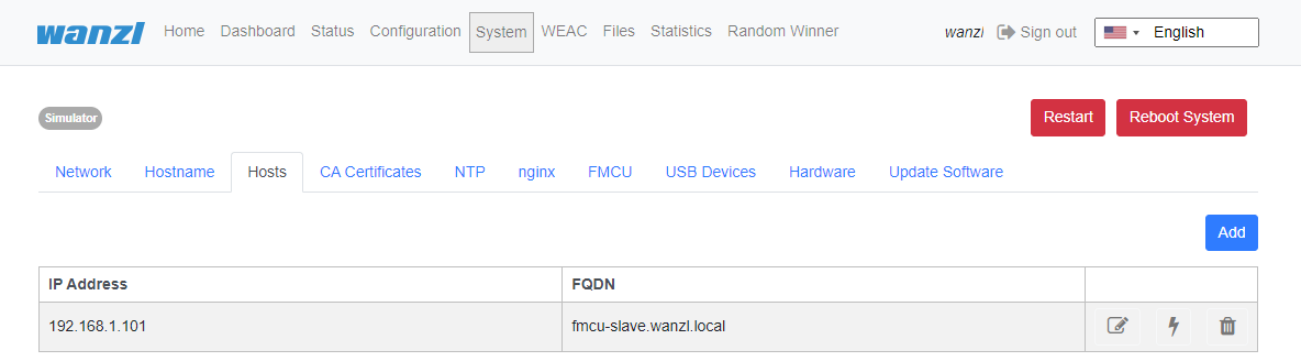
Network



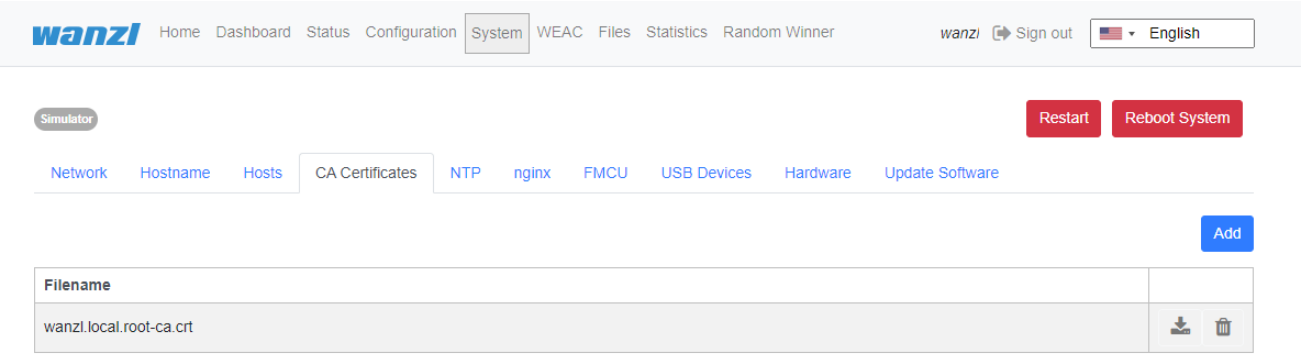
Hostname



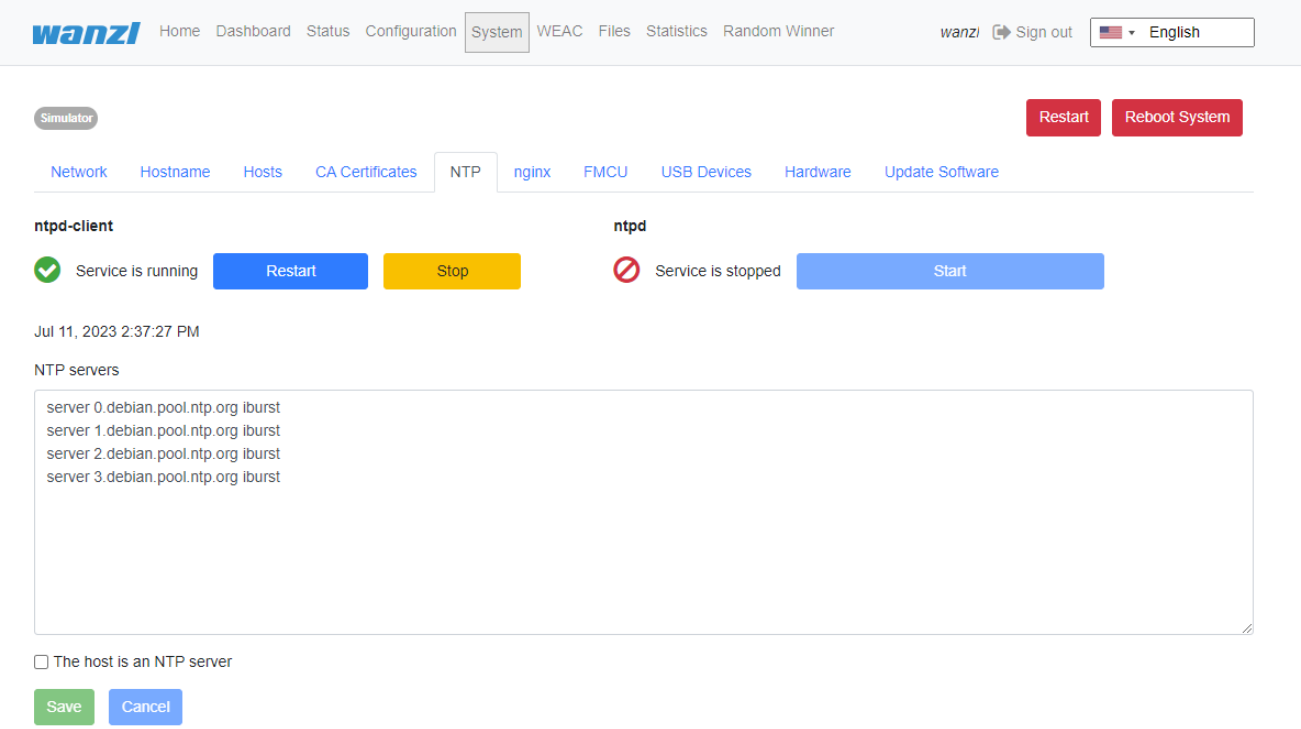
Hosts



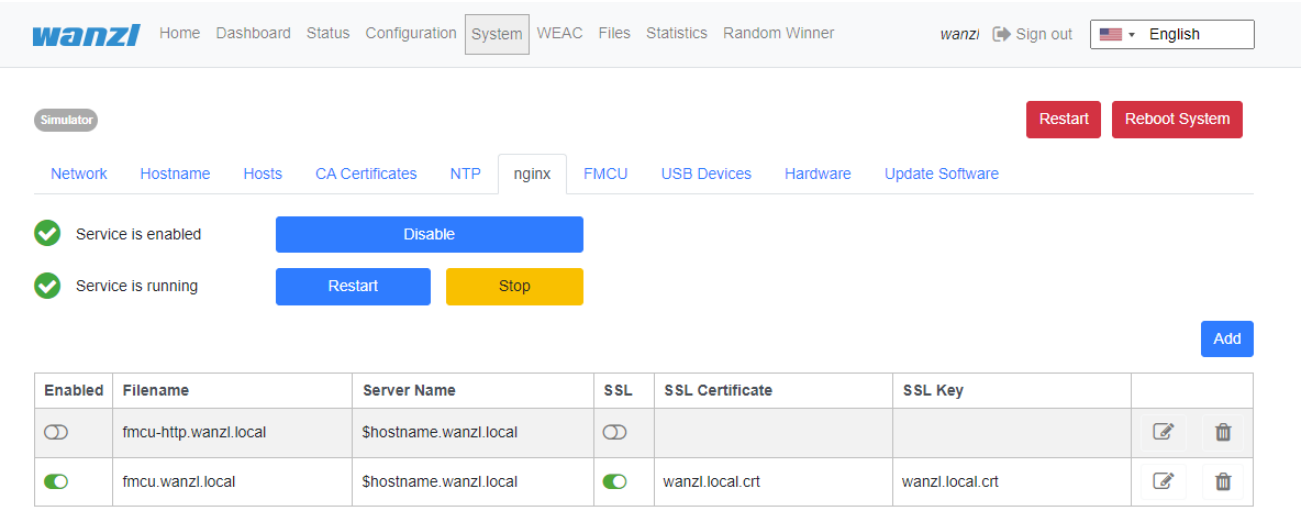
CA Certificates



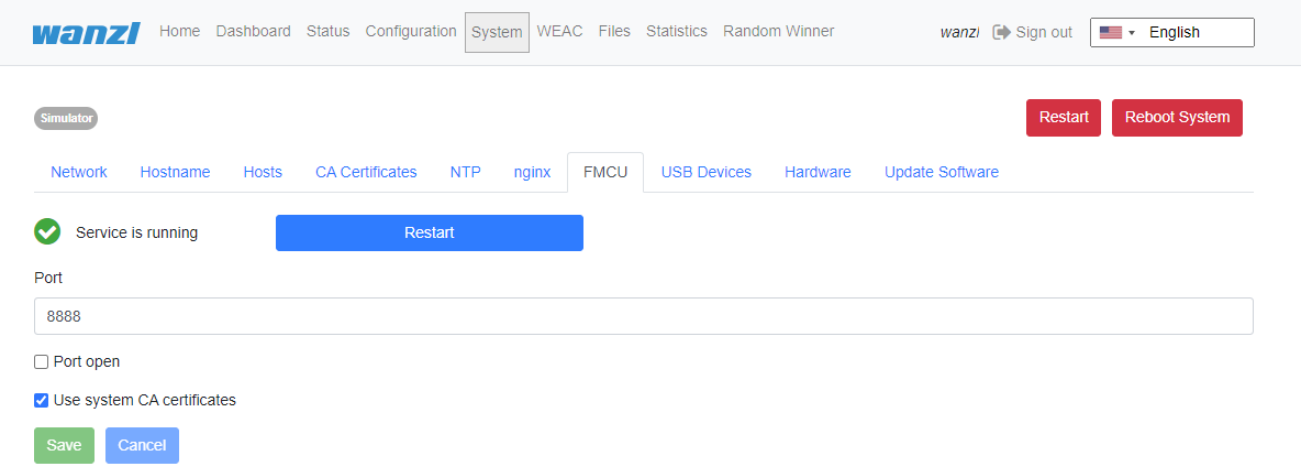
NTP


wanzl
Home
Dashboard
Status
Configuration
System
WEAC
Files
Statistics
Random Winner
wanzl
Sign out
English
Simulator
Restart
Reboot System
Network
Hostname
Hosts
CA Certificates
NTP
nginx
FMCU
USB Devices
Hardware
Update Software
ntpd-client
Service is running
Restart
Stop
ntpd
Service is stopped
Start
Jul 11, 2023 2:37:27 PM
NTP servers
server 0.debian.pool.ntp.org iburst
server 1.debian.pool.ntp.org iburst
server 2.debian.pool.ntp.org iburst
server 3.debian.pool.ntp.org iburst
The host is an NTP server
Save
Cancel

nginx

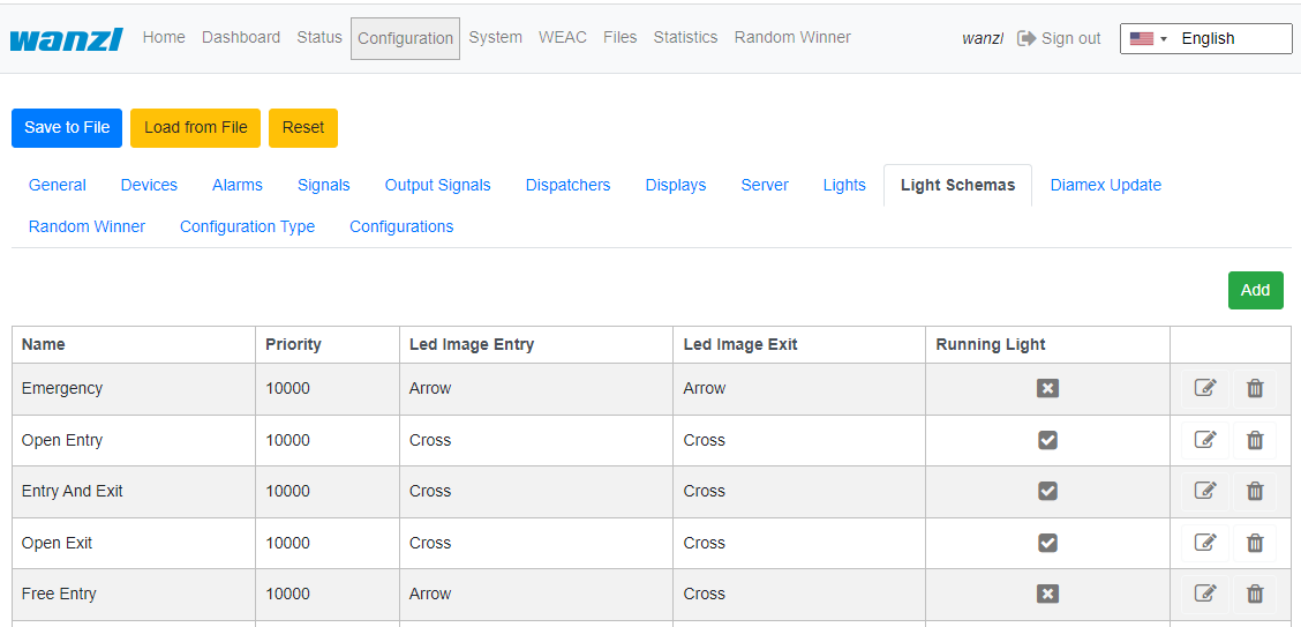

wanzl
Home
Dashboard
Status
Configuration
System
WEAC
Files
Statistics
Random Winner
wanzl
Sign out
English
Simulator
Restart
Reboot System
Network
Hostname
Hosts
CA Certificates
NTP
nginx
FMCU
USB Devices
Hardware
Update Software
Service is enabled
Disable
Service is running
Restart
Stop
Add
Enabled
Filename
Server Name
SSL
SSL Certificate
SSL Key
fmcu-http.wanzl.local
$hostname.wanzl.local
fmcu.wanzl.local
$hostname.wanzl.local
wanzl.local.crt
wanzl.local.crt

FMCU



Light Schemas

To navigate the section click "Configuration" -> "Light Schemas". Here you can add and/or customize named color schemes.



Each schema describes the colors and behaviour of FMCU lights elements like enter and exit zones and the door. Existing light schema you can use in settings of **Gates** and **Alarms**.

Click Add to create light schema or click "pen" in the table to edit existing schema.

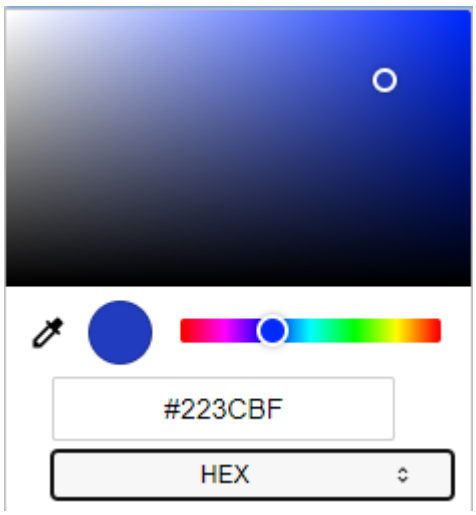
Each light schema is described by the fields below

Field	Description
Name	Name of light schema
Priority	Priority of using light schema if there is competition situation. Less value means more priority
Color Entry On	Color of the gate entry zone during "On" time period
Color Exit On	Color of the gate exit zone during "On" time period
Color Door On	Color of the doors during "On" time period
Light Schema On, ms *	Length of "On" time period in ms
Light Schema Off, ms *	Length of "Off" time period in ms
Color Entry Off	Color of the gate entry zone during "Off" time period
Color Exit Off	Color of the gate exit zone during "Off" time period
Color Door Off	Color of the doors during "Off" time period
Led Image Entry *	Selected image of the gate entry zone (Arrow, Cross, Empty)
Led Image Exit *	Selected image of the gate exit zone (Arrow, Cross, Empty)

Running Light	Using "runing light" for the light schema (option)

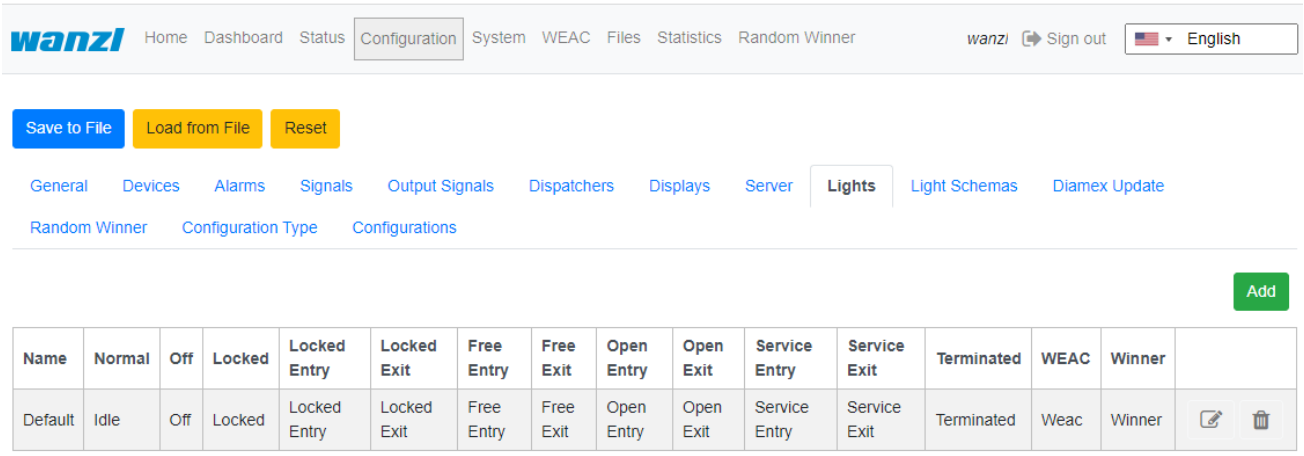
Click on any field for color to edit color of selected gate element

You can select the color space (RGB, HSL, HEX) to set the required color



Lights

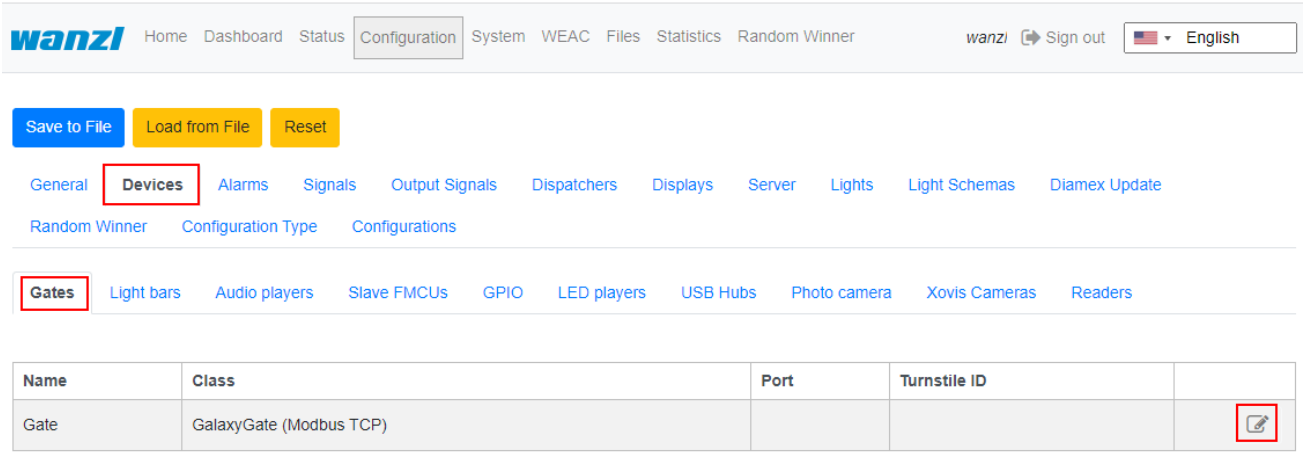
To navigate the section click "Configuration" -> "Lights". Here you can add and/or customize light configurations for different gate's modes.



Each configuration has its own name. The image above shows the default light configuration. Click *Add* to create configuration, or "pen" to edit existing one.

For each mode select existing light schema.

Then you can use the light configuration in "Devices" -> "Gates" settings.



Press "pen" to edit gate settings, and select light configuration.

Technical Background

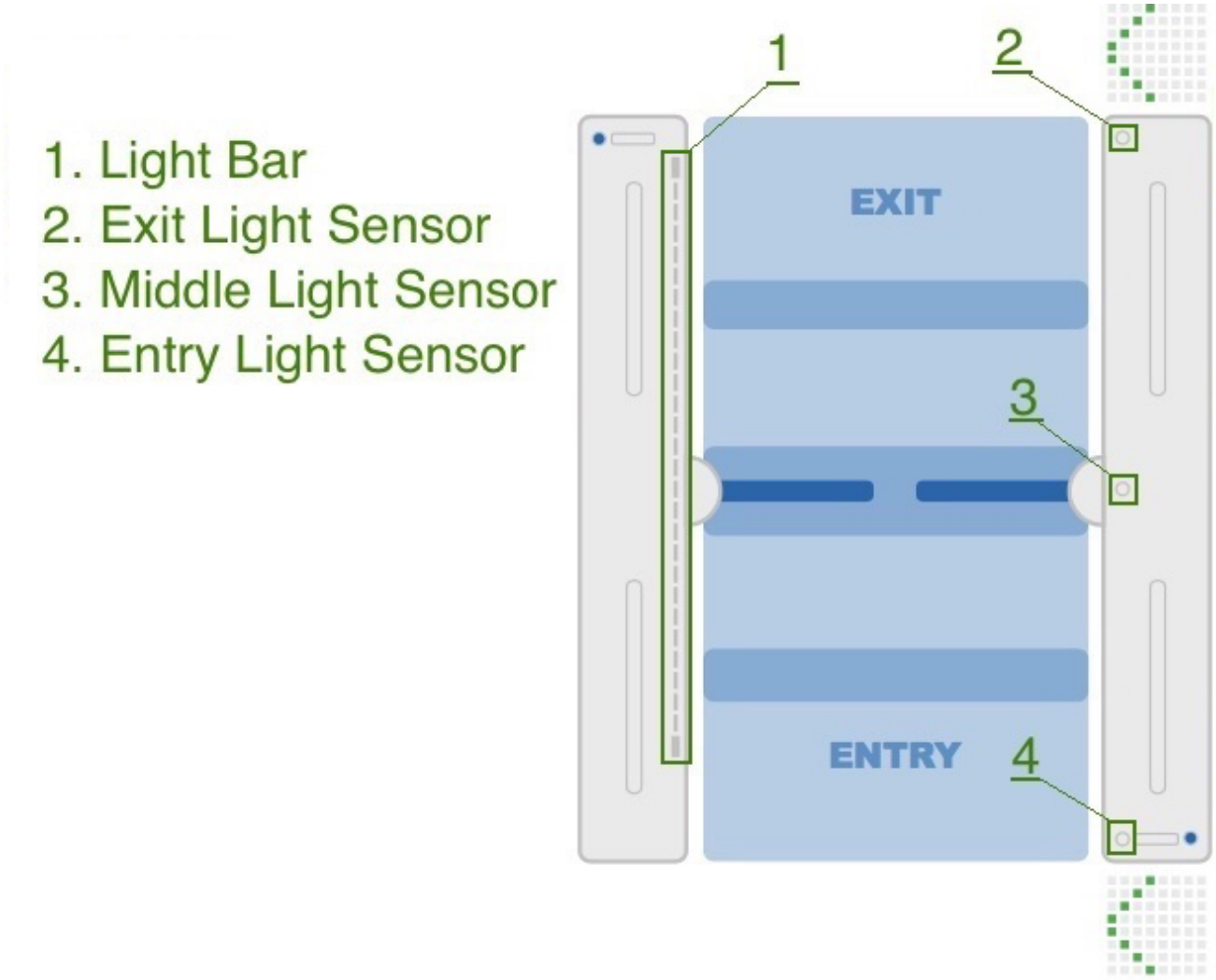
The **FMCU** software is based on a customized UNIX operating system, which has been produced using the Yocto Project. Only the required services are activated in the operating system. The optimal support packages for the CPU type are taken into account when creating the operating system. These so-called **B**oard **S**upport **P**ackages (BSP) are provided by the hardware manufacturers and allow optimal and efficient utilization of the hardware resources.

Functions

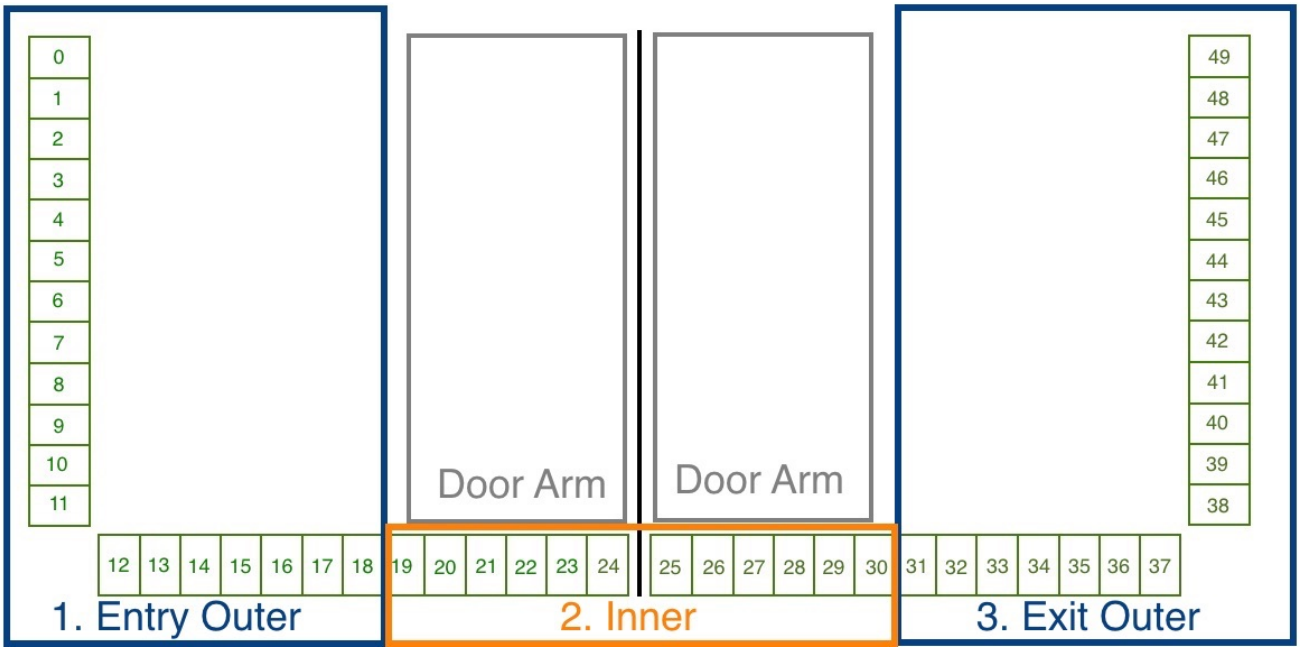
In principle, the functions are mapped via the signal processing. The signals are generated by different sources including:

- Light bar
- Light sensor
- Ceiling sensor
- Other

The location of the sensors is shown in the figure below. In each half of the frame there is a so-called "inner zone" and an "outer zone". When passing through an access control, a signal flow diagram is generated, which is used to map the following functions.



The light bar serves as a source for several signals and is also divided into different areas.



The following signals are installed in the standard configuration.

Signal Name	Frame Half
Entry Confirmation	Entry
Entry Gate Sensor [U1_E2]	Entry
Entry Outer LightBar	Entry
Exit Inner LightBar	Entry
Free Entry [1000]	Entry
Lock Entry [0100]	Entry
Open Entry [U1_U2_E3]	Entry
Open Entry 70% [U1_E9]	Entry
Remote Open Entry	Entry
Service Entry [1100]	Entry
Emergency Remote	Exit
Emergency [U1_U2_E8]	Exit
Entry Inner LightBar	Exit
Exit Confirmation	Exit
Exit Gate Sensor [U2_E5]	Exit
Exit Outer LightBar	Exit
Free Exit [0010]	Exit
Lock Exit [0001]	Exit
Open Exit [U1_U2_E4]	Exit
Open Exit 70% [U2_E9]	Exit

Remote Open Exit	Exit
Service Exit [0011]	Exit

Closing-run at reduced Speed

This function applies to signals that have the property **CloseGate > 0**. For the affected signals, the value **Close gate speed, % *** must be defined with a value between 10 and 100%. It is therefore possible to define appropriate closing speeds for different passage scenarios. The default value is set to 100%. In the standard configuration, the following signals meet this requirement.

Signal	Parameter	Value
Tailgating watcher	Close gate speed, % *	100%
Entry Gate Sensor [U1_E2]	Close gate speed, % *	100%
Exit Gate Sensor [U2_E5]	Close gate speed, % *	100%
Entry Outer LightBar	Close gate speed, % *	100%
Exit Outer LightBar Exit	Close gate speed, % *	100%

Passage Confirmation

This function sets an impulse with an adjustable duration in the connection board for connection **A8**.

Suitcase Trolley Detection

This function is active when the listed parameters are set for the following signals. It means that a person with a suitcase being pulled behind them can pass through prematurely closing swing doors without being disturbed.

Signal	Parameter	Value
Middle Gate Sensor [U1_E1]	Protect from force close	true
Inner LightBar	Protect from force close	true

Multiple Opening

This function is only valid if a reader has been set up for the entry direction. It means that several people can pass through the entrance in a row without the swing door being closed in the meantime. Each person must present a ticket at the card reader at the entrance. The swing doors only remain open if the validation is successful. This function is active when the listed parameters are set for the following signals.

Signal	Parameter	Value
Middle Gate Sensor [U1_E1]	Protect from force close	true
Inner LightBar	Protect from force close	true
Entry Outer LightBar	Protect from force close	true
Entry Gate Sensor [U1_E2]	Protect from force close	true

Tailgating watcher	Activated	false

Tips for Working

If you have lost the overview when configuring the signals, you can use the function

Reset to Default

restore a defined initial state.

NOTE

If you use the "Rest to Default" function, the current settings will be lost. If necessary, you can export the current configuration before this step.

Verwandte Themen

- Galaxy Gate Bedienungsanleitung
- Beschreibung zentrales Dashboard
- Galaxy Gate Inbetriebnahme
- Applikationsserver Zutrittskontrollen
- Zutrittskontrollen Checkliste IT Infrastruktur