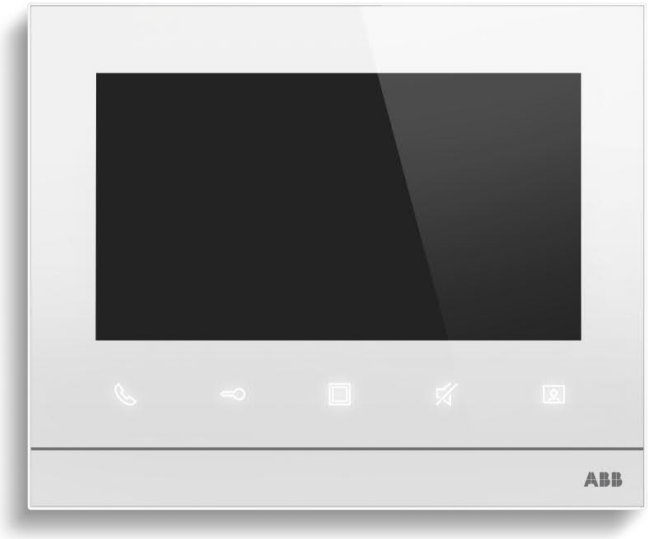
2TMD041800D0026 | 30.04.2019

Product manual

ABB-Welcome

M2238.-. Video indoor station 7

M2238.-.-02 Video indoor station 7



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1 Notes on the instruction manual

Please read through this manual carefully and observe the information it contains. This will assist you in preventing injuries and damage to property, and ensure both reliable operation and a long service life for the device.

Please keep this manual in a safe place. If you pass the device on, also pass on this manual along with it. ABB accepts no liability for any failure to observe the instructions in this manual.

2 Safety

Warning

Electric voltage!

Dangerous currents flow through the body when coming into direct or indirect contact with live components.

This can result in electric shock, burns or even death.

– Disconnect the mains power supply prior to installation and/or disassembly!
– Permit work on the 100-240 V supply system to be performed only by specialist staff!

3 Intended use

This device is a central control panel of the ABB-Welcome system and operates exclusively with components from this system. The device must only be installed in dry indoor rooms.

SD card

This indoor station supports the following SD card:

- Type: Micro SDHC
- Capacity: 4...32 G
- Speed: Class10
- File system: FAT32
- Please use a SD card complying with SDHC standard, some SD cards may not perform correctly. It is recommended to use SanDisk, Kingston, Transcend SDHC cards, which are fully tested and verified.
- Do not remove SD card or reboot indoor station while recording or copying images onto the SD card, otherwise this SD card may fail to preform when recording or playing images.
- ABB is no responsible for the performance of an SDHC card.

4 Environment

Consider the protection of the environment!

Used electric and electronic devices must not be disposed of with household waste.

– The device contains valuable raw materials that can be recycled. Therefore, dispose of the device at the appropriate collecting facility.

4.1 ABB devices

All packaging materials and devices from ABB bear the markings and test seals for proper disposal. Always dispose of the packing materials and electric devices and their components via an authorized collection facility or disposal company.

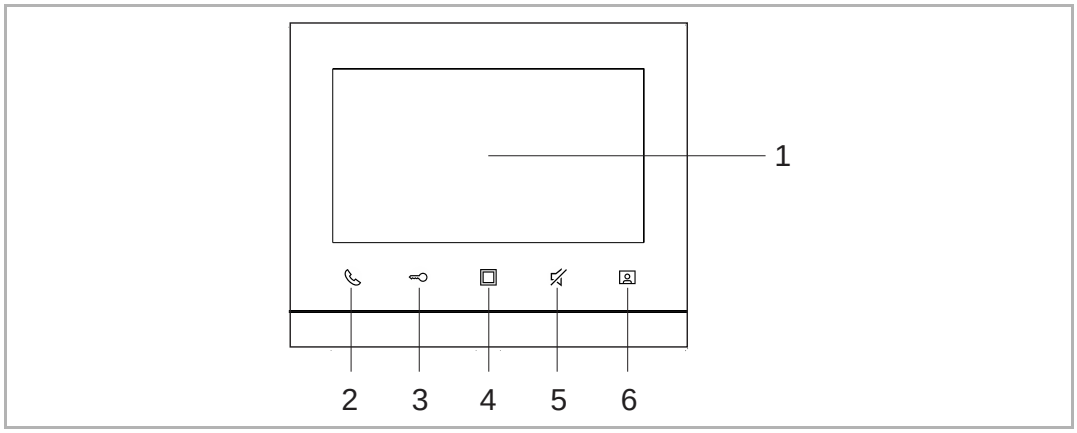
ABB products meet the legal requirements, in particular the laws governing electronic and electrical devices and the REACH ordinance.

(EU-Directive 2012/19/EU WEEE and 2011/65/EU RoHS)

(EU-REACH ordinance and law for the implementation of the ordinance (EG) No.1907/2006)

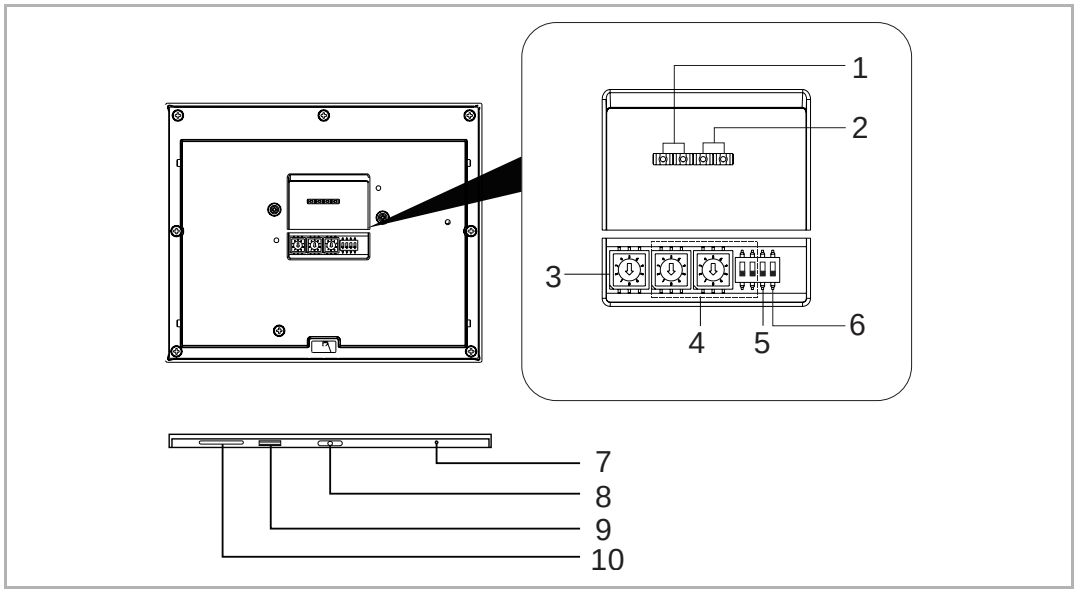
5 Product description

5.1 Control elements



No.	Function
1	**Touch screen**
2	**Communication button** When a call is coming in, press this button within 30 s to activate communication and press again to end the call.
3	**Unlock button** Open the door by pressing this button at any time.
4	**Programmable button** ▪ Default function of this button is to release the 2nd lock connected with outdoor station. ▪ Programmable for additional function, e.g. switch on the light, unlock by relay.
5	**Mute button** ▪ In standby mode, press this button to mute the ringtone on this indoor station. ▪ In standby mode, press and hold this button for 3 s to mute the ringtone of all indoor stations in the same apartment ▪ When a call is coming in, press this button to reject the call. ▪ During a conversation, press this button to mute the microphone.
6	**Surveillance button** In standby mode, press this button to monitor the outdoor station and external cameras if available.

5.2 Terminal description



No.	Function
1	**a1 b1 = bus connector**
2	**Doorbell connector**
3	**Station switch** Set the address of the default outdoor station
4	**Address selector switch** All are used to set the indoor station address. Selector switch X10 sets tens digits, selector switch X1 sets units digits, Dip switches X100 and X200 set hundreds digits.
5	**Master/slave function switch** Only one indoor station in each apartment can be set as "Master" (ON=Master).
6	**Terminal resistor switch** In video installations or mixed audio and video installations, the switch must be set as 'RC on' on the last device of the line (ON=RC on).
7	**Microphone**
8	**Dismantling switch**
9	**Micro SD card connector (Only support SD card with FAT32 format)**
10	**Speaker**

6 Technical data

Designation	Value
Operating voltage range	20-30 V DC
Standby current	24 V DC, 12 mA
Operating current	24 V DC, 330 mA
Operating temperature	-10 °C…+55 °C
Display size	7"
Resolution	1024 x 600 pixel
Single-wire clamps	2 x 0.28 mm^2...2 x 0.75 mm^2
Fine-wire clamps	2 x 0.28 mm^2...2 x 0.75 mm^2
Product dimensions	198.5 mm × 162.3 mm × 17 mm

7 Mounting/Installation

Warning

Electric voltage!

Dangerous currents flow through the body when coming into direct or indirect contact with live components.

This can result in electric shock, burns or even death.

– Disconnect the mains power supply prior to installation and/or disassembly!
– Permit work on the 100-240 V supply system to be performed only by specialist staff!

7.1 Requirement for the electrician

Warning

Electric voltage!

Install the device only if you have the necessary electrical engineering knowledge and experience.

– Incorrect installation endangers your life and that of the user of the electrical system.
– Incorrect installation can cause serious damage to property, e.g. due to fire.

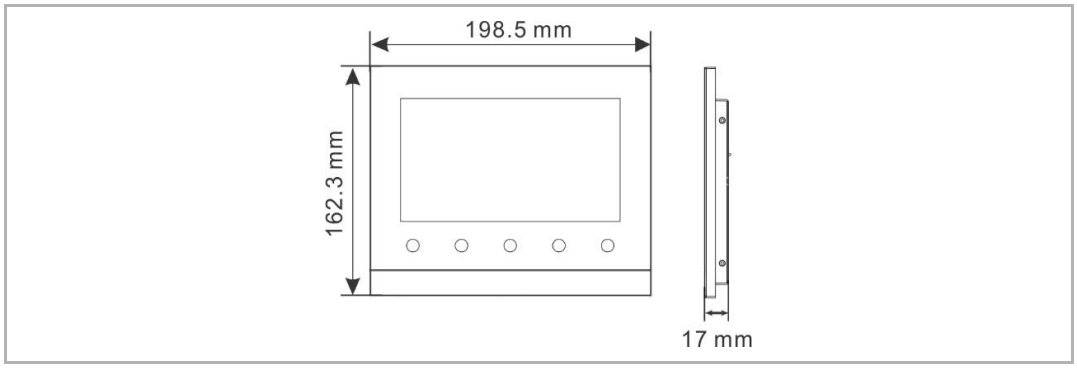
The minimum necessary expert knowledge and requirements for the installation are as follows:

– Apply the "five safety rules" (DIN VDE 0105, EN 50110):
  1. Disconnect
  2. Secure against being re-connected
  3. Ensure there is no voltage
  4. Connect to earth and short-circuit
  5. Cover or barricade adjacent live parts.
– Use suitable personal protective clothing.
– Use only suitable tools and measuring devices.
– Check the type of supply network (TN system, IT system, TT system) to secure the following power supply conditions (classic connection to ground, protective grounding, necessary additional measures, etc.).

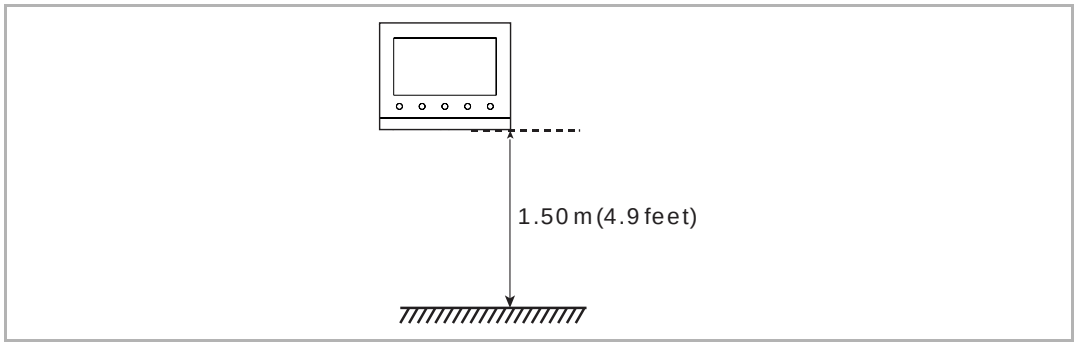
7.2 General installation instructions

- Terminate all branches of the wiring system via a connected bus device (e.g., indoor station, outdoor station, system device).
- Do not install the system controller directly next to the bell transformer and other power supplies (to avoid interference).
- Do not install the wires of the system bus together with 100-240 V wires.
- Do not use common cables for the connecting wires of the door openers and wires of the system bus.
- Avoid bridges between different cable types.
- Use only two wires for the system bus in a four-core or multi-core cable.
- When looping, never install the incoming and outgoing bus inside the same cable.
- Never install the internal and external bus inside the same cable.

7.3 Product dimensions

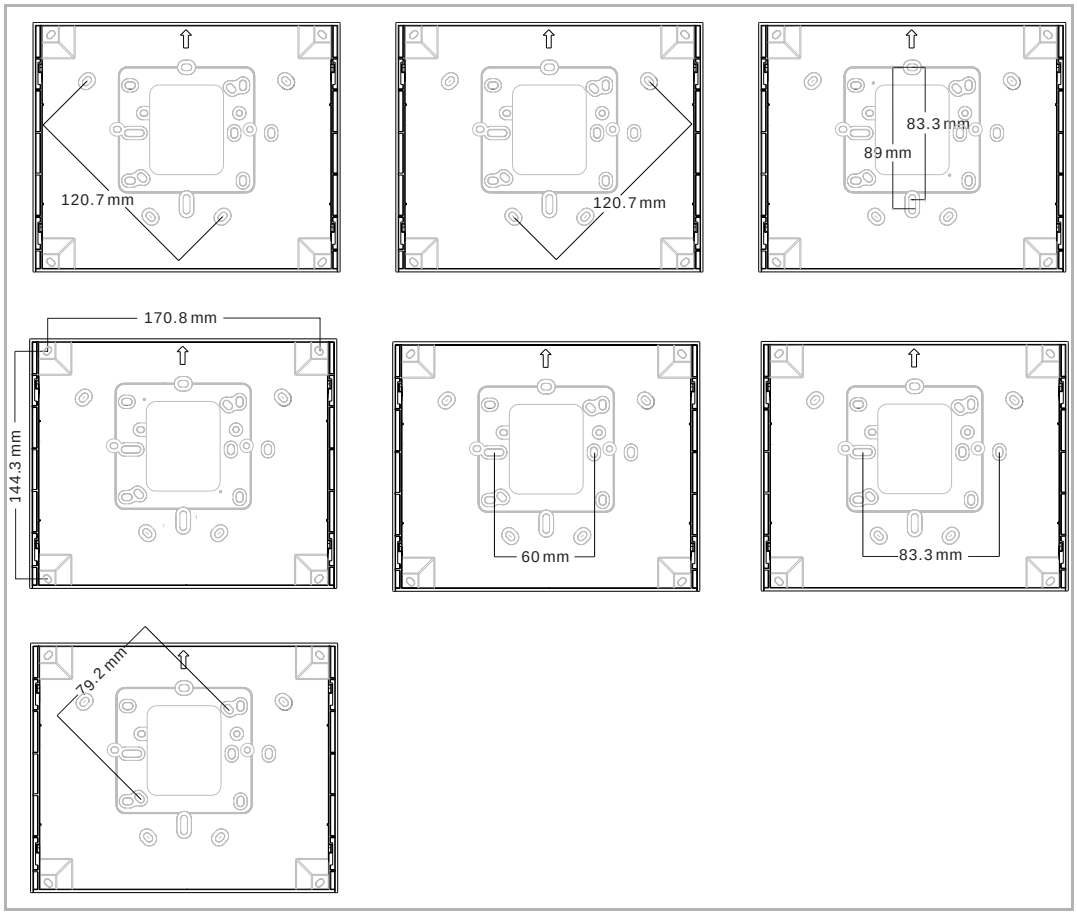


7.4 Installation height

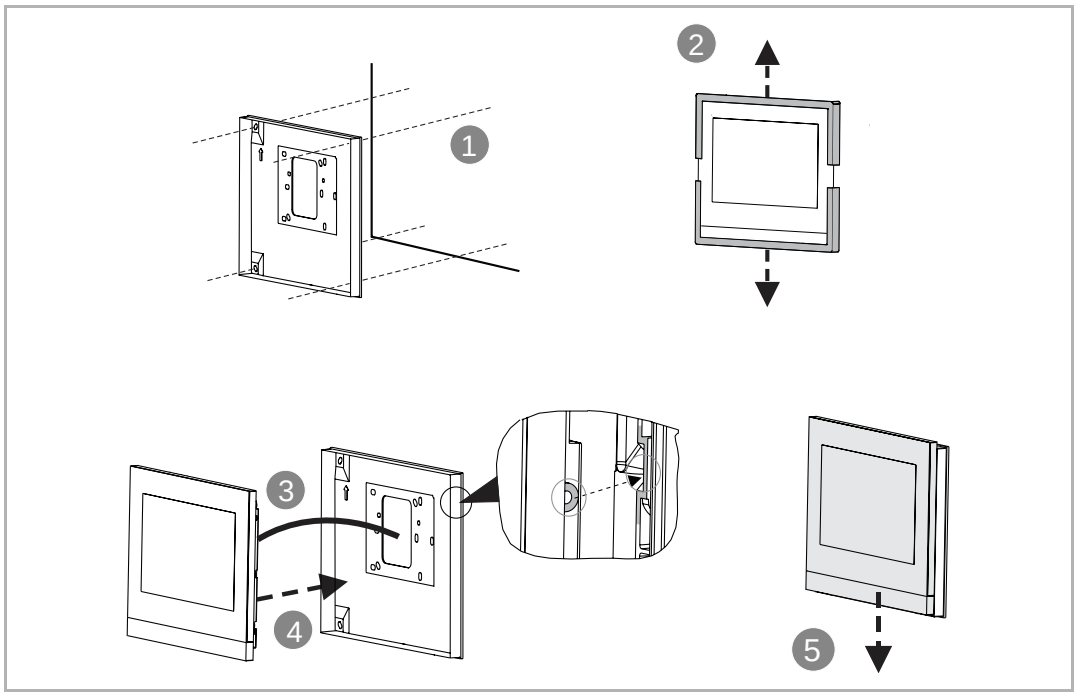


7.5 Surface-mounted installation

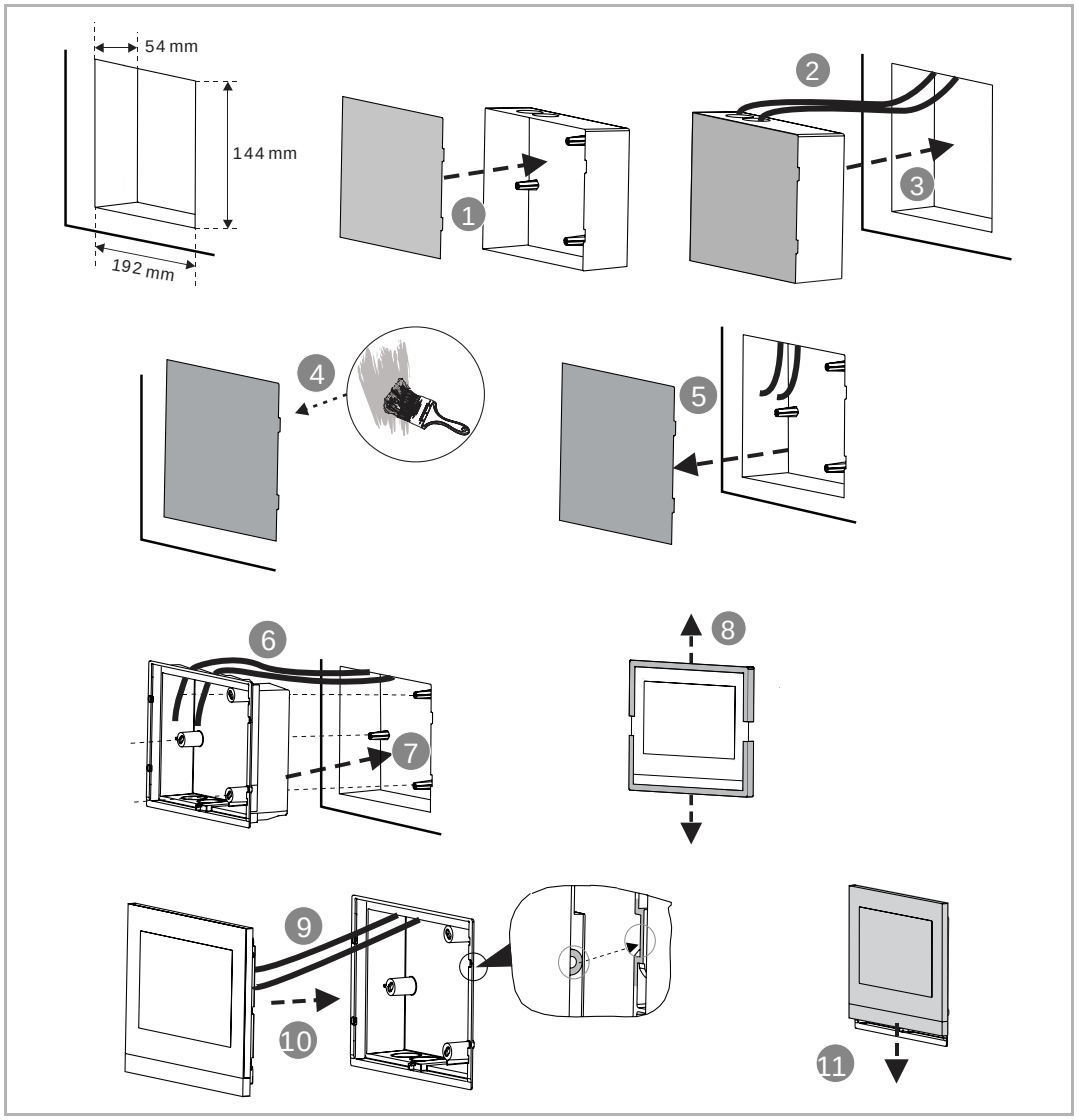
Surface-mounted box



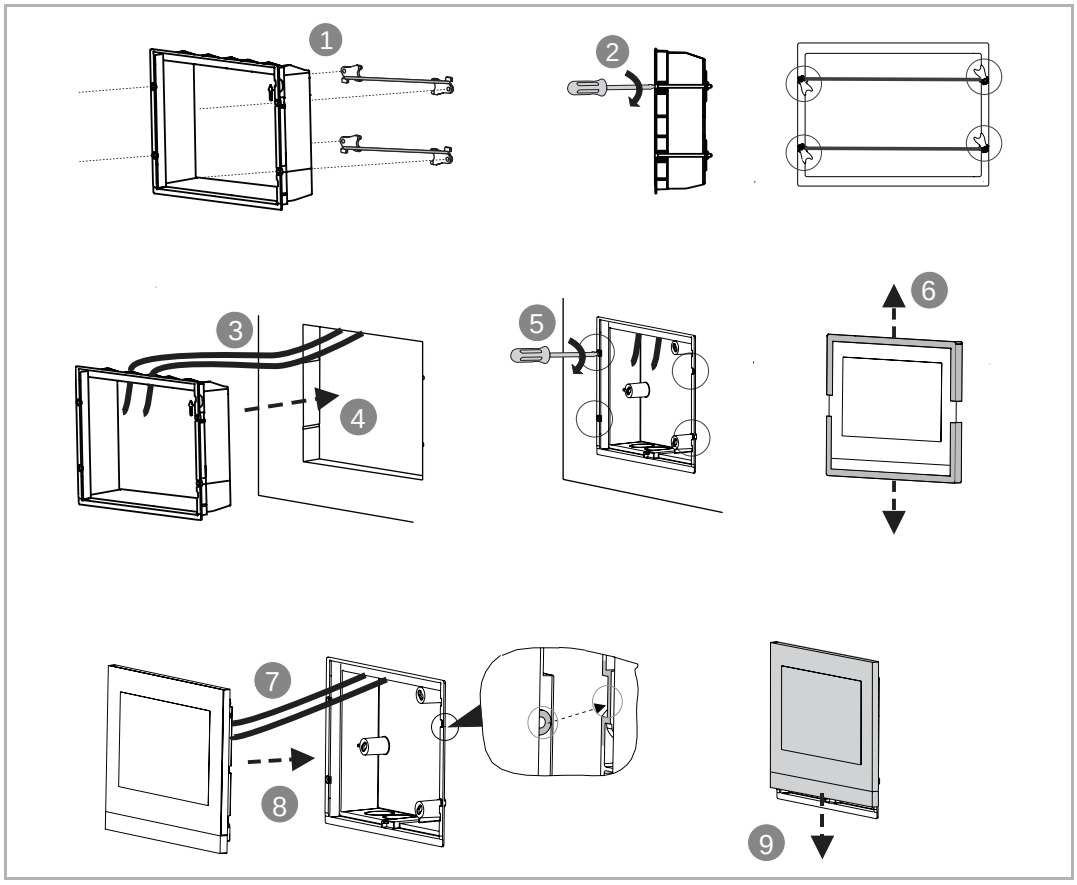
Surface-mounted installation



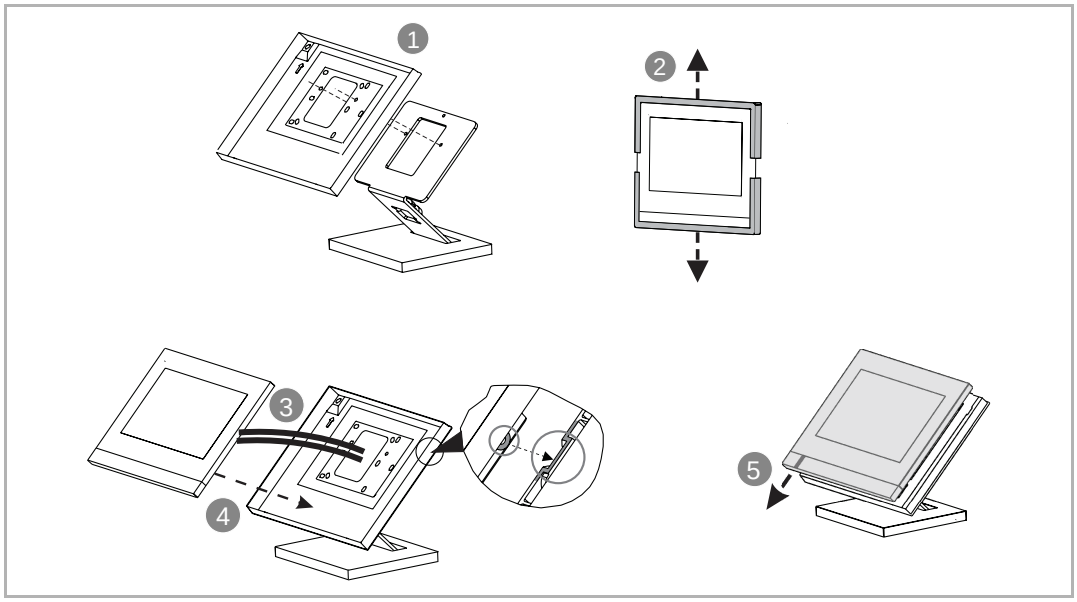
7.6 Flush-mounted installation



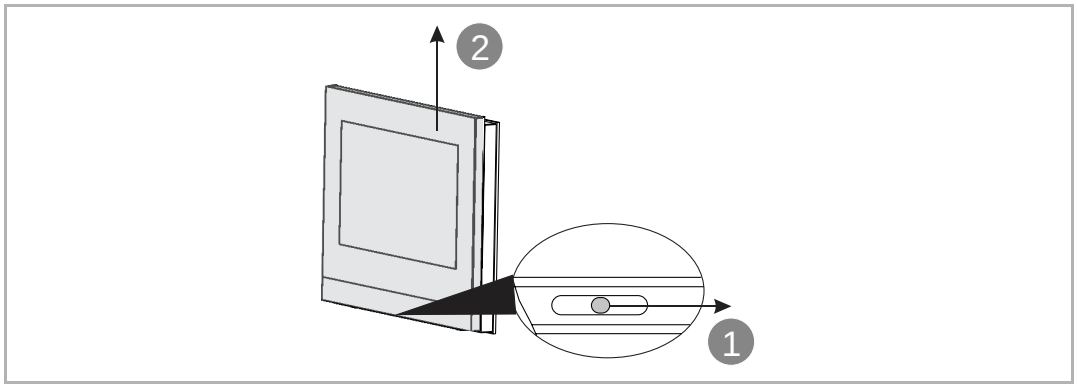
7.7 Cavity wall installation



7.8 Desktop installation



7.9 Dismantling

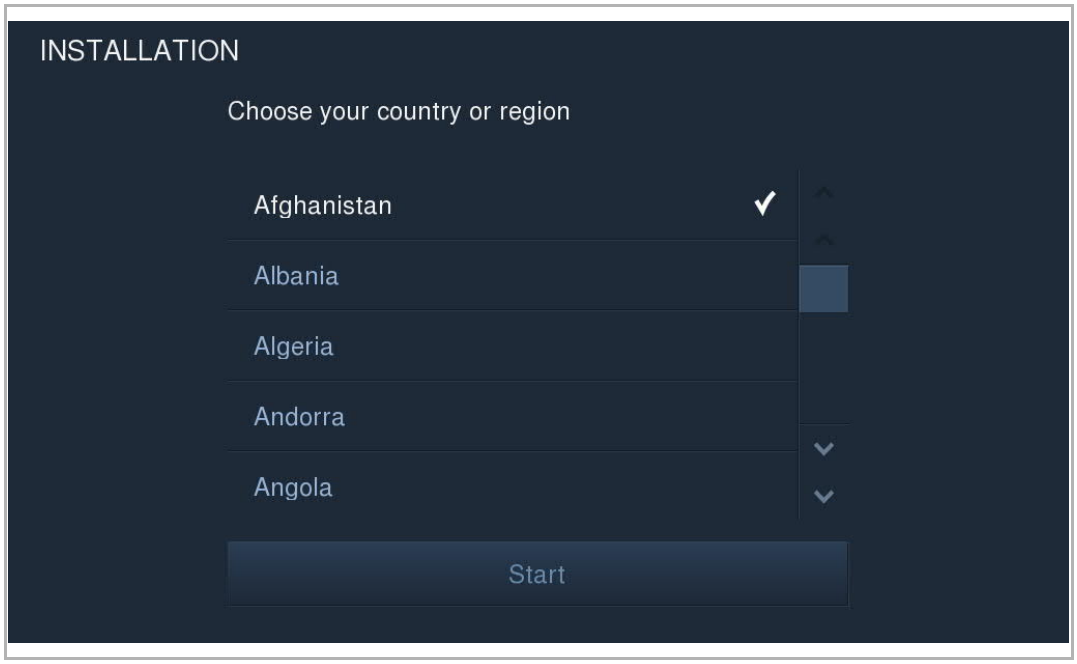


8 Commissioning

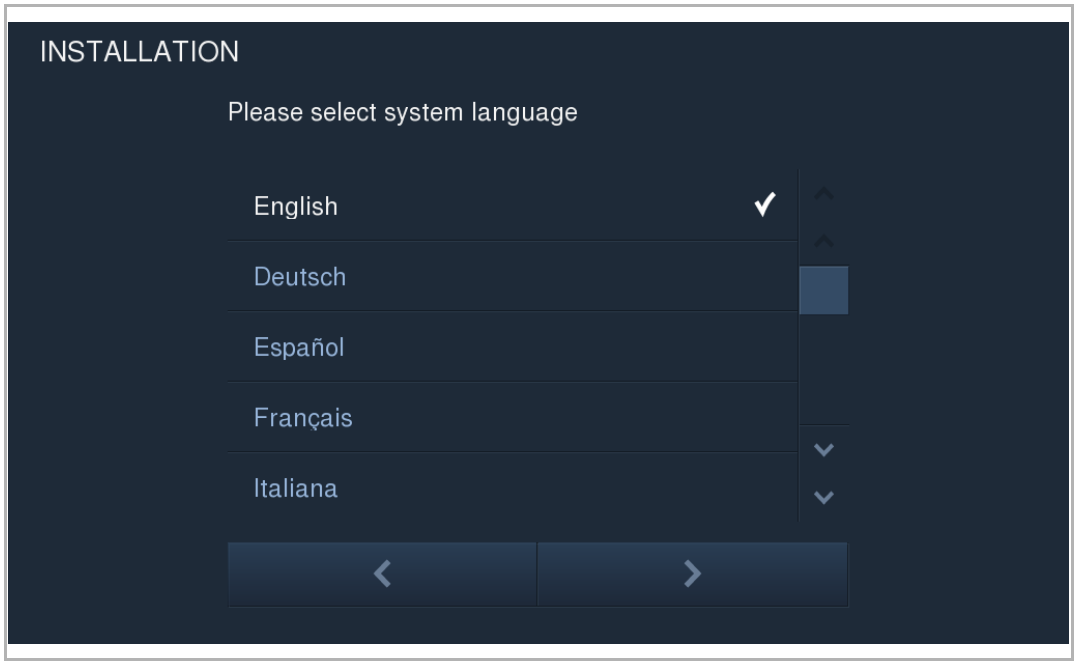
8.1 Initial setup

When this device is powered up for the first time, or when the "Clear all data" function on "Engineering settings" screen is used, the indoor station enters initial setup.

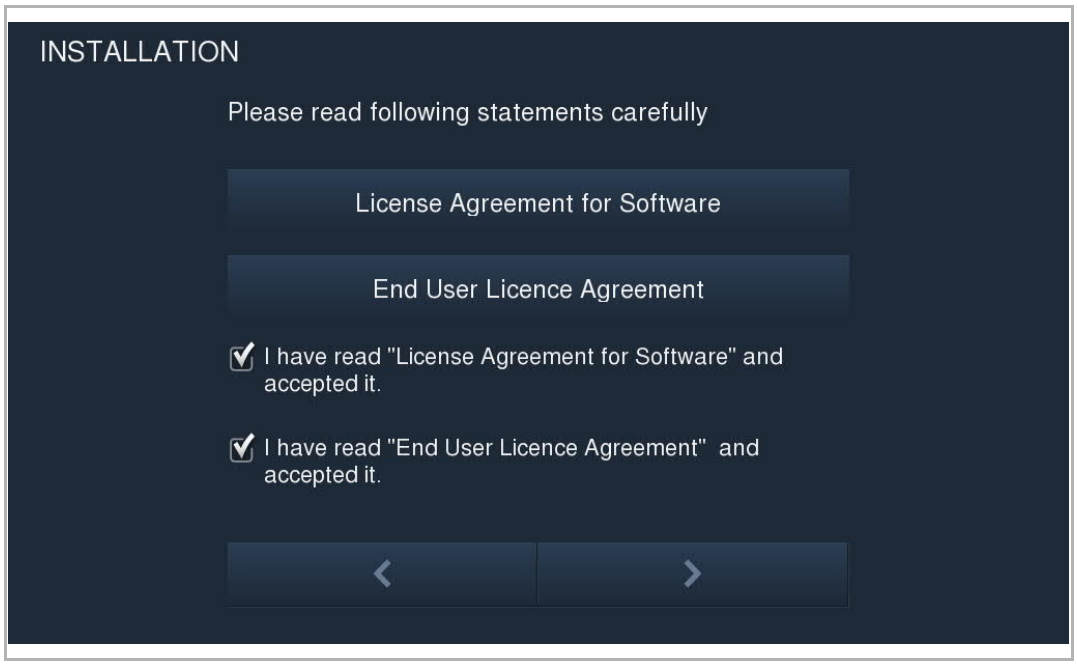
1. Choose country or region



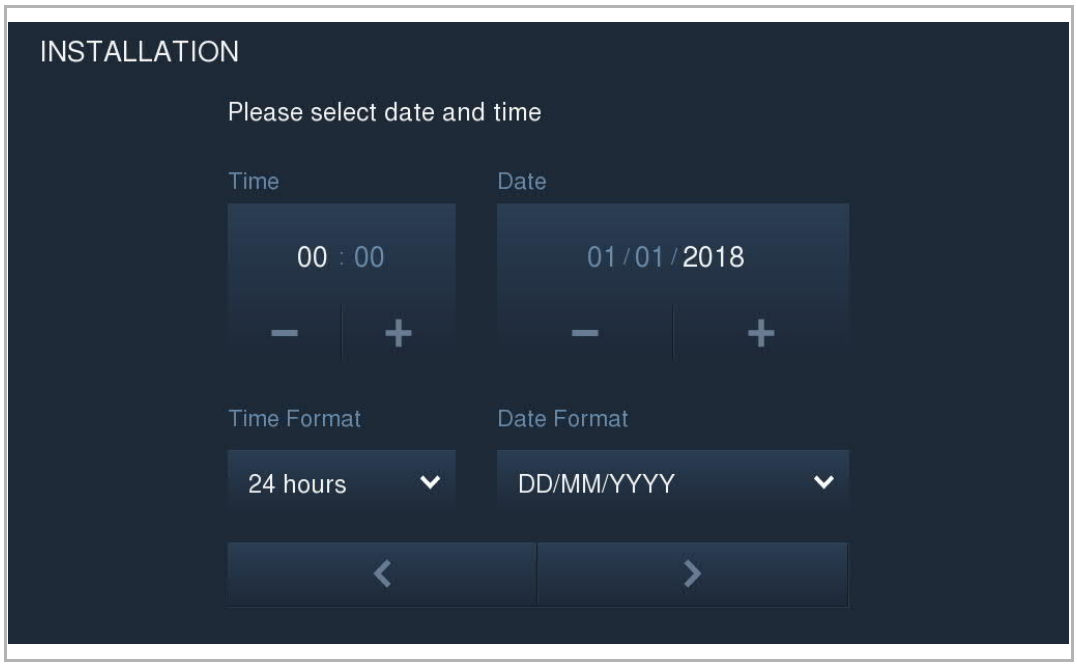
2. Select system language



3. Read license agreement

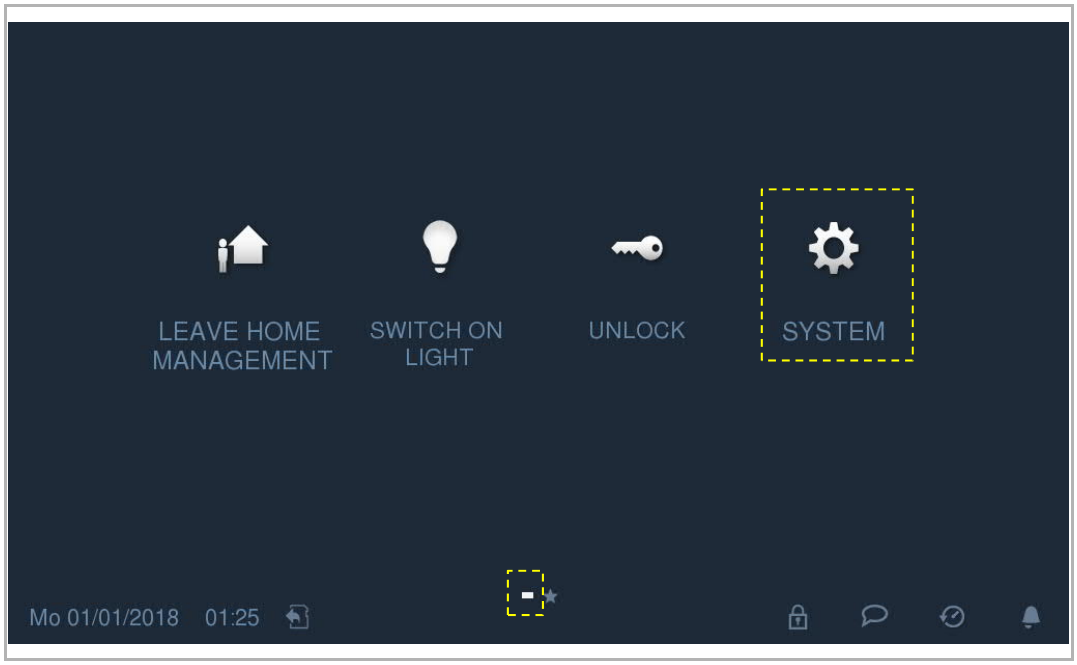


4. Set date and time



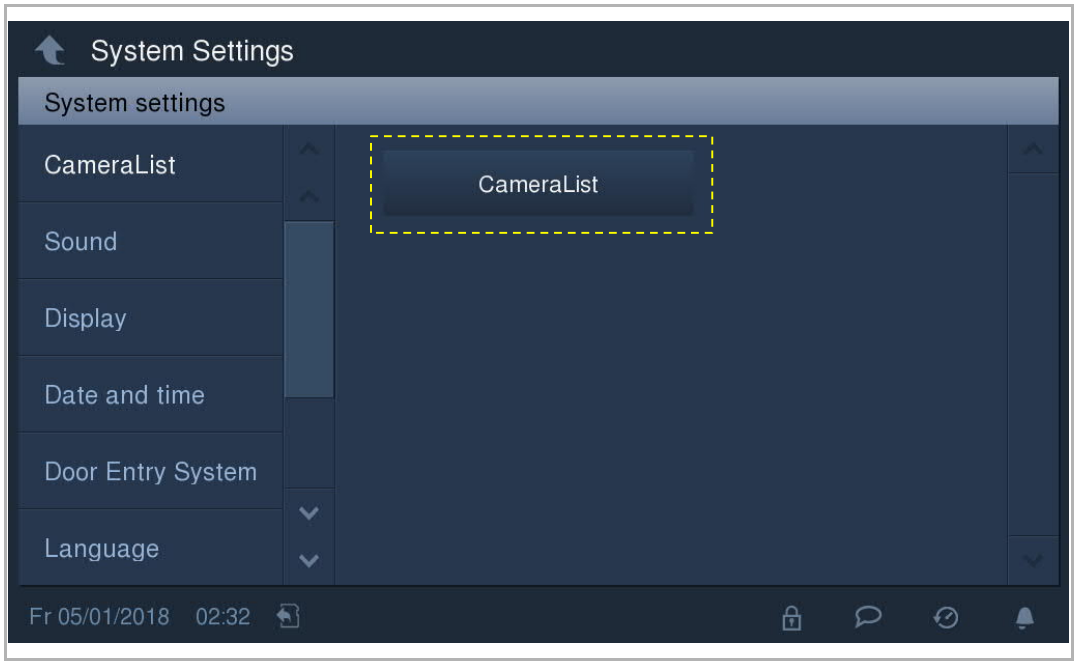
8.2 Enter system setting

In standby mode, on the extra screen, click "SYSTEM" to access the "System Settings" screen.

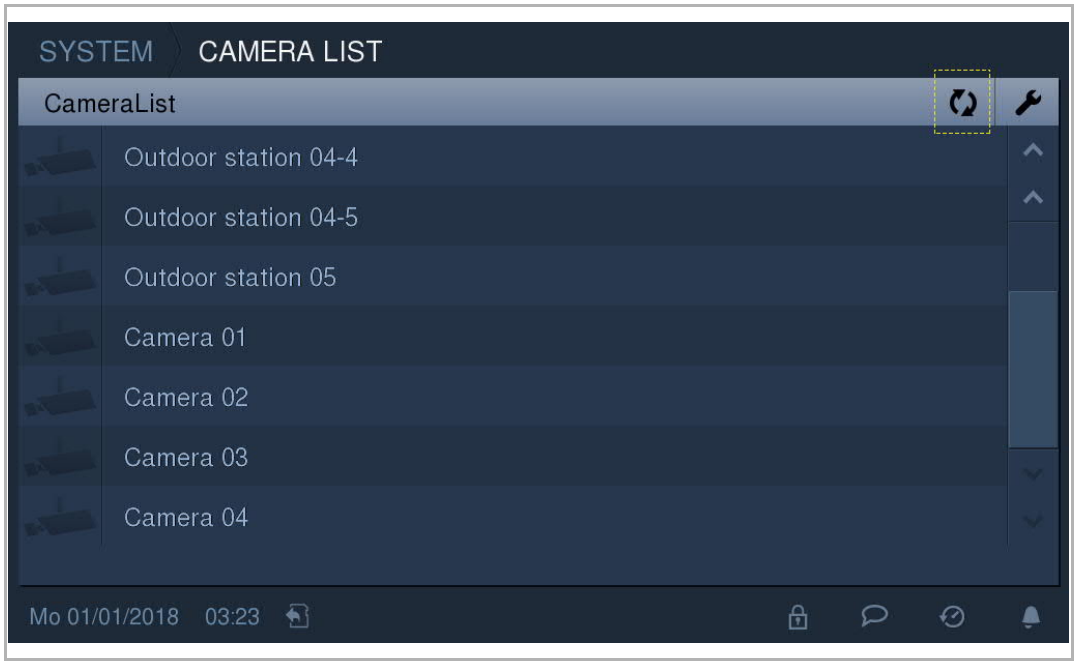


8.3 Camera list

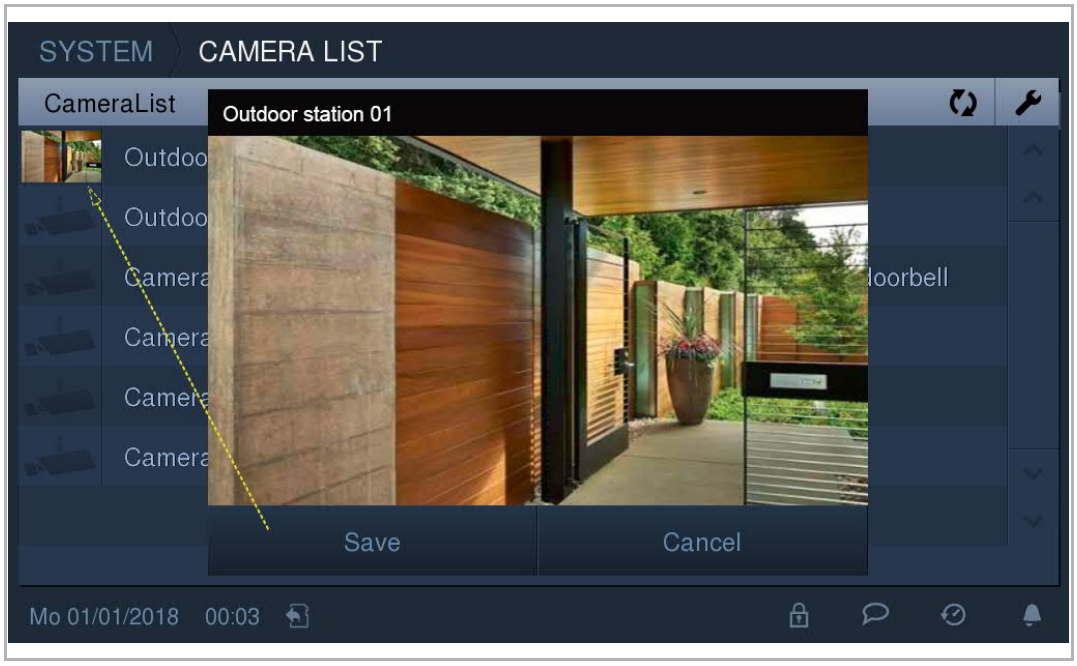
On the "System Settings" - "Camera list" screen, click "Camera list" to access the corresponding screen.



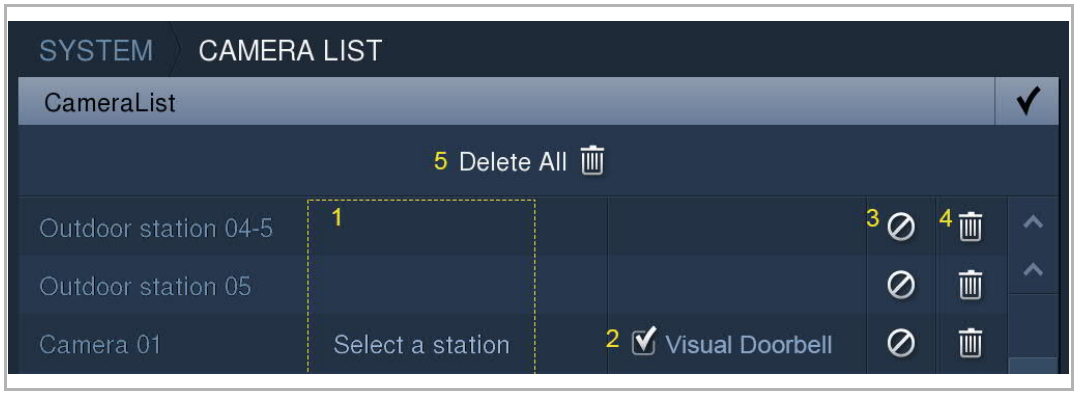
Click to synchronize all cameras on outdoor stations and cameras connected to the camera interfaces to create a camera list.



On the "Camera list" screen, click the outdoor station or camera to view the image, and then click "Save" to save an icon to the camera list.



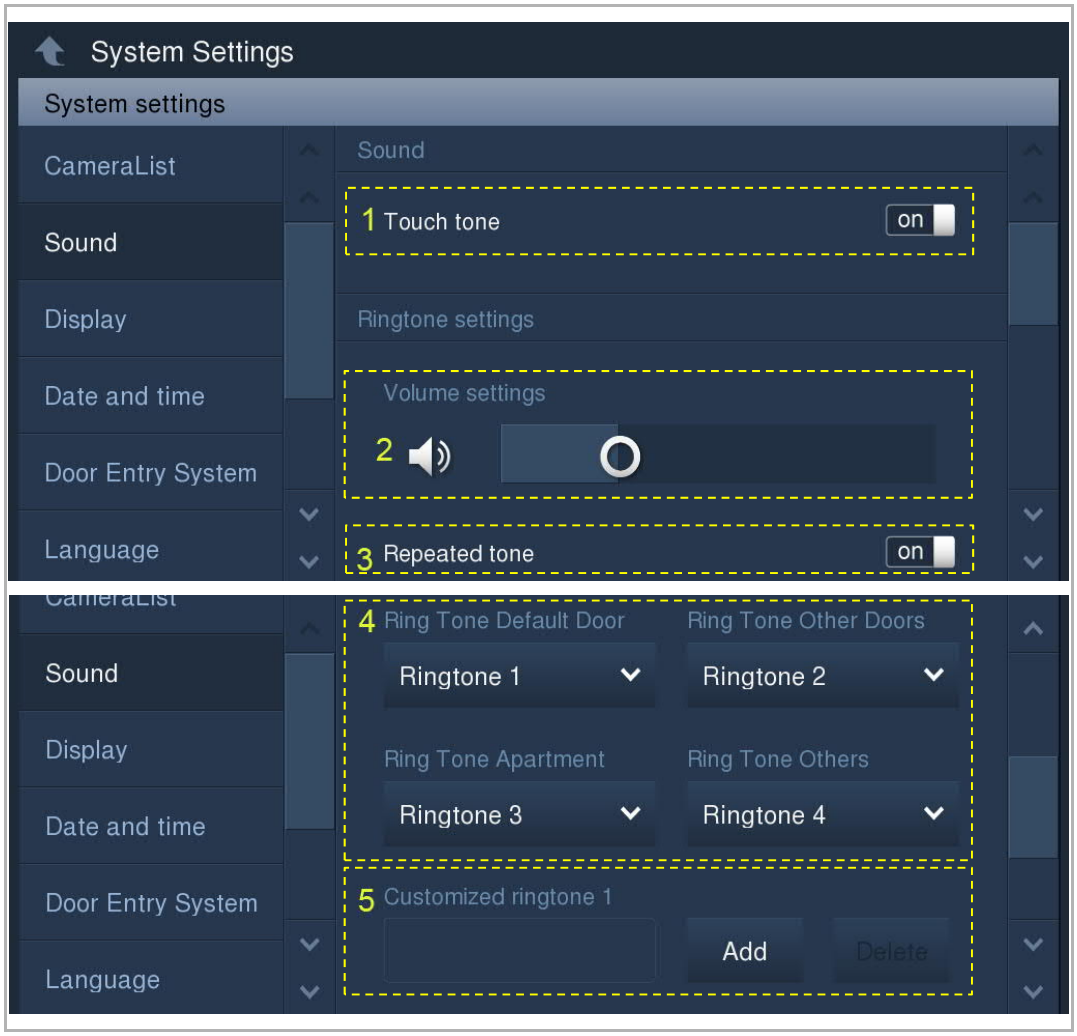
On the "Camera list" screen, click to access the settings.



No.	Function
1	Set an alias for outdoor stations or cameras
2	Set visual doorbell function for cameras
3	Hide the device in the camera list
4	Delete the device from the camera list
5	Clear all devices from the camera list

8.4 Sound

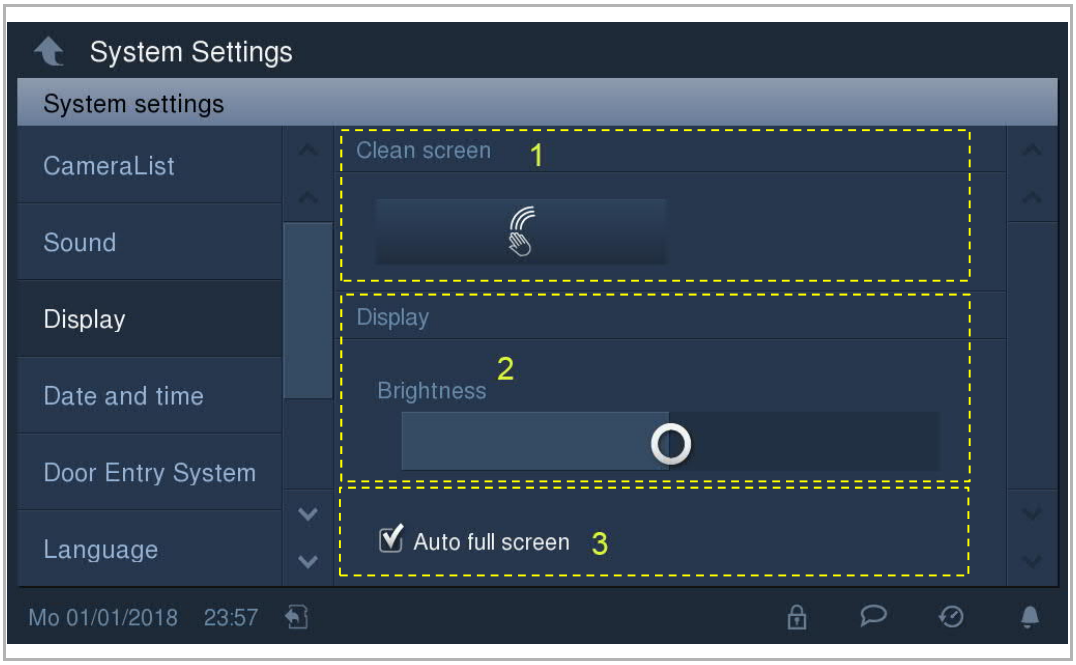
On the "System Settings" - "Sound" screen,



No.	Function
1	**Touch tone setting**
2	**Volume setting**
3	**Repeated tone setting** ON = repeated ringtone within 30 s, OFF = rings only once
4	**Ringtone settings** Click the drop-down list to select the ringtones for the default outdoor station, other outdoor stations, the doorbell and other devices. (5 built-in ringtones)
5	**Customized ringtone** ▪ 3 customized ringtones (.wav only) can be added from an SD card. ▪ The toal size of 3 customized ringtones is 10 M. ▪ A customized ringtone will appear on the drop-down list of ringtone settings after being added successfully.

8.5 Display

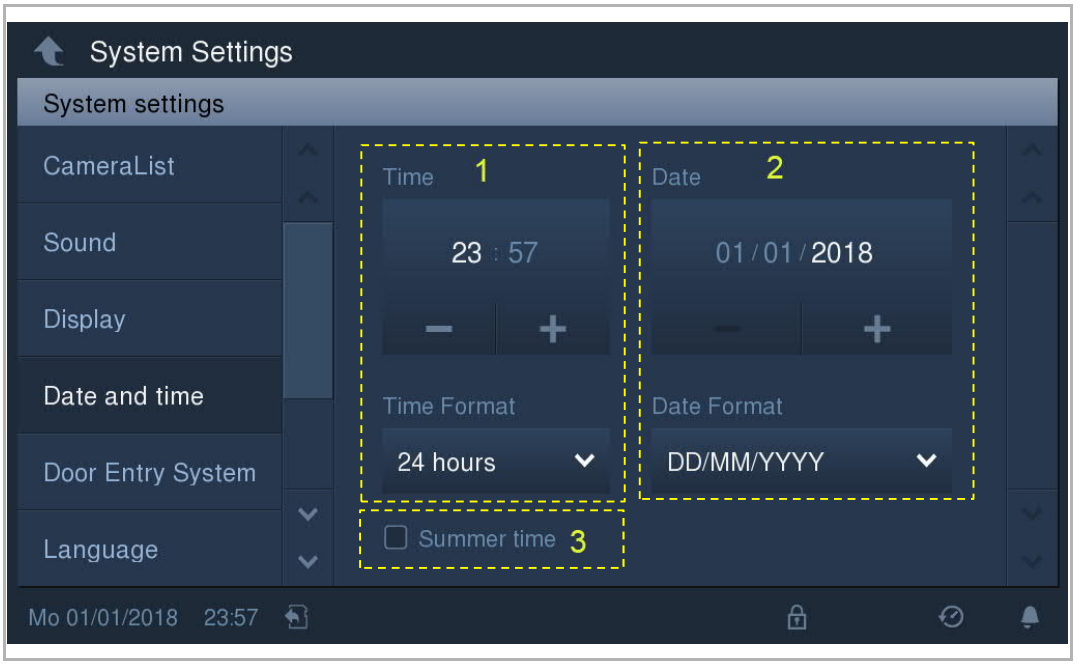
On the "System Settings" - "Display " screen,



No.	Function
1	**Clean screen** Click to lock the screen for 30 s. Please see the "Clean screen" chapter for more details.
2	**Brightness** Drag the bar to adjust the brightness.
3	**Auto full screen** Enable/disable the full-screen mode on the outdoor station camera by ticking/unticking the checkbox.

8.6 Date and time

On the "System Settings" - "Date and time" screen,

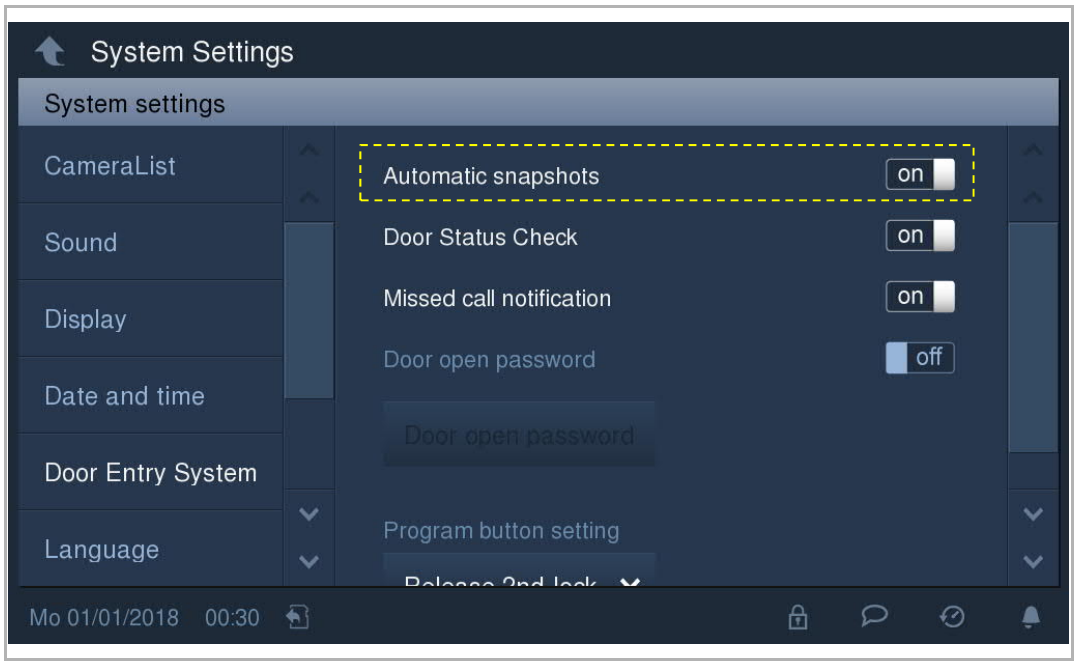


No.	Function
1	**Time setting** ▪ Click "+" or "-" to set hour and minute ▪ Choose time format (12 hours or 24 hours) from the drop-down list
2	**Date setting** ▪ Click "+" or "-" to set the year, month and day ▪ Choose the date format from the drop-down list
3	**Surmmer time** Enable/disable summer time by ticking/unticking the checkbox

8.7 Automatic snapshot

On the "System settings" - "Door Entry System" screen, click switch button to enable/disable the function.

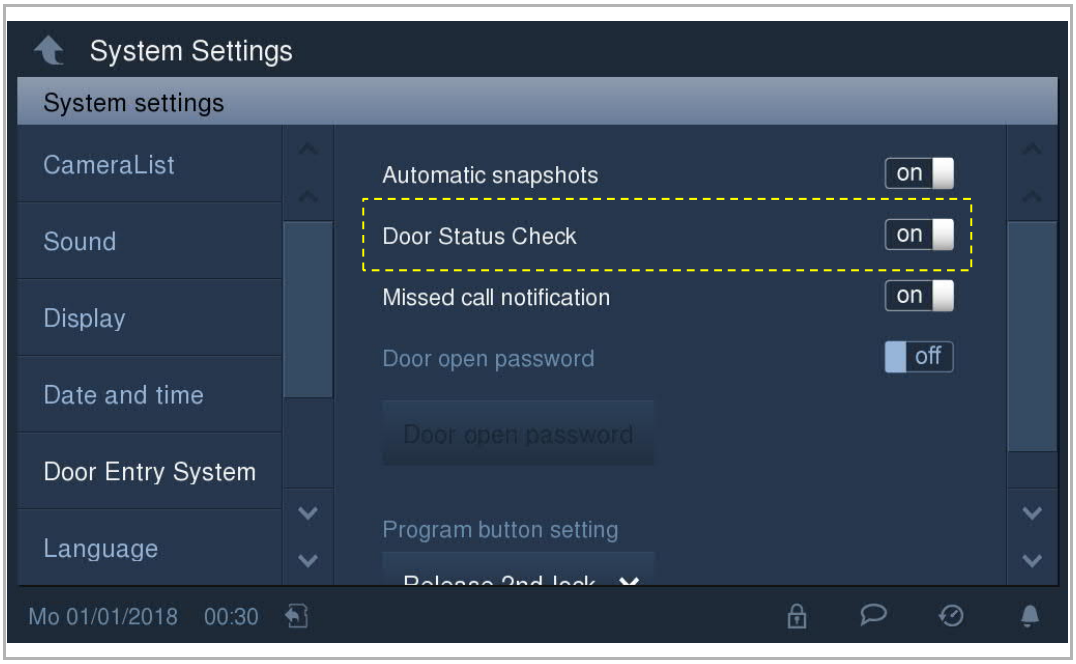
When this function is enabled, three snapshots are taken and automatically saved to the history record when the bell is pressed.



8.8 Door status check

On the "System settings" - "Door Entry System" screen, click the radiobutton to enable/disable the function.

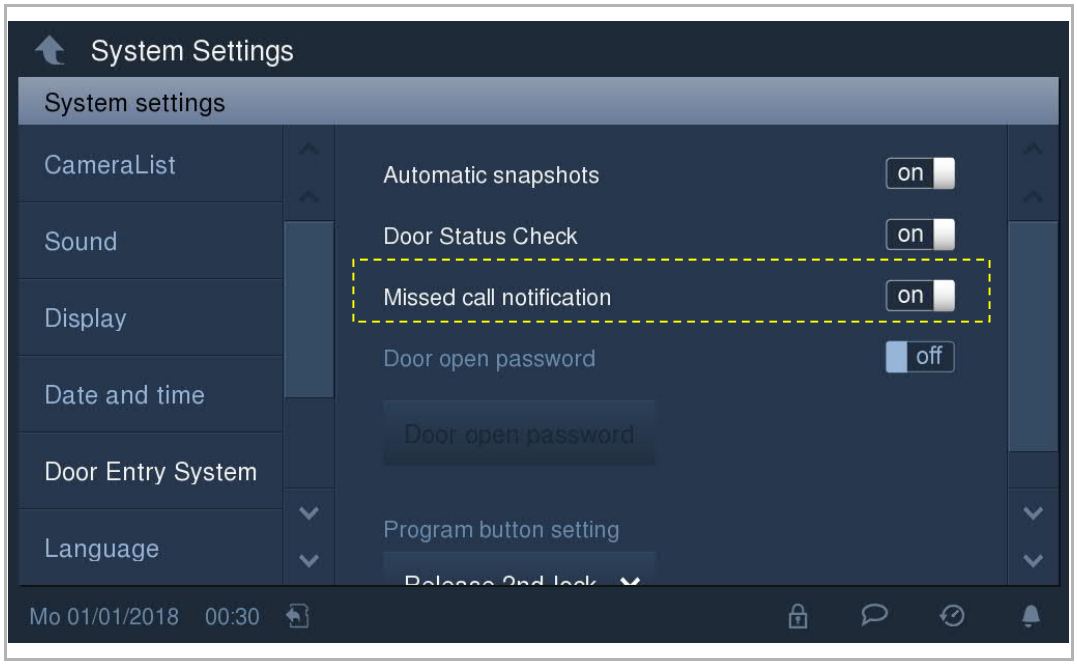
When this function is enabled, the outdoor station will send an alarm to this indoor station when the door is open over 120 s. (A sensor should be connected to the outdoor station first) The indoor station will flash all its button LEDs until the door is close.

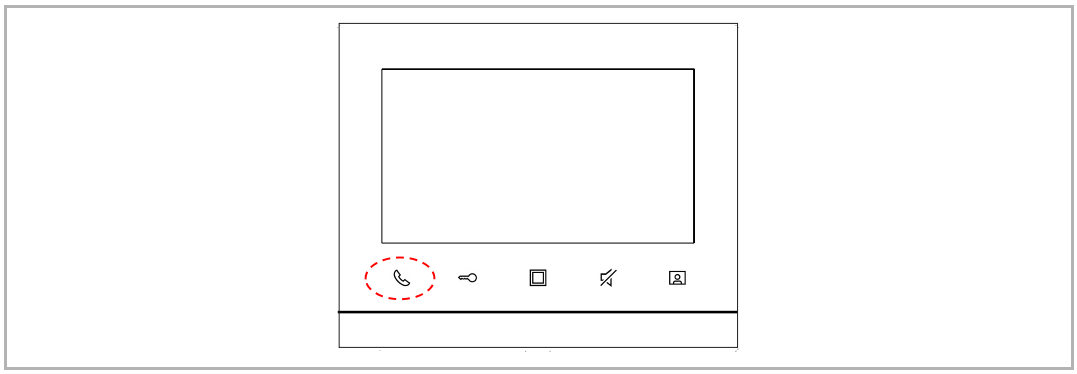


8.9 Missed call notification

On the "System settings" - "Door Entry System" screen, click the radiobutton to enable/disable the function.

If this function is enabled, the call button LED will flash to indicate the missed call.

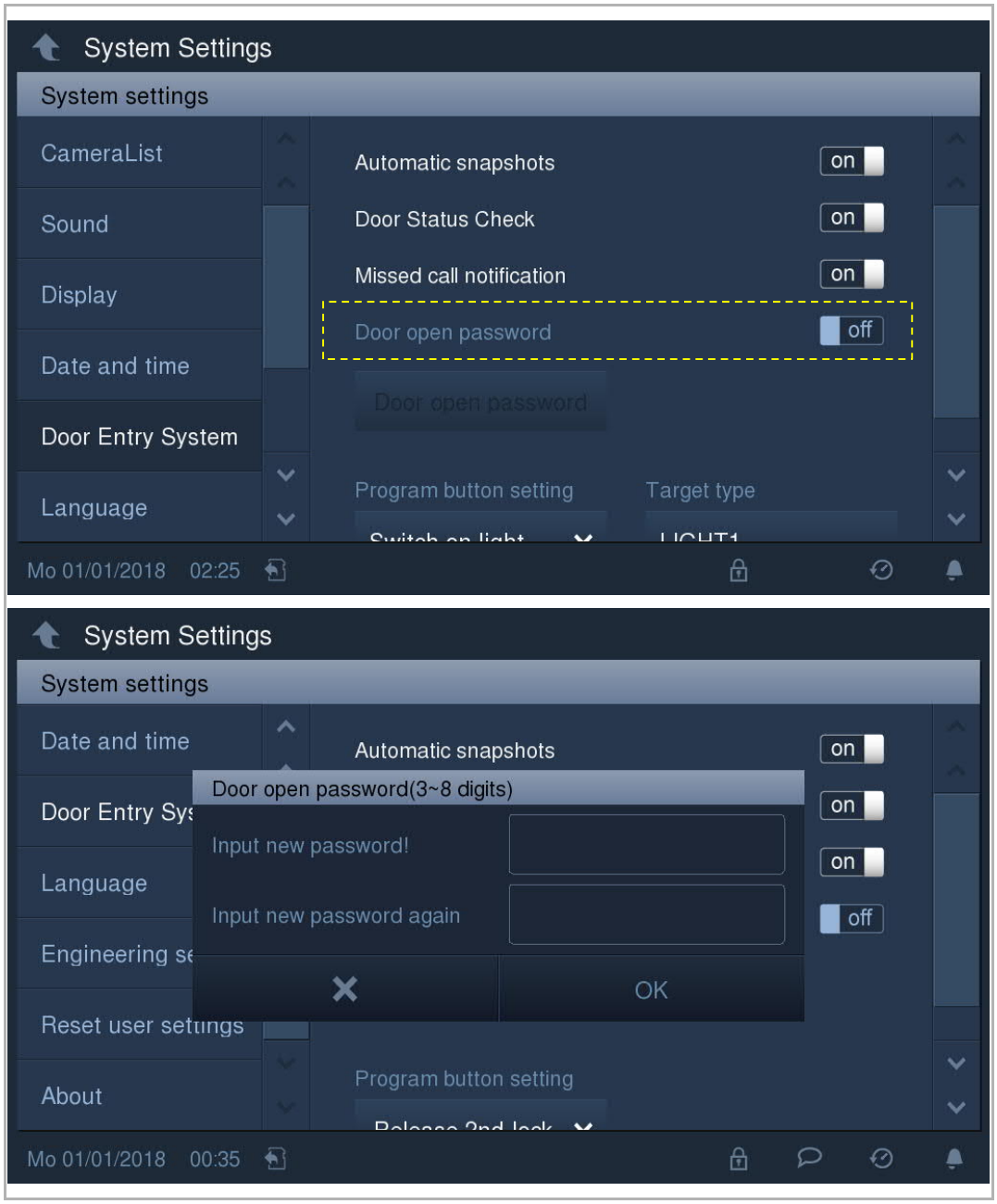




8.10 Unlock password

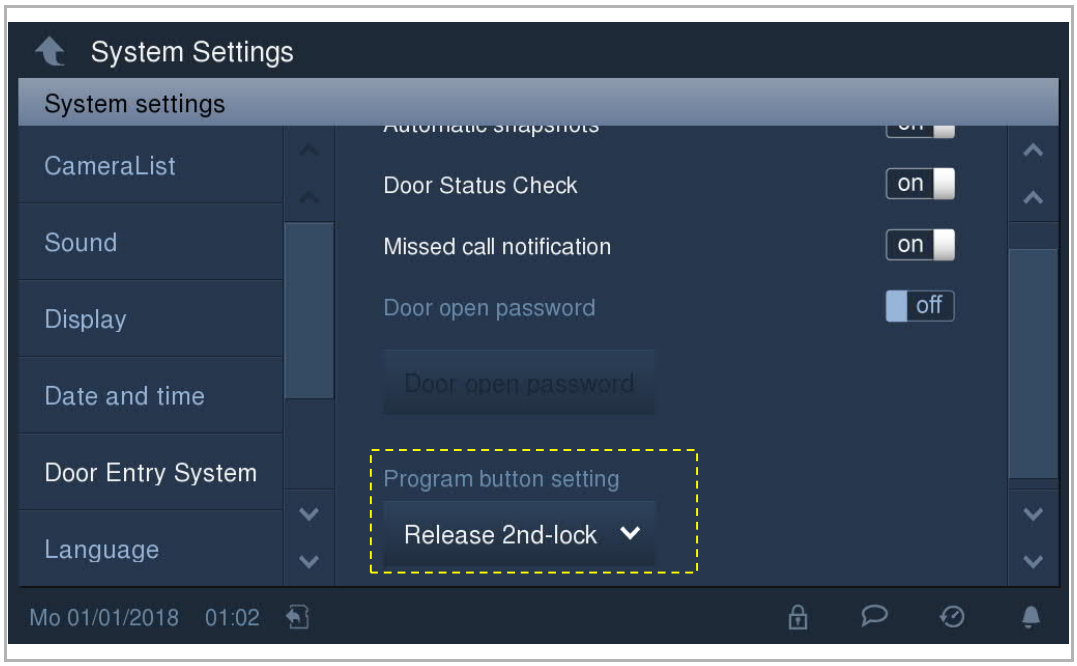
On the "System settings" - "Door Entry System" screen, click the radiobutton to enable/disable the function.

When this function is enabled, you can set a password to release the lock connected to the outdoor station. (3...8 digits)

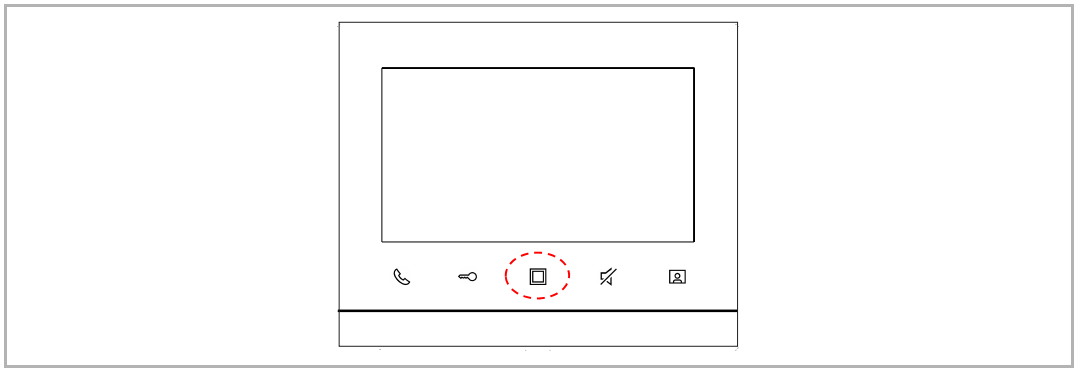


8.11 Program button setting

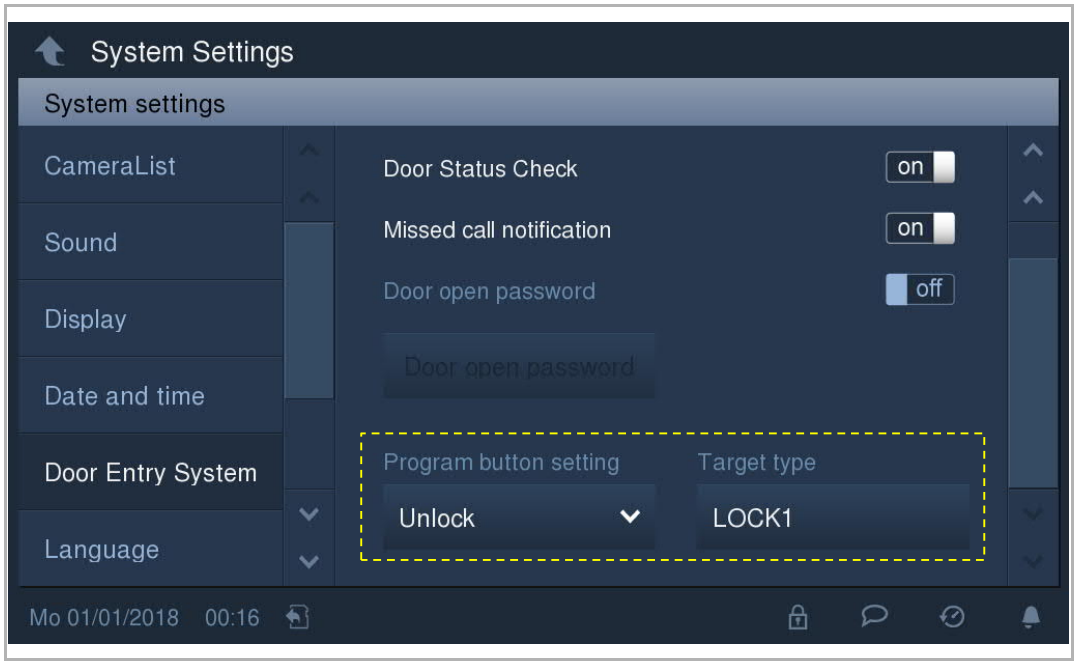
On the "System settings" - "Door Entry System" screen, program button is set to "Release 2nd-lock" by default. It will be disabled if it is set to "None".



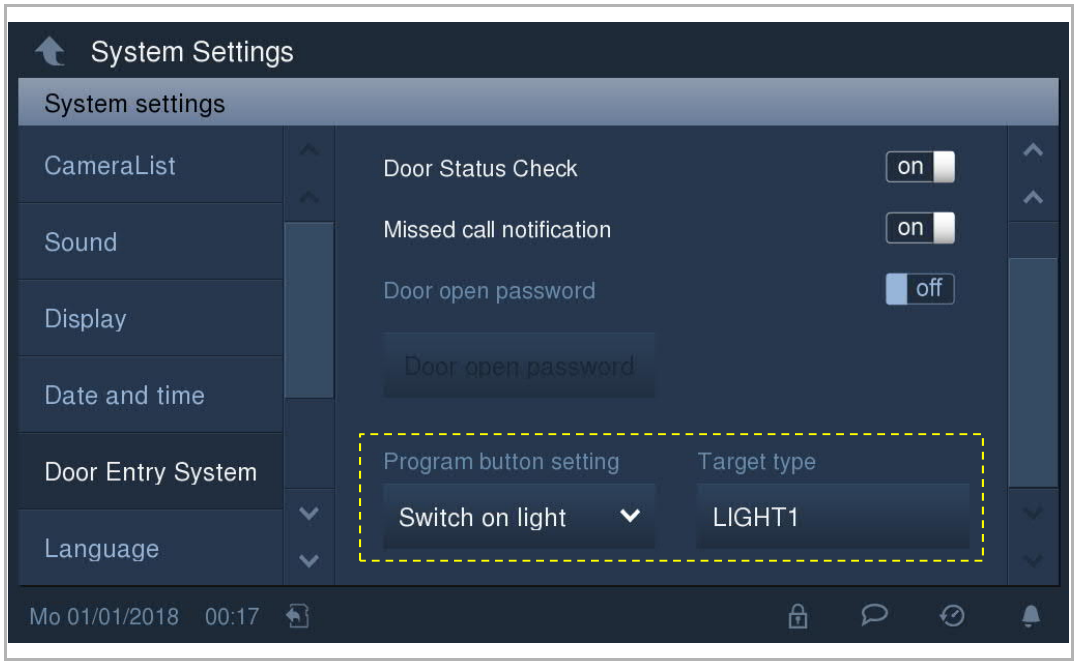
Press the ⧈ button to enable the defined function.



If the standby unlock settings have been enabled, "Unlock" can be select here, followed by a lock from the drop-down list. Please see the "Standby unlock" chapter for more details.

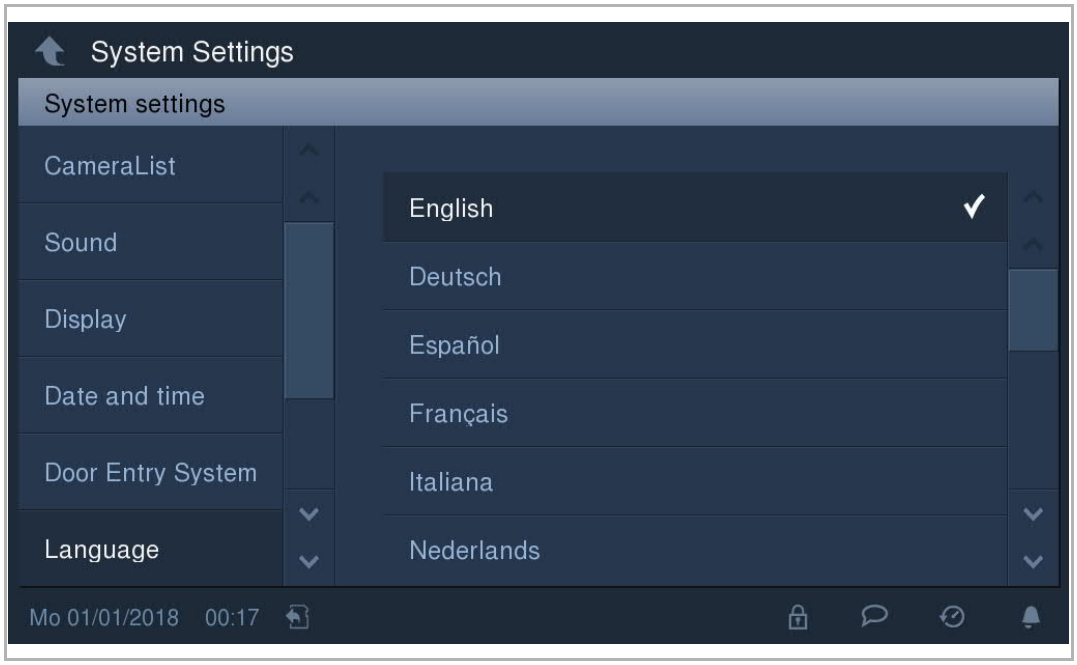


If the standby switch has been selected in the light settings, "Switch on light" can be selected here, followed by a light from the drop-down list. Please see the "Standby switch on the light" chapter for more details.



8.12 Language

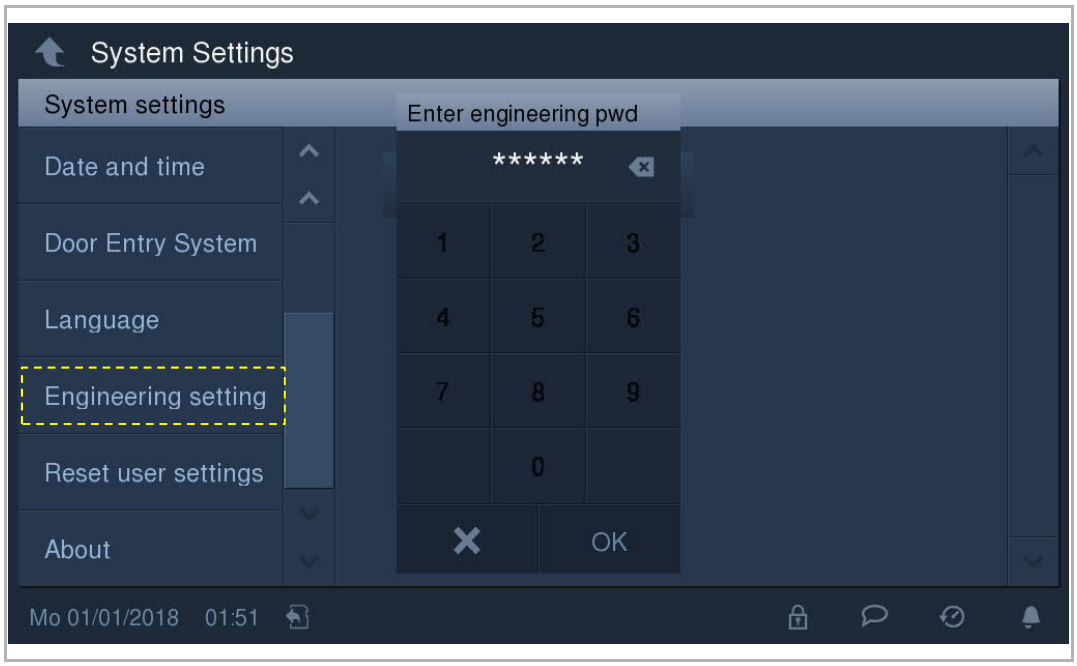
On the "System Settings" - "Language" screen, select the language.



8.13 Engineering settings

8.13.1 Enter engineering setting

On the "System Settings" - "Engineering setting" screen, enter the engineering password to enter the settings screen. (the system default engineering password is 345678; this password is only used to set a new engineering password and must be changed after first use)

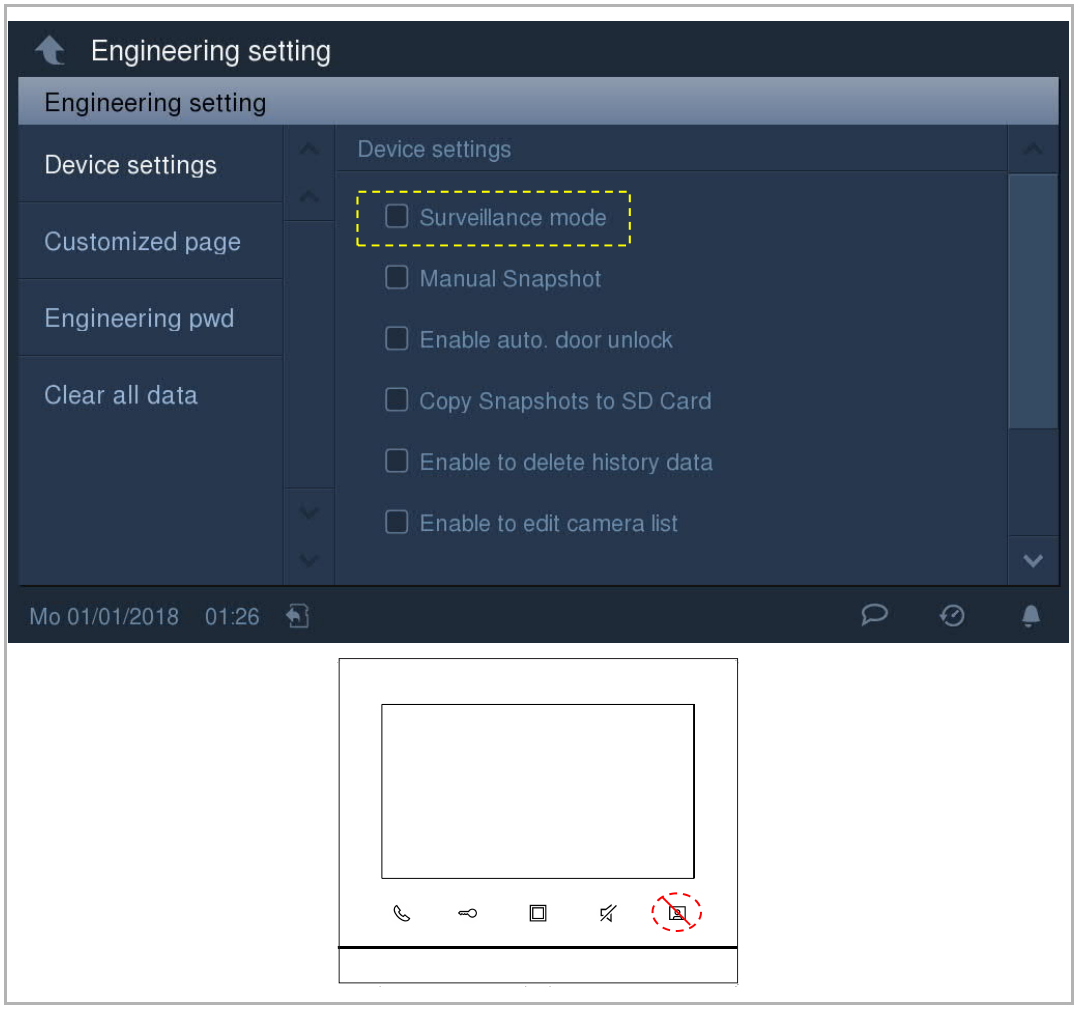


8.13.2 Device settings

The "Engineering setting" - "Device settings" screen includes the settings described below.

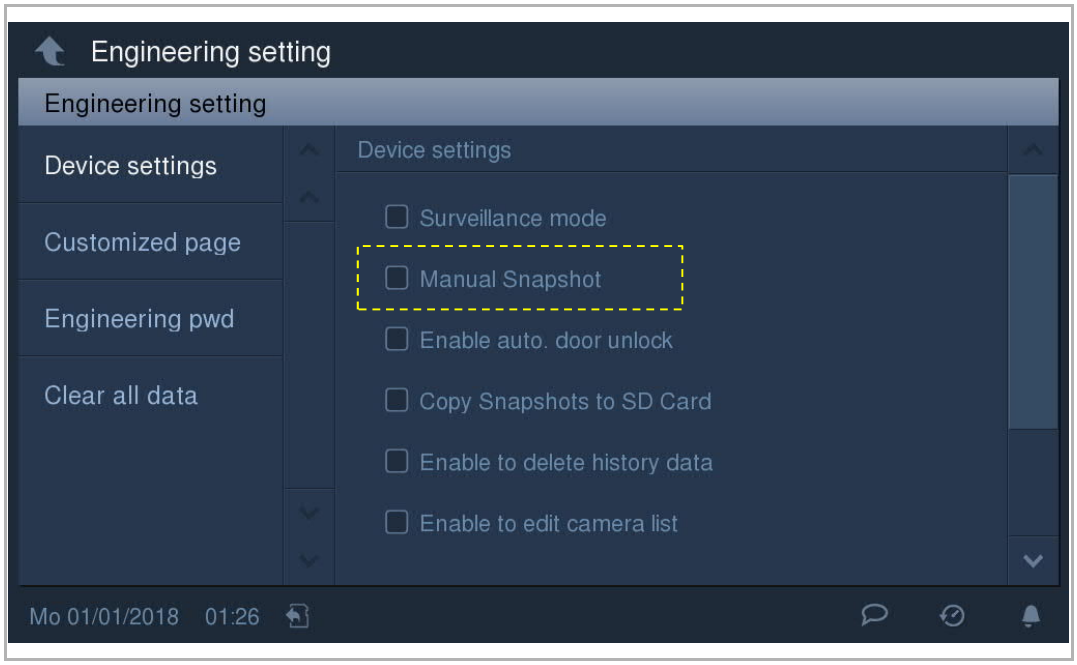
Surveillance mode

If this function is disabled, it is not possible to start the surveillance by pressing the button.



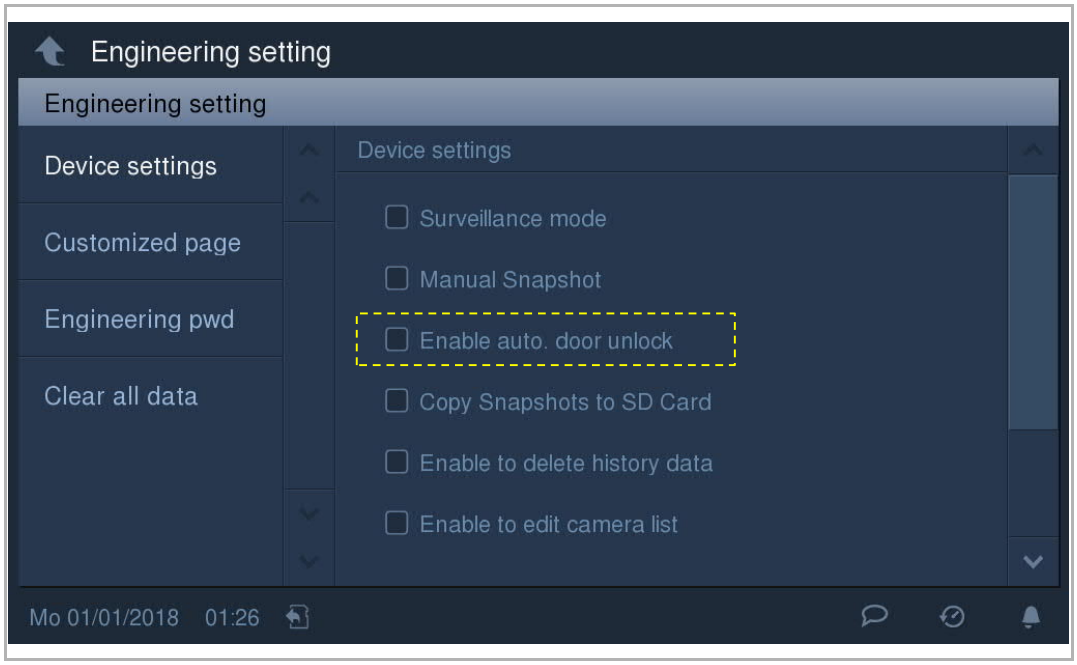
Manual snapshot

If this function is disabled, it is not possible to take a manual snapshot during a call.



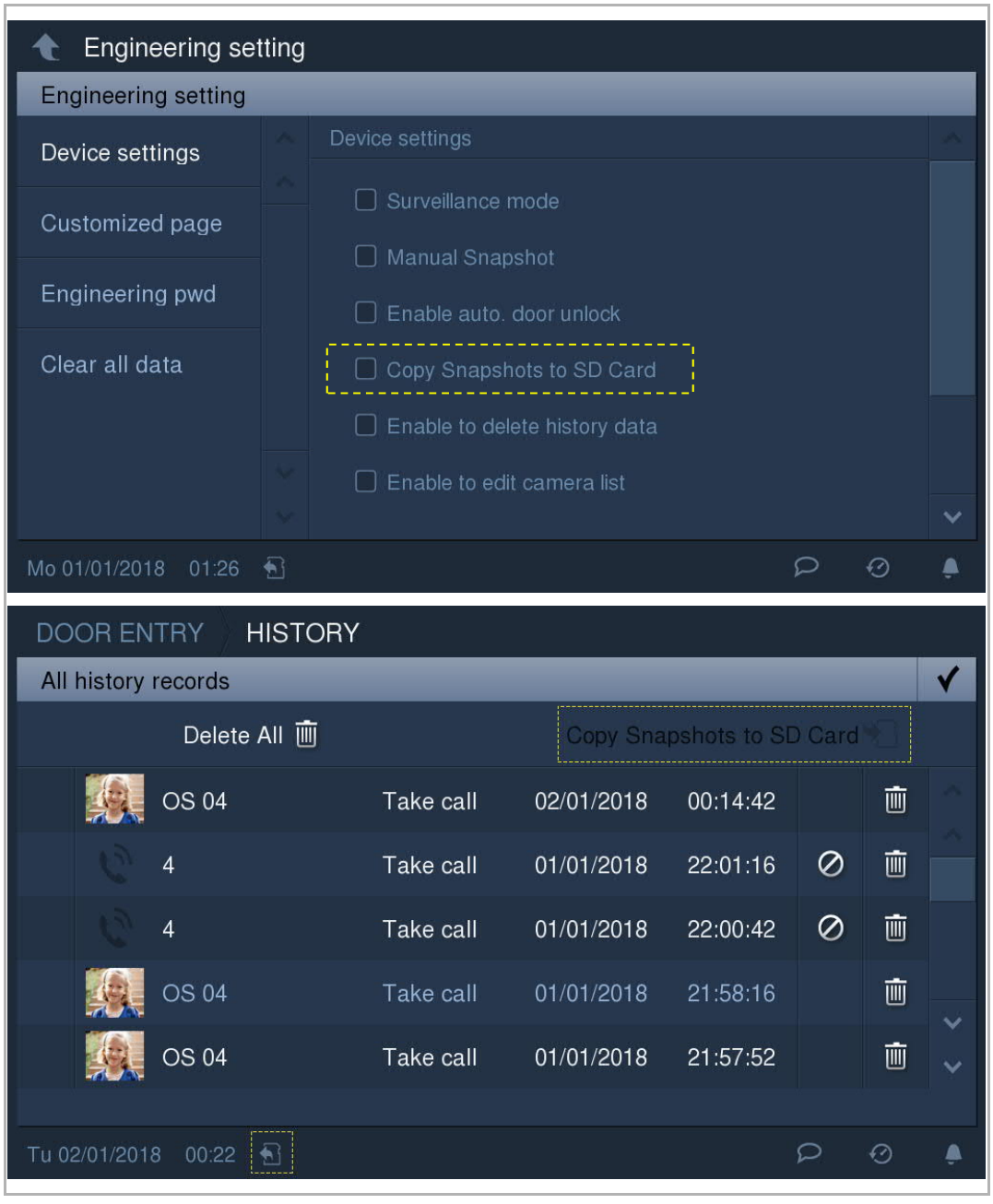
Auto unlock

If this function is disabled, the will be hidden on the status bar.



Copy snapshot to SD card

If this function is disabled, it is not possible to copy snapshots to SD card on the "History" screen even when an SD card is inserted.

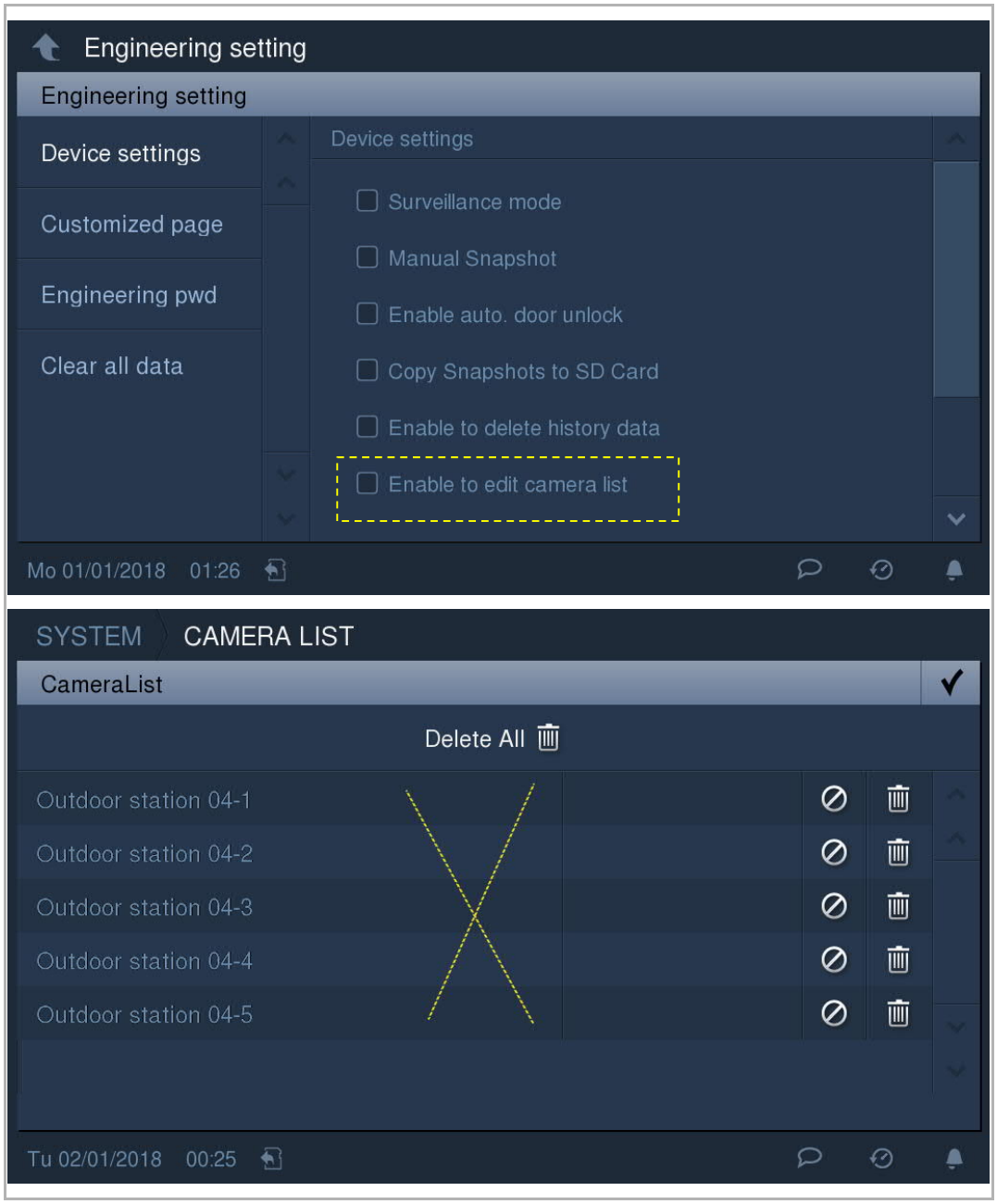


Delete history data

If this function is disabled, it is not possible to delete the record on the "History" screen.

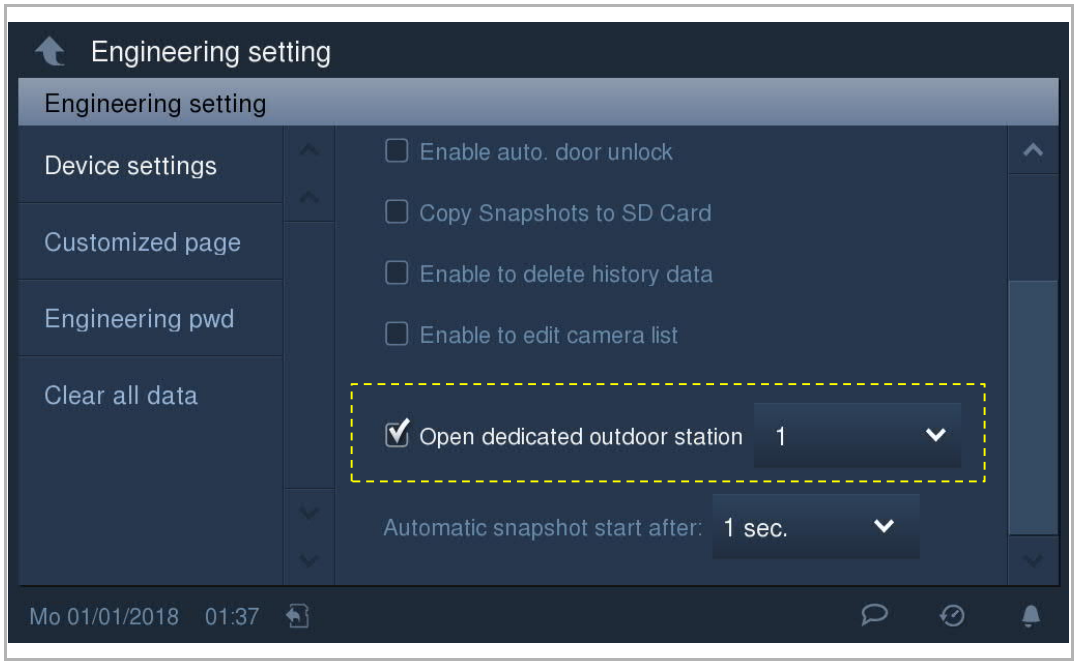
Edit camera list

If this function is disabled, it is not possible to rename the camera.



Open dedicated outdoor station

If this function is enabled, it is possible to release the lock on dedicated outdoor station. (1…9)

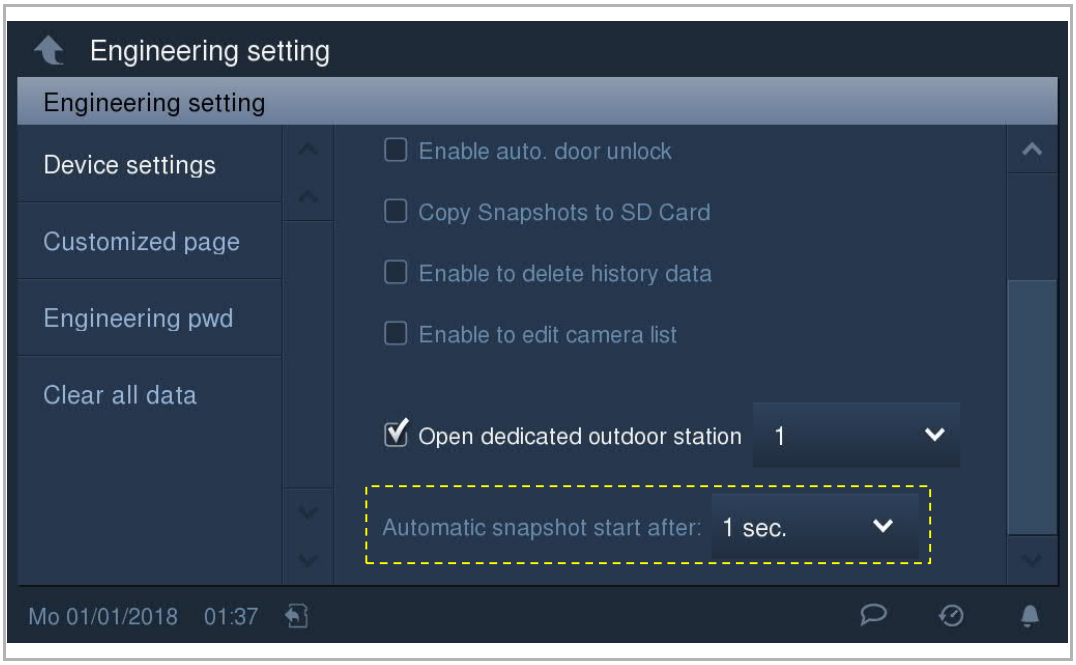


Auto snapshot

It is possible to set auto snapshot start after 1 s or 3 s.

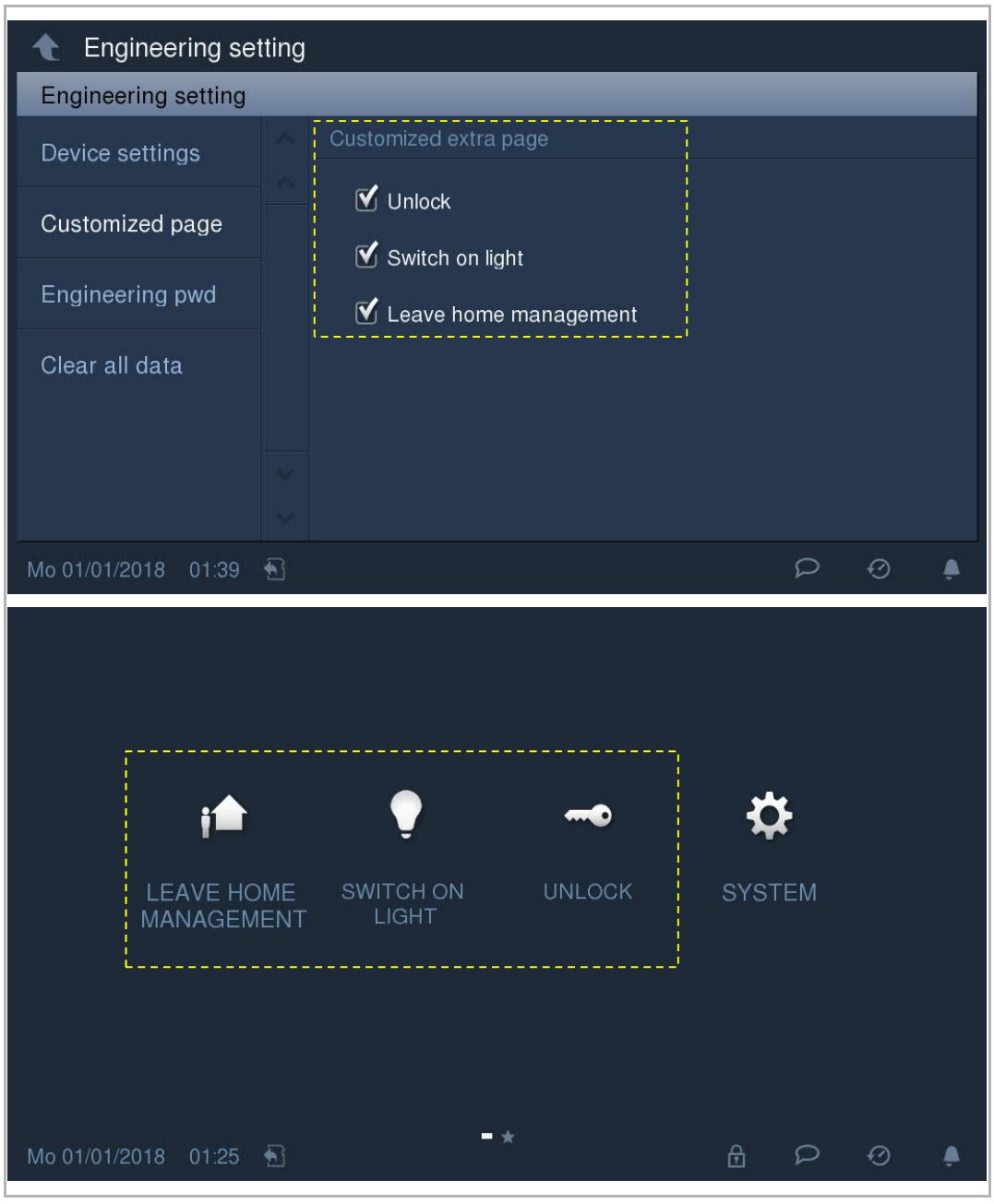
Selecting 1 s means, this device will take a snapshot automatically at 1 s, 3 s and 5 s.

Selecting 3 s means, this device will take a snapshot automatically at 3 s, 5 s and 7 s.



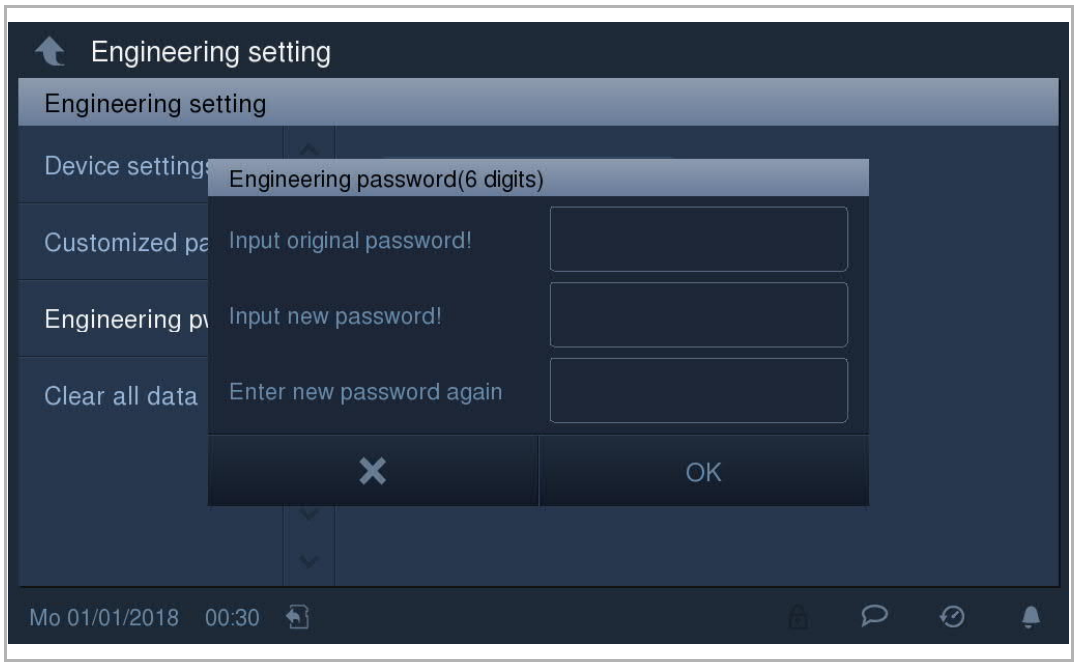
8.13.3 Customized extra page

On the "Engineering setting" - "Customized page" screen, tick the check box to enable the functions. The icons for these functions will be displayed on the extra screen.



8.13.4 Change engineering password

On the "Engineering setting" - "Engineering pwd" page, click "Engineering password" to change the password in the pop up window.

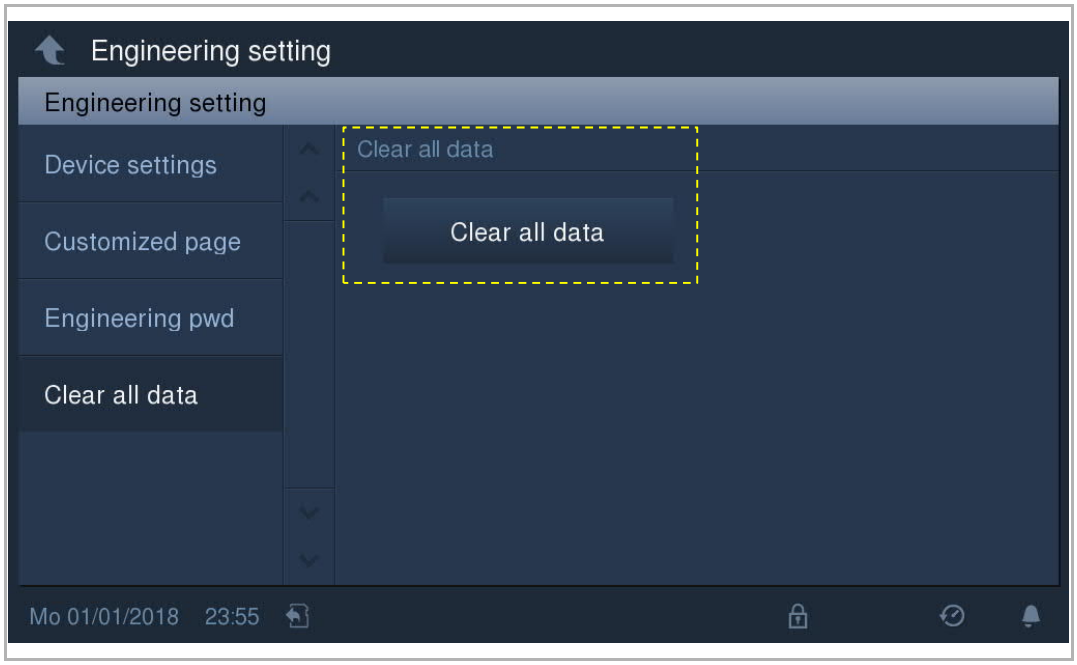


Note
Engineering password must be changed at the first time you enter engineering setting. (The system default is 345678. This password should only be used for initial setting work and should then be changed to another password. It cannot be used as the actual password)

8.13.5 Clear all data

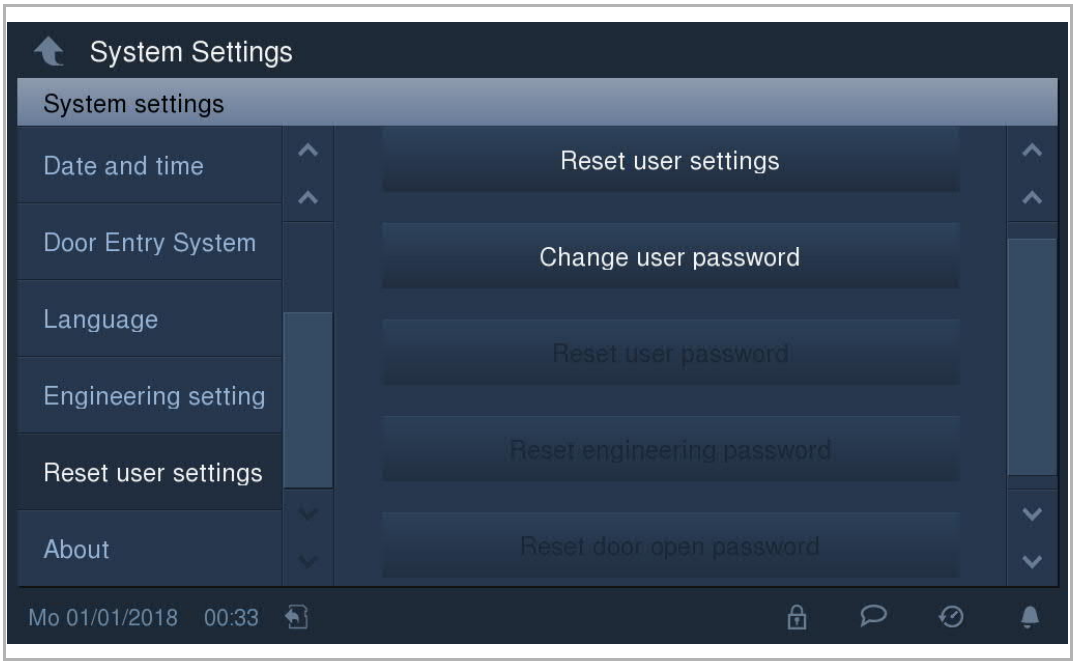
On the "Engineering setting" - "Clear all data" screen, click "clear all data" - "OK".

This function is only available within 120 s after the indoor station is powered on, and will restore all user settings and engineering settings to the default value.



8.13.6 Reset settings

On the "System settings" - "Reset user settings" screen,



Click "Reset user settings" and enter user password (default is 123456) to reset the following settings:

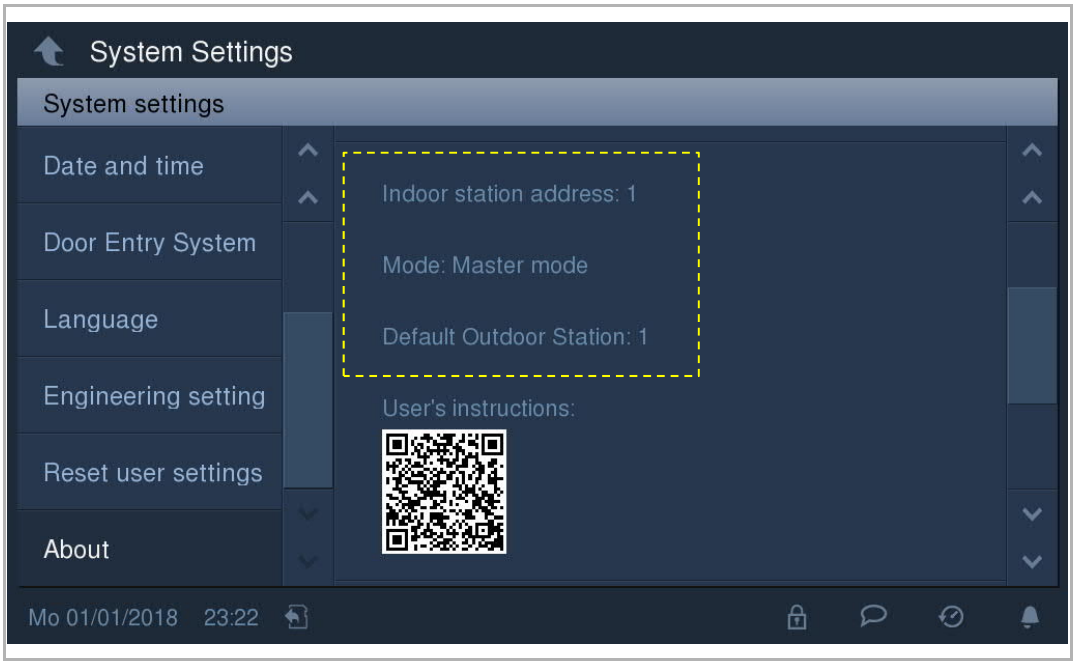
- Brightness: 50%
- Volume settings: 50%
- Auto full screen: Enable
- Auto snapshots: Enable
- Door status check: Enable
- Missed call notification: Enable
- Program button setting: Release the 2nd-lock
- Door open password: Null
- Repeated tone: on
- Touch tone: on
- Leaving message: off
- Call forward: off
- Auto unlock: off
- Mute: off

Click "Change user password", enter the original password and a new password to set the new user password.

"Reset user password" , "Reset engineering password" and "Reset door open password"are only available within 120 s after the device is powered on.

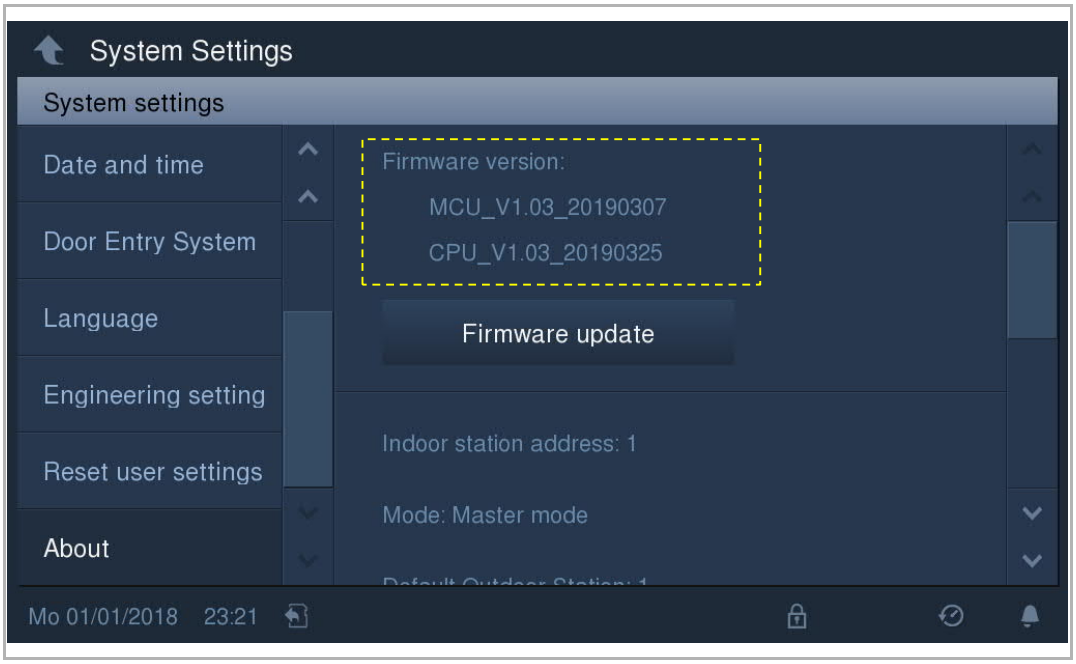
8.13.7 Device address

On the "System settings" - "About" screen, it is possible to view the address of this device.



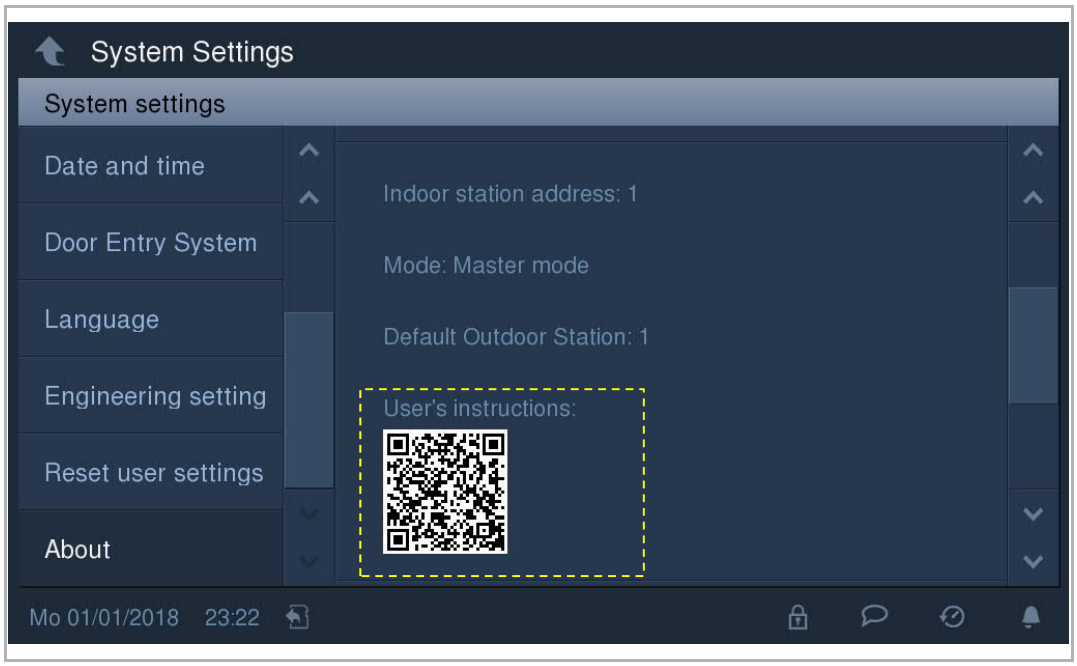
8.13.8 Version information

On the "System settings" - "About" screen, it is possible to view the version information.

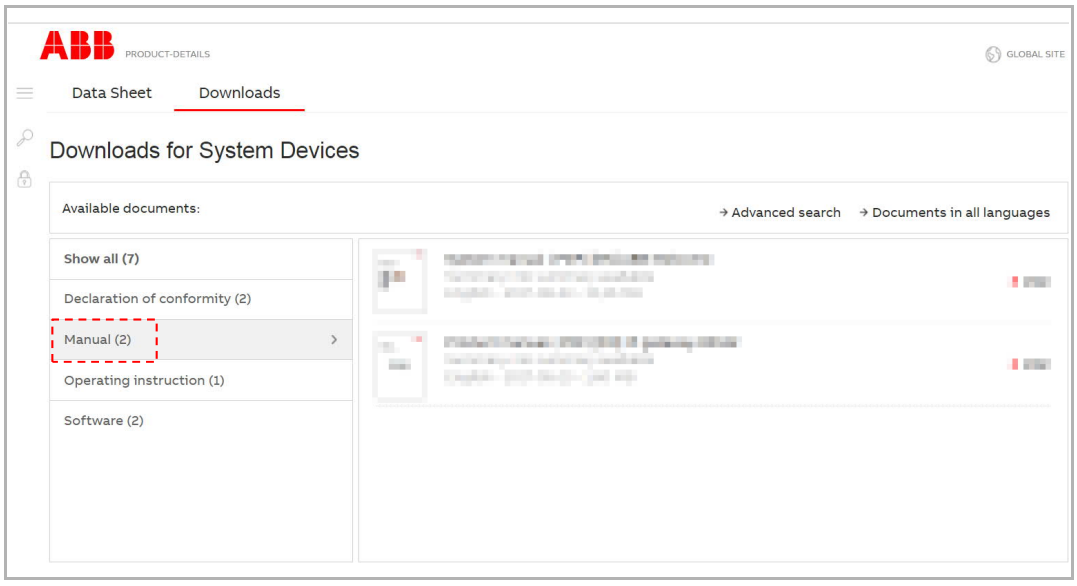


8.13.9 Obtain product manual

On the "System settings" - "About" screen, there is a QR code that can be scanned to access the website.

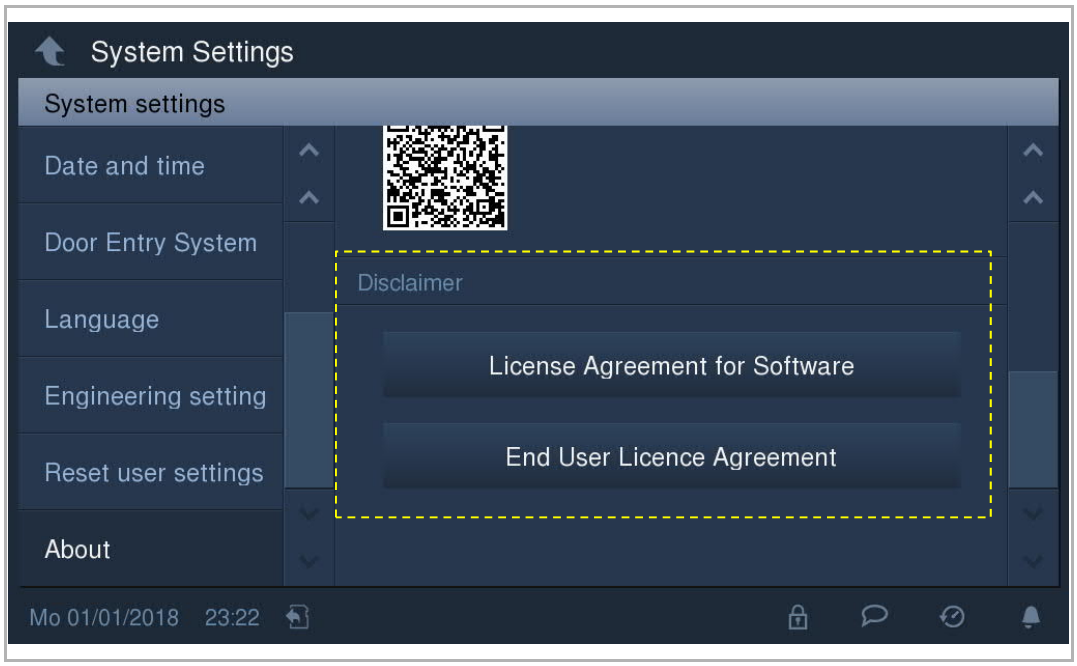


Click "Downloads" - "Manual" to download the file.



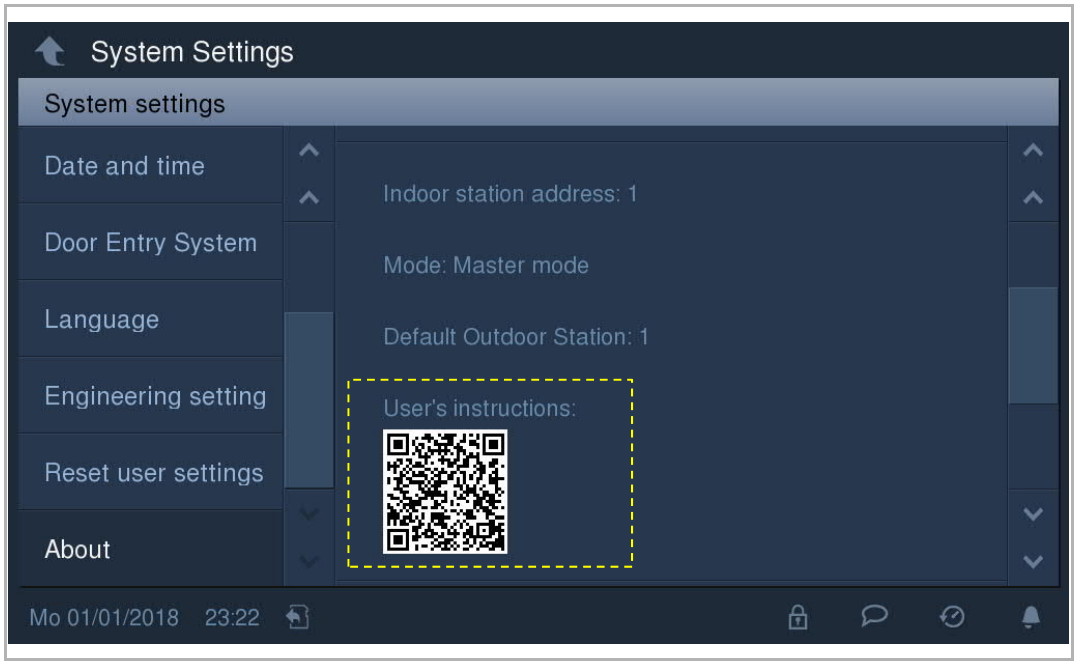
8.13.10 Disclaimer

On the "System settings" - "About" screen, it is possible to view the disclaimers e.g. OSS and EULA.

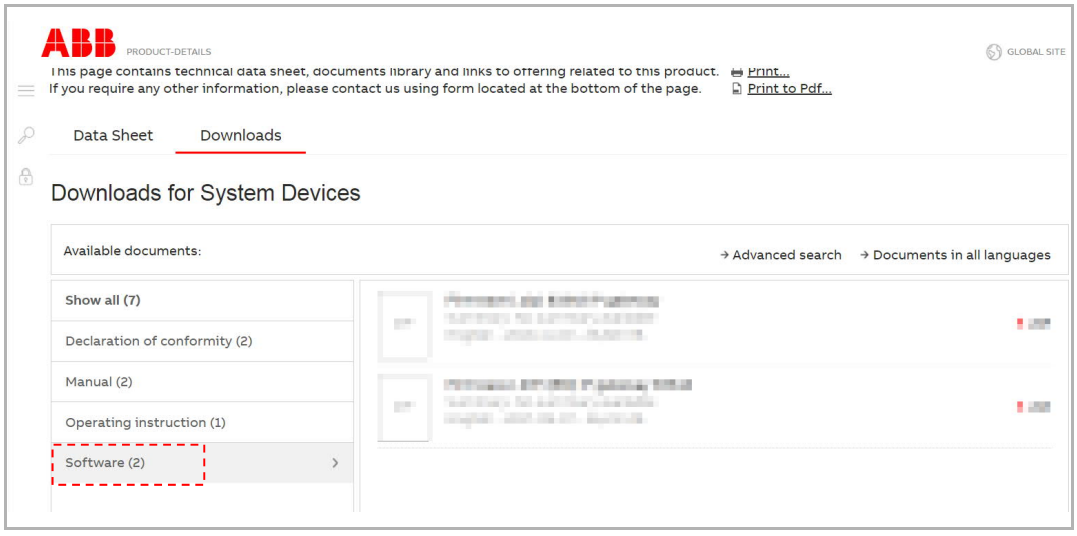


8.13.11 Firmware update

It is possible to obtain the latest version on the website via scanning the QR code.



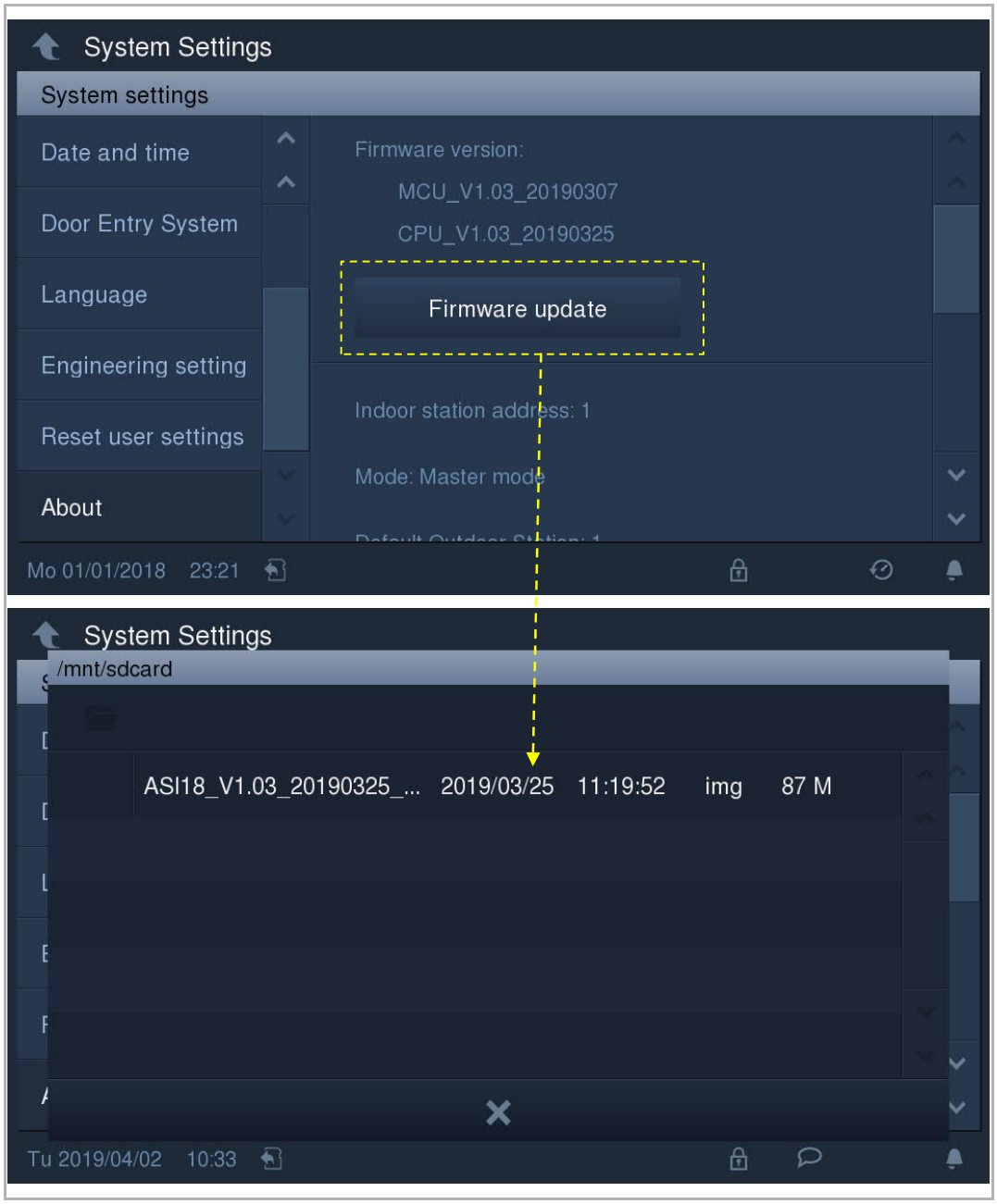
Click "Downloads" - "Software" to download the files.



Note
These 2 update files must be saved in the root directory on the SD card.

Note
This function is only available when an SD card is inserted.

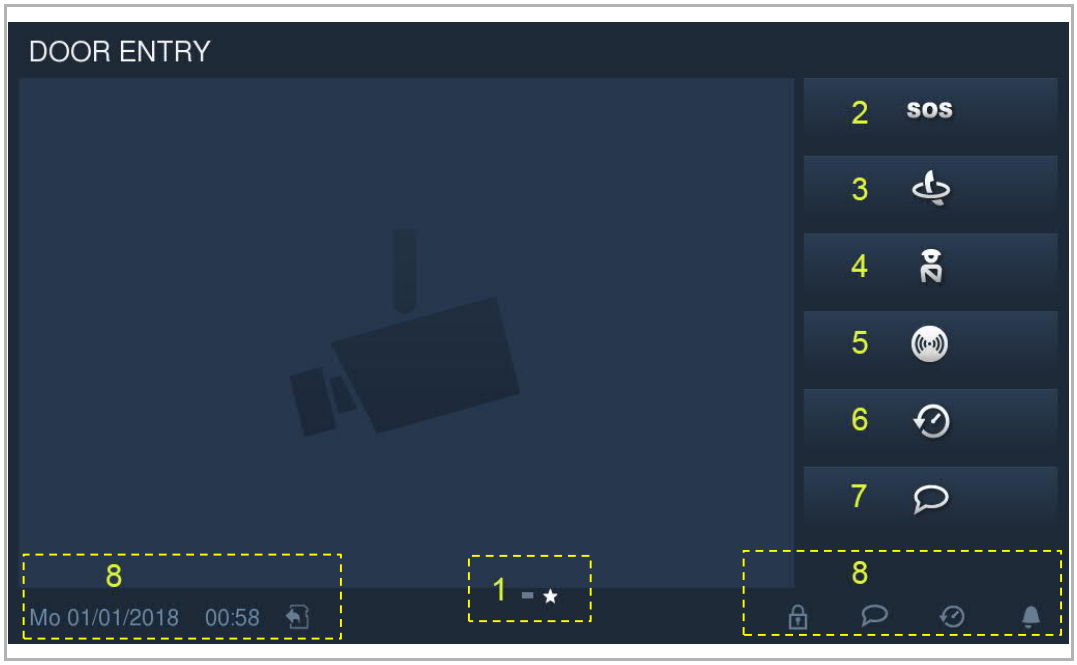
On the "System settings" - "About" screen, click "Firmware update", click the file and then click "OK" to update the firmware.



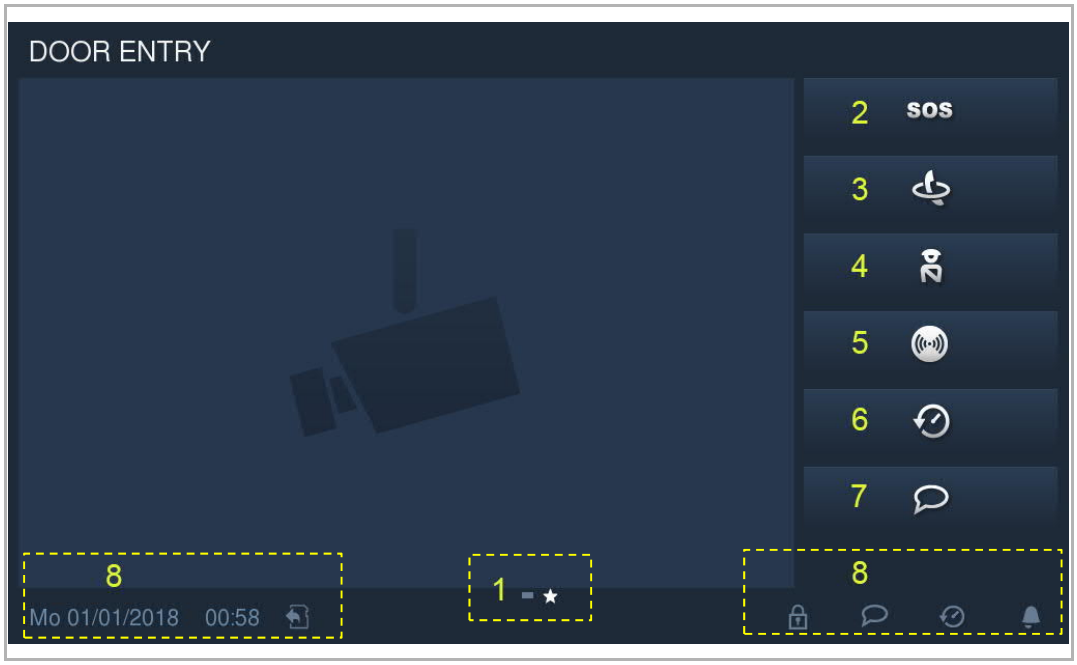
9 Operation

9.1 DES page

In standby mode, clicking the screen will light up the screen and display the Home screen automatically.



No.	Function
1	**Function page** "★" means home screen, "—" means extra screen. This indoor station has 1 home screen and 1 extra screen. The content of extra screen can be customized on "System settings" –"Engineering settings".
2	**SOS** In standby mode, hold SOS for 3 s to send SOS to the guard unit.
3	**Intercom** In standby mode, click to enter intercom screen. Please see the "Intercom" chapter.
4	**Call guard unit** In standby mode, click to call guard unit. Please see the "Call guard unit" chapter.
5	**Pager** In standby mode, click to initial an intercom call to all indoor stations in the same apartment. Please see the "Pager" chapter.

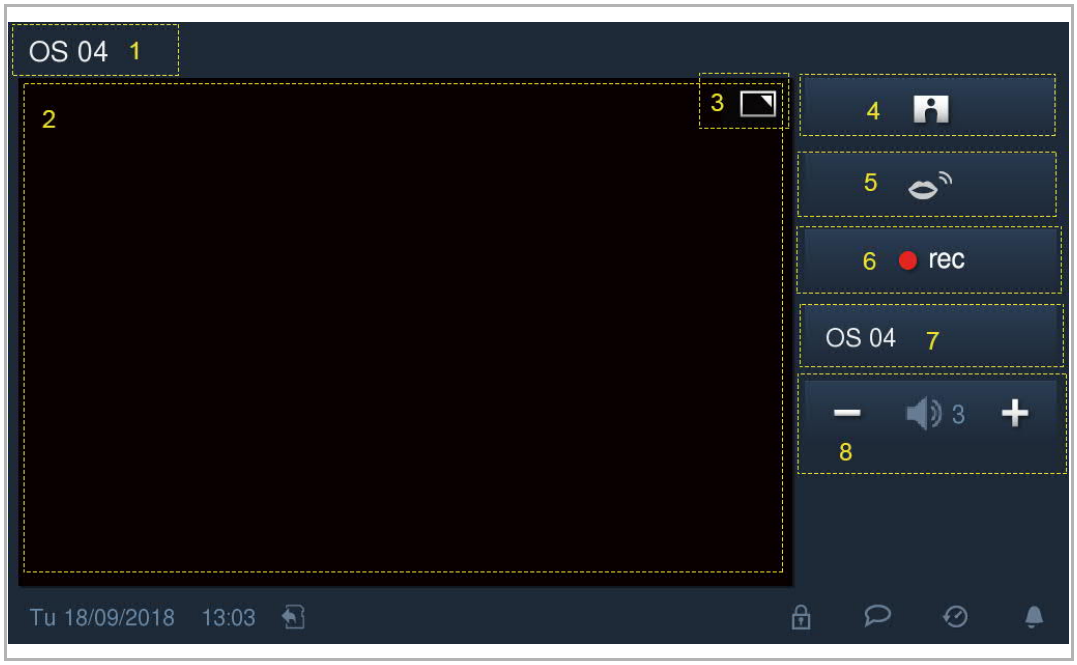


No.	Function
6	**History** In standby mode, click to view the history records. Please see the "History" chapter.
7	**Voice message** In standby mode, click to view the voice messages. Please see the "Voice message" chapter.
8	**Status bar** Display the date, time and the status information for this indoor station.

9.2 Incoming call

9.2.1 Call from outdoor station/gate station

This device displays an image as full screen view by default when receiving an incoming call. Clicking anywhere on the screen will switch to the normal screen view.



No.	Function
1	Caller ID
2	Display image from outdoor station/gate station.
3	Click anywhere on the screen to switch to full screen.
4	**Snapshot manually** Click to capture and save pictures to the internal memory when ringing or during a conversation.
5	**Press to talk** Press and hold for 3 s to switch the speech direction from this device to the other side.
6	**Record audio and video** Press ● to record audio and video to the SD card when ringing or during a conversation if an SD card is inserted.
7	**Select the camera** Select the image from a drop-down list.
8	**Volume** Click "+" or "-" to adjust the volume.

9.2.2 Call from guard unit/indoor station

No.	Function
1	Caller ID
2	**Press to talk** Press and hold for 3 s to force the speech direction from this device to other side.
3	**Volume** Click "+" or "-" to adjust the volume.

9.2.3 Call from doorbell

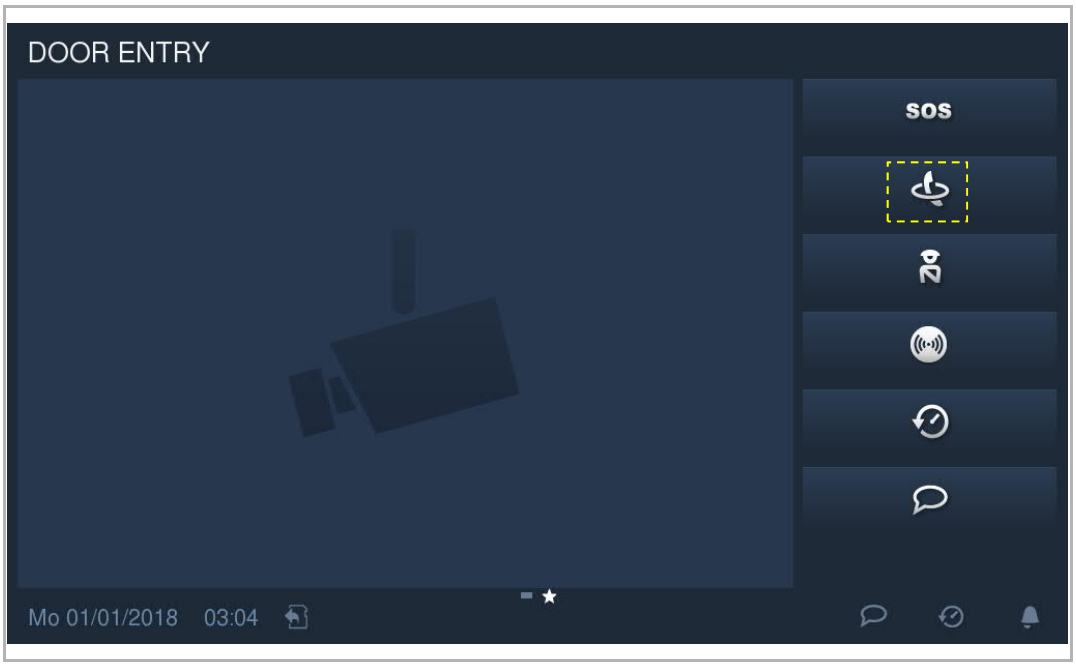
When the doorbell is pressed, the device will display for 5 s on the status bar.

If the doorbell is associated with the camera in the camera list settings, the device will display the corresponding camera automatically for 15 s. Please see the "Visual doorbell" chapter for more details.

9.3 Intercom

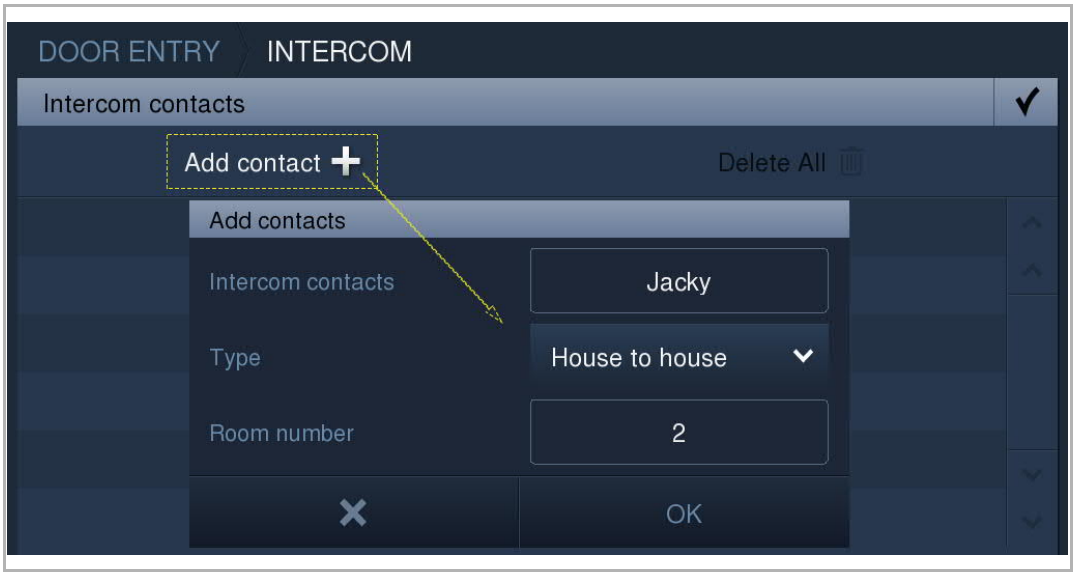
9.3.1 Enter intercom page

In standby mode, click on the home screen to access the corresponding screen.



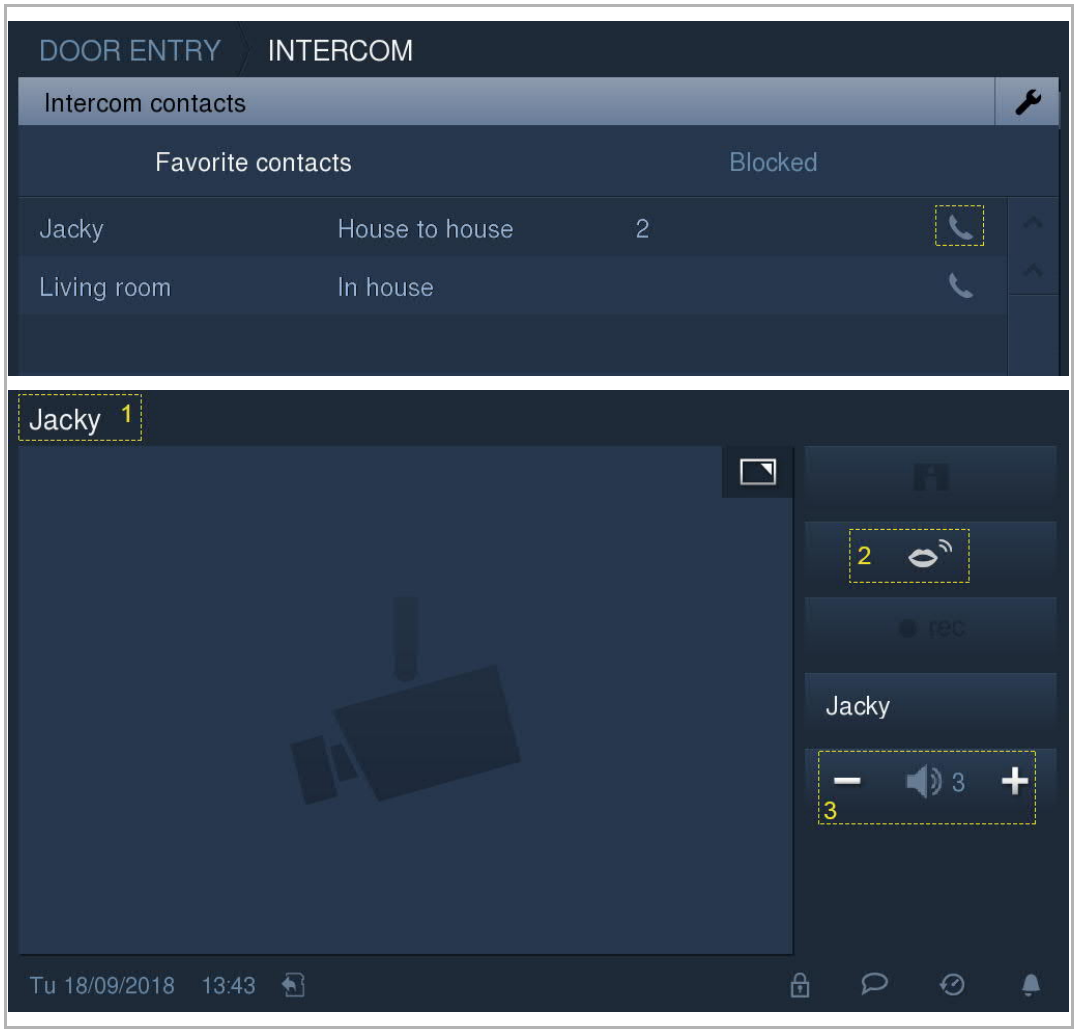
9.3.2 Add contacts

On the "Intercom" screen, click to access the settings. Click "+" to create a new contact.



9.3.3 Initiating an intercom call

On the "Intercom" – "Favorite contacts" screen, click to initial an intercom.

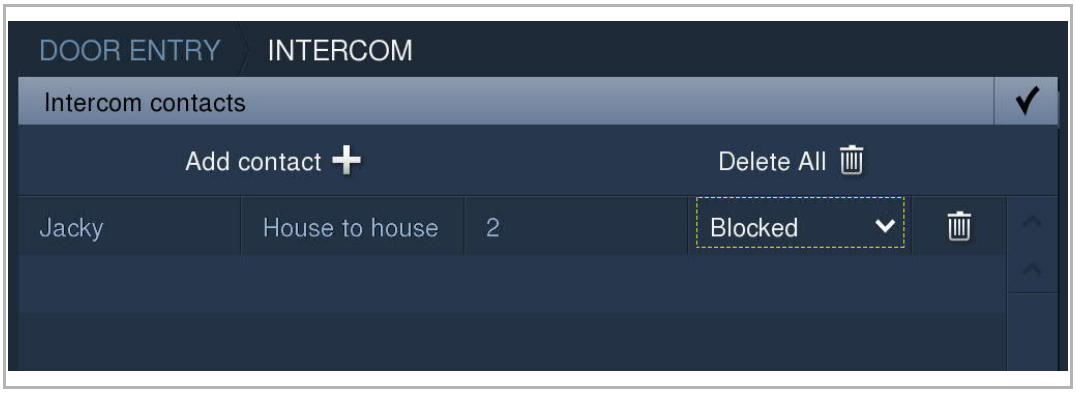


No.	Function
1	Caller ID
2	**Press to talk** Press and hold for 3 s to force the speech direction from this device to other side.
3	**Volume** Click "+" or "-" to adjust the volume.

9.3.4 Add to blacklist

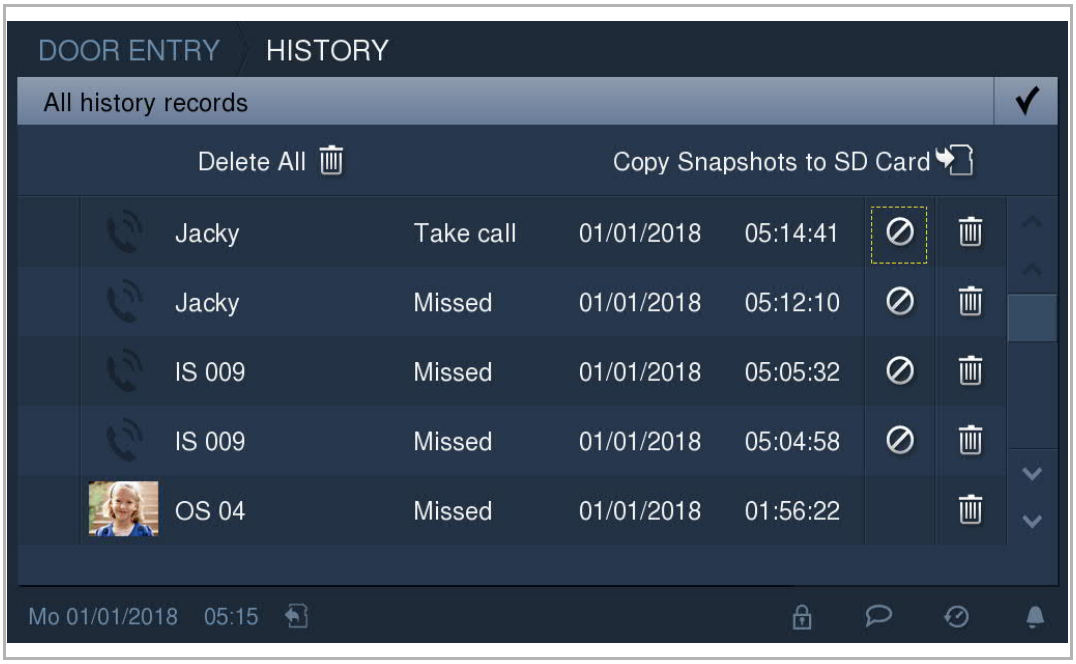
On the "Intercom" – "Favorite contacts" screen, click to access the corresponding screen.

Select "Blocked" from the drop list to add the contact to blacklist.



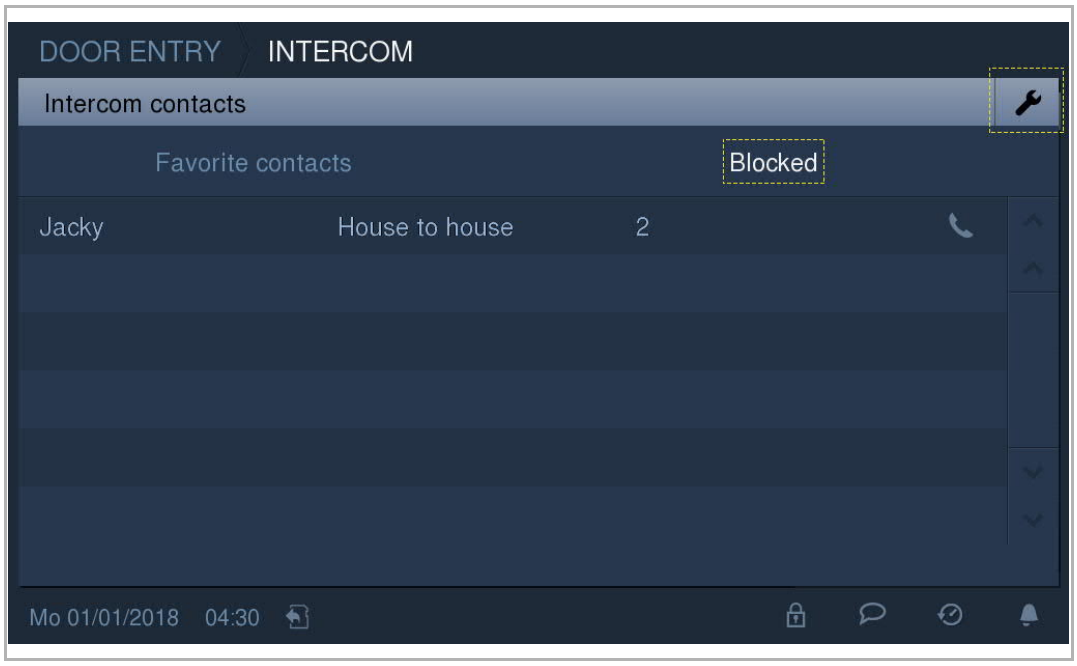
It is possible to add a contact to the blacklist directly on the "History" screen.

On the "History" screen, click to add the caller ID to blacklist directly. Only the caller ID on the favorite list can be added to the blacklist.

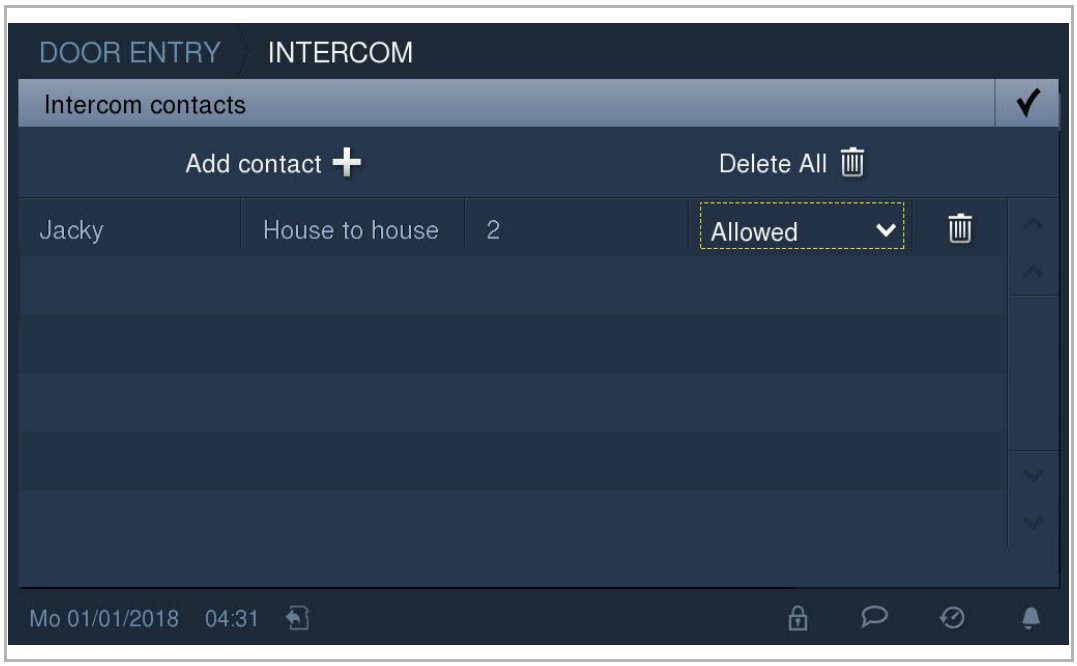


9.3.5 Restoring a contact from the blacklist

On the "Intercom" – "Blocked" screen, click to access the settings.



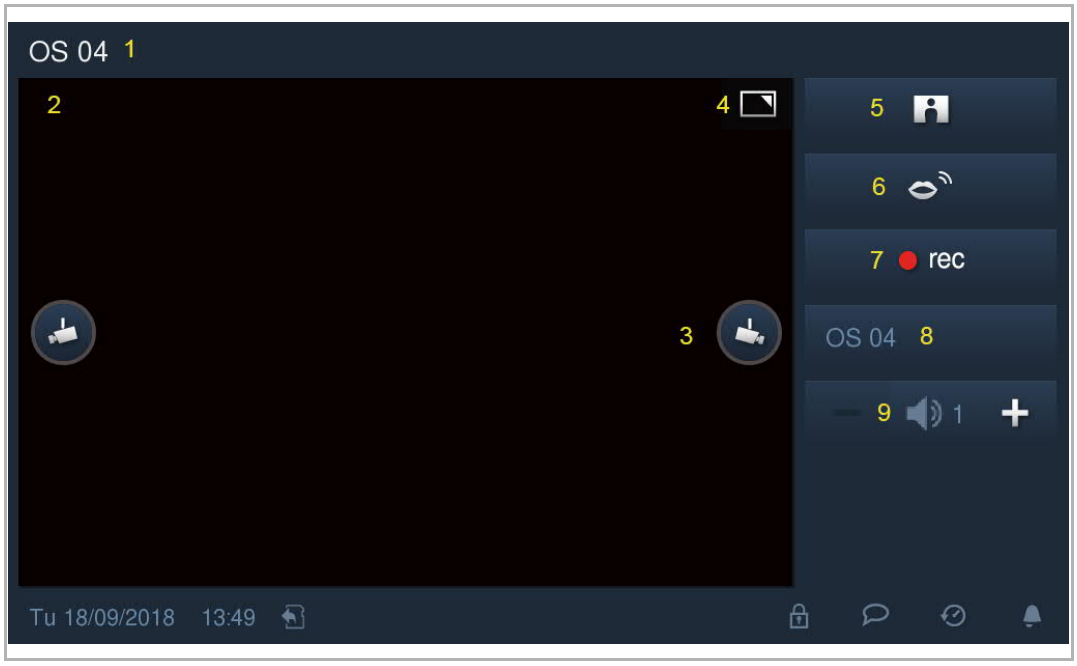
Select "Allowed" from the drop list to add the contact to favorite contact list.



9.4 Surveillance

9.4.1 Surveillance without the camera list

In standby mode, press the button to start a surveillance if there is no camera list. Press the button again to quit the surveillance.

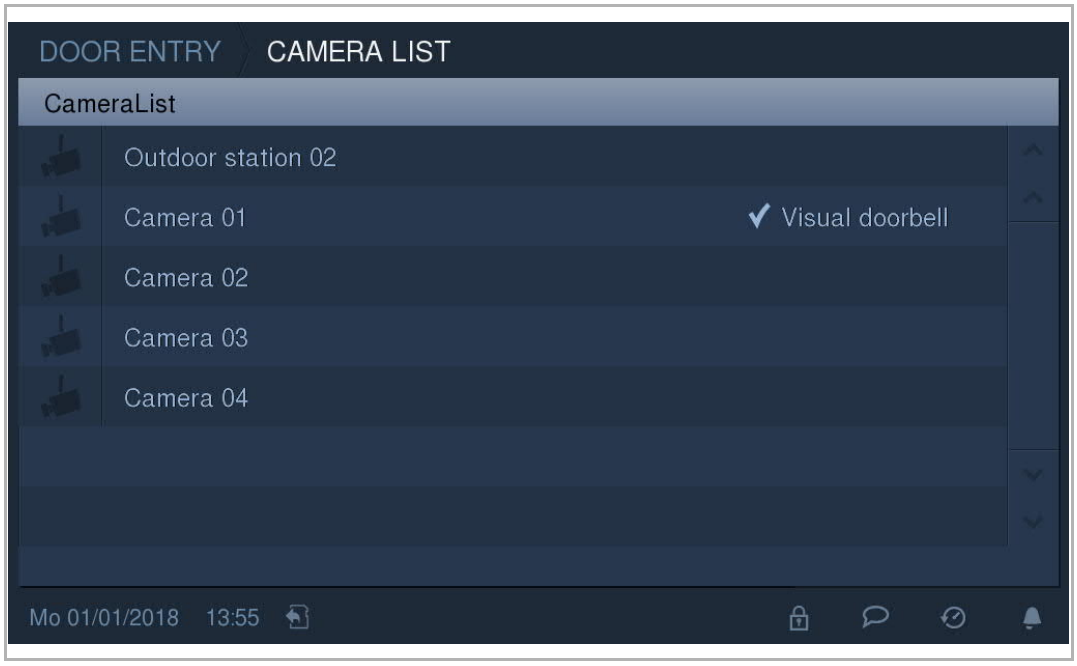


No.	Function
1	Caller ID
2	Display the image of outdoor station or gate station.
3	Click to see next image
4	Click to see full screen image.
5	**Snapshot manually** Click to take a snapshot and save the picture to internal memory during ringing and conversation.
6	**Press to talk** Press and hold for 3 s to force the speech direction from this device to other side.
7	**Record audio and video** Press ● to record audio and video to an SD card during ringing and conversation when an SD card is inserted.
8	**Select the camera** Select the image from drop-list.
9	**Volume** Click "+" or "-" to adjust the volume.

9.4.2 Surveillance with the camera list

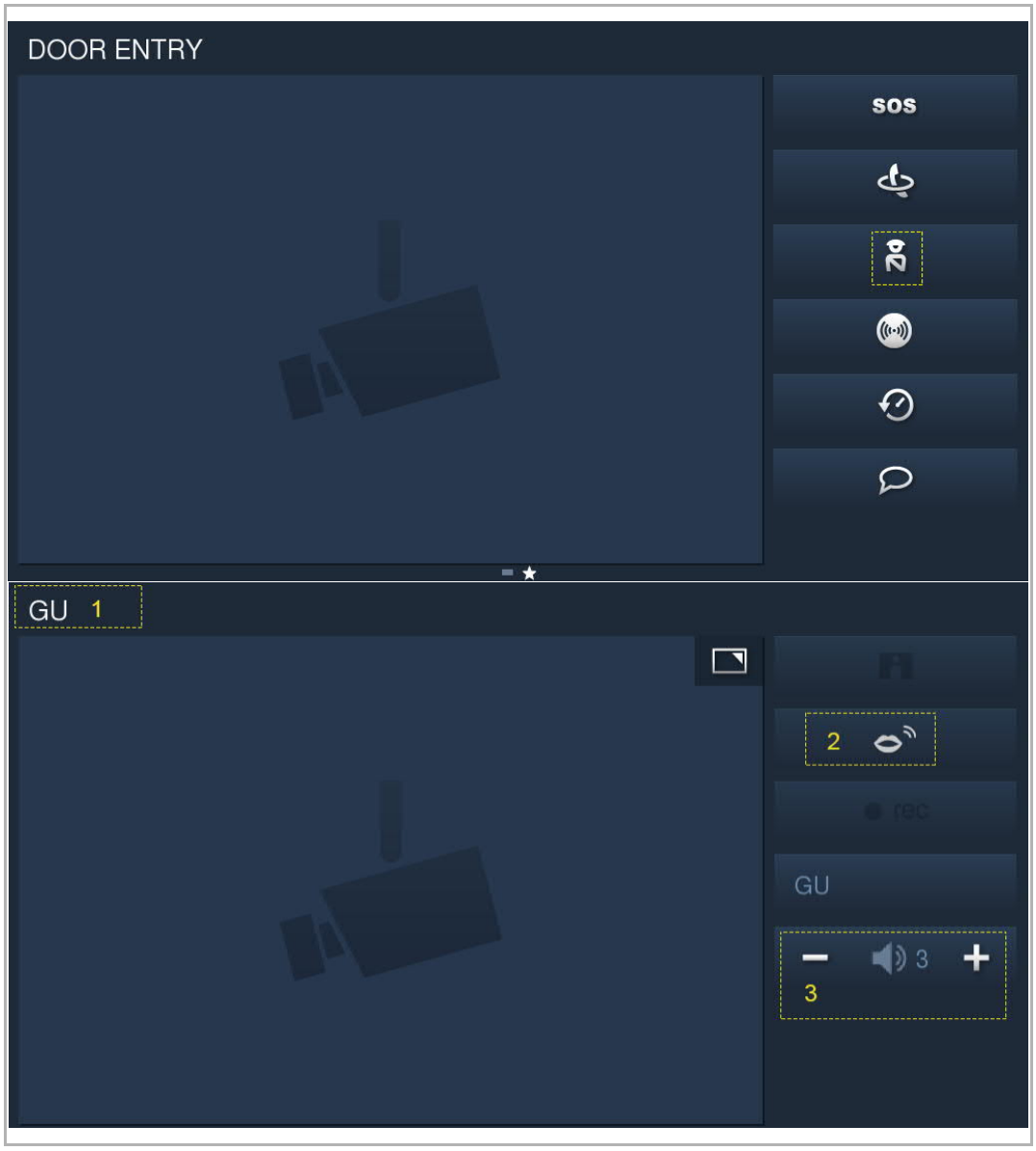
In standby mode, press the button to access the "Camera list" screen if there is a camera list. Click the designated outdoor station or camera to view the image. Press the button again to quit the surveillance.

Press the button during the surveillance to initial a communication and press the button again to end the call.



9.5 Call guard unit

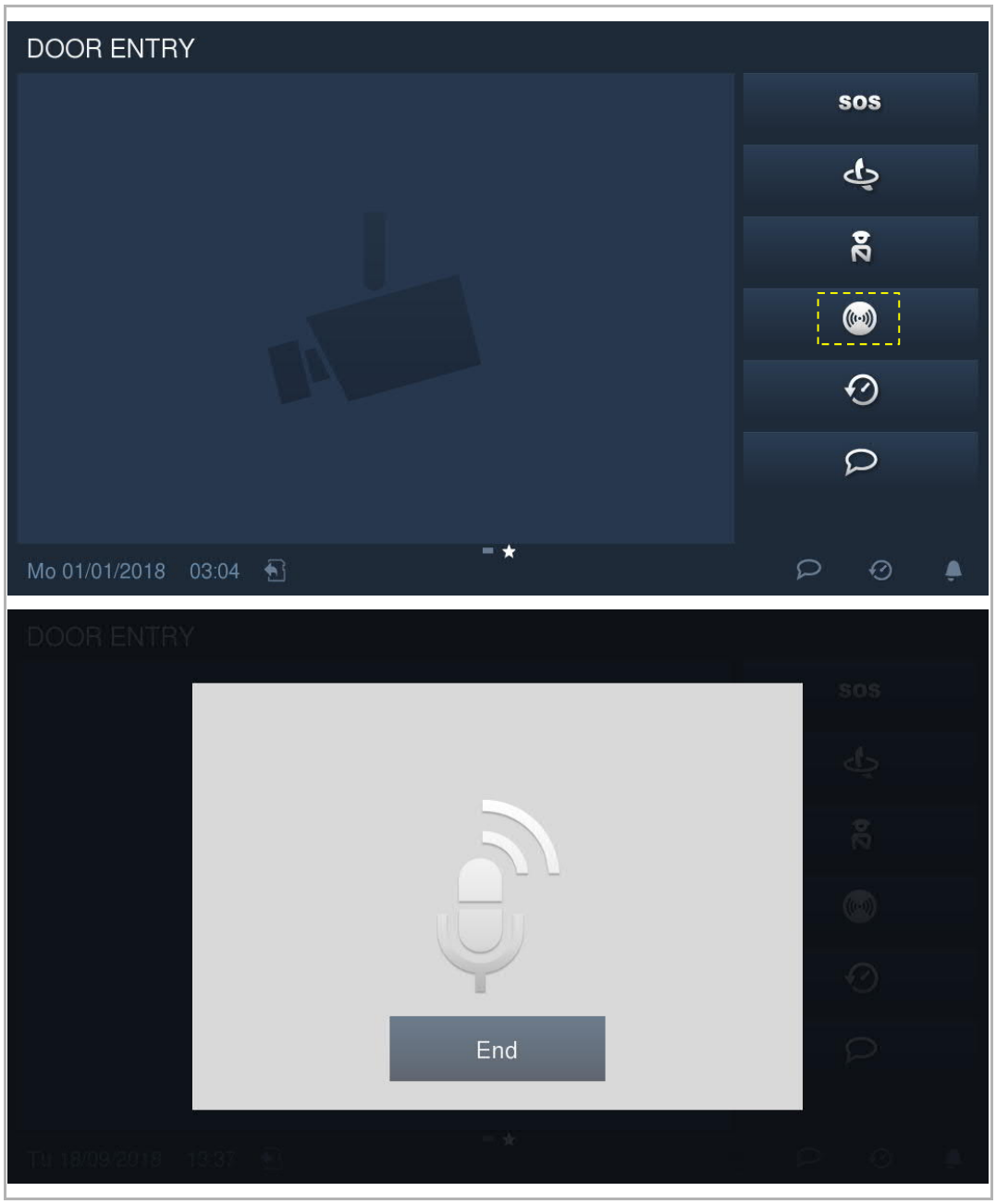
In standby mode, click on the home screen to call guard unit.



No.	Function
1	Caller ID
2	**Press to talk** Press and hold for 3 s to force the speech direction from this device to other side.
3	**Volume** Click "+" or "-" to adjust the volume.

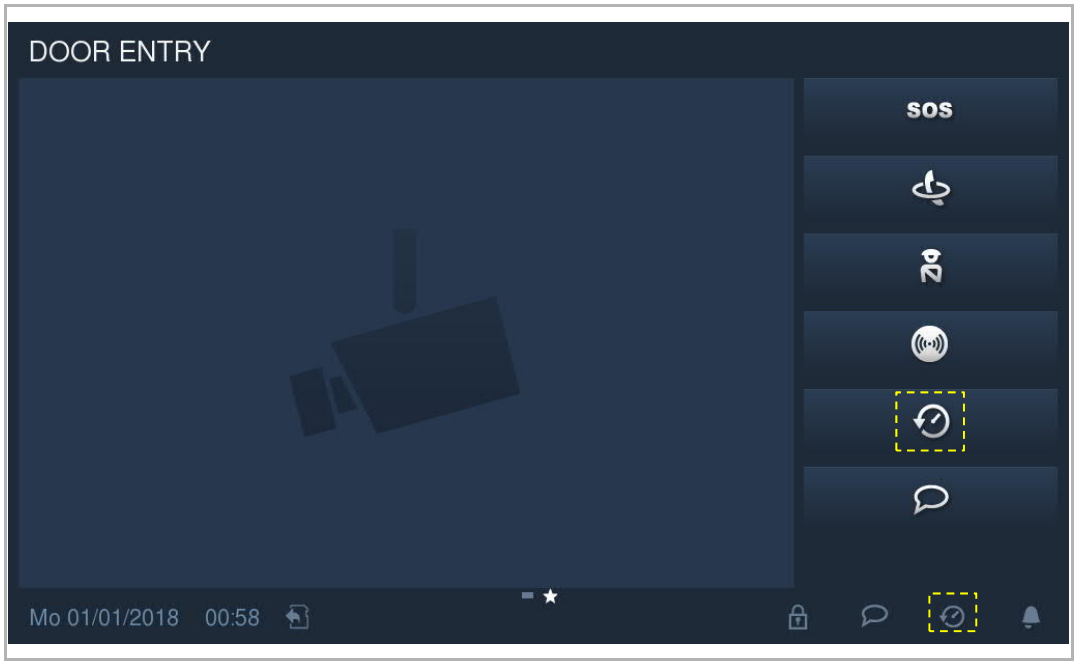
9.6 Pager

In standby mode, click on the home screen. This indoor station will initial an internal call to all indoor stations in the same apartment. This broadcast will last maximum 30 s.

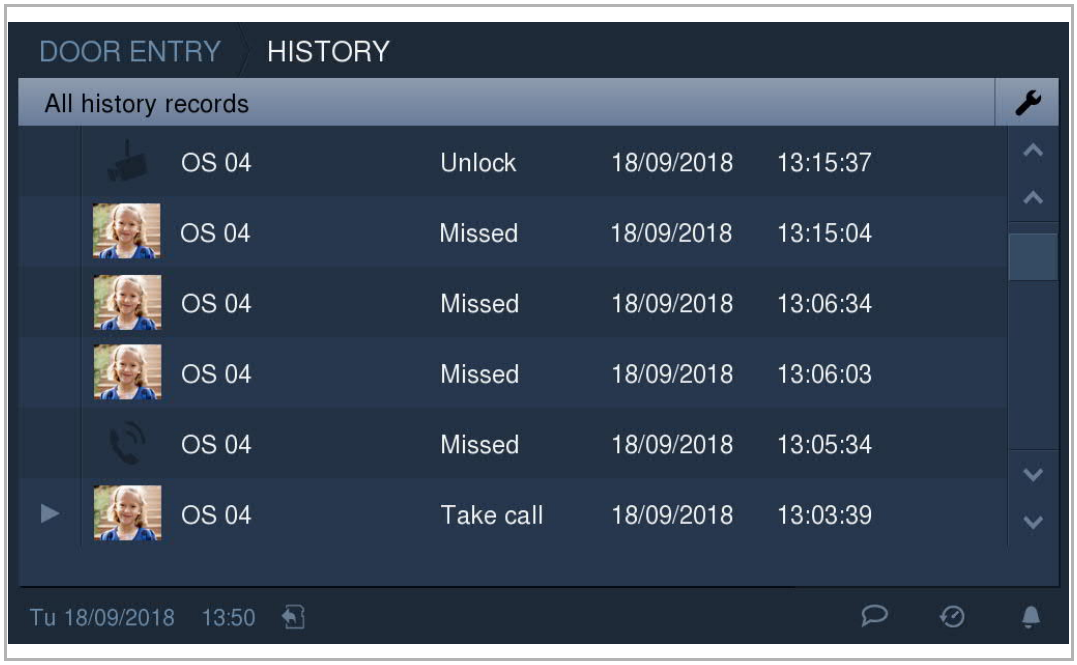


9.7 History

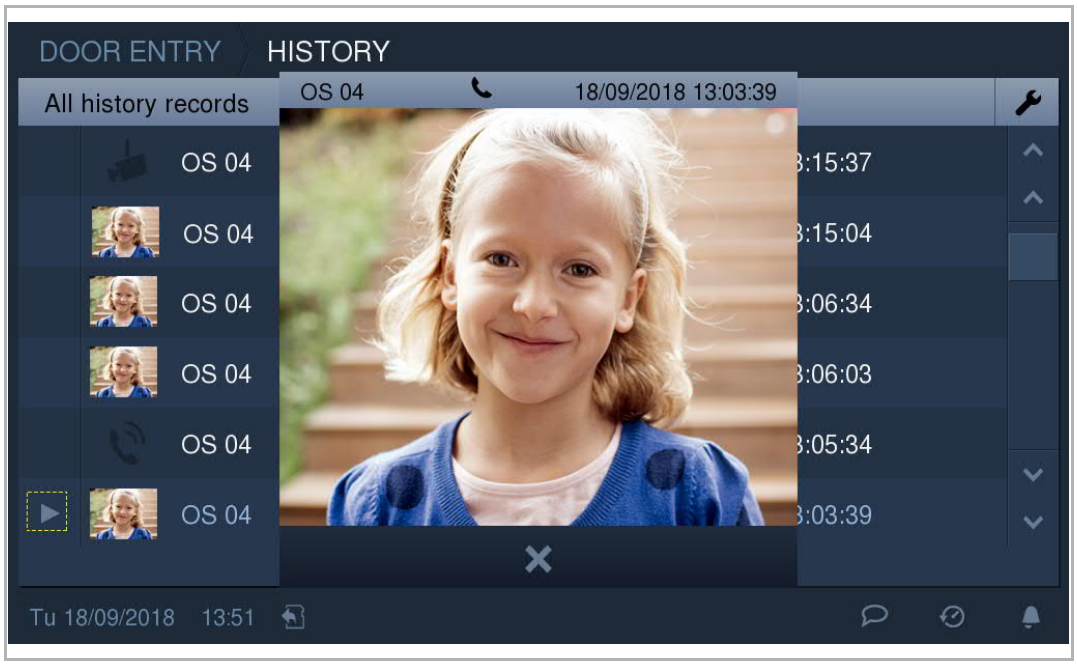
In standby mode, click to view the history.



A maximum of 100 DES communication records can be stored. Highlighting indicates that the record is unread.

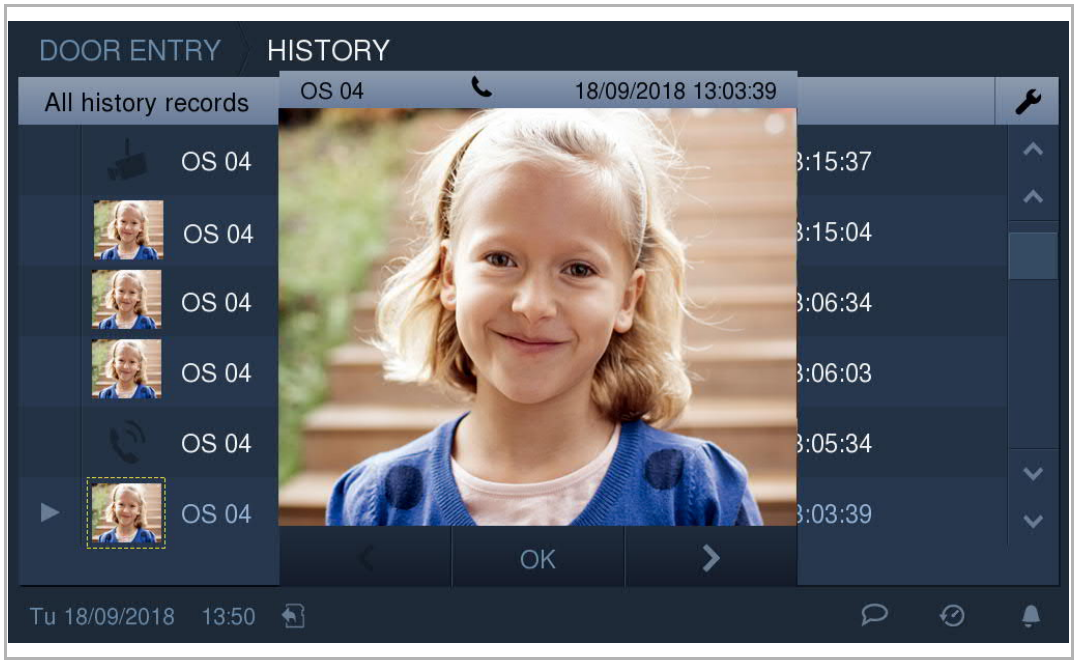


Click ▶ to play the audio or video record in the pop up window (an SD card must be inserted)



Click the image to view details in the pop up window.

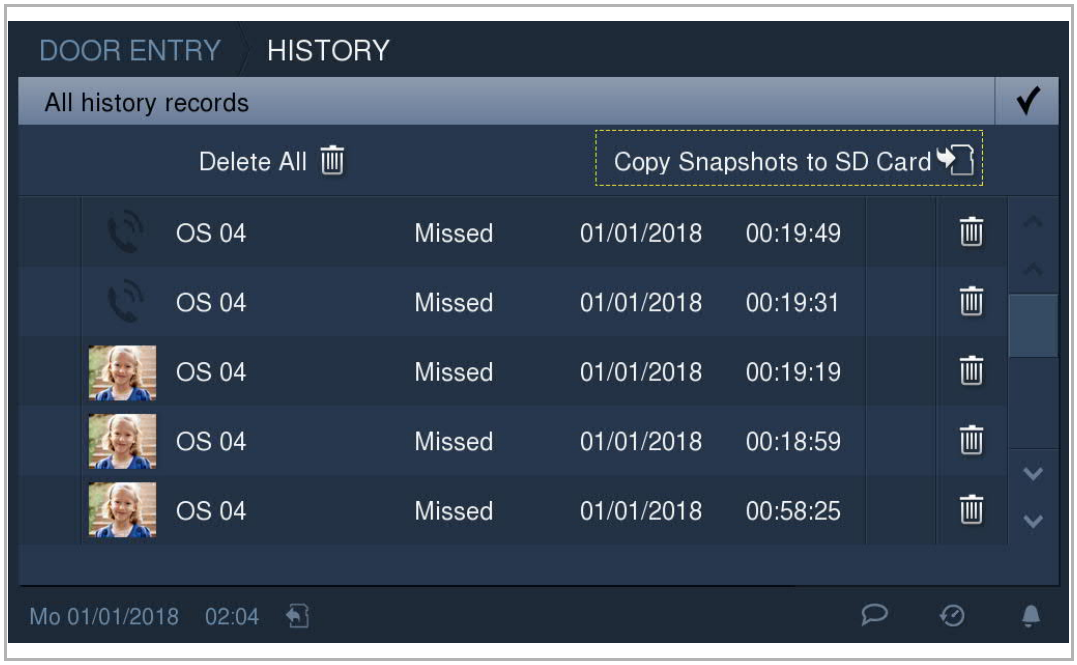
Click "<" or ">" to change the images. (max. 3 pictures for each record)



Click to enter the settings.

It is possible to delete history records one by one, or to delete all the records at once with one click.

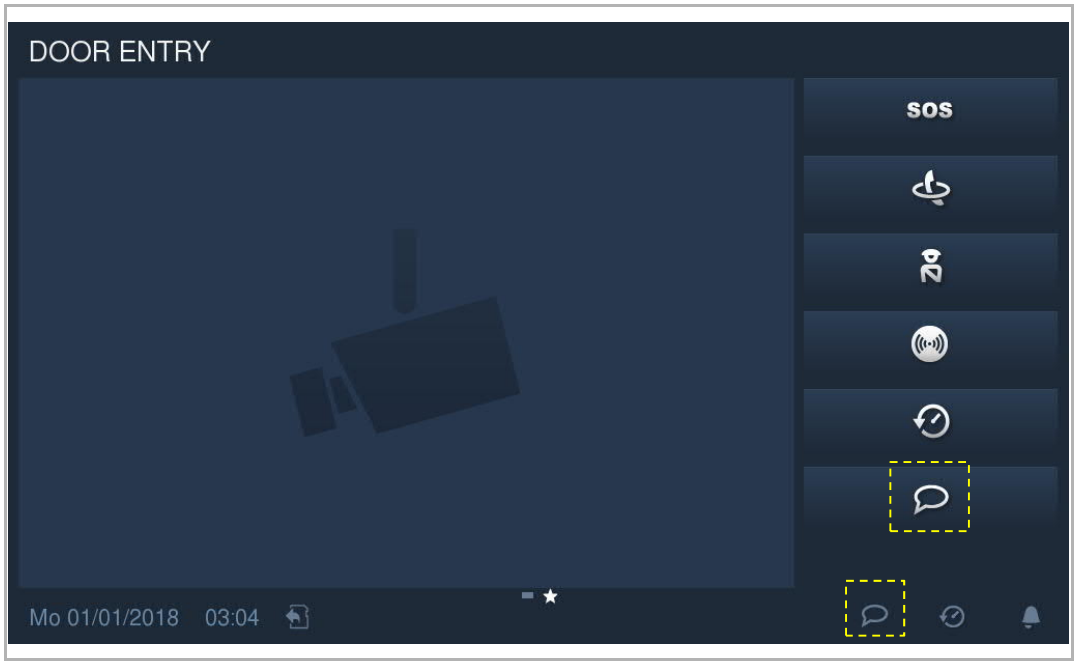
Snapshots can be copied to the SD card if an SD card is inserted.



If the disk space of SD card is full, will be displayed on the status bar.

9.8 Voice message

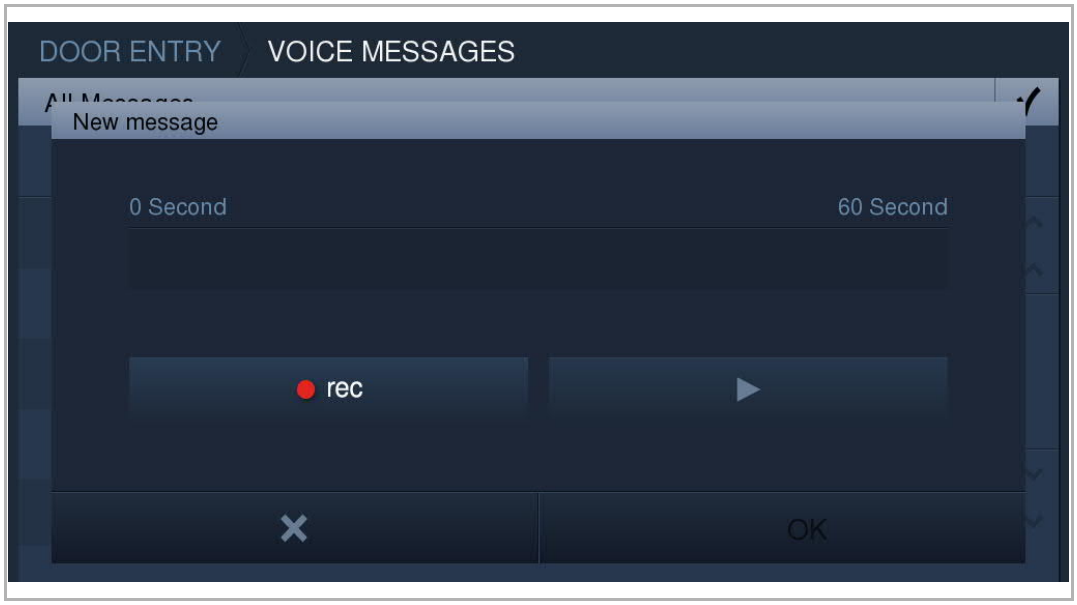
In standby mode, click to access the corresponding screen.



Click to access the settings. Click "+" to add a new voice message.

Click the Rec button ● to start recording a voice message and click the Play button ▶ to play the voice message.

A maximum of 10 voice messages can be recorded.



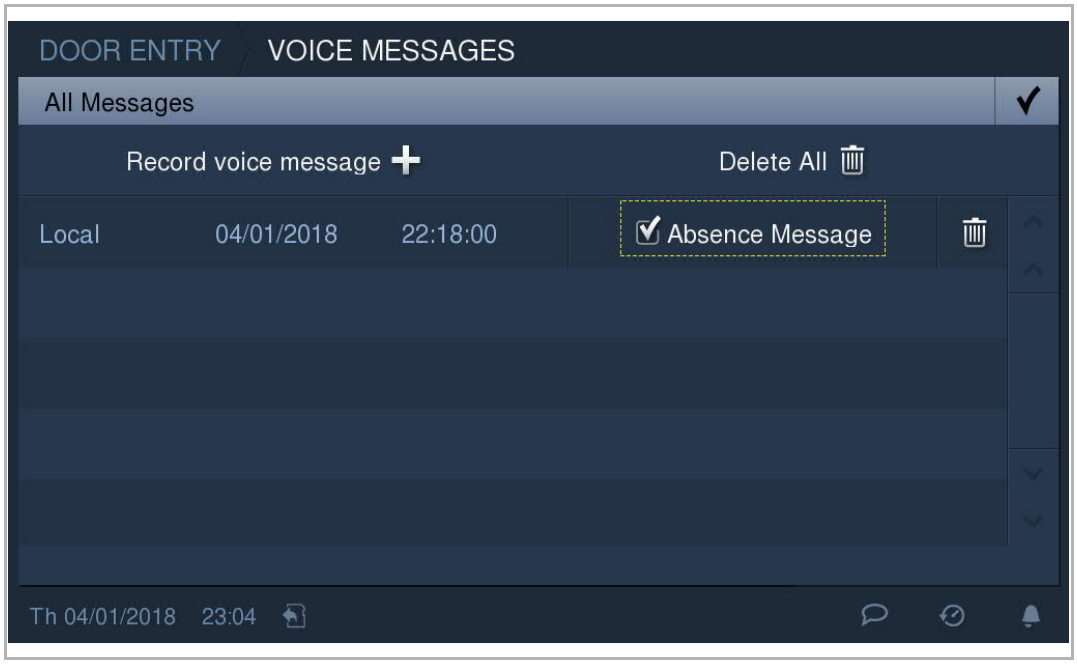
9.9 Absence message

This device is able to leave voice message for visitors and to record voice message from visitors.

Enable "Absence message"

At least one voice message must exist before this function can be used.

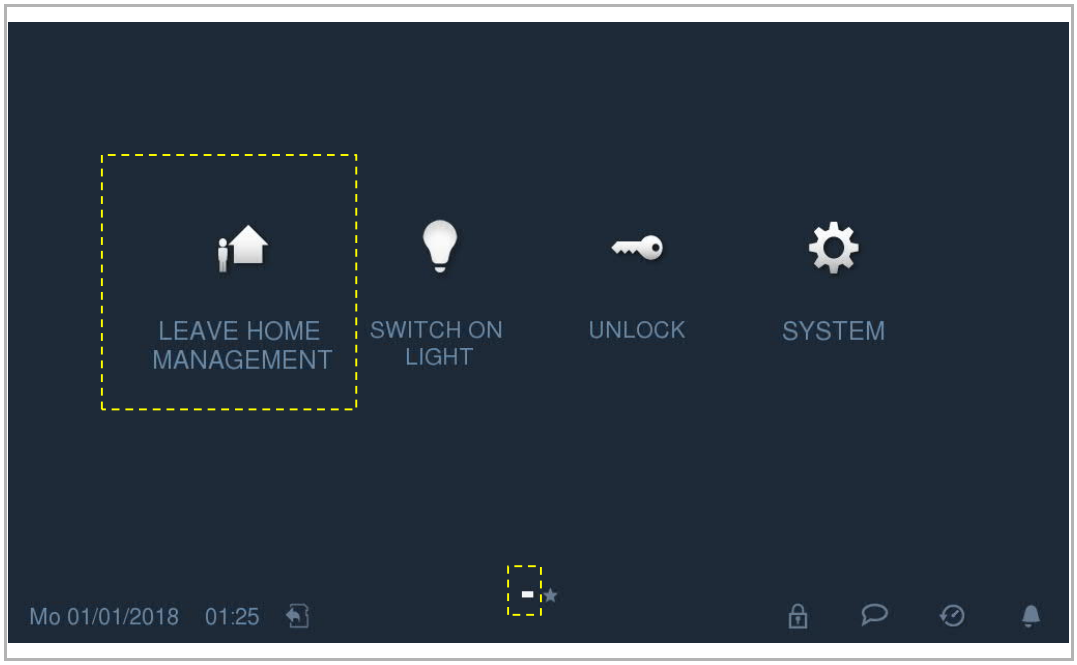
On the "Voice message" screen, tick the check box to enable the function.



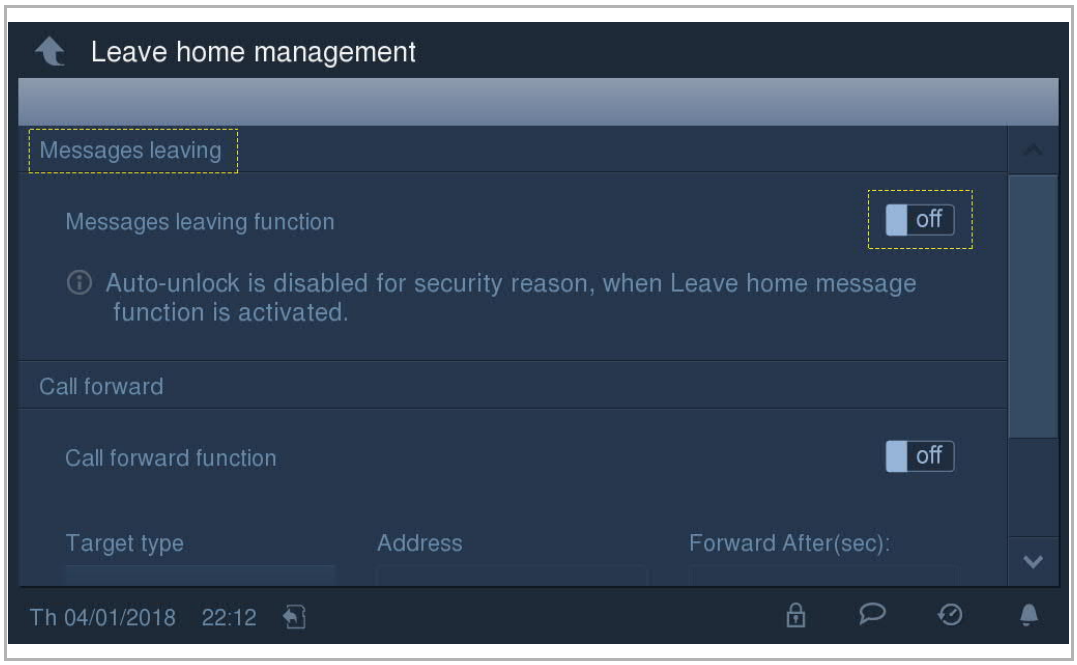
Note
The functions "Call forward" and "Auto unlock" will be disable if this function is activated.

Disable "Absence message"

On the extra screen, click "Leave home management" to access the screen.



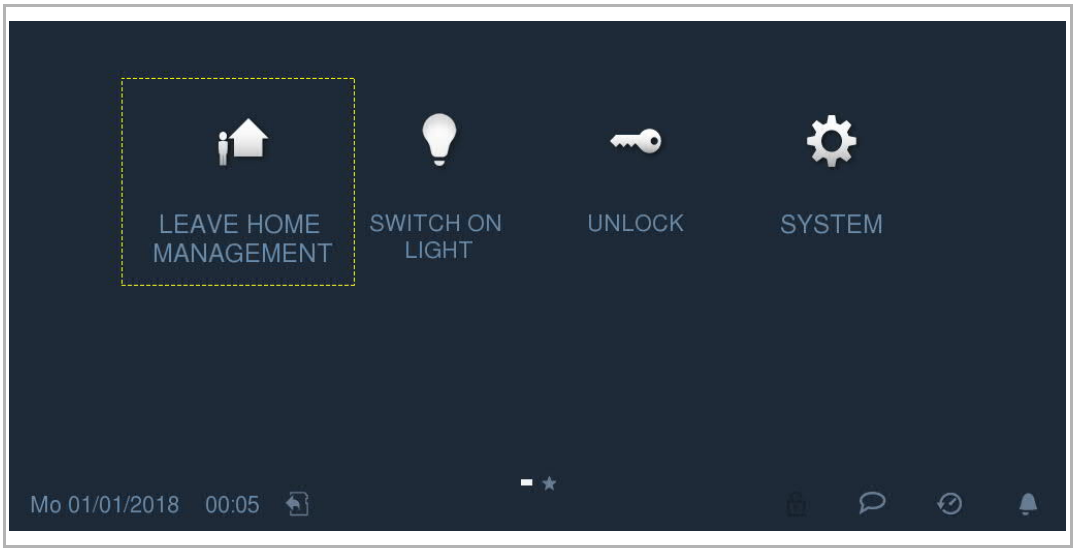
Click the radiobutton to "OFF" to disable the absence message function.



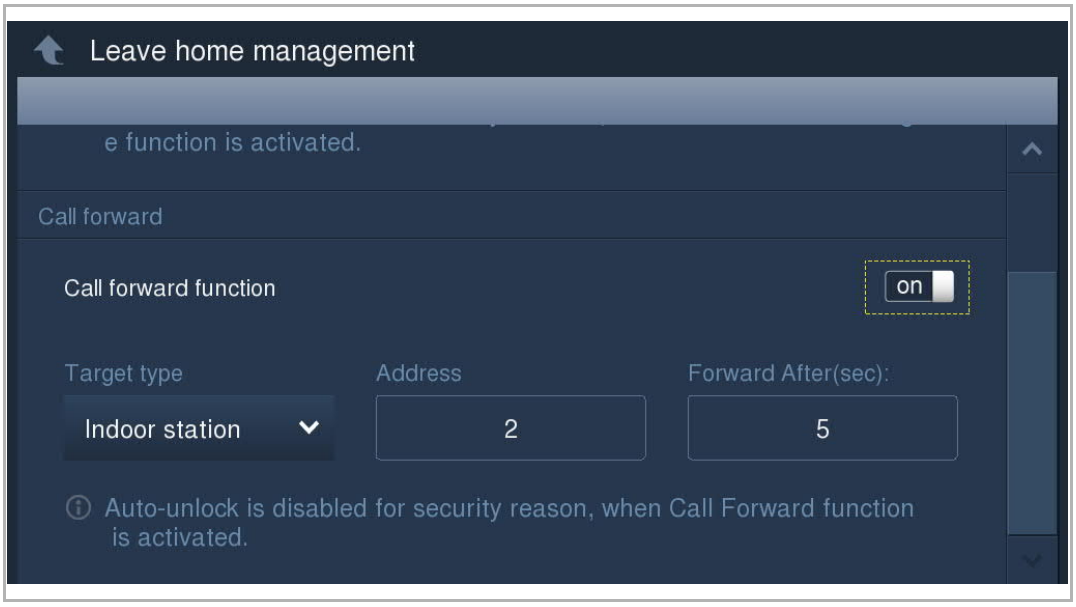
9.10 Call forward

This indoor station is able to forward an incoming call to another apartment or guard unit automatically.

On the extra screen, click "Leave home management" to access the screen.



When the function is enable, it is possible to select the indoor station or guard unit to forward the incoming call. Forward time can be set to 1...30 s.

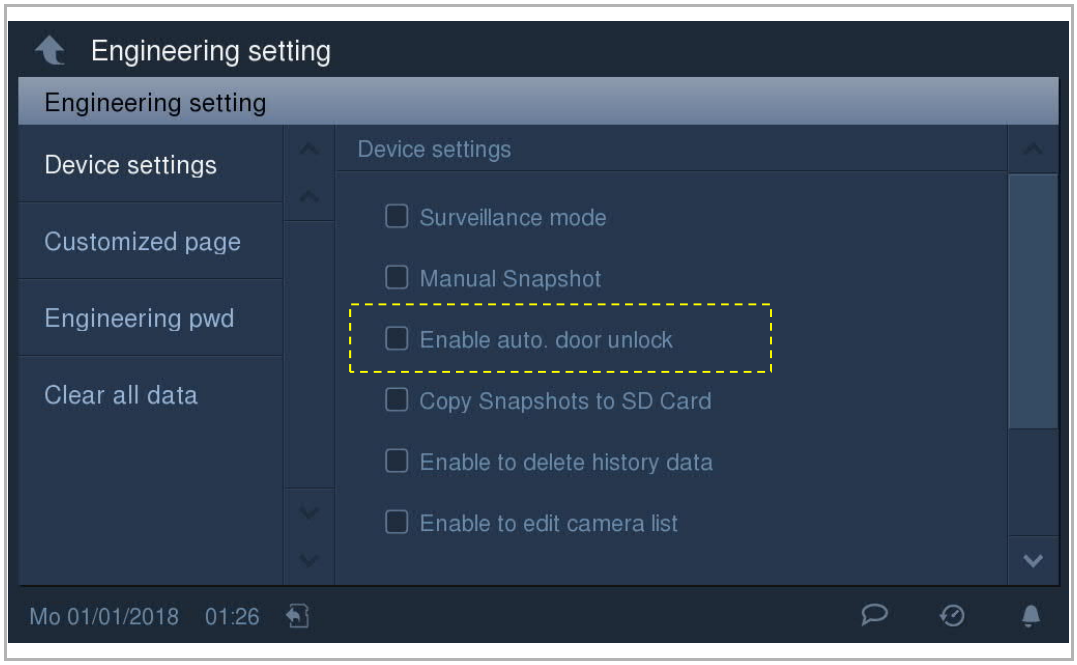


Note

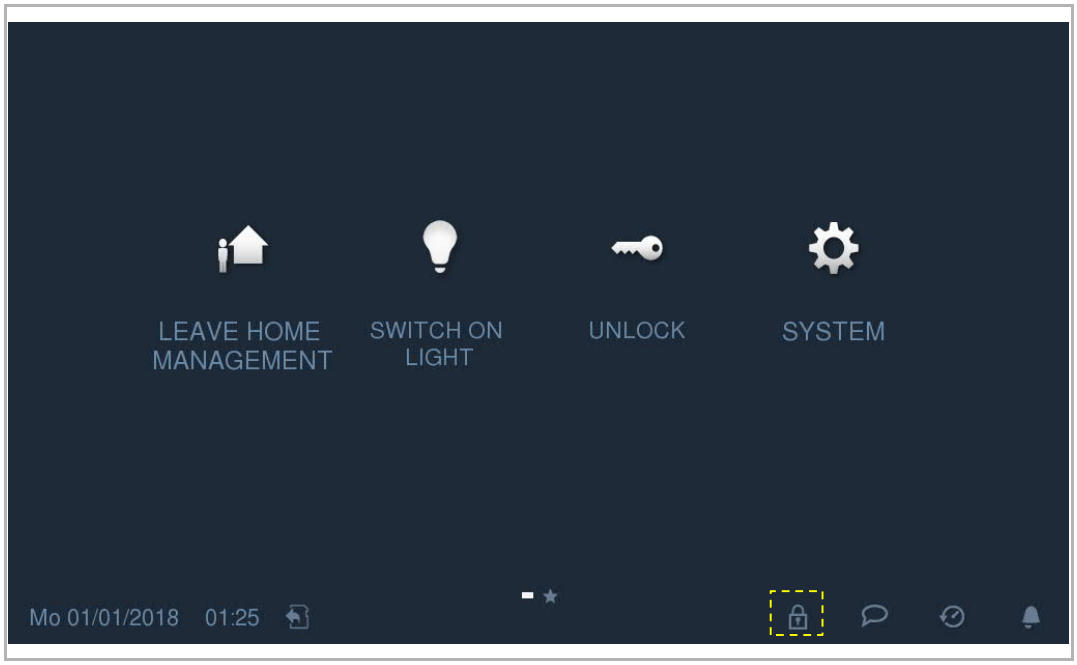
The functions "Absence message" and "Auto unlock" will be disable if this function is activated.

9.11 Automatic unlock

On the "Engineering settings" – "Device settings" screen, tick the checkbox to enable the function.



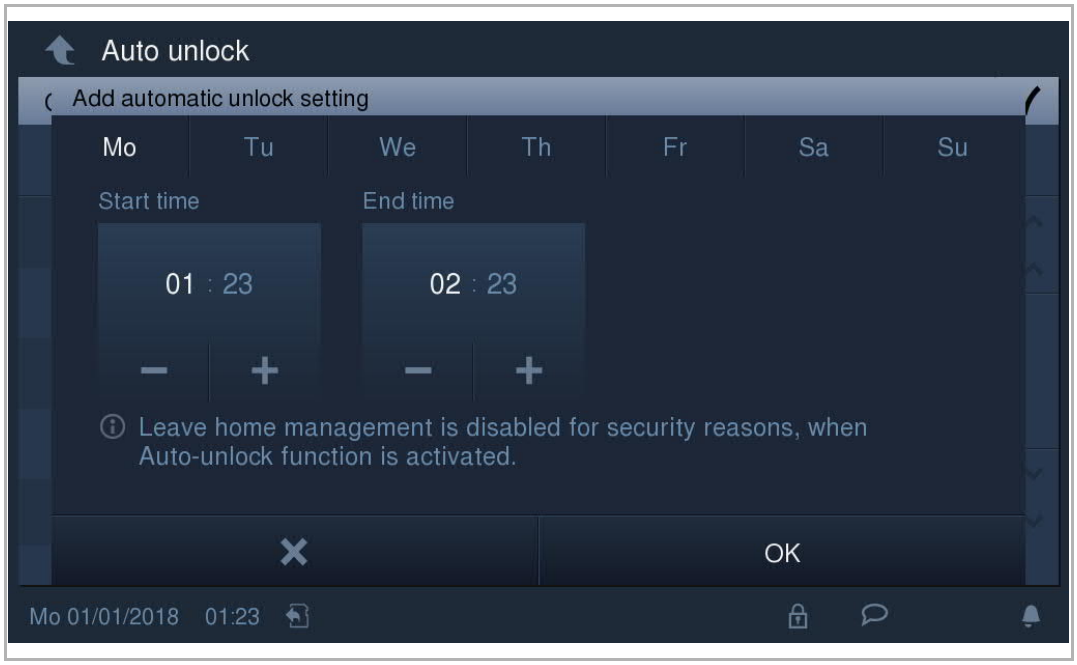
Click on the status bar to access the screen.



Click to access the settings. Click "+" to add a new one.

The system allows you to select the days of the week, with the selected options shown in highlighting.

After setting the start time and end time, click "OK" to save.



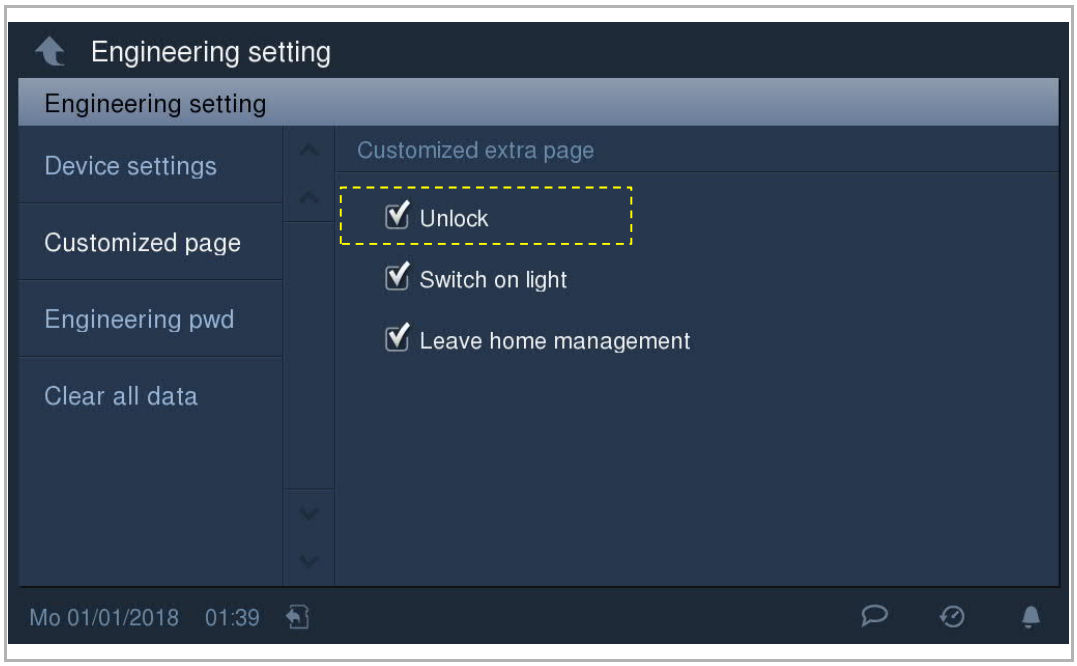
This device supports a maximum of 10 auto unlock settings.

Note

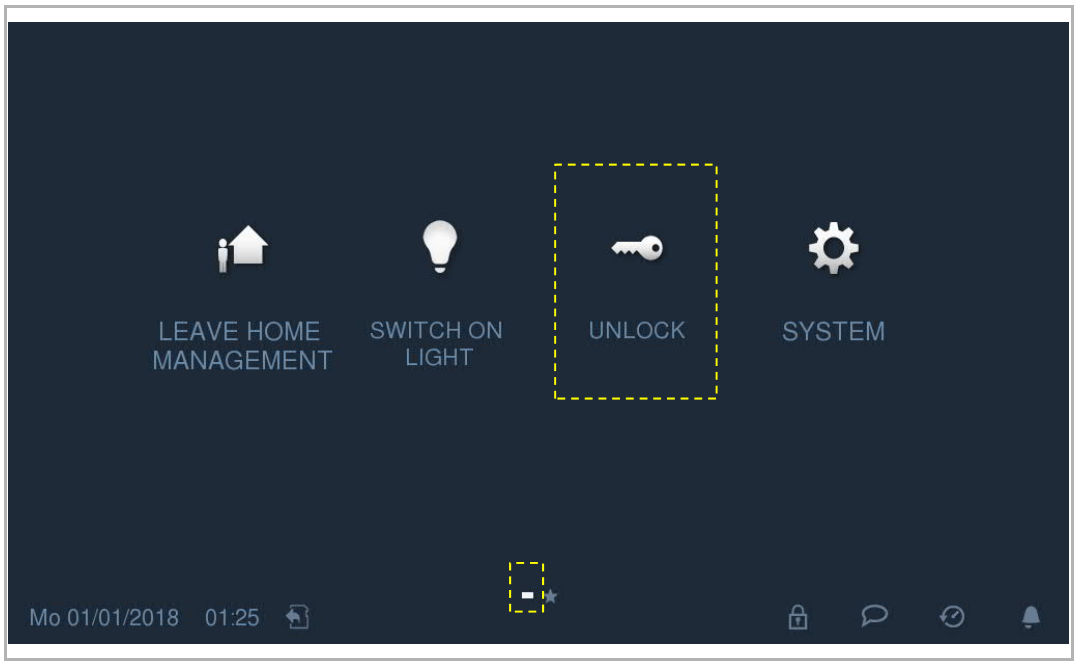
The functions "Absence message" and "Call forward" will be disable if this function is activated.

9.12 Standby unlock

On the "Engineering setting" - "Customized page" screen, tick the checkbox to enable the function.

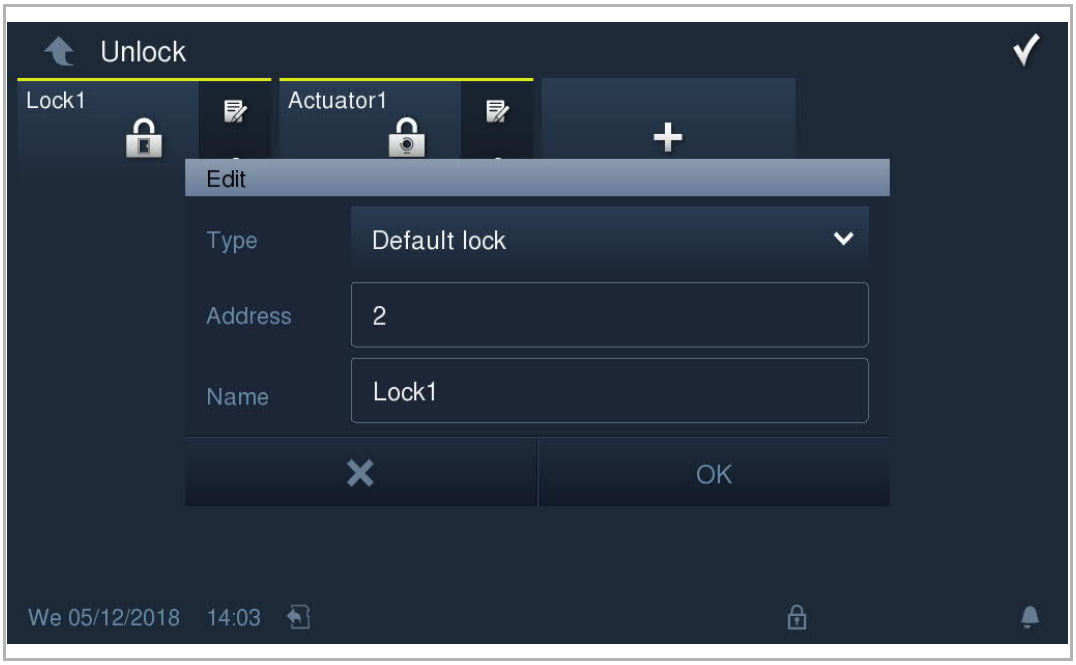


On the extra screen, click "Unlock" to access the screen.



Click to access the settings. Click "+" to add a new setting.

Please refer to below table to complete the setting.



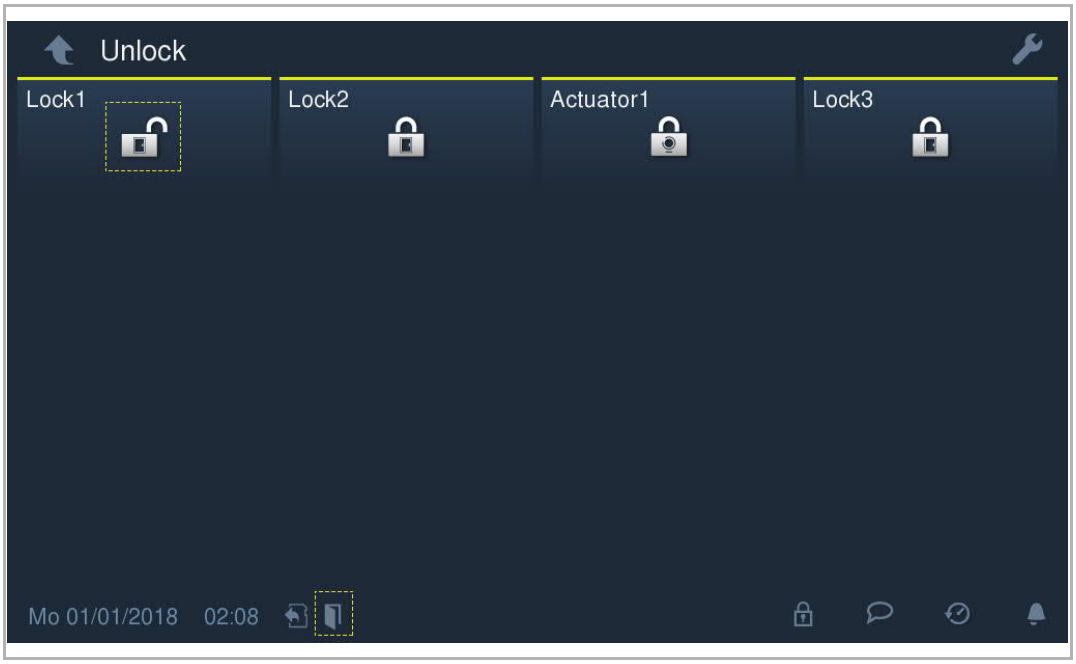
Type	Description	Address	Connected object
Default lock	Lock is connected to outdoor station.	Address = 1…9	
	Lock is connected to switch actuator.	Unlock mode (1>OFF, 2>ON) Address = 1…9 (associated with outdoor station)	
2nd lock	Lock is connected to outdoor station	Address = 1…9	
Actuator	Lock is connected to switch actuator.	Relay mode (1>ON, 2>OFF) Address = 1...199	

On the "Unlock" screen, click on a designated lock to release that lock. The screen will display and the status bar will display .

This device supports a maximum of 16 standby locks.

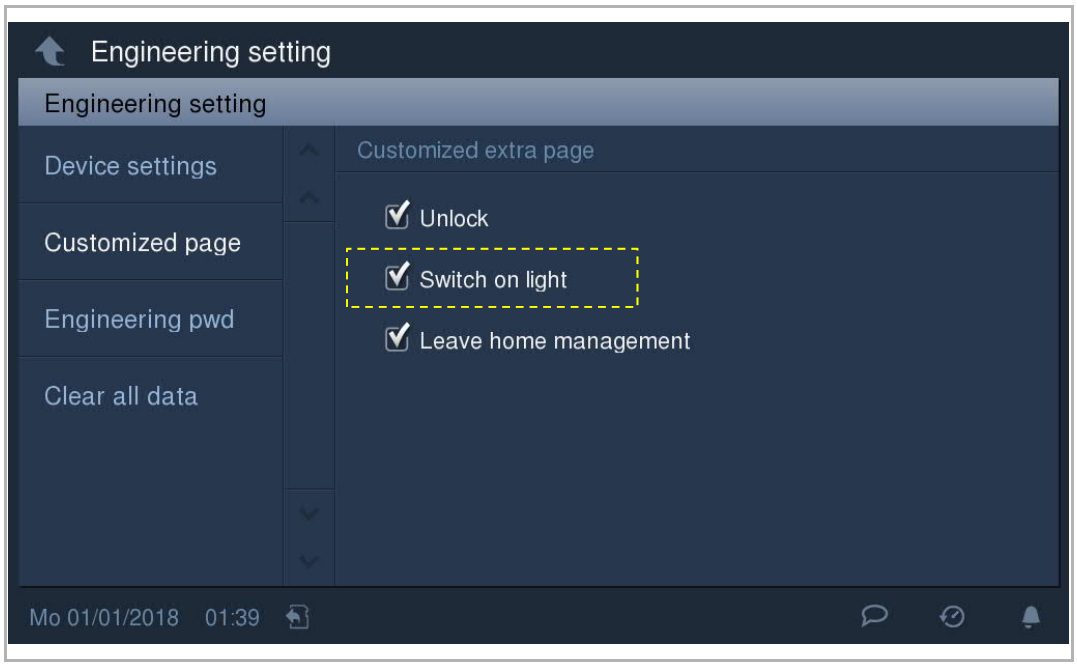
= Default lock

= Actuator lock

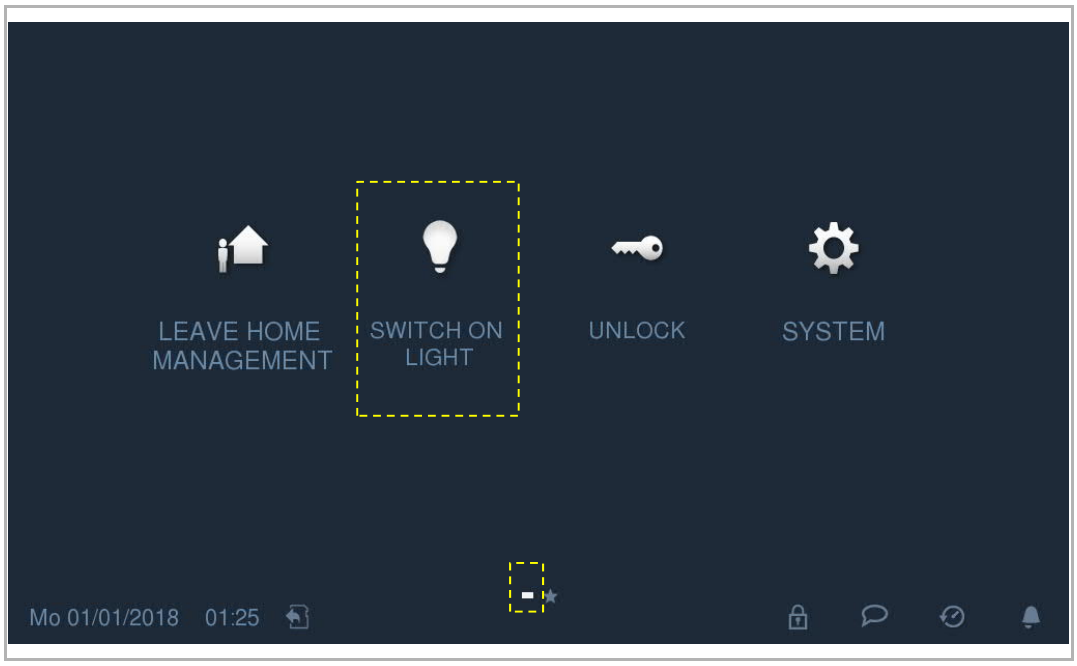


9.13 Standby switch on light

On the "Engineering setting" - "Customized page" screen, tick the checkbox to enable the function.

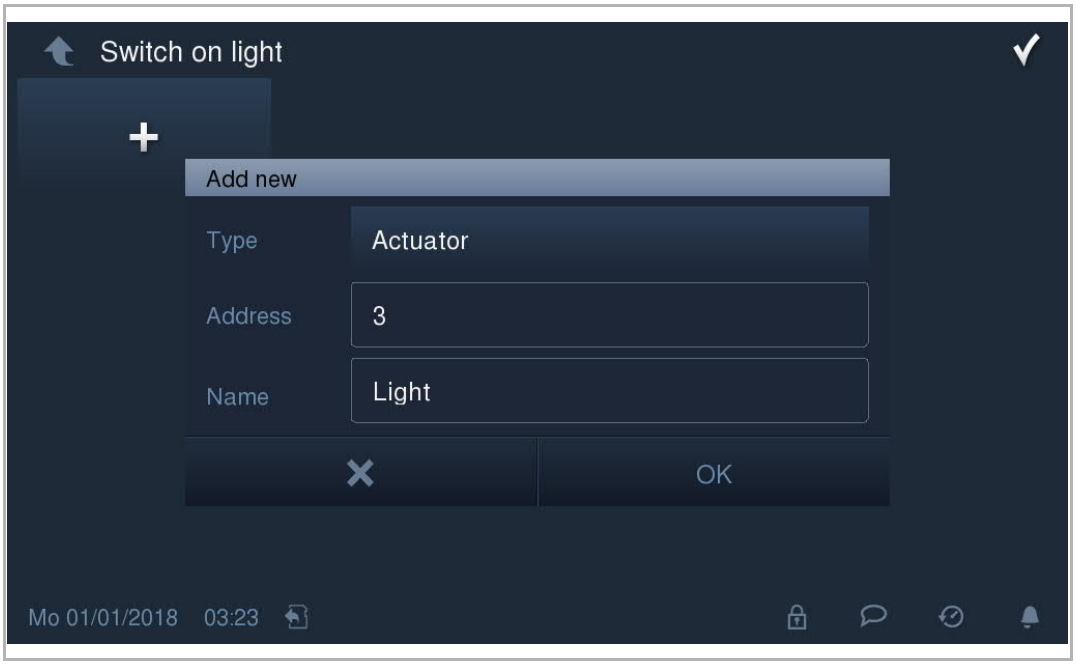


On the extra screen, click "Switch on light" to access the screen.



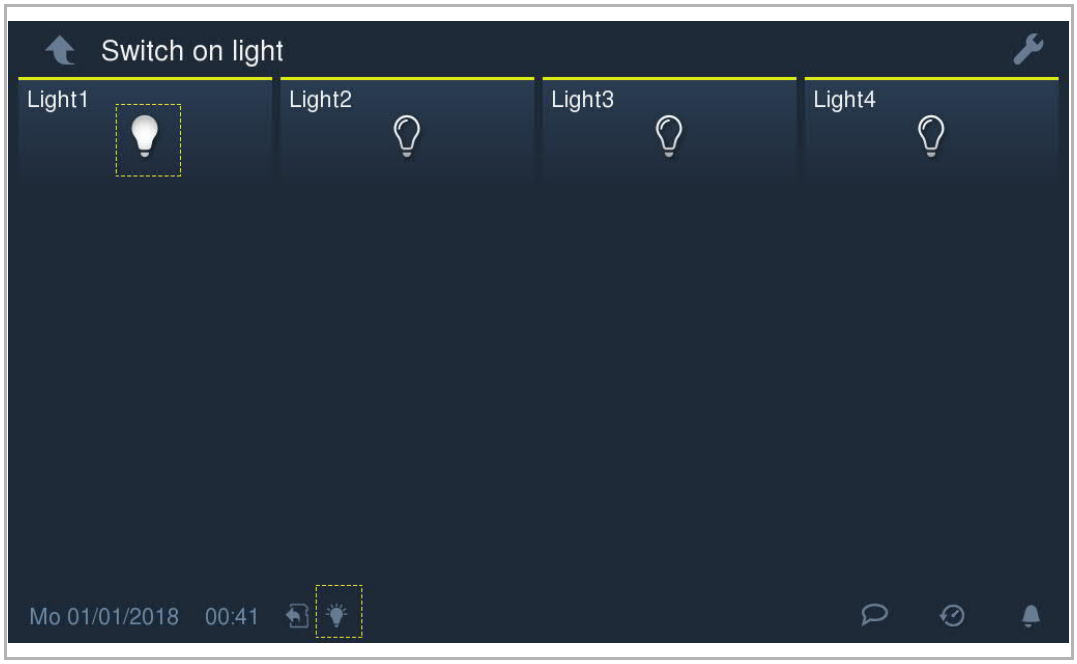
Click to access the settings. Click "+" to add a new setting.

Please refer to the table below to complete the setting.



Type	Description	Address	Connected object
Actuator	Lock is connected to switch actuator.	Relay mode (1>ON, 2>OFF) Address = 1...199	

On the "Switch on light" screen, click on a designated light icon to turn on the light. The screen will display and the status bar will display . This device supports a maximum of 16 standby lights.

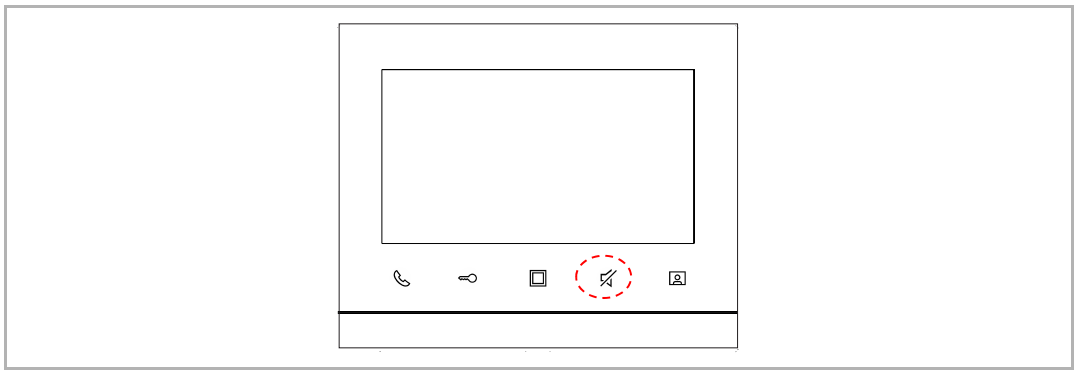

Switch on light
Light1
Light2
Light3
Light4
Mo 01/01/2018
00:41

9.14 Mute

Mute button

Tap the button to mute the ringtone on the device. Tap this button again to unmute.

Press the button and hold for 3 s to mute the ringtone of all indoor stations in the same apartment.



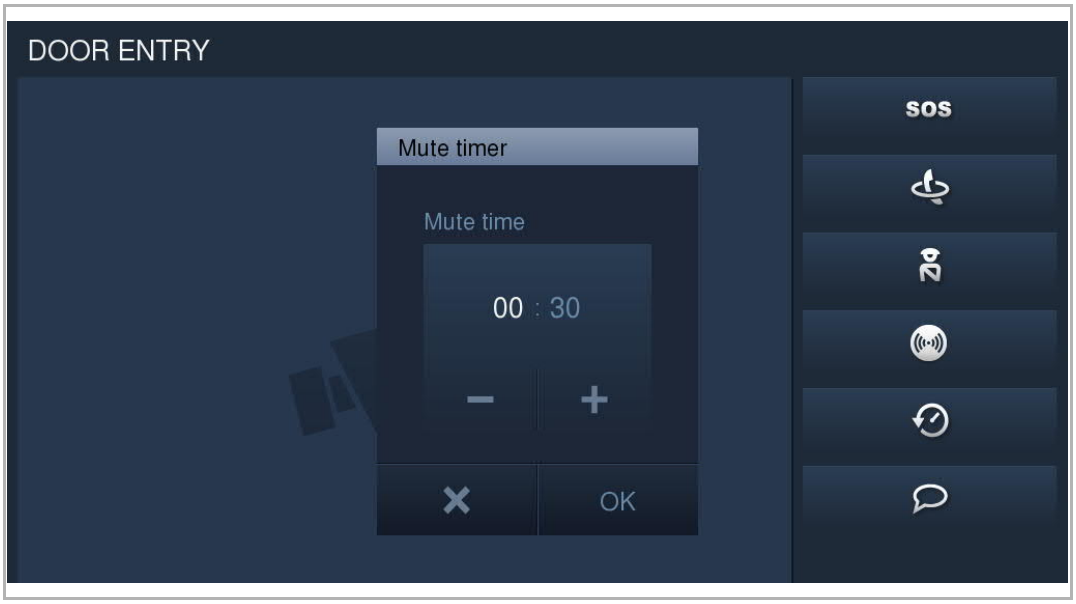
The device will display on the status bar if the function is enabled.

Mute icon

A mute timer can be set to enable the device to be unmuted automatically.

[1] Click on the status bar and select "Mute timer" to access the settings.

[2] Click "+" or "-" to set the value for hour and minute. Click "OK" to save.



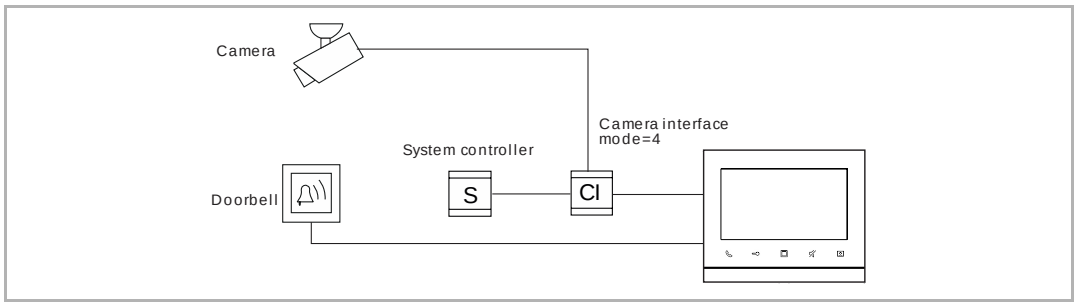
[3] Click again and select "Activate mute". This indoor station will mute the ringtone immediately and display on the status bar.

[4] When the countdown is complete, the indoor station will unmute automatically and display on the status bar.

9.15 Visual doorbell

With this setting, the indoor station is able to display the image form the camera when the doorbell is pressed.

[1] The camera should be connected to the camera interface. Please refer to the following diagram.



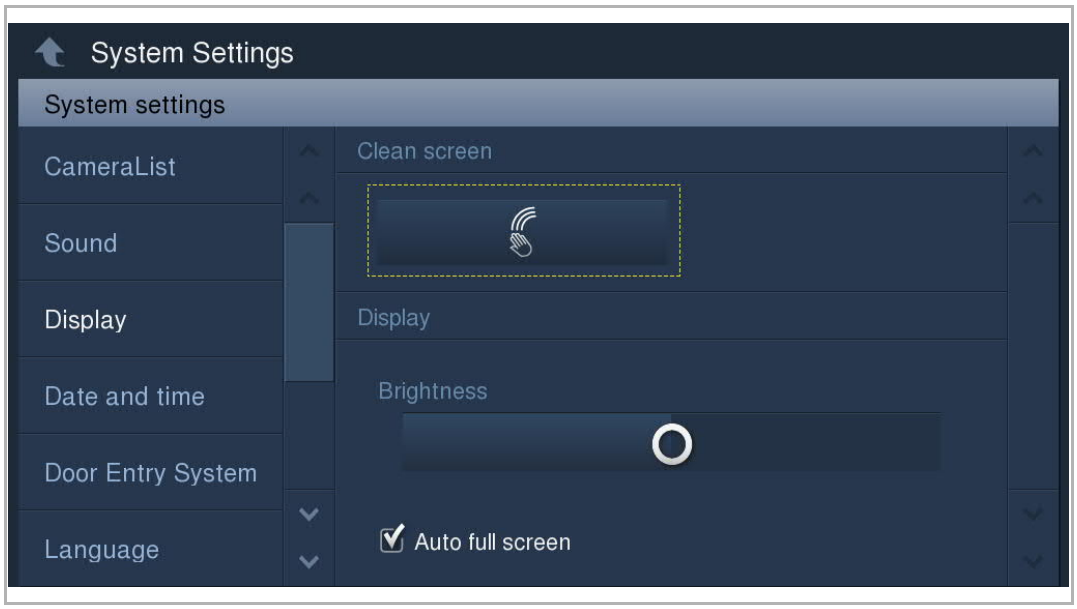
[2] The camera interface needs to be associated with this device. (mode = 4) Please refer to the product manual of camera interface.

[3] The function "Visual doorbell" should be enable before the use. Please refer to the chapter "Camera list".

9.16 Clean screen

The indoor station is able to block all operations during screen cleaning.

On the "System Settings" screen, click "Display", followed by to access the screen.



The countdown (1…30) is displayed on the screen. Any operations on the screen will be invalid. This device will exit "Clean screen" mode if an incoming call is received.

10 FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Only operate the device in accordance with the instructions supplied.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.

11 Cyber security

Disclaimer

Although ABB provides functionality testing on the products and updates that we release, you should institute your own testing program for any product updates or other major system updates (to include but not limited to code changes, configuration file changes, third party software updates or patches, hardware change out, etc.) to ensure that the security measures that you have implemented have not been compromised and system functionality in your environment is as expected.

Upgrading

Device supports firmware updates via SD card.

Malware prevention solution

The M2238 device is not susceptible to malware because custom code cannot be executed on the system. The only way to update the software is via firmware upgrades.

Password rule

The user must change the engineering password when accessing the engineering settings for the first time. This engineering password must not include continuously increasing or decreasing numbers (e.g. 12345678, 98765432) and three consecutive identical numbers are similarly not permitted (e.g. 123444, 666888).

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