DIVUS VISION

DIVUS VISION – User Manual

Version 4.24

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GENERAL INFORMATION

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User instructions: Please read this manual before using it for the first time and keep it in a safe place for future reference.

Target group: The manual is written for users with previous knowledge of PC and automation technology.

PRESENTATION CONVENTIONS

[KEY]	Keystrokes of the user are shown in square brackets, e.g. [CTRL] or [DEL].
COURIER	Screen output is described in the Courier font, e.g. `C:\>`
COURIER FAT	Keyboard input by the user is described in Courier font bold, e.g. **`C:\> DIR`**
"„…“	Names of buttons, menus or other screen elements to be selected are displayed in "inverted commas".
PICTOGRAMS	The following pictograms are used in the manual to identify certain sections of text:
	*Watch your step!* Possibly dangerous situation. Damage to property can be the result.
	*Notes Tips* and supplementary information
	*New* Marks changes and new features

TABLE OF CONTENTS

1 Introductory Remarks

1.1 INTRODUCTION

This manual describes the DIVUS VISION application, a new KNX visualisation software for DIVUS KNX IQ panels. DIVUS VISION is pre-installed on KNX IQ touch panels. There is also a version of DIVUS VISION that can be run from a PC with a Windows operating system, as well as on Android and iOS mobile devices.

The DIVUS KNX IQ is a stand-alone system for KNX visualisation. So it plays the client and server roles at the same time. The client role consists of controlling the KNX system via graphical elements. The server role is to manage the communication between KNX (or other technologies) and the graphical user interface in both directions.

1.1.1 INFO POINT

What can I find where? How should this manual be read?

Of course there are several approaches and several possibilities and reading it from beginning to end is a good one for sure; here we mention some of them to quickly get to the point depending on what you are looking for:

Chapter 1 Introductory Remarks contains general information about the Graphical User Interface - General and the Prerequisites to work with VISION.

Chapter 2 Creating a new visualization answers the question "how do I create a visualisation with VISION?" and describes the different possibilities. Furthermore, the individual Element Types are described there, i.e. what I have available in VISION to control and display a KNX device. Sequences and Time schedules that can be created and managed both as a system integrator and as a user complete this chapter.

Chapter 3 Vision - Settings describes the settings menu in the same order as it is found in VISION.

Finally, Chapter 4 Troubleshooting answers typical questions that may arise in practice.

1.1.2 PREREQUISITES

Prerequisites for DIVUS VISION are:

- 1 DIVUS KNX IQ touch panel
- 1 Windows PC with corresponding DIVUS VISION software [optional or alternative to KNX IQ]
- 1 mobile device with iOS or Android operating system and corresponding DIVUS VISION application [optional]
- OPC export file of an ETS project (KNX) [optional]
- ETS with DIVUS KNX IQ DCA app [optional]
- Network with active Internet connection [optional]

Strictly speaking, therefore, only a KNX IQ is needed to get started with DIVUS VISION, since you can implement or edit a visualisation from the panel itself, as well as display and control a KNX system via an existing visualisation. In addition, a project can also be implemented in offline mode (see 1.1.3) by the PC application (and transferred to a paired device in a second moment).

1.1.3 CONNECTION MODES

In general, there are several different connection modes:

- Local connection
  This is only available from the local area network (LAN) where the KNX IQ is located.
- Cloud connection
  This is available to the end user in order to connect mobile devices to the KNX IQ and thus operate the visualisation. It is also available for the Windows version of VISION. It allows you to connect from anywhere there is an internet connection for the device you are using as a client (mobile or PC that is). Prerequisite is the internet connection for the KNX IQ itself.
- Offline programming mode
  This mode allows you to work on the visualisation on the PC independently of the available network and to transfer the project to the KNX IQ at a second moment. Furthermore, it plays an important role in ETS mode, as before editing a project you must switch to this mode.

1.1.4 MODELS AND WORKING MODES

There are different models of the KNX IQ:

Up to mid of 2022 there were:

- KNX IQ 08 TP
- KNX IQ 08 IP

The difference being the type of connection to the KNX bus: the TP model has a direct KNX bus connector while the IP model uses KNX over IP (tunneling) and requires a KNX/IP router to forward its communication with a KNX system.

Starting from mid of 2022, the KNX IQ 08 TP is replaced by the new

- KNX IQ 08 TPS

which, while maintaining the same features as the TP model, also introduces the support for KNX Data Secure and for a new working mode.

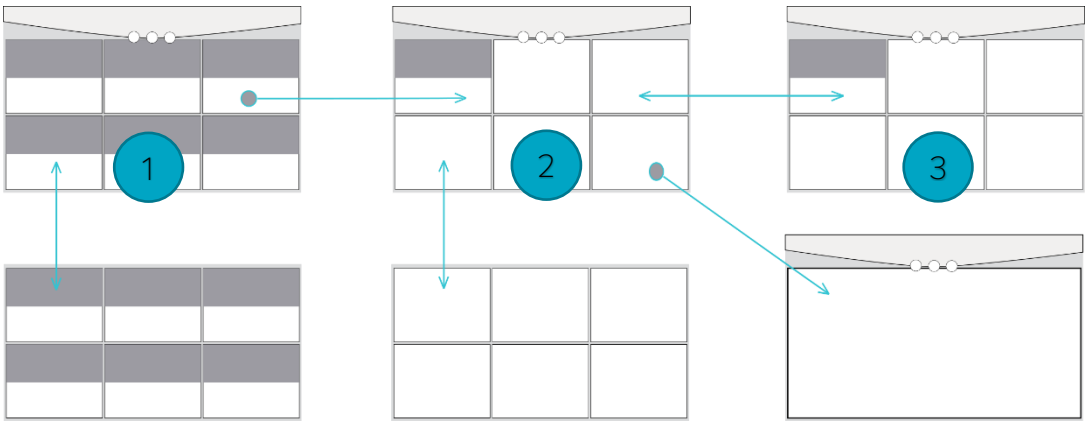
The working mode which was available since the beginning, and still is, is now referred to as ***FREE MODE*** to distinguish it from the new ***ETS MODE***. The ETS MODE, which also gives the possibility to implement KNX SECURE, is available for the KNX IQ 08 TPS only. The KNX IQ 08 IP remains unchanged i.e. does not support KNX Secure.

More details about FREE MODE and ETS MODE can be found in chapter 2.1.

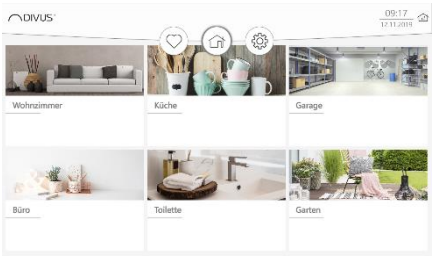
1.2 INSTALLATION

The desktop version of DIVUS VISION can be found in the download area of our website www.divus.eu. You can also find the mobile versions on our homepage or in the respective app stores for Android or iOS.

1.3 VISUALIZATION - NAVIGATION



1 Homepage / Rooms' Overview



Up to a maximum of 6 rooms are displayed here in a grid (or 12 in slim design).

Vertical scrolling allows you to reach other rooms, if available.

Horizontal scrolling allows you to reach the next (to the right) or previous (to the left) room.

Clicking on one of the rooms allows you to reach it directly.

Clicking on an icon in the lower left area of a room box allows you to directly access these central functions. More detailed information about them can be found in chapter1.4.5.1.

2 Room

The room representation shows up to 5 (or 11) of the first elements of its content. The first tile shows the room itself with name and central functions.

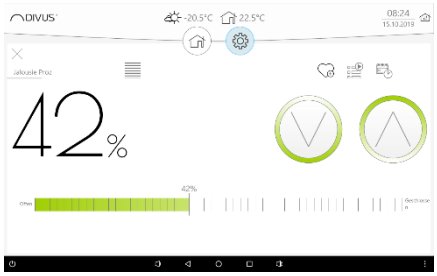
The vertical scrolling allows to reach further elements of the room, if available.

Horizontal scrolling allows you to reach the next (to the right) or previous (to the left) room. The order is the one you see on the homepage.

Clicking on one of the elements allows you to reach its detail view directly.

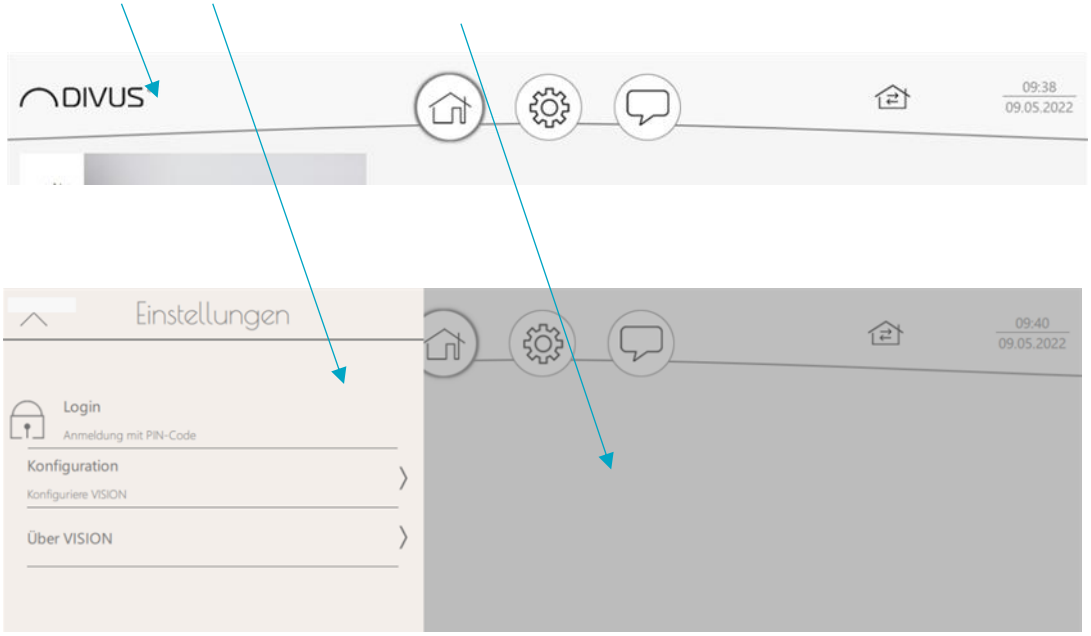
3 **Element**

The detail view of an element is the deepest navigation level in the hierarchy. So here you operate the element or read its status, or reach its time schedule or its sequences. Then you have to close it to get back to the next higher level (room).



1.4 GRAPHICAL USER INTERFACE - GENERAL

The user interface is divided into 3 main areas:
The upper bar, the menu and the visualization area.



1.4.1 UPPER BAR

In the upper bar there are 4 or 5 centrally located icons for favourites and plugins (as soon as available/enabled), homepage, settings and notifications as well as temperature values and current date and time (right). This area always remains visible.

1.4.2 CONNECTION ICON

In the right corner of the upper bar is the connection icon, which shows the current status of the connection. Here is the overview of the possible states:

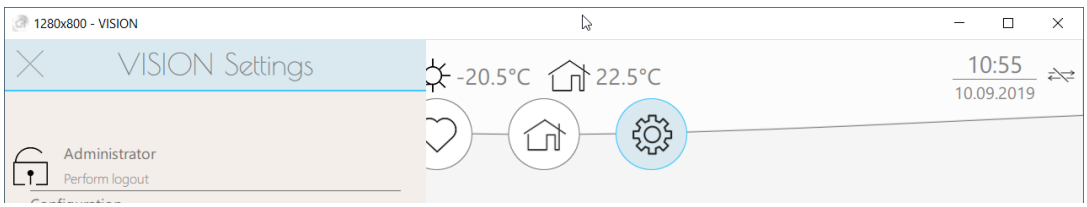
Icon	Meaning
	Connecting
	Locally connected
	Connected via cloud (client only)
	Connected to cloud (KNX IQ only)
	Unknown status
	No connection (also displayed in offline mode and demo mode)
	Connection error occurred
	Waiting for connection to server

1.4.3 VISUALIZATION AREA

The larger part of the window is, of course, for the visualization itself: here you can see the rooms created or the elements of a room or special setting pages, such as when editing a schedule or scenario. A plus icon appears in the lower right corner (if you are logged on as administrator), which, depending on the context, allows you to create new objects: initially rooms, then elements within a room, and so on).

1.4.4 MENU

The menu is initially hidden and appears when you click/press the gear icon. The actual processing does not begin until you log in using the PIN code. If you log in correctly, the gear icon will be coloured (depending on the user) and several menu items and functions will only become visible then.
There are two ways to close the menu:

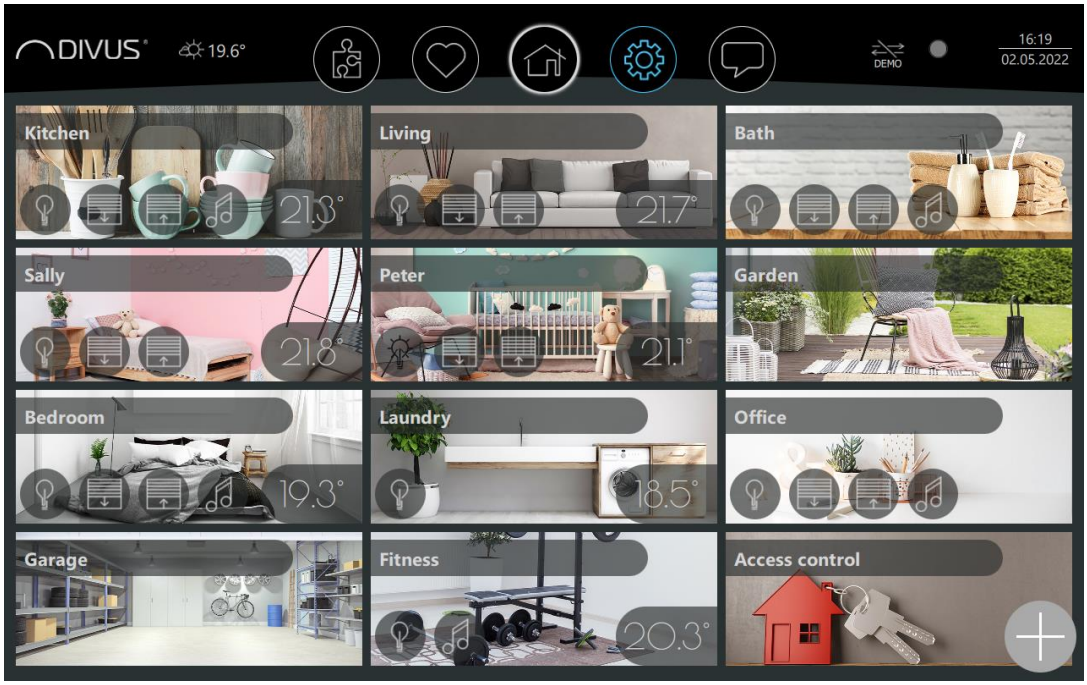


You can close the menu either with the X symbol on the far left or with the gear icon.

1.4.5 ROOMS' OVERVIEW

This view is defined as the homepage of the visualization. The first 6 (or 12) rooms are displayed in corresponding tiles by name, background image and central functions.

Scrolling up/down allows you to reach any other rooms, if available. By a click on one of the rooms you reach its detail view.



1.4.5.1 Central functions

Depending on the content, central functions, which can also be operated from this view, are automatically added to a room. There is a central switch for lights, blinds, and music as well as the display of the room's temperature. These functions become available as soon as at least one element is added to the room that matches the corresponding device type (i.e. a light, blinds, a room controller or a music element to control an audio system). The central functions switch as follows:

- Lights: all on/all off (toggle)
- Blinds down: all down
- Blinds up: all up
- Room temperature displays the room's temperature (average if several sensors are present)
- Music play/pause (toggle)

Reworked version (since 4.22)

Positionings and sizes have been rationalised, pressable buttons distinguished from read-only information by grey background circles.

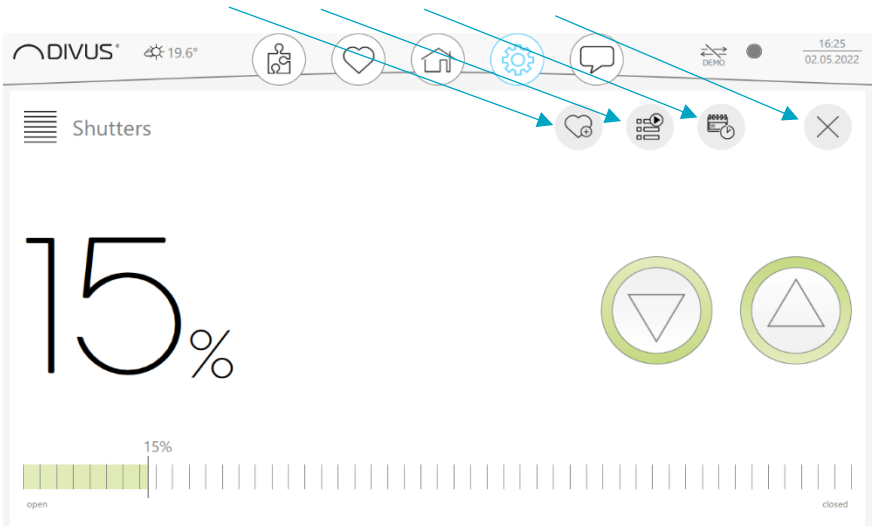
1.4.6 DETAIL VIEW OF THE ROOM

In the room's detail view, the content of the room is displayed by default according to the same schema as for rooms in a 6-grid (or 12). The first position always shows the tile of the room itself. This serves both for better orientation and to be able to operate the central functions. Further elements can also on this level be reached by scrolling down or up.
By scrolling sideways, on the other hand, you reach the other rooms on the same level, i.e. their detail views.

1.4.7 DETAIL VIEW OF ELEMENTS

Here each element with all its functions is offered for operation.
All elements have some icons in common, i.e. the elements for

favourites, sequences, schedules and for closing



2 Creating a new visualization

2.1 FREE MODE VS. ETS MODE

The so-called *Free mode* is the usual way to realise a visualisation with VISION up to version 4.22. It involves the import of the KNX project via OPC export from ETS and/or the manual addition of individual data points. After the import, any changes to the project are perfectly possible from the device itself or from a client device: the only requirement for this is administrator access with the corresponding PIN code. *KNX SECURE* is not supported in Free Mode for technical reasons.

The so-called *ETS mode* was introduced in version 4.22 (along the introduction of the KNX IQ 08 TPS) and brings a new editing concept of a KNX visualisation for VISION. Here, project editing is carried out in different subsequent steps, whereby the Windows client for VISION is used to prepare project changes for the work in the ETS and also the reworking of a project must necessarily be carried out via the same path. *KNX DATA SECURE* is supported in *ETS mode*, which makes this path the only possible choice should this technology be necessary.

For a better overview, the following comparison table is shown, which compares the advantages and disadvantages of the 2 modes: if *KNX SECURE* is not required for a project, one can freely choose between the 2 options using this table.

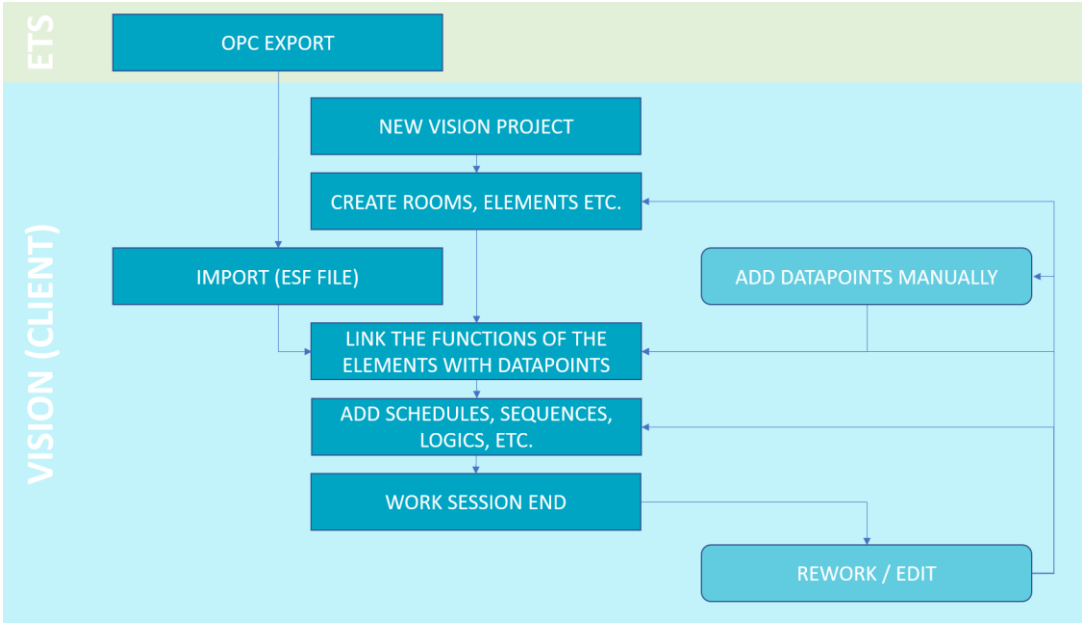
Function	Free Mode	ETS Mode
KNX DATA SECURE support	No	Yes
Import of KNX group addresses	Via OPC export, then import under Configuration - Data points	Via the ETS, with the project in VISION for Windows set to *offline mode*
Add/change/delete group addresses	Free, possible from any client, requires administrator PIN.	Via the ETS, with the project in VISION for Windows set to *offline mode*
Add/change/delete other objects (rooms, elements, sequences, etc.)	Free, possible from any client, may require administrator PIN.	Via the ETS, with the project in VISION for Windows set to *offline mode*

Attention: When switching between Free Mode and ETS Mode (or vice versa), data is lost. An existing project cannot be switched to the other mode; therefore, the project is reset!

Note: In the following, FM (Free Mode) and EM (ETS Mode) are used abbreviated in the text.

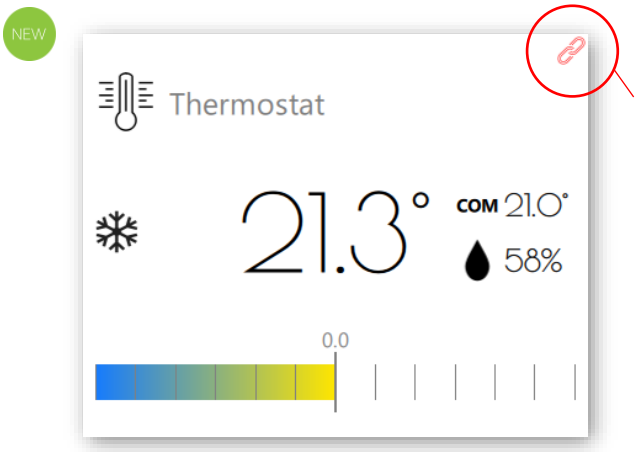
2.2 KNX VISUALISATION IN FREE MODE

The following flow chart shows the typical workflow in Free Mode:



Notes:

- The project is prepared graphically (Rooms and Elements are created and named)
- The ETS project's export is then used to link the elements' functions to the matching datapoints



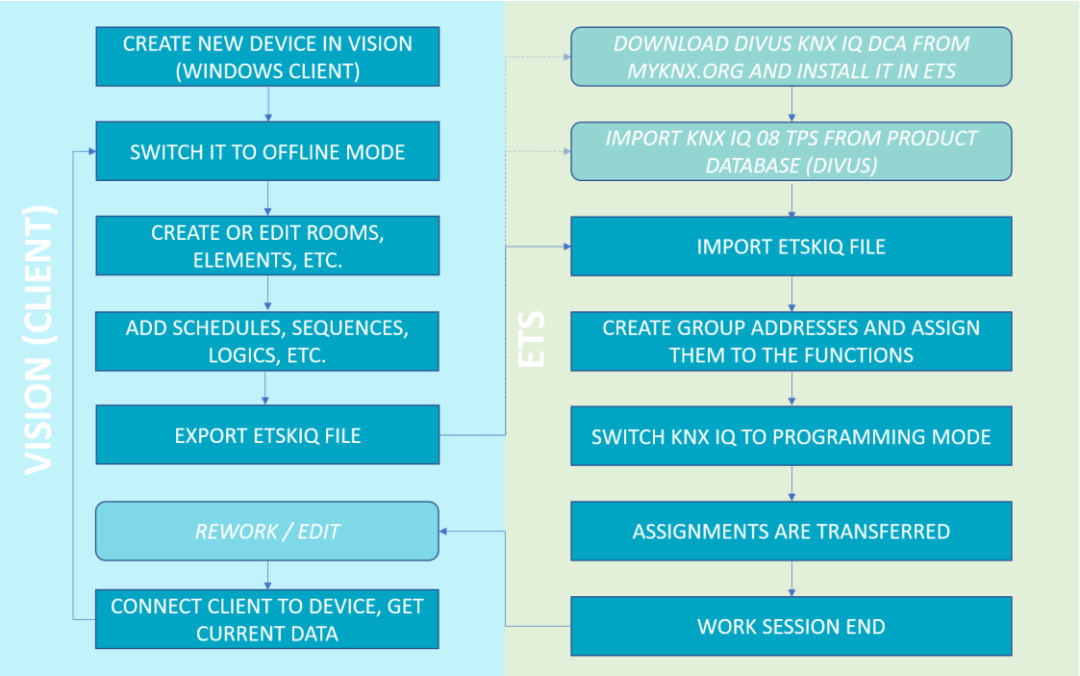
This symbol, which is only visible to the administrator (i.e. when he is logged in), indicates that there are still missing function links. It is intended to provide a quick overview of which elements have been completelty configured and which ones have not.

- Once functions are linked, they can be used in advanced features like schedules, sequences etc. But the reverse is also true: element functions that are not (yet) linked are not listed for use in schedules, sequences, etc.
- Editing is available anytime from any client – only the administrator PIN is needed

- Manually editing datapoints is available anytime also
- There is great flexibility and freedom. Making ends meet is up to the system integrator

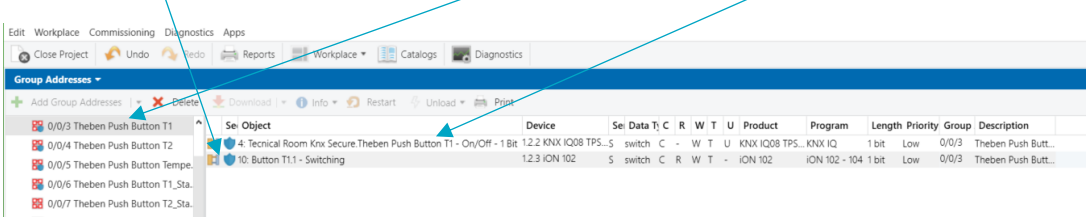
2.3 KNX VISUALISATION IN ETS MODE

The following flow chart shows the typical workflow in ETS mode:



Notes:

- You prepare the project graphically (Rooms and Elements are created and named). You need to do this in offline mode i.e. disconnected from the KNX IQ.
- You can also add advanced features like schedules, sequences etc.
- You then export the VISION project and import it in the ETS.
- The KNX IQ is then managed like any other KNX device: you create group addresses and assign them to the device's functions. In this case each KNX group address will have a VISION function paired with a KNX device's function.



- The KNX IQ is set to *programming mode* and receives all the group address assignments and other settings through the ETS *download* function.
- To edit something you need to repeat all these steps
- Less freedom in this mode is compensated by increased control over the correctness: you automatically have all the needed functions defined in the ETS, along with their correct data point types and subtypes. You can't assign wrong types

2.3.1 SPECIAL STEPS IN ETS MODE

The editing of a project is largely the same - regardless of the choice between Free and ETS Mode. In the following, the steps that only occur in ETS Mode are shown, while the steps that are mode-independent are explained later.

2.3.1.1 Export of the VISION project

After rooms, elements, schedules, etc. have been created as desired, go as administrator to Configuration - Export/Import and execute the export: an ETSKIQ file is saved on your PC.

Attention: ETSKIQ is the extension of project files created in ETS mode. KIQ files exported from Free Mode are fundamentally different, i.e. you cannot use project files from one mode for the other - they are not compatible!

2.3.1.2 Preparation steps in the ETS

1. import (just once) the app *DIVUS KNX IQ DCA* from myknx.org.
2. Import the *KNX IQ* (manufacturer DIVUS) from the ETS online product catalogue.

Compared to a usual KNX device, the device from the catalogue is initially without functions. These are then assigned by importing the project via the DIVUS KNX IQ DCA. See next point.

2.3.1.3 Importing the VISION project

Select the *KNX IQ 08 TPS* under *Devices* and then the *DCA* tab in the main window and import the ETSKIQ file exported previously. The device will thus receive its functions.

2.3.1.4 Creating the group addresses and assigning the functions

This is the typical workflow of a KNX project, as every KNX programmer knows it. Using your preferred scheme for KNX projects, you create the same number of group addresses as the functions received by the KNX IQ through the import, and then assign them. Or, if you previously already assigned group addresses to all the KNX devices, the missing step will be to add the corresponding VISION functions to each one of them.

Please make sure not to leave unassigned functions – specially if it's important functions. (Some feedback functions may remain unassigned because they are indeed not available on the knx device level).

2.3.1.5 Transferring assigned addresses to the KNX IQ

As with usual KNX devices, the 2nd phase then follows, where the created group addresses are programmed. To do this, the KNX IQ is set to programming mode.

1. in the main menu, as administrator, you will find the Programming Mode checkbox (this is only visible if the device or project is in ETS Mode - the option for this is found in the same menu).

2. Right-click on the KNX IQ in the ETS: Program

3. After the data transfer has been completed, the programming mode is automatically deactivated.

4. the project is now complete and operational.

2.3.2 SPECIAL STEPS IN FREE MODE

2.3.2.1 Preparing the project

There are some mandatory preliminary tasks to complete before we can concentrate on the graphical part. These are:

1. Create and configure a default KNX driver
2. Export the esf file from the ETS software
3. Do the ETS import to build the project's set of data points

You need to complete them in the above order. Let's have a look at the single steps in detail now.

2.3.2.2 Create and configure a default KNX driver

1. Go to *Settings – Configuration – Drivers – KNX* as administrator.

    - The list will be empty the first time, so push the round plus button at the bottom to create a new driver.

    - If there is one which you want to edit instead, keep it pushed until the edit button appears.

    - Never delete a driver which has datapoints associated to it or you'll have to change each datapoint singularly. Also see chapter 4.2.

2. Enable driver: If you have multiple KNX drivers, you need to enable one of them. Only one driver at a time can be enabled, so you'll need to disable the currently enabled one before you can enable another one.

3. Interface type: Choose according to your KNX connection and your KNX IQ model.

4. Scan for TP/IP interface: choose the physical address of the device or the IP address of the KNX/IP router to connect to.

5. Enable startup read: reads the values of all the involved datapoints of the project on start up.

6. Read status interval: defines the time between subsequent reads during startup

7. Save and make sure the desired driver shows as *enabled* in the list now.

2.3.2.3 Export the ESF file from the ETS software

Depending on your ETS version, the option called OPC export may be in the menu or in the export options where you also export the knxproj-file (change the exported file type there).

If you are working on the KNX IQ device through the DIVUS Synchronizer app or directly, you need to upload the esf file to the device: go to the UPLOAD page and push the VISION icon there. For more details please refer to the DIVUS Synchronizer manual.

2.3.2.4 ETS import

Go to Configuration – Datapoints – ETS Import. You'll be presented with 4 submenu points:

- Select ETS OPC Export file

  Choose the file previously exported from the ETS. If you used the Synchronizer to load it onto the device's storage, you will find it in the folder called VISION. The choice will then be kept until you explicitly change it – also after the import procedure is completed.

- KNX driver (Choose driver)

  Choose the previously configured KNX driver. All the imported datapoints will be managed by this driver.

- Options

  Go here to set some flags depending on whether you're importing into an empty project or not and some other general options.

- Import rules

  Here you manage the import rules. Using naming logics (using specific keywords in the names assigned in ETS) you can automate the matching of group addresses and merge them into a single data point during the import process. Usually at least one rule will be defined. Adding more rules means that all rules will be applied.

  Example:

  In ETS writing 1 BIT group addresses have the keyword **On/Off** in the name. The corresponding status group addresses have the keyword **Status** instead of *On/Off* - the rest of the name is the same.

  Kitchen Light On/Off 1/2/3
  Kitchen Light Status 1/3/3

  The logic will look for group addresses that have a part of the name in common and differ only for the keywords indicated in the rule: On/Off marks the command/write address while the status/reading address contains the word Status. As a result, VISION will create a data point consisting of the two group addresses identified by the rule. In this mode the current status of the light in the kitchen will always be shown correctly - whether you use VISION or a physical switch will make no difference.

  Note that a keyword can also consist of several words.

  Example 2:

  You can also use only one of the two keywords. If, for example, the way to assign names and functions was not the one in the first example but this one:

Kitchen Light On/Off	1/2/3
Kitchen Light On/Off Status	1/3/3

As the colouring already indicates, you can see that the part of the name in common in this case also includes *On/Off* and what differentiates the two addresses is only the keyword Status. In the rule that makes this type of pairings, you will leave the keyword field for the command address empty and only value the second field with the keyword *Status*.

Define a new import rule

1. Go to Settings – Configuration – Datapoints – ETS Import – Import rules
2. Push the round plus button
3. Choose a name for the rule (e.g. "R1")
4. As command keyword, choose the keyword you use in the ETS to identify commanding/switching addresses (e.g. "Kitchen light on/off" → "on/off")
5. As feedback keyword, choose the keyword you use in the ETS to identify feedback/status addresses (e.g. "Kitchen light status" → "status")
6. Save pushing the check symbol on the top right of the menu.
7. Make sure "Apply import rules" is enabled under *Options*.
8. (The import will then merge "Kitchen light on/off" and "Kitchen light status" into a single datapoint, as well as all other pairs using that same naming convention)

Execute the Import

When all the four points of the menu are set as desired, hit the NEXT above to start the import. After a few steps the procedure will be complete and you can go back to the datapoint list to find all the newly imported datapoints.

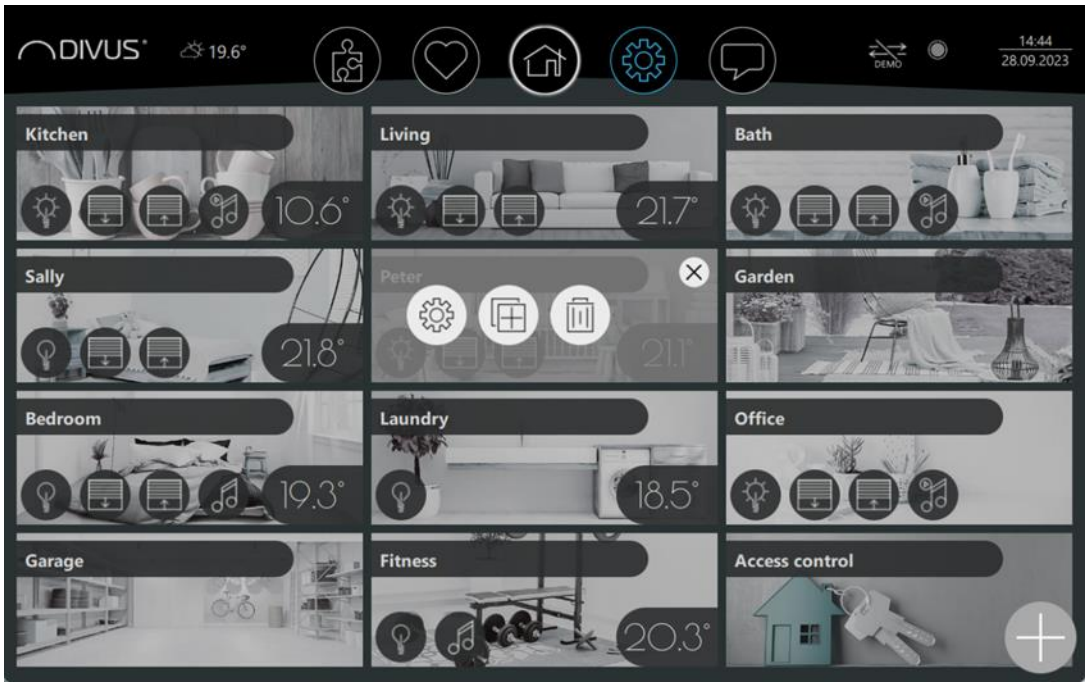
2.4 CREATING A NEW ROOM (FM AND EM)

How to create a new room:

1. Log on as an administrator (see chapter 3.1) if you haven't already.
2. Go to the rooms' overview - the quickest way is to press the Home button.
3. Press the plus button in the lower right corner.
4. Enter the required data for the new room (name, description, background).
5. The new room is shown as the last room after the existing rooms.

2.5 EDITING A ROOM (FM AND EM)

To edit a room, press and hold the finger or mouse pointer on its tile. Several icons appear on the tile:



- The *gear icon* leads (back) to the input form, where name, description and image can be changed.
- The *copy icon* allows you to copy the room (with its content). The copied room, like a new room, is added last to the existing rooms.
- The *trash can icon is used to* delete the room. Its content will also be completely deleted.
- The *X* closes this editing menu and the tile is displayed normally again.

2.6 MOVING A ROOM OR ELEMENT - CHANGING THE ORDER (FM AND EM)

1. Press and hold your finger or mouse pointer (or right click) on a tile until the Edit menu appears.
2. Then drag it to the desired position.
3. Then close the editing menu with the X symbol. The tiles are rearranged.

2.7 ADD A NEW ELEMENT TO A ROOM (FM AND EM)

1. As administrator, go to the desired room.
2. Then press the plus symbol at the bottom right.
3. Enter the element's name, description and type in the form that appears.
4. After the type selection a further menu item named *Parameters* appears, where the details of the element can be further configured. The available types are described below.

2.7.1 ELEMENT TYPES

2.7.1.1 On/Off

This type is used for all devices that have two possible states: on/off, up/down, play/pause, etc.

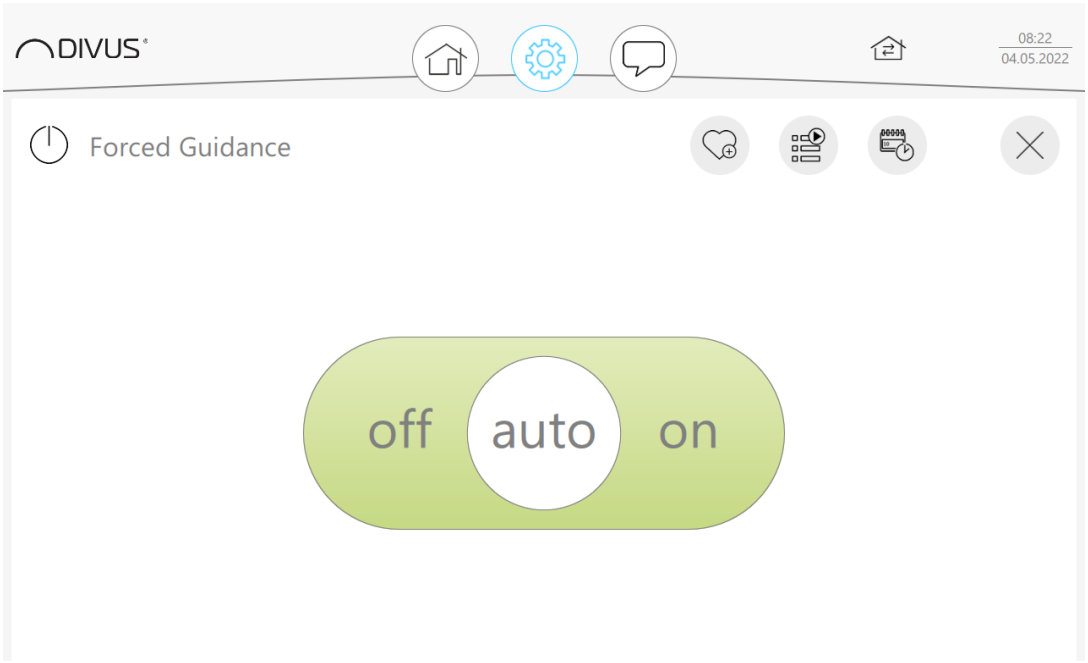
After selecting this type, the selection of a suitable icon and corresponding labelling of the two states appears as parameter. There is a choice to be made:

	General On/Off
	Light On/Off
	Presence Present/Absent
	Door Closed/Open

	Lock Locked/Unlocked
	Alarm Alarm/Normal
	Windows Closed/Open
	Door lock Closed/Open
	Garage Open/Closed
	Ventilation On/Off
	Load On/Off
	Heating On/Off
	Climate On/Off
	Socket On/Off
	Sprinkler On/Off
	Skylight Closed/Open
	Day/Night
	Shutters closed/open
	Rain/no rain
	Wind/no wind
	Awning retracted/extended
	Curtains closed/open
	Heating/Cooling
	Heat pump on/off
	Pump on/off
	Summer/Winter
	Valve close/open
	Alarm system armed/disarmed

An on/off element has a single datapoint to link. More detailed information can be found in chapter 2.8.2.

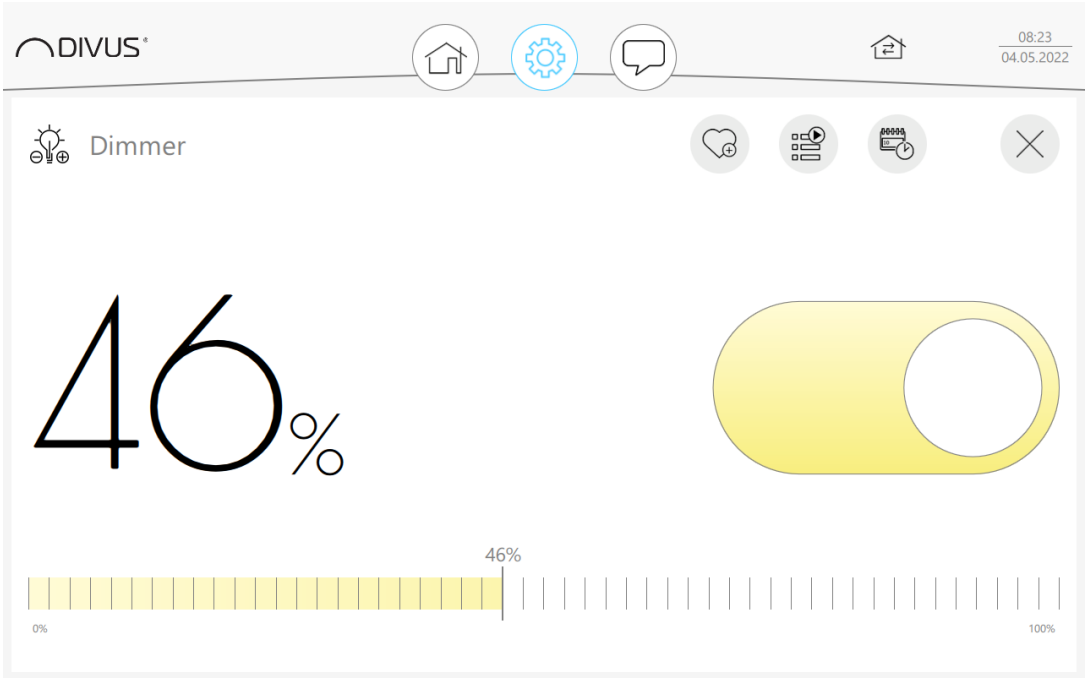
2.7.1.2 Forced guidance



This element supports KNX DPT 2.xxx, i.e. 2 BIT group addresses, which allow switching between automatic and manual control. It is a pure control element and does not give any feedback about the active on or off status in the automatic status. The data point to be linked is therefore one:

- Off/Auto/On (DPT 2)

2.7.1.3 Dimmers

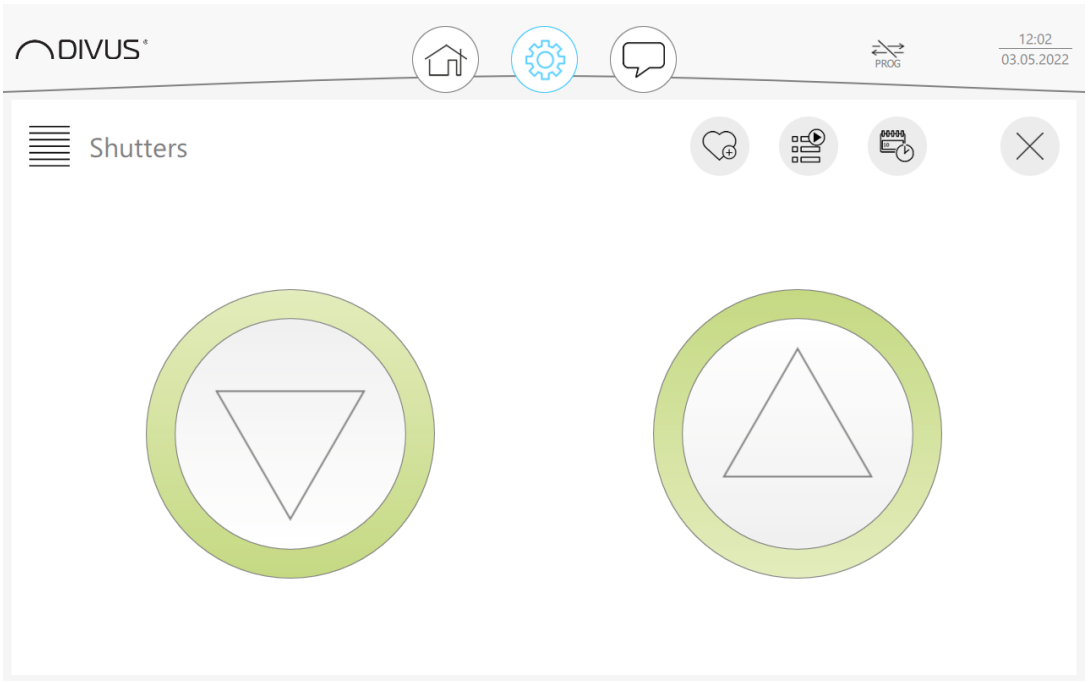


This element type has no parameters. It is then linked with 2 datapoints:

- On/Off (DPT 1)
- Dimming (DPT 5)

More detailed information on linking datapoints can be found in Chapter 2.8.2.

2.7.1.4 Shutter up/down

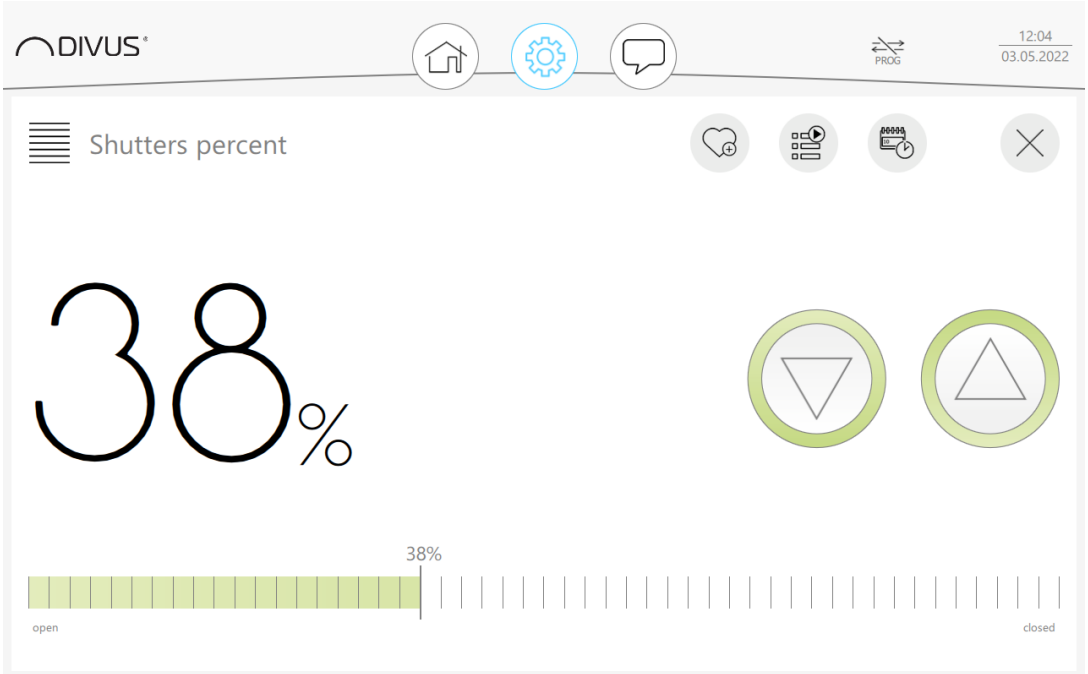


This element type has no parameters. It is then linked with 2 datapoints:

- Shutter up/down (move) (DPT 1)
- Shutter up/down step (stop) (DPT 1)

More detailed information on linking datapoints can be found in chapter 2.8.2.

2.7.1.5 Shutter percent

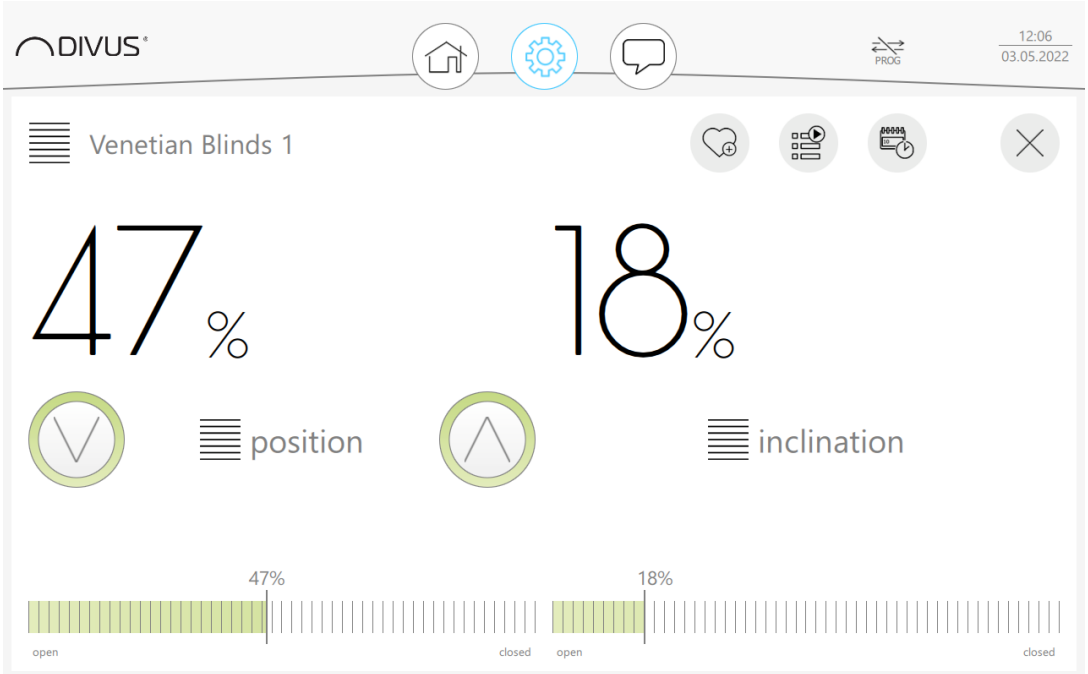


This element type has no parameters. It is then linked to 3 datapoints; the first two are the same as for element type Shutter up/down. In addition there is a 3rd datapoint for

- Shutter position (DPT 5)

More detailed information on linking datapoints can be found in Chapter 2.8.2.

2.7.1.6 Venetian blinds



This element type has two parameters:

- Venetian blinds slider control (enable/disable)
- Lamellae slider control (enable/disable)

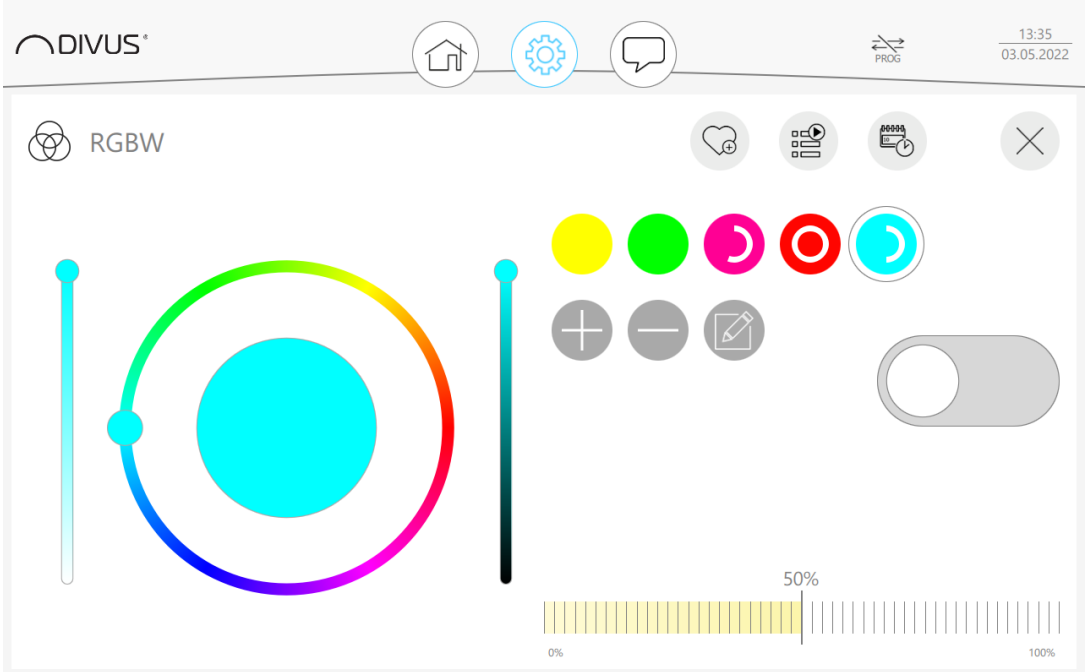
It offers up to 6 functions which need to be linked to a matching datapoint:

- Shutter up/down (DPT 1)
- Shutter up/down step (DPT 1)
- Shutter position (DPT 5)
- Slats up/down (DPT 1)
- Slats up/down step (DPT 1)
- Slats position (DPT 5)

This is the most complete type of element for blinds actuators.

More detailed information on linking datapoints can be found in chapter 2.8.2.

2.7.1.7 RGB(W) – also for HSV(+W)



This element type has been graphically and functionally revised in version 0.15.8 (fw 2.21). This element type has 3 main parameters: The colour white (for RGBW devices) and the dimmer can be enabled or disabled. The datapoints for red, green and blue as well as for switching on and off are fixed. The default setup will be:

- On/Off (DPT 1)
- RGB Colour Red (DPT 5)
- RGB Colour lor Green (DPT 5)
- RGB Colour Blue (DPT 5)
- RGB Colour White (DPT 5) - optional
- Dimming (DPT 5) - optional

If as 3rd parameter *RGB datapoint* you choose *Single datapoint*, instead of the 3 separate colour values you will need a datapoint of type DTP232 (3 Bytes):

- RGB Colour (DPT 232)

For RGBW or HSV+W, there is the 3rd possible combination that provides a single data point for all 4 channels:

- RGBW Colour (DPT 251.600)

If you have configured a unit for HSV colour representation, the available datapoints are:

- H (Hue) (DPT 5.003 - Rotation in degrees)
- S (Saturation) (DPT 5.001)

- V (Value) (DPT 5.001)

More detailed information on linking datapoints can be found in Chapter 2.8.2.

The RGB(W) element now also offers up to 10 presets - i.e. stored colours that can be recalled as needed by simply touching them.

The active preset is marked with a thin grey outer ring. The internal rings each represent the following:

- Grey ring: percentage value of the dimmer (full circle = 100%)
- White ring: percentage value of white (full circle = 100%).

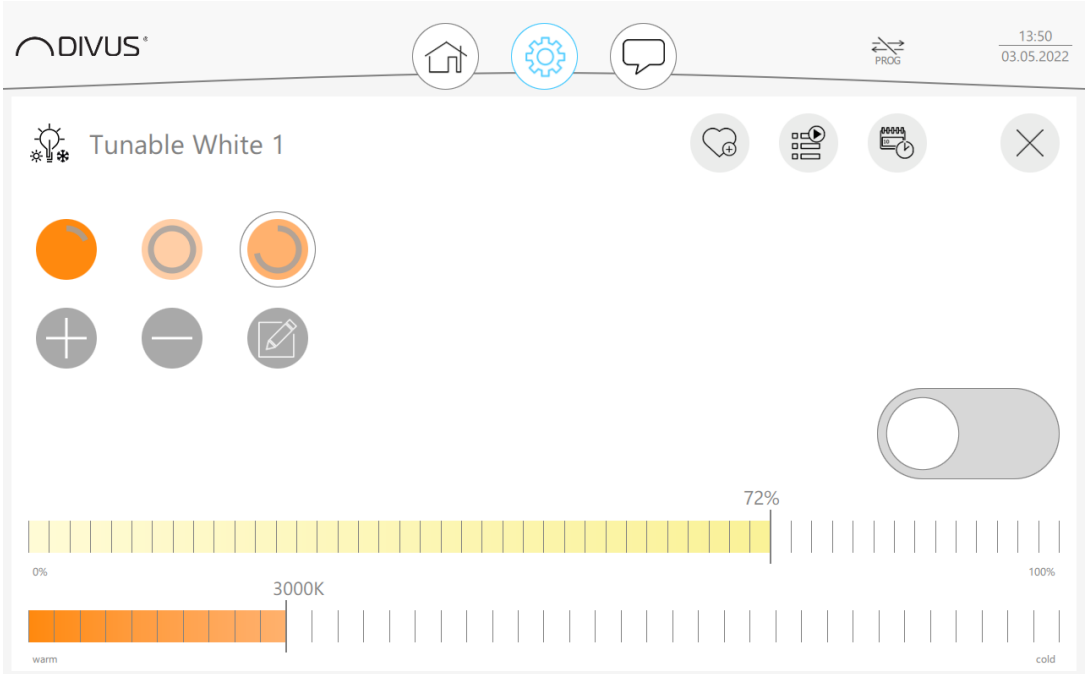
If neither dimmer nor white are activated, the internal rings are also not visible. If not all saved presets are visible, you can slide them to the left or right to reach the others.

The grey buttons (above), which are displayed depending on the situation, allow the following respectively: Add a preset (max. 10), delete selected preset, edit selected preset, save or discard the current changes.

Note: Colours that already exist as presets cannot be saved a second time!

Attention: if parameters of an RGB(W) element with stored presets are changed afterwards, data may be lost (dimmer values and/or white values) or presets may be totally deleted (data point type changes). Such changes cannot be undone.

2.7.1.8 Tunable White



The Tunable White element is used to control white light sources whose colour temperature can be changed (hence "tunable"). The available parameters are:

- Enable dimmer (shows/hides DTP 5 function and its slider).
- Colour temperature min. value (differs depending on the illuminant. In Kelvin degrees)
- Colour temperature max. value (as above)
- Colour temperature tick step (value distance between 2 ticks)
- Colour temperature value step (size of smallest possible change in value)

The linkable functions are then:

- On/Off (DPT 1)
- Dimmer (DPT 5)
- Colour temperature (DPT 7)

More detailed information on linking datapoints can be found in Chapter 2.8.2.

The Tunable White element offers up to 10 presets - i.e. stored colour temperature and dimmer value combinations that can be recalled as needed with a simple touch.

The active preset is marked with a thin grey outer ring. The internal ring represents the dimming value (full ring 100%).

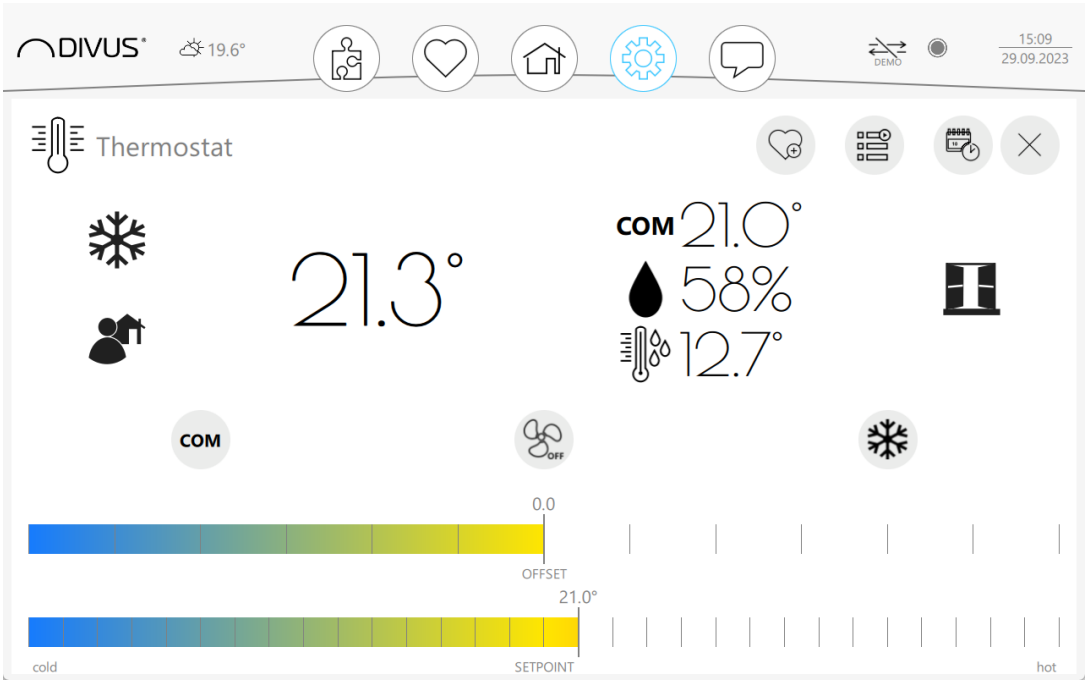
If the dimmer is not activated, the internal rings are not visible. If not all saved presets are visible, you can "slide" them to the left or right to reach the others.

The grey buttons (above), which are displayed depending on the situation, allow the following respectively: Add a preset (max. 10), delete the marked preset, edit the marked preset, save or discard the current changes.

Note: Values that already exist as presets cannot be saved a second time!

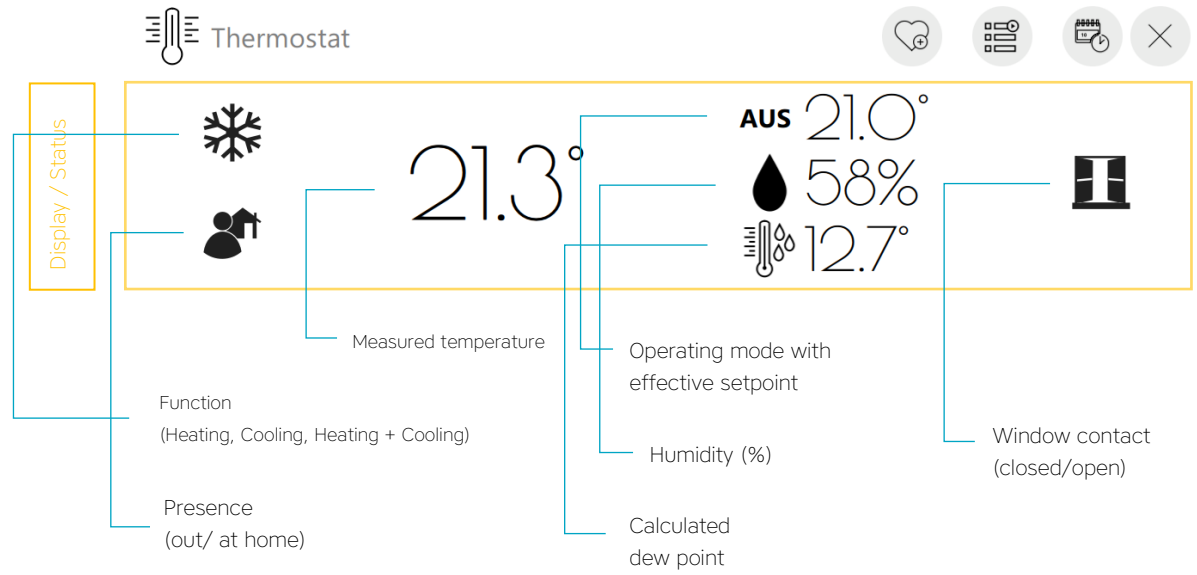
Caution: if parameters of a Tunable White element with stored presets are changed afterwards, data may be lost (dimmer values) or presets may be totally deleted (data point type changes). Such changes cannot be undone.

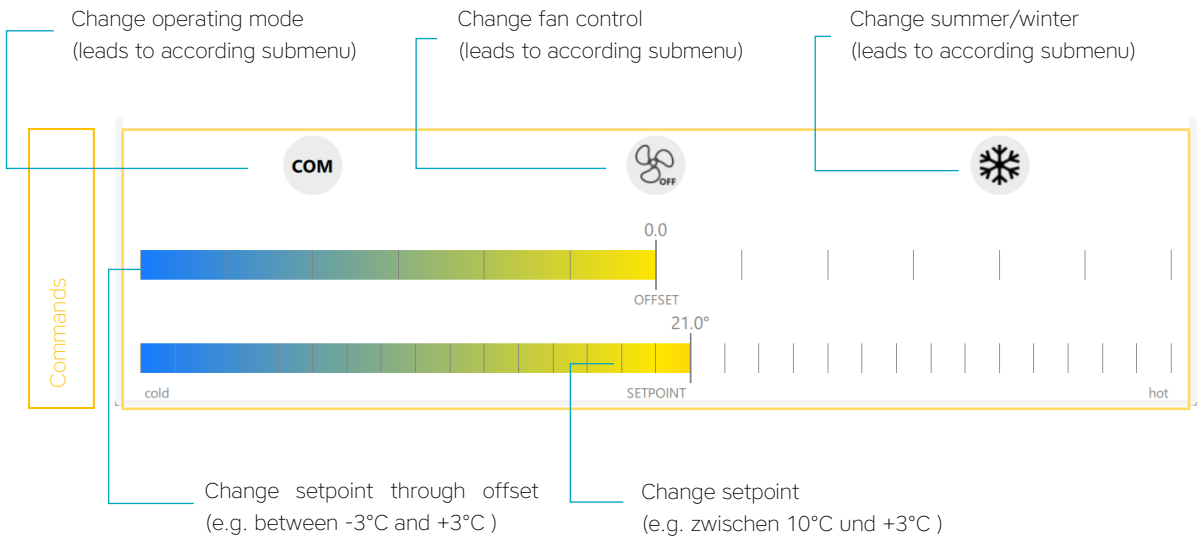
2.7.1.9 Thermostat



The thermostat element was heavily revised in the last version. The range of functions has increased, and the graphic representation in all views has been streamlined. The screenshot above shows a representation that has all possible options activated. In reality, this will very rarely be the case and in general icons and values will be rearranged depending on the amount of enabled functions, but we use this representation for further explanation.

In the detail view, the window is divided into two areas: the upper area for display/status, the lower area for the commands:





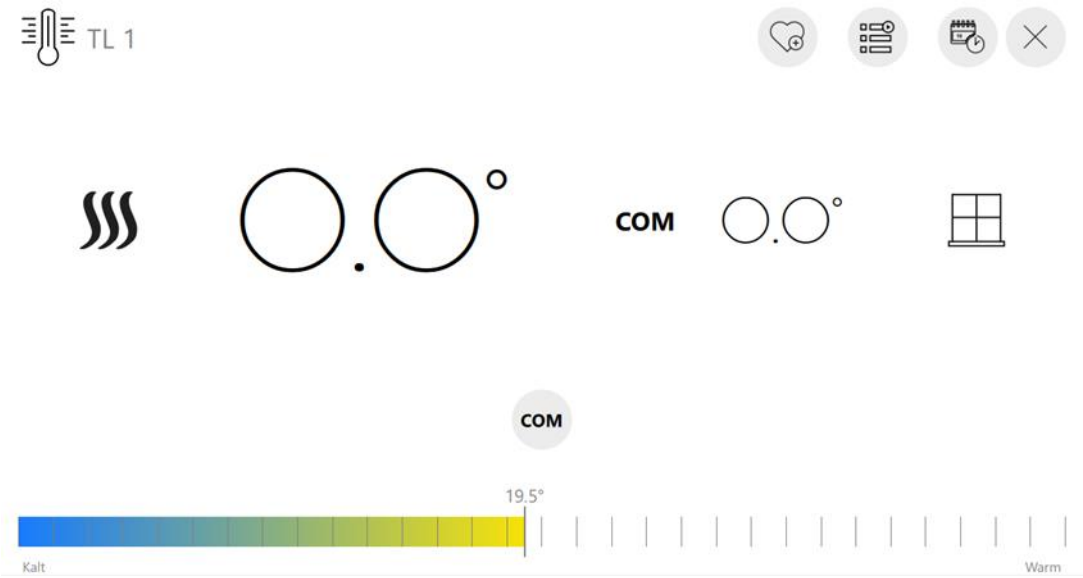
This element type has the widest range of functions, as does the physical device. Its parameters require a table with explanations:

Parameter	*Choices*	*Explanation*
Operating mode control (DPT 5)		*Choose one of the following:*
	Disabled	*Disable the operating mode control(s)*
	AUTO-COM-PRE-ECO-OFF	*Choose one of these options. In general, note that:* • *PRECOMFORT (PRE) might be called STANDBY/STBY* • *ECONOMY (ECO) might be called NIGHT* • *OFF is most of the times the same as FROST or BUILDING PROTECTION/PROT (although there might indeed be an ON/OFF function of the device)* • *The official KNX data type specification uses:* 0 = Auto, 1 = Comfort, 2 = Standby, 3 = Economy, 4 = Bldg.Prot. All numbers > 4 are usually not used (although this is a 1 Byte data type)
	COM-PRE-ECO-OFF	
	COM-STBY-NIGHT-FROST	
	ON-OFF	
	AUTO-COM-STBY-ECO-PROT	
	COM-STBY-ECO-PROT	
Enable 1 Bit operating modes		*Switches mode by sending 0 to all operating modes except the chosen one (sending 1). Each single operating mode has its own 1 BIT datapoint and its respective function. Note that the 1 BIT operating point functions, if enabled, will replace the 1 Byte Operating mode function (see above)*
Fan control		*Choose one of the following:*
	Disabled	*Disable the fan control*
	On/Off (status only) (DPT 1)	*Choose one of these options depending on your physical device's options and the customer's preferences.*
	Off/Speed 1-3 (Status only) (DPT 1 + DPT 5)	
	Auto/[Man Off/On] (DPT 1 + DPT 1)	
	Auto/[Man Off/Speed 1-3] (DPT 1 + DPT 5)	

	Auto/Man (DPT 1)	
	Invert fan Auto/Man (0/1 or 1/0)	*Invert the value interpretation if needed.*
Heating/cooling function		*Select one of these functions according to which the thermostat operates:*
	Heating and cooling	*Thermostat controls both at the same time*
	Heating	*Thermostat is used for heating*
	Cooling	*Thermostat is used for cooling*
Enable window status icon	Disabled/enabled	
Enable presence status icon	Disabled/enabled	
Enable setpoint	Disabled/enabled	*Enable or disable the setpoint control in general*
Setpoint min. value		*Lower boundary of the setpoint value range*
Setpoint max. value		*Upper boundary of the setpoint value range*
Shared setpoint	Disabled/enabled	*Use one setpoint for both heating and cooling. Only visible if Heating and cooling is chosen as function*
Enable humidity	Disabled/enabled	*Enable / disable the humidity sensor reading as percentage value*
Enable calculated dew point	Disabled/enabled	*Only visible if humidity is enabled. Calculated using current humidity and temperature values.*
Enable effective setpoint	Disabled/enabled	*Shows the setpoint actually applied by the thermostat (calculated including offsets). Status only*
Enable heating/cooling status icon	Disabled/enabled	*Shows the heating/cooling status icon*
Enable heating/cooling switch	Disabled/enabled	*Enables manual switching between heating and cooling (or winter and summer)*
	Invert cooling/heating (0/1 or 1/0)	

Enable setpoint offset		*Allows the setpoint to be adjusted as an offset (i.e. as a relative value) in a specified range (e.g. between -3°C and +3°C)*
	Offset step	*Determines the size of the smallest step (e.g. 1 for one degree or 0.5 for 0.5°C minimum displacement)*
	Offset min. value	*Lower limit of the offset range (e.g. -5)*
	Offset max. Value	*Upper limit of the offset range (e.g. 5)*

2.7.1.10 Thermostat logic



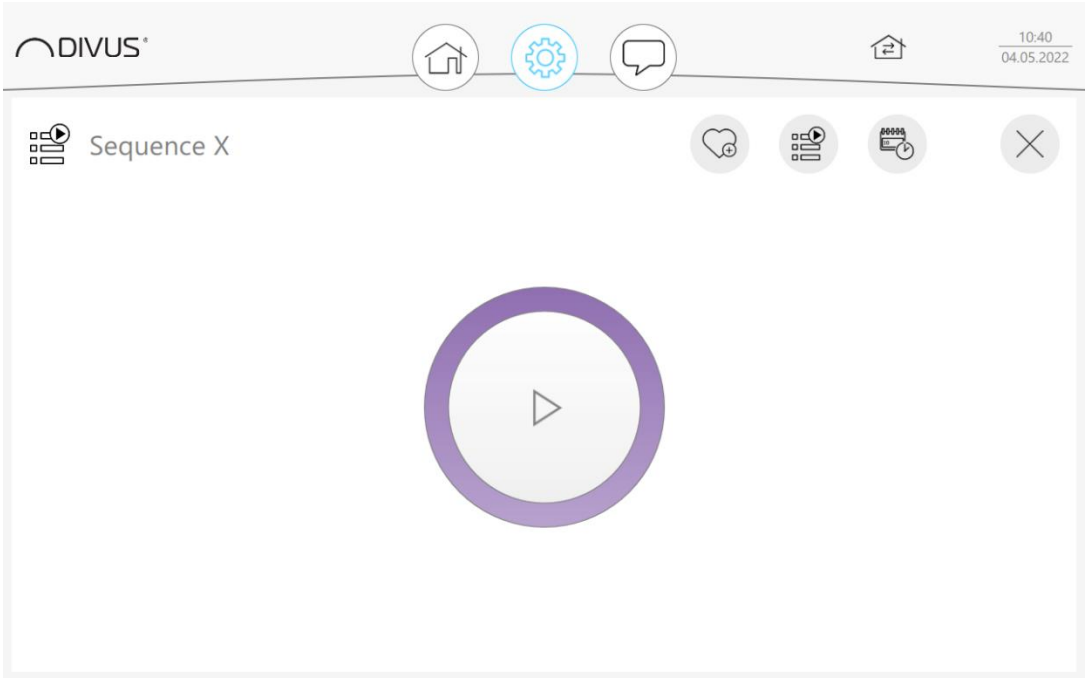
The Thermostat Logic element looks very similar to the Thermostat element, but has a significant difference in comparison: here, the element itself takes over the switching logic. In the minimal setup, it therefore only requires one temperature value data point as input and one switching data point as output. Optionally, it is also possible to link further data points for setpoint and operating mode so that these functionalities are also available from or for other devices.

The following parameters are provided by the Thermostat Logic element:

- Operating mode (COM-PRE-ECO-OFF or COM-STBY-NIGHT-FROST)
- Hysteresis (e.g. at 0.5 the temperature goes half a degree above or below the setpoint before switching over)
- Setpoint min. value (lower limit for the setpoint range)
- Setpoint max. value (upper limit for the setpoint range)
- Setpoint offset PRE (e.g. for 2, PRE is 2° below the COM setpoint for heating, 2° above for cooling)

- Setpoint offset ECO (e.g. at 4, ECO is 4° below the COM setpoint for heating, 4° above it for cooling)
- Enable eff. setpoint (effective setpoint - see Thermostat element). Here it is the value calculated by the thermostat logic itself - as a status.
- Enable status icon (shows the heating/cooling status - see Thermostat element).
- Enable heating/cooling switch (see Thermostat element)
- Frost protection (enter limit value in degrees for operating mode OFF or FROST during heating)
- Overheating protection (enter limit value in degrees for operating mode OFF or FROST for cooling)

2.7.1.11 Sequence



This type of element is similar to KNX scenes but is managed by VISION directly. It allows to create a set of commands to be executed in sequence in order to reach a defined configuration of the environment. Once the functions to be set with the respective value have been set, the same result can be achieved at any time by reproducing the sequence.

The smart buttons, starting from version 4.15, also offer the possibility to match a certain sequence with a certain numerical value sent to a specific 1 byte group address. Then by pressing a physical button, you can execute the desired sequence. For more details see chapter 3.2.8.4.

The parameters of the sequence are:

- *Stoppable* (you can interrupt the sequence during execution or not)

- *Enable smart button (enables the sequence for pairing with a KNX button. See chapter 3.2.8.4)*

2.7.1.12 KNX Scene

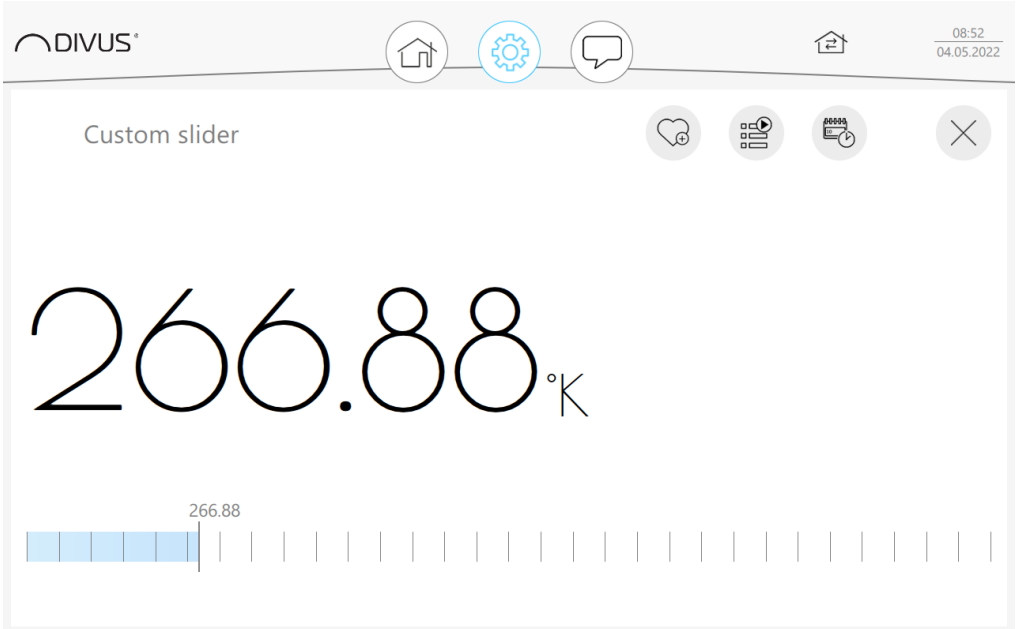
The KNX scene is similar in functionality to the sequence, but more limited. The configuration of the KNX scene must be done in ETS. Through this element it is possible to recall a certain scene, corresponding to a number (from 1 to 64) also defined at the ETS programming level.

The parameters are:

- *Enable learning* (saves the current values of the involved group addresses and from then on sets using the new values)
- *Scene number* (scene number to be recalled from 1 to 64)

As a connectable function, there is a single datapoint that will match that of the *KNX scene* (DPT 5, 0-255).

2.7.1.13 Custom slider



The custom slider can be used for many purposes. These icons are available:

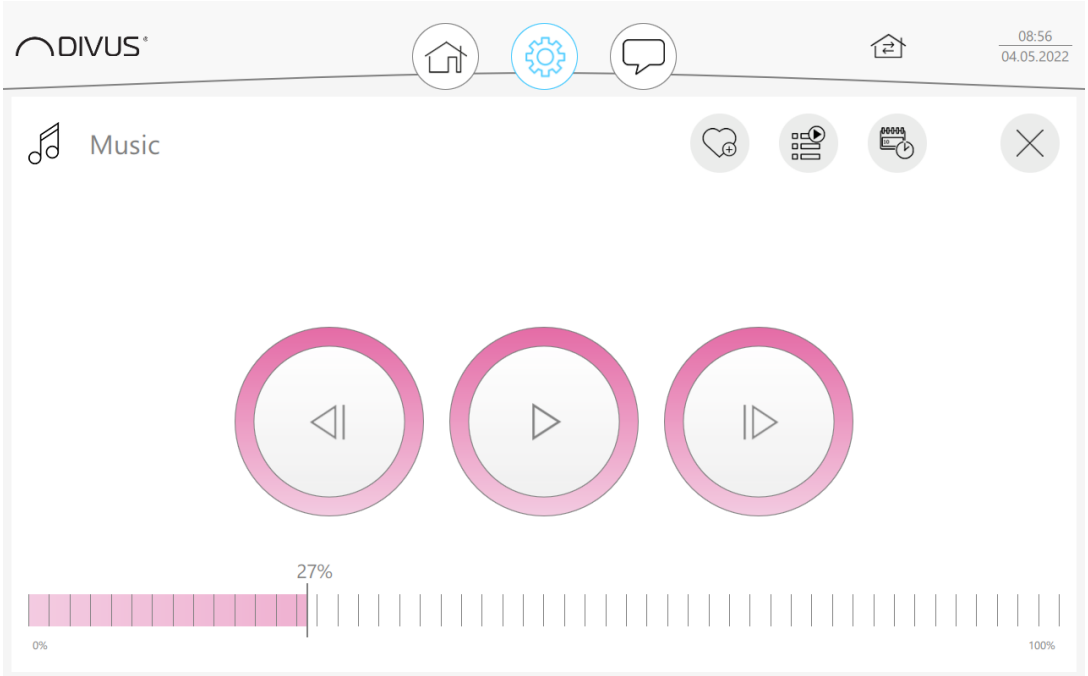
	None (element remains without icon)
	General information
	counters
	data

	moisture
	heating
	light
	cooling
	temperature
	Weather
	ventilation
	Energy
	General measured value
	CO_2
	Wind speed
	Brightness

Apart from the icon, you will find the following options under PARAMETERS:

Controls	*All*, *only slider*, *only value* can be selected
Unit	Shown after the value (e.g. °K)
Decimals	Number of decimal places
Label min.	Displayed to the left of the slider.
Label max.	Displayed to the right of the slider
Value min.	Minimum value (smallest value of the possible value range)
Max. value	Maximum value (largest value of the possible value range)
Tick step	Value between 2 ticks
Value step	Smallest possible value shift of the slider

2.7.1.14 Music

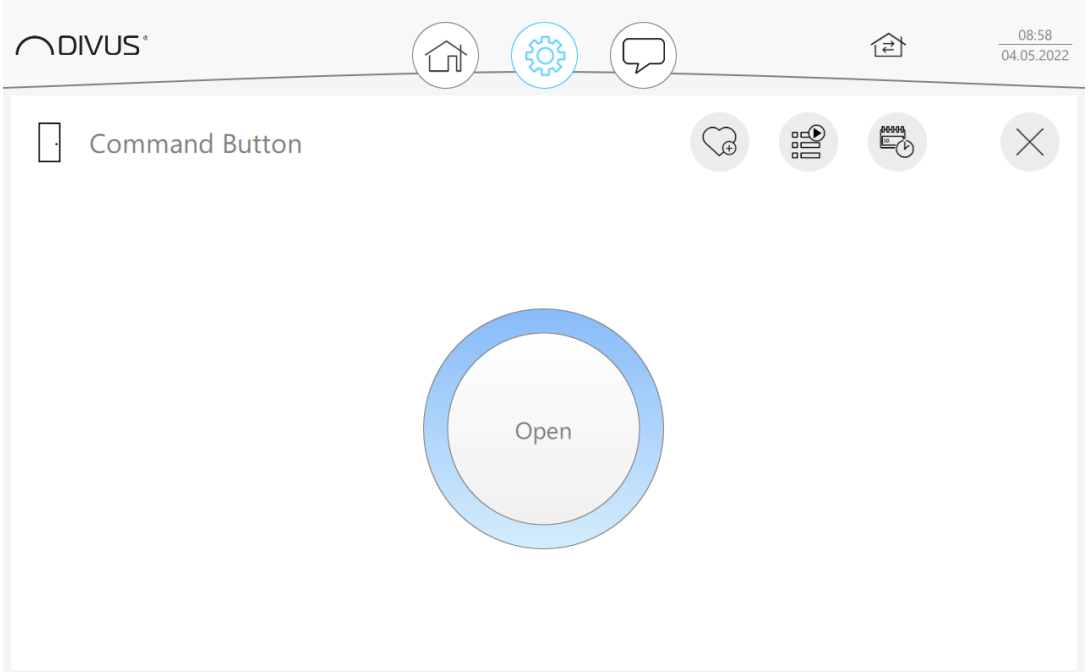


The parameters for the music element are:

Invert Play/Pause	Disabled: 0 Pause, 1 Play - Enabled: 1 Pause, 0 Play
Enable volume control	Enables/disables the *volume control.*
Enable previous/next	Activate/deactivate *Next/previous title*
Value for Previous	Enabled: transmits 1, Disabled: transmits 0
Value for Next	Enabled: transmits 1, Disabled: transmits 0
Enable track information	Activates/deactivates track title and artist

The functions that can be linked are, of course, those that were activated under PARAMETERS.

2.7.1.15 Command button



This element acts like a physical button: you can associate a command both to the pushing and to the releasing action.

The parameters are

Icon	Chose one of the available icons (or none).
Value when pressed	Set the value to be sent when the button is pressed
Value when released	Set the value to be sent when the button is released
Label	The name to show inside the button

The command button element connects one single function: that of the value (which may be of any DPT)

2.7.1.16 Placeholder

A placeholder element serves to graphically/visually separate the other elements. It is a non-element, so to speak, and accordingly leaves a free tile between the surrounding elements.

Optionally, the background can be made visible and the assigned element name can be displayed so that the placeholder element resembles the other elements - except for the content: placeholders have neither icons nor graphic content and do not react to clicks or finger touches. Like all elements, placeholders can be moved (see 3.4).

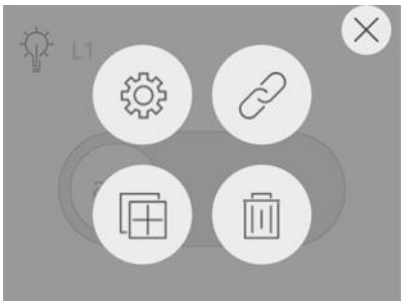
The available parameters are:

- Background (shows the element with the same background as the other elements).
- Title (also shows a title)
- Show only on KNXIQ (on mobile devices, elements are arranged differently, which is why placeholders could have undesired effects)

Note: while working on the project, logged in as administrator, the tile is shown with a light grey background to make it easier to handle it. Log out to see the effect of the placeholder element from the end user point of view.

2.8 EDIT AN ELEMENT

Similar to rooms (see chapter 2.5), you bring an element into edit mode by holding down its tile (or right clicking it if you're using a pc) until the edit icons appear.



The X button closes the editing menu again.

2.8.1 OPEN THE ELEMENT'S FORM

If you want to edit the name or other essential properties of the element, press the gear icon. In addition to the fields Name and Description, you have access to the submenus *Type* (see Chapter 2.7.1), *Parameters, Functions, General* and *Lock*.

2.8.1.1 Parameters Submenu

Depending on the element type, you will find different configuration options that allow you to define the properties of the element in detail.

2.8.1.2 Functions submenu

Depending on the element type, there may be one or more functions to be linked to data points. For more details see chapter 2.8.2.

2.8.1.3 Generic submenu

Here you can define general settings that influence the functionality of the control element:

- *Authorization level* By the explicit assignment of an element to a certain user level, this level is determined for the access (possession) of the element. At the same time, this means that lower access levels no longer have access to the functionality of the element. Locked elements remain visible, but when you click/press a button, the PIN entry window appears. The correct entry of an authorized PIN code remains active for 10 seconds. During this time you can switch several elements that are assigned to the corresponding level. After the 10 seconds you jump back to the previous authorization level.

- *Visible* Makes the element visible/hidden

- *Enable scheduling* The element can be controlled in schedules

- *Enable scenarios* The element can be integrated into scenarios

- *Status only mode* The element is used for operation (deactivated, default) or only to display its value (activated).

2.8.1.4 Lock Submenu

Here it is possible to lock an element via a 1 BIT data point. A locked element can then not be operated. The sub-items here are:

- Activate lock Activates/deactivates the additional function.

- Invert value lock Allows the value received to be inverted if required.

- Behaviour on lock Can leave the element in a desired state, or unchanged

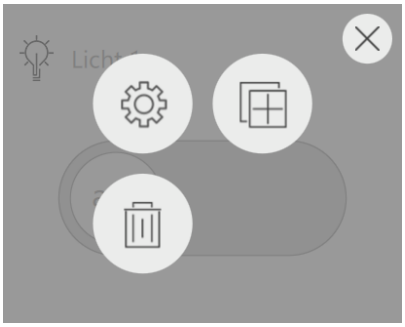
2.8.2 LINKING DATAPOINTS OF AN ELEMENT (FM)

This function links the visual element with the desired function(s) in the background. Depending on the element type, there can be a single function or a multitude of functions that you can link here. There are two possibilities:

- You can select an existing datapoint for the link (only the elements of the matching datapoint type are automatically displayed).

- You can create a new datapoint. In this case, the appropriate datapoint type is automatically preselected - you only need to enter a name and the group address(es).

This function is only visible in Free Mode, as the data points in ETS Mode are linked via a different path. As a result, the context menu in ETS mode is this one:



2.8.3 CREATE A COPY OF AN ELEMENT

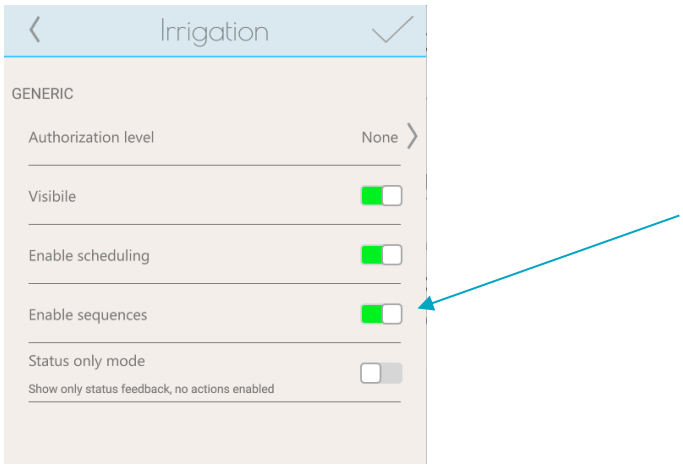
Press and hold the mouse pointer or finger on the item or right click it until the Edit menu appears. Then press the copy icon. The copied element inherits all settings, rights and the links of the functions.

2.8.4 DELETE ELEMENT

Press and hold the mouse pointer or finger on the item or right click it until the Edit menu appears. Then press the delete icon (Trash).

2.9 SEQUENCES

In general, only elements that have been activated for this purpose can be included in sequences. You can find this setting under the generic settings of the element:



Moreover, scenarios can be generated in different ways: directly as element or indirectly when you create one starting from the scenario icon inside another element's detail view. In the latter case a scenario element will automatically be added to the same room as the generating element.

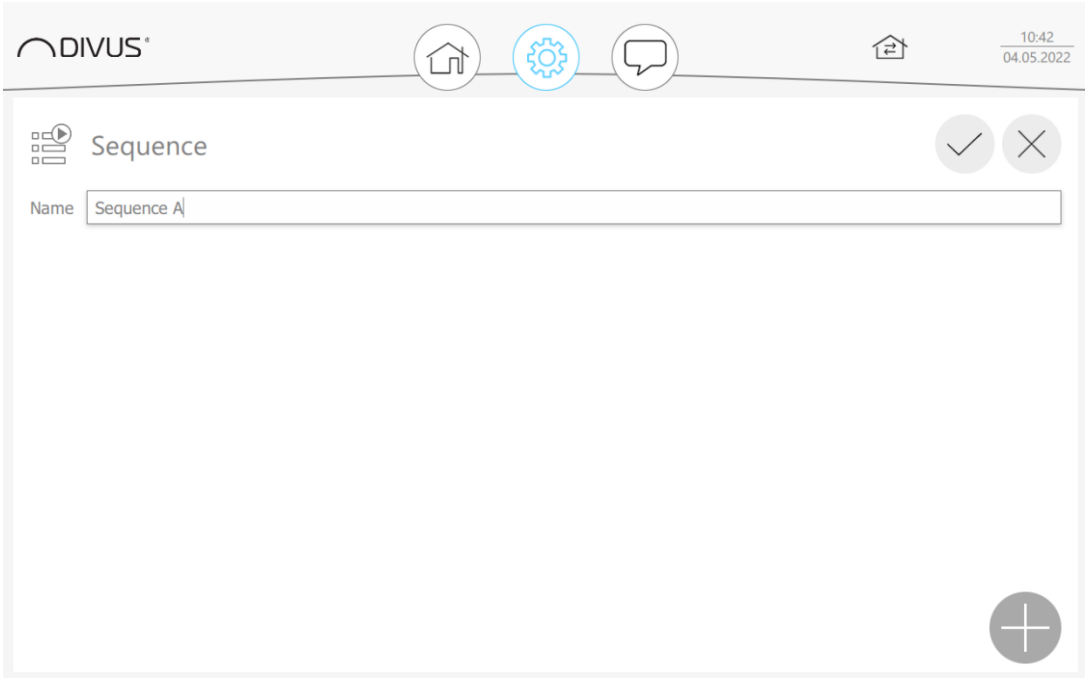
As default, starting from version 4.22 sequences and schedules are enabled for new elements and you can disable single ones if needed.

2.9.1 CREATE A SCENARIO AS ELEMENT

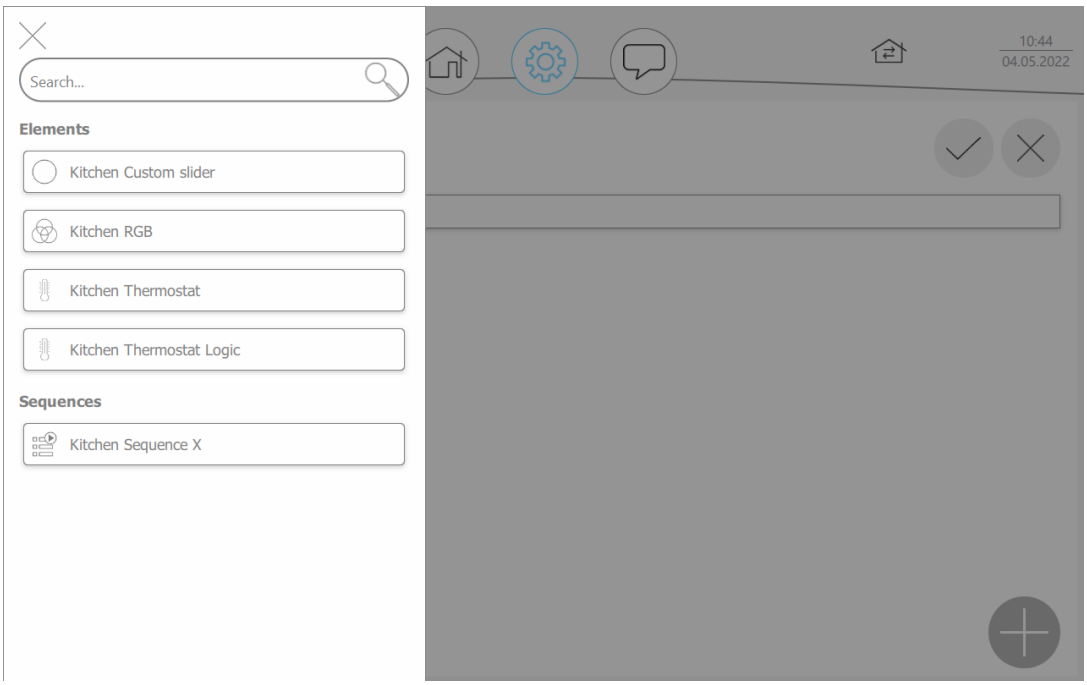
1. Go to the desired room as administrator
2. Use the plus button to add a new element of type *scenario*
3. This creates a new, empty scenario and displays it in the room.

2.9.2 CREATE A SCENARIO FROM ANOTHER ELEMENT

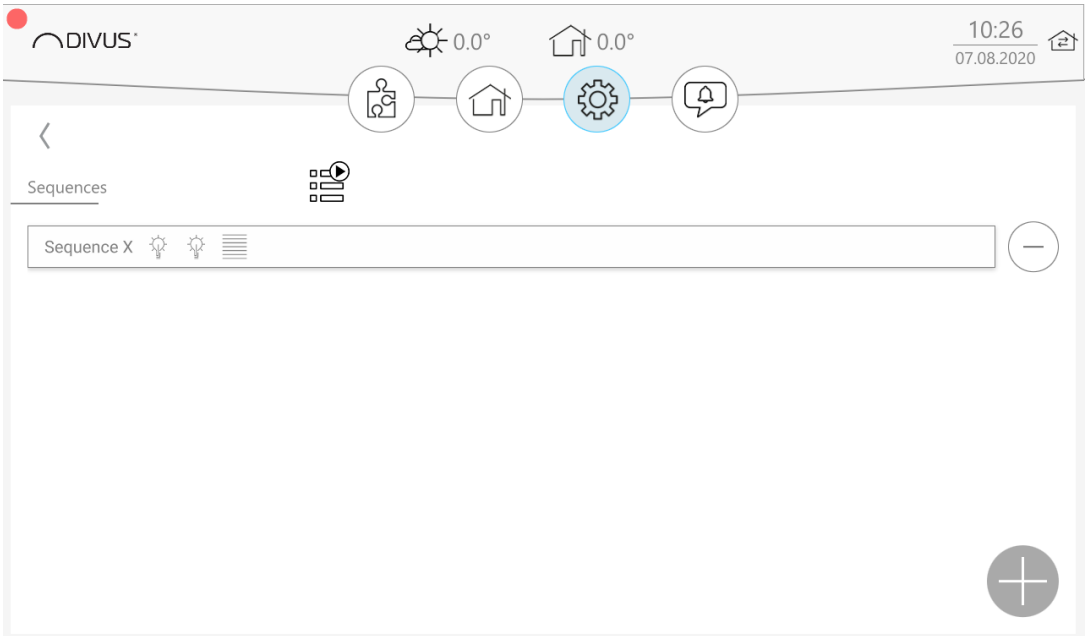
1. Go to an element enabled for scenarios
2. Press the scenario icon 
3. The configuration window for scenarios opens: choose an existing scenario or create a new one.



4. Enter a name (for a new one) and then add the desired elements and set their values.



5. Finally save by clicking the ✓ icon. The list now shows the new scenario:



2.9.3 EDIT A SEQUENCE

To access the list of available sequences, proceed as for creating and click on the sequence that you want to edit. Save your changes with the ✓ icon at the end.

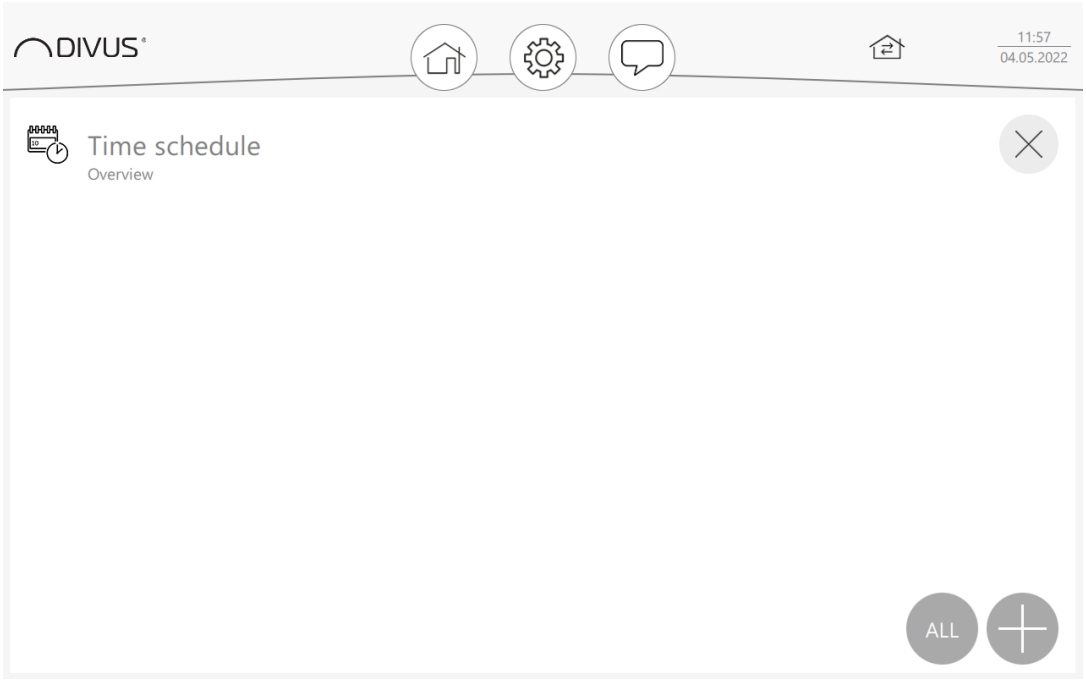
2.9.4 DELETE A SEQUENCE

To access the list of available sequences, proceed as for creating. Then click the minus symbol at the right end of the line of the sequence to be deleted. Confirm the deletion in the message that appears.

2.10 TIME SCHEDULES

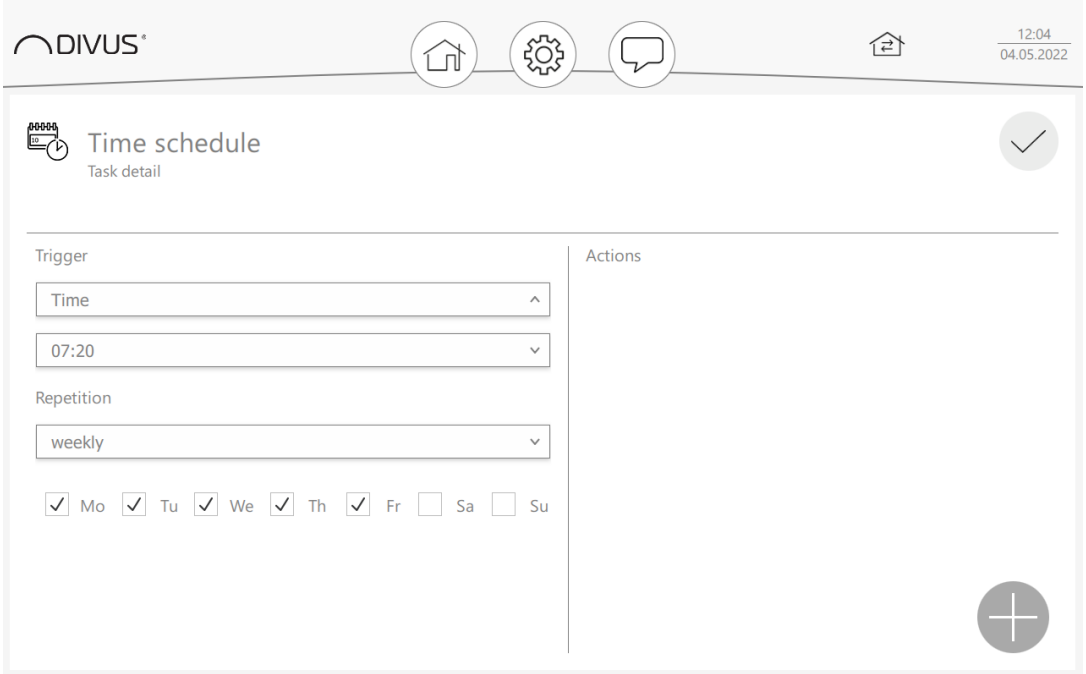
2.10.1 CREATE A NEW SCHEDULE

1. Go to the detail view of the item for which you want to create a schedule.
2. Press the schedule icon. 
3. The scheduling configuration window opens. Press the plus symbol to create a new schedule.



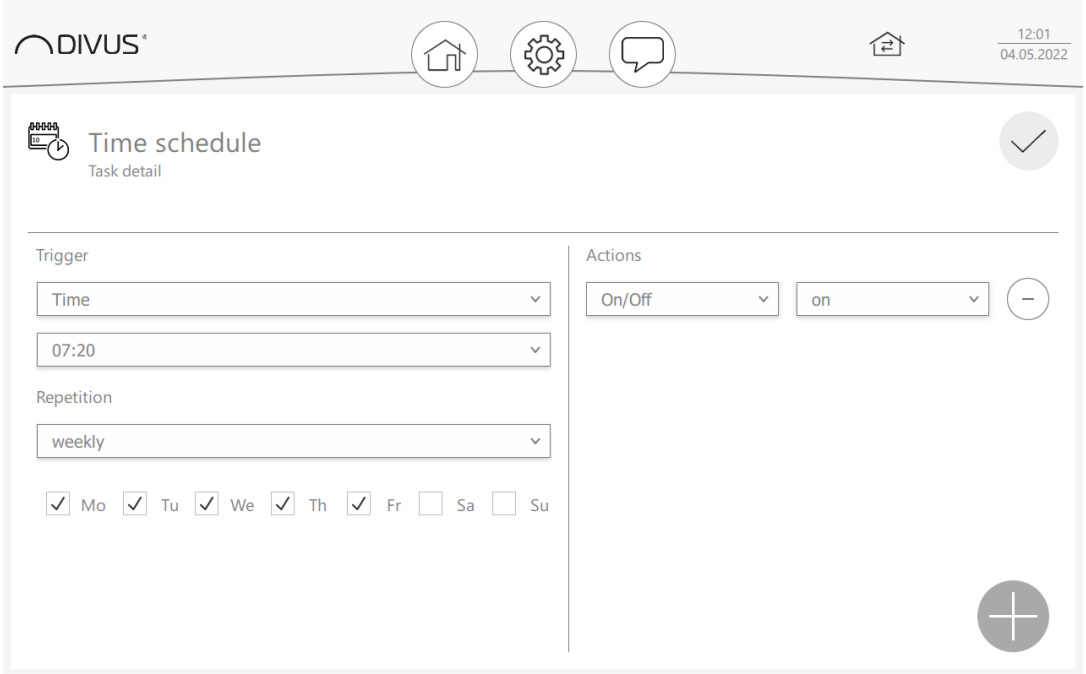
4. Give a name to the schedule.
5. Hit the plus button to create a first scheduled command.

6. Enter the desired settings:



- Trigger (options Time or Astro. Schedule using a fixed time or using sunrise/sunset through the astronomical clock functionality)
- Repetition (options are daily/weekly/monthly/yearly or none) and depending on the choice, the date(s) etc.

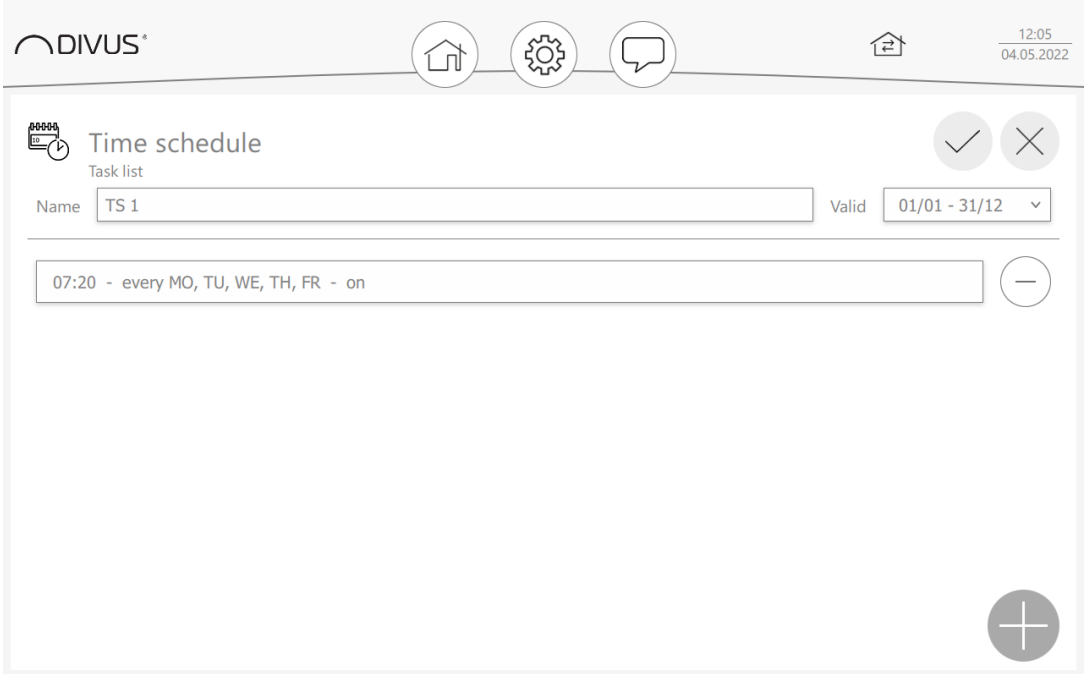
7. Push the plus button to add a first action.



8. Select the function of the element to be scheduled and its value here.

9. Add additional actions if desired.

10. Go back to the task list and repeat steps 5-8 for more scheduled commands if needed.



11. Save at the end by clicking the ✓ icon.

2.10.2 EDIT A SCHEDULE

1. Go to the detail view of the desired element.
2. Click/press the schedule icon.
3. Select the desired schedule and then edit its desired tasks.

2.10.3 DISABLE/ENABLE SCHEDULE

1. Go to the detail view of the desired element.
2. Click/press the Schedule icon.
3. You can disable (switch to the left) or enable (switch to the right) the time schedule using the switch on the right (before the minus symbol). Newly created schedules are enabled as default.

2.10.4 DELETE SCHEDULE

1. Go to the detail view of the desired element.
2. Click/press the *schedule icon*.
3. You can delete the schedule by clicking the minus symbol.

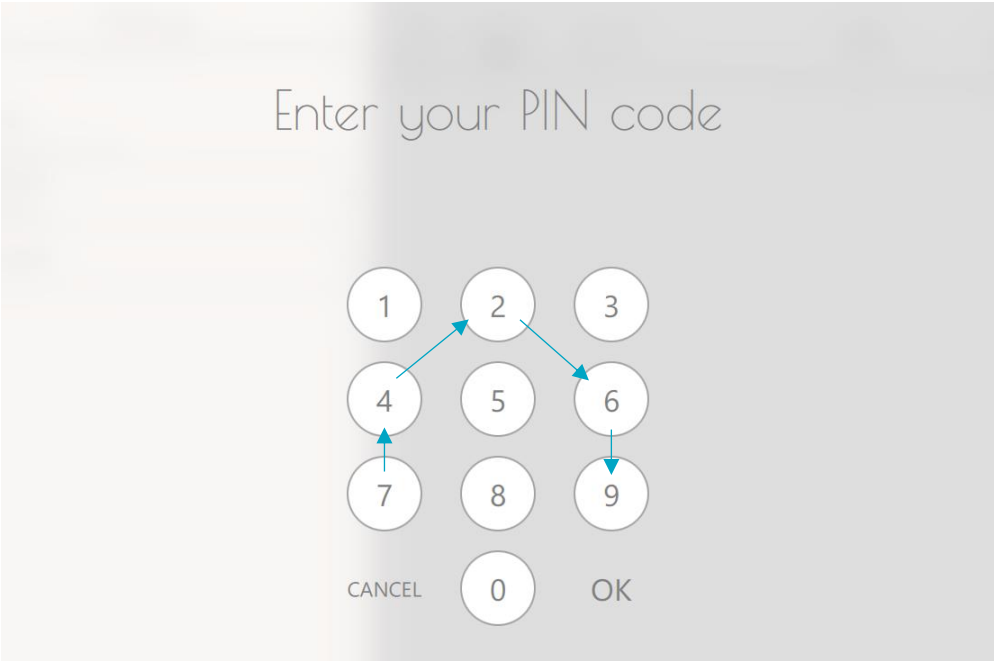
3 Vision - Settings

3.1 LOGIN

By logging in with a PIN code, certain functions and menu items become accessible. Without login you have access to the visualization, but you can't change anything and for certain functions the PIN code window will appear.

To login, open the menu and select the first item *LOGIN*.

The administrator PIN code is 74269.



To configure the authentication of the different users, go to Configuration - Authentication in the menu after the first login. More detailed information can be found in chapter 3.2.7.

3.1.1 LOG OUT

As soon as you have logged on, you will find the function for logging out at the same place as for logging on. After editing, a user should always log out. Whether a user is currently logged in can be seen at first glance through the gearwheel icon: if it has a coloured background, then a user is logged in; if the background is white, then no user is currently logged in.

After 15 minutes of inactivity, the logged-in user is automatically logged out.

3.2 CONFIGURATION

The third menu item gives access to various sub-items for configuring DIVUS VISION:

- Resources
- Visualisation
- Drivers
- Datapoints
- Rules
- Notifications
- User management
- Plugins
- Cloud
- Import/Export

3.2.1 RESOURCES

This page gives an overview of the currently used and still free resources such as data points, schedules etc. with a bar chart.
The shown resources are:

- Datapoints
- Elements (300)
- Rules (logical expressions, 55)
- Users (10)
- Schedules (125 with max. 10 commands each)
- Sequences
- Thermostat logics (12)

They are shown in green – orange – red colours depending on the usage/remaining availability.

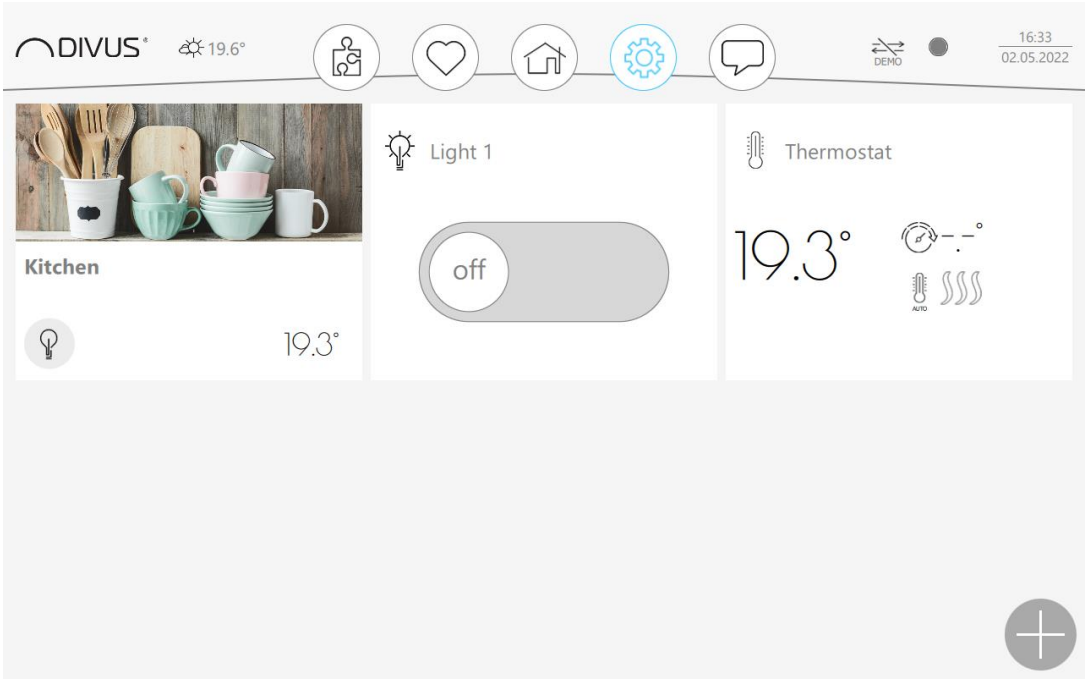
3.2.1.1 Resources in ETS Mode

If the device/project is programmed in ETS mode, the page of the resources changes, because the special way of data transfer via ETS brings certain size restrictions with it, which cannot be defined as a fixed number of functions or objects, but as memory available for them in bytes. A sequence with 10 functions, for example, needs more memory than another one with only 3 functions. For this reason, in ETS mode, the used/available resources are indicated on the resources page, either as a memory percentage or as a fixed number. When approaching the upper limit, both the remaining memory and the maximum fixed number are to be monitored - the limit reached first of the two is then the decisive one.

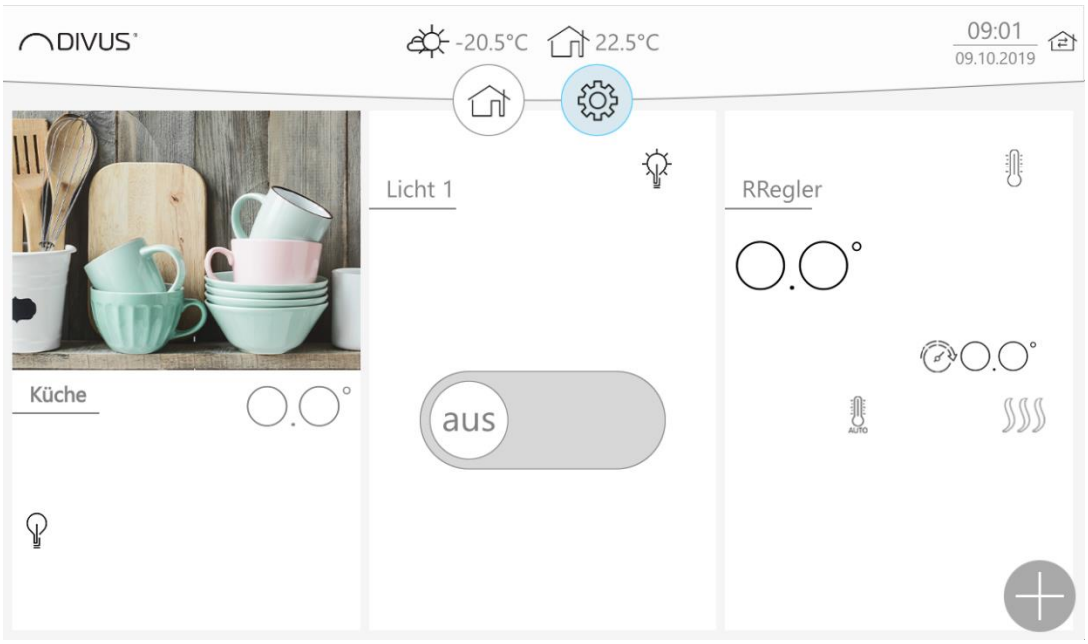
3.2.2 VISUALISATION

Here the visualisation can be customized. The raster mode can be *fixed* or *dynamic*. *Fixed* means that the grid has a fixed division into 6 tiles - unoccupied tiles remain free. *Dynamic* means that the tiles, depending on the number, fill as much of the surface as possible.

Example of fixed raster mode with 3 elements:



Example of dynamic grid mode with 3 elements:



The time with date displayed by default in the upper bar can be hidden if desired.

The temperature values for inside and outside, which are not shown by default, can also be activated here and linked to a datapoint. They then appear on the left of the upper bar.

The Single room mode allows to remove the rooms' layer: all elements will be placed in a single list when enabled.

Under *Elements Design*, default settings can be configured for new rooms, the homepage and other special rooms, regarding the choice between Classic and Slim Design. See also Chap. 3.6.2

3.2.3 DRIVERS (FREE MODE)

This is where you configure the drivers that are used to support different technologies.

3.2.3.1 KNX

Depending on the KNX IQ model, select the desired setting here:

- Direct KNX bus cable connection (TP model)
- IP tunneling via network interface (TP and IP model)

Also see chapter 2.3.2.2

3.2.4 DATAPOINTS

The datapoints of a project are managed here. There is a search function, an area for the list of available datapoints and the plus icon to create new datapoints.

In the case of KNX, a *datapoint* corresponds to a single group address or a pair of group addresses consisting of the command address and the corresponding status address.

Apart from the name, the DPT (datapoint type) is a necessary information.

For the import of datapoints from the ETS, see chapter 2.3.2.4

3.2.4.1 DTP (datapoint type) - table with examples

This table shows all datapoint types supported by VISION:

DPT 1	1 BIT	Switches (on/off or up/down etc.)
DPT 2	2 BIT	(1 control bit 0/1 and 1 switching bit 0/1)
DPT 3	1/4/8 BIT controlled	Dimmers/shutters (0...0 to 1...7)
DPT 4	1 byte (CHAR)	Single letter or symbol
DPT 5	1 byte (%)	(0...100%, 0...255 or 0...360°)
DPT 6	1 byte (%)	(-128...127)
DPT 7	2 bytes	(lux, mm, ms etc. 0...65535)
DPT 8	2 bytes	(time difference, rotation etc. -32768...32767)
DPT 9	2 bytes	Floating point values (-671088.64...670760.96)
DPT 10	3 bytes	time
DPT 11	3 bytes	date
DPT 12	4 bytes	0...4294967295
DPT 13	4 bytes	-2147483648...2147483647
DPT 14	4 bytes	4-octet float value IEEE 754
DPT 15	4 bytes	Access control (status/feedback)
DPT 16	14 bytes	Character string (max. 14 letters/symbols)
DPT 18	1 Byte	Scene control
DPT 19	8 Byte	Time and date
DPT 20	1 Byte	8-Bit Enumeration
DPT 232	3 bytes	RGB / HSV
DPT 251	6 bytes	RGBW / HSV+W

3.2.4.2 Create a new datapoint (Free Mode)

As an administrator, go to *Configuration - Datapoints - Datapoint List* in the menu. First press the *plus* icon at the bottom right of the menu area.

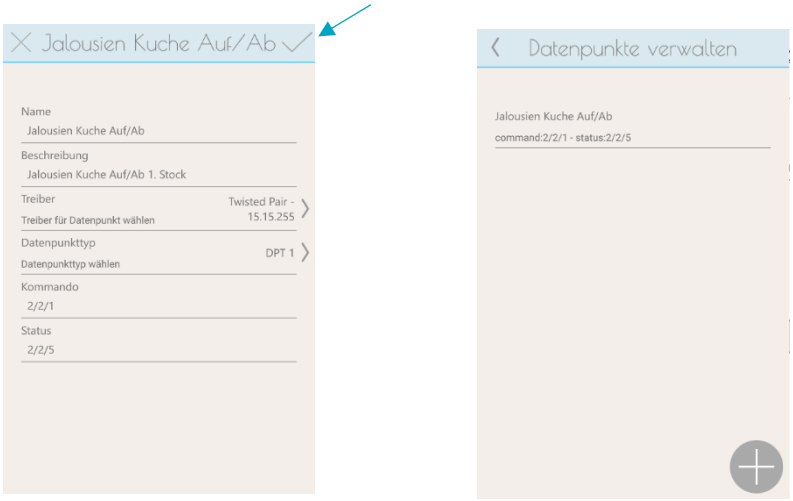
Attention: A datapoint needs an appropriate driver. If you have not yet defined the desired driver, do so before you create the associated datapoints. It is not possible to save a datapoint without a driver.

The "*Add datapoint*" window for entering the properties of the new datapoint then appears in the menu area. So enter the following: name, description, driver, datapoint type, command, status.

For a new KNX datapoint this would be e.g.

- Name: *Kitchen blinds up/down*
- Description *Kitchen blinds up/down 1st floor*
- Drivers: *KNX (...)*
- Datapoint type: DPT 1 (1 BIT)
- Command: *2/2/1*
- Status: *2/4/1*

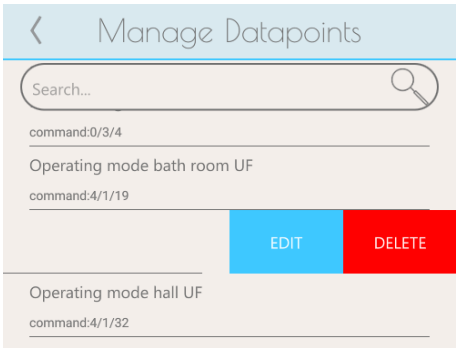
Last confirm the entry with the checkmark icon in the upper right corner. The new datapoint is saved.



Datapoints can also be created directly using the "Link" function of an element. The only difference is that in this case certain settings are predefined and cannot be changed. More detailed information can be found in chapter2.8.2.

3.2.4.3 Edit / delete a datapoint (Free Mode)

To edit or delete an existing datapoint, open and hold it pressed (or right click it) in the list of datapoints:



Then the two buttons for editing and deleting the datapoint appear. Choose Edit to open the same form you used to create the datapoint. For already linked datapoints you cannot edit the values for driver and DPT. Press the red button to delete. The datapoint is then deleted directly.

3.2.4.4 Search Function

If the number of datapoints increases and they can no longer all be seen directly in the window, the search function appears at the top of the list. When you enter a search word, the datapoints that do not correspond are automatically filtered out. As soon as the desired datapoint becomes visible, you can interrupt the entry and select it (also see 3.2.4.3).

The search is possible by name as well as by group address.

3.2.5 RULES

Rules are logics following the simple "if – then-else" principle. This function initially only shows the search function and the plus button at the bottom right.

Logics in VISION work according to this principle: AND has priority over OR i.e. first AND connections are calculated and then OR connections e.g.:

LIGHT1 OR *LIGHT2* OR *LIGHT3* AND *LIGHT4 calculation*:

1. *LIGHT3* AND *LIGHT4* => RESULT *LIGHT3ANDLIGHT4*
2. *LIGHT1* OR *LIGHT2* OR *LIGHT3ANDLIGHT4*

3.2.5.2 Create a new rule

After pressing the *plus* button, the form for the new rule appears. First enter a name and select the type: there are 3 types available, which are described in the following table:

Rule type	Description
On demand	Is controlled, for example, by a time schedule.
Trigger	With each new telegram that refers to one of the datapoints inserted below (even if the value remains the same), the rule's logic is evaluated.

On value change Is only evaluated if one of the datapoints in use has an effective change in value.

Then enter when the logic should be triggered in the "*If*" area of the form:

4. The element (e.g. a thermostat)
5. The function of the element (e.g. the measured temperature)
6. The comparison operator (smaller, larger, equal, etc.)
7. The value of the function of the element (e.g. 5 for 5°)

Then repeat the same procedure for any additional triggers (by adding the small (+)) or for the function(s) to be commanded.

Note: To execute multiple commands when certain conditions occur, you can use a sequence containing the desired commands and then insert it into the THEN section.

3.2.6 NOTIFICATIONS

Here you will be offered an option to enable or disable notifications, as well as access to the list of existing notifications.

The notification sound duration can now be adjusted. The options are: endless, short (about 4 sec), middle (about 8 sec), long (about 16 sec).

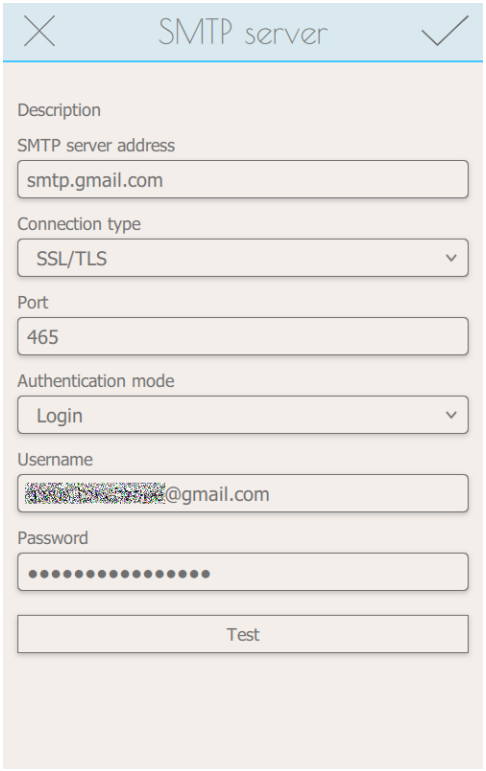
Initially the list of notifications shows the search function and the "+" button in the lower right corner. See 3.2.6.1 for the creation of new notifications.

E-mail recipients can be edited via the subitem. In addition to the e-mail address, a description field is offered as well as the option to be set as default recipient. Then new messages will already have the recipient (or recipients) in the e-mail recipient list by default.

If system notifications (see below) are also to be sent to the recipient as an e-mail, this function can also be activated.

The submenu SMTP server contains all settings for the correct connection to an SMTP server with which the e-mail can be sent.

Here is an example of the settings for a Gmail account:



~~In the case of Gmail (and others similarly), it is necessary to allow the "*access by less secure apps*" in one's own Google account.~~

NEW [At the end of May 2022, Google will remove the "*access by less secure apps*" setting which VISION previously used.] You now need to enable the "*Two-step verification*" which then gives the possibility to create "*App Passwords*". ***Create such a password and use it in the form above instead of the account's password!*** Further details about the procedure are shown in this document.

Then the configuration can be tested via the *Test* button.

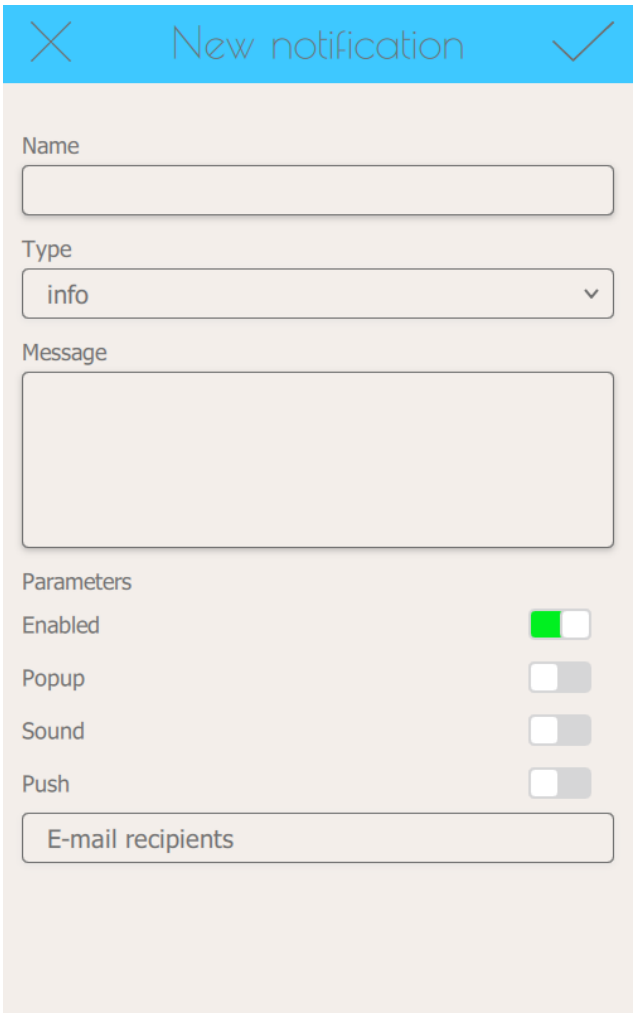
The notifications page can be called up via the icon in the top bar if the notifications are activated.

In general there are 2 types of notifications:

- *System-wide notifications*, with which the system provides warnings or suggestions. These notifications are generated independently by the system and are also generated when the notifications in the menu are disabled.

- *User-level notifications* that appear for user-defined events. This type of notification can be enabled or disabled from the menu. As a result, the icon in the top bar is also displayed or hidden.

3.2.6.1 Create a new notification



After pressing the plus button, the form for the new notification appears. First you enter a name and select the type: *Info*, *Warning* and *Alarm* stand for corresponding importance levels in increasing order, as well as for different acoustic signals.

A user level notification can be combined with an acoustic signal and you can choose to have the automatic popup or just print in the notification panel. Moreover single notifications can be disabled – they're enabled ad default, obviously. The push function allows the message to be received as a corresponding push notification on mobile devices.

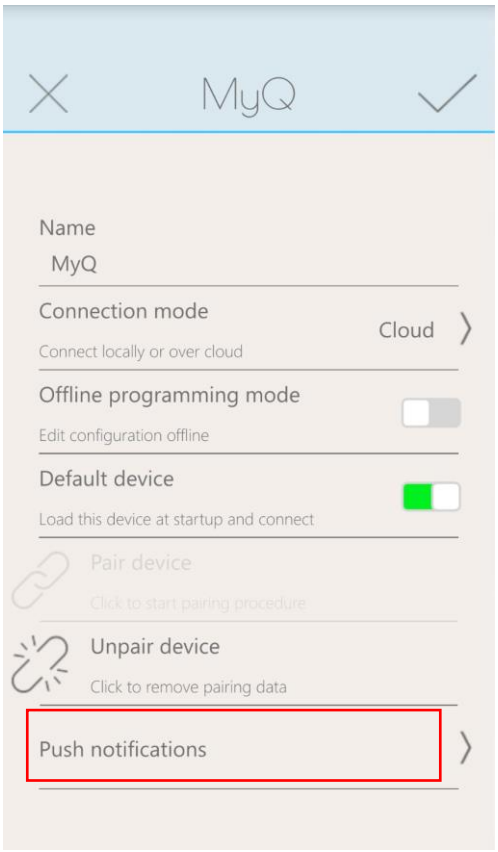
The field for e-mail recipients contains the e-mail recipients set as default, if any are set. In general, you can select one or more or no e-mail recipients from here.

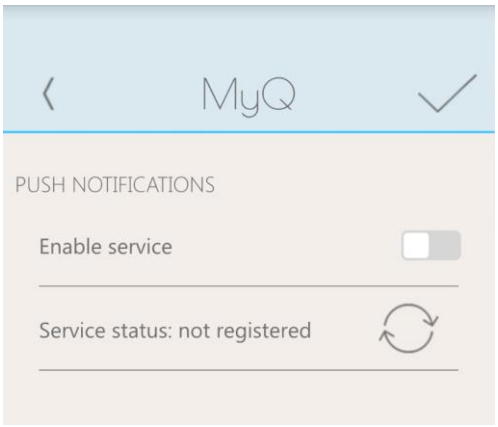
In order to display a message for a certain event, you need a rule where the relationship between trigger and notification can be defined in detail (see chapter 3.2.5).

3.2.6.2 Push Notifications - Management on Client Device

Push notifications can be managed independently on different client devices: here you will find the corresponding settings:

- Go to the list of configured devices as an administrator (default PIN 74269) or as a user with the User Settings right and press and hold the desired device (or right-click from PC).
- Select Edit
- The configuration form of the device appears: at the end you will find Push Notifications
- Select, as desired, whether the service for receiving push notifications is to be enabled or not. If the service is enabled, the current status will be displayed underneath.





3.2.6.3 Delete a notification

Press and hold the notification or right click it in the list until the delete button appears, then press it.

3.2.7 USER MANAGEMENT

3.2.7.1 Introduction

There are two default access levels, namely the *administrator* level which comes with the default PIN code `74269` and the *user* level which operates the visualization without the need for authentication.

Any authenticated access has a default timeout followed by an automated log off. After 15 minutes of inactivity (i.e. without user interaction), the authenticated session will run out, the gear icon's colour will return neutral and VISION will apply the user level access rights.

Also temporary access rights behave like this: a user may gain higher permissions inserting a correct PIN code e.g. to view a protected room's content or to operate a protected element. These rights will be lost after 10 seconds of inactivity.

Also the role and the permissions of the administrator can't be changed or deleted. Only the PIN code can – and should – be customized.

The administrator can create and manage additional users defining their name, PIN code and access rights. Access rights are set through a permission matrix where a set of basic permissions is offered for configuration. These are:

VIEW	Permission to see elements with their current values. Rooms without this permission remain visible but are pin protected.
CONTROL	Permission to operate elements (i.e. change values)
SCHEDULES	Permission to manage (add, edit, delete) schedules for elements
SEQUENCES	Permission to manage (add, edit, delete) sequences with the available elements
PRESENCE SIM.	Permission to control the presence simulation functions PLAY and RECORD.
USER PREFS.	Permission to change the order of tiles (on the homepage and inside rooms) and to access some device dependent settings. These are: ▪ Access to submenu *App* ▪ Access to submenu *Devices* (on client devices only) ▪ Access to submenu *Pairing* (on KNX IQ only)

Single rooms or elements may get a custom set of rights which will override the default ones. This means that authentication settings done on a room or an element will prevale over the default settings configured in the *User management* menu.

There is no fixed hierarchy of users in this structure: each user can be managed independently from all others.

As example let's say we have

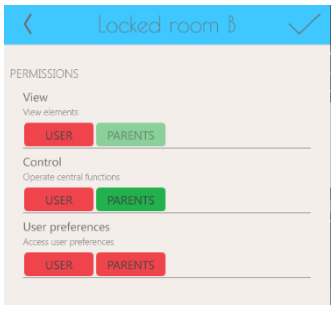
- 2 rooms: *Room A* and *Locked room B*.
- Inside Room A we have 3 elements: *Light 1, Secret switch* and *Hidden alarm*. There is an additional user *Parents* added to the default users *Admin* and *User*

What we want to achieve:

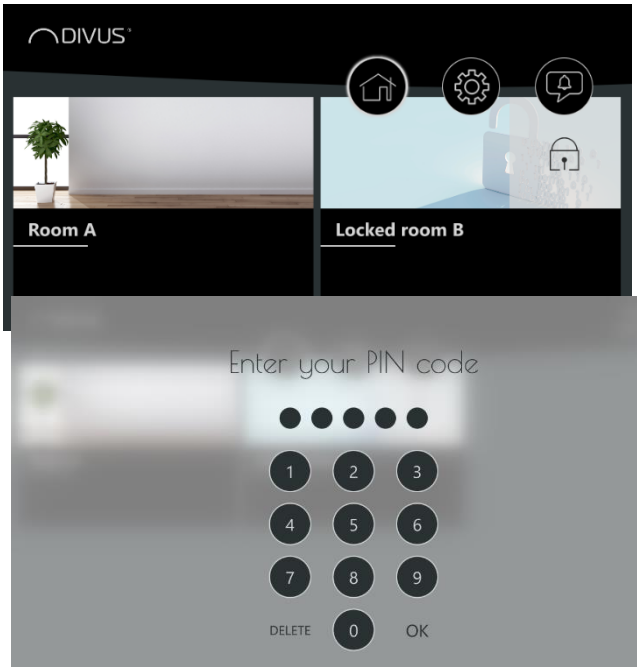
- Usually the visualisation will use the default *User* rights. Therefore also children will use that.
- Parents will have a PIN code assigned to protect access to rooms and elements
- Locked room B shall be PIN protected. Only user Parents will have access
- Light 1 has default access rights. Therefore everybody can see and switch it.
- Secret switch shall be PIN protected. Everybody will see it, but only Parents may control it
- Hidden alarm is meant to be hidden. Only user Parents will see it inside Room A.

Permissions	View

Rooms view

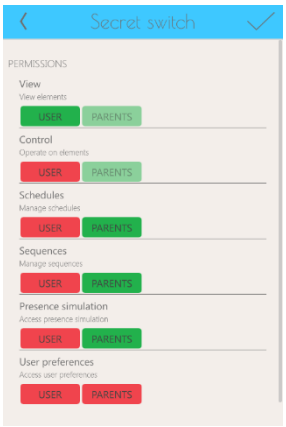


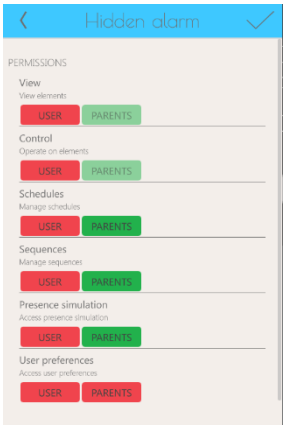
(notice the lock on the room on the right)



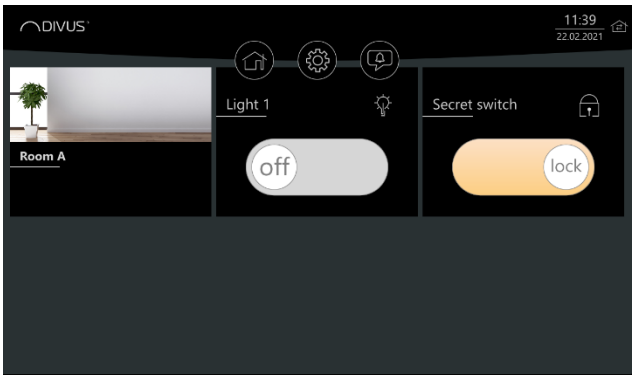
User can't access: a PIN code is required

Room A view

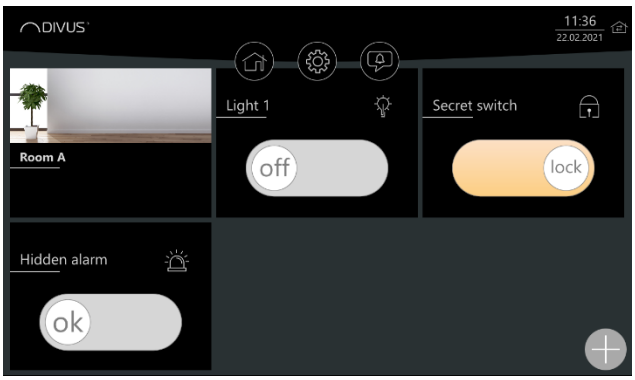




For *User*:



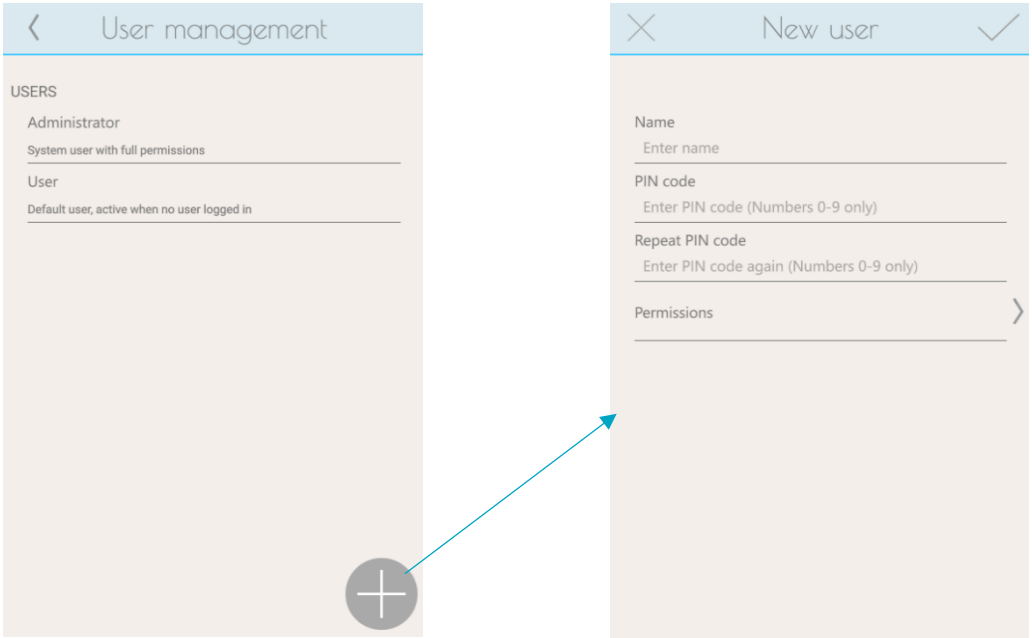
For *Parents*:



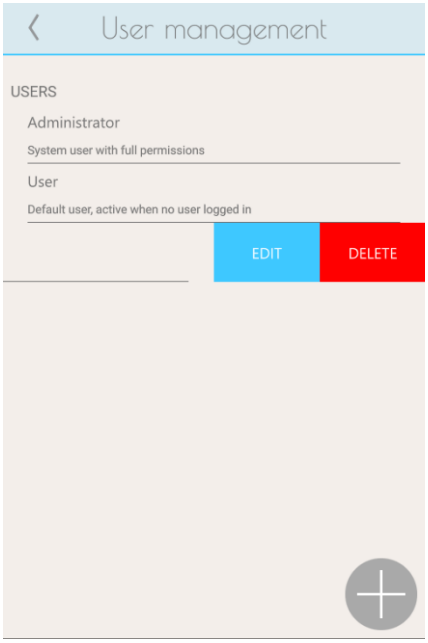
3.2.7.2 Adding new users

- Go to *Configuration - User management - Users* as administrator and hit the plus icon in the lower right corner of the menu.

- Insert the name and the PIN code of the new user. The PIN code must be a numeric code of min. 4 and max. 8 digits. The permissions can be set from here also, but you may prefer to set (or change) them later going to *Configuration - User management - Permission matrix*.



3.2.7.3 Editing or deleting a user

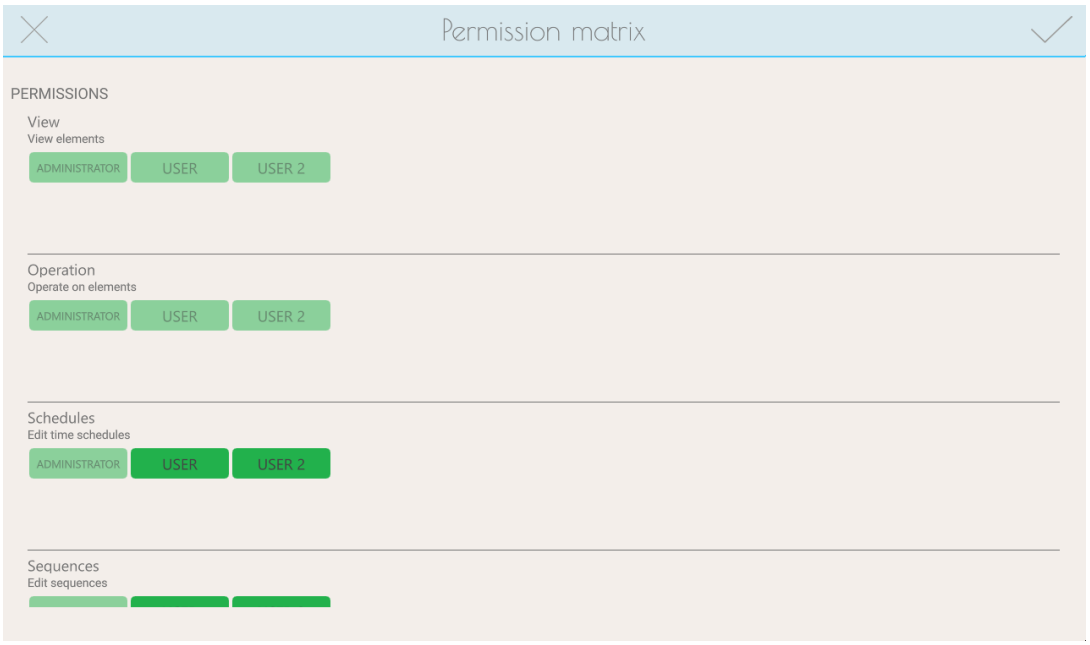


Go to *Configuration - User management - Users* as administrator and long click (or swipe left) the desired user. Choose the appearing button *EDIT* (to recall the same form shown to add a new user and edit its values) or *DELETE* to delete the user and remove any references to his rights throughout the project.

3.2.7.4 Configuring the default access rights

Go to *Configuration - User management - Permission matrix* as administrator.

A double click / tap on the title "Permission matrix" will expand the view to fullscreen.



For each of the permissions, choose the desired right: granted rights will be green, denied rights will be red. Semi-transparent rights mean that they can not be changed currently.

Whether a right may be changed or not, results from a set of dependencies. Some of the base permissions have obvious dependencies e.g. to operate something (*control* right) you need to see it (*view* right). Therefore, in this example, the view permission will be semi-transparent and you will not be able to disable it without first disabling the control right.

Check out this dependencies overview scheme:

1	VIEW		USER PREFERENCES
2	CONTROL	PRESENCE SIMULATION	
3	SCHEDULES	SEQUENCES	

As you can see:

- *View* and *User preferences* permissions have no dependencies
- *Control* and *Presence simulation* depend on the *View* permission. This means they can only be enabled if the *View* right is enabled first.
- *Schedules* and *Sequences* permissions both depend on the control permission. This means they can only be enabled if *Control* and *View* rights are enabled already. At the same time, it means that a user with schedules or sequences (or both) enabled can't be denied the *Control* or the *View* right.

3.2.8 PLUGINS

Some special, modular functions also using or related to the KNX bus can be found here.

3.2.8.1 The Astronomical clock

This optional function allows to use geographical data combined with date and time data to calculate sun position and angle, sunset and sunrise. Then you can create logics which are triggered at the chosen time of the day e.g. "turn on the external lights 30 minutes after sunset".

Set up the astronomical clock:

8. Go to Configuration – Plugins – Astronomical clock – Settings
9. Enable the astronomical clock
10. Input the desired coordinates using decimal degrees.
11. during programming, you can use sunrise and sunset in place or as alternative to a fixed time.

3.2.8.2 Date/time synchronization

This function is useful if you need a reliable date and time data source on KNX and have it on your LAN, or the opposite.

Set up the astronomical clock:

12. Go to Configuration – Plugins – Date/time synchronization
13. Enable the date/time synchronization
14. Choose the desired direction (KNX IQ => bus or Bus => KNX IQ)
15. Choose the desired datapoints to involve in the synchronization
16. Choose the desired time interval. 0 means do not send.

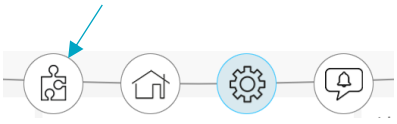
3.2.8.3 Presence simulation

The presence simulation is based on a simple principle: record the commands sent over the KNX bus along with a time stamp. Then, when required, switch to playback mode and the last week will be replayed to simulate your presence (while nobody is there).

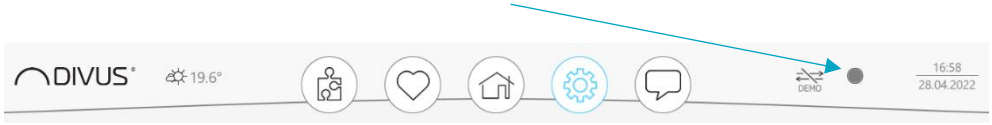
- On/Off elements
- Dimmers
- Shutters
- RGB
- Custom sliders

To set up the presence simulation:

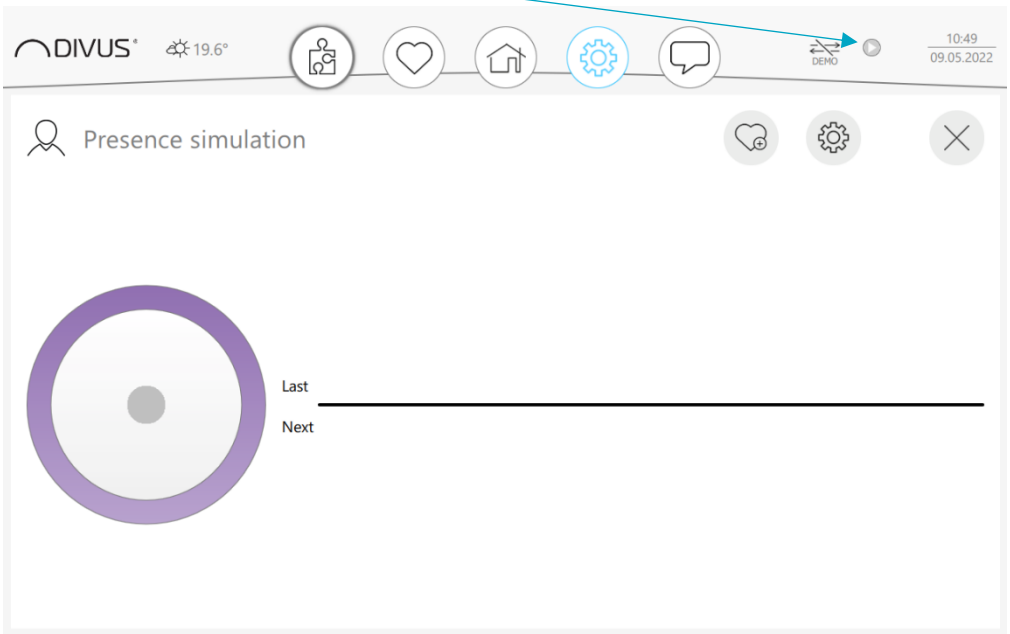
1. Go to Configuration – Plugins – Presence simulation
2. Enable the presence sumulation
3. The plugin icon will appear (if it was previously hidden) on the upper bar



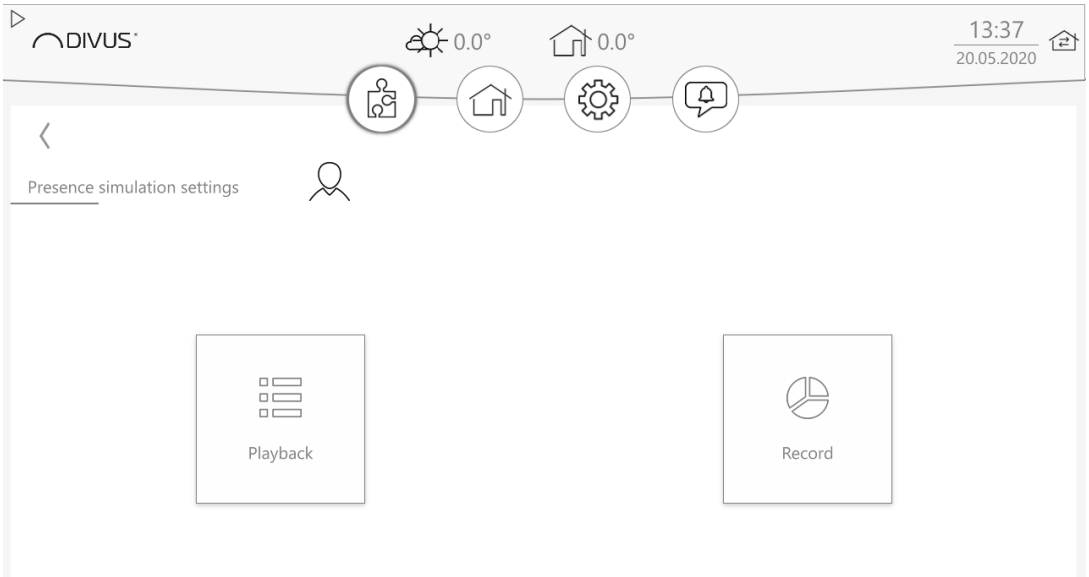
4. On the plugins page you will find the presence simulation function. It show one simple button. When recording, a pulsating dot will appear in the top left corner of the page.



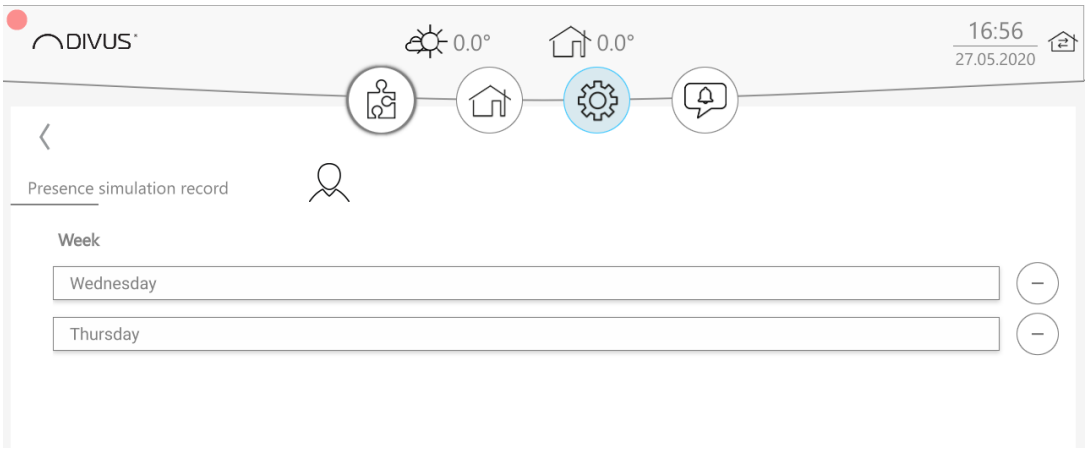
5. If you push the button again, it will switch to playback mode. The icon in the corner will show a play symbol and the presence simulation button will also change:

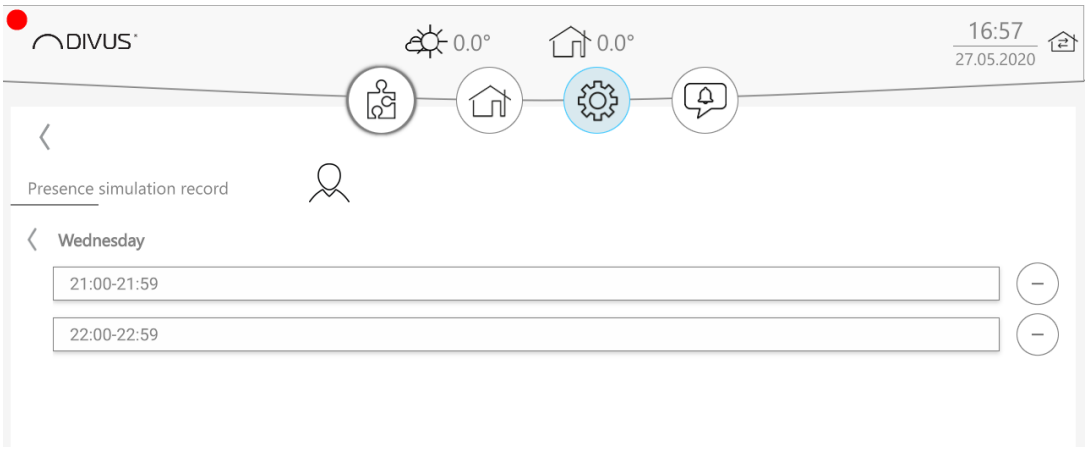


There are of course also tools to configure what to record and what to play back. To reach them go to the detail view of the Presence simuation where you will see a gear wheel icon on the right. There you reach the presence simulation settings page.



Under *Playback* you can define which items should be excluded/included during recording. In *Recording* you can view recordings and add, edit or remove individual commands or e.g. particular hours or days that you do not want to be played back.

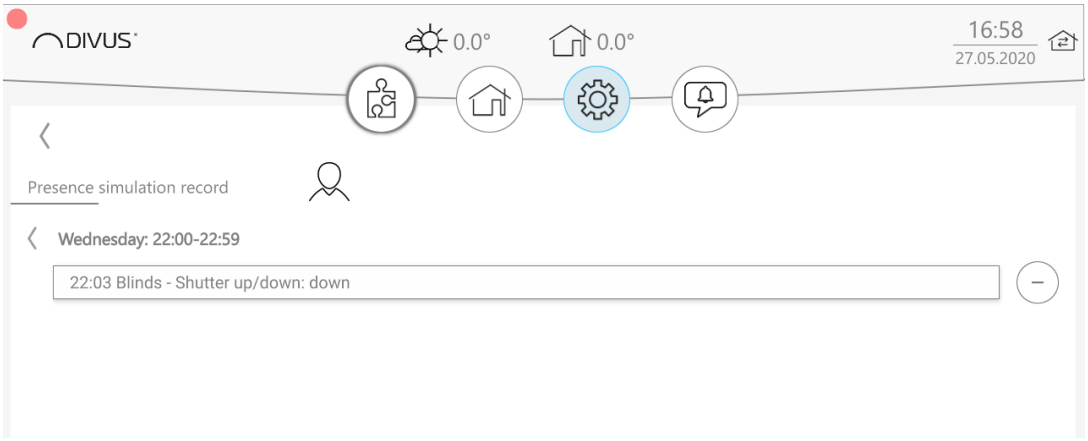




During Playback, if available, the last week of recorded commands is played back. If a day is not found, the system jumps to the previous day until it finds one actually containing commands. This means you could also use the recording of one single day and let it would be played back every day.

A function can be connected to the presence simulation (see chapter 2.8.2 *connection*). The function is called "Status synchronization" and, as the name suggests, allows you to have e.g. a light signal corresponding to the simulator status, or to control its status via an actuator, switching from recording to playback or vice versa.

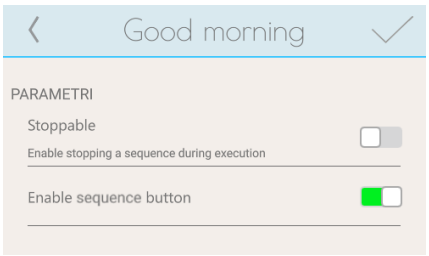
Attention: After each change on the datapoint level (changes in ETS, new import or individual additions) it is **the responsibility of the system integrator** to delete the current recording, if the presence simulator is active and recording, in order to prevent any playback from sending commands that have e.g. changed their effect in the meantime because they have been assigned to another KNX device.



3.2.8.4 Sequence button

This function creates a connection between physical buttons on the KNX bus and sequences created in VISION in such a way that by pressing a button, the sequence matched to that button will be executed. This function requires:

- A 1 Byte (0-255) group address of the so-called *listener*, similar to the one for KNX scenes
- One or more KNX buttons that, when pressed, send a numerical value to the above address
- Enabling the function in the sequence parameters.



- Optionally, for keys equipped with RGB LEDs, a group address (which can also group several LEDs at ETS level) of type DPT 232 (3 bytes).

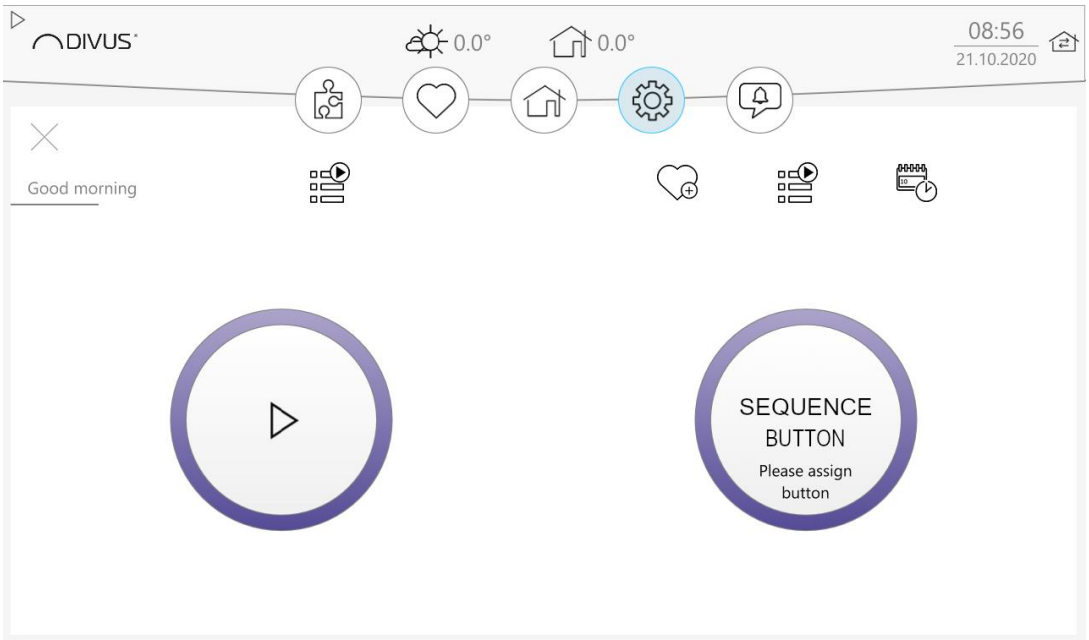
These are the settings available under *Configuration – Plugins – Sequence button*:

Setting	Description
Enable sequence button	To enable or disable the function (in general). Once this is enabled, every single sequence will show the option in its own settings.

Timeout	Time available to complete the pairing with a KNX button (default 120 s)
Datapoint "listener"	To be connected to the 1 Byte address, subtype 0-255
Datapoint "LED RGB"	To be connected optionally for keys equipped with RGB LEDs (DPT 232).
LED RGB colour	Hexadecimal value of the colour (default white #FFFFFF) in the web format i.e. the symbol "#" followed by 3 values between 00 and FF for the colours red, green and blue respectively. See e.g. this website.

Once these general settings are in place and the feature is enabled, the procedure for matching a button to a VISION sequence is as follows:

1. Open the detail view of the sequence



2. Press the *sequence button* on the right

3. (timer starts)

4. If the function is available, one or more LEDs of the buttons that can be matched light up in the configured colour. The LEDs have only an orientation function for the user and do not distinguish between already assigned keys and "free" keys.

5. Within the time set with the timeout parameter (default 120 seconds), press one of the preconfigured keys for this function. At ETS level a separate value will have been programmed to be sent to the "listener" address when each key is pressed.

6. The "listener" that now receives a value by pressing the key, records the combination between the *received value* and the *currently open sequence* and saves it.

7. From now on, each press of the button will execute the matched sequence.

3.2.9 CLOUD

The cloud is, simply put, a way to access your KNX IQ's visualisation from wherever you are, using a client device.

Make sure your KNX IQ's firmware is on 4.17 or newer. Vouchers and time limited cloud access was removed and since then the cloud registration procedure was streamlined.

To use this access type, there is a procedure involving several steps:

1. Go to cloud.divus.eu and create a new account if you haven't yet.
2. Check the confirmation email you'll receive and click the confirmation link to activate your account.
3. Then go to your DIVUS KNX IQ and under Configuration - Cloud, insert your cloud user name and password.
4. Now, when you set up a connection between a mobile device (or your PC) and the KNX IQ, you can choose cloud as connection mode, but remember that the first pairing must be done in the LAN. See chapter 3.3 for further details about pairing.

The *Installation ID* will be assigned automatically to your device. As *device identification*, you may assign a label to the KNX IQ to recognize it from the client apps.

3.2.10 IMPORT/EXPORT

This is where the project itself is managed. Exporting corresponds to saving the project in a file. Importing corresponds to reading a saved project, whereby the current project is replaced. Resetting returns the project configuration to its initial status, i.e. all changes are deleted and a new project can be created.

3.2.10.1 Export

This function enables you to select the storage location for the project using a file browser and then execute the saving.

3.2.10.2 Import

This function allows to select and read an existing project backup in form of a file with .kiq extension. This replaces/overwrites the current project.

In newer versions, there is a distinction between .freekiq and .etskiq files according to the different mode chosen (Free mode or ETS mode). The backups generated by one mode can't be switched to the other mode.

3.2.10.3 Reset

If you want to start with a new project, use this function to reset the current project to the factory settings or delete it completely.

3.2.11 SYSTEM – UPDATE

Version 4.23 introduces the possibility to trigger the update of the KNX IQ from a client device. This may be needed sometimes, when:

- The client device's VISION version was manually or automatically updated while the KNX IQ was not
- The customer is not at home and can't access his home automation anymore because of the version differences which make client and server software incompatible.

This new feature is introduced in 2 steps. In version 4.23 you have access to the options in the last point of the configuration menu. Starting from the next version (4.24), when a new firmware will be released for the KNX IQ and accordingly new versions of all the client software will be released for Android, iOS and Windows, the functionality will start to be complete and usable.

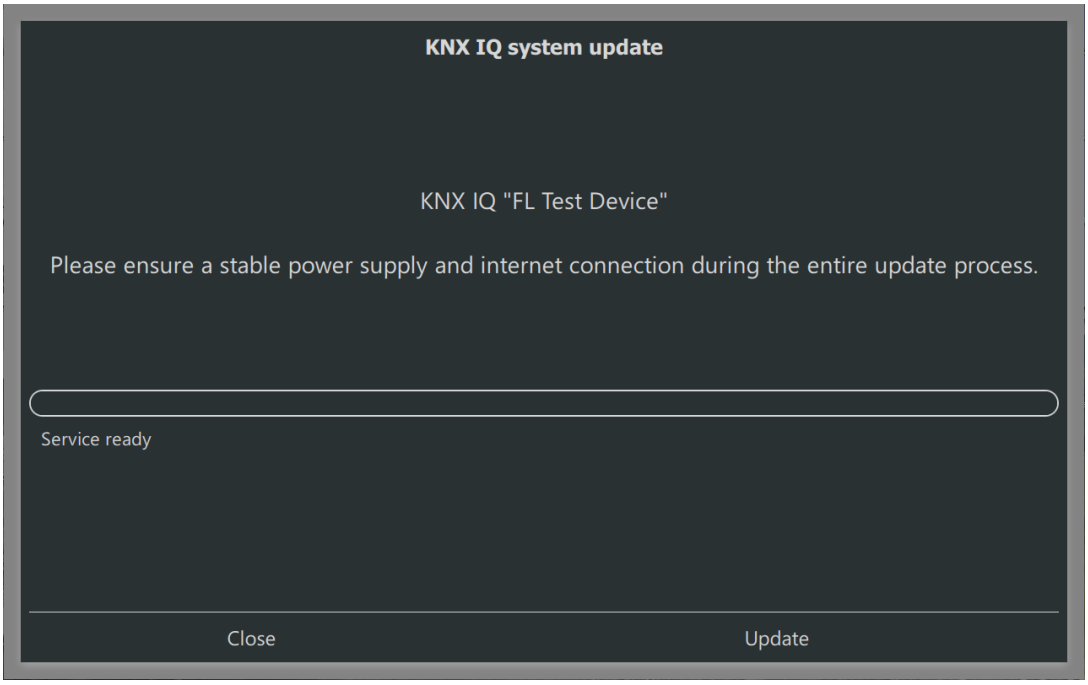
Note: While on client devices the client app is made available on its own (through app stores or as downloadable file), on the KNX IQ the client software is bound to the server software and to the whole system and thus the device gets a firmware update which may contain changes on several levels: operating system and features, VISION app, VISION server software, the other apps available on the KNX IQ.

3.2.11.1 Settings

The setting *Enable in-app system update* allows to disable/enable the feature to update the KNX IQ from the current client device.

3.2.11.2 KNX IQ system update

This menu point will only be available if the corresponding setting (see above) will be enabled.



Pushing / tapping *Update* will obviously start the update procedure if the pre-requisites are met and if a newer KNX IQ firmware version is found online.

3.3 Pairing - KNX IQ SIDE

Here you can manage client devices and configure the corresponding settings. On external devices (other than the KNX IQ) you will find Devices in this position. For details see chapter 3.5

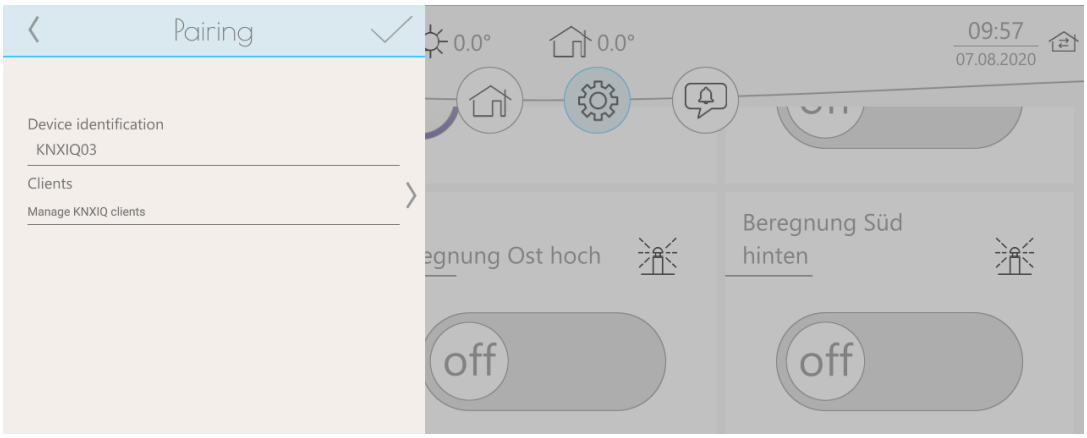
Before being able to access the display from a device other than the KNX IQ itself - either to program it or to control it - it is necessary to proceed with the pairing, during which the external device is authorised to access the KNX IQ. This procedure must be done from inside the local network; pairing over the cloud is not allowed. From a mobile device or from a PC I can configure access to one or more KNX IQ by performing the pairing for each of them. I can then choose which device (and its project) to connect with from the menu. See chap. 3.5 for more on that.

Up to a maximum of 10 client devices may be paired with one single DIVUS KNX IQ.

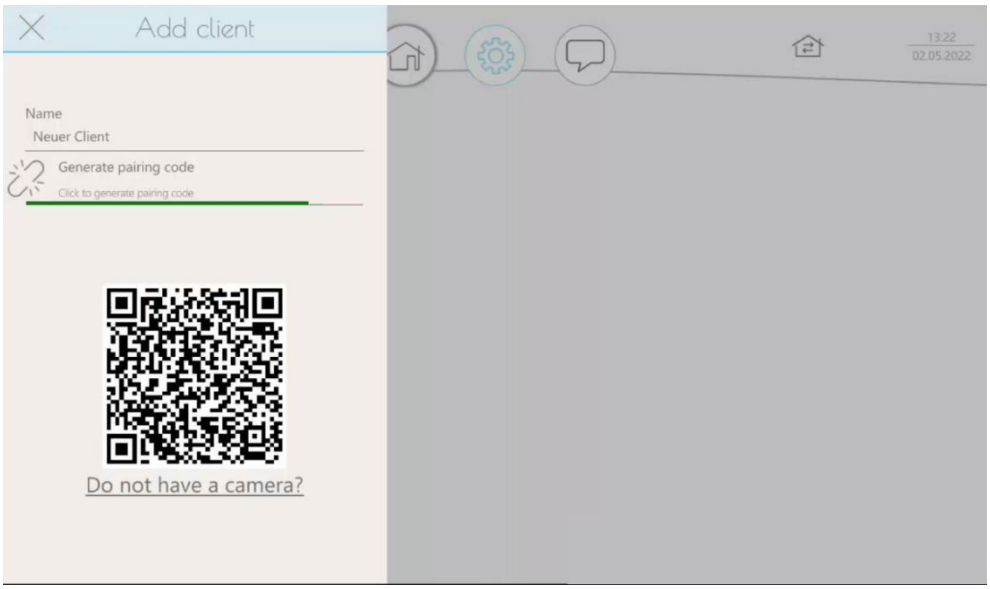
3.3.1 PAIRING PROCEDURE – KNX IQ SIDE

The clients are managed on the device that plays the server from this point of view. The order is this:

1. As an administrator, press PAIRING in the menu.
2. Enter an identification name for the device (for the clients to identify it, if not done already).



3. Open the list of client devices. It'll be empty at first.
4. Create a new device by pressing the lower plus button.
5. Type in a name and then generate a pairing code.



6. By default, the QR code that can be read by a mobile device via camera is displayed. By clicking on the link *Do not have a camera?* you can switch to the display of the numerical code, which can be typed in directly on the target device.

3.4 PAIRING PROCEDURE - CLIENT SIDE

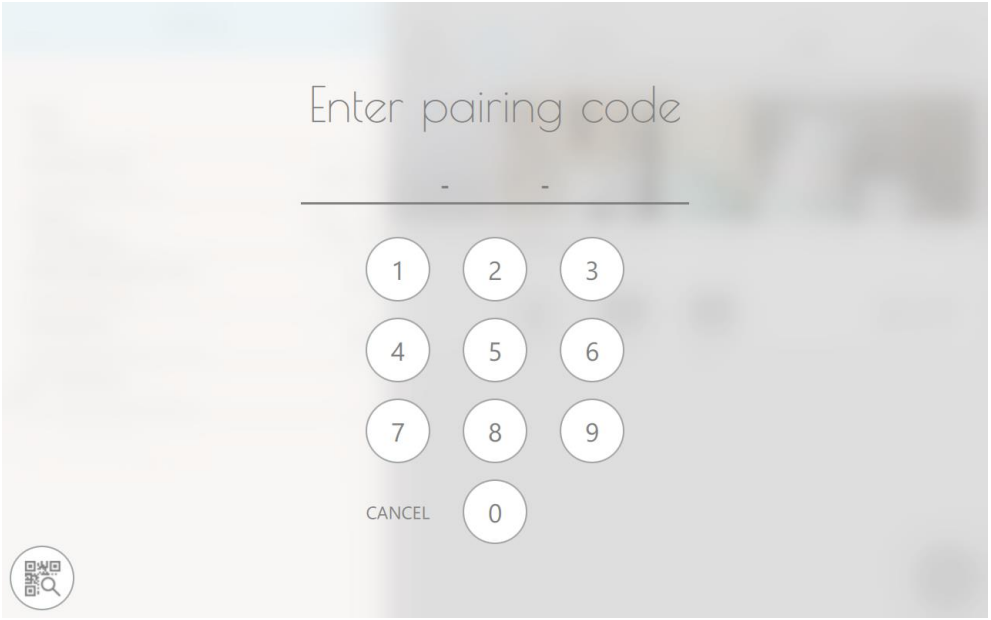
You can configure access to one or more devices from a client. Clients include PCs through the VISION application for Windows as well as mobile devices through their respective DIVUS VISION application for iOS or Android.

How to connect a client device to the DIVUS KNX IQ:

1. As administrator (or as user with *user preferences* rights), click/press on Devices in the menu

2. Choose the device you want to pair to by keeping it clicked/pushed, then click/push the EDIT button which appears. If the desired device must be created yet, go to chapter 3.5

3. Finally, click on "Start pairing" and enter the code that you first generated on the device (see 3.3.1, item 6). Wait for the confirmation of the successful pairing.



Alternatively, pairing can also be done via QR code: if your client device has a camera, press the QR code button in the lower left corner and read it in.

If the pairing is successful, you will receive a corresponding message. After this one-time procedure, the client device is authorised to access the visualisation of the KNX IQ - unless the client is explicitly deleted from the list of client devices.

Starting from version 0.17.x (KNX IQ FW 4.23), VISION can also be paired over the cloud connection. The prerequisite for this is that the device itself has been connected to the DIVUS cloud in advance. See chap. 3.2.9 for this.

3.5 DEVICES (CLIENT SIDE ONLY)

In place of *Pairing,* you will find *Devices* in the menu on client devices. Here you create, configure and select the KNX IQ(s) to which you can then connect.

3.5.1 ADDING A NEW DEVICE TO A CLIENT SYSTEM

1. as *administrator* click/press on Devices in the menu
2. click/press the "+" button at the bottom right of the menu
3. enter the address of the device via the search function or manually
4. if configured manually, also give the device a name - otherwise the name will be transmitted automatically via the search function.
5. the serial number is transmitted by the search function and cannot be entered manually.

6. offline mode: Activate this field if you intend to work on the project without connection to the device at the beginning. This field can be switched over later. See also chapter 1.1.2.

7. default device: Activate this field if you want your client application to start directly with this device / configuration.

8. connection type: Choose between "Direct" and "Cloud" here. See also chapter 1.1.2.

9. finally click on "Start pairing" and enter the code generated on the device (see 2.4.1, point 6). Wait for the confirmation of successful pairing.

10. When at least one device has been created, you can select it in the client application to work on it or control the automation system.

3.5.2 LEGEND OF DEVICE LABELS

Device label	Meaning
PAIRED	Coupled: Changes are transferred directly to the device, operation of the visualization is also possible.
DEFAULT	Device selected automatically at startup.
LOCAL	Local network connection (LAN)
CLOUD	Connected over the cloud
PROG	Offline mode: not connected. Changes remain stored on the client device and can be transferred afterwards. Commands are not routed via the device to the terminal devices in this mode.
ETS	ETS Mode chosen for the project. See chapter 2.1
FREE	Free Mode chosen for the project. See chapter 2.1

3.6 APP

Application settings such as language, logging and demo mode can be configured here.

3.6.1 LANGUAGE

The languages available are English, German and Italian. "Auto" tries to select the language used by the client's operating system. If that is not available, English will be used.

Starting with version 4.15 of KNX IQ this option is removed: the language is automatically the one set in the operating system via the general settings of the DIVUS Launcher. On client devices you can still set it from the App settings.

3.6.2 DESIGN

Here you can choose between the dark and the light colour scheme.

3.6.3 ELEMENTS DESIGN

From version 4.22 onwards, you can choose between the classic design (with 6 tiles per side) and the slim design (12 tiles). This configuration applies to the entire project and is applied to all rooms. The third option "Auto" enables a mixed configuration: this design choice can be made in the settings of the individual rooms. The default design choice for new rooms can also be set under *Configuration - Visualisation - Design - Design of elements*.

3.6.4 LOG

Application-specific logging can be activated here. The log file can then be deleted if necessary or sent to DIVUS support.

Attention: The log function should only be activated if necessary and preferably in consultation with our support department and should be deactivated after a problem has been solved, as otherwise it loads the storage medium of the KNX IQ with write operations which may impair its functionality in the long term.

3.6.5 DEMO MODE

For demo purposes, the corresponding mode can be enabled (/disabled), which shows some prebuilt rooms including elements. Your current project is retained, i.e. as soon as you leave the demo mode, you return to the current project.

3.6.5.1 Free Mode

This demo mode shows a realistic visualisation, as can be realised in Free Mode. Also see chapter 2.1

.

3.6.5.2 ETS Mode

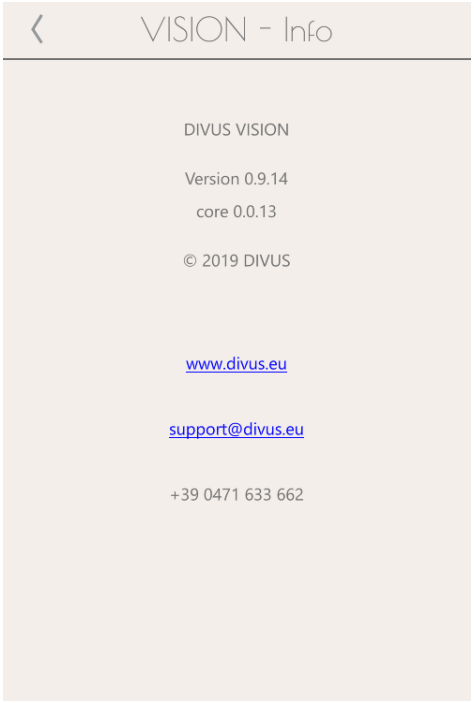
This demo mode shows a realistic visualisation as it can be realised in ETS mode - including the corresponding limitations of the programming method. Also see chapter 2.1

3.6.6 SOFTWARE UPDATE HINT

This setting enables or disables the notification about updating the device. If enabled, it will appear on every application start.

3.7 ABOUT VISION

The current version number of the DIVUS VISION application can be read out here. Moreover you will also find the contact details to get in touch with us.


VISION - Info
DIVUS VISION
Version 0.9.14
core 0.0.13
© 2019 DIVUS
www.divus.eu
support@divus.eu
+39 0471 633 662

4 Troubleshooting

4.1 Changing the physical address of a TP-KNX driver (FM)

To change the predefined physical address of a KNX driver, proceed as follows:

1. Logged on as administrator, go to *Configuration - Driver - KNX to* reach the driver list.
2. Select the desired driver and keep it pushed
3. Push EDIT
4. Repeat the address scan
5. Edit the address which results from the scan by keeping it pressed and then pushing *EDIT*.
6. Enter the desired physical address
7. Save with the "✓" icon

4.2 CHANGE KNX DRIVER (CHANGE FROM TP TO IP OR VICE VERSA) (FM)

If you transfer a project from a KNX IQ TP to a KNX IQ IP (or vice versa), you must change the driver configuration. It is important **not to delete the current driver and create a new one, but to edit the existing one**! This updates all datapoints that were previously configured for the other, no longer existing driver and you do not have to change them individually.

4.3 TRANSFER EDITED PROJECT BETWEEN CLIENT DEVICE AND KNX IQ

If you have finished editing in offline mode and want to transfer the project to KNX IQ, proceed as follows:

1. Log on to the client device as administrator.
2. To be safe, export the current project to a file.
3. Go to *Devices* in the menu and select the device for which you want to transfer the project.
4. Press and hold the row of the device, then press EDIT.
5. Deactivate the offline mode in the device form and check that the other entries are (still) correct.

6. Save.

7. Now the 2 devices will try to connect.

8. If the connection is successful, an automatic control of the respective projects follows. The possible cases are these:

    A. Client device has local project data. In this case, a message appears indicating the direction in which synchronization is to be performed. In our case we choose to transfer the project from the client device to the KNX IQ device. It would still be possible to overwrite the local project with that of the KNX IQ.

    B. Client device has no project data. In this case, the project is transferred from KNX IQ to the client device.

4.4 NOTES