Technical Manual

State 12/2025 - Version 1.1

Object Server VisuControl Easy II

VC-EASY.03

Further documents:

Data sheets:
https://www.mdt.de/en/for-professionals/downloads/datasheets.html

Assembly and operating instructions:
https://www.mdt.de/en/for-professionals/downloads/assembly-and-operation-instructions.html

Tips for MDT products:
https://www.mdt.de/en/for-professionals/tips-tricks.html

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2 Overview

2.1 Device overview

This manual applies to the following devices (order number printed in bold).

- **VC-EASY.03** Object Server VisuControl Easy II, 2SU MDRC, with Android or IOS App

2.2 Functions

Up to 200 functions can be selected from 10 function types:

- Type 1: Switch (General)
- Type 2: Light
- Type 3: Colour control (RGB/RGBW/HSV)
- Type 4: Blinds / Shutter
- Type 5: Room temperature
- Type 6: Scenes
- Type 7: Multimedia
- Type 8: Status
- Type 9: Other
- Type 10: Time switch

The functions can be assigned to rooms, zones or function groups. In this way, different function types (e.g. light, blinds/shutter and multimedia) can appear together in a room “living room” or in the zone “ground floor”, or the entire lighting in the “Light” function group. The decisive factor here is the individual operating concept.

Diagrams

A total of 8 data series can be recorded in the object server and displayed graphically in the app. The datapoint type, recording interval, unit and scaling of each diagram are adjustable. The data series can be displayed as lines or bar charts, for example to display a temperature curve or the amount of energy supplied from a PV system.

Connection of the MDT time switch

In connection with a current MDT Time Switch from version .02 or (glass) Central Operation Unit Smart 68, existing switching times can be conveniently adjusted and new switching times can be created directly in the app.

Webcams

Images from up to 4 webcams can be displayed in the app. The refresh rate of the images is adjustable.

Weather data

The visualisation can display data provided via the KNX bus, such as outdoor temperature, wind speed and brightness (for example from the “MDT Weather Station Home”) as well as rain and wind alarms.

IP interface with KNX Secure and time server

The MDT Object Server VisuControl Easy II can be used as a secure programming interface, with up to 4 parallel KNX tunnelling connections. At the same time, the time and date can be made available by an NTP server to the devices connected via the KNX bus.

Email functions

Status changes, bit alarms, 14-byte text alarms and status reports can be sent automatically by the object server to up to 3 email recipients. For example, the collected status of up to 30 individual elements can be sent weekly, or on a specific day of the month, as a status report in a single email. Bit alarms can send faults from the heating or wallbox, for example.

Status logic

A status logic links up to ten 1-bit input objects logically and displays the result in the app. The logic function can be AND, OR, NAND, NOR. This allows, for example, the status of all window contacts per floor to be grouped and visualised.

Updateable via web interface

If necessary, the MDT Object Server VisuControl Easy II can be updated via the web interface.

Long frame support

The MDT Object Server VisuControl Easy II supports “Long Frames” (longer telegrams). These contain more usable data per telegram, which significantly reduces the programming time with the ETS.

2.3 Wiring diagram

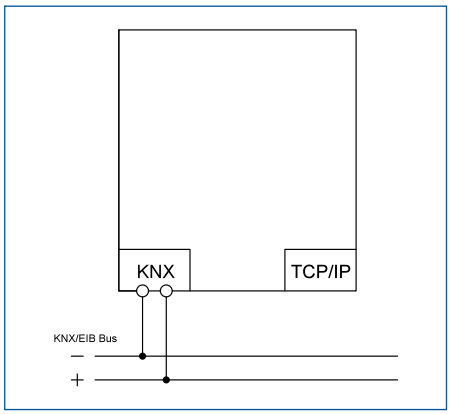


Figure 1: Wiring diagram

2.4 Structure & operation

The following picture shows the structure of the device:

Figure 2: Structure & operation

1 = Bus connecting terminal
2 = Programming LED
3 = Programming button
4 = Function button
5 = Status LEDs
6 = RJ45 connector

2.5 Commissioning

1. Wiring of the device according to the wiring diagram.
2. Establish an Ethernet connection to the existing network.
3. Switch on the bus voltage.
4. Briefly press the programming button on the device (programming LED lights up)
5. Set and program the physical address in the ETS.
   (Programming LED switches off)
6. Set and program the settings in the application program.

Note: After downloading the application program or after the bus voltage returns, the linked group addresses are queried via the KNX bus for synchronisation.

2.6 Use as a KNX IP interface

The object server can be used as a KNX IP interface. Connections to the KNX bus can be established by means of 4 tunnelling addresses.

In its initial condition, the object server expects an IP address from a DHCP server. As soon as the device has received an IP address (for example from an Internet router), it appears as a programming interface within the ETS and can be used to program the KNX components.

The interface is selected in the ETS6 (in the open project) in the top right-hand corner.

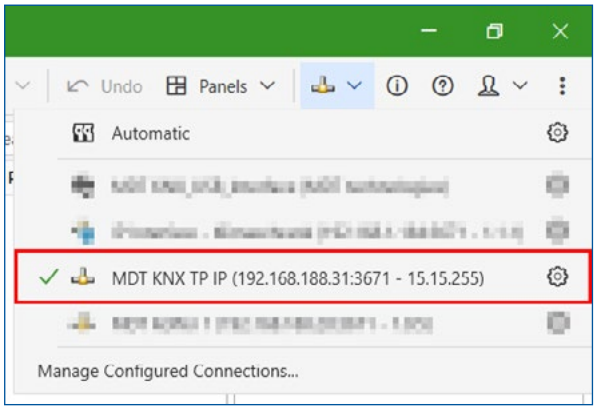


Figure 3: Interface selection in ETS6

2.6.1 Adjusting the IP settings

In its initial condition, the object server expects an IP address from a DHCP server.
If, on the other hand, a fixed IP address is to be used, this must be set in the properties of the application program.

The “Properties” window is called up by right-clicking (1) on the application program and opens at the right edge of the screen. All general settings for a fixed IP address can now be made via the “IP” tab (2).

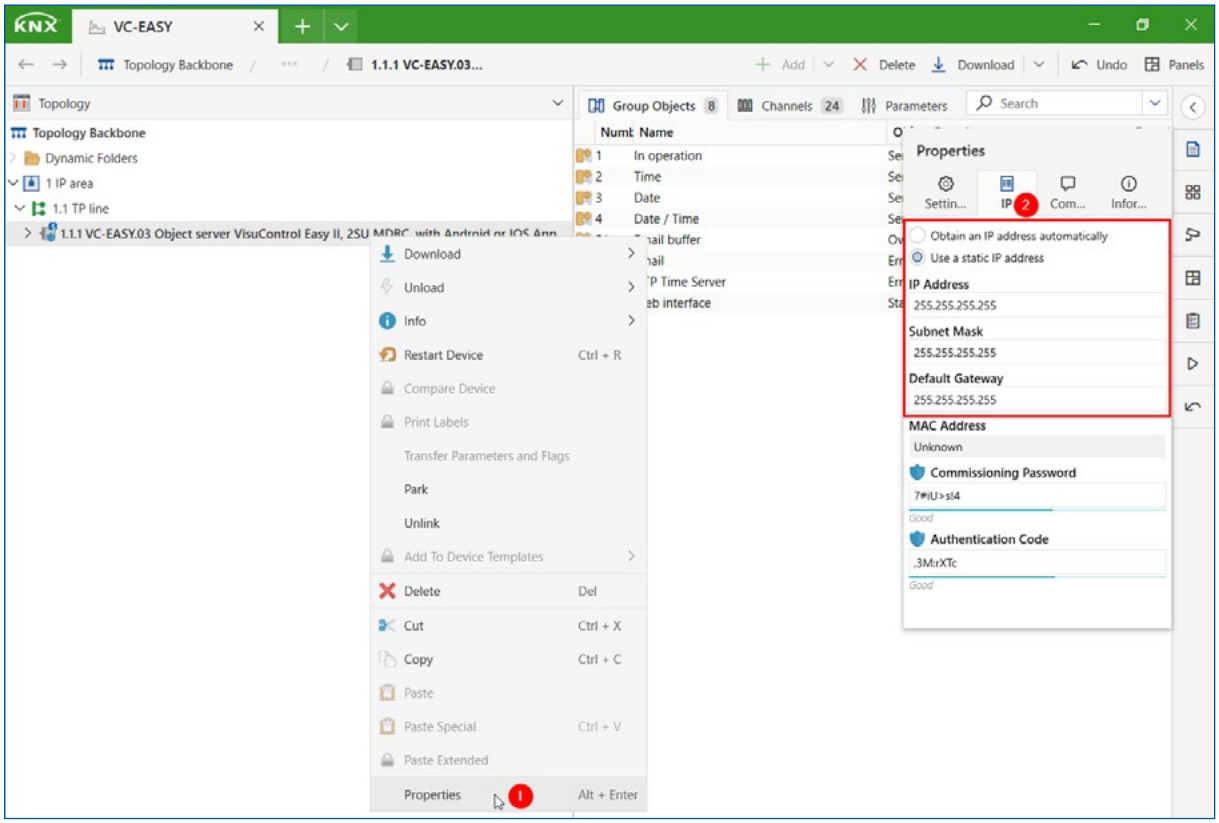


Figure 4: Adjusting the IP settings

2.6.2 Tunnelling channels

A connection to the KNX bus can be established simultaneously via a total of 4 tunnelling channels. Each tunnelling channel occupies a Individual Address in the KNX bus. The permissible address range is between x.x.1 and x.x.255. The addresses of the tunnelling channels are accessed via the “Properties” window. Enlarge application program (1), right-click on tunnelling channel -> “Properties” (2), set Individual Address for tunnelling channel (3). After programming the application program, the new tunnelling addresses are available.

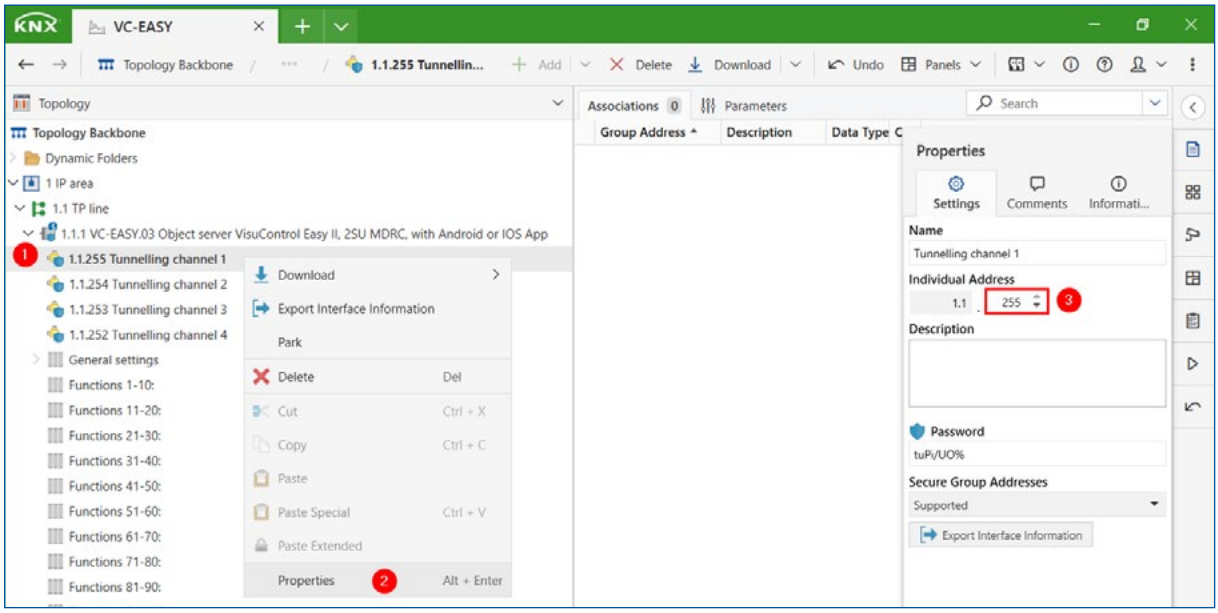


Figure 5: Tunnelling channels

2.7 Security

2.7.1 KNX Secure

The use of the KNX Secure functionality requires the ETS as of version 5.7.

KNX Secure distinguishes between two mechanisms: IP Secure and Data Secure.

KNX IP Secure allows secure transmission in IP networks by encrypting and authenticating messages sent out. IP Secure ensures that KNX tunnelling or routing messages cannot be read or manipulated at the IP level. KNX IP Secure forms an additional security shell that protects the complete KNXnet IP data traffic.

KNX Data Secure ensures that the messages/telegrams sent out by KNX devices (independent of the KNX medium) are encrypted and/or authenticated as long as both devices are KNX Data Secure capable. If one of the devices does not support KNX Data Secure, the communication is still unencrypted.

FDSK (Factory Device Setup Key)
Each KNX Secure device is delivered with an FDSK. The system integrator/installer enters this key into the ETS, which generates a device-specific tool key from it. The ETS sends the tool key via the KNX bus to the device that is to be configured. This transmission is encrypted and authenticated with the FDSK. After commissioning, the device only accepts the received tool key.
The FDSK is no longer required for further transmission unless the device is reset via a master reset (see 2.8 Resetting to factory settings). The FDSK of all devices in a project should be detached from the device label after commissioning and kept on a project-specific basis. **The FDSK is located on a detachable sticker on the side of the housing of the object server.**

Secure mode
If a device has security activated, it operates in “Secure Mode” and transmits data in an encrypted format. This is recognisable by the blue shield symbol.

Plain mode
If a device does not have security activated, it operates in “Plain Mode”. Data are transmitted unencrypted.

2.7.2 Project password

The ETS project password is required to activated KNX Secure. Without a project password, secure commissioning is not possible and the devices are loaded in plain mode.

2.7.3 Commissioning with KNX Secure active

When the application program is imported into the KNX project, the necessity of a project password is indicated. **If you abort at this point, the device is loaded without KNX Secure functions.** The FDSK (Chapter 2.7.1) is entered at this point. If a webcam is connected, this can be done by scanning the QR code; alternatively, the certificate can be entered via the keyboard.

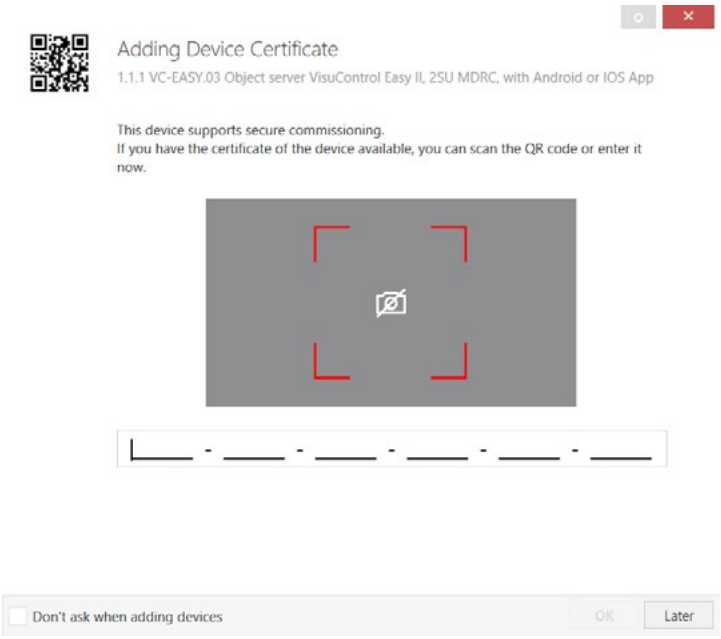


Figure 6: Device certificate

Note: Commissioning with activated KNX Secure functionality requires ETS version > 5.7.x.

2.8 Resetting to factory settings

If the device has already been used or if commissioning has failed, reset the device to factory settings according to the following procedure.

- Press and hold the “Function” button for at least 8 seconds.
  The two upper and lower LEDs then light up red/orange.
- Now release the button briefly and press it again for at least 2 seconds until all LEDs go out. You can now release the button.
- The device will restart. It disappears briefly in the interface overview of ETS and then appears with activated DHCP and the physical address 15.15.255.

The device is now reset.

3 Smartphone / Tablet application (app)

3.1 Download

Smartphones and tablets with the Android (from version 8) and iOS (from version 14) operating systems are supported.
The app is available to download for free in the Google Play Store and Apple App Store.

App name: **VisuControl II for KNX**

3.2 Appearance and operation

The app can be used on a smartphone in portrait mode and on a tablet in portrait and landscape mode.
Choice of “bright” or “dark” appearance

Sample views of the home page:

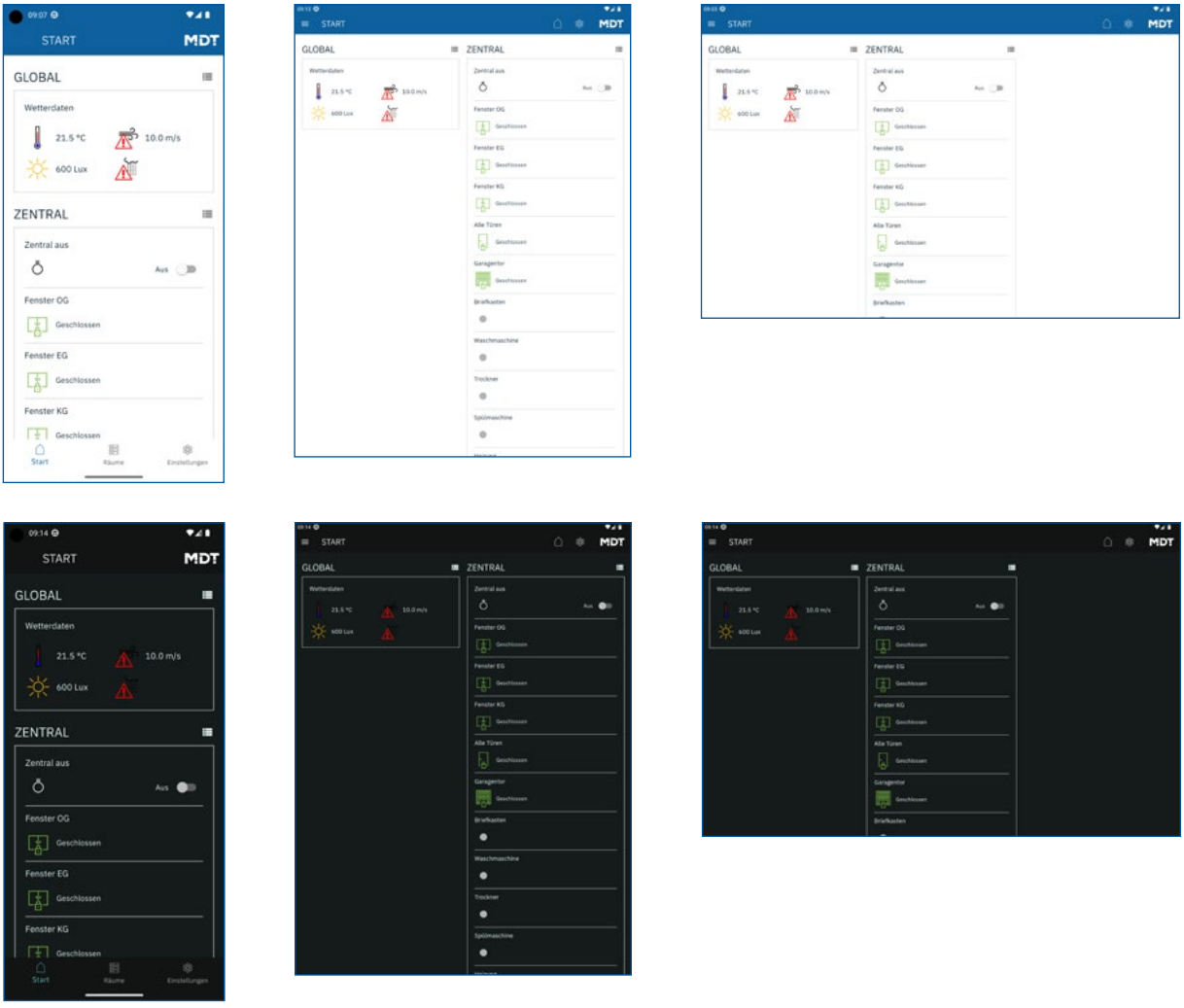


Figure 7: Home page – Variants

3.3 Settings

You can access the app settings via the cogwheel symbol.

Server:
Display of the current connection status and management of up to 10 object servers, see 3.3.1 Server administration

General setting:
Basic settings for the appearance of the app can be set here.

Information:
Display of imprint, data protection and licence information.

3.3.1 Server administration

The local search automatically lists all object servers detected in the network. The search uses so-called “IGMP-Multicasting” to list the servers. If this procedure fails for the network components used, up to 10 object servers can be saved manually in the app. In this case, the IP address of the object server can be taken from the Internet router, for example.

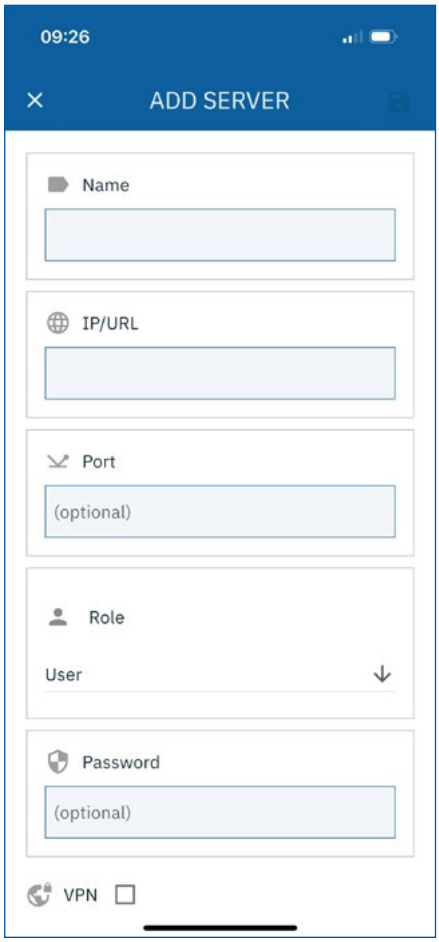


Figure 8: Server administration

Name:
Free field for the name of the object server

IP/URL:
Input field for the IP address of the object server

Port: (optional)
Input field for an alternative port
(Only used if the **Standard Port 12005** is redirected to another port)

Role:
Selecting the user role – Admin or User.
(**Determines which password is required.)**

Password: (optional)
Enter the password to connect the app to the object server.
(Depending on the role: Admin or User)

VPN: (iOS)
see 3.3.1.1 VPN (iOS)

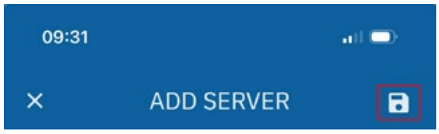


Figure 9: Saving a server

Important:
Changes to the general server settings must be saved via the diskette symbol (marked red).

3.3.1.1 VPN (iOS)

For iOS-based end devices, the “VisuControl for KNX App” offers integrated VPN support. The connection to a VPN server is set up within the app and transferred to the operating system. The VPN connection is automatically started when the app is used and automatically disconnected when it is closed.

Note: For Android-based end devices, the VPN connection must be established from the system settings of the operating system.

The app supports the VPN types “IPSec” and “IKEv2”.

To activate the VPN functionality, a new server is first added to the app.
see 3.3.1 Server administration

After the general server settings, activate the “VPN” function and select the desired method.

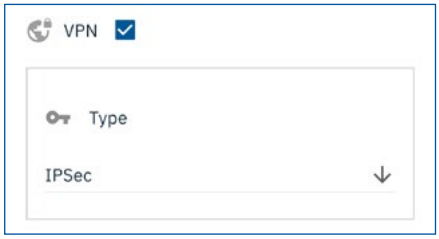


Figure 10: VPN activation

All input fields necessary for the connection are displayed. When using IKEV2, it is also possible to choose between the authentications “**username**” and “**Shared Secret**”. The selection depends on the server used.

Important: Changes to the general server settings must be saved via the diskette symbol (marked red).

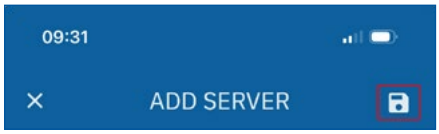


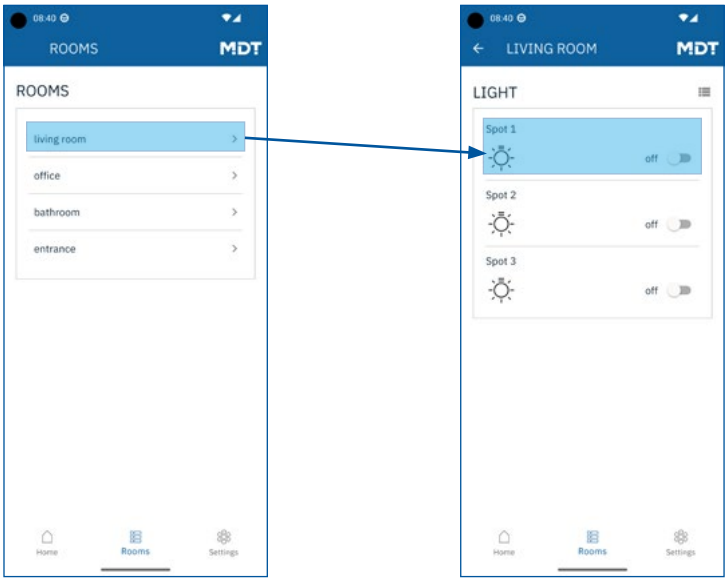
Figure 11: Saving a server

3.3.2 Grouping of functions

The app offers two options for grouping functions. Depending on the operating concept, a choice can be made here between grouping by room or by function. The desired view can be selected in the app under "**Settings**" --> "**GROUP FUNCTIONS BY**".

Example:
Spot 1 is located both in the **room** "Living room", as well as in the **function** "Light".

Grouping according to room



Grouping according to function

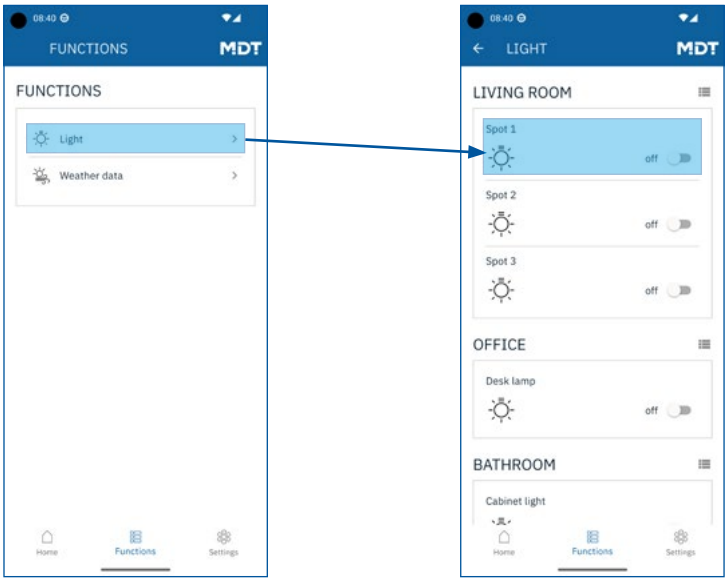


Figure 12: Grouping of functions

3.3.3 Sorting of functions

The object server automatically sorts and groups the set functions according to their function and order in the ETS. In addition, the sorting can be individually edited for each device in the application.

The order can be changed in the “Settings --> Sorting of functions” menu. Press and hold a function to move.

Note: Tablets can be sorted separately in portrait and landscape mode. The app recognises the device orientation and saves the sorting accordingly.

3.3.4 Start page on inactivity

This function activates an automatic jump to the start page. The time can be set in “seconds”.

4 Communication objects

4.1 Default settings of the communication objects

Default settings – General								
No.	Name	Object function	Length	C	R	W	T	U
1	In operation	Send status	1 Bit	■	■		■	
2	Time	Send current value	3 Byte	■	■		■	
3	Date	Send current value	3 Byte	■	■		■	
4	Date / Time	Send current values	8 Byte	■	■		■	
51	Email buffer	Overflow	1 Bit	■	■		■	
52	Email	Error code	1 Byte	■	■		■	
53	NTP Time Server	Error	1 Bit	■	■		■	
54	Web interface	Status: Lock	1 Bit	■	■		■	
55	Web interface	Lock	1 Bit	■		■		
1316	Weather data	Status: Temperature	2 Byte	■		■	■	■
1317	Weather data	Status: Wind speed	2 Byte	■		■	■	■
1318	Weather data	Status: Brightness	2 Byte	■		■	■	■
1319	Weather data	Status: Rain alarm	1 Bit	■		■	■	■
1320	Weather data	Status: Wind alarm	1 Bit	■		■	■	■

Table 1: Communication objects – Default settings: General

Default settings – Email functions								
No.	Name	Object function	Length	C	R	W	T	U
5	Status report 1	Send email	1 Bit	■		■		
+1	**Next status report (until status report 3)**							
8	Text alarm 1	Send email text	3 Byte	■		■		
+1	**Next text alarm (until text alarm 3)**							
11	Bit alarm 1	Send email	1 Bit	■		■		
+1	**Next bit alarm (up to bit alarm 10)**							
21	Status element 1	Switching status	1 Bit	■		■		
21	Status element 1	Day/Night	1 Bit	■		■		
21	Status element 1	Present/Absent	1 Bit	■		■		
21	Status element 1	Yes/No	1 Bit	■		■		
21	Status element 1	Heating/Cooling	1 Bit	■		■		
21	Status element 1	Open/Closed	1 Bit	■		■		
21	Status element 1	Top/Bottom	1 Bit	■		■		
21	Status element 1	Lock status	1 Bit	■		■		
21	Status element 1	Value (0...255)	1 Byte	■		■		
21	Status element 1	Percent value (0...100%)	1 Byte	■		■		
21	Status element 1	HVAC Status	1 Byte	■		■		
21	Status element 1	HVAC Mode	1 Byte	■		■		
21	Status element 1	Floating-point value	2 Byte	■		■		
21	Status element 1	Value unsigned	2 Byte	■		■		
21	Status element 1	Value signed	2 Byte	■		■		
21	Status element 1	Floating-point value	4 Byte	■		■		
21	Status element 1	Value unsigned	4 Byte	■		■		
21	Status element 1	Value signed	4 Byte	■		■		
21	Status element 1	Character ISO 8859-1	14 Byte	■		■		
+1	**Next status element (up to status element 30)**							

Table 2: Communication objects – Default settings: Email functions

Default settings – Functions								
No.	Name	Object function	Length	C	R	W	T	U
116	F1:	Switch	1 Bit	■			■	
116	F1:	Toggle	1 Bit	■			■	
116	F1:	Play	1 Bit	■			■	■
116	F1:	Open/Close	1 Bit	■			■	
116	F1:	Up/Down	1 Bit	■			■	
116	F1:	Lock/Unlock	1 Bit	■			■	
116	F1:	Switch: Heating/Cooling	1 Bit	■			■	
116	F1:	Switch: Present/Absent	1 Bit	■			■	
116	F1:	Day/Night	1 Bit	■			■	
116	F1:	Switch: Summer/Winter	1 Bit	■			■	
116	F1:	Switch: Armed/Disarmed	1 Bit	■			■	
116	F1:	Tilt/Close	1 Bit	■			■	
116	F1:	Tilt/Close (Window)	1 Bit	■			■	
116	F1:	Blinds Up/Down	1 Bit	■			■	
116	F1:	Switch	1 Bit	■		■	■	■
116	F1:	Heating/Cooling	1 Bit	■		■	■	■
116	F1:	Present/Absent	1 Bit	■		■	■	■
116	F1:	LED display	1 Bit	■		■	■	■
116	F1:	Summer/Winter	1 Bit	■		■	■	■
116	F1:	Armed/Disarmed	1 Bit	■		■	■	■
116	F1:	Alarm	1 Bit	■		■	■	■
116	F1:	Error	1 Bit	■		■	■	■
116	F1:	Tilted/Closed	1 Bit	■		■	■	■
116	F1:	Day/Night	1 Bit	■		■	■	■
116	F1:	Open/Closed	1 Bit	■		■	■	■
116	F1:	Up/Down	1 Bit	■		■	■	■
116	F1:	Lock/Unlock	1 Bit	■		■	■	■
116	F1:	Dimming relative	4 Bit	■			■	
116	F1:	Call up scene	1 Byte	■			■	

Default settings – Functions								
No.	Name	Object function	Length	C	R	W	T	U
116	F1:	Save scene	1 Byte	■			■	
116	F1:	Call up and save scene	1 Byte	■			■	
116	F1:	Decimal unsigned (0...255)	1 Byte	■			■	
116	F1:	Decimal signed (-128...127)	1 Byte	■			■	
116	F1:	Percent unsigned (0...100%)	1 Byte	■			■	
116	F1:	Percent signed (-128...127%)	1 Byte	■			■	
116	F1:	HVAC Mode	1 Byte	■			■	
116	F1:	Decimal unsigned (0...255)	1 Byte	■		■	■	■
116	F1:	Decimal signed (-128...127)	1 Byte	■		■	■	■
116	F1:	Percent unsigned (0...100%)	1 Byte	■		■	■	■
116	F1:	Percent signed (-128...127%)	1 Byte	■		■	■	■
116	F1:	HVAC Mode	1 Byte	■		■	■	■
116	F1:	HVAC Status	1 Byte	■		■	■	■
116	F1:	Floating-point value	2 Byte	■			■	
116	F1:	Decimal (0...65335)	2 Byte	■			■	
116	F1:	Decimal difference (-32768...32767)	2 Byte	■			■	
116	F1:	Floating-point value	2 Byte	■		■	■	■
116	F1:	Decimal (0...65335)	2 Byte	■		■	■	■
116	F1:	Decimal difference (-32768...32767)	2 Byte	■		■	■	■
116	F1:	Status: Actual temperature	2 Byte	■		■	■	■
116	F1:	RGB	3 Byte	■			■	
116	F1:	RGB	3 Byte	■		■	■	■
116	F1:	Floating-point value	4 Byte	■			■	
116	F1:	Decimal unsigned	4 Byte	■			■	
116	F1:	Decimal signed	4 Byte	■			■	
116	F1:	Floating-point value	4 Byte	■		■	■	■
116	F1:	Decimal unsigned	4 Byte	■		■	■	■
116	F1:	Decimal signed	4 Byte	■		■	■	■
116	F1:	Text	14 Byte	■			■	

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Default settings – Functions								
No.	Name	Object function	Length	C	R	W	T	U
116	F1:	Text	14 Byte	■		■	■	■
116	F1:	Interface for time switch: Input/Output	14 Byte	■		■	■	■
117	F1:	Pause	1 Bit	■			■	■
117	F1:	Status: On/Off	1 Bit	■		■	■	■
117	F1:	Status: Toggle	1 Bit	■		■	■	■
117	F1:	Blinds Step/Stop	1 Bit	■			■	
117	F1:	Status: Up/Down	1 Bit	■		■	■	■
117	F1:	Status: Present/Absent	1 Bit	■		■	■	■
117	F1:	Status: Day/Night	1 Bit	■		■	■	■
117	F1:	Status: Tilted/Closed	1 Bit	■		■	■	■
117	F1:	Status: Locked/Unlocked	1 Bit	■		■	■	■
117	F1:	Status: Armed/Disarmed	1 Bit	■		■	■	■
117	F1:	Status: Heating/Cooling	1 Bit	■		■	■	■
117	F1:	Status: Open/Closed	1 Bit	■		■	■	■
117	F1:	Status: Summer/Winter	1 Bit	■		■	■	■
117	F1:	Dimming relative	4 Bit	■			■	
117	F1:	Status: Decimal unsigned (0...255)	1 Byte	■		■	■	■
117	F1:	Status: Decimal signed (-128...127)	1 Byte	■		■	■	■
117	F1:	Status: unsigned value (0...255)	1 Byte	■		■	■	■
117	F1:	Status: Percent signed (-128...127)	1 Byte	■		■	■	■
117	F1:	Status: HVAC Mode	1 Byte	■		■	■	■
117	F1:	Status: Floating-point value	2 Byte	■		■	■	■
117	F1:	Status: Decimal (0 – 65335)	2 Byte	■		■	■	■
117	F1:	Status: Decimal difference (-32768...32767)	2 Byte	■		■	■	■
117	F1:	Status: Actual setpoint	2 Byte	■		■	■	■
117	F1:	Status: RGB	3 Byte	■		■	■	■
117	F1:	Status: Floating-point value	4 Byte	■		■	■	■
117	F1:	Status: Decimal unsigned	4 Byte	■		■	■	■
117	F1:	Status: Decimal signed	4 Byte	■		■	■	■

Default settings – Functions								
No.	Name	Object function	Length	C	R	W	T	U
117	F1:	Status: Text	14 Byte	■		■	■	■
118	F1:	Stop	1 Bit	■			■	■
118	F1:	Setpoint shift	1 Bit	■			■	
118	F1:	Dimming absolute	1 Byte 2 Byte	■			■	
118	F1:	Dimming absolute: Red	1 Byte	■		■	■	■
118	F1:	Dimming absolute: Hue (H)	1 Byte	■		■	■	■
118	F1:	Absolute height position	1 Byte	■			■	
118	F1:	Setpoint setting (2 Byte)	2 Byte	■			■	
118	F1:	Setpoint shift (2 Byte)	2 Byte	■			■	
118	F1:	RGB combined object	3 Byte	■			■	
118	F1:	RGBW combined object	6 Byte	■			■	
118	F1:	HSV combined object	3 Byte	■			■	
119	F1:	Volume control	1 Bit	■			■	■
119	F1:	Absolute position of slats	1 Byte	■			■	
119	F1:	Dimming absolute: Green	1 Byte	■		■	■	■
119	F1:	Dimming absolute: Saturation (S)	1 Byte	■		■	■	■
119	F1:	Status: Setpoint setting (2 Byte)	2 Byte	■		■	■	■
119	F1:	Status: Setpoint shift (2 Byte)	2 Byte	■		■	■	■
119	F1:	Status: RGB combined object	3 Byte	■		■	■	■
119	F1:	Status: RGBW combined object	6 Byte	■		■	■	■
119	F1:	Status: HSV combined object	3 Byte	■		■	■	■
119	F1:	Status: Dimming value	1 Byte 2 Byte	■		■	■	■
120	F1:	Title selection	1 Bit	■			■	■
120	F1:	Dimming absolute	1 Byte	■			■	
120	F1:	Dimming absolute: Blue	1 Byte	■		■	■	■
120	F1:	Dimming absolute: Value (V)	1 Byte	■		■	■	■
120	F1:	Status: Dimming value	1 Byte	■		■	■	■
120	F1:	Mode selection (HVAC Mode)	1 Byte	■			■	

Default settings – Functions								
No.	Name	Object function	Length	C	R	W	T	U
120	F1:	Status: Absolute height position	1 Byte	■		■	■	■
121	F1:	Dimming absolute: White	1 Byte	■		■	■	■
121	F1:	Status: Dimming value	1 Byte	■		■	■	■
121	F1:	Status: Absolute position of slats	1 Byte	■		■	■	■
121	F1:	HVAC Status	1 Byte	■		■	■	■
121	F1:	Status: HVAC Mode	1 Byte	■		■	■	■
+6	**Next function (up to function 200)**							

Table 3: Communication objects – Default settings: Functions

Default settings – Diagrams								
No.	Name	Object function	Length	C	R	W	T	U
1322	Diagram 1:	Decimal unsigned (0...255)	1 Byte	■			■	
1322	Diagram 1:	Decimal signed (-128...127)	1 Byte	■			■	
1322	Diagram 1:	Percent unsigned (0...100%)	1 Byte	■			■	
1322	Diagram 1:	Percent signed (-128...127%)	1 Byte	■			■	
1322	Diagram 1:	Floating-point value	2 Byte	■			■	
1322	Diagram 1:	Decimal (0...65335)	2 Byte	■			■	
1322	Diagram 1:	Decimal difference (-32768...32767)	2 Byte	■			■	
1322	Diagram 1:	Floating-point value	4 Byte	■			■	
1322	Diagram 1:	Decimal unsigned	4 Byte	■			■	
1322	Diagram 1:	Decimal signed	4 Byte	■			■	
1323	Diagram 1:	Delete diagram	1 Bit	■		■		
+6	**Next diagram (up to diagram 8)**							

Table 4: Communication objects – Default settings: Diagrams

The preset default settings can be taken from the tables above. The priority of the individual communication objects, as well as the flags, can be adjusted by the user as required. The flags assign the communication objects their respective tasks in the programming, where C stands for communication, R for read, W for write, T for transmit and U for update.

5 ETS parameters

5.1 General settings

5.1.1 General

The following table shows the available settings:

ETS text	Dynamic range **[Default value]**	Comment
Startup time	2 – 240 s **[10 s]**	Time between the return of bus voltage and the functional start of the device.
Send “In operation” cyclically	not active, 1 min – 24 h **[10 min]**	Activation of a cyclic “In operation” telegram.
Language for email content	■ **German** ■ English ■ French ■ Spanish	Selection of the language for the emails to be sent automatically.
Device name	any text (up to 28 bytes allowed) **[MDT VisuControl Easy II]**	Free entry of a text that appears in the app for the device name.
Use password (Connection to App)	■ not active ■ **active**	Setting whether a password is required to use the device.
Password: User	any text (up to 10 bytes allowed) **[UserVC]**	Setting a password.
Password: Administrator	any text (up to 10 bytes allowed) **[AdminVC]**	Setting a password.
HTTP Port	■ 80 ■ **8080**	Setting the port number for the web interface.
DNS Server	any address **[0.0.0.0]**	Setting the address for the DNS server.
Enable slow connections	■ **not active** ■ active	Setting whether slow connections should also be supported.
Webcams	■ **not active** ■ active	Activation of 4 webcams.
Webcam 1-4 URL	any text (up to 160 bytes allowed)	Setting a URL address for the respective webcam.
Refresh every ... (0 = not active)	0 ... 255 × 100 ms **[0]**	Setting whether and in which interval the address is to be updated.

Table 5: General settings

Startup time
This time defines when the device boots up after a restart (reset, reprogramming, return of bus voltage). This can be important if, for example, a bus reset is carried out. If there are many devices on a line, all devices would start at the same time and overload the bus. With a variable time, the devices can thus start at different times.

“In operation”
The “In operation” object is used to show on the bus that the device is alive. If activated, an “ON” telegram is sent cyclically.

Language for email content
The set language refers to the fixed texts in automatically sent emails.

Use password (Connection to App)

- **no password**
  No password is required for app access.
- **with password**
  A password is required to access the app. A distinction can be made between user and administrator password.

HTTP port
Setting the port number for accessing the web interface of the VisuControl Easy II

DNS server
When using a fixed IP address, the address of a valid DNS server must be entered here. In some cases, this can also be the address of the Internet router. If the IP address of the VC Easy II is obtained automatically, this field is disregarded.

Enable slow connections
Adjust the “Timeout” for tunnelling connections. By default, slow connections are not supported and a short “Timeout” is used for the UDP connection. This can be increased by supporting slow connections, which may be necessary for tunnel connections over the Internet in particular.

Webcam settings
Up to 4 webcams can be activated. Entering a URL address (https:/...) activates the display in the app.
Note: The URL entered must be accessible from the mobile device. A cyclic refresh of the URL can be activated via the parameter “**Refresh every ...**”. The value “0” deactivates this option.

The following table shows the associated communication object:

Number	Name/Object function	Length	Usage
1	In operation – Send status	1 Bit	Sending a cyclical “In operation” telegram

Table 6: General communication objects

5.1.2 Formatting of areas

Each area represents a room or a defined zone in the object. Functions can then be assigned to an area.

The first areas are preset with frequently used names (for example, living room, kitchen, garage, central, etc.). These can be changed as required with up to 30 bytes. The name appears later in the app. 30 areas are available in total. Areas without function assignment do not appear in the app.

The differences in app display by function type or by room are explained under 3.3.2 Grouping of functions.

5.1.3 Formatting the function types

The function types allow similar functions/works to be grouped together.

Up to **22 different types** and their **symbols** (which appear in the app) can be set via the "**Formatting the function types**" menu.

The text entered here (up to 30 bytes) will appear later in the app for the selected function type. The predefined names (e.g. switch, light, etc.) can be changed with up to 30 bytes if required.

The differences in app display by function type or by room are explained under 3.3.2 Grouping of functions.

5.1.4 Weather data

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Display weather data	■ not active ■ active	Sets whether “weather data” should be displayed in the app.
Name in visualisation	Any text (up to 30 bytes allowed) **[Weather data]**	Free entry of a text which appears in the app.
Unit for “Temperature”	Any text (up to 4 bytes allowed) **[°C]**	Enter a text for the unit.
Unit for “Wind speed”	Any text (up to 4 bytes allowed) **[m/s]**	Enter a text for the unit.
Unit for “Brightness”	Any text (up to 4 bytes allowed) **[Lux]**	Enter a text for the unit.

Table 7: Settings – Weather data

Weather data includes temperature, wind speed, brightness, rain alarm and wind alarm. These are displayed in the app, grouped together on the home page. The required values are provided by an MDT weather station, for example. By activating the parameter “**Display weather data**”, further parameters and the communication objects intended for this appear.
The “**Weather data**” name is preset, but it can be changed with up to 30 bytes in the input field “**Name in visualisation**”. This name appears in the app on the home page. The units displayed in the app for temperature, wind speed and brightness can be set with up to four bytes. Rain and wind alarms are **1-bit alarms** that are triggered per object and do not require any further parameter settings.

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
1316	Weather data – Temperature	2 Byte	Receiving an external measured value
1317	Weather data – Wind speed	2 Byte	Receiving an external measured value
1318	Weather data – Brightness	2 Byte	Receiving an external measured value
1319	Weather data – Rain alarm	1 Bit	Receiving the status for the rain alarm
1320	Weather data – Wind alarm	1 Bit	Receiving the status for the wind alarm

Table 8: General communication objects

5.1.5 Web interface

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Password	any text (up to 20 bytes allowed) **[AdminVC]**	Free entry of a text for the password.
Timeout for valid login	10 min, 30 min, 1 h, 2 h, 4 h, without time limit **[30 min]**	Sets the time that the web interface is accessible after a login.
Time until deactivation of the web interface after reset	0 min, 10 min, 30 min, 1 h, 2 h, 4 h, not active **[30 min]**	Sets the time that the web interface is accessible after a restart.
Temporary activation after email event	not active, 10 min, 30 min, 1 h, 2 h, 4 h **[30 min]**	Sets the time that the web interface is accessible after sending an email.
Activation / deactivation of the web interface via object	■ **not active** ■ active	Sets whether “weather data” should be displayed in the app.
Web interface with security activated	■ settings active ■ only status ■ **settings locked**	Enter a text for the unit.

Table 9: Settings – Web interface

Password
The password is used to control access to the web interface. A password should always be entered!
Permitted characters: All characters from code page ISO 8859-1, excluding spaces and “ &’ ` ´ €ŠšŽžŒœŸ.

Timeout for valid login
The parameter specifies the time that the web interface is accessible after a login. After the set time has elapsed, the web interface is automatically locked.

Time until deactivation of the web interface after reset
The parameter specifies the time for which the web interface is accessible after a restart (switching on the bus voltage or reset via ETS). After the set time has elapsed, the web interface is no longer accessible and can only be accessed again after a restart or after activating the web interface via the object.

Temporary activation of the web interface after email event
The parameter allows the web interface to be activated in a time-limited manner after an email has been sent by the object server.

Activation / deactivation of the web interface via object
With the activation of this parameter, a communication object (object 55) is shown. This object can be used to lock or activate the web interface via the bus, regardless of other settings.

Web interface with activated security

The web interface provides access to firmware updates, NTP server and general email settings.

- Settings active:
  All general settings of the web interface are accessible to the user.
- Only status:
  Security-critical functions are only displayed as status in the web interface and no changes are possible.
- Settings locked:
  No web interface can be called up.

Important: In the settings “only status” and “settings locked”, the locking of the web interface only works if “Secure commissioning” is activated!

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
54	Web interface – Status: Lock	1 Bit	Send the current lock status
55	Web interface – Lock	1 Bit	Receive a command to lock

Table 10: Communication objects – Web interface

Attention: For security reasons, we recommend deactivating the web interface after a certain time using the “**Time until deactivation of the web interface after reset**” parameter or to activate the web interface only via object and to deactivate it when not in use!

5.1.6 Time/Date

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Send system time cyclically every ...	not active 10 min – 24 h **[10 min]**	Sets whether and in which interval the system time is to be sent to the bus.
Automatic switch to daylight saving time	■ not active ■ **active**	Sets whether the time should be changed automatically between summer and winter time.
Time difference to Universal Time	Set according to list **[(UTC +01:00) Amsterdam, Berlin etc.]**	Sets the time zone.

Table 11: Settings – Time/Date

The basic settings for “Time” and “Date” are made in this menu.

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
2	Time – Send current value	3 Byte	Sends the time
3	Date – Send current value	3 Byte	Sends the date
4	Date / Time – Send current values	8 Byte	Sends date and time

Table 12: Communication objects – Time/Date

5.2 Functions 1 - x

Up to 200 functions can be activated and configured individually. These are grouped in 20 blocks of 10 functions each (“Functions 1-10” to “Functions 191-200”):

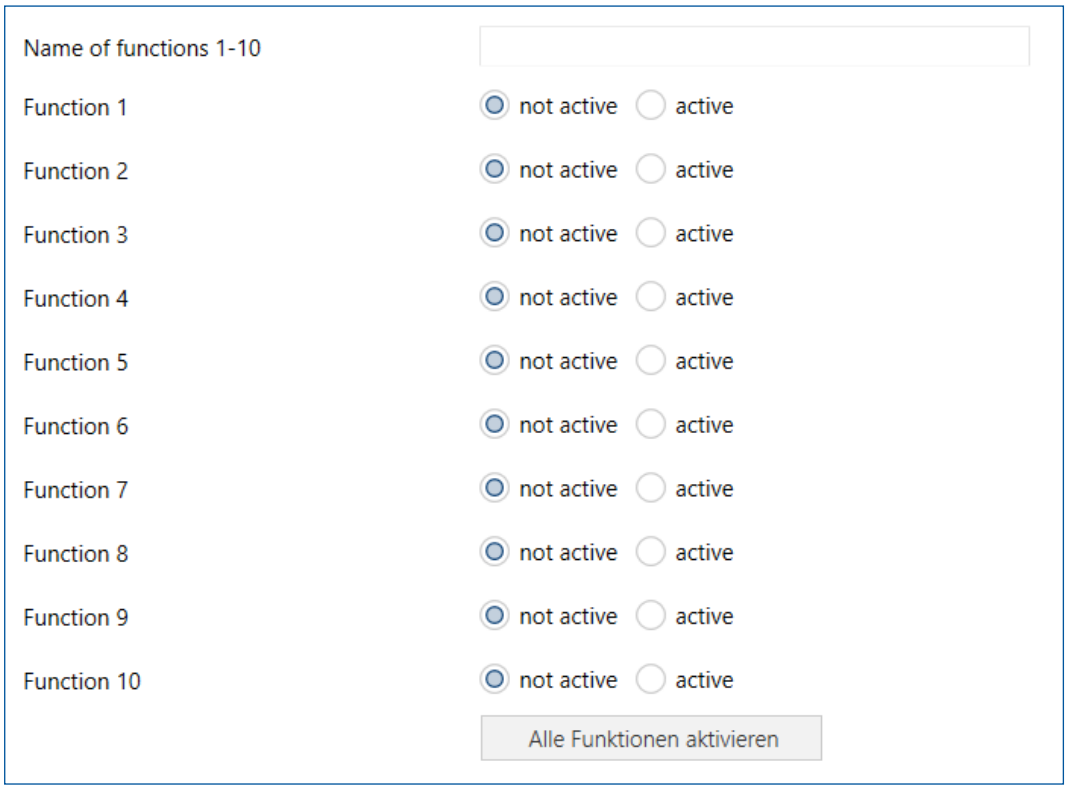

Figure 13: Settings – Function selection

Within a block, the functions can be activated individually. Using “**Activate all functions**”, all functions in the selected block can be activated simultaneously.

A text with up to 30 bytes can be entered in the input field “**Name of functions ...**”. This then appears to the right of the menu for the functions.
The text is only for clarity in the ETS application and is not displayed in the app.

For activated functions, submenus (F1 to F200) are displayed in which the functions can be further configured. Some parameters are generally valid, others depend on the selected function type. These are described in detail in the following chapters.

5.2.1 Functions – General parameters

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Function/Object description	any text (up to 30 bytes allowed)	Free entry of a text.
Individual name in visualisation	■ **not active** ■ active	Sets whether a separate name for the function should be displayed in the app.
	any text (up to 30 bytes allowed)	Free entry of a text. **Only available if "Individual name" is activated.**
Area	■ **no allocation** ■ living room ... ... ■ other 8	Sets whether and to which area the function should be assigned.
Name in visualisation	preset text according to the definition of the area	Name of the area according to the definition in "Formatting the areas". Cannot be changed.
Visibility on the home page	■ **not active** ■ active	Sets whether the function should be visible on the home page.
Function visible	■ only for admin ■ **for admin and user**	Sets for whom the function should be visible.
Setting the sorting	■ **normal** ■ extended	Sets whether the function remains in the selected "area" or is to be assigned to another function type.
Sorting in function type	■ **Type 1: Switch (General / Light)** ■ Type 2: Light ... ... ■ Type 22: freely definable	Sets to which function type the function is to be assigned.

Table 13: Settings – Functions: General parameters

Function/Object description
The text entered here labels the communication objects associated with the function, the function within the ETS application (e.g. F1: **Bathroom light**), as well as the function displayed in the **Android/iOS App**. Up to 30 bytes are possible for this.

Exception: The following “Individual name in visualisation” parameter is activated.

Individual name in visualisation
If this parameter is activated, the function can be displayed in the visualisation with an individual text (up to 30 bytes long), which differs from the function/object description.

Area
Each function can be assigned to an “Area”. The function then appears in this area in the app. If an area has been renamed under “**Formatting the areas**”, this text is displayed under “**Name in visualisation**”.

Visibility
The general settings for “Visibility” define whether the function should be visible on the home page of the app. The function here can also be restricted to administrator access.

Setting the sorting
With the selection “**normal**”, the functions are automatically sorted according to the set function type. With the selection “**extended**” it is possible to cancel the preset sorting and assign the function to another function type. This is useful in some situations, for example, when a switching function is used to switch between the operating modes of a room temperature controller.

5.2.2 Function type 1: Switch (General)

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Function selection	■ **1 Bit DPT 1.001 On/Off (General)** ■ 1 Bit DPT 1.001 On/Off (Socket) ■ 1 Bit DPT 1.003 Lock/Unlock (green/red) ■ 1 Bit DPT 1.003 Lock/Unlock (red/green) ■ 1 Bit DPT 1.008 Up/Down ■ 1 Bit DPT 1.009 Open/Close (Door) ■ 1 Bit DPT 1.009 Open/Close (Garage door) ■ 1 Bit DPT 1.009 Open/Close (Window) ■ 1 Bit DPT 1.001 Tilt/Close (Window) ■ 1 Bit DPT 1.001 Armed/Disarmed (green/red) ■ 1 Bit DPT 1.001 Armed/Disarmed (red/green) ■ 1 Bit DPT 1.001 Day/Night ■ 1 Bit DPT 1.001 Summer/Winter ■ 1 Bit DPT 1.001 Present/Absent ■ 1 Bit DPT 1.001 Heating/Cooling	Sets the 1 Bit switching function.
Presentation format	■ **two buttons** ■ one button: toggle ■ one button: send value	Settings, how the function is to be displayed in the app.
Value for ...	Selects the polarity according to the function selection	Sets which value is to be sent for the corresponding function. **Only for the “two buttons” and “one button: toggle” presentation formats.**
Value	■ **0** ■ 1	Sets the value to be sent. **Only for “one button: send value” presentation format.**
Value for status: „X / Y”	■ **„X” = 0 / „Y” = 1** ■ „X” = 1 / „Y” = 0	Sets how the status is to be displayed. “X” and “Y” stand for the options according to the function selection.
Symbols	Fixed symbols according to the set function selection	Displays the symbols that are shown in the app.

Table 14: Settings – Function type: Switch (General)

With the “**Switch (General)**” function type, different states can be displayed with the corresponding symbols for a 1-bit object. With the “**function selection**”, the function can be described in more detail. For example, “Lock/Unlock”, “Open/Close” or “Summer/Winter”.

Presentation format
With the selection “**two buttons**”, two buttons are displayed in the app with the labelling of the corresponding function selection. The “**Value for ...**” parameter sets the polarity for the selection. The symbol indicates the status accordingly.

Using “**one button: toggle**”, switching on/off is done via only one button. A value is sent which always depends on the current status. To do this, the status of the actuator must be linked to the object “Status: Toggle”. For example, if the status “1” is sent by the actuator, a “0” is sent as the next command and vice versa.

“**one button: send value**” causes the same value to always be sent. This can be, for example, a defined “off” command when leaving the house. The status is displayed in the app after feedback is received from the actuator with the corresponding polarity in “Value for status: ...”.

The **symbols** displayed in the app are assigned for each function selection and cannot be changed.

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Switch, Up/Down, Armed/Disarmed ...	1 Bit	Switching function according to set function selection.
117	F1: – Status: On/Off, Status: Up/Down, Status: Heating/Cooling ...	1 Bit	Status output according to set function selection.

Table 15: Communication objects – Function type: Switch (General)

5.2.3 Function type 2: Light

Via the “Function selection” you can choose between:

- Light On/Off
- Dimming
- Tunable White

These functions can be displayed with corresponding icons in the app.

5.2.3.1 Light On/Off

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Presentation format	■ **two buttons** ■ one button: toggle ■ one button: send value	Settings, how the function is to be displayed in the app.
Value for On/Off	■ **Off = 0 / On = 1** ■ Off = 1 / On = 0	Sets which value is to be sent. **Only for “two buttons” and “one button: toggle”.**
Value	■ **0** ■ 1	Value to be sent. **Only with “one button: send value”.**
Value for status: On / off	■ **Off = 0 / On = 1** ■ Off = 1 / On = 0	Sets how the status is to be displayed. **Only with “one button: send value”**.
Symbol	■ **light** ■ wall light ■ ceiling light ■ table light	Sets which type of lights are to be made available for selection as symbols.
Symbol “ ... Off” or “ ... On”	Fixed symbols according to the set light.	Displays the symbols that are shown in the app.

Table 16: General settings – Function type: Light On/Off

Presentation format
By selecting “**two buttons**”, the two buttons, “On” and “Off” are displayed in the app. The “**Value for ...**” parameter sets the polarity. The symbol indicates the status accordingly.

Using “**one button: toggle**”, switching on/off is done via only one button. A value is sent which always depends on the current status. To do this, the status of the actuator must be linked to the object “Status: Toggle”. For example, if the status “1” is sent by the actuator, a “0” is sent as the next command and vice versa.

“**one button: send value**” causes the same value to always be sent. This can be, for example, a defined “off” command when leaving the house. The status is displayed in the app after feedback is received from the actuator with the polarity selected in “Value for status: ...”.

The **symbols** displayed in the app are assigned for each light type and cannot be changed.

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Switch	1 Bit	Switching function to the actuator.
116	F1: – Toggle	1 Bit	Toggle function to the actuator. For “one button: toggle”.
117	F1: – Status: On/Off, Status: Toggle	1 Bit	Receive the switching status from the actuator.

Table 17: Communication objects – Function type: Light On/Off

5.2.3.2 Dimming

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Presentation format	■ Slider ■ Symbol	Select the display for the dimming function in the app.

Table 18: Settings – Function type: Dimming light

You can use the “Dimming” function to choose between 2 different presentation formats.

Symbol
Presented as 0 – 100% bar. The “-” and “+” buttons are used to send relative dimming commands. The status is displayed visually with the bar after feedback is received from the actuator. The output will not given as an absolute number.

Figure 14: Dimming – Symbol

Slider
Display as a unitless slider. The “-” and “+” buttons are used to send relative dimming commands. Absolute dimming values are sent when operating the slider. The status is visualised by the position of the sliding controller on the slider. No value is output as a number.

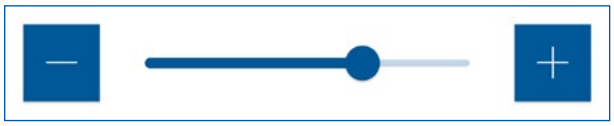

Figure 15: Dimming – Slider

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Switch	1 Bit	On/Off switching function on the dimming actuator
117	F1: – Dimming relative	4 Bit	Sends relative dimming commands to the actuator
118	F1: – Dimming absolute	1 Byte	Sends absolute dimming values to the actuator
120	F1: – Status: Dimming value	1 Byte	Receive the dimming status from the actuator

Table 19: Communication objects – Function type: Dimming light

5.2.3.3 Tunable White

Note: This function is available as of Firmware Version 2.1.0.

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Datapoint type	■ DPT 5.001 Percent (0...100%) ■ DPT 7.600 Absolute Colour temperature (K)	Setting how Tunable White is to be displayed.
Colour temperature: Warm White	1000 ... 3300 K **[2700 K]**	Setting the colour temperature for Warm White.
Colour temperature: Cold White	4000 ... 8000 K **[6000 K]**	Setting the colour temperature for Cold White.

Table 20: Settings – Function type: Tunable White

The datapoint type can be used to set whether the colour temperature is to be processed as an absolute value (2 Byte) or as a percentage value (1 Byte).

The limit values for Tunable White are defined via the colour temperature for Warm White and Cold White.

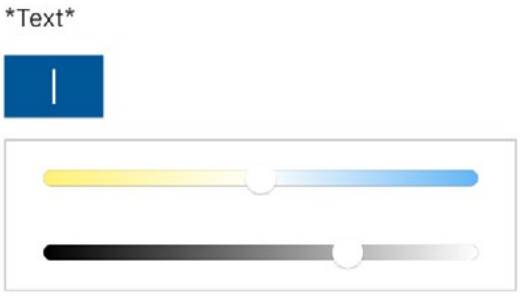

Figure 16: Presentation – Function type: Tunable White

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1 TW: – Switch	1 Bit	Switching function On/Off
117	F1 TW: – Status: On/Off	1 Bit	Receiving the status from the actuator
118	F1 TW Colour temperature: – Dimming absolute	1 Byte 2 Byte	Sends absolute dimming values. DPT according to parameter setting
119	F1 TW Colour temperature: – Status: Dimming value	1 Byte 2 Byte	Receiving the status from the actuator. DPT according to parameter setting
120	F1 TW Brightness: – Dimming absolute	1 Byte	Sends absolute brightness values
121	F1 TW Brightness: – Status: Dimming value	1 Byte	Receiving the brightness status

Table 21: Communication objects – Function type: Tunable White

5.2.4 Function type 3: Colour control (RGB/RGBW/HSV)

This function can be used to operate controllers for colour control, either in RGB, HSV or RGBW format.

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Control via	■ Slider ■ Color Picker	Setting how the colour control should be carried out in the app.
Presentation format	■ RGB single objects ■ RGB combined object ■ HSV single objects ■ HSV combined object	Sets how the colours are to be controlled and displayed. **For control via “Slider”.**
Presentation format	■ RGB single objects ■ RGB combined object ■ HSV single objects ■ HSV combined object ■ RGBW single objects ■ RGBW combined object	Sets how the colours are to be controlled and displayed. **For control via “Color Picker”.**

Table 22: Settings – Function type: Colour control (RGB/RGBW/HSV)

5.2.4.1 Control via RGB

Note: Control via RGB is available in the “Slider” and “Color Picker” display formats.

Important: RGB via “Slider” is only possible as of firmware version 2.1.0.

When controlled via “Color Picker”, a colour circle is displayed for direct selection of the respective colour. When controlled via “Slider”, the colour is set via 3 single sliders.

The output can be either via 3× 1 Byte individual objects (0...100%) or a 3 Byte combination object.

The following image shows the exemplary display in the “Color Picker” format in the app:

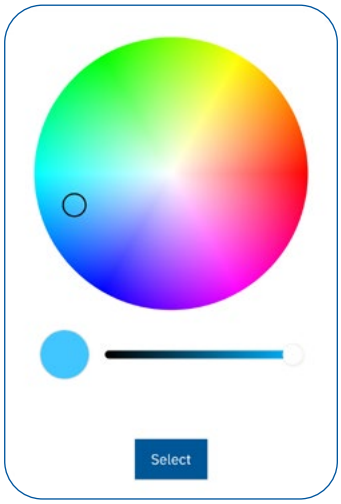

Figure 17: Display – RGB colour control

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Switch	1 Bit	Switching function for the controller.
117	F1: – Status: On/Off	1 Bit	Receives the switching status from the controller.
118	F1: – RGB combined object	3 Byte	Sends a combined colour value to the controller. **For control via combined object.**
118	F1: – Dimming absolute: Red	1 Byte	Sends an absolute value to the controller. Must be connected to absolute value and status. **For control via single objects.**
119	F1: – Status: RGB combined object	3 Byte	Receives the status for the controller. **For control via combined object.**
119	F1: – Dimming absolute: Green	1 Byte	Sends an absolute value to the controller. Must be connected to absolute value and status. **For control via single objects.**
120	F1: – Dimming absolute: Blue	1 Byte	Sends an absolute value to the controller. Must be connected to absolute value and status. **For control via single objects.**

Table 23: Communication objects – Function type: RGB colour control

Important: When using single objects for RGB, the corresponding status of the controller must be linked as the second group address to the sending object.

5.2.4.2 Control via RGBW

Note: Control via RGBW is only available in the “Color Picker” display format.

Important: RGBW via “Color Picker” is only possible as of firmware version 2.1.0.

When controlling via RGBW, a colour circle appears for direct selection of the respective colour.
The output can be either via 4x 1 byte single objects (0...100%) or a 6 byte combined object.

The presentation in the App corresponds to the presentation as for RGB in the “Color Picker” format (see previous chapter).

The table shows the available communication objects::

Number	Name/Object function	Length	Usage
116	F1: – Switch	1 Bit	Switching function for the controller.
117	F1: – Status: On/Off	1 Bit	Receives the switching status from the controller.
118	F1: – RGBW combined object	6 Byte	Sends a combined colour value to the controller. **For control via combined object.**
118	F1: – Dimming absolute: Red	1 Byte	Sends an absolute value to the controller. Must be connected to absolute value and status. **For control via single objects.**
119	F1: – Status: RGBW combined object	3 Byte	Receives the status for the controller. **For control via combined object.**
119	F1: – Dimming absolute: Green	1 Byte	Sends an absolute value to the controller. Must be connected to absolute value and status. **For control via single objects.**
120	F1: – Dimming absolute: Blue	1 Byte	Sends an absolute value to the controller. Must be connected to absolute value and status. **For control via single objects.**
120	F1: – Dimming absolute: White	1 Byte	Sends an absolute value to the controller. Must be connected to absolute value and status. **For control via single objects.**

Table 24: Communication objects – Function type: RGBW colour control

Important: When using single objects for RGB, the corresponding status of the controller must be linked as the second group address to the sending object.

5.2.4.3 Control via HSV

Note: Control via HSV is available in the display formats “Slider” and “Color Picker”.

Important: HSV via “Color Picker” is only possible as of firmware version 2.1.0.

When controlled via “Color Picker”, a colour circle appears for direct selection of the respective colour.
When controlled via „Slider“, the colour is set via 3 individual sliders.

In each case, the control can take place via 3x 1 Byte single objects or a 3 Byte combination object.

H (Hue): Sets the colour; **S** (Saturation): Sets the saturation; **V** (Value): Sets the brightness

The following image shows the exemplary display as a “Slider”in the App:

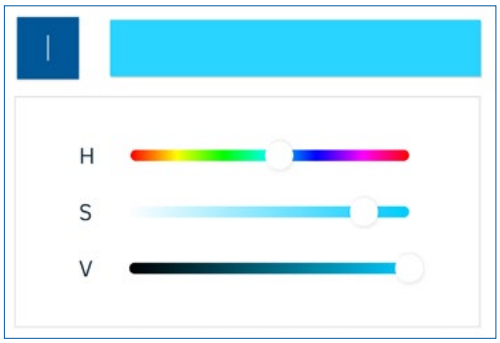

Figure 18: Display – HSV colour control

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Switch	1 Bit	Switching function for the controller.
117	F1: – Status: On/Off	1 Bit	Receives the switching status from controller.
118	F1: – HSV combined object	3 Byte	Sends a combined HSV colour value to the controller. **For control via combination object.**
118	F1: – Dimming absolute: Hue (H)	1 Byte	Sends an absolute value to the controller. Must be connected to absolute value and status. **For control via individual object.**
119	F1: – Status: HSV combined object	3 Byte	Receives the status for the controller. **For control via combination object.**
119	F1: – Dimming absolute: Saturation (S)	1 Byte	Sends an absolute value to the controller. Must be connected to absolute value and status. **For control via individual object.**
120	F1: – Dimming absolute: Value (V)	1 Byte	Sends an absolute value to the controller. Must be connected to absolute value and status. **For control via individual object.**

Table 25: Communication objects – Function type: HSV colour control

Note: When using individual objects for HSV, the corresponding status of the controller must be linked as the second group address to the sending object.

5.2.5 Function type 4: Blinds/Shutter

This function type enables the control of blinds and shutters, optionally as a simple movement function (up/down) or additionally via absolute position commands for height or height and slat positions.

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Function selection	■ **Blinds/Shutter** ■ Blinds/Shutter with height position ■ Blinds/Shutter with height and slat position	Sets the functionality.
Presentation format	■ **Slider** ■ Symbol	Settings, how the function is to be displayed in the app. **Only for function selection with positions for “height” and “height and slat position”.**

Table 26: Settings – Function type: Blinds/Shutter

5.2.5.1 Function selection: Blinds/Shutter

A simple movement function is possible here. The status of the position is not displayed. A long button press activates the up or down movement. A quick button press activates the stop/step function.

Figure 19: Display – Blinds/Shutter

5.2.5.2 Function selection: Blinds/Shutter with height position

This selection enables a simple movement function and allows an absolute height position to be moved to. The display in the app can be a “**Symbol**” or a “**Slider**”.

Symbol:
A long button press activates the up or down movement. A quick button press activates the stop/step function. The status of the height position is displayed as a percentage value next to the symbol.

Figure 20: Display – Blinds/Shutter with height position: Symbol

Slider:
A long button press activates the up or down movement. A quick button press activates the stop/step function. The slider sends an absolute position. The status of the height position is visualised by the position of the slider.

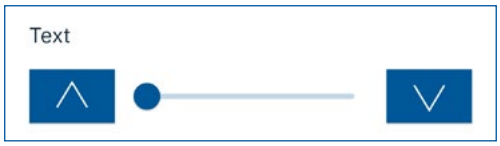

Figure 21: Display – Blinds/Shutter with height position: Slider

5.2.5.3 Function selection: Blinds/Shutter with height and slat position

This selection enables a simple movement function and allows an absolute height and slat position to be moved to. The display in the app can be a “**Symbol**” or a “**Slider**”.

Symbol

Row 1: A long button press activates the up or down movement. A quick button press activates the stop/step function. The height position is displayed as a percentage value next to the symbol.

Row 2: A quick button press activates the stop/step function for tilting the slats. The slat position is displayed as a percentage value next to the symbol.

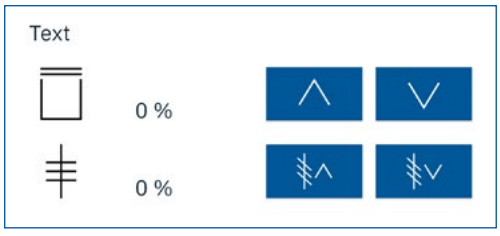

Figure 22: Display – Blinds/Shutter with height and slat position: Symbol

Slider

Row 1: A long button press activates the up or down movement. A quick button press activates the stop/step function. The slider sends an absolute position. The status of the height position is visualised by the position of the slider.

Row 2: A quick button press activates the stop/step function for tilting the slats. The slat position is displayed as a percentage value next to the symbol. The slider sends an absolute position. The status of the slat position is visualised by the position of the slider.

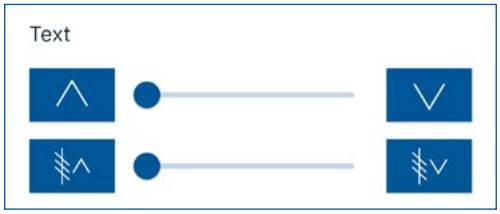

Figure 23: Display – Blinds/Shutter with height and slat position: Slider

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Blinds Up/Down	1 Bit	Sends a move command to the shutter actuator
117	F1: – Blinds Step/Stop	1 Bit	Sends stop and short-time movement commands to the shutter actuator
118	F1: – Absolute height position	1 Byte	Sends an absolute position to the shutter actuator
119	F1: – Absolute position of slats	1 Byte	Sends an absolute position to the shutter actuator
120	F1: – Status: Absolute height position	1 Byte	Receives the status from the shutter actuator
121	F1: – Status: Absolute position of slats	1 Byte	Receives the status from the shutter actuator

Table 27: Communication objects – Function type: Blinds/Shutter

5.2.6 Function type 5: Room temperature

This function type enables adjustment of the current set temperature in a temperature controller and displays the current room temperature. It is also possible to switch between operating modes.

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Function selection	■ **Room temperature controller** ■ Room temperature controller with HVAC Mode	Sets the functionality.
Adjust setpoint via:	■ **setpoint shift (1 Bit)** ■ setpoint shift (2 Byte) ■ setpoint setting (2 Byte)	Sets the method for changing the setpoint.
Step width	0 ... 1 K **[0.5]**	Sets in which steps the setpoint is to be changed. **Only for setpoint shift (2 Byte) and setpoint setting (2 Byte).**
Lower limit	-10 ... 10 K **[-5]**	Sets the lower limit value at **setpoint shift (2 Byte)**.
Upper limit	-10 ... 10 K **[5]**	Sets the upper limit value at **setpoint shift (2 Byte)**.
Lower limit	0 ... 45 °C **[19]**	Sets the lower limit value at **setpoint setting (2 Byte)**.
Upper limit	0 ... 45 °C **[23]**	Sets the upper limit value at **setpoint setting (2 Byte)**.
HVAC Status as	■ **HVAC Mode (DPT 20.102)** ■ HVAC Status (non-standard DPT)	Sets how the HVAC Status is to be output.

Table 28: Settings – Function type: Room temperature

5.2.6.1 Function selection: Room temperature controller

Depending on the general settings in the temperature controller used, three methods are available for changing the set temperature. The method is selected using the “Adjust setpoint via:” parameter.

Setpoint shift (1 Bit)
The setpoint is shifted here via a 1 Bit object. Only “1” and “0” telegrams are sent. The step width and limit values are set in the corresponding temperature controller.

Setpoint shift (2 Byte)
With this type of setpoint shift, a 2 Byte temperature difference is sent, which is added to or subtracted from the current setpoint. Each time the button is pressed, the setpoint is increased/decreased by the set step width. Lower and upper limit values restrict the area in which the setpoint may be shifted.

Note: The step width and limit values must match the general settings in the temperature controller – for example in the MDT Heating Actuator.

Setpoint setting (2 Byte)
An absolute temperature value (in °C) is sent to the temperature controller here. Each time the button is pressed, the setpoint is increased/decreased by the set step width. Lower and upper limit values restrict the area in which the setpoint may be changed.

The display in the app is independent of the selected method.
The first line shows the current room temperature, the second line shows the current setpoint, which is moved up or down with “+” and “-”.

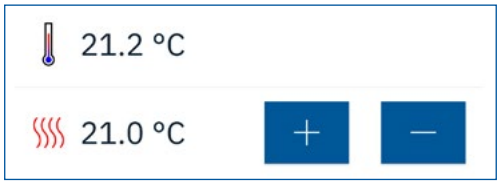

Figure 24: Display – Room temperature controller

5.2.6.2 Function selection: Room temperature controller with HVAC Mode

Depending on the general settings in the temperature controller used, three methods are available for changing the set temperature. The method is selected using the “Adjust setpoint via:” parameter.

Setpoint shift (1 Bit)
The setpoint is shifted here via a 1 Bit object. Only “1” and “0” telegrams are sent. The step width and limit values are set in the corresponding temperature controller.

Setpoint shift (2 Byte)
With this type of setpoint shift, a 2 Byte temperature difference is sent, which is added to or subtracted from the current setpoint. Each time the button is pressed, the setpoint is increased/decreased by the set step width. Lower and upper limit values restrict the area in which the setpoint may be shifted.

Note: The step width and limit values must match the general settings in the temperature controller – for example in the MDT Heating Actuator.

Setpoint setting (2 Byte)
An absolute temperature value (in °C) is sent to the temperature controller here. Each time the button is pressed, the setpoint is increased/decreased by the set step width. Lower and upper limit values restrict the area in which the setpoint may be changed.

The display in the app is independent of the selected method.
The first line shows the current room temperature, the second line shows the current setpoint, which is moved up or down with “+” and “-”. The operating mode is switched in the third line.

Note: To display the operating mode correctly, the “HVAC Status as” parameter must be set according to the HVAC status object of the temperature controller.

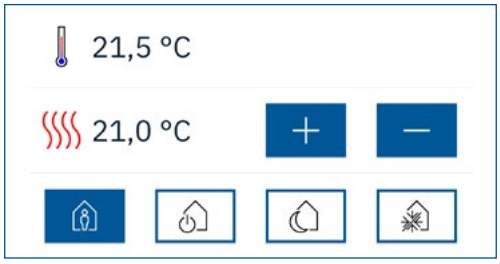

Figure 25: Display – Room temperature controller with HVAC Mode

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Status: Actual temperature	2 Byte	Receive the current temperature. Displayed in the app.
117	F1: – Status: Actual setpoint	2 Byte	Receive the current setpoint from the controller to be controlled – to display the status.
118	F1: – Setpoint shift (1 Bit)	1 Bit	Send the setpoint shift.
118	F1: – Setpoint shift (2 Byte)	2 Byte	Send the setpoint shift.
118	F1: – Setpoint setting (2 Byte)	2 Byte	Send the absolute setpoint.
119	F1: – Status: Setpoint shift (2 Byte)	2 Byte	Receive the current setpoint shift. Must be connected to all 2-byte objects that send the setpoint shift to the controller to be controlled in order to correctly evaluate the current status of the setpoint shift.
119	F1: – Status: Setpoint setting (2 Byte)	2 Byte	Receive the current setpoint. Must be connected to the “Status: Actual setpoint” of the controller to be controlled in order to be able to shift the Comfort basic setpoint correctly even when changing to another operating mode.
120	F1: – Mode selection (HVAC Mode)	1 Byte	Send the operating mode to the controller.
121	F1: – Status: HVAC Mode	1 Byte	Receive the status for the actuator.
121	F1: – HVAC Status	1 Byte	Receive the status for the actuator.

Table 29: Communication objects – Function type: Room temperature

5.2.7 Function type 6: Scenes

Scenes enable control of various functions across different functions. The VisuControl Easy II calls up the scene at the press of a button (scene number is sent to the KNX bus). The configuration of the scene itself is done in the responding actuators. You can also set whether the scene can only be called up or whether it can also be saved by pressing and holding the button.

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Function selection	■ **Call up scene** ■ Call up and save scene	Sets the functionality.
Scene number	1 ... 64 **[1]**	Sets which scene is to be sent/ saved.

Table 30: Settings – Function type: Scenes

Call up scene
Pressing a button sends the set scene.

Call up and save scene
With a short button press, the set scene is sent.
With a long button press, the set scene is saved.

Illustration of a scene with the name “Home Office”:

Figure 26: Display – Scene

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Call up scene	2 Byte	Sends the set scene. **When selecting “Call up scene”.**
116	F1: – Call up and save scene	2 Byte	Sends and saves the set scene. **When selecting “Call up and save scene”.**

Table 31: Communication objects – Function type: Scene

5.2.8 Function type 7: Multimedia

The multimedia function type enables the control of multimedia gateways. The multimedia control can be adjusted via the function selection.

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Function selection	■ **Multimedia control** ■ Multimedia control and volume control ■ Volume control	Sets the functionality.

Table 32: Settings – Function type: Multimedia

Multimedia control
Using the multimedia control function selection, 4 objects are displayed and the user has the possibility to select the functions play, stop, pause and title forward/back.

Multimedia control and volume control
Using the multimedia control function selection, 5 objects are displayed and the user has the possibility to select the functions play, stop, pause, title forward/back and volume control +/-.

Volume control
The volume control function selection offers a simple function that only controls the volume.

The display depends on the selection above. “Multimedia control and volume control” is illustrated below.

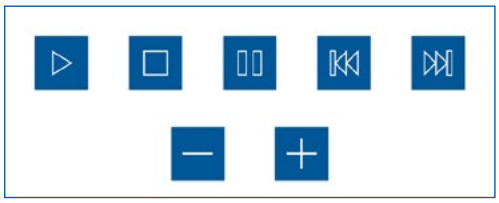

Figure 27: Display – Multimedia

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Play	1 Bit	Sends the “Play” command
117	F1: – Pause	1 Bit	Sends the “Pause” command
118	F1: – Stop	1 Bit	Sends the “Stop” command
119	F1: – Volume control	1 Bit	Sends a “0” for “Decrease volume” and a “1” for “Increase volume”
120	F1: – Title selection	1 Bit	Sends a “0” for “Title back” and a “1” for “Title forward”

Table 33: Communication objects – Function type: Multimedia

5.2.9 Function type 8: Status

The status function type enables the display of various functions. The status functions serve to provide feedback regarding certain switching states and cannot send values via the app.

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Function selection	■ **1 Bit DPT 1.011 On/Off (General)** ■ 1 Bit DPT 1.001 On/Off (Socket) ■ 1 Bit DPT 1.003 Locked/Unlocked (green/red) ■ 1 Bit DPT 1.003 Locked/Unlocked (red/green) ■ 1 Bit DPT 1.008 Up/Down ■ 1 Bit DPT 1.009 Open/Closed (Door) ■ 1 Bit DPT 1.009 Open/Closed (Garage door) ■ 1 Bit DPT 1.009 Open/Ventilating/Closed (Garage door) ■ 1 Bit DPT 1.009 Open/Closed (Window) ■ 1 Bit DPT 1.011 Tilted/Closed (Window) ■ 1 Bit DPT 1.009 Open/Tilted/Closed (Window) ■ 1 Bit DPT 1.011 LED display ■ 1 Bit DPT 1.005 OK/Error ■ 1 Bit DPT 1.005 OK/Alarm ■ 1 Bit DPT 1.001 Armed/Disarmed (green/red) ■ 1 Bit DPT 1.001 Armed/Disarmed (red/green) ■ 1 Bit DPT 1.024 Day/Night ■ 1 Bit DPT 1.001 Summer/Winter ■ 1 Bit DPT 1.001 Present/Absent ■ 1 Bit DPT 1.001 Heating/Cooling ■ 1 Byte DPT 5.005 Decimal factor (0 – 255) ■ 1 Byte DPT 6.010 Counting pulses (-128...127) ■ 1 Byte DPT 5.001 Percentage value unsigned (0...100%) ■ 1 Byte DPT 6.001 Percentage value signed (-128%...127%) ■ 2 Byte DPT 7.001 Pulses (0...65535) ■ 2 Byte DPT 7.012 Current (mA) ■ 2 Byte DPT 7.013 Brightness (Lux) ■ 2 Byte DPT 8.001 Pulse difference ■ 2 Byte DPT 9.001 Temperature (°C) ■ 2 Byte DPT 9.004 Brightness (Lux) ■ 2 Byte DPT 9.005 Wind speed (m/s) ■ 2 Byte DPT 9.007 Humidity (%) ■ 2 Byte DPT 9.008 Air quality (ppm) ■ 2 Byte DPT 9.020 Voltage (mV) ■ 2 Byte DPT 9.021 Current (mA) ■ 2 Byte DPT 9.024 Power (kW) ■ 2 Byte DPT 9.025 Flow rate (l/h)	Sets the function to be displayed as status.

ETS text	Dynamic range **[Default value]**	Comment
Function selection	■ 3 Byte DPT 232.600 RGB value ■ 4 Byte DPT 12.001 Counting pulses (unsigned) ■ 4 Byte DPT 12.1200 Volume (l) ■ 4 Byte DPT 12.1201 Volume (m³) ■ 4 Byte DPT 13.001 Counting pulses (signed) ■ 4 Byte DPT 13.002 Flow rate (m³/h) ■ 4 Byte DPT 13.010 Active energy (Wh) ■ 4 Byte DPT 13.013 Active energy (kWh) ■ 4 Byte DPT 14.019 Power (A) ■ 4 Byte DPT 14.056 Output (W) ■ 4 Byte DPT 14.065 Speed (m/s) ■ 4 Byte DPT 14.076 Volume (m³) ■ 4 Byte DPT 14.077 Flow rate (m³/s) ■ 4 Byte DPT 14.1200 Flow rate (m³/h) ■ 14 Byte DPT 16.000 characters (ASCII) ■ 1 Byte HVAC operating mode switchover ■ 1 Byte DPT 20.102 HVAC Mode	Sets the function to be displayed as status.
Value for ...	selects the polarity according to the function selection	Sets which value is to be sent. **Only for 1 Bit functions.**
LED colour at value “1” / “0”	■ **not active** ■ red ■ green ■ blue	Sets the colour to be displayed. **Only for “1 Bit DPT 1.011 LED display”.**
Unit	free text (up to 5 bytes allowed)	Specifies a unit; matching the selected DPT.
Symbols	fixed symbols according to the set function selection	Display of the symbols in the app. **Only for 1 Bit functions.**

Table 34: Settings – Function type: Status

Function selection
When selecting **1 Bit functions**, the parameter "**Value for ...**" is available in each case. This determines the polarity, i.e., which value is to be displayed in the app with a "0" or with a "1". The **symbols** for the selected function are permanently assigned and thus cannot be changed.

Exception: When selecting "**1 Bit DPT 1.011 LED display**", a fixed colour can be defined with "**LED colour at value ...**", which is displayed in the app as a colour dot for the corresponding value.

When selecting other functions (1 Byte – 14 Bytes), a text field for entering a "**unit**" is displayed, where useful. A text of up to 5 bytes can then be entered here, which then becomes visible in the app. The possible symbols for this cannot be selected, but they are stored in the app and are displayed accordingly.

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Status: On/Off, Status: Up/Down, Status: Day/Night ...	1 Bit	Receive the status to display in the app.

Table 35: Communication objects – Function type: Status

5.2.10 Function type 9: Other

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Function selection	■ **1 Bit DPT 1.001 On/Off (General)** ■ 1 Bit DPT 1.001 On/Off (Socket) ■ 1 Bit DPT 1.001 On/Off (one button no status) ■ 1 Bit DPT 1.003 Lock/Unlock (green/red) ■ 1 Bit DPT 1.003 Lock/Unlock (red/green) ■ 1 Bit DPT 1.008 Up/Down ■ 1 Bit DPT 1.009 Open/Close (Door) ■ 1 Bit DPT 1.009 Open/Close (Garage door) ■ 1 Bit DPT 1.009 Open/Close (Window) ■ 1 Bit DPT 1.001 Tilt/Close (Window) ■ 1 Bit DPT 1.001 Armed/Disarmed (green/red) ■ 1 Bit DPT 1.001 Armed/Disarmed (red/green) ■ 1 Bit DPT 1.024 Day/Night ■ 1 Bit DPT 1.001 Summer/Winter ■ 1 Bit DPT 1.001 Present/Absent ■ 1 Bit DPT 1.001 Heating/Cooling ■ 4 Bit DPT 3.007 Dimming relative ■ 4 Bit DPT 3.008 Blinds relative ■ 1 Byte DPT 5.005 Decimal factor (0 – 255) ■ 1 Byte DPT 6.010 Counting pulses (-128...127) ■ 1 Byte DPT 5.001 Percentage value unsigned (0...100%) ■ 1 Byte DPT 6.001 Percentage value signed (-128%...127%) ■ 1 Byte DPT 17.001 Scene number ■ 1 Byte DPT 18.001 Scene control ■ 2 Byte DPT 7.001 Pulses (0...65535) ■ 2 Byte DPT 7.012 Current (mA) ■ 2 Byte DPT 7.013 Brightness (Lux) ■ 2 Byte DPT 8.001 Pulse difference ■ 2 Byte DPT 9.001 Temperature (°C) ■ 2 Byte DPT 9.004 Brightness (Lux) ■ 2 Byte DPT 9.005 Wind speed (m/s) ■ 2 Byte DPT 9.007 Humidity (%) ■ 2 Byte DPT 9.008 Air quality (ppm) ■ 2 Byte DPT 9.020 Voltage (mV) ■ 2 Byte DPT 9.021 Current (mA) ■ 2 Byte DPT 9.024 Power (kW) ■ 2 Byte DPT 9.025 Flow rate (l/h) ■ 3 Byte DPT 232.600 RGB value	Set the function to be displayed.

ETS text	Dynamic range **[Default value]**	Comment
Function selection	■ 4 Byte DPT 12.001 Counting pulses (unsigned) ■ 4 Byte DPT 12.1200 Volume (l) ■ 4 Byte DPT 12.1201 Volume (m³) ■ 4 Byte DPT 13.001 Counting pulses (signed) ■ 4 Byte DPT 13.002 Flow rate (m³/h) ■ 4 Byte DPT 13.010 Active energy (Wh) ■ 4 Byte DPT 13.013 Active energy (kWh) ■ 4 Byte DPT 14.019 Power (A) ■ 4 Byte DPT 14.056 Output (W) ■ 4 Byte DPT 14.065 Speed (m/s) ■ 4 Byte DPT 14.076 Volume (m³) ■ 4 Byte DPT 14.077 Flow rate (m³/s) ■ 4 Byte DPT 14.1200 Flow rate (m³/s) ■ 14 Byte DPT 16.000 characters (ASCII) ■ 1 Byte DPT 20.102 HVAC Mode	Set the function to be displayed.
The following general settings are available for “1 Bit functions”		
Presentation format	■ **two buttons** ■ one button: toggle ■ one button: send value	Settings, how the function is to be displayed in the app.
Value for ...	Selects the polarity according to the function selection	Sets which value is to be sent for the corresponding function. **For “two buttons” and “one button: toggle” formats.**
Value	■ **0** ■ 1	Sets the value to be sent. **For “one button: send value” format.**
Value for status: „X / Y”	■ **„X” = 0 / „Y” = 1** ■ „X” = 1 / „Y” = 0	Sets how the status is to be displayed. “X” and “Y” stand for the options corresponding to the function selection.
Symbols	Fixed symbols according to the set function selection	Displays the symbols that are shown in the app.

ETS text	Dynamic range **[Default value]**	Comment
The following general settings are available for functions with “1/2/3/4/14 Byte”		
Presentation format	■ **Input field** ■ one button with fixed value ■ slider	Settings, how the function is to be displayed in the app.
Minimum/maximum value	Enter a value according to the function selection	Input of minimum or maximum possible values.
Step width	Enter a value according to the function selection	Enter the step width to increase/decrease the value to be sent. **Only with “Slider” format.**
Value	Enter a value according to the function selection	Enter a fixed value to be sent. **Only with “one button with fixed value” format.**
Scene number	1 ... 64 **[1]**	Enter a scene number. **Only when selecting “Scene number” or “Scene control”.**
Enter Text	free text (up to 14 bytes allowed)	Enter a text to be sent. **Only when selecting “Characters (ASCII)” and “one button with fixed text” format.**
Value for “Red”/“Green”/“Blue”	0 ... 255 **[0]**	Enter the respective colour value. **Only when selecting “RGB value” and “one button with fixed value” format.**

Table 36: Settings – Function type: Other

The “Other” function type is a kind of collective function for all functions that can be called up via the app. A distinction can be made between two categories.

Settings with “1 Bit” functions

With this, different states can be displayed with the corresponding symbols. With the **“function selection”**, the function can be described in more detail. For example, “Lock/Unlock”, “Open/Close” or “Summer/Winter”.

Presentation format
With the selection **“two buttons”**, two buttons are displayed in the app with the labelling of the corresponding function selection. The **“Value for ...”** parameter sets the polarity for the selection. The symbol indicates the status accordingly.

Using **“one button: toggle”**, switching on/off is done via only one button. A value is sent which always depends on the current status. To do this, the status of the actuator must be linked to the object “Status: Toggle”. For example, if the status “1” is sent by the actuator, a “0” is sent as the next command and vice versa. **“one button: send value”** causes the same value to always be sent. This can be, for example, a defined “off” command when leaving the house. The status is displayed in the app after feedback is received from the actuator with the corresponding polarity in **“Value for status: ...”**.

The symbols displayed in the app are assigned for each function selection and cannot be changed.

Settings with “4 Bit” and “1/2/3/4/14 Byte” functions

Various other functions can be selected here, which differ in format and possibilities of the parameters.

“4 Bit” functions
No further parameters available. 2 button fields with “-” and “+” appear as the symbol for “Dimming relative”. 2 button fields with “arrow up” and “arrow down” appear as symbols for “Blinds relative”. The step width is set in the corresponding actuator.

“1/2/3/4/14 Byte” functions
The following presentation formats are basically available for these functions:

Input field
Here, values can be entered into an input field, which are transmitted by activating the “arrow” area. The value range can be limited via parameters with **“minimum/maximum value”**.

One button with fixed value
Here a fixed value, which is set with the “value” parameter, can be sent by activating the “arrow” area.

Slider
Values are sent by moving the sliding controller on the slider. The step width and the value range can be limited with “minimum/maximum value” via parameters.

There are special features for the following functions:

“Scene number” and “Scene control”
By activating the “scene” area, a scene defined via the “scene number” parameter is sent. In the scene control, the scene is triggered by “short button press” and saved by “long button press”. Status feedback is not available for scenes.

3 Byte RGB value
Two settings are possible in this presentation format:
If **“RGB single objects”** is selected, the corresponding value is sent by moving the respective sliding controller on the slider. The status feedback is visualised by the position of the sliders. By selecting **“one button with fixed value”**, the colour to be sent is determined via the parameters “Value for Red/Green/Blue”. The selected colour is displayed in the right-hand field. Activating the “arrow” area sends the colour.

14 byte characters (ASCII)
Two settings are possible in this presentation format:
A text of up to 14 bytes can be entered in the **“input field”**, which is sent by activating the “arrow” area.
With the selection **“One button with fixed text”**, the text to be sent is determined by entering it in the “text” field. Activating the “arrow” area sends the text.

HVAC Mode
The operating modes “Comfort”, “Standby”, “Night” and “Protection” are visible in the app. Activating one of the “areas” sends the corresponding operating mode. The status feedback visualises the currently valid mode. No additional parameters are available.

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Switch, Day/Night, Scene, RGB, Percentage value ...		Sends values according to the function selection. DPT depending on the function selection.
117	F1: – Status: Percentage value unsigned, Status: Floating point value ...		Status feedback from the actuator. DPT depending on the function selection.

Table 37: Communication objects – Function type: Status

5.2.11 Function type 10: Time switch

With this function it is possible to change the switching times in an MDT Time Switch (e.g. SCN-RTC20.02 or BE-GBZx.01).

Connecting the “Interface for time switch: input/output” object with the corresponding 14 Byte object in the time switch results in a bidirectional exchange between the devices. Current switching times are read and can be changed and transmitted via VisuControl Easy II.

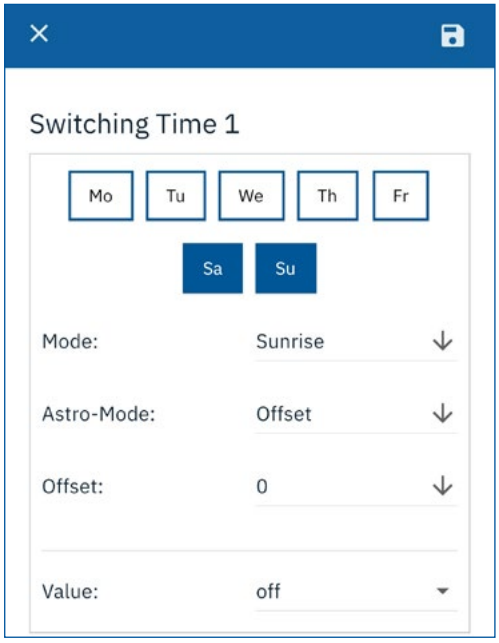

Figure 28: Display – Time switch

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
116	F1: – Interface for time switch: Input/Output	14 Byte	Send/receive the data from and to the time switch.

Table 38: Communication objects – Function type: Time switch

5.3 Status logic

There are 10 individual status logics available in this menu. With a status logic, internal 1 bit objects can be logically linked and transmit a common status. Another submenu appears along with the activation under “status logic selection”. The following parameters can be selected here.

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Name of the status logic	any text (up to 20 bytes allowed)	Free entry of a text.
Area	■ **no allocation** ■ living room ... ... ■ Other 8	Sets whether and to which area the status logic should be assigned.
Name in visualisation	preset text according to the definition of the area	Name of the area according to the definition in “Formatting of areas”. Cannot be changed.
Visibility on the home page	■ **not active** ■ active	Sets whether the status logic should be visible on the home page.
Status logic visible	■ only for admin ■ **for admin and user**	Sets for whom the status logic should be visible.
Sorting in function type	■ Type 1: Switch (General / Light) ■ Type 2: Light ... ... ■ Type 22: freely definable	Sets to which function type the status logic is to be assigned.
Logic function	■ **AND** ■ OR ■ NAND ■ NOR	Sets the logical operation.
Logic input 1-10: Object number	0 ... 1316 **[0]**	Sets the object number that acts as the input of the status logic.

Table 39: General settings – Status logic 1 - 10

Name of the status logic
A text field for free labelling is available for each status logic. A text of up to 20 bytes can be stored for the field. The text input in **“Name of status logic”** appears in the ETS in the menu behind the corresponding status logic.

Note: The description of the function is also displayed in the app.

Area allocation
Each status logic can be assigned to a specific **“Area”**, similar to the functions. Under **“Name in visualisation”**, the text defined in menu **“Formatting of areas”** for the selected area is adopted.

Visibility on the home page
The general settings for “**Visibility**” define whether the status logic should be visible on the app’s home page and for whom (administrator and/or user) it should be visible.

Sorting in function type
Status logics are normally automatically sorted into function type 8: Status. However, in some situations, this does not make sense and you want to assign a status logic to a different function type. In this case, it is possible to cancel the preset sorting and assign the function itself to another function type.

Logic function
Sets the function with which the set objects are to be logically linked. The AND, OR, NAND, NOR operators are available here.

Logic input X: Object number
The inputs of the logic function are set here. The object numbers of the VisuControl Easy II are entered. If, for example, object 116 and object 117 are to be inputs for the status logic, the value 116 is entered for “Logic input 1: Object number” and the value 117 for “Logic input 2: Object number”. A “0” (= not active) is entered for the remaining inputs 3 – 10. This results in a logic function with 2 inputs.

Important: With status logic, only objects of length 1 bit can be compared with each other!

5.4 Diagrams

The VisuControl Easy II is able to record up to 8 data series and display them in the app as a diagram. In the "**Diagram selection**" menu, up to 8 diagrams can be individually activated for this purpose. When activating a diagram, the "**Combine with an additional diagram**" parameter appears. If this is set to "active", a dialog appears in which a diagram to be combined can be selected by mouse click. Combined diagrams are displayed superimposed as one diagram.

The following should be noted:

- Only diagrams that are active can be combined.
- Diagrams that have already been combined cannot be combined with further diagrams.
- Diagrams which can be combined are indicated by a check box in the table.
- Only line graphs can be combined.
- The combined diagrams must use the same recording interval.
- Diagrams with different recording intervals cannot be combined.

Furthermore, when activated, a new menu appears in which the diagram is further configured.

The following table shows the possible settings:

ETS text	Dynamic range **[Default value]**	Comment
Diagram/Object description	any text (up to 30 bytes allowed)	Free entry of a text.
Name in visualisation	■ **not active** ■ active	Sets whether a separate name for the diagram should be displayed in the app.
	any text (up to 30 bytes allowed)	Free entry of the text for the individual name.
Area	■ **no allocation** ■ living room : ■ other 8	Sets whether and to which area the diagram should be assigned.
Name in visualisation	preset text according to the definition of the area	Name of the area according to the definition in "Formatting the areas". Cannot be changed.
Visibility on the home page	■ **not active** ■ active	Sets whether the diagram should be visible on the home page.
Function visible	■ only for admin ■ **for admin and user**	Sets for whom the diagram should be available.
Setting the sorting	■ **normal** ■ extended	Sets whether the diagram should remain in the selected "area" or be assigned to another function type.

ETS text	Dynamic range **[Default value]**	Comment
Sorting in function type	■ Type 1: Switch (General / Light) ■ Type 2: Light ... ... ■ Type 22: freely definable	Sets to which function type the diagram is to be assigned. **Only with “extended” setting.**
Datapoint type	■ 1 Byte DPT 5.005 Decimal factor (0 – 255) ■ 1 Byte DPT 6.010 Counting pulses (-128...127) ■ 1 Byte DPT 5.001 Percentage value unsigned (0...100%) ■ 1 Byte DPT 6.001 Percentage value signed (-128%...127%) ■ 2 Byte DPT 7.001 Pulses (0...65535) ■ 2 Byte DPT 8.001 Pulse difference ■ 2 Byte DPT 9.* Floating-point value ■ 4 Byte DPT 12.001 Counting pulses (unsigned) ■ 4 Byte DPT 13.001 Counting pulses (signed) ■ 4 Byte DPT 14.* Floating-point value	Select the datapoint type in which the data for the diagram is to be recorded.
Unit	any text (up to 5 bytes allowed)	Free entry of the text for the unit in the diagram.
Recording interval	■ 5 minutes (10 days) ■ 15 minutes (30 days) ■ 30 minutes (60 days) ■ hourly (120 days) ■ 2 hours (240 days) ■ 6 hours (721 days) ■ daily (2,883 days) ■ monthly (>100 years) ■ 1 day every 5 minutes, then every 60 minutes (98 days) ■ 7 days every 15 minutes, then every 60 minutes (96 days) ■ Hourly for 14 days, then daily (2,526 days)	Sets at which interval the data for the diagram should be recorded and how long the maximum recording duration is.

ETS text	Dynamic range **[Default value]**	Comment
Scaling the diagrams	■ automatic ■ manual	Sets how the diagrams are to be scaled.
Minimum/Maximum scale value	Any input (values depend on the selected DPT)	Sets minimum or maximum scale value. **Only with “manual” scaling.**
Presentation format	■ measured values (line diagram) ■ meter readings (bar diagram)	Sets how the data is to be displayed in the diagram.

Table 40: Settings – Diagram 1 - 8

Diagram/Object description
The text entered here labels the communication objects associated with the diagram, the function within the ETS application and the communication objects (e.g., diagram 1: **Usage**) as well as the diagram in the **Android/iOS App**. Up to 30 bytes are possible.

Exception: The following “Name in visualisation” parameter is activated.

Name in visualisation
If this parameter is activated, the diagram can be displayed in the visualisation with an individual text (up to 30 bytes long), which differs from the diagram/object description.

Area
Each diagram can be assigned to an “area”. The diagram then appears in this area in the app. If an area has been renamed under “**Formatting the areas**”, this text is displayed under “**Name in visualisation**”.

Visibility
The general settings for “Visibility” define whether the diagram should be visible on the home page of the app. The diagram here can also be restricted to administrator access.

Setting the sorting
By selecting “**normal**”, the diagram is automatically assigned according to the function type “Diagrams”. By selecting “**extended**”, it is possible to cancel the preset sorting and assign the diagram to another function type.

Datapoint type
Selecting the datapoint type determines the format for the diagram. This depends on the format in which the data to be recorded is made available (temperature/brightness/current values etc.).

Unit
Here you can define the unit for the recorded data, which appears as the label of the diagram in the app. A text of up to 5 bytes can be entered for this purpose.

Recording interval
The recording interval determines the maximum possible recording duration. The data to be recorded should be sent cyclically at least at the same interval to avoid gaps. When the maximum recording duration is reached, the oldest value is discarded. In a bar chart, a single bar covers the period from one timestamp to the next. This refers to a one-hour interval, for example, from 08:00:00 - 08:59:59.

Scaling the diagrams
Selecting “automatic” sets the scaling according to the measured values automatically. By selecting “manual”, the minimum and maximum scale values can be set individually.

Presentation format
Determines how the diagram is depicted in the app. This can be either a line graph or a bar chart.
Note: The bar chart requires counter readings; the object server plots the difference to the previous value.

Important: To record the values and display the diagrams, the VisuControl Easy II needs the current time, i.e. the connection to an NTP server.

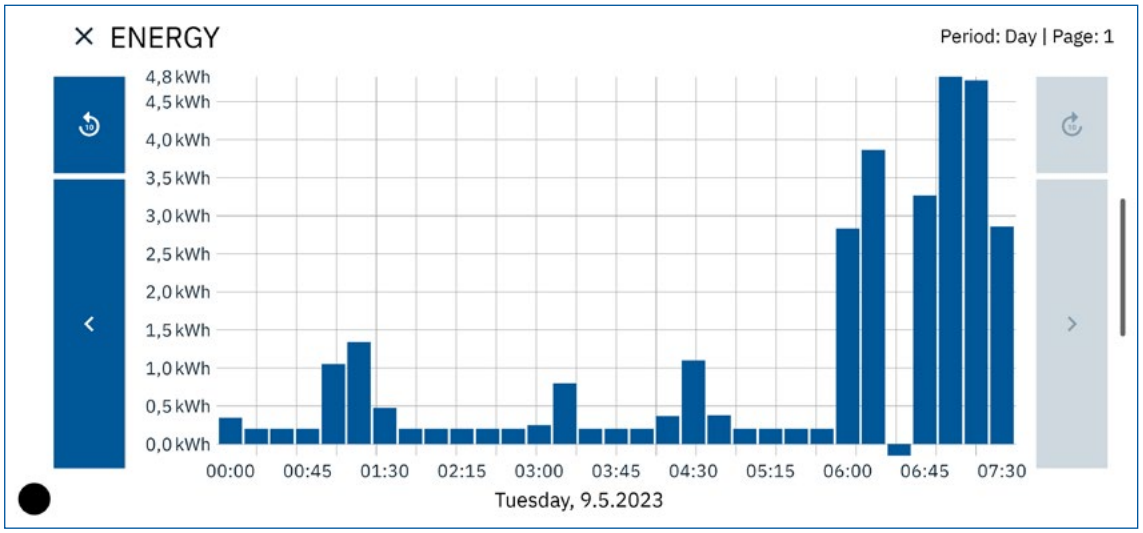

Figure 29: Example – Bar diagram

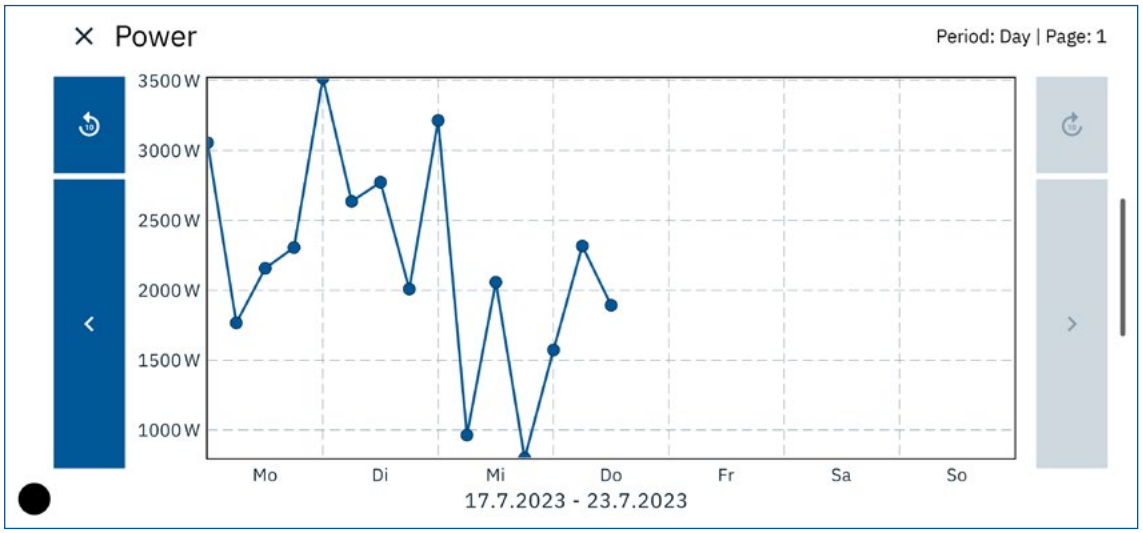

Figure 30: Example – Line diagram

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
1322	Diagram 1: – Decimal unsigned (0...255), percent unsigned (0...100%) ...		Receives the recording values. DPT according to the selection.
1323	Diagram 1: – Delete diagram	1 Bit	Deletes the diagram when a “1” is received.

Table 41: Communication objects – Diagrams

5.5 Email functions

The Object Server VisuControl Easy II has extensive email functionality. As a result, up to 30 status elements are available, whose names and values can be displayed in the emails. The emails can be triggered via bit telegrams (Bit alarms) or by sending a 14 Byte text (Text alarm).

Furthermore, up to 3 status reports can be created and sent. The status reports contain the set status elements and can be sent both via objects and at fixed times.

The configuration of the email functionality, such as sending email address, email recipient, etc., is carried out in the web interface, see 6 Web interface.

5.5.1 Status elements

Up to 30 status elements can be activated.

The following table shows the available settings after activating a status element:

ETS text	Dynamic range **[Default value]**	Comment
Name of the status element	any text (up to 30 bytes allowed)	Free entry of a text.
Datapoint type	■ 1 Bit DPT1* Value ■ 1 Byte DPT 5.005 Decimal factor (0 – 255) ■ 1 Byte DPT 5.001 Percent value (0...100%) ■ 1 Byte non-standard HVAC Status ■ 1 Byte DPT 20.102 HVAC Mode ■ 2 Byte DPT 7.001 Pulse (unsigned) ■ 2 Byte DPT 8.001 Pulse difference (signed) ■ 2 Byte DPT 9.* Floating-point value ■ 4 Byte DPT 12.001 Counting pulses (unsigned) ■ 4 Byte DPT 13.001 Counting pulses (signed) ■ 4 Byte DPT 14.* Floating-point value ■ 14 Byte DPT 16.001 Character (ISO 8859-1)	Select the datapoint type for the status element.

ETS text	Dynamic range **[Default value]**	Comment
Predefined values	■ individual texts ■ Switch (On=1; Off=0) ■ locked=1; unlocked=0 ■ top=0; bottom=1 ■ open=0; closed=1 ■ open=1; closed=0 ■ tilted=0; closed=1 ■ tilted=1; closed=0 ■ Heating=1; Cooling=0 ■ Heating=0; Cooling=1 ■ Yes=1; No=0 ■ OK=0; Error=1 ■ OK=0; Alarm=1 ■ present=1; absent=0 ■ Day=1; Night=0 ■ Day=0; Night=1 ■ Armed=1; Disarmed=0 ■ Armed=0; Disarmed=1 ■ Summer=0; Winter=1 ■ Summer=1; Winter=0	Set the switch function and its polarity. **Only for “1 Bit DPT1* Value”.**
Text for value 0 / 1	any text (up to 20 bytes allowed)	Free entry of text for the corresponding value. **Only for “1 Bit DPT1* Value” -> “individual texts”.**
Unit	any text (up to 5 bytes allowed)	Free input of text for the unit, according to the selected datapoint type. **Only for DPT “2 Byte” and “4 Byte”.**

Table 42: Settings – Status elements 1 to 30

Each status element can be assigned an individual text (as a name for the element) and a datapoint type (for a value to be received). The text and the value subsequently appear in the email.

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
21	Status element 1	1 Bit, 1 Byte 2 Byte, 4 Byte 14 Byte	Receive the value for the status element. DPT according to the selection.
+1	**next status element**		

Table 43: Communication objects – Diagrams

5.5.2 Bit alarms

Emails can be triggered via bit telegrams (Bit alarms). For this, up to 10 Bit alarms can be activated individually. The following table shows the available general settings after activating a bit alarm:

ETS text	Dynamic range **[Default value]**	Comment
Sending behaviour	■ send when ON ■ send when OFF ■ send when change to ON ■ send when change to OFF ■ send when change to ON or OFF (separate texts)	Sets when the email is to be sent.
Text in email	any text (up to 100 bytes allowed)	Input text to be displayed in the email. **Only for "sending behaviour" 1 – 4.**
Text for email when changed to ON / OFF	any text (up to 50 bytes allowed)	Input text to be displayed in the email. **Only for "send when change to ON or OFF (separate texts)".**
Send email to recipient address 1	■ not active ■ **active**	Sets whether to send to recipient 1.
Send email to recipient address 2	■ **not active** ■ active	Sets whether to send to recipient 2.
Send email to recipient address 3	■ **not active** ■ active	Sets whether to send to recipient 3.

Table 44: Settings – Bit alarms

Text in email
Input field for the text that is to appear in the sent email. Alternatively, macros can be used here. Macros are placeholders which are replaced by texts and values in the sent email. The following macros can be used:

- D Placeholder for the set **device name**. See (5.1 General settings)
- T Placeholder for the **time** and **date** of corresponding email events.
- Nxx Placeholders for the **names** of a status element. "xx" must be replaced by the number of the desired status element.
  E.g. $N1$ for status element 1, or $N22$ for status element 22.
- Vxx Placeholder for the **value** of a status element. "xx" must be replaced by the number of the desired status element.
  E.g. $V1$ for status element 1, or $V22$ for status element 22.
- A semicolon creates a line break and separates the subject from the email content.

Examples:

Device name "**MDT**" was assigned for the following example. **Status element 1** is named "**Leakage Sensor laundry room**" and assigned the datapoint type "**1 Bit (OK=0; Alarm=1)**".

Example Parameter 1
"Text for email": **T**, **$N1$**, state: **$V1$**

Email output:
Subject: Bit alarm: **MDT**
Email content: **04.05.23 - 14:10**, **Leakage Sensor laundry room**, state: **OK**
Email content: **04.05.23 - 14:15**, **Leakage Sensor laundry room**, state: **Alarm**

No semicolon was used in the "Text for email" parameter. The macros and texts are output in the email without breaks. The default subject "Bit alarm:" + "Device name" is also used. The status "OK" or "Alarm" depends on the status element 1.

Example of parameter 2
"Text for email": **D** Alarm**; T ; $N1$,** state**: $V1$**

Email output:
Subject: **MDT** alarm
Email content: **04.05.23 - 14:10**
Leakage Sensor laundry room, state: **OK**
Email content: **04.05.23 - 14:15**
Leakage Sensor laundry room, state: **Alarm**

Use of first semicolon after "**D** Alarm" separates the subject from the rest of the email. Each additional semicolon inserts a new line break. The status "OK" or "Alarm" depends on the status element 1.

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
11	Bit alarm 1 – Send email	1 Bit	Trigger Bit alarm
+1	**next Bit alarm**		

Table 45: Communication objects – Bit alarms

5.5.3 Text alarms (14 Byte)

The following table shows the available settings after activating a Text alarm:

ETS text	Dynamic range **[Default value]**	Comment
Time until collected 14 byte telegrams are sent together	1 to 120 s **[10 s]**	Sets the time window in which text messages are combined into an email.
Send email to recipient address 1	■ **not active** ■ active	Sets whether to send to recipient 1.
Send email to recipient address 2	■ **not active** ■ active	Sets whether to send to recipient 2.
Send email to recipient address 3	■ **not active** ■ active	Sets whether to send to recipient 3.

Table 46: Settings – Text alarms

Text alarms can be used to send 14 Byte text telegrams as emails to 1 to 3 recipients. The email is sent when the communication object receives a 14 Byte text via the KNX bus and the set time window has elapsed. If further telegrams follow within the set time window, they are sent in a single email separated by a comma. This means that longer texts can also be sent by email.

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
8	Text alarm 1 – Send email	14 Byte	Receive the text for the text alarm
+1	**next Text alarm**		

Table 47: Communication objects – Text alarms

5.5.4 Status reports

Status reports are used to send the status of selected status elements collectively via email. This can be done automatically at a set day and time, or via a 1 Bit object.

The following table shows the available general settings after activating a status report:

ETS text	Dynamic range **[Default value]**	Comment
Sending condition	■ fixed day in the week ■ fixed date in the month ■ **via object "Send email"**	Sets when the status report is to be sent.
Send each ...	■ **Monday** ■ Tuesday ■ Wednesday ■ Thursday ■ Friday ■ Saturday ■ Sunday ■ Monday to Friday ■ Saturday to Sunday ■ Monday to Sunday	Sets when the report is to be sent. **Only for "Fixed day in the week".**
Selection (Day in month)	0 ... 31 **[1]**	Sets when the report is to be sent. **Only for "Fixed date in the month".**
Time (hour)	0 ... 23 **[0]**	Sets the time when to send. **Only for "Fixed day in the week" or "Fixed date in the month".**
Time (minute)	0 ... 59 **[0]**	
Send email to recipient address 1	■ not active ■ **active**	Sets whether to send to recipient 1.
Send email to recipient address 2	■ **not active** ■ active	Sets whether to send to recipient 2.
Send email to recipient address 3	■ **not active** ■ active	Sets whether to send to recipient 3.
Status element 1 – 30	■ **not contained in email** ■ contained in email	Sets whether the status element should be displayed in an email. **Status elements displayed depending on activated elements in the "Status elements" menu.**

Table 48: General setting – Status reports

A status report is structured as follows:

Subject: Status report [**Device name**]

Name of object: [**Device name**]
Report from [**Date - Time**]

[**Name of the status element 1**]: [**State**]
...
...
[**Name of the status element 30**]: [**State**]

The table shows the available communication objects:

Number	Name/Object function	Length	Usage
5	Status report 1 – Send email	1 Bit	Sends the status report with a “1”. Only visible with “Sending condition: Via object ‘Send email’”.
+1	**next Status report**		

Table 49: Communication objects – Status report

5.5.5 Special behaviour and error handling

The following points must be observed for email functionality:

- For technical reasons, there is a pause of 5 seconds between two emails if they are processed without errors.
- Emails are only sent with the current time. That's why it's checked whether a time has ever been received via NTP. If not, the emails are sent out after 5 minutes with the start date "00:00 01/01/1970".

Error code object:
The error code object is set and sent when...

- four attempts were made to send the email and this failed each time and the previous email transmission was without error or it is the first email after a restart. The following delays are observed between attempts:
  - Delay before the second attempt: 10 seconds
  - Delay before the third attempt: 1 minute
  - Delay before the fourth attempt: 10 minutes
- an attempt was made to send the email once and this failed and the previous email transmission also failed.

The table shows the associated communication object:

Number	Name/Object function	Length	Usage
52	Email – Error code	1 Byte	Sends an error

Table 50: Communication objects – Email error code

Email buffer:
10 emails can be buffered.

- From the eighth email in the buffer, an alarm is sent on the bus.
- If the buffer is full, further email requests are discarded.
- Only the value that prevails at the time of sending can be used for all values in bit alarm emails or status emails.

The table shows the associated communication object:

Number	Name/Object function	Length	Usage
51	Email buffer memory – Overflow	1 Bit	Indicates an overflow of the email buffer

Table 51: Communication objects – Email buffer

6 Web interface

6.1 Calling up the web interface

The web interface is accessed by calling up the following in the web browser:

[**IP address of VisuControl Easy II**] + [**Colon**] + [**HTTP Port**]

Example: 192.168.178.100:8080

The IP address of the VisuControl Easy II can be taken from the connected Internet router, for example, in the case of automatic address assignment (DHCP).

For information on assigning a static IP address, see 2.6.1 Adjusting the IP settings

For information on changing the HTTP port, see 5.1 General settings

6.2 Web interface overview

Web interface start page:

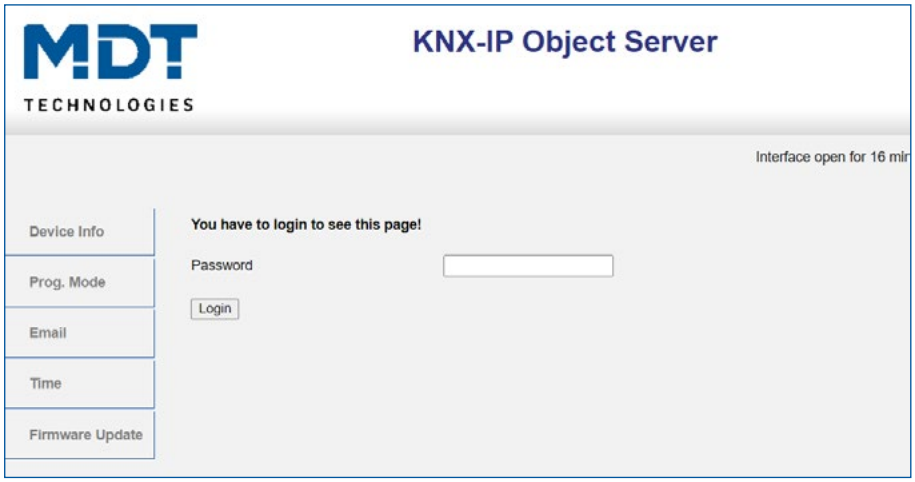

Figure 31: Web interface – Start page

Device Info:
Information on IP settings and firmware status of the VisuControl Easy II.

Prog. Mode:
Menu for activating the programming mode and for displaying the KNX tunnelling addresses used.

Email
Menu for setting the email functionality.

Time:
Menu for setting the time server. (Standard: europe.pool.ntp.org)

Firmware Update:
Menu for installing a firmware update.

6.3 Setting the email functionality

An external email account is required to use the email functionality. The VisuControl Easy II uses this account to send the alarms and status reports.

Settings are made in the web interface – see 6 Web interface – under **“Email” -> “Settings”**.

Outgoing (SMTP) settings

SMTP server address:	Input field for the address of the SMTP server (outgoing mail server), of the email provider used. (e.g. smtp.mail.me.com)
SMTP server port:	Input field for the SMTP server port of the email provider used (e.g. 587)
E-Mail Address:	Input field for the sending email address.
Username:	Input field for the username required by the email provider for login. (Can vary depending on the provider and can be either the complete email address, a username or an ID)
Password:	Input field for the password required by the email provider for login.

Destination email address:

E-Mail Address 1:	Input field for email recipient 1
E-Mail Address 2:	Input field for email recipient 2
E-Mail Address 3:	Input field for email recipient 3

Note:
The security mechanisms of the email providers may require further preparations, such as special app passwords or permissions, which must be made in the respective general settings of the provider.

After complete configuration, a **test email** can be sent to recipients 1 – 3.
Possible errors are displayed under “**Status:**”.

Error 4: unable to connect to server:	Check SMTP Port.
Error 6: invalid sending E-Mail address:	Check the spelling of the outgoing email address.
Error 8: invalid receiving E-Mail address:	Reference to an unknown recipient email address
Error 9: Socket unexpectedly closed:	Restart the device and reprogram if necessary.
Error 12: Unknown/unsupported server authentication request (535 Authentication credentials invalid):	Invalid username or password

6.4 Firmware update

Important:
After an update, the device is in the delivery state. The physical address and application must be reloaded! Email addresses and server settings entered must be noted in advance and then re-entered! During the update process, the buttons on the device must be pressed, i.e., access to the device is required.

Possible firmware updates can be downloaded from the download area of www.mdt.de and installed directly via the web interface of the VisuControl Easy II. The updates are .HEX files which are transferred to the device.

Follow the instructions in the “Firmware Update” menu.
Note:
A detailed description of the process is provided at https://www.mdt.de/en/for-professionals/tips-tricks.html (Update IP Router, IP Interface und VisuControl Easy).

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8 Appendix

8.1 Legal provisions

The devices described above must not be used in conjunction with devices that serve life-saving or health- or life-sustaining purposes directly or indirectly. Furthermore, the described devices must not be used if their use may cause danger to people, animals or property.
Do not leave the packaging material lying around carelessly. Plastic foils/bags etc. can become a dangerous toy for children.

8.2 Disposal

Do not throw the old appliances into the household waste. The appliance contains electrical components which must be disposed of as electronic waste. The housing is made of recyclable plastic.

8.3 Assembly

Danger to life due to electric current!

All work on the device may only be carried out by qualified electricians. The country-specific regulations and the applicable KNX guidelines must be observed.

The devices are approved for operation in the European Union and in the United Kingdom. The products are respectively marked with the CE and UKCA symbols.

Use in the USA and Canada is prohibited!

Before starting work on the device, always disconnect it from the power supply by turning off the circuit breaker or removing the fuse. After installation, all live terminals and connections must be completely covered by the control panel cover to prevent accidental contact. It must be ensured that the control panel cover may not be opened without tools.

8.4 History

V1.0	First version of the manual	DB V3.1	08/2023
V1.1	Functional update (Tunable White, Languages, App)	DB V3.3	05/2024