



KNX room controller

TS KNX 01N



ETS USER MANUAL

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INTRODUCTION

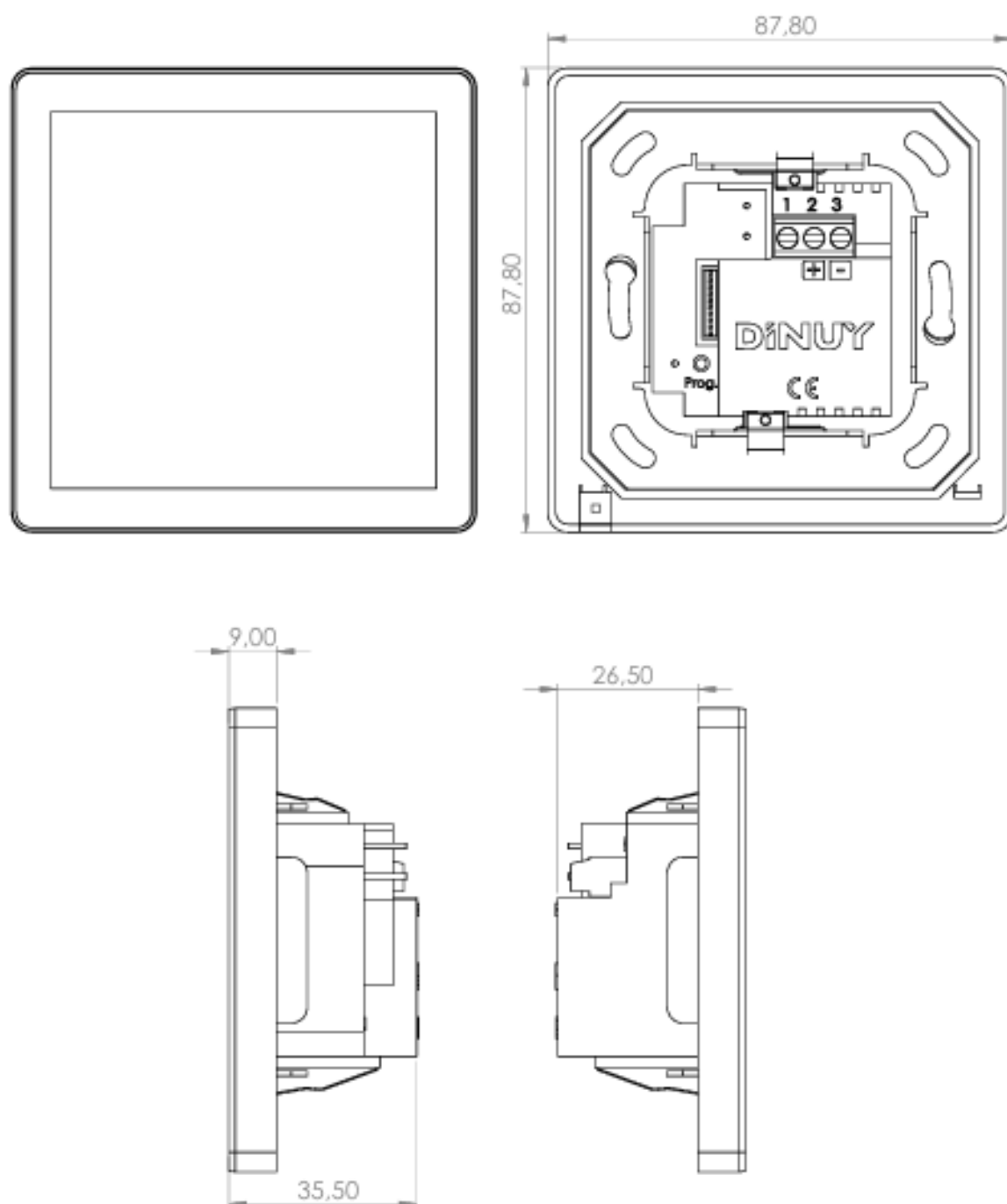
Description

- The TS KNX 01N is a room controller with a 4" touch screen that enables the control of KNX installations and devices.
- Some of its main features are:
 - Multifunction thermostat with integrated temperature and humidity sensors.
 - Control of up to 60 KNX devices.
 - Navigation by function and by room.
 - Option to select different thermostat widgets.
 - 4" touch screen.

Technical specifications

Power supply		Supply voltage: 8 to 14 Vdc Maximum consumption: 1.8 W (150 mA 12 Vdc) Average consumption: 1.2 W (100 mA 12 Vdc)
Processor		Cortex A7 900 MHz
KNX	KNX power supply	29 Vdc
	KNX consumption	5 to 10 mA
	KNX medium	TP I
	Chip	KNX BAOS Module 832
Display	Dimensions	4"
	Resolution	480 x 480
	Colour (resolution)	24 bits
Temperature	Sensor range	-40 to 125° C
	Sensor resolution	0.1° C
Humidity	Sensor range	0 to 100%
	Sensor resolution	1%
Environmental conditions	Operating temperature	0 to 45° C
	Operating humidity	10 to 80% non-condensing
	Storage temperature	-20 to 60° C
	Storage humidity	10 to 80% non-condensing

Dimensions

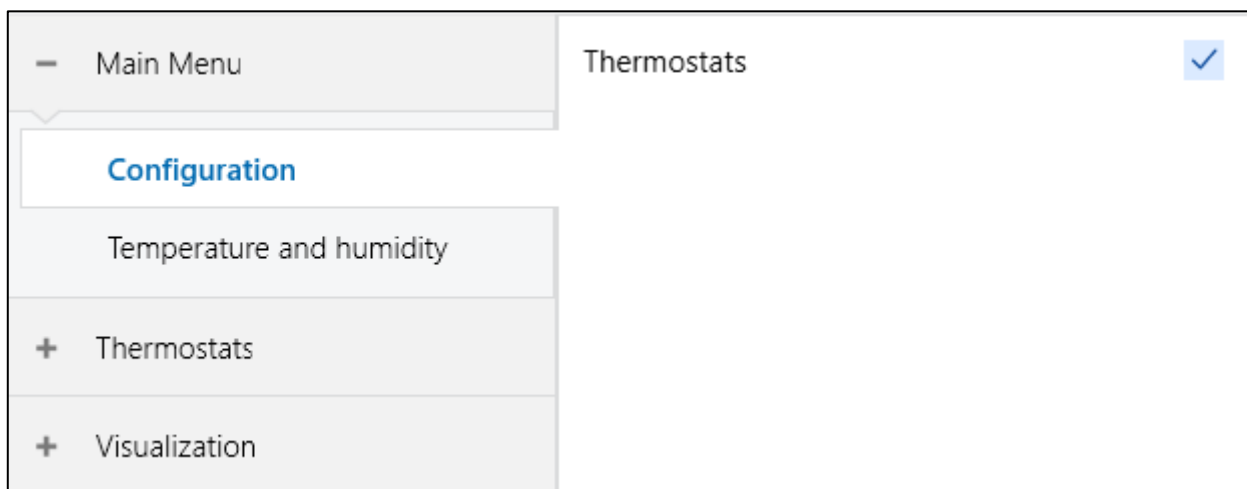


ETS CONFIGURATION

Main menu

This menu contains the configuration of the device's internal functions related to temperature and humidity control.

Configuration



- **Thermostats:** enables the device's internal thermostats. This option must be enabled in order to access the functions described in section 1.3 Thermostats. Selectable values: True / False.

Temperature and humidity

– Main Menu Configuration Temperature and humidity + Thermostats + Visualization	Temperature calibration	0	x 0.1°C
	Temperature sending period	Disabled	
	Temperature send on change	0.2 °C	
	Humidity calibration	0	%
	Humidity sending period	Disabled	
	Humidity send on change	Disabled	
	Condensation hysteresis	5	x 0.1°C
	Condensation resending period	Disabled	
	Condensation activation offset	10	x 0.1°C
	Condensation temperature sending period	Disabled	
	Condensation temperature send on change	Disabled	

Configures the device's internal temperature and humidity sensors, as well as the conditions for sending the corresponding values to the bus. The condensation control system associated with these measurements can also be configured. ETS communication objects: Dinuy Device - Current temperature (ETS object no. 57; DPT 9.001) and Dinuy Device - Current humidity (ETS object no. 58; DPT 9.007).

Condensation control reduces the risk of condensation in HVAC systems. Condensation occurs when a radiant surface is at a temperature below the dew point (condensation temperature). The dew point is calculated internally by combining the measured temperature and humidity values. The device compares the calculated temperature with the radiant surface temperature sent by an external device. If the surface temperature is below the calculated

temperature, a condensation-risk warning signal is sent to the bus. This function uses Dinuy Device - Condensation surface temperature as the input (ETS object no. 59; DPT 9.001), Dinuy Device - Condensation temperature as the calculated output (ETS object no. 60; DPT 9.001), and Dinuy Device - Condensation risk as the binary signal (ETS object no. 61; DPT 1.001).

- **Temperature calibration:** calibrates the device's internal temperature measurement. Positive values increase the measured value and negative values reduce it. This value can be overwritten by the user through the SETTINGS menu on the screen. Selectable values: [-128 to 127] x 0.1 °C. Actual values: [-12.8 to 12.7] °C.
- **Temperature sending period:** selects the cyclic period for resending the internal temperature measured by the device to the bus. The Disabled value deactivates this function. Selectable values: Disabled / 30 s / 1 min / 2 min / 5 min / 1 h.
- **Temperature send on change:** selects the minimum change that must occur in the internal temperature measured by the device before the new value is transmitted to the bus. The Disabled value deactivates this function. Selectable values: Disabled / 0.1 °C / 0.2 °C / 0.5 °C / 1 °C / 2 °C.
- **Humidity calibration:** calibrates the device's internal humidity measurement. Positive values increase the measured value and negative values reduce it. Selectable values: [-50 to 50] %.
- **Humidity sending period:** selects the cyclic period for resending the internal humidity measured by the device to the bus. The Disabled value deactivates this function. Selectable values: Disabled / 30 s / 1 min / 2 min / 5 min / 1 h.
- **Humidity send on change:** selects the minimum change that must occur in the internal humidity measured by the device before the new value is transmitted to the bus. The Disabled value deactivates this function. Selectable values: Disabled / 1% / 2% / 5% / 10%.
- **Condensation hysteresis:** this value prevents excessive transmission of the Condensation risk object when the dew-point and radiant-surface temperatures vary slightly. The higher the value, the greater the difference required between the two temperatures before the condensation-risk value is updated. Selectable values: [0 to 20] x 0.1 °C. Actual values: [0.0 to 2.0] °C.
- **Condensation resending period:** selects the cyclic period for resending the condensation risk measured internally by the device to the bus. The Disabled value deactivates this function. Selectable values: Disabled / 30 s / 1 min / 2 min / 5 min / 1 h.
- **Condensation activation offset:** increases the safety margin for condensation risk. If set to 0, the surface temperature is compared directly with the dew point. Higher values increase the safety margin before the condensation risk is activated. Selectable values: [0 to 255] x 0.1 °C. Actual values: [0.0 to 25.5] °C.
- **Condensation temperature sending period:** selects the cyclic period for resending the calculated condensation temperature to the bus. Disabled deactivates this function. Selectable values: Disabled / 30 s / 1 min / 2 min / 5 min / 1 h.
- **Condensation temperature send on change:** selects the minimum change that must occur in the calculated condensation temperature before the new value is transmitted to the bus. The Disabled value deactivates this function. Selectable values: Disabled / 0.1 °C / 0.2 °C / 0.5 °C / 1 °C / 2 °C.

Thermostats

This menu contains the configuration of the device's two internal thermostats.

Main thermostat objects: depending on the parameters, ETS enables Thermostat X - On/Off (ETS object no. 1/29 for T1/T2) and Thermostat X - On/Off state (2/30), Thermostat X - Setpoint (3/31) and Thermostat X - Setpoint state (4/32), Thermostat X - Current temperature (5/33), Thermostat X - Heating/cooling mode (6/34) and Thermostat X - Heating/cooling mode state (7/35), and Thermostat X - Mode (12/40) and Thermostat X - Mode state (13/41).

Configuration

+ Main Menu	Thermostat 1	☒
- Thermostats	Thermostat 2	☐
Configuration		
+ Thermostat 1		
+ Visualization		

- **Thermostat 1:** enables the device's internal thermostat 1. This option must be enabled in order to access the functions described in section 1.3.2 Thermostat X. Selectable values: True / False.
- **Thermostat 2:** enables the device's internal thermostat 2. This option must be enabled in order to access the functions described in section 1.3.2 Thermostat X. Selectable values: True / False.

Thermostat(s)

Configures each of the device's internal thermostats. These function blocks regulate external HVAC sources to achieve the desired temperature in a room.

The data required for these blocks to operate are the current temperature and the setpoint temperature. The current temperature can be obtained from the device's internal sensor or received from the bus. To use the internal sensor, link the Device TS KNX 01N - Current temperature communication object to the Thermostat X - Current temperature object.

- Main Menu	Setpoint step	5	x 0.1°C
Configuration	Use widow contact	☐	
Temperature and humidity	Use KNX modes	☒	
- Thermostats	Keep setpoints	☒	
Configuration	Comfort setpoint heating	21	°C
- Thermostat 1	Comfort setpoint cooling	23	°C
Basic stage heating	Initial heating/cooling mode	☐ Cooling ☒ Heating	
Additional stage heating	Base stage type	Heating	
Additional stage cooling	Additional stage	☒	
Modes	Additional stage type	Heating and cooling	
+ Visualization			

- **Setpoint step:** limits the possible setpoint-temperature values by specifying the step or resolution. A step of 0.2 °C makes the possible setpoint-temperature values multiples of this value, for example 20.0 °C, 20.2 °C, 20.4 °C, etc. Selectable values: [1 to 255] x 0.1 °C. Actual values: [0.1 to 25.5] °C.
- **Use window contact:** activates the window-contact communication object. External activation of this object via the bus activates protection mode. By default, this mode applies a 14 °C offset to the setpoint temperature. The protection offset can be changed in section 1.3.2.5. Selectable values: True / False.
- **Use KNX modes:** activates the KNX modes and their associated communication objects. The KNX modes apply offsets to the setpoint temperature according to the selected mode: Comfort, Standby, Economy and Protection. Selectable values: True / False.
- **Keep setpoints:** stores the current setpoint value so that it is retained in the event of a power failure and/or device reprogramming. If this option is not enabled, the thermostat always starts with the Comfort setpoint configured by parameter. Selectable values: True / False.
- **Comfort setpoint heating:** comfort-mode temperature for heating mode. Selectable values: [-128 to 127] °C. Visible if: Heating or Heating/Cooling stages are enabled.
- **Comfort setpoint cooling:** comfort-mode temperature for cooling mode. Selectable values: [-128 to 127] °C. Visible if: Cooling or Heating/Cooling stages are enabled.
- **Initial heating/cooling mode:** selects the default mode in which the thermostat starts. Selectable values: Heating / Cooling.
- **Base stage type:** the basic stage is the main HVAC source controlled by the thermostat. It may be capable of generating heating, cooling or both. Selectable values: Heating / Cooling / Heating and cooling.
- **Additional stage:** enables the additional stage. Selectable values: True / False.
- **Additional stage type:** the additional stage is the secondary HVAC source controlled by the thermostat. Specify whether this stage is capable of generating heating, cooling or both. Selectable values: Heating / Cooling / Heating and cooling.

Basic heating stage

Configures the control parameters for this demand stage. ETS enables the output object that matches the selected control type: Thermostat X - Basic heating control (ETS object no. 8/36 for T1/T2) for 2-point control, Thermostat X - Basic heating control PI (16/44) for PI control, or Thermostat X - Basic heating control PWM (17/45) for PWM control.

– Main Menu Configuration Temperature and humidity – Thermostats Configuration – Thermostat 1 Basic stage heating Additional stage heating Additional stage cooling Modes + Visualization	Basic heating control type	PWM	
	Resending period	Disabled	
	Cycle time	15 min	
	Configuration	Advanced	
	Proportional band	4 K	
	Integral time	240 min	
	Minimum activation time	2 min	

- **Basic heating control type:** there are three control strategies: 2-point: control by means of an on/off signal with configurable hysteresis. PWM: control by means of a timed on/off signal based on a PI control strategy. PI: control by means of a proportional signal. Selectable values: 2-point / PWM / PI.
- **Resending period:** time interval for resending the control signal. When Disabled is selected, the control signal is transmitted to the bus only when its value changes. Selectable values: 30 s / 1 min / 2 min / 5 min / 1 h.
- **Hysteresis:** minimum difference between the current temperature and the setpoint temperature that produces a change in the control signal. Hysteresis applies both above and below the setpoint, so the current temperature must exceed the setpoint temperature plus the hysteresis for deactivation to occur, and fall below the current temperature minus the hysteresis for activation to occur. Selectable values: [0 to 255] x 0.1 °C. Actual values: [0 to 25.5] °C. Visible if: 2-point control type.
- **Cycle time:** time base used to calculate the proportional control signal. Actual values: [5 to 255] min. Visible if: PI or PWM control type.
- **Configuration:** adjusts the parameters used to calculate the control signal. Preset values are provided for the most common installation types, and the advanced option allows the individual parameters to be configured manually. Visible if: PI or PWM control type. Selectable values: Water / Underfloor heating / Electric / Air / Advanced.
- **Proportional band:** defines the proportional component of the control-signal calculation. At temperatures below the setpoint temperature minus the proportional band, the control signal is 100% and then decreases proportionally until the current temperature equals the setpoint temperature. At temperatures above the setpoint, the proportional component is 0%. Actual values: [1 to 255] K. Visible if: PI or PWM control type and Advanced configuration.
- **Integral time:** defines how quickly the integral component of the control-signal calculation acts to correct persistent errors. Specifically, it is the time the integral component would need to generate the same correction that the proportional action produces instantaneously for a constant error. Short times correct errors quickly but cause oscillations. Long times correct errors more slowly but more reliably. Actual values: [1 to 255] min. Visible if: PI or PWM control type and Advanced configuration.
- **Minimum activation time:** prevents PWM signal switching periods that are too short to affect control-valve operation. It should be set to the opening time of the controlled valve. Actual values: [1 to 15] min. Visible if: PWM control type.

Basic cooling stage

Configures the control parameters for this demand stage. All parameters are equivalent to those described in section 1.3.2.1 Basic heating stage, except: ETS enables Thermostat X - Basic cooling control (ETS object no. 9/37 for T1/T2) for 2-point control, Thermostat X - Basic cooling control PI (19/47) for PI control, or Thermostat X - Basic cooling control PWM (20/48) for PWM control.

- **Configuration:** adjusts the parameters used to calculate the control signal. Preset values are provided for the most common installation types, and the advanced option allows the individual parameters to be configured manually. Visible if: PI or PWM control type. Selectable values: Chilled ceiling / Air / Advanced.

Additional heating stage

Configures the control parameters for this demand stage. All parameters are equivalent to those described in section 1.3.2.1 Basic heating stage, except: ETS enables Thermostat X - Additional heating control (ETS object no. 10/38 for T1/T2) for 2-point control, Thermostat X - Additional heating control PI (22/50) for PI control, or Thermostat X - Additional heating control PWM (23/51) for PWM control.

- **Activation offset:** differential that modifies the control-signal calculation parameters. The setpoint temperature used in the calculation is the setpoint temperature minus the activation offset. Selectable values: [0 to 255] x 0.1 °C. Actual values: [0 to 25.5] °C.

Additional cooling stage

Configures the control parameters for this demand stage. All parameters are equivalent to those described in section 1.3.2.2 Basic cooling stage, except: ETS enables Thermostat X - Additional cooling control (ETS object no. 11/39 for T1/T2) for 2-point control, Thermostat X - Additional cooling control PI (25/53) for PI control, or Thermostat X - Additional cooling control PWM (26/54) for PWM control.

- **Activation offset:** differential that modifies the control-signal calculation parameters. The setpoint temperature used in the calculation is the setpoint temperature plus the activation offset. Selectable values: [0 to 255] x 0.1 °C. Actual values: [0 to 25.5] °C.

Modes

This section modifies thermostat behaviour when its KNX Modes are used. When modes are enabled, Thermostat X - Mode receives the command (ETS object no. 12/40 for T1/T2), and Thermostat X - Mode state publishes the effective mode (ETS object no. 13/41; DPT 20.102).

– Main Menu	Keep mode	☒
– Configuration	Standby offset	20 x 0.1°C
– Temperature and humidity	Economy offset	40 x 0.1°C
– Thermostats	Protection offset	140 x 0.1°C
– Configuration		
– Thermostat 1		
– Basic stage heating		
– Additional stage heating		
– Additional stage cooling		
– Modes		
+ Visualization		

- **Keep mode:** stores the KNX mode between device restarts. Selectable values: True / False.
- **Offset in each mode:** differential that applies an offset to the setpoint temperature according to the selected mode. When the thermostat is operating in cooling mode, the selected differential increases the setpoint value relative to the comfort temperature; when the thermostat is in heating mode, the differential decreases the setpoint value. The calculated setpoint value is sent through the Thermostat X - Setpoint status communication object. Selectable values: [0 to 255] x 0.1 °C. Actual values: [0 to 25.5] °C.

Visualization

This section configures how all the device's graphical content is displayed and managed. The different rooms, devices and indicators that will be displayed to the user are created here. Rooms and pages organise the interface but do not create bus objects by themselves; objects appear when visualisation thermostats and devices are enabled.

TS KNX 01N supports up to 4 rooms, each with up to 5 pages and a maximum of 15 devices per page. The different menus are described below.

Configuration

+ Main Menu	Default room	Home ▼
+ Thermostats	Number of rooms	1 ▲▼
- Visualization	Number of thermostats	1 ▲▼
	Number of pages	1 ▲▼
Configuration	Number of devices	1 ▲▼
+ Rooms		
+ Thermostats		
+ Pages		
+ Devices		

- **Default room:** selects the system's main room. This room is displayed by default and the device returns to it whenever it enters an inactivity period. Home is the main navigation page used to move between rooms. Selectable values: Home / Room 1 / Room 2 / Room 3 / Room 4.
- **Number of rooms:** defines the rooms that will be visible in the visualisation. Selectable values: [1 - 4].
- **Number of thermostats:** defines the thermostats that can be used in the visualisation. Selectable values: [0 - 4].
- **Number of pages:** defines the number of pages that can be used in the visualisation. Selectable values: [0 - 20].
- **Number of devices:** defines the number of devices that can be used in the visualisation. Selectable values: [0 - 60].

Rooms

Selecting a room allows you to configure how it is displayed on the Home page and how it is linked to the corresponding pages.

+ Main Menu	Name	Room
+ Thermostats	Icon	 Garage ▼
- Visualization	Number of pages	5 ▲▼
Configuration	Page 1	Page 1 ▼
	Page 2	Page 2 ▼
	Page 3	Thermostat 1 ▼
	Page 4	Thermostat 1 ▼
	Page 5	Thermostat 1 ▼
- Rooms		
Room 1		
+ Thermostats		
+ Pages		
+ Devices		

- **Name:** defines the name of the room displayed on the Home page. Selectable values: 20-character string.
- **Icon:** defines the room icon displayed on the Home page. Selectable values: icon number selector.
- **Page 1:** selects the page number displayed first in the page carousel. This is the default page shown when navigating to the room. Selectable values: thermostat or page number selector.
- **Page X:** selects the page number displayed in position X in the page carousel. Selectable values: thermostat or page number selector.

Thermostats

When the internal thermostat is selected as the control source, link each visualisation command object to its equivalent internal-thermostat object: Visualization TX - On/Off (ETS object no. 81/113/145/177 for T1/T2/T3/T4) to Thermostat X - On/Off (ETS object no. 1/29 for T1/T2); Visualization TX - Setpoint (83/115/147/179) to Thermostat X - Setpoint (3/31); Visualization TX - Heating/cooling mode (86/118/150/182) to Thermostat X - Heating/cooling mode (6/34); and Visualization TX - Mode (92/124/156/188) to Thermostat X - Mode (12/40). Also link the feedback objects: Visualization TX - On/Off state (82/114/146/178) to Thermostat X - On/Off state (2/30); Visualization TX - Setpoint state (84/116/148/180) to Thermostat X - Setpoint state (4/32); Visualization TX - Heating/cooling mode state (87/119/151/183) to Thermostat X - Heating/cooling mode state (7/35); and Visualization TX - Mode state (93/125/157/189) to Thermostat X - Mode state (13/41).

- **Thermostat type:** there are two thermostat visualisation layouts. The standard layout retains the thermostat's standard design and provides a consistent appearance between the device and the customer's mobile app. The Round layout is a new representation based on a circular slider and icon-based navigation. Selectable values: Standard / Round.
- **Window state:** enables display of the open-window indicator. Selectable values: True / False. The status is received through Visualization TX - Window contact (ETS object no. 104/136/168/200 for T1/T2/T3/T4; DPT 1.001).
- **Maximum:** maximum temperature that the user is allowed to set. Selectable values: [-128 to 127] °C.
- **Minimum:** minimum temperature that the user is allowed to set. Selectable values: [-128 to 127] °C.
- **Step:** limits the possible setpoint-temperature values by specifying the step or resolution. A step of 0.2 °C makes the possible setpoint-temperature values multiples of this value, for example 20.0 °C, 20.2 °C, 20.4 °C, etc. Selectable values: [1 to 255] x 0.1 °C. Actual values: [0.1 to 25.5] °C. The screen sends the setpoint through Visualization TX - Setpoint (ETS object no. 83/115/147/179 for T1/T2/T3/T4) and updates it from Visualization TX - Setpoint state (84/116/148/180; DPT 9.001).
- **On/off:** enables the thermostat to be switched on and off. Selectable values: True / False. ETS enables Visualization TX - On/Off for the command (ETS object no. 81/113/145/177 for T1/T2/T3/T4) and Visualization TX - On/Off state for feedback (82/114/146/178; DPT 1.001).

- **Heating cooling mode:** enables the thermostat's cooling/heating mode to be changed. Selectable values: True / False. The change is sent through Visualization TX - Heating/cooling mode (ETS object no. 86/118/150/182 for T1/T2/T3/T4; DPT 1.100); the displayed value is confirmed through Visualization TX - Heating/cooling mode state (87/119/151/183).
- **Heating cooling mode state:** enables the thermostat's actual cooling/heating mode status to be displayed. Selectable values: True / False. The value is received through Visualization TX - Heating/cooling mode state (ETS object no. 87/119/151/183 for T1/T2/T3/T4; DPT 1.100).
- **Initial heating/cooling mode:** sets the default mode shown by the thermostat visualisation until the first status value is received through the Visualisation TX - Heating/cooling mode status communication object. Selectable values: Cooling / Heating.
- **Mode:** activates the KNX modes: Comfort, Standby, Economy and Protection. Selectable values: True / False. The command uses Visualization TX - Mode (ETS object no. 92/124/156/188 for T1/T2/T3/T4), and the indication is updated through Visualization TX - Mode state (93/125/157/189; DPT 20.102).
- **Fan:** activates fan control. Selectable values: True / False.
- **Fan speed:** selects the data type for fan control. The discrete type sends discrete values 1/2/3/4 for each selected speed. The percentage type sends values of 33/67/100%. Visible if: Fan enabled. Selectable values: Discrete / Percentage. The command uses Visualization TX - Fan speed (ETS object no. 96/128/160/192 for T1/T2/T3/T4), and feedback uses Visualization TX - Fan speed state (97/129/161/193); ETS adapts the DPT to the selected Discrete or Percentage format.
- **Fan speeds:** selects the number of fan-control speeds and whether automatic speed is available. Visible if: Fan enabled.
- **Fan auto/manual:** enables an independent control for automatic/manual fan operation and allows its polarity to be selected. Visible if: Fan enabled. Selectable values: Disabled / Manual 0 - auto 1 / Manual 1 - auto 0. The associated objects are Visualization TX - Fan auto/manual (ETS object no. 94/126/158/190 for T1/T2/T3/T4) and Visualization TX - Fan auto/manual state (95/127/159/191; DPT 1.001).
- **Additional stage status:** activates display of the additional-stage demand status. Selectable values: True / False. When this indication is enabled, ETS exposes Visualization TX - Basic heating demand (ETS object no. 88/120/152/184 for T1/T2/T3/T4), Visualization TX - Basic cooling demand (89/121/153/185), Visualization TX - Additional heating demand (90/122/154/186), and Visualization TX - Additional cooling demand (91/123/155/187).
- **Demand objects:** the screen receives the statuses through Visualization TX - Basic heating demand (ETS object no. 88/120/152/184 for T1/T2/T3/T4), Visualization TX - Basic cooling demand (89/121/153/185), Visualization TX - Additional heating demand (90/122/154/186), and Visualization TX - Additional cooling demand (91/123/155/187), all with DPT 1.001. ETS displays only the objects compatible with the enabled stages.
- **Additional stage icon:** defines the icon for the additional stage. Selectable values: icon number selector.
- **Custom on/off 1:** enables a custom on/off control for controlling and displaying the status of a multipurpose bus element. Selectable values: True / False. The control uses Visualization TX - Custom 1 on/off (ETS object no. 98/130/162/194 for T1/T2/T3/T4) and Visualization TX - Custom 1 on/off state (99/131/163/195; DPT 1.001).
- **Custom on/off 2:** enables a custom on/off control for controlling and displaying the status of a multipurpose bus element. Selectable values: True / False. The control uses Visualization TX - Custom 2 on/off (ETS object no. 102/134/166/198 for T1/T2/T3/T4) and Visualization TX - Custom 2 on/off state (103/135/167/199; DPT 1.001).
- **Custom analog:** enables a custom analogue control for controlling and displaying the status of a multipurpose bus element. Selectable values: True / False. The control uses Visualization TX - Custom analog (ETS object no. 100/132/164/196 for T1/T2/T3/T4) and Visualization TX - Custom analog state (101/133/165/197; 1 byte).

Custom X on/off

Configures the parameters for custom on/off control X. The visible parameters vary according to the selected thermostat type [Standard /Round].

+ Main Menu	Name	Additional
+ Thermostats	Label on	On
- Visualization	Label off	Off
Configuration		
+ Rooms		
- Thermostats		
- Thermostat 1		
Custom 1 on/off		
+ Pages		
+ Devices		

- **Name:** defines the name of custom control X. Visible if: Standard thermostat type. Selectable values: 20-character string.
- **Label on:** defines the status name of custom control X for the On value. Visible if: Standard thermostat type. Selectable values: 20-character string.
- **Label off:** defines the status name of custom control X for the Off value. Visible if: Standard thermostat type. Selectable values: 20-character string.
- **On icon:** defines the status icon of custom control X for the On value. Visible if: Round thermostat type. Selectable values: icon number selector.
- **Off icon:** defines the status icon of custom control X for the Off value. Visible if: Round thermostat type. Selectable values: icon number selector.

Custom analog

Configures the parameters for custom analogue control X. The visible parameters vary according to the thermostat type selected [Standard /Round].

+ Main Menu	Number of values	6
+ Thermostats	Name	Additional
- Visualization		
Configuration		
+ Rooms		
- Thermostats		
- Thermostat 1		
Custom analog		
+ Pages		
+ Devices		

Custom analog	Value	Name
Label 1	0	Value1
Label 2	1	Value2
Label 3	3	Value3
Label 4	4	Value4
Label 5	5	Value5
Label 6	6	Value6

- **Number of values:** defines the number of values available for the custom analogue control. Selectable values: [1 to 6].

- **Name:** defines the name of the custom analogue control. Visible if: Standard thermostat type. Selectable values: 20-character string.
- **Label X:** defines the name and value of each analogue label linked to the custom control. Visible if: Standard thermostat type. Selectable values: values from 0 to 255 and an associated 10-character string.
- **Label X:** defines the icon and value of each analogue label linked to the custom control. Visible if: Round thermostat type. Selectable values: values from 0 to 255 and an associated icon.

Page X

Selecting a page allows you to configure how it is displayed in the linked room and how it is linked to the corresponding devices. Assigning a device to a page determines only its position in the interface; group addresses are linked to the objects of Device X itself.

+ Main Menu + Thermostats - Visualization Configuration + Rooms + Thermostats - Pages Page 1 + Devices		Column 1	Column 2	Column 3
	Row 1	Device 1 ▼	Device 2 ▼	Device 3 ▼
	Row 2	Device 4 ▼	Device 5 ▼	Device 6 ▼
	Row 3	Device 7 ▼	Device 8 ▼	Device 9 ▼
	Row 4	Disabled ▼	Disabled ▼	Disabled ▼
	Row 5	Disabled ▼	Disabled ▼	Disabled ▼

Number of scenes	5
Scene 1 device	Disabled ▼
Scene 2 device	Disabled ▼
Scene 3 device	Disabled ▼
Scene 4 device	Disabled ▼
Scene 5 device	Disabled ▼

Each page can display 15 devices arranged in a maximum of 3 columns and 5 rows. This menu selects the position of each control linked to the page. Scene controls can also be displayed at the top of the page, with a maximum of 5 devices. For a device to be represented as a scene, its type must be set to “Scene”; see section 1.4.1.

- **Device selector Row X Column Y:** defines the device in the corresponding row and column. Selectable values: device reference.
- **Number of scenes:** defines the number of scenes available for the page. Selectable values: [0 to 5].
- **Scene device selector X:** defines the device linked to scene X. Selectable values: device reference.

Device X

Selecting a device allows you to configure its type and how it is displayed on the linked page. When Type is selected, ETS generates only the compatible object set. Always link the status object where available so that the screen displays the actual bus value.

+ Main Menu	Name	Dummy
+ Thermostats	Type	Disabled ▼
- Visualization		
Configuration		
+ Rooms		
+ Thermostats		
+ Pages		
- Devices		
Device 1		

- **Name:** defines the name of device X. Selectable values: 20-character string.
- **Type:** defines the device type. The parameters and communication objects available for each device type vary considerably and are therefore described in separate sections of this manual. Selectable values: Disabled / On/off lamp / Dimmable lamp / Colour lamp / Shutter / On/off label / Analogue label / On/off control / Analogue control / Scene.

Lamp on/off

This device type controls non-dimmable lighting and includes preconfigured icons for easy parameterisation. These preset icons can be changed by the user. ETS objects: Visualization DX (name) - Switch on/off (ETS object no. $225 + 10 \times (X-1)$) and Visualization DX (name) - Switch on/off status ($226 + 10 \times (X-1)$; DPT 1.001), where X is the numeric device index (1 to 60).

+ Main Menu	Name	Dummy
+ Thermostats	Type	Lamp on/off
- Visualization	Icon On	Power-on
Configuration	Icon Off	○ Power-off
+ Rooms		
+ Thermostats		
+ Pages		
- Devices		
Device 1		

Icon ON: defines the status icon of Device X for the On value. Selectable values: icon number selector.

- **Icon OFF:** defines the status icon of Device X for the Off value. Selectable values: icon number selector.

Lamp dimming

This device type controls dimmable lighting and includes preconfigured icons for easy parameterisation. These preset icons can be changed by the user. ETS objects: Visualization DX (name) - Switch on/off (ETS object no. $225 + 10 \times (X-1)$) for switching, Visualization DX (name) - Value ($229 + 10 \times (X-1)$) for dimming, and Visualization DX (name) - Value status ($230 + 10 \times (X-1)$; DPT 5.001) for feedback, where X is the numeric device index (1 to 60).

+ Main Menu	Name	Dummy
+ Thermostats	Type	Lamp dimming
- Visualization	Icon On	Power-on
Configuration	Icon Off	○ Power-off
+ Rooms		
+ Thermostats		
+ Pages		
- Devices		
Device 1		

- **Icon ON:** defines the status icon of Device X for the On value. Selectable values: icon number selector.
- **Icon OFF:** defines the status icon of Device X for the Off value. Selectable values: icon number selector.

Colour lamp

This device type controls dimmable lighting and includes preconfigured icons for easy parameterisation. These preset icons can be changed by the user. Depending on the parameters, ETS enables Visualization DX (name) - Red color /

Visualization DX (name) - Red color status (ETS object no. $227/228 + 10 \times (X-1)$), Visualization DX (name) - Green color / Visualization DX (name) - Green color status ($229/230 + 10 \times (X-1)$), Visualization DX (name) - Blue color / Visualization DX (name) - Blue color status ($231/232 + 10 \times (X-1)$), Visualization DX (name) - Color value / Visualization DX (name) - Color value status ($231/232 + 10 \times (X-1)$), Visualization DX (name) - White color / Visualization DX (name) - White color status ($229/230 + 10 \times (X-1)$), Visualization DX (name) - Switch on/off / Visualization DX (name) - Switch on/off status ($225/226 + 10 \times (X-1)$), and Visualization DX (name) - Value / Visualization DX (name) - Value status ($233/234 + 10 \times (X-1)$), where X is the numeric device index (1 to 60).

+ Main Menu + Thermostats - Visualization + Configuration + Rooms + Thermostats + Pages - Devices Device 1	Name	Dummy
	Type	Lamp Color
	Device type	3 individual bytes
	On off control	☐
	Value	☐

- **Device type:** selects the device type according to the communication objects to be controlled. See individual colours (independent 1-byte objects for each colour), 3-byte colour control or 6-byte colour control. Selectable values: Individual colours / RGB 3 bytes / RGBW 6 bytes.
- **On/off control:** enables the colour lamp to be switched on and off using a 1-bit object. Selectable values: True / False.
- **Value:** enables the colour lamp to be dimmed using a 1-byte object. Selectable values: True / False.
- **White:** enables the white colour to be adjusted using an independent control. Visible if: Device type other than Individual colours. Selectable values: True / False.

Shutter

This device type controls a shutter with or without slats and includes preconfigured icons for easy parameterisation. These preset icons can be changed by the user. ETS objects: Visualization DX (name) - Move (ETS object no. $225 + 10 \times (X-1)$; DPT 1.008), Visualization DX (name) - Stop ($227 + 10 \times (X-1)$; DPT 1.007), Visualization DX (name) - Value / Visualization DX (name) - Value status ($229/230 + 10 \times (X-1)$), and, where applicable, Visualization DX (name) - Lamella value / Visualization DX (name) - Lamella value status ($231/232 + 10 \times (X-1)$; DPT 5.001), where X is the numeric device index (1 to 60).

+ Main Menu	Name	Dummy
+ Thermostats	Type	Shutter
- Visualization	Percentage value	☒
	Lamella	☐
Configuration	Closed	 Window-shutter
+ Rooms	Middle	 Window-shutter-half
+ Thermostats	Opened	 Window-shutter-open
+ Pages		
- Devices		
Device 1		

- **Percentage value:** enables the shutter position to be adjusted using a 1-byte object. Selectable values: True / False.
- **Slats:** enables the slat position to be adjusted using a 1-byte object. Selectable values: True / False.
- **Closed:** defines the icon representing the shutter in its closed position. Selectable values: icon number selector.
- **Half open:** defines the icon representing the shutter in its intermediate positions. Selectable values: icon number selector.
- **Open:** defines the icon representing the shutter in its open position. Selectable values: icon number selector.

On/off label

This device type displays the status of a device according to its on and off values. The indication is received exclusively through Visualization DX (name) - Switch on/off status (ETS object no. $226 + 10 \times (X-1)$; DPT 1.001), where X is the numeric device index (1 to 60); this type does not send commands from the screen.

+ Main Menu	Name	Dummy
+ Thermostats	Type	Label on/off
- Visualization	Label type	Icon
	Icon On	 Power-on
Configuration	Icon Off	 Power-off
+ Rooms		
+ Thermostats		
+ Pages		
- Devices		
Device 1		

- **Label type:** defines the label type displayed for the status indication. Selectable values: Text / Icon.
- **On icon:** defines the icon representing the status of Device X when it is on. Visible if: Label type is icon. Selectable values: icon number selector.
- **Off icon:** defines the icon representing the status of Device X when it is off. Visible if: Label type is icon. Selectable values: icon number selector.

- **On text:** defines the text representing the status of Device X when it is on. Visible if: Label type is text. Selectable values: 20-character string.
- **Off text:** defines the text representing the status of Device X when it is off. Visible if: Label type is text. Selectable values: 20-character string.

Analogue label

This device type displays the status of an analogue device according to its different states. When preset mode is selected, the visualisation shows indicators as specific labels; in value mode, the exact value is shown with a suffix. The value is received through Visualization DX (name) - Value status: ETS object no. $230 + 10 \times (X - 1)$ for Percentage and 1-byte types, or $232 + 10 \times (X - 1)$ for 2-byte, 4-byte and text types, where X is the numeric device index (1 to 60). ETS adapts the DPT to the selected data type.

+ Main Menu + Thermostats - Visualization Configuration + Rooms + Thermostats + Pages - Devices Device 1	Name	Dummy
	Type	Label analg
	Visualization type	Value
	Address type	Percentage
	Suffix	°C

- **Visualisation type:** defines the label type displayed for the status indication. Selectable values: Value / Preset.
- **Data type:** selects the data type of the communication object linked to Visualization Device X - Value status. Visible if: Visualisation type is Preset. Selectable values: Percentage / 1 byte unsigned.

+ Main Menu + Thermostats - Visualization Configuration + Rooms + Thermostats + Pages - Devices - Device 1 Prefixed values	Number of values	6		
	Custom analog	Value		Name
	Label 1	0	▲▼	Value1
	Label 2	1	▲▼	Value2
	Label 3	2	▲▼	Value3
	Label 4	3	▲▼	Value4
	Label 5	4	▲▼	Value5
	Label 6	5	▲▼	Value6

- **Number of values:** defines the number of values available for the custom analogue control. Visible if: Visualisation type is Preset. Selectable values: [1 to 6].

- **Label X:** defines the name and value of each analogue label linked to Device X. Visible if: Visualisation type is Preset. Selectable values: values from 0 to 100 or from 0 to 255 depending on the data type, with an associated 10-character string.

+ Main Menu + Thermostats - Visualization Configuration + Rooms + Thermostats + Pages - Devices Device 1	Name	Dummy
	Type	Label analg
	Visualization type	Value
	Address type	1 byte unsigned
	Sufix	°C

- **Data type:** selects the data type of the communication object linked to Visualization Device X - Value status. Visible if: Visualisation type is Value. Selectable values: Percentage / 1 byte unsigned / 1 byte signed / 2 bytes floating point / 2 bytes unsigned / 2 bytes signed / 4 bytes floating point / 4 bytes unsigned / 4 bytes signed / Text.
- **Suffix:** defines the suffix text that follows the status value of Device X. Visible if: Visualisation type is Value. Selectable values: 10-character string.

On/off control

This device type controls a device with on and off values. ETS objects: Visualization DX (name) - Switch on/off for the command (ETS object no. $225 + 10 \times (X-1)$) and Visualization DX (name) - Switch on/off status for feedback ($226 + 10 \times (X-1)$; DPT 1.001), where X is the numeric device index (1 to 60).

+ Main Menu + Thermostats - Visualization Configuration + Rooms + Thermostats + Pages - Devices Device 1	Name	Dummy
	Type	Control on/off
	Type	On and off
	Label type	Icon
	Icon On	☒ Power-on
	Icon Off	☐ Power-off

- **Control type:** defines whether the device sends a fixed value or alternates between the on and off values. Selectable values: On and off / On only / Off only.
- **Label type:** defines the label type displayed for the status indication. Selectable values: Text / Icon.
- **On icon:** defines the icon representing the status of Device X when it is on. Visible if: Label type is icon. Selectable values: icon number selector.

- **Off icon:** defines the icon representing the status of Device X when it is off. Visible if: Label type is icon. Selectable values: icon number selector.
- **On text:** defines the text representing the status of Device X when it is on. Visible if: Label type is text. Selectable values: 20-character string.
- **Off text:** defines the text representing the status of Device X when it is off. Visible if: Label type is text. Selectable values: 20-character string.

Analogue control

This control type controls an analogue device according to its different states. When preset mode is selected, the visualisation shows indicators as specific labels; in value mode, a slider allows the exact value to be controlled with a suffix. ETS objects: Visualization DX (name) - Value and Visualization DX (name) - Value status. Their ETS object numbers are $229/230 + 10 \times (X-1)$ for Percentage and 1-byte types, or $231/232 + 10 \times (X-1)$ for 2-byte and 4-byte types, where X is the numeric device index (1 to 60). The size and DPT are adapted to the configured data type.

+ Main Menu + Thermostats - Visualization + Configuration + Rooms + Thermostats + Pages - Devices Device 1	Name	Dummy	
	Type	Control analog	
	Visualization type	Prefixed	
	Address type	☐ Percentage ☒ 1 byte unsigned	
	Number of values	6	
	Custom analog	Value	Name
	Label 1	0	Value1
	Label 2	1	Value2
	Label 3	2	Value3
	Label 4	3	Value4
Label 5	4	Value5	
Label 6	5	Value6	

- **Visualisation type:** defines the label type displayed for the status indication. Selectable values: Value / Preset.
- **Data type:** selects the data type of the communication object linked to the Visualisation Device X - Status value state. Visible if: Visualisation type is Preset. Selectable values: Percentage / 1 byte unsigned.
- **Number of values:** defines the number of values available for the custom analogue control. Visible if: Visualisation type is Preset. Selectable values: [1 to 6].
- **Label X:** defines the name and value of each analogue label linked to Device X. Visible if: Visualisation type is Preset. Selectable values: values from 0 to 100 or from 0 to 255 depending on the data type, with an associated 10-character string.

+ Main Menu + Thermostats - Visualization + Configuration + Rooms + Thermostats + Pages - Devices Device 1	Name	Dummy
	Type	Control analog
	Visualization type	Value
	Address type	2 bytes unsigned
	Suffix	°C
	Maximum value	0
	Minimum value	0
	Step	10 x 0.1

- **Data type:** selects the data type of the communication object linked to the Visualisation Device X - Status value state. Visible if: Visualisation type is Value. Selectable values: Percentage / 1 byte unsigned / 1 byte signed / 2 bytes floating point / 2 bytes unsigned / 2 bytes signed.
- **Suffix:** defines the suffix text that follows the status value of Device X. Visible if: Visualisation type is Value. Selectable values: 10-character string.
- **Maximum value:** maximum value that the user is allowed to set. Selectable values: [-32,768 to 32,767].
- **Minimum value:** minimum value that the user is allowed to set. Selectable values: [-32,768 to 32,767].
- **Step:** limits the possible values by specifying the step or resolution. A step of 0.2 °C makes the possible values multiples of this value, for example 20.0 °C, 20.2 °C, 20.4 °C, etc. Selectable values: [1 to 255] x 0.1 °C. Actual values: [0.1 to 25.5] °C.

Scene

This control type sends KNX scenes and can only be displayed in the scene-control area of Pages. The command is sent through Visualization DX (name) - Scene (ETS object no. 225 + 10×(X-1); DPT 18.001), where X is the numeric device index (1 to 60); the object includes the scene number and the storage bit.

+ Main Menu + Thermostats - Visualization + Configuration + Rooms + Thermostats + Pages - Devices Device 1	Name	Dummy
	Type	Scene
	Save scene on long press	☐
	ⓘ This device type can only be used in pages within the scene section	
	Scene number	1

- **Save scene with long press:** enabling this option sends the scene storage command to the bus together with the scene number when a long press is performed. Selectable values: True / False.
- **Scene number:** value sent to the bus for the scene. Selectable values: [1 to 64].