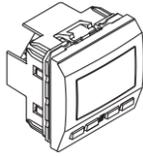**Schneider Electric**

KNX Room Temperature Control Unit with Display

Operating instructions

Art. no MGU3.534.xx

Necessary accessories

Complete the room temperature control unit with a corresponding design frame.

For your safety

⚠ **DANGER**

Risk of fatal injury from electrical current.
The unit may only be installed and connected by skilled electicians. Observe the regulations valid in the country of use, as well as the valid KNX guidelines.

Getting to know the controller

The **Room temperature control unit with display** (referred to as **Controller** from here on) can be used for heating and cooling with infinitely variable KNX valve drives or for controlling switch actuators and heating actuators. The white backlit display shows e.g. time, date, temperature and operating mode. The following settings can be changed via the menu:
operating mode, setpoint, working day, display mode, time, switching time and brightness.

Four operating surfaces are also available, two of which are preset with room temperature control functions and the other two are only for menu navigation . The pushbuttons can at a later date be locked to prevent misuse by unauthorised persons.

Functions of the room temperature control unit:

– Heating / cooling with one controller output
– Heating / cooling with separate controller outputs
– Heating / cooling with two controller outputs

Push-button functions:

– Push-button 1: Menu navigation
– Push-button 2: Setpoint adjustment / operating mode
– Push-button 3: Setpoint adjustment / operating mode
– Push-button 4: Menu navigation

The controller is directly connected to the KNX and parameterised by the electrician using the KNX tool software (ETS).
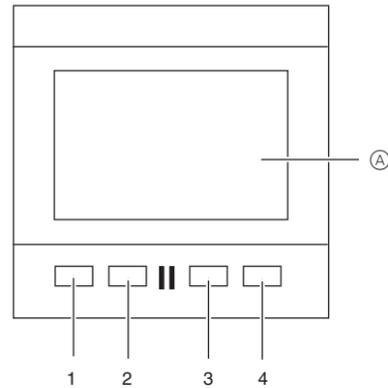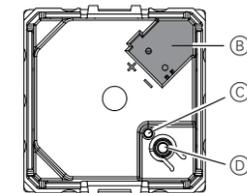
Contents
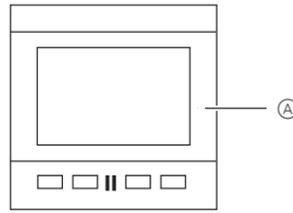
Ⓐ Unit

Connections, displays and operating elements

Front

1 + 4 Menu navigation push-buttons
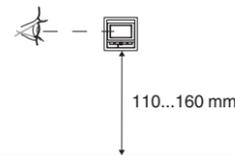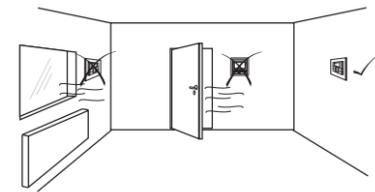2 + 3 Push-buttons (Setpoint adjustment / operating mode)
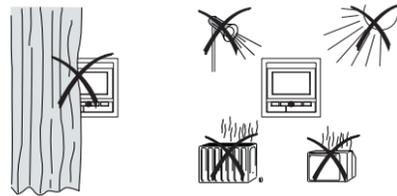Ⓐ Display

Rear

Ⓑ Bus connection
Ⓒ Programming LED
Ⓓ Programming button

Mounting side

In order for the room temperature control unit to work best, you should keep the following in mind when selecting the right installation site:

110...160 mm

Sources of interference

Mounting the controller

① Connect the red bus wire to the red terminal (+) and the black bus wire to the dark grey terminal (-) Ⓐ.

② Store the screen and the stability wire, as well as the white and yellow bus wire Ⓑ. They are not required.
③ Connect the terminal to the bus connection.
④ Insert the controller.
⑤ Put on the frame.

Operating the controller

① Make the desired settings in the ETS.
② Press the programming button: The programming LED lights up.
③ Load the physical address and application into the device from the ETS: The programming LED goes out.

Pre-settings

When installing the controller, the electrician defines various settings that are necessary so you can use the controller correctly. Most of the explanations provided on the following pages depend on these settings. The electrician enters the settings in question in a table for you (see table „pre-settings").

ℹ If you come across this symbol 📋 when reading, it means that you can look up the corresponding value in the table.

Preface room temperature control unit/ display

With the integrated room temperature control unit, you can control the temperature in various different ways.

You can read and set important information on the display:

• Setpoint temperature
• Operating mode (comfort, standby, night, etc.)
• Working day/holiday
• Display mode (setpoint temperature, actual temperature, date etc.)
• Background lighting
• Setting the time/switching time

Getting to know the display

You will see the following symbols on the display:

🏠 Comfort mode or working day. The room temperature is adjusted to the set comfort setpoint temperature 📋.
The flashing symbol means that the comfort extension is active.

🏠 Standby mode or holiday. The room temperature is adjusted to the set standby setpoint temperature 📋.

☽ Night operation. The room temperature is adjusted to the set night setpoint temperature 📋.

🕐 Time control is active.
Constant display: The time has been synchronised.
Flashing display: The time has not been synchronised; the displayed time may not be accurate.

🔔 Alarm, symbol flashing.

1 2 3 4 Weekday display 📋.
5 6 7 In combination with 🗲 : Fan speed

💡 Menu command „Setting the background lighting" is activated.

🗲 Fan.

♨ Heating control mode is active or controller requires power.

❋ Cooling control mode is active or controller requires power.

♨ Display under „Heating" or „Cooling" symbol.
1 - For heating **or** cooling:
„1": Setpoint temperature has not yet been reached. The controller is heating or cooling.
„2": Level 2 is activated (display only if two-step heating/cooling is set..
- For heating **and** cooling:
Two modes are available: Manual or automatic

°C Temperature display in degrees Celsius
°F Temperature display in degrees Fahrenheit
88:88 Time display or value display

Getting to know the control menu

There is a control menu for selecting the individual functions of the room temperature controller.

Overview of the menu structure
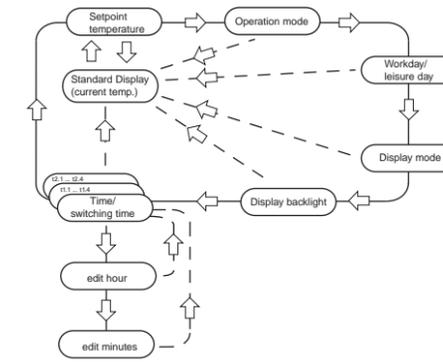
Push-button action	Function triggered
Left/right – Long push-button action*	Select menu Save Return to standard display
Left/right – Short push-button action**	Select next menu command
Left or right – Short push-button action**	Change value

*Long push-button action = approx. 5 s

**Short push-button action = approx. 1 s

ℹ If you don't press any push-button within a period of about one minute, the room temperature control unit automatically returns to the standard display. The values that were set before the control menu was opened are restored; **changes that you may have made are not saved**.
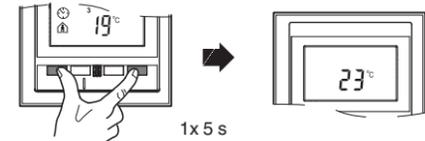**Exception**: Setpoint temperature

Setting the room temperature control unit/display view

Standard display

Here you see an example of the standard display:

• 🏠 "Comfort" operating mode
• Actual temperature 𝟚𝟘°
• Heating ♨ is active in order to reach the comfort setpoint temperature 📋
• 🕐 is constantly displayed: The time has been synchronised with the time switch (e.g. year time switch REG-K).
Clock symbol flashes: Time has not (yet) been synchronised.
• Weekday display **3** = Wednesday 📋

ℹ Note that the display of the weekday depends on the pre-settings. Your electrician has set 📋,

ℹ a specific weekday to 1. In some countries the first day of the week is not Monday, but Sunday, for example. The other numbers have different meanings accordingly (e.g., 2 = Monday, 3 = Tuesday etc.).
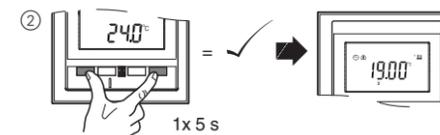
Setting the setpoint temperature

1x 5 s

The electrician has specified three setpoint temperatures 📋 (for both heating and cooling):

• for comfort mode
• for standby mode
• for night operation

ℹ You see the setpoint temperature of the current operating mode. You can only change this setpoint temperature. In order to change the setpoint temperature of another operating mode, you first have to switch operating mode (see "Setting the operating mode").

ℹ The electrician specified 📋 within which limits this value can be changed (for example, within a minimum of 16 °C up to a maximum of 26 °C). You cannot set any value below or above these limit values.

①
- 0,5°   + 0,5°

②
1x 5 s

Setting the operating mode

① 1x 5 s

② 1x 1 s → b 0
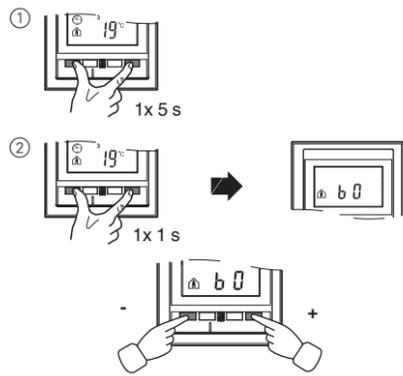
- b 0 = comfort mode 🏠
  Select this operating mode if you are staying in the room. The heating is set to the comfort setpoint temperature (e.g. 21°C 📋).
- b 1 = standby mode 🏠
  Select this operating mode when you are not in the room over a longer period of time. The heating is set to the standby setpoint temperature (e.g. 18°C 📋).
- b 2 = night operation 🌙
  The heating is set to the night setpoint temperature (e.g. 15°C 📋).
- b 3 = comfort extension 🏠 (flashes)
  Select this operating mode if you want to suppress night operation temporarily. The heating is set to the comfort setpoint temperature (e.g. 21°C 📋).
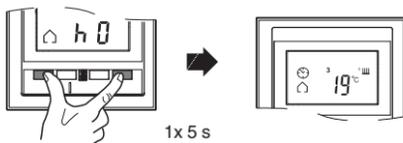
ℹ The electrician may have set 📋 the times at which the operating mode switches automatically from night operation to comfort mode and vice versa.

b 2 → 1x 5 s
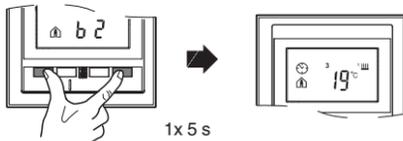
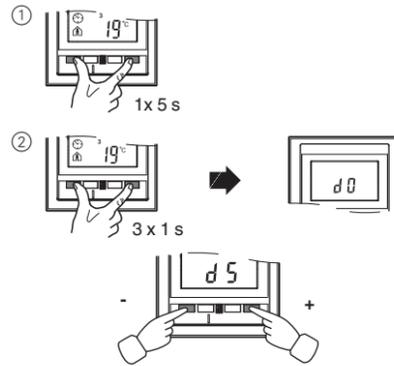## Setting working day/holiday

① 1x 5 s

② 2 x 1 s → h 1
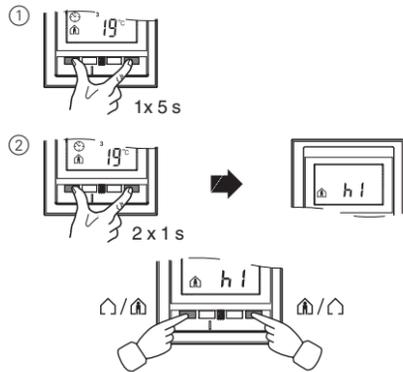
- h 0 = holiday 🏠
- h 1 = working day 🏠

h 0 → 1x 5 s

Setting the display mode

ℹ With the display mode, you can select which values you want to see in the display.

① 1x 5 s

② 3 x 1 s → d 0

d 5

- d 0 = actual temperature (without decimal point)
- d 1 = setpoint temperature (to 0.5 degree accuracy)
- d 2 = temperature from external temperature sensor
- d 3 = date
- d 4 = time
- d 5 = fan speed
- d 6 = date and time in alternation
- d 7 = date, time and fan speed in alternation
- d 8 = actual and setpoint temperature in alternation
- d 9 = actual/setpoint temperature and time in alternation
- d 10 = actual/setpoint temperature and fan speed in alternation
- d 11 = temperature from external temperature sensor and actual temperature
- d 12 = temperature from external temperature sensor, actual temperature and time in alternation
- d 13 = actual/setpoint temperature, date and time in alternation
- d 14 = actual/setpoint temperature, fan speed and time in alternation
- d 15 = temperature from external temperature sensor, actual temperature, fan speed and time in alternation

d 5 → 1x 5 s

Setting the background lighting

① 1x 5 s

② 4 x 1 s → L 6

③ L 3 - +
1 = 🔆 ... 10 = 🔅

④ L 8 = ✓ → 1x 5 s
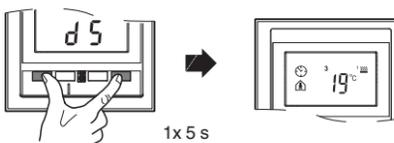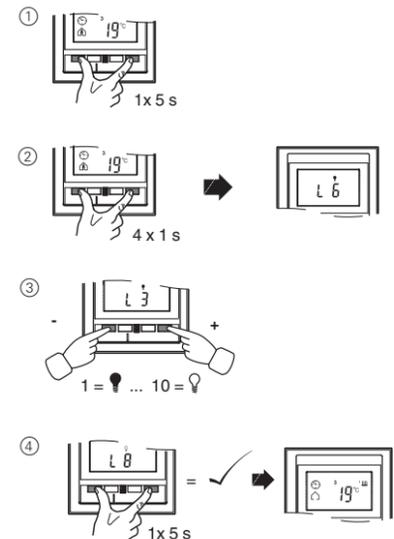
Setting the internal clock time and switching times

ℹ If the time is updated by an external time switch, the updated time is displayed here. If you change this time manually, it will be overwritten again by the time switch during the next update.

ℹ You can only use the control menu to adjust the switching times which have been pre-programmed via the ETS. Switching times which are not defined in the ETS are shown when they are called up in the display with "--:--" and cannot be set using the push-buttons on the display.

① 1x 5 s

② 5 x 1 s → t 0

t 1.2 - +
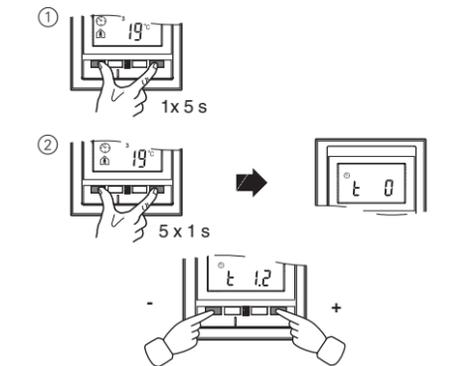
- t 0 = time (either transmitted from the external time switch or from the internal clock)
- t 1.1 to t 1.4 = time channel 1, switching time 1-4
- t 2.1 to t 2.4 = time channel 2, switching time 1-4

③ Press central push-button and **hold**: The hour display for the selected time/switching time starts to flash.
④ Press the left or right push-button on the display: Set the hours as desired.
⑤ Press the central push-button **briefly**: The minute digits now flash.
⑥ Press the left or right push-button on the display: Set the minutes as desired.
⑦ Press the central push-button **briefly**: The set time (t...) appears again.
⑧ Press the central push-button **briefly** again: Save the desired new setting.

12:40 = ✓ → 1x 5 s
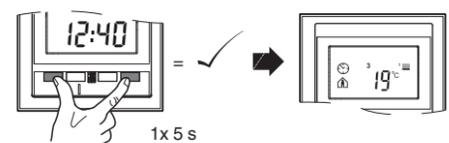
ℹ Synchronise the time via an external time switch to guarantee precision over a long period of time.

Selecting the setpoint temperature or operating mode directly

The electrician specified 📋 whether you can access and adjust the setpoint temperature or the operating mode directly using the right/left push-button, or whether none of these functions is activated.

① **1 x** push-button **right/left** – **short** push-button action.

The menu command "Set setpoint temperature" or "Set operating mode" is displayed with the last set value. Change the value by pressing the left or right push-button on the display. The value is saved directly; you don't have to save separately. After approx. 5 seconds, the room temperature control unit returns automatically to the standard display.

Other display views

APL.	Application not loaded or faulty
E 2	Heating setpoint temperature = cooling setpoint temperature
E 3	ETS application is not compatible
E 4	Upper control value range = lower control value range
E 5	Internal memory error
E 6	Error in temperature sensor
E 7	STACK error
E 8	RAM error
E 9	Buffer error

Presettings table

Push-button assignment

Push-button 1	Setpoint adjustment -0.5 K/ operating mode
Push-button 2	Comfort mode / night operation
Push-button 3	Comfort extension
Push-button 4	Setpoint adjustment +0.5 K/ operating mode

Time control channel 1

Switching time	1	2	3	4
Time	__:__	__:__	__:__	__:__
Function:				

Time control channel 2

Switching time	1	2	3	4
Time	__:__	__:__	__:__	__:__
Function:				

Monitoring functions

☐ A message is issued if actual temperature is less than the frost protection temperature **or**

☐ Other: _____

Heating setpoints in °C/°F	Adjustment limit in °C/°F	
Comfort: _____	min. _____	max: _____
Standby: _____	min. _____	max: _____
Night: _____	min. _____	max: _____
Frost protection: _____	min. _____	max: _____

Cooling setpoints in °C/°F	Adjustment limit in °C/°F	
Comfort: _____	min. _____	max: _____
Standby: _____	min. _____	max: _____
Night: _____	min. _____	max: _____
Heat protection: _____	min. _____	max: _____

Setpoint adjustment valid until:
Operating mode change / permanent

Week starts (1): on Fri / Sat / Sun / Mon

Direct selection: setpoint temperature / operating mode / none

Technical data

Power supply:	Via KNX
Power consumption:	Approx. 9 mA
Connection:	Bus connecting terminal
Display elements:	1x display
Operating elements:	4 push-buttons
Measuring range:	0 to 40 °C
Measuring accuracy:	± 1 K, depending on installation site; offset can be parameterised
Ambient temperature	
Operation:	-5°C to +45°C
Controller type:	2-step
	Continuous PI controller
	Switching PI controller (PWM)
Controller mode:	Heating with 1 controller output
	Cooling with 1 controller output
	Heating with 2 controller outputs
	Cooling with 2 controller outputs
	Heating and cooling with separate controller outputs
	Heating and cooling with 1 controller output
	2-step heating with 2 controller outputs
	2-step cooling with 2 controller outputs
	2-step heating and 2-step cooling with 4 control outputs
Type of protection:	IP 20
EC guidelines:	EMC directive 2004/108/EEC

Schneider Electric Industries SAS

If you have technical questions, please contact the Customer Care Center in your country.

www.schneider-electric.com

This product must be installed, connected and used in compliance with prevailing standards and/or installation regulations. As standards, specifications and designs develop from time to time, always ask for confirmation of the information given in this publication.