Room Control Unit UP 227	5WG1 227-2AB11

Product and function description

The room control unit unites the functions of a Dot-Matrix LCD display with up to 10 room control functions, an individual room temperature controller with setpoint value default and operating mode setting, a temperature sensor and a fan coil unit control device in a bus participant.

The design of the UP 227 room control unit fits the DELTA i-system / Azio switching program. Available in the following color variations.

Titanium white   5WG1 227-2AB11

The UP 227 room control unit is a mono-block device. It requires no separate bus connection and no additional power supply.
During installation, the device is inserted into the corresponding Mounting plate together with the lateral springs and the associated frame. The mounting plate with its screw connection on the UP socket is used to fasten the UP 227 room servicing unit.

The Mounting plate and the associated DELTA line, DELTA miro or DELTA Azio frame are not included in the scope of supply but must be ordered separately (see the valid catalogue for the design frame selection)

Mounting plate (CEE/VDE)   AQR2500NF
Mounting plate (3 Modules horizontal) AQR2500NG
Mounting plate (Portrait)   AQR2500NJ
Mounting plate (British Standard)   AQR2500NH

The usage of the suspension brackets is to be checked in accordance with the regional installation requirements.

The following display and operating functions can be configured: switching, switching with forced control, dimming, sun protection control, recall and save scenes, sending and displaying values, display of values and text/operating messages. The functions and states can be displayed graphically with texts and symbols. Every operating or display function is shown on a separate page on the LCD display.

Alarm messages are displayed on special alarm pages and particularly highlighted by an acoustic signaler or by the blinking of a red LED in the upper right corner.

The room temperature controller integrated in the UP 227 room control unit is specially designed for usage in rooms which are heated and/or cooled where the room temperature control is dependent on up to four room operating modes (comfort mode, pre-comfort mode, energy-saving mode and protection mode). A parameter can be used as needed to set the controller to not consider all four operating modes but rather just three (comfort mode, energy-savings mode and protection mode) or just two (comfort mode and protection mode). The room temperature controller can be used as a two-point controller or as a constant controller (PI-controller).
The room operating mode is selected directly on site in the settings for the room temperature controller. This activates manual mode. Every room operating mode can be permanently activated in manual mode and not changed by a bus telegram or an internal time-switching program.
The controller offers the option of extending the duration of the comfort mode in automatic mode.
The setpoint temperature is set directly in C°/F° based on the comfort mode or as a relative value displacement from the basic setpoint value in K.
In the automatic setting, the controller receives its operating mode by a bus telegram or via the internal timer program.
If the UP 227 room control unit is used in rooms which are heated and/or cooled by a fan coil unit, then it is possible to set the desired fan speed manually. The fan speed is set automatically when automatic mode is selected.

The date and time can be displayed on the UP 227 room control unit. The clock is used to control the timer program and to display the time stamp for alarm messages.
The UP 227 room control unit requires an external timer which supplies the exact time and date via the corresponding KNX communication objects. Therefore a corresponding KNX device is mandatory in the system as a time master. Manual setting of the time and date is possible directly on the LCD display in the system settings.

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Additional display settings can be adapted using special system pages on the LCD display.
- Setting of the display background lighting
- Setting of the background color (white or blue)
- Setting of the time-out
- Setting of the operating language
- Setting of the system language

The device is additionally equipped with a weekday switching function for up to 40 timer tasks, These can be set directly on the LCD display. Weekday switching commands can be configured for each of the 8 configurable control functions. The weekday function can also be used to set the operating mode.

The internal signaler of the room control unit serves to acoustically display alarm messages and can be used as a response for the pressing of a button.
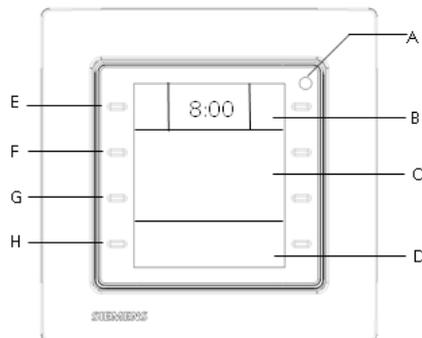
LED display (see Figure 1):

Figure: 1

An LED is located in the upper right corner of the room control unit (A). Blinking green, this can be used as an orientation light. The orientation light can be selectively configured so that it is continuously off or on. The LED, illuminate green, can be additionally used as a status indicator of a function or as a response to pressing a button.
The LED is continuously illuminated or blinks red when an alarm is signaled.
The LED signals the programming mode.

Operating guidelines

Operation and display (see Figure 1)
The room control unit has 4 capacitive button pairs for operation. These are arranged on both sides of the display.
The display is divided into 3 areas.

The upper area (B) consists of the info-line with the two fixed function buttons (E) on the right and left. Various information such as time, date, outside temperature, inside temperature or room operating mode, heating or cooling mode, fan speed etc. can be displayed between the two buttons. The upper two buttons (E), to the right and left of the info-line can each be assigned a fixed room control function.

The middle area (C) contains two lines. The channel of the selected function, the function name, e.g. ceiling light, south blinds, scene presentation, messages, settings for room temperature controller or system settings can be selected by using the second line. This is achieved by the second button pair (F) on the left and right of the second line. The selected function is operated by the third line, e.g. switching On/Off, blinds Up/Down or settings changed, e.g. setpoint temperature 21°C or changing the operating language. The third button pair (G) on the left and right of the third line is used for this operation.

The lower area (D), with line 4, serves to navigate through the various functions groups, e.g. switching, lighting, dimming, sun protection, scenes, sending or displaying values, room temperature control, system settings and alarms. The respective channels, function names or settings for an additional selection are displayed in line 2 in accordance with this selection. The fourth button pair (H) on the left and right of the lower line is used for this navigation.
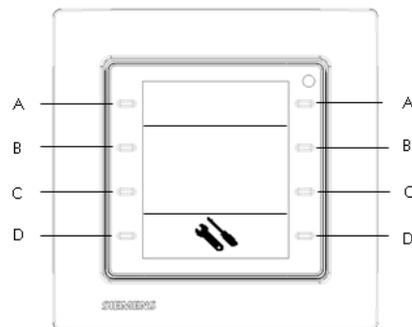
Setting of date and time (see Figure 2):

Figure: 2

The corresponding function in the system settings can be used to set or change the date and time if they have not already been updated by an external time master in the KNX system.
The system setting is first selected by the navigation buttons (D) or (D`) in the fourth line.

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The button pair (B) or (B`) is used to navigate to the time setting. The time is displayed in 2 blocks. The first block represents the hours, the second block represents the minutes.

The button (C`) is first used to mark the hour block. The button (C) can now set the hours step-by-step. It is counted up each time by one hour. The hours are quickly scrolled up when the button (C) is held down.

The button (C`) is used to navigate to the next block, to the setting of the minutes. The button (C) can now set the minutes step-by-step. It is counted up each time by one minute. The minutes are quickly scrolled up when the button (C) is held down. If the button pair (B) or (B`) is used to change to another system setting or the button pair (D) or (D`) is used to change to another functions group, then the set time is adopted.

The button pair (B) or (B`) is used to navigate to the date setting. The date is displayed in 3 blocks. The date display is determined by the ETS configuration.

The following displays are possible: DD-MM-YY, YY-MM-DD or MM-DD-YY.

The button (C`) is initially used to mark the first block. The button (C) can now set the day, months resp. years step-by-step. It is counted up each time by one step. When the button (C) is held down, the settings scrolls up quickly until the button is released.

The button (C`) is used to navigate to the next block. The button (C) can now be used to count up step-by-step or quickly. This occurs for all three date blocks.

If the button pair (B) or (B`) is used to change to another system setting or the button pair (D) or (D`) is used to change to another functions group, then the set date is adopted.

Note
The attitude of the time and date is possibly only in the administrator mode.

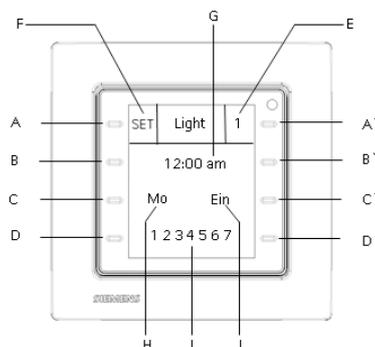Weekly schedule (see Figure 3)

Figure: 3

The following example describes the setting of the time-switching tasks by means of the weekly schedule:

Example:
The light should be switched on every Monday, Tuesday and Friday at 9:00 AM

The buttons (D) or (D`) in the lower area are used to select the lighting function group.

The buttons (B) or (B`) are used to select the channel of the lighting function group, e.g. light.

The setting of the weekly schedule for the light-switching function is accessed by pressing the buttons (B) and (B`) simultaneously for at least 5 seconds.

The name of the lighting channel to be set, light, is displayed in the center of the info-line.

The number of the timer task (1 to 40), e.g. 1, appears in the right field (E) of the info-line.

The number of the timer job in which the timer command should be saved is selected with the button (A`). If a timer command is already stored under a number, then its setting is displayed.

The editing mode of the timer task is accessed with the button (A). This is shown by the "SET" display in the left field (F) of the info-line.

The time to be set is displayed in the second line. The time is displayed in 2 blocks (G). The first block represents the hours, the second block represents the minutes.

The button (B) can now set the hours step-by-step, e.g. 9:00. It is counted up each time by one hour. The hours are quickly scrolled up when the button (B) is held down.

The button (B`) can now set the minutes step-by-step, e.g. 00. It is counted up each time by one minute. The minutes are quickly scrolled up when the button (B`) is held down. The setting is immediately implemented.

The weekday to be set is displayed in the left field (H) of the third line. The button (C) can be used to select the weekday (Mon-Sun), for example Monday, Tuesday and Friday.

The weekdays (1 – 7) are displayed in the fourth line. The button (D) can be used to activate the weekday selected in the third line. This is signaled by underlining the respective weekday. The button (D) can also be used to deactivate the weekday selected in the third line. The underline beneath the respective weekday is deleted. The setting is immediately implemented.

The relevant value in accordance with the function is displayed in the right field (J) of the third line. The button (C`) is used for example to select On or Off for a switching command or 0 - 100% for a dimming command. The setting is immediately implemented.

The button (A) is used to activate the set timer command. This activation status is displayed by the clock symbol in the left field (F) of the info-line.

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The setting for the timer command is deleted by pressing and holding down the button (A) for at least 2 seconds.
The button (D`) is used to end the weekday switching program.

Note
The attitude of time-switching tasks is possibly only in the administrator mode.

System settings
The navigation buttons (D) or (D`) are used to select the system setting in the fourth line. The button pair B or B` is used to select the specific system setting which one would like to change, for example the display background lighting.
The button pair C and C` is used to dim the display background lighting up and down.
The setting of the background color on the display is selected with the button pair B or B`. The button pair C and C` is used to select the color blue or white.
The setting of the time until the display enters sleep mode (Time Out) is selected with the button pair B or B`. The button pair C and C` is used to set the time to a range between 5 and 20 seconds. If the device is not operated within this time, the background lighting switches off or is dimmed. A specific, to parameterized, page is displayed after this time.
The setting of the operating language is selected with the button pair B or B`. The button pair C and C` is used to select the desired operating language. One of three operating languages can be chosen. All functions, text and alarm messages are displayed in the chosen operating language. The operating languages are configured with the ETS.

The upper button pair A and A` in the first line can be used to select the system language. The system language can be chosen from German, English, French, Italian and Spanish. The system settings (brightness, color, time out, time, date, user language, weekdays in time-switching program), the settings for the room temperature controller (operating mode, setpoint temperature, comfort mode extension, fan speed) and the settings for the administrator mode, factory reset, programming mode are displayed in this selected language.

Administrator Mode
The administrator mode is used to protect against undesired operations and settings. The saving of scenes, the time and date setting and the configuration of the timer functions are only possible in Administrator mode.
This mode can be set or switched off locally on the room control unit either permanently by a specific operation.

For this purpose, the B and B` buttons must be pressed simultaneously for at least 5 seconds in system setting pages. The setting for the Administrator mode is located in the third line. The C` button can be used to switch the mode On and Off. The Administrator mode can also be exited automatically after a configured time period.

Setting of the delivery status
All system settings on the room control unit are reset to the default values when the delivery status is selected.
- Display Background lighting: 60%
- Display Background Color: white
- Time until the idle state (Time-out): 15 sec.
- Time: 00:00
- Date: 01/01/2012
- Operating language: Language 1
- System language: English

All parameter settings in the ETS are also set to their standard values.
A specific system side for address allocation/setting administration mode and factory reset is displayed.
The B and B` buttons must be pressed simultaneously for at least 5 seconds in system setting pages to set the delivery state. The setting for the delivery state is located in the second line. Button B` is used to restart the room control unit in the delivered state.

Address allocation
The programming mode is accessed by simultaneously pressing the B and B` buttons for at least 5 seconds in system setting pages. Button A` in the topmost line is used to activate or deactivate the programming mode. The LED (Figure1, (A)) lights up in red and displays the activated programming mode. The LED is extinguished when the physical address is adopted and the programming mode ends. The device restarts after.

Note:
At the first commissioning, before the first application download this specific system side for address allocation/setting administration mode and factory reset is automatically called. It serves exclusively for setting the programming mode. The setting administration mode, the factory reset is not possible in this case.

The ETS3, Version 3.0f and higher, can be used to select the application program, assign the specific parameters and addresses and transfer them to the UP 227 room control unit.
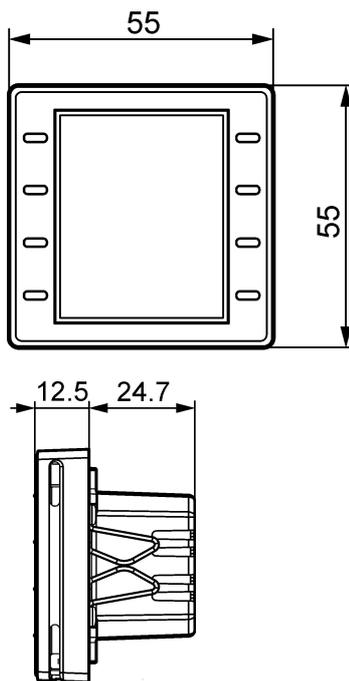
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Additional Information

http://www.siemens.com/gamma

Technical Data

Figure: 4

Power supply
• via the KNX bus line
current consumption:
- 6,8 mA (w/o display background lighting)
- 8,6 mA (with display background lighting)

Operating elements
• 8 capacitive touch buttons

Display elements
• Dot-matrix LCD with 96x128 pixel resolution for human-machine operation
• 1 green/red high brightness LED

Temperature measurement
• Measuring range: 0 ... + 50 ℃
• Resolution: 0.08 K
• Accuracy of the sensor temperature:
  ± 0,61 K under environmental conditions (5 … 30 ℃)
  ± 0,35 K under reference conditions (25 ℃)

Connections
• Bus line: Bus terminal (black/red) , screwless
  0.6 ... 0.8 mm Ø solid

Mechanical data (Figure 5)
• Dimensions (L x W x D):
  - 55 x 55 x 37.2 mm (adapted for i-system)
• Weight: approx. 50 g
• Fire resistance: approx. 1000 kJ ±10%

Electrical safety
• Type of protection (according to EN 60529): IP 30

Reliability
• Failure rate: 277 fit at 40℃

Environmental specifications
• Climatic withstand capability: EN 50491-5-2
• Ambient operating temperature: 0 ... + 50 °C
• Storage temperature: - 25 ... + 70 °C
• Relative humidity (not condensing): <=85% in normal operation, <=95% in transportation

Markings
• KNX / *EIB*

Installation notes

• The system is used for fixed installation in dry internal areas for the installation of flush-mounting boxes.

⚠ **WARNING**

• The system may only be installed and commissioned by a licensed electrician.
• The device may not be inserted together in the same socket with 230V equipment and/or 230V cables.
• The relevant safety and accident prevention rules are to be obeyed.
• The system must not be opened.
• When planning and installing electrical systems, the relevant national directives, rules and regulations of the country in question are to be obey

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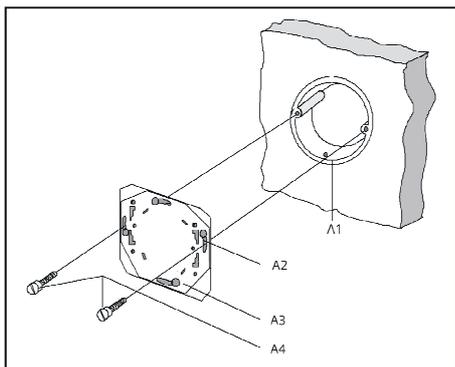## Mounting and wiring

General description (see Figure 5)

Figure 5:

Fastening screws are used to attach the mounting plate (here CEE/VDE) to the installation box.

A1 Installation box (60mm Ø in accordance with DIN 49073)
A2 Slotted holes for attachment
A3 Mounting plate
A4 Fastening screws

The mounting plate has a bracket for the attachment of the fuse strip (D6) (cable tie). This is connected to the room control unit (Figure 8) and protects against manipulation.
The mounting plate and the cable tie are not included in the scope of supply.

Wiring (see Figure 6)

The connection to the bus line is achieved using screwless plug-in terminals.
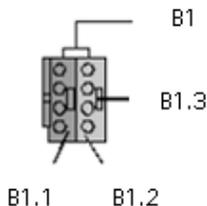

Figure 6:

Remove bus terminal (Figure 6)
The bus terminal is located on the rear side of the Room Control Unit.

The bus terminal (terminal block) (B1) consist of two parts (B1.1, B1.2), each with four terminal contacts. You must take care that both test sockets (B1.3) are not damaged, either with the bus lead (accidental attempt to plug in) or with the screwdriver (when trying to remove the terminal).
Insert the screwdriver carefully into the wire insertion slot of the red/black part of the terminal and remove the terminal from the Room Control Unit.

Attach bus terminal

Plug the terminal into the guide groove of the Room Control Unit and push the terminals downwards to the end stop.
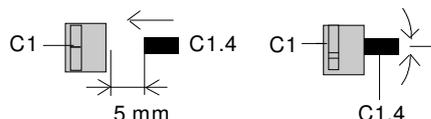
Connecting the bus lines (Figure 7)

Figure 7:

The terminals (C1) are suitable for solid leads with a diameter of 0.6 ... 0.8 mm.
Remove insulation on the ends of the leads (C1.4) and plug them into the terminal (C1) (red = +, black = -).
If the bus line is connected with reverse polarity, then the Room Control Unit is switched off by a protective device (reverse polarity protection).

Disconnection of the bus lines (Figures 7)
Remove the terminal (C1) and pull out its lead (C1.4) by turning it alternately backwards and forwards.

Mounting of the room control unit (Figure 8)

- Thread the anti-theft device (D6) through the design frame (D3) and connect it between the mounting plate and the room control unit.
- Use the mounting plate (D2) to set up the design frame (D3) on the wall (D1)
- Slide the room control unit (D4) together with its lateral springs (D5) through the design frame (D3) and attach it to the mounting plate.

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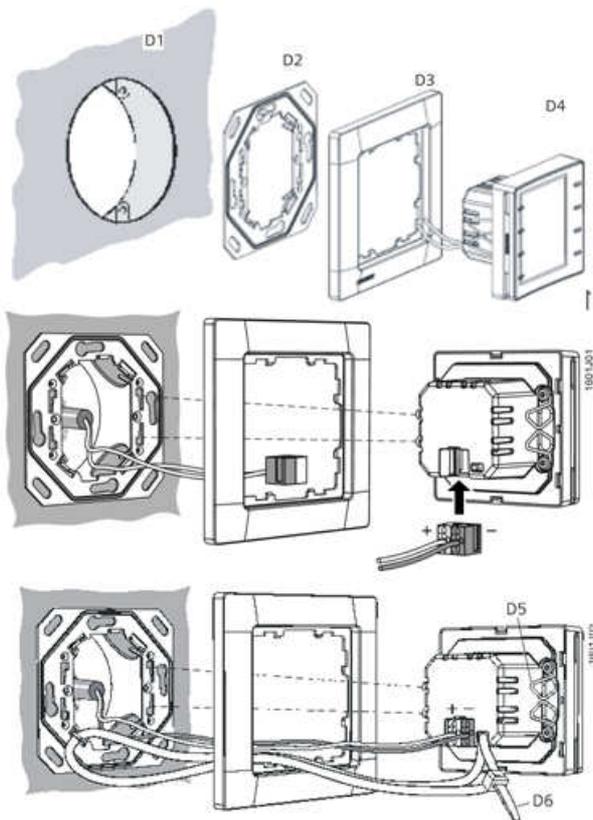| Room Control Unit UP 227	5WG1 227-2AB11

Figure 8:

Dismounting of the room control unit (Figure 8)

- Keep the design frame (D3) on the wall.
- Remove the room control unit (D4) from the mounting plate.
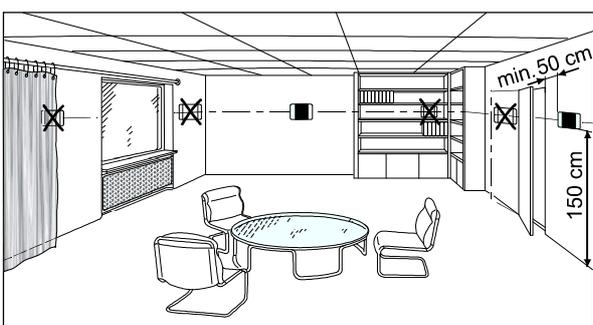
Mounting location (Figure 9)

Figure 9:

Observe the following notes when mounting the Room Control Unit:
Controller mounting on the interior wall of the room to be air-conditioned, opposite the heating source:
- at a height of around 1.5 m in the occupied zone and at least 50 cm away from the nearest wall.
- not on exterior walls
- not in niches or behind curtains
- not above or near heat sources or shelves
- not on walls, behind which heat sources such as a fireplace are located
- not in the radiation range of heat sources and lights such as spot lamps
- not in areas with direct sunlight
- care must be taken to ensure a low-vibration installation site

Drafts from windows and doors must be avoided!

The device-side end of the installation tube must be sealed so that no drafts form in the tube which negatively affect the measurements, see Fig. 10.
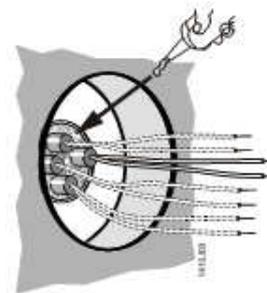

Figure 10:

General Notes

- The operating instructions must be handed over to the client.
- Any faulty device is to be sent together with a return delivery note of the local Siemens office.
- If you have further questions concerning the product please contact our technical support:

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🖶 +49 (911) 895-7223
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