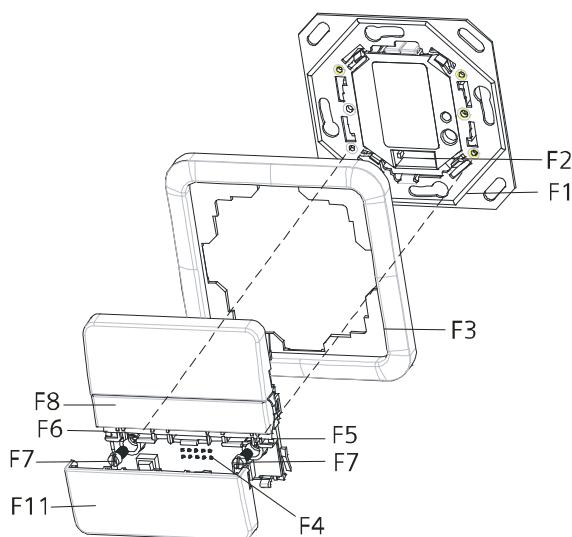


DELTA profil	wall switch, single	UP 241/2 UP 241/3, with status LED	5WG1 241-2AB_2 5WG1 241-2AB_3
	wall switch, double	UP 243/2 UP 243/3, with status LED	5WG1 243-2AB_2 5WG1 243-2AB_3
	wall switch, quadruple	UP 245/2 UP 245/3, with status LED UP 245/4, with temperature sensor UP 245/5, with IR receiver decoder	5WG1 245-2AB_2 5WG1 245-2AB_3 5WG1 245-2AB_4 5WG1 245-2AB_5



Product		wall switch, single	wall switch, double	wall switch, quadruple
without status LED	titanium white anthracite silver	5WG1 241-2AB12 5WG1 241-2AB22 5WG1 241-2AB72	5WG1 243-2AB12 5WG1 243-2AB22 5WG1 243-2AB72	5WG1 245-2AB12 5WG1 245-2AB22 5WG1 245-2AB72
with status LED	titanium white anthracite silver	5WG1 241-2AB13 5WG1 241-2AB23 5WG1 241-2AB73	5WG1 243-2AB13 5WG1 243-2AB23 5WG1 243-2AB73	5WG1 245-2AB13 5WG1 245-2AB23 5WG1 245-2AB73
with status LED, scene controller, and room temperature sensor	titanium white anthracite silver			5WG1 245-2AB14 5WG1 245-2AB24 5WG1 245-2AB74
with status LED, scene controller, and IR receiver decoder	titanium white anthracite silver			5WG1 245-2AB15 5WG1 245-2AB25 5WG1 245-2AB75



- F1 Bus coupling unit (BTM) UP 117
- F2 Bus transceiver interface (BTI) on bus coupling unit (BTM)
- F3 Design frame (DELTA profil)
- F4 Bus Transceiver Interface (BTI) on wall switch module
- F5 Basic push button module
- F6 Holder for switch button
- F7 Mounting screws
- F8 Transparent label cover
- F9 Learning button, for switching between normal operating mode and addressing mode for receiving the physical address
- F10 LED for indicating normal operating mode (LED off) or addressing mode (LED on); upon receiving the physical address the device automatically returns to normal operating mode
- F11 Switch buttons

Figure 1: Mounting wall switch DELTA profil

DELTA profil	wall switch, single wall switch, double wall switch, quadruple
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Product and Applications Description

The wall switches for the DELTA profile have one, two or four vertically arranged pairs of buttons. A labeling field is placed in the middle between these buttons.

These types of wall switches are available:

- Wall switch single, double and quadruple, with one orientation LED, without status LED.
- Wall switch single, double and quadruple, with one orientation LED and with one status LED per button.
- Wall switch quadruple, with one orientation LED, with one status LED per button, scene controller, and room temperature sensor.
- Wall switch quadruple, with one status LED per button, scene controller, and IR receiver-decoder.

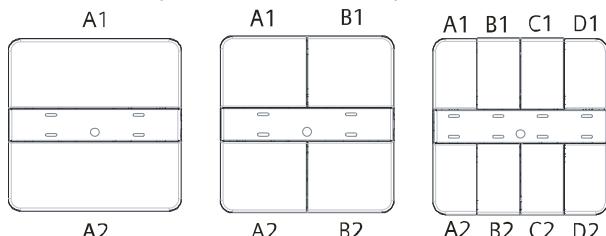
The wall switches are mounted together with the design frame DELTA profile onto a bus coupling unit (BTM). At the same time the electrical connection between the wall switch and the bus coupling unit (BTM) is established via the Bus Transceiver Interface (BTI).

Bus coupling unit (BTM) and the design frame DELTA profile are not included and therefore have to be ordered separately (see current catalog).

Common functions

Switch buttons

Depending on the model a switch provides two to eight switch buttons (figure 1: A1, A2, B1, B2, C1, C2, D1, D2), which vertically function as a switch pair (A to D).



Vertically aligned buttons may be used as a pair of buttons (e.g. for defined switching/dimming, or control of shutters and blinds, i.e. with the upper button light is turned on and with the lower button light is turned off), or as single buttons for sending values, single-button switching/dimming or single button control of blinds.

Each individual switch button (A1, A2, B1, B2, C1, C2, D1, D2) may be assigned one of the following functions:

- Switching (on, off, toggle)
- door bell function

- single button dimming
- single button control of solar protection (blinds, roller shades)
- 1-bit scene control (scene 1 or 2: recall / save)
- 8-bit scene / effect control (recall, recall / save)
- Send value (8-bit value, percent)
- Send value (16-bit value, temperature value, brightness value)
- Forced control

Depending on the selected main function another function may be executed either additionally after a time delay (time delay configurable from 100ms to 655s) or alternatively when the button is pressed for a longer period.

When switch buttons are configured as a pair then this button pair may be assigned one of the following functions:

- Dual-button dimming with stop telegram
- Dual-button control of solar protection (blinds, roller shades)
- Send variable percent value
- Send variable 8-bit value
- 1-bit scene control (scene 1 and 2: recall / save)
- 8-bit scene / effect control (recall / save)
- Forced control

Depending on the selected main function another function may be executed additionally after a time delay (time delay configurable from 100ms to 655s).

These options are available as additional or alternative functions for single buttons or button pairs:

- Switching (on)
- Switching (off)
- Send percent value
- Send 8-bit value (0...255)
- Send temperature value
- Send brightness value
- Send 16-bit value (0...65535)
- 1-bit scene control (scene 1: recall / save)
- 1-bit scene control (scene 2: recall / save)
- 8-bit scene / effect control: recall
- Forced on
- Forced off
- Deactivate forced control

Orientation lighting

[not available with UP 24x/5]

The orientation light (LED) of the device may be turned on or off continuously or depending on a status object.

DELTA profil	wall switch, single wall switch, double wall switch, quadruple
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These configuration options are available for the orientation light (LED):

- LED permanently off
- LED permanently on
- LED indicates IR activity (only for switch with IR receiver)
- LED indicates user operation
- LED indicates long button press
- A binary status object controls the LED for each status value on (=1) or off (=0) respectively to either
 - on
 - off
 - flash, slowly (0,3 Hz)
 - flash, moderately (1 Hz)
 - flash, fast (5 Hz)
- An analog status object (8-bit value [0...255], percent value, 16-bit value [0...65535], temperature value [0°C...40°C], brightness value [0...2000 lux] controls the LED for each of up to three value ranges respectively to either
 - on
 - off
 - flash, slowly (0,3 Hz)
 - flash, moderately (1 Hz)
 - flash, fast (5 Hz)

The brightness of the orientation light is configurable and may be controlled via object (e.g. for night operation).

Additional functions of devices with status LED

Status LED

The same configuration options as described for the orientation LED are available for the status LED's of a device.

- LED permanently off
- LED permanently on
- LED indicates IR activity (only for switch with IR receiver)
- LED indicates user operation
- LED indicates long button press
- A binary status object controls the LED for each status value on (=1) or off (=0) respectively to either
 - on
 - off
 - flash, slowly (0,3 Hz)
 - flash, moderately (1 Hz)
 - flash, fast (5 Hz)
- An analog status object (8-bit value [0...255], percent value, 16-bit value [0...65535], temperature value [0°C...40°C], brightness value [0...2000 lux] controls the LED for each of up to three value ranges respectively to either
 - on
 - off
 - flash, slowly (0,3 Hz)
 - flash, moderately (1 Hz)
 - flash, fast (5 Hz)

- on
- off
- flash, slowly (0,3 Hz)
- flash, moderately (1 Hz)
- flash, fast (5 Hz)

The brightness of the status LED can be configured mutually for all status LED's and can be influenced via object (e.g. for night operation).

To find a switch when its associated status LED is turned off and it is dark, this LED may be configured to cyclically flash briefly.

Scene controller

[applies only to UP 24x/4 and UP 24x/5]

The scene controller enables integration of those actuators, which themselves do not provide 8-bit scene control, into 8-bit scene control schemes. Up to eight scene channels (A ... H) are controlled via a single 8-bit scene object. For each channel one of these functions may be selected:

- Switching
- Solar protection control
- Forced control
- 8-bit value
- 16-bit value

Each channel may be assigned to up to eight different scene numbers (1...64).

Scenes are recalled with a short button press and saved with a long button press.

Before saving a scene the actuators belonging to that scene must be set to the desired light levels and switching states.

When receiving a save telegram for an 8-bit scene via the 8-bit scene object the scene controller interrogates the current values and states of the actuators via the corresponding objects and saves these values and states as scene settings for the associated scene number.

Saved scene values are only deleted by a new configuration of the device if the parameter "Delete scene memory after bus voltage recovery" is set to "Yes".

Room temperature sensor

[applies only to UP 24x/4]

The room temperature may be transmitted cyclically or on change of value. To accommodate local circumstances the measured room temperature may be offset by a configurable value.

DELTA profil	wall switch, single wall switch, double wall switch, quadruple
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IR receiver

[applies only to UP 24x/5]

The device offers a 16 channel IR receiver-decoder. As described for the single buttons / button pairs above, each of the 16 IR channels may be either configured for functions associated with single buttons or a button pair. Likewise, dependent on the selected main functions additional functions may be selected. The 16 channel IR hand-held remote S425/72 allows to fully exploit these possibilities.

The application program already has been loaded in the factory.

With the ETS (Engineering Tool Software) the specific parameters and addresses are assigned appropriately, and downloaded into the device.

Function ex factory:

All switch button pairs are pre-configured for the building site function for switching (upper buttons on, lower buttons off).

Application program

25 CO BTM wall switch 909301

- Single, double or quadruple wall switch for
 - switching on / off / toggle
 - bell function (press on, release off)
 - dimming (with one or two buttons)
 - solar protection control (with one or two buttons)
 - send value (8-bit and 16-bit)
 - send variable value (8-Bit)
 - 1-bit and 8-bit scene control
 - forced control
 - second transmission object
- 8 channel scene controller with 8 scenes per channel
- 1 LED as orientation light
- 1 LED per switch button for status annunciation
- room temperature sensor
- IR receiver-decoder for 16 IR channels

This application program applies to all *instabus* wall switches that are mounted on a bus coupling unit (BTM) UP 117.

When expanding the number of switch buttons or the functionality (e.g. from UP 241/_2 to UP 243/_5) the prior configuration remains and must only be expanded. In the same simple fashion switching between design lines (DELTA line / vita / miro, DELTA profil oder DELTA style) is possible.

Configuration and operation of all *instabus* wall switches is identical independent of design and the number of switch buttons.

DELTA profil wall switch, single
wall switch, double
wall switch, quadruple

Installation notes

- The device can be used for permanent installation in dry interior rooms and for insertion in distribution boards or miniature housings.

WARNING

- The device must be mounted and commissioned by an authorised electrician.
- The device may be mounted in switch and socket combinations if VDE-certified devices are used exclusively.
- The prevailing safety rules must be heeded.
- For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.

Technical data

Power supply

- KNX bus voltage: via via bus coupling unit (BTM) UP 117
- KNX bus current: 9 mA

Operating elements

- 1, 2 or 4 pairs of horizontally arranged switch buttons
- Number of switching operations: > 20000 per button
- 1 learning push button:
for toggling between normal mode / addressing mode

Display elements

- 1 red LED:
for checking the bus voltage and for displaying normal mode / addressing mode

UP 24x/2:

- 1 LED
as orientation light in the dark

UP 24x/3 und UP 24x/4:

- 1 LED
as orientation light in the dark
- 1 red LED per switch button for status annunciation (e.g. quadruple switch = 8 status LED's)

UP 24x/5:

- 1 red LED per switch button for status annunciation

IR receiver (UP 24x/5)

- Range of IR transmission: approx. 25 m under these conditions:
 - with IR hand-held remote S 425/72 (5WG1 425-7AB72)
 - directed in optical direct line-of-sight
 - at 500 Lux diffuse day-light at reception location

Connections

10-pin connector (BTI):
for connection to a bus coupling unit (BTM) UP 117

Physical specifications

- Housing: plastic
- dimensions (L x W x D): 68 x 68 x 25 mm (incl. spring)
- weight: approx. 50 g
- Fire load: approx. 1190 kJ
- installation:
mounted on bus coupling unit (BTM) UP 117

Electrical safety

- Degree of pollution (according to IEC 60664-1): 2
- Type of protection (according to EN 60529): IP 20
- Class of protection (according to IEC 61140): III
- Overvoltage category (according to IEC 60664-1): III
- Bus: safety extra-low voltage SELV DC 24 V
- Device complies with: EN 50090-2-2 and IEC 60664-1

EMC requirements

complies with EN 50090-2-2

Environmental specifications

- climatic conditions: EN 50090-2-2
- ambient temperature operating: - 5 ... + 45 °C
- ambient temperature non-op.: - 25 ... + 70 °C
- relative humidity (non-condensing): 5 % to 93 %

Reliability

UP241/x and UP243/x

- Failure rate: 152 fit at 40°C
- UP245/x
- Failure rate: 251 fit at 40°C

Markings

KNX, EIB, CE

CE mark

In accordance with the EMC guideline (residential and functional buildings), low voltage guideline.

DELTA profil	wall switch, single
	wall switch, double
	wall switch, quadruple

Location and Function of the Display and Operating Elements

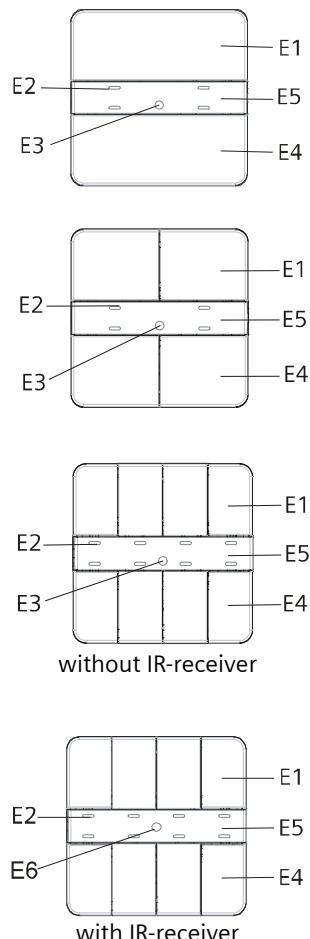


Figure 2: Display and operating elements

- E1 Upper button(s)
- E2 LED's for status annunciation (not available with UP 24x/2)
- E3 LED for orientation lighting
- E4 Lower button(s)
- E5 Labeling field
- E6 IR receiver (UP 24x/5 only)

Installation and wiring

General description

The wall switch is slid onto the bus coupling unit (BTM) together with its design frame (DELTA profil). Bus coupling unit (BTM) and the design frame "DELTA profil" are not included and therefore have to be ordered separately (see current catalog).

Mounting

- Slip the wall switch's main module (F5) together with the design frame (F3) onto the bus coupling unit (BTM) (F1).
- The electrical connection between the wall switch and the bus coupling unit (BTM) is established via a Bus Transceiver Interface (BTI) (F2 and F4).

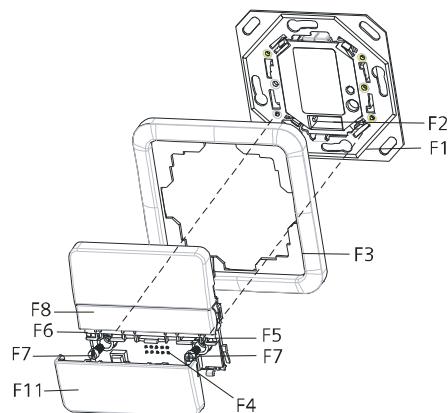


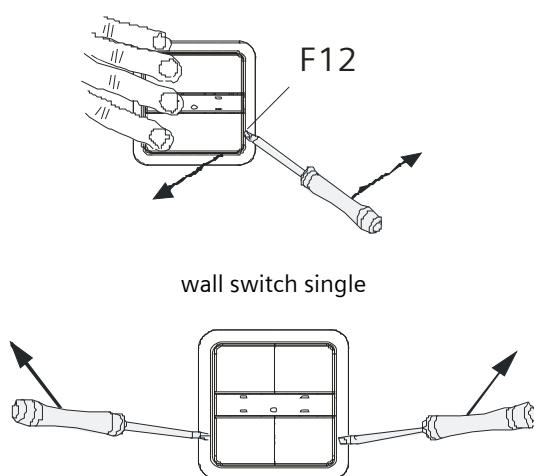
Figure 3: Installation sequence

- F1 Bus coupling unit (BTM) UP 117
- F2 Bus transceiver interface (BTI) on bus coupling unit (BTM)
- F3 Design frame (DELTA profil)
- F4 Bus Transceiver Interface (BTI) on wall switch module
- F5 Basic push button module
- F6 Holder for switch button
- F7 Mounting screws
- F8 Transparent label cover
- F9 Learning button, for switching between normal operating mode and addressing mode for receiving the physical address
- F10 LED for indicating normal operating mode (LED off) or addressing mode (LED on); upon receiving the physical address the device automatically returns to normal operating mode
- F11 Switch buttons
- F12 notch

DELTA profil wall switch, single
 wall switch, double
 wall switch, quadruple

Installation of mounting screws (F7)

- Before securely attaching the wall switch's main module to the bus coupling unit (BTM) with the mounting screws (F7) delivered in the package the switch buttons have to be removed. Insert a screwdriver between the frame and the switch's main module and lift the buttons up.
 Important: Hold the Switch module (F5), the switch buttons (F11) plus frame (F3) in place.
- Insert and tighten screws (F7).
- Snap switch buttons (F11) correctly oriented onto the button holder.

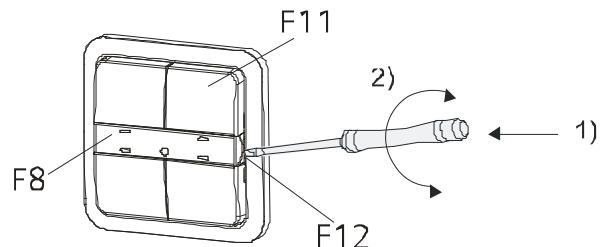


dual switch / quadruple switch
 hold the switch module in place

Figure 4: Lifting out the rockers

Transparent label cover

- Remove the transparent label cover (F8) with a screw driver, while holding the switch module (F5).



- 1) Insert the screwdriver into the slot (F12)
- 2) then wiggle it

Figure 5: Lifting out the transparent label cover

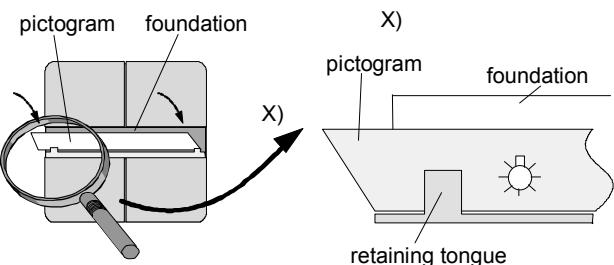


Figure 6: inserting the pictograms

- Insert the pictogram (label) into the foundation
- Snap the transparent label cover (F8) back on

DELTA profil wall switch, single
wall switch, double
wall switch, quadruple

Unmounting

Without mounting screws

- Remove the wall switch (F5) completely with the frame (F3) from the bus coupling unit (BTM) (F1):
 - manually
 - with a screw driver under the frame / wall

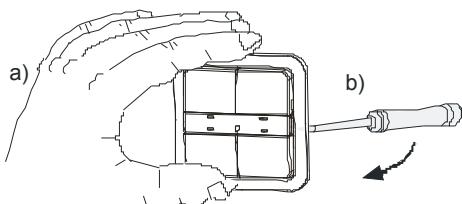


Figure 7: Unmounting

With mounting screws

- Remove wall switch buttons (F11), as described under „mounting“.
- Remove mounting screws (F7).
- Snap switch buttons (F11) back onto the wall switch.
- Remove the complete switch module (F5) as described under “Without mounting screws”

Address assignment

- Remove the transparent label cover (F8) with a screw driver, while holding the switch module (F5). Insert a screw driver as far as possible and turn it (figure 5).
- Remove the labels with the label foundation.
- Press the learning button (F9) on the device to initiate the assignment of the physical address to the device (figure 8).
- The programming LED (F10) turns on to indicate the programming mode. Upon receiving the physical address the device automatically returns to normal operating mode and the LED turns off.

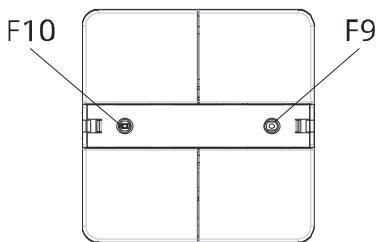
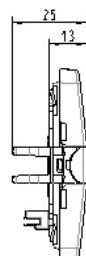
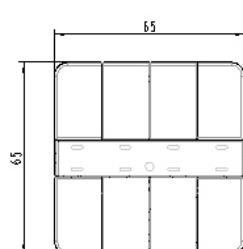
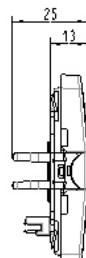
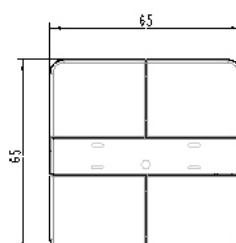
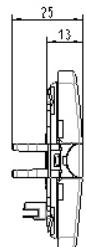
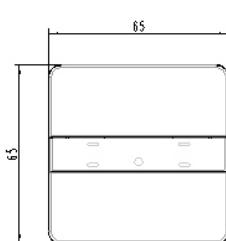


Figure 8: Assignment of individual address

DELTA profil wall switch, single
wall switch, double
wall switch, quadruple

Dimension drawing

dimension in mm



General Notes

- The device must be mounted and commissioned by an authorised electrician.
- The device may be mounted in switch and socket combinations if VDE-certified devices are used exclusively.
- The prevailing safety rules must be heeded. For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered

☎ +49 (0911) 895 - 7222

📠 +49 (0911) 895 - 7223

E-Mail: support.automation@siemens.com

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DELTA profil wall switch, single
wall switch, double
wall switch, quadruple

Room for notes