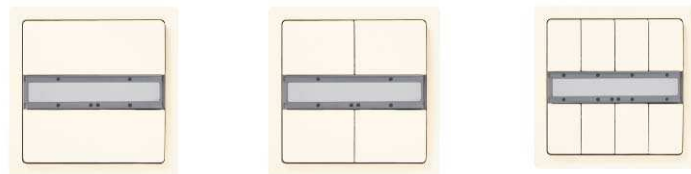
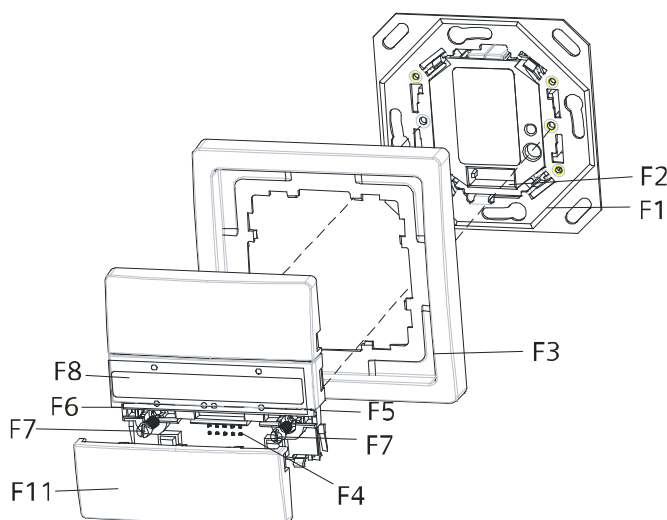


DELTA style	wall switch, single	UP 285/2, UP 285/3,with status LED	5WG1 285-2AB_2 5WG1 285-2AB_3
	wall switch, double	UP 286/2, UP 286/3,with status LED	5WG1 286-2AB_2 5WG1 286-2AB_3
	wall switch, quadruple	UP 287/2, UP 287/3,with status LED UP 287/4,with temperature sensor UP 287/5,with IR receiver decoder	5WG1 287-2AB_2 5WG1 287-2AB_3 5WG1 287-2AB_4 5WG1 287-2AB_5



Product		wall switch, single	wall switch, double	wall switch, quadruple
without status LED	titanium white	5WG1 285-2AB12	5WG1 286-2AB12	5WG1 287-2AB12
	basalt black	5WG1 285-2AB22	5WG1 286-2AB22	5WG1 287-2AB22
	platinum metallic	5WG1 285-2AB42	5WG1 286-2AB42	5WG1 287-2AB42
with status LED	titanium white	5WG1 285-2AB13	5WG1 286-2AB13	5WG1 287-2AB13
	basalt black	5WG1 285-2AB23	5WG1 286-2AB23	5WG1 287-2AB23
	platinum metallic	5WG1 285-2AB43	5WG1 286-2AB43	5WG1 287-2AB43
with status LED, scene controller, and room temperature sensor	titanium white			5WG1 287-2AB14
	basalt black			5WG1 287-2AB24
	platinum metallic			5WG1 287-2AB44
with status LED, scene controller, and IR receiver decoder	titanium white			5WG1 287-2AB15
	basalt black			5WG1 287-2AB25
	platinum metallic			5WG1 287-2AB45



- 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 style

**DELTA style** wall switch, single  
 wall switch, double  
 wall switch, quadruple

**Product and Applications Description**

The wall switches for the DELTA style 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.

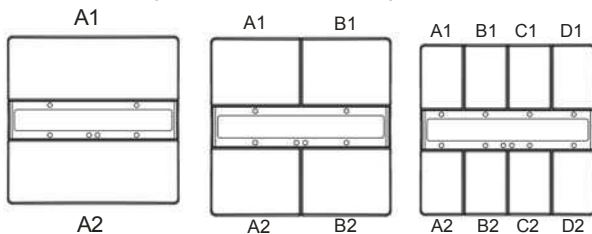
The wall switches are mounted together with the design frame DELTA style onto a bus coupling unit (BTM). At the same time the electrical connection between the wall switch and the bus coupling unit (BTM) is established via the Bus Transceiver Interface (BTI).

Bus coupling unit (BTM) and the design frame DELTA style 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

<b>DELTA style</b>	wall switch, single wall switch, double wall switch, quadruple
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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. These configuration options are available for the orientation light (LED):

- LED permanently off
- LED permanently on
- 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)

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 28x/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.

IR receiver

[applies only to UP 28x/5]

<b>DELTA style</b>	wall switch, single wall switch, double wall switch, quadruple
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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 C0 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 285/\_2 to UP 287/\_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 style	wall switch, single wall switch, double wall switch, quadruple
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## 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 28x/2:

- 1 LED  
as orientation light in the dark

#### UP 28x/3 und UP 28x/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 28x/5:

- 1 red LED per switch button for status annunciation

## IR receiver (UP 28x/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 27 mm (incl. spring)
- weight: approx. 50 g
- Fire load: approx. 1420kJ
- 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

UP285/x and UP286/x

- Failure rate: 152 fit at 40°C

UP287/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 style wall switch, single  
 wall switch, double  
 wall switch, quadruple

**Location and function of the display and operating elements**

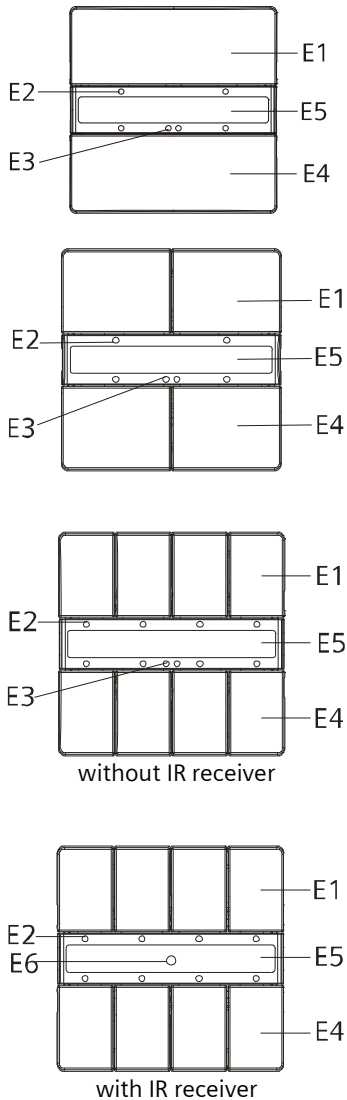


Figure 2: Display and operating elements

- E1 Upper button(s)
- E2 LED's for status annunciation (not available with UP 28x/2)
- E3 LED for orientation lighting
- E4 Lower button(s)
- E5 Labeling field
- E6 IR receiver (UP 28x/5 only)

**Installation and wiring**

General description

The wall switch is slid onto the bus coupling unit (BTM) together with its design frame (DELTA style). Bus coupling unit (BTM) and the design frame "DELTA style" 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) and firmly press them together. The electrical connection between the wall switch and the bus coupling unit (BTM) is established via a Bus Transceiver Interface (BTI) (F2 and F4).

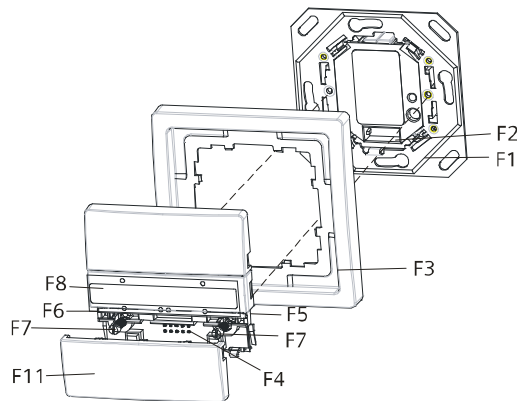


Figure 3: Mounting sequence

- 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) and addressing mode (LED on); upon receiving the physical address the device automatically returns to normal operating mode
- F11 Switch buttons
- F12 notch

DELTA style	wall switch, single wall switch, double wall switch, quadruple
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**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 (figure 4).
- Important: Hold the Switch module (E5), the switch buttons (F11) plus frame (F3) in place.
- Insert and tighten screws (F7).
- Snap switch buttons (F11) correctly oriented onto the button holder.

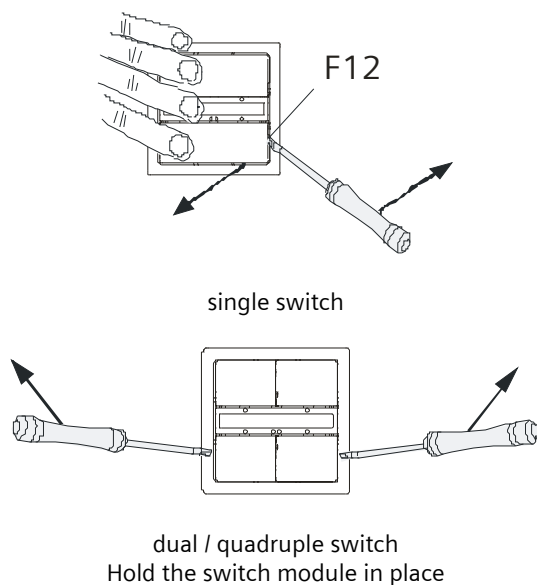
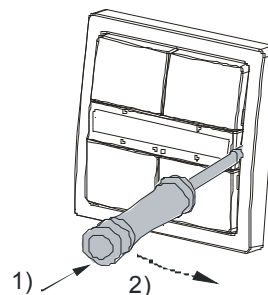


Figure 4: Lifting out the rockers

**Transparent label cover**



- 1) Insert the screwdriver between the frame and the pushbutton module.
- 2) Swivel the screwdriver towards the wall.

Figure 5: Lifting out the transparent label cover

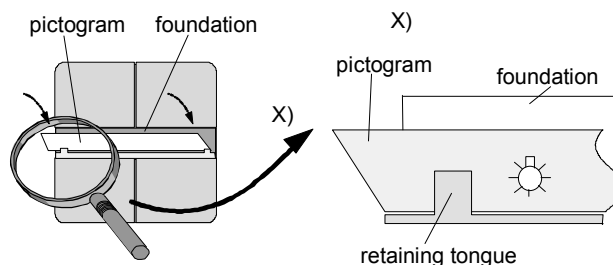


Figure 6: inserting the pictograms

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

DELTA style 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):
  - a) manually
  - b) with a screw driver under the frame / wall

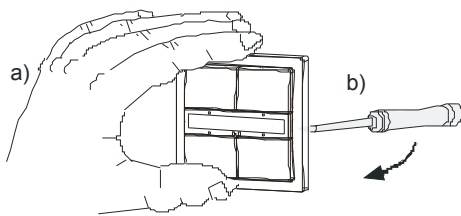


Figure 7: Unmounting

### 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 from the label base.
- 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.

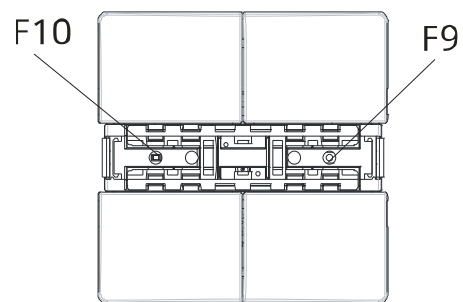


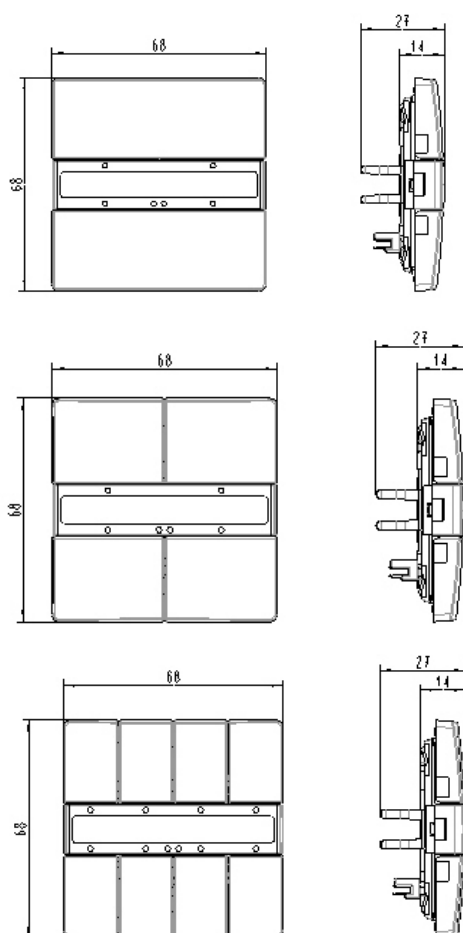
Figure 8: Address assignment



**DELTA style** wall switch, single  
 wall switch, double  
 wall switch, quadruple

### Dimension drawing

Dimensions 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

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<b>DELTA style</b>	wall switch, single wall switch, double wall switch, quadruple
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Room for notes

