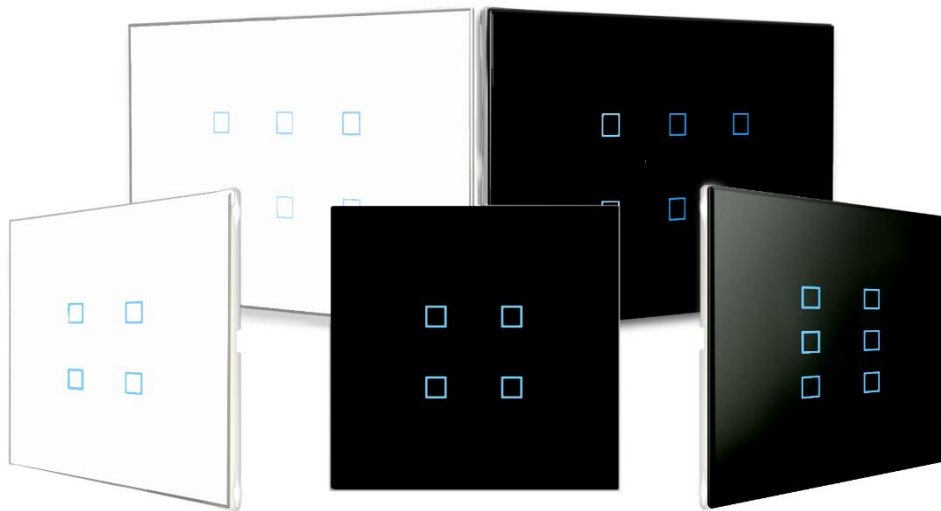




# **Application Manual**

## **Gemma KNX**

### **Pushbutton**



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### 1. General information

In this manual are described the application details of Gemma KNX.  
In the document there is the description and the riferiment guide for the device functionality and for application programming.  
In the technical data sheet od device there are mechanical and electrical details

### 2. Product description

The Vivo panel Gemma KNX is a capacitive device KNX for the command on/off of utilities, the dimmeration of lighting equipment, the control of motorized drivers or other programming function of command and control. The device is equipped with a integrated communication form bus KNX and is made for mounting on a recessed wall box. Every channel can be programmed freely to do 1 o 2 functions on bus and has programmable LEDs, for example as state signaling or night orientation light. When a button is pressed, the device send a telegram on the bus, which is received ad executed by one or more KNX actuators depending on the programming carried out. The product is powered with a SELV 30 Vdc voltage by the KNX bus and not need of auxiliary power supply.

Many of these funtions use the ability to identify the long contact for do other action.

The pannel is equipped with a blue back light for every command and a white light along the trasparent outer edge. The pannel is equipped with an acustic buzzer and a freely programmable proximity sensor for simplify its use.

### 3. Operating, signaling and connection elements

The device is designed for wall mounting on a round or square recessed box.

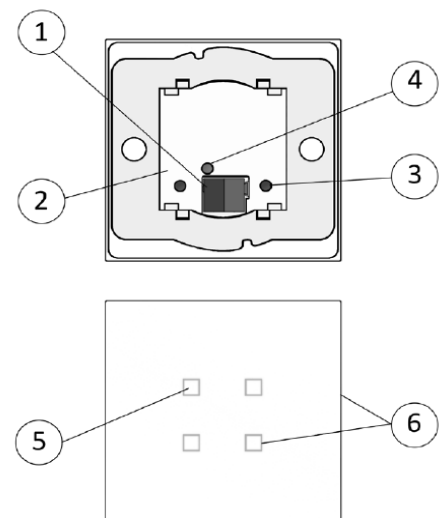
The device is equipped with buttons for the independent drive, and of programmable LEDs for every channel.

Command elements:

- Button (3) for the switching between normal operation and programming modes
- Capacitive buttons (5) for the independent command of groups of users

Reporting elements:

- Red LED (4) for ithe ndication of the active mode (ON = programmation, OFF = normal operaion)
- LED with light guide (6) freely programmable; for example for status of controlled users and for night light



### 3.1 Providing

The supply of the appliance including the plastic support, the fixing screws and the terminal for connection to the KNX bus.

the plastic support, the fixing screws and the terminal for connection to the KNX bus are included in the supply of the device.

### 3.2 Accessories

The device must be completed with the addition of matching plates a civil series Legrand/Bticino Axolute.

External dimension 80x80      120x80mm  
Internal dimension 45x45      68x45mm

Code	Description
K.GEM.01T.25W.WO	GEMMA KNX Square plate White
K.GEM.01T.25B.WO	GEMMA KNX Square plate Black
K.GEM.02T.25W.WO	GEMMA KNX Rectangular plate White
K.GEM.02T.25T.WO	GEMMA KNX Rectangular plate Black

### 3.3 Pushbuttons versions

Set code	Size	Nr.	Dim. L x H [mm]
K.GEM.01P.25x.WO	Square	4	80 x 80
K.GEM.03T.35x.WO	Rectangular	3	120 x 80
K.GEM.02P.25x.WO	Square	6	80 x 80
K.GEM.04P.25x.WO	Rectangular	6	120 x 80
K.GEM.07P.25x.WO	Rectangular	8	120 x 80

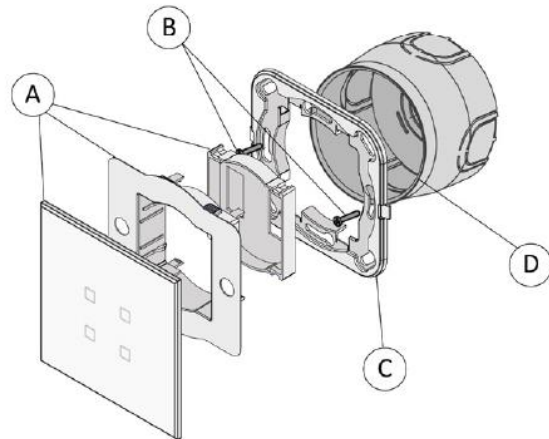
### 3.4 Installation

The device has IP20 protection rating so, its suitable for use in dry environments.

To install it, carry out the following operation:

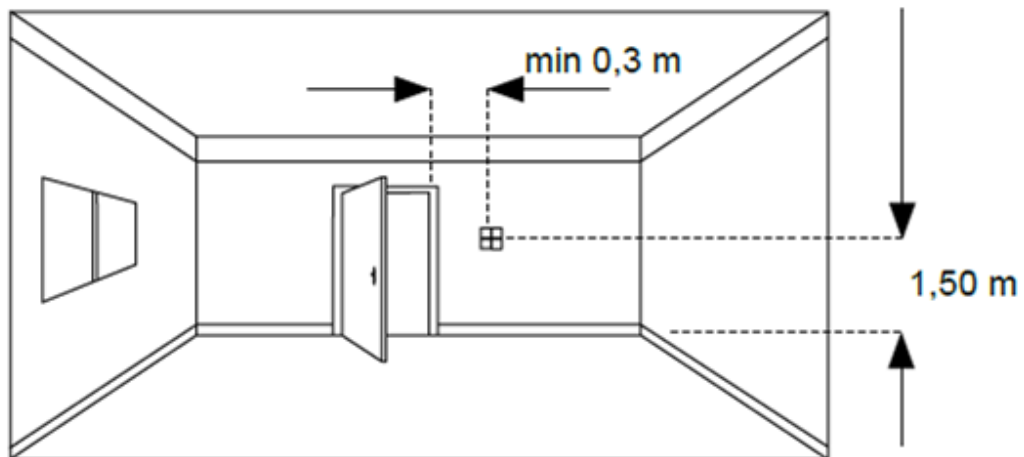
- Fix the plastic support (C) using the pair of screws (B) on the recessed wall box (D) with special holes;
- Insert the bus terminal, previously connected to the bus cable (see: "Connection to the KNX bus network"), in the appropriate location on the back of the device;
- At this point it is advisable to commission the device (see "Commissioning") or at least the download of the physical address;
- Snap the panel into place (A).

- A) Pushbutton (glass, support, closing);
- B) Fixing screws (for plastic support);
- C) Support;
- D) Recessed box (not of supply Vivo).



**Mounting position:**

The device must be installed preferably on an inside wall at the height of 1,5 m and at least 0,3 m of distance away the doors. The device can not be installed near heat sources such as radiators or appliances, or in location subject to direct solar irradiation.



### 3.5 Connection

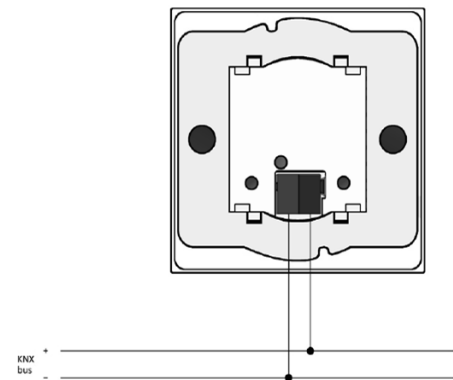
For its operation the device must be connected to the bus line and addressed, configured and put into service using the ETS software (**Engineering Tool SoftWare**).

#### 3.5.1 Connected to the KNX bus network

The connection to the bus network happen using the KNX clamp (1) included in the supply and inserted in the appropriate place located on the back of the appliance.

Characteristics of the KNX clamp:

- Spring tightening of conductors
- 4 conductive seats for each polarity
- Suitable for KNX bus cable with singlewire conductors with a diameter between 0,6 and 0,8 mm
- Conductive peeling recommended ca. 5 mm
- Color coding:
  - red = conductor bus+ (positive)
  - black = conductor bus - (negative)

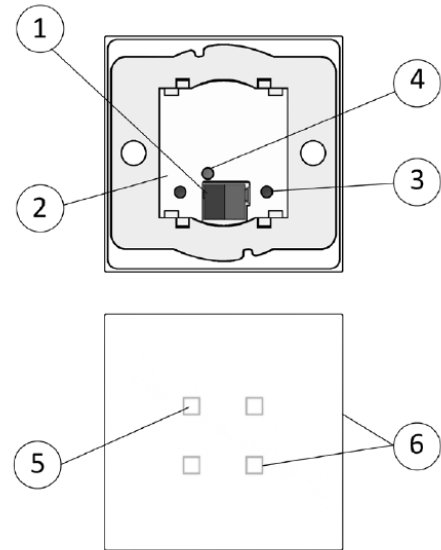


### 3.6 Operating, signaling and connection elements

The keyboards are equipped with a blue backlight behind each button and a white backlight along the transparent edges to illuminate the wall. Both are controllable with appropriate ETS communication objects. The device is equipped with a buzzer, programmable with ETS, with the aim of offering the best acoustic feedback.

The interface is also equipped with a proximity sensor to turn on when the user's hand approaches. The IP20 container is designed to be positioned inside junction boxes intended to house the civil series

- 1) KNX bus line connection terminal
- 2) Label
- 3) Programming button
- 4) Programming LED
- 5) Pushbutton panel
- 6) LED light diffusion guides



#### 4. Configuration

The configuration and the commissioning of the appliance requires the use of the ETS program (Engineering Tool Software) V4 or later versions. These activities must be carried out in accordance with the project of the automation system built by a qualified professional.

To configure the device parameters, the corresponding application program of the entire Vivo product database must be loaded into the ETS program. For detailed information on parameterization option, refer to the device application manual available at [www.vivoknx.com](http://www.vivoknx.com)

#### 5. Programming and commissioning

The following activities are required for commissioning device:

- Make the electrical connections as indicated before;
- Give power to the bus;
- Switch the appliance operation to programming mode by pressing the appropriate button on the front of the appliance. In this mode operating the programming LED is on;
- Download the physical address and configuration via the ETS program to the device.

At the end of the download, the operation of the appliance automatically returns to normal mode; in this operating mode the programming LED is off. The bus device is programmed and ready for operation.

## 6. Table of technical information

TECHNICAL SPECIFICATION	
Power supply	30 Vdc from KNX bus line
Current consumption from bus	< 15 mA
Maximum output from bus	n. d.
Classification	Climate: 3K5 – Mechanical: 3M2 (EN 50491-2)
Pollution degree	2 (based on IEC 60664-1)
Protection Rating	IP20
Installation	Wall installation in round or squared flush mounting box
Size	80x80x36mm 120x80x36mm - 100g
AMBIENT TEMPERATURE RANGE	
Operation	from -5°C to 45°C
Storage	from -25°C to 55°C
Transportation	from -25°C to 70°C
Relative humidity (non condensing)	95%
Standards	EMC: EN61000-6-1:2007, EN61000-6-3:2007+A1:2011, EN62479:2010 LVD: EN50428:2005+A2:2009, RoHS: EN50581:2012

## 7. Description of the operation

The main functional features are:

- Control and dimming of lighting fixtures;
- Control of motorized drives for blinds (such as blinds, curtains, venetian blinds or roller shutters);
- Sending values;
- Switch to forced operation (lock);
- Recall and memorize scenarios;
- Different programmable functions for short/long press of a button;
- Signaling with configurable LEDs as status indication or night-time orientation light;
- Exclusionable acoustic signaling;

### 7.1 Other characteristics:

- Plastic case;
- Version for wall mounting;
- Degree of protection IP20 (device installed);
- 3K5 climatic classification and 3M2 mechanics (according EN 50491-2);
- Pollution degree 2 (according to IEC 60664-1);
- 100 g weight;
- Dimensions 80 x 80 x 36 mm (version square) 120x80x36 (version rectangular)



Environmental condition:

- Operating temperature: - 5 ... + 45°C
- Storage temperature: - 25 ... + 55°C
- Transport temperature: - 25 ... + 70°C
- Relative humidity: 95% non condensing

## 7.2 Functionality

The Vivo Gemma KNX entrance panel is a device for on/off switching of utilities, such as dimming of luminaires, control of motorized drives or other programmable control and command functions.

Each channel can be freely programmed to perform functions on the bus, and has programmable LEDs, for example as a status indicator or night-time light.

The device is equipped with a proximity sensor and a freely programmable buzzer for managing internal LEDs or other functions.

## 7.3 Buzzer

The device is equipped with a buzzer, programmable with ETS, in order to offer the best acoustic feedback at the execution of a command. The buzzer can be disabled at any time.

## 7.4 Keypad lock

When the Keypad lock is enabled, keyboard operation is blocked, for example when cleaning the glass surface.

## 7.5 Back light

The Back light can always remain off (OFF), or always on (ON), or it can be controlled by communication objects.

Alternatively it can be activated automatically, thanks to a proximity sensor that turns it on when the approach of the hand is detected. In this case it is to define a time elapsed which then the Back light goes out.

## 7.6 Switch mode

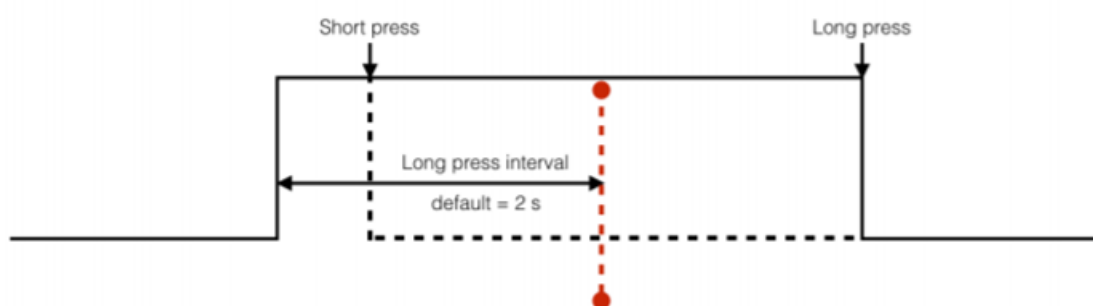
The Switch mode allows you to send a KNX telegram in one of the possible events related to finger contact with the keyboard.

By defining a contact type of the normally open type, the telegram will be transmitted at the beginning of the contact between finger and keyboard.

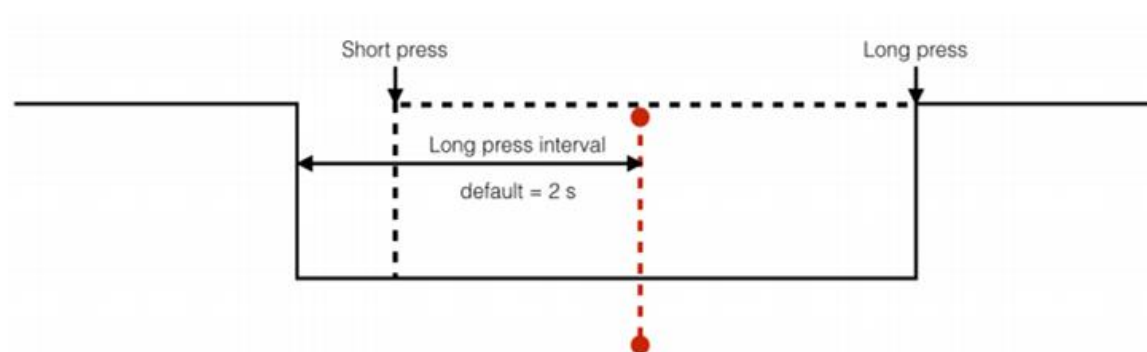
By defining a contact type of normally closed type, the telegram will be transmitted at the end of the contact between finger and keyboard, or when the finger moves away.

Each time the keypad is touched, a telegram starts, the value of which can be specified by the Short press function parameter.

Long press function can be activated. This allows two distinct events to be managed with each input present: a KNX command with short pressure and a KNX command with long press.



In the event that the Contact Type is normally closed, operation is reversed.



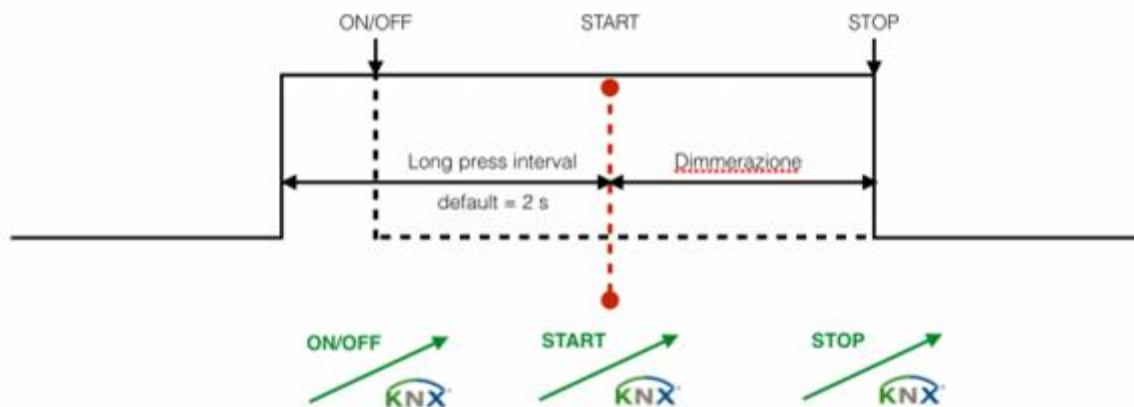
### 7.7 Dimmer mode

The function is suitable for controlling the brightness of a dimmable light.

The Dimmer function is one of those modes that automatically enables the use of the Long press function to have a second command. The Short command is dedicated to turning on and off the light, while the Long command is dedicated to adjusting the brightness.

This means that to turn the light on and off, a brief touch will suffice, while if I want to adjust the brightness I will have to hold it down until I get the desired brightness.

After the time required to activate the Long command, the telegram will be sent with the START dimmer command. When I have obtained the desired brightness I can release the button automatically causing the STOP dimming command to be sent.



### 7.8 Scene mode

This function allows the control of KNX scenarios. Controlling a KNX scenario means being able to recall it if necessary or to save a new configuration.

Each scenario is defined by an identification number (ID) that can vary between 1 and 64.

This command is assigned to the Short function. Therefore, every time I make a short press, the configured scenario will be recalled.

The sending of the storage command is assigned to the Long function. Therefore, every time I make a long press, a new memorization of the scenario will be commanded.

This function can be enabled or disabled with the Enable long press function.

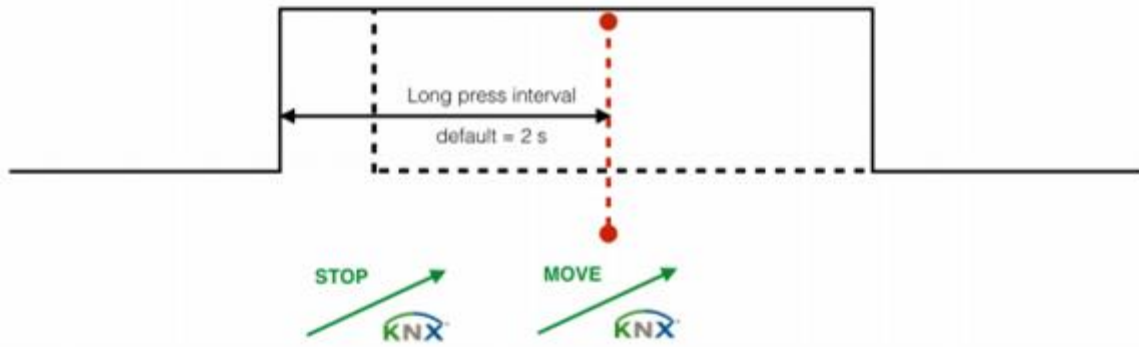
### 7.9 Blind - shutter mode

This is the function that allows the control of the shutters and blind actuators.

The main characteristic of the control of a Venetian blind-shutter consists in the fact that it is carried out through two different addresses: the first that controls the movement of the shutter, while the second one controls the shutter stop and the movement of the Venetian blind.

The STOP command is assigned to the Short function, while the MOVE command is assigned to the Long function.

So every time I make a short pressure, stop the movement of the shutter and every time I press long, I put the shutter in motion.



This allows the shutter to run all the way down without having to hold down the button. The moment you want to stop it first you can make a short pressure.

### 7.10 Energy saving mode

After a set time interval, the keypad enters the power saving state, ie, the backlight is switched off until it is used again

## 8. Library ETS

### 8.1 Device settings

Nr. Obj. Comp.	Object name	Conditions	Size	Flags	DPT
0	Button 1	Switching	1 bit	C-W-T-U	[1.001] switch
1	Button 2	Switching	1 bit	C-W-T-U	[1.001]switch h
2	Button 3	Switching	1 bit	C-W-T-U	[1.001] switch
3	Button 4	Switching	1 bit	C-W-T-U	[1.001] switch
24	Button 1	LED Comand	1 bit	C-W-U	[1.001] switch
25	Button 2	LED Comand	1 bit	C-W-U	[1.001] switch
26	Button 3	LED Comand	1 bit	C-W-U	[1.001]

					switch
27	Button 4	LED Comand	1 bit	C-W-U	[1.001] switch

## 8.2 Energy saving

Parameter name	Conditions	Value
Energy saving	Backlight = disabled	<b>Able</b> Disabled
	<i>Active after a set time</i>	
Back light	-	<b>Able</b> Disabled

Nr. Obj. Comp.	Object name	Conditions	Size	Flags	DPT
30	Back light	Control	1 bit	C-W-T-U	[1.001] switch

## 8.3 Shutter/Blinds

Nr. Obj. Com.	Parameter name	Conditions	Size.	Flags	DPT
6	Shutter up/down	Type = shutter/blinds	1 bit	C-W-T-U	[1,008]Up/down
		<i>Move the shutter up to open or close it completely</i>			
0	Stop shutter	Type = shutter/blinds	1 bit	C-W-T-U	[1.001] switch
		<p><i>Stop any movement of the shutter. It is sent to the short pressure if the "Venetian blind" mode is disabled, or at the end of a long press if the "Venetian blind" mode is enable.</i></p>			

## 8.4 Dimmerazione

Nr. Obj. Com.	Object name	Conditions	Size	Flags	DPT
0	Switching command	Type = dimmering	1 bit	C-W-T-U	[1.001] switch
12	Dimming control up/down/stop	Type = dimmering	4 bit	C-T	[3,007] switch
		<p><i>Sends a light intensity change (increase or decrease) command to a dimmer. The increase and decrease are sent after a long pressure of the key, while the stop at the release of the key</i></p>			

## 8.5 Proximity sensor

Nr. Obj. Com.	Object name	Conditions	Size	Flags	DPT.
37	Proximity sensor	Type = proximity sensor	1 bit	C-W-U	[1.001] switch
		<i>Send a power-up command to the backlight. The command is sent following a hand detection.</i>			

## 8.6 Buzzer

Nr. Obj. Com.	Object name	Conditions	Size	Flags	DPT.
31	Buzzer	Enable	1 bit	C-R-T	[1.001] switch
0	Stop shutter	Type = shutter/blinds	1 bit	C-W-T-U	[1.001] switch

## 8.7 Keypad Lock

Nr. Obj. Com.	Object name	Conditions	Size	Flags	DPT.
68	Pushbutton	Enable	1 bit	C-W-U	[1.001] switch
69	Pushbutton	Status arrest	1 bit	C-R-T	[1.001] switch

## 8.8 Mode scenery

Nr. Obj. Com.	Object name	Conditions	Size	Flags	DPT.
18	Scene 1	Value	1 bit	C-R-T	[1.001] switch
19	Scene 2	Value	1 bit	C-R-T	[1.001] switch
20	Scene 3	Value	1 bit	C-R-T	[1.001] switch
21	Scene 4	Value	1 bit	C-R-T	[1.001] switch