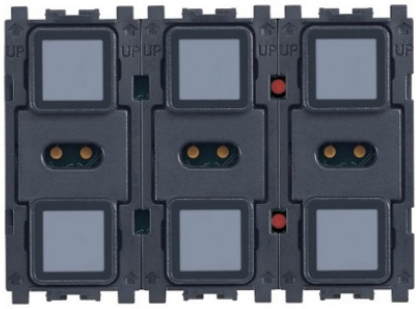
Installer manual



21125

Electronic control unit, 8 non-polarised inputs,
7 solid-state outputs for non-polarised contacts

Contents

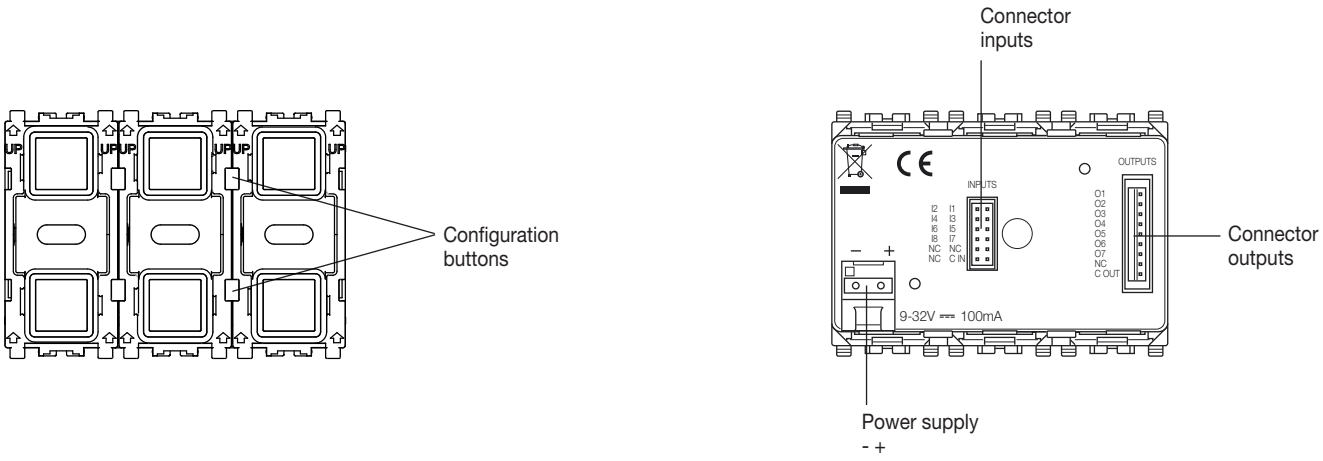
1. General description

Electronic unit, 8 non-polarised inputs, 7 solid state outputs for non-polarised contacts, configurable RGB LED backlighting, 9-32 Vdc power supply, for external/internal hotel room or cabin applications, to be completed with Eikon Tactil labels and cover plate - 3 modules.

2. Characteristics

- Power supply:
  - Supply voltage: 9-32 Vdc SELV
  - Max absorbed power in power supply input: 0.9 W
- Inputs:
  - Input activation voltage: 5-32 Vdc
  - Signal frequency PWM input 7: 400 kHz (if you wish to change the current colour settings of the LEDs)
- Outputs:
  - Voltage that can be controlled by the outputs: 40 V
  - Current that can be controlled by each individual output: 100 mA

FRONT AND BACK VIEW

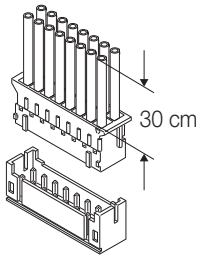


3. Connections

N.B. The conductors of the inputs and outputs can be extended up to at most 50 m (minimum section 0.33 mm²).

3.1 Inputs

The inputs connector is of the type JST PHDR-12VS.



These are live inputs (they can be controlled directly using the supply voltage) and are all referred to the common contact of pin 11.

The inputs are non-polarised and can be activated with positive or negative currents, and therefore by push-pull, open collector, open-emitter or voltage-free contacts.

- Internal room input wiring.

Input 2 (Pink) Do not connect	2	1	Input 1 (Orange) Do not connect
Input 4 (Brown) Do not connect	4	3	Input 3 (Green) Do not connect
Input 6 (Black) Do not connect	6	5	Input 5 (Purple) Do not connect
Input 8 (Grey) Do not connect	8	7	Input 7 (White) Colour of all LEDs in the device
Input 10 (Blue) Do not connect	10	9	Input 9 (Red) Do not connect
Pin 12 (Yellow) Do not connect	12	11	Pin 11 (White/Red) Inputs common

- External room input wiring.

  IMPORTANT: Connect input 8 as “always active”, otherwise the device will work as the internal room.

Input 2 (Pink) OUT - Client out of room	2	1	Input 1 (Orange) IN - Client in room
Input 4 (Brown) Do not connect	4	3	Input 3 (Green) Do not connect
Input 6 (Black) DO NOT DISTURB	6	5	Input 5 (Purple) RE-DO ROOM
Input 8 (Grey) Connect, always active	8	7	Input 7 (White) Colour of all LEDs in the device
Input 10 (Blue) Do not connect	10	9	Input 9 (Red) Do not connect
Pin 12 (Yellow) Do not connect	12	11	Pin 11 (White/Red) Inputs common

Input 7 can be PWM controlled and this makes it possible to set the colours of all the LEDs of the device (see the paragraph "LED Configuration").

3.1.1 Input connection

The inputs are not polarised and are isolated from the device's supply voltage by functional isolation (non-reinforced); this allows the connection of input signals with reference voltages that differ from the supply voltage of the 21125 electronic control unit, provided they have SELV power supplies.

A PWM signal can be connected to input 7.

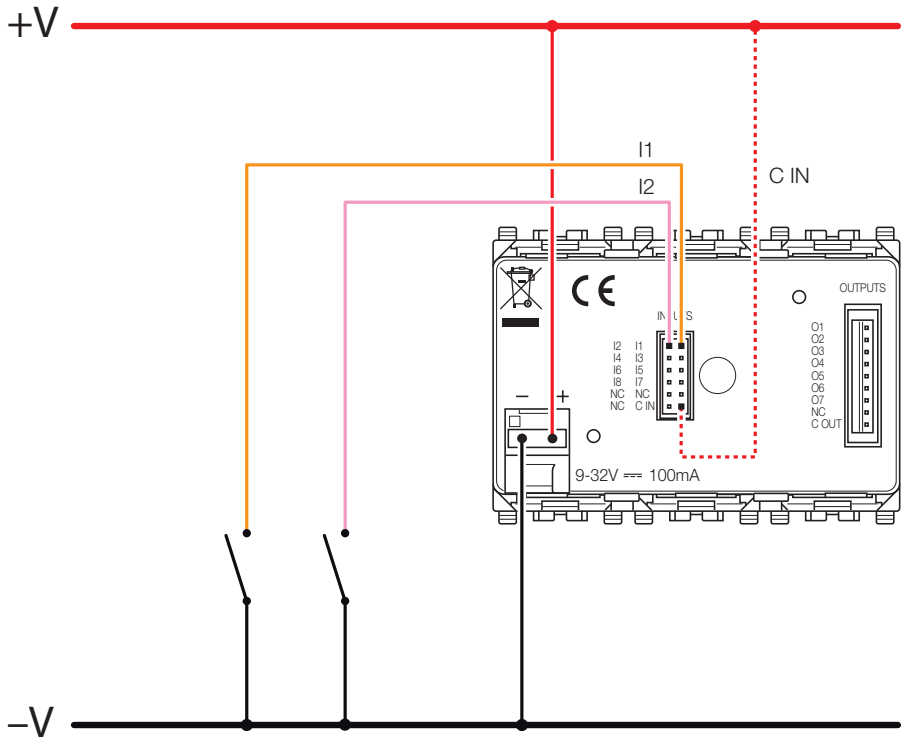
Illustrated below are two examples of the wiring layouts that can be achieved.

Example 1: Connection via contacts that close to the power supply negative (-) (most frequently used case).

The inputs can be connected to the device's power supply negative (-) by means of a switch.

Open collector outputs of a third-party device can be used as switches, provided it is checked beforehand that these outputs have appropriate maximum voltage and current values.

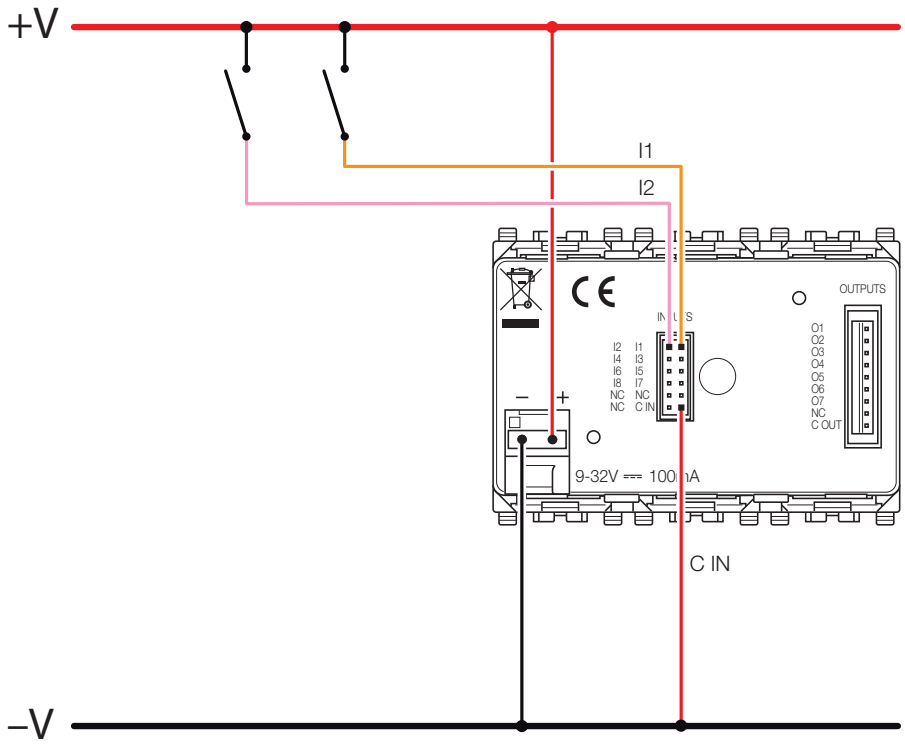
The inputs common is to be connected directly to the power supply positive (+).



Example 2: Connection via contacts that close to the power supply positive (+) (the opposite to the previous example).

The inputs can be connected to the device's power supply positive (+) by means of a switch.

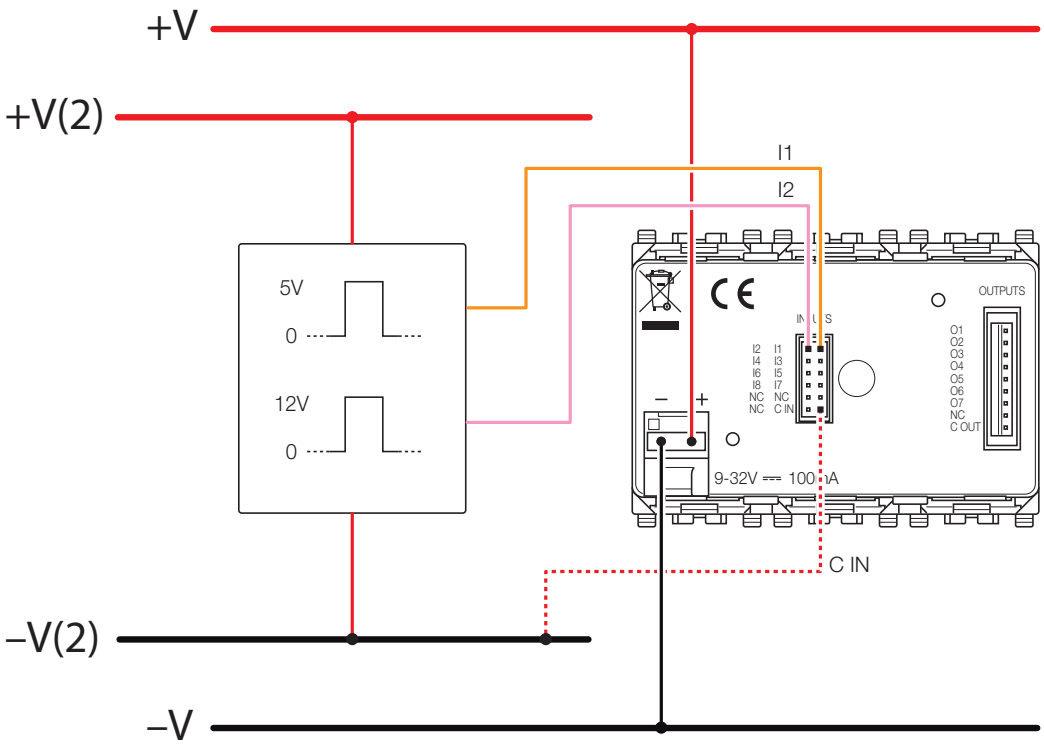
The inputs common is to be connected directly to the power supply negative (-).



Example 3: Connection with a signal generator with different voltage references.

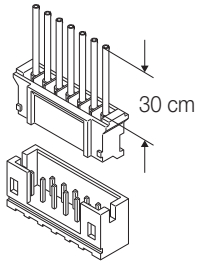
The inputs can be connected directly to a third-party device that provides an output with voltage and current values compatible with the inputs of the 21125 electronic control unit.

The inputs common is to be connected directly to the negative (-) of the power supply of the third-party device.



3.2 Outputs

The outputs connector is of the type JST PHR-9.



The outputs are non-polarised solid state (volt-free contact) and are all referred to the common on pin C.

The outputs can be used to control signals but are not suitable for controlling loads (for example, thee coils of large relays or contactors, high-power LED lights, etc.).

- Internal room output wiring.

1	Output 1 (Orange) DO NOT DISTURB
2	Output 2 (Yellow) RE-DO ROOM
3	Output 3 (Green) Do not connect
4	Output 4 (Blue) Do not connect
5	Output 5 (Purple) Do not connect
6	Output 6 (Grey) Do not connect
7	Output 7 (White) Do not connect
8	Output 8 (Black) Do not connect
C	Pin C (Red) Outputs common

- External room output wiring.

1	Output 1 (Orange) Do not connect
2	Output 2 (Yellow) Do not connect
3	Output 3 (Green) Do not connect
4	Output 4 (Blue) Door bell
5	Output 5 (Purple) Do not connect
6	Output 6 (Grey) Do not connect
7	Output 7 (White) Do not connect
8	Output 8 (Black) Do not connect
C	Pin C (Red) Outputs common

3.2 1 Output connection

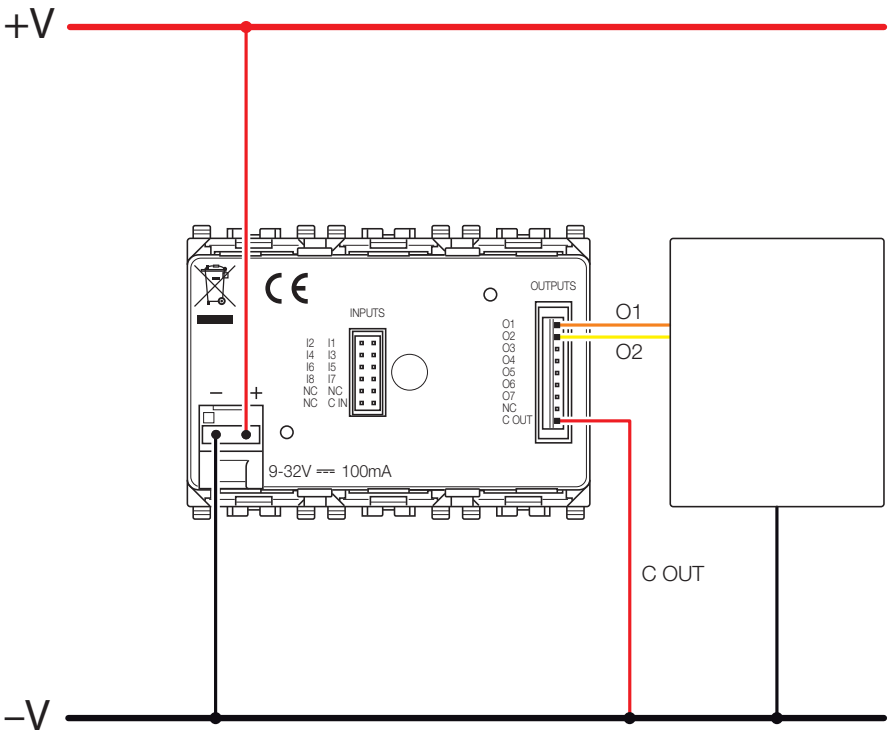
The outputs are not polarised and are isolated from the device's supply voltage by functional isolation (non-reinforced); this allows the connection of output signals with reference voltages that differ from the supply voltage of the 21125 electronic control unit, provided they have SELV power supplies.

Illustrated below are two examples of the wiring layouts that can be achieved.

Example 1: Connection with output contacts that close to the power supply negative (-) (most frequently used case).

The outputs can be connected to a third-party device with internal pull-up inputs.

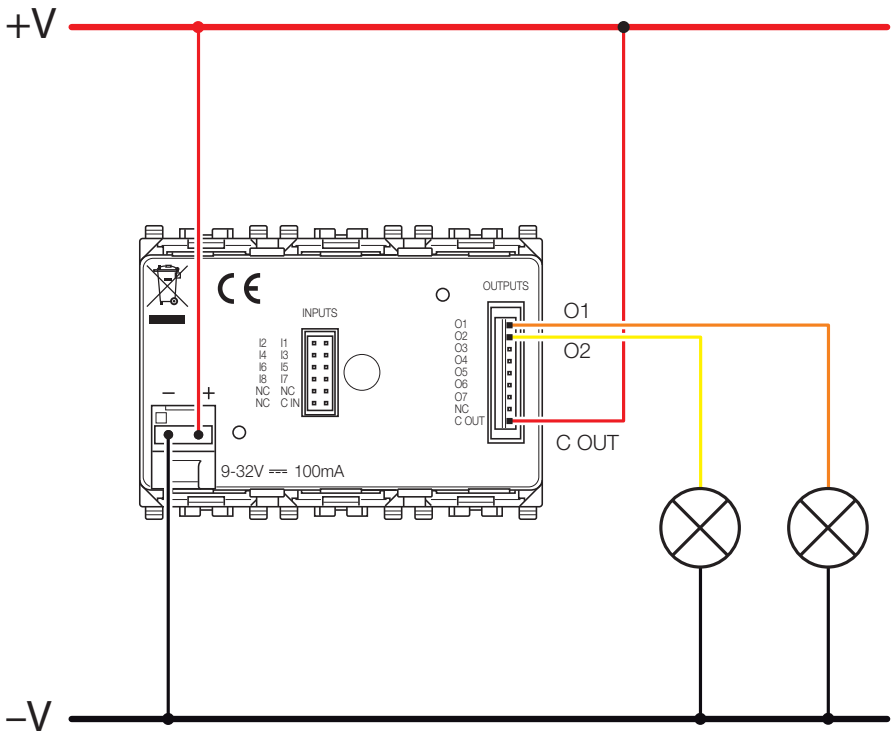
The outputs common is to be connected directly to the power supply negative (+).



Example 2: Connection of small indicator lights.

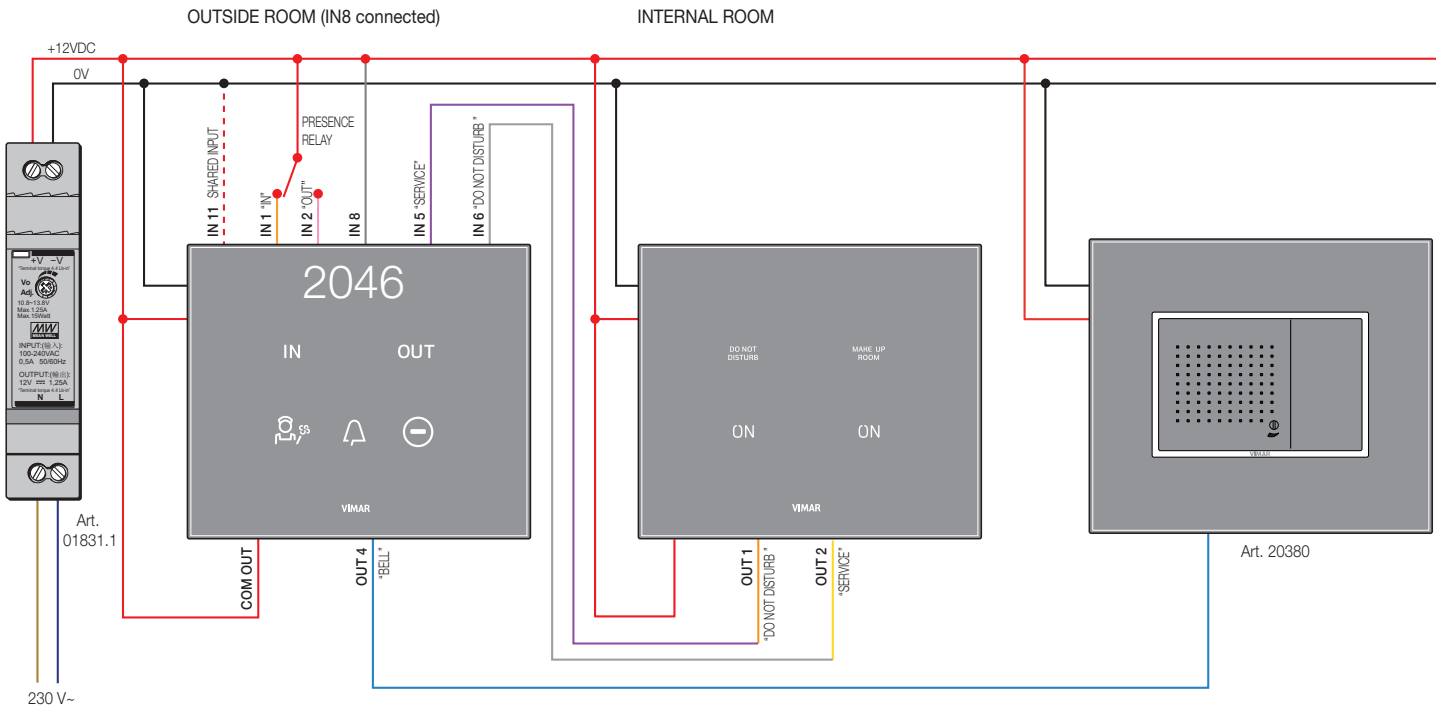
The outputs can be connected to indicator lights with characteristics compatible with the maximum voltage and current values of the 21125 electronic control unit.

The outputs common is to be connected directly to the power supply positive (+).



Connections

Typical example of room connections (inputs and outputs).



Note: The IN7 input is not connected; the LED colour has been set manually using the device.

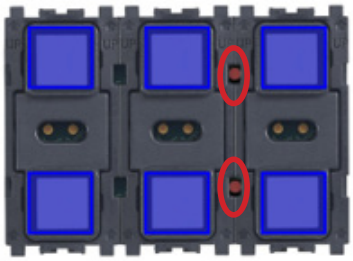
4. RGB LEDs and pushbuttons

4.1 RGB LEDs

The device is equipped with 6 RGB LEDs (the colours of the LEDs are configured via a signal on input 7 or via the local programming procedure) and the symbols displayed on the cover plate 21663 can be customised using the specific labels.

4.2 Pushbuttons

When the cover plate is not fitted, the 21125 electronic control unit presents six physical pushbuttons (shown in blue) and two configuration pushbuttons (shown in red).



Once the cover plate has been fitted to the control, the 6 touchscreen buttons (shown in blue) can be used independently of each other.

5. Device configuration

Caution: all the procedures described below musty be carried out using the physical pushbuttons, and therefore without the cover plate fitted to the device.

5.1 Setting the colours of the LEDs

The colours of the LEDs can be configured in two different ways:

- via signal on input 7;
- via local programming procedure.

5.1.1 Configuration via input 7

By providing a signal at input 7 and modulating the pulse width, it is possible to configure the colours of all the LEDs, as indicated in the table below.

Modulation %	LED colour
0 - 13	Custom colour saved to memory (see paragraph 5.1.2)
14 - 27	Blue
28 - 39	Green
40 - 51	Red
52 - 63	Magenta
64 - 75	Cyan
76 - 87	Amber
88 - 100	White

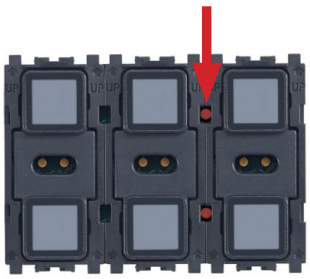
As input 7 has a read error of ± 3% it is advisable to generate an amplitude modulation equal to the average value of the indicated intervals (for example 45% for Red).

This configuration method is useful for centralised systems where there is a requirement to change the colours of the LEDs quickly.

5.1.2 Configuration via local programming procedure

If input 7 is not activated or if the signal provided has a pulse width modulation of less than 14%, the colours of the LEDs may be set using the following procedure:

1. Long press the upper configuration button; the device will illuminate all the LEDs with the colour currently saved to memory.



At this point it is possible to modify the colour of each individual LED.

2. Short press the pushbutton for which you want to set the colour of the relative LED; each press of the pushbutton will cycle through the available colours in the sequence Amber - White - Blue - Green - Red - Magenta - Cyan.

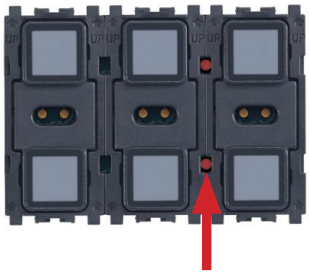
   With a long press on one of the pushbuttons, all the LEDs will cycle simultaneously through the sequence Amber - White - Blue - Green - Red - Magenta - Cyan.

3. Once all the desired colours have been selected, long press the upper configuration button to save the settings to memory.

N.B. If no operations are performed within the timeout of 10 s, the device will quit the LED configuration procedure without saving any changes made.

5.2 Device setup

Long press the upper configuration button; the device will illuminate all the LEDs with the colour white displaying the functions currently saved to memory.



The illumination of the LEDs corresponds to a precise function, as shown in the following table:

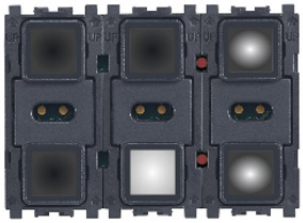
	Left module	Central module	Right module
Upper pushbutton	Always off	High sensitivity (default value)	LED brightness in standby
Lower pushbutton	Always off	Low sensitivity	LED brightness in standby

- The LEDs of the central module indicate the sensitivity of the touchscreen when the device is used in combination with a cover plate; if the upper centre LED is on, sensitivity is high, and if the lower centre ED is on, sensitivity is low.
  To select the desired behaviour, simply press the relative pushbutton (the two central pushbuttons are mutually exclusive).
- The LEDs on the right module indicate the brightness of he the LEDs in standby; pressing the upper right pushbutton increases the brightness, while pressing the lower right pushbutton decreases it.
  The available options are: **LEDs off**, **minimum brightness (default)**, **medium brightness**, **maximum brightness**.
  The brightness of the LEDs changes immediately to show the new setting

Once all the desired options have been selected, long press the lower configuration button to save the settings to memory.

N.B. If no operations are performed within the timeout of 10 s, the device will quit the setup configuration procedure without saving any changes made.

Example.
The device illustrated below is set to low sensitivity and, when in standby, the LEDs illuminate with minimum brightness.



5.3 Factory reset

Simultaneously long pressing all six pushbuttons resets the device to the factory settings; all other settings will be deleted.

6. Operation

The device has two operating modes:

- Internal room.
- External room.

The operating mode is selected by activating or not activating input **8**; if it is active the external room function is on, vice versa the internal room function is on.

6.1 Internal room

In this case the device is installed in the room and is used to enable the “DO NOT DISTURB” and "MAKE UP ROOM” signals.

Only the following are used:

- 4 signalling LEDs (the 2 LEDs in the left-hand module and the 2 LEDs in the right-hand module).
- 2 push buttons (lower left and upper right).
- 2 outputs (O1 and O2).

	Left module	Central module	Right module
Upper pushbutton	DO NOT DISTURB push button	Always off	MAKE UP ROOM push button
Lower pushbutton	DO NOT DISTURB indicator	Always off	MAKE UP ROOM indicator

The device is normally in standby condition.

6.1.1 Standby

The colour and brightness of the LEDs is that set during configuration.

- Lower left LED:
  - Off if the DO NOT DISTURB signal is not active.
  - On at set brightness for standby if the signalling is active.
- Lower right LED:
  - Off if the MAKE UP ROOM signal is not active.
  - On at set brightness for standby if the signalling is active.
- Outputs O1 and O2 follow the DO NOT DISTURB and MAKE UP ROOM signals respectively.
- If a hand enters the proximity detection area, the device will be activated.

6.1.2 Activated

The colour and brightness of the LEDs is that set during configuration.

- The upper left and upper right LEDs come on at full brightness.
- Lower left LED:
  - Off if the DO NOT DISTURB signal is not active.
  - On at full brightness if the signalling is active.
- Lower right LED:
  - Off if the MAKE UP ROOM signal is not active.
  - On at full brightness if the signalling is active.
- Press the upper left push button to enable/disable the DO NOT DISTURB signal.
- Press the upper right push button to enable/disable the MAKE UP ROOM signal.
- Outputs O1 and O2 follow the DO NOT DISTURB and MAKE UP ROOM signals respectively.
- 10 s after the hand is withdrawn from the proximity area, the device returns to standby.

6.2 External room

In this case the device is installed outside the room and is used as a door bell and shows the “DO NOT DISTURB” and “MAKE UP ROOM” signals.

Only the following are used:

- 5 signalling LEDs (the 2 LEDs in the left-hand module, the lower central LED and the 2 LEDs in the right-hand module).
- 1 push button (lower centre).
- 1 output (O4).
- 4 inputs (I1, I2, I5 and I6).

	Left module	Central module	Right module
Upper pushbutton	IN	Always off	OUT
Lower pushbutton	MAKE UP ROOM indicator	Door bell	DO NOT DISTURB indicator

The device is normally in standby condition.

6.2.1 Standby

The colour and brightness of the LEDs is that set during configuration.

- upper left LED (IN = client in room):
  - Off if input I1 is not active.
  - On at set brightness for standby if I1 is active.

- lower left LED (MAKE UP ROOM):
  - Off if input I5 is not active.
  - On at set brightness for standby if I5 is active.
- upper central LED: always off.
- lower central LED (door bell):
  - Off if input I6 is active (DO NOT DISTURB).
  - On at set brightness for standby if I6 is not active.
- upper right LED (OUT = client out of room):
  - Off if input I2 is not active.
  - On at set brightness for standby if I2 is active.
- lower right LED (DO NOT DISTURB):
  - Off if input I6 is not active.
  - On at set brightness for standby if I6 is active.
- If a hand enters the proximity detection area, the device will be activated.

6.2.1 Activated

The colour and brightness of the LEDs is that set during configuration.

- upper left LED (IN = client in room):
  - Off if input I1 is not active.
  - On at full brightness if I1 is active.
- lower left LED (MAKE UP ROOM):
  - Off if input I5 is not active.
  - On at full brightness if I5 is active.
- upper central LED: always off.
- lower central LED (door bell):
  - Off if input I6 is active (DO NOT DISTURB).
  - On at full brightness if I6 is not active.
- upper right LED (OUT = client out of room):
  - Off if input I2 is not active.
  - On at full brightness if I2 is active.
- lower right LED (DO NOT DISTURB):
  - Off if input I6 is not active.
  - On at full brightness if I6 is active.
- 10 s after the hand is withdrawn from the proximity area, the device returns to standby.

Note: The only push button used in the lower central one (door bell). Pressing this push button (touch or physical), the device will activate output O4 for as long as the button is pressed; if the DO NOT DISTURB signal is enabled (I6 active) output O4 is disabled.

7. Installation rules

Installation should be carried out by qualified personnel in compliance with the current regulations regarding the installation of electrical equipment in the country where the products are installed.

8. Regulatory compliance

EMC Directive.
Standard EN 60669-2-1.

WEEE - Information for users

If the crossed-out bin symbol appears on the equipment or packaging, this means the product must not be included with other general waste at the end of its working life. The user must take the worn product to a sorted waste center, or return it to the retailer when purchasing a new one. Products for disposal can be consigned free of charge (without any new purchase obligation) to retailers with a sales area of at least 400 m^2, if they measure less than 25 cm. An efficient sorted waste collection for the environmentally friendly disposal of the used device, or its subsequent recycling, helps avoid the potential negative effects on the environment and people's health, and encourages the re-use and/or recycling of the construction materials.

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