SMH-Combo　KNX Integration Module

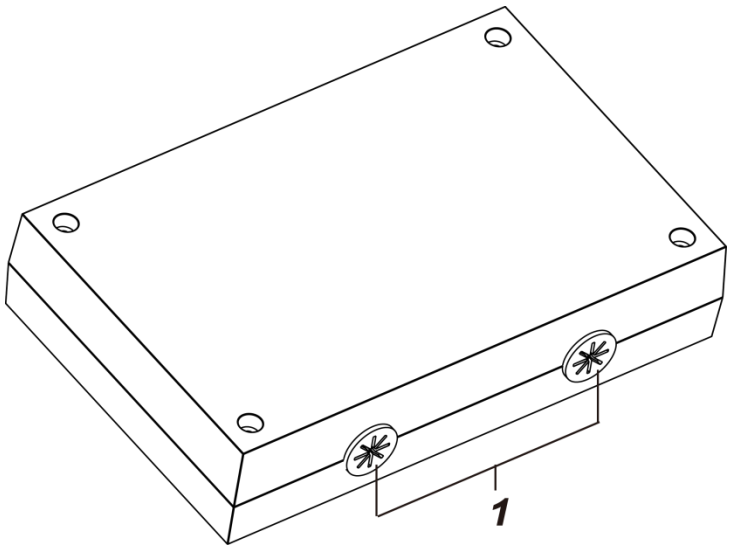
SMH-COMBO is an RF and BUS module that is designed to be connected to EELECTRON IO42E01KNX input and outputs interface device to provide integration of the Climax security system with KNX Home automation system.

SMH-COMBO can be set to communicate to the Climax Control Panel via BUS or RF according to jumper setting. The EELECTRON IO42E01KNX is powered by and communicates to the KNX system via bus EIB/KNX.

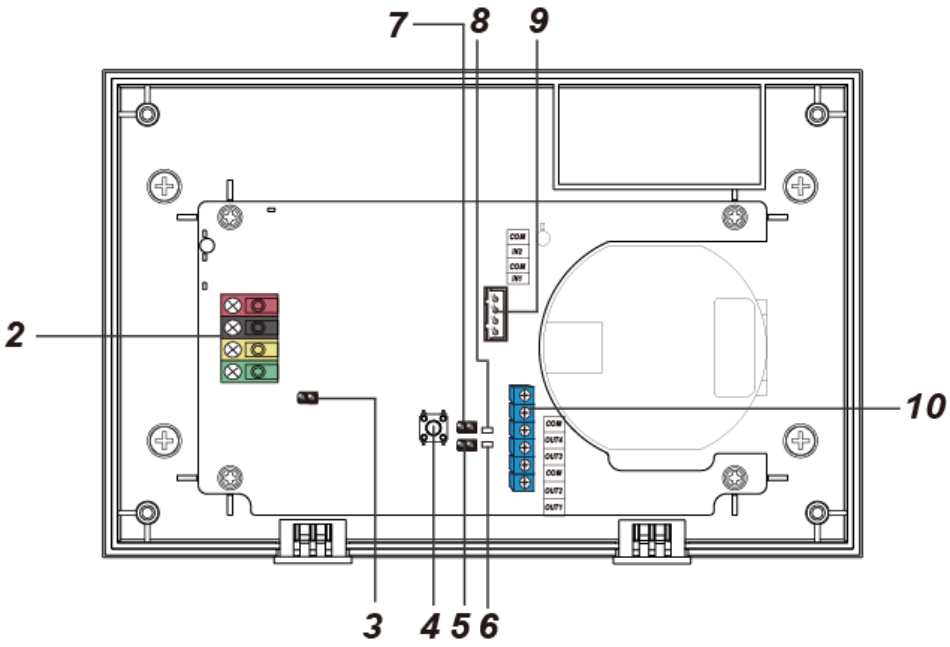
Including inputs and outputs that allow for changing mode, panel status reporting, triggering a programmed scene, and turning on/off devices, the SMH-COMBO and the EELECTRON IO42E01KNX serve as a bridge of bidirectional communication between Climax security system and KNX Home automation system.

Identifying the parts

External View



Internal View



1. **Wiring Holes**
2. **Pluggable BUS Terminal**
3. **Terminal Resistor Jumper Switch**

   When SMH-COMBO is connected as the furthest BUS device on a BUS line, please set the SMH-COMBO resistor jumper and the first BUS device's (usually Hybrid Panel's) terminal resistor jumper to ON to serve as terminating resistors. The connected BUS line's communication ability will be enhanced.

 - If the jumper is OFF (the jumper link is removed or “parked” on one pin), the communication ability is in normal level.

 - If the jumper is ON, the communication ability will be enhanced.

4. **Test Button**

   Press the test button to send a learn/test signal to the Control Panel.

5. **BUS Jumper Switch (JP5)**

   If JP5 is set to On, SMH-COMBO will communicate to the Control Panel via BUS.

    **Jumper On**
   The jumper link is inserted, connecting the two pins.

    **Jumper Off**
   The jumper link is removed or “**parked**” on one pin.

6. **LED 1 (for BUS)**
   - ON: When the SMH-COMBO is connected to the Control Panel via BUS.
   - Flashes 3 times: When the test button is pressed in BUS connection mode.

7. **RF Jumper Switch (JP6)**

   If JP6 is set to On, SMH-COMBO will communicate to the Control Panel via RF.

    **Jumper On**
   The jumper link is inserted, connecting the two pins.

    **Jumper Off**
   The jumper link is removed or “**parked**” on one pin.

8. **LED 2 (for RF)**
   - ON: When the SMH-COMBO is connected to the Control Panel via RF.
   - Flashes 3 times: When the test button is pressed in RF wireless mode.

9. **Input 1-2 & COM Connectors**

   Connect to the OUT1&2 and COM terminal of EELECTRON IO42E01KNX. Refer to the ***Wiring of the Integration Module*** section for details.

10. **Output 1-4 & COM Terminals**

    Connect to the Inputs 1-4 and the black common of EELECTRON IO42E01KNX. Refer to the ***Wiring of the Integration Module*** section for details.

Wiring of the Integration Module

● *Caution* ⚠

- Wiring of the Integration Module should only be performed by certified technicians with proper knowledge and training in electric equipment.
- Before installation or any maintenance work, make sure the power supply has been disconnected.

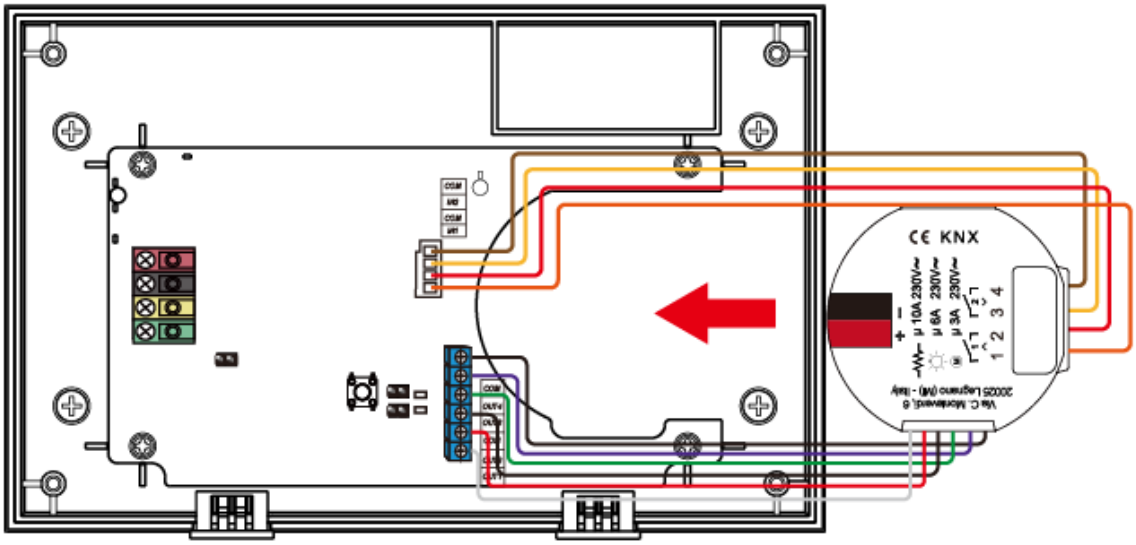
● *Wiring*

A. Connect SMH-Combo to EELECTRON IO42E01KNX

- Before wiring, make sure the power supply has been disconnected.
- Connect the SMH-Combo to the EELECTRON IO42E01KNX according to the table below.

SMH-COMBO	EELECTRON IO42E01KNX
Wired Connectors	Screw Terminals
IN1	**OUT1**
COM	COM OUT 1
IN2	**OUT2**
COM	COM OUT 2
SMH-COMBO	**EELECTRON IO42E01KNX**
Screw Terminals	**Wired Connectors**
OUT1	**WHITE Input 1 (IN1)**

OUT2	RED Input 2 (IN2)
COM	BLACK Common for IN 1 and IN 2
OUT3	GREEN Input 3 (IN3)
OUT4	VIOLET Input 4 (IN4)
COM	BLACK Common for IN 3 and IN 4

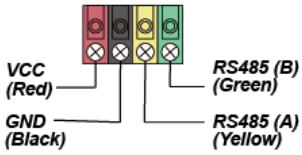


- The EELECTRON IO42E01KNX is connected to the KNX system via BUS terminals.

B. Connect SMH-Combo to Hybrid Panel via BUS

- To assist with cable connections, the terminal blocks on each BUS system module are color-coded.

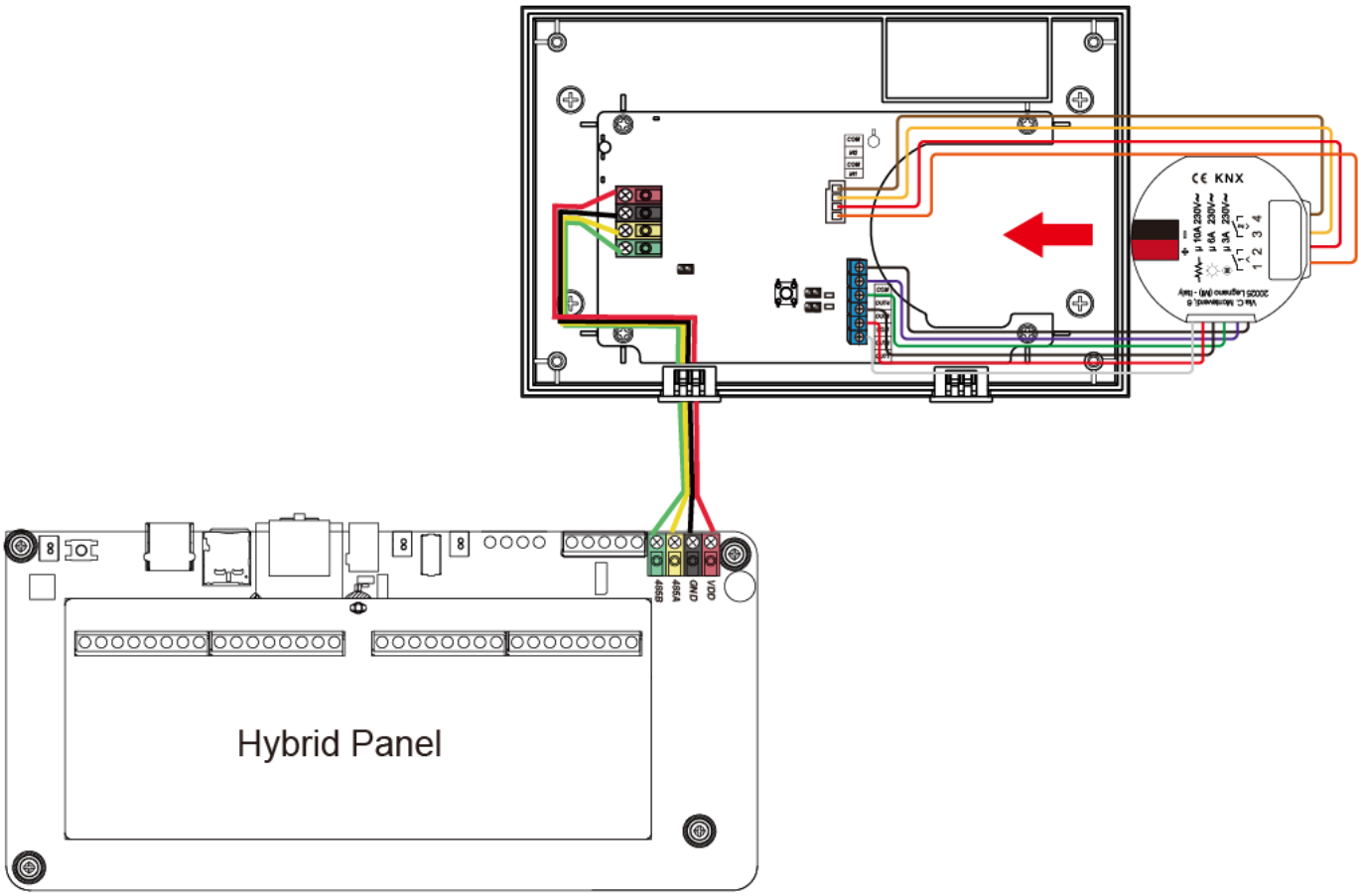
Red	VDD
Black	GND
Yellow	485A
Green	485B



- Multiple BUS devices can be connected in series to the Hybrid Panel. For optimal communication of the connected BUS line devices, ensure the terminal resistor jumper switches of the first and the furthest BUS devices on a BUS line are set to ON to serve as terminating resistors. Be sure to only enable the aforementioned 2 jumper switches, and do not set the jumper switches to ON for any other BUS devices in between.

  <NOTE>

  - ☞ The pluggable design of BUS terminal blocks improves installation efficiency. Before wiring, you can remove the terminal blocks from the PCB board for ease of use, and plug in again after wiring.
  - ☞ After unplugging the terminal, when re-installing the terminal back to the board, make sure to install the terminal in the same direction to avoid potential hazards.
- Incorrect connections will result in failure or malfunction. Inspect wiring and ensure proper connections before applying power.



Features

- ***Power***
  - When SMH-COMBO is hardwired to the Hybrid Panel, 13.5V (typical) power supply will be provided by the Hybrid Panel.
- ***LED Indicator***
  - **LED 1 (for BUS)**
    - ON: When SMH-COMBO is connected to the Control Panel via BUS.
    - Flashes 3 times: When the test button is pressed in BUS connection mode.
  - **LED 2 (for RF)**
    - ON: When SMH-COMBO is connected to the Control Panel via RF.
    - Flashes 3 times: When the test button is pressed in RF wireless mode.
  - **Both LED 1 & 2 flash for 5 times:** When learning is successful for RF wireless operation.
  - **Both LED 1 & 2 flash for 10 times:** When SMH-COMBO receives BUS “Identify” signal from Hybrid Panel.
- ***Protocol Selection***
  - SMH-COMBO can be set to communicate to the Climax Control Panel via BUS or RF according to jumper setting.
  - When BUS Jumper Switch (JP5) is set to On, SMH-COMBO will communicate to the Control Panel via BUS. LED 1 will light up.
  - When RF Jumper Switch (JP6) is set to On, SMH-COMBO will communicate to the Control Panel via RF. LED 2 will light up.
- ***Learning SMH-COMBO into the Control Panel***

Step 1. Put Control Panel into Learning Mode.

Step 2. **(For RF Wireless Operation)** Press the Test button of the SMH-COMBO. SMH-COMBO will transmit a learning signal to the Control Panel. If the Control Panel successfully receives the learning signal, the SMH-COMBO will be displayed in the Control Panel as KNX.

(For BUS Wired Operation) If SMH-COMBO is properly connected to the Panel, it will be automatically displayed in the Control Panel as KNX.

Step 3. Refer to the Control Panel manual to complete the learn-in process. When learning is successful, both LED 1 and LED 2 will flash for 5 times **(For RF wireless operation only)**.

Step 4. Navigate the Control Panel into "**Walk Test**" mode. Hold SMH-COMBO at the desired location, press the test button on SMH-COMBO to confirm this location is within signal range of the Control Panel.

● *Identification (For BUS Wired Operation)*

The "**Identify**" function is used to localize a specific BUS device in the BUS wired system. This function is helpful in distinguishing which device is which especially in a large installation where numerous BUS devices are included.

To locate the SMH-COMBO in the BUS system:

Step 1. On Hybrid Panel's webpage, click "Identify" under the device list after the device column entry.

Step 2. If the SMH-COMBO receives the signal from the Hybrid Panel, the webpage will display a success message and SMH-COMBO's LED1 & LED2 will flash 10 times to indicate where it is to the user.

<NOTE>

☞ If a timeout message is displayed on the webpage, it means SMH-COMBO did not receive the signal from the Panel.

Please check whether SMH-COMBO is connected properly to the Panel within appropriate wiring distance.

● *Edit SMH-COMBO Operation Area*

Follow instructions below to change SMH-COMBO Operation Area in the Control Panel

Step 1: Use the panel Edit Device function to change SMH-COMBO area setting.

Step 2: **(For RF wireless operation)** Press the Test button on SMH-COMBO to send signal to panel, LED 2 will flash three times. When SMH-COMBO receives acknowledgement signal from panel, it will flash LEDs 1 & 2 for 5 times to indicate the setting has been updated.

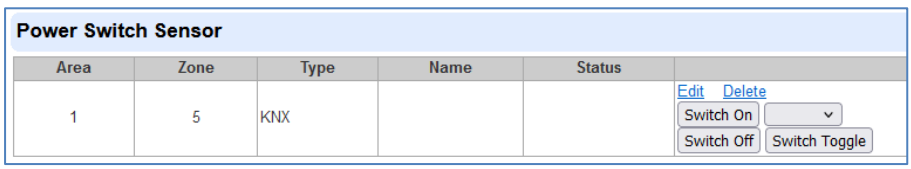
(For BUS wired Operation) Device Area is changed when setting is completed on the Panel webpage. There is no need to press the test button.

● *Supervision Signal*

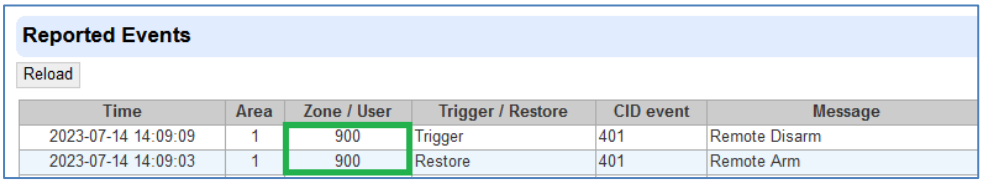
- When connected to Panel via BUS, SMH-COMBO will automatically transmit Supervision Signals to the Control Panel at an interval of 20-30 seconds.
- When connected to Panel via RF, SMH-COMBO will automatically transmit Supervision Signals to the Control Panel at an interval of 30-50 minutes.
- If the Control Panel has not received the signal from SMH-COMBO for a preset period of time, the Control Panel will consider SMH-COMBO out of order and react according to panel setting.

● *Operation*

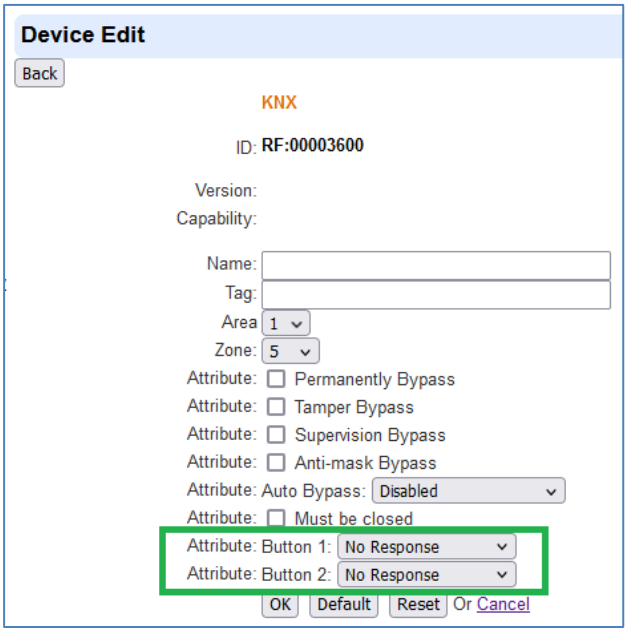
- The integration of Climax security system and KNX Home Automation System enables bi-directional communication between the two.
- **From Climax system to KNX system**
  - The Climax Control Panel can report Panel Status (Arm/Home Arm/Disarm) and Alarm Status (In Alarm/No Alarm) through output 1/2/3. Refer to the Table below for details.
  - The Climax Control Panel can control output 4 to turn ON/OFF or by setting Home Automation Rules to control it.



- **From KNX system to Climax system**
  - The KNX system (as User 900) can request to arm/disarm the Climax Control Panel through IN1.



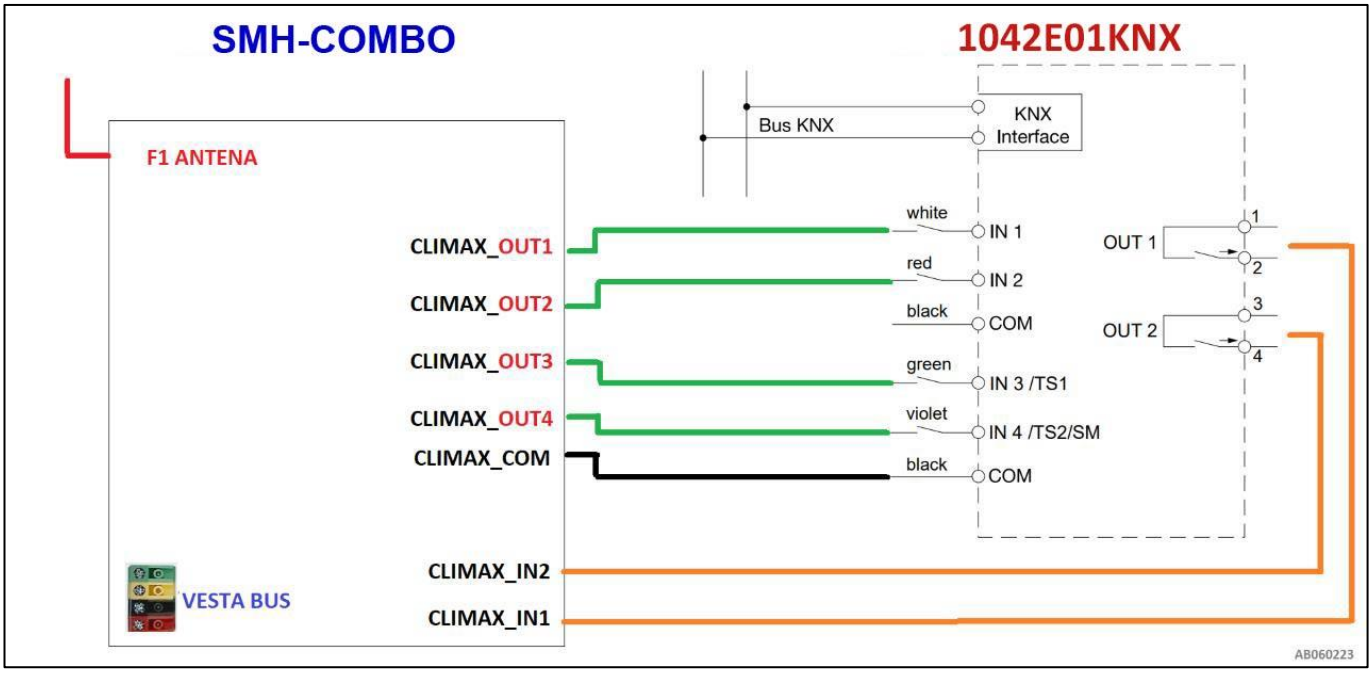
- The KNX system can request the Climax Control Panel to activate a preset scene through IN2. (ON = Activate Button 1 scene; OFF = Activate Button 2 scene).



- Refer to the table below for bi-directional communication details.

SMH-COMBO	EELECTRON IO42E01KNX	ESTABLISHED FUNCTION
Communication		**From KNX system to Climax system (RF/BUS)**
IN1	**OUT1**	ON (Relay Output Close) ➡ Arm by user 900 (KNX)
		OFF (Relay Output Open) ➡ Disarm by user 900 (KNX)
IN2	**OUT2**	ON (Relay Output Close) ➡ Activate Button 1 scene
		OFF (Relay Output Open) ➡ Activate Button 2 scene
COM	COM OUT 2	---
COM	COM OUT 1	---
SMH-COMBO	**EELECTRON IO42E01KNX**	**ESTABLISHED FUNCTION**
Communication		**From Climax system to KNX system (RF/BUS)**

OUT1	**WHITE Input 1 (IN1)**	ON	OFF	OFF
OUT2	**RED Input 2 (IN2)**	OFF	ON	OFF
* ON = Relay Output Close * OFF = Relay Output Open		Arm Mode	Home Mode	Disarm Mode
OUT3	**GREEN Input 3 (IN3)**	ON (Relay Output Close) ➡ Alarm		
		OFF (Relay Output Open) ➡ Alarm Restore Arm/Home Arm/Disarm [Change Mode]		
OUT4	**VIOLET Input 4 (IN4)**	ON (Relay Output Close) ➡ Turn On output device		
		OFF (Relay Output Open) ➡ Turn Off output device		
COM	BLACK Common for IN 3 and IN 4	---		
COM	BLACK Common for IN 1 and IN 2	---		

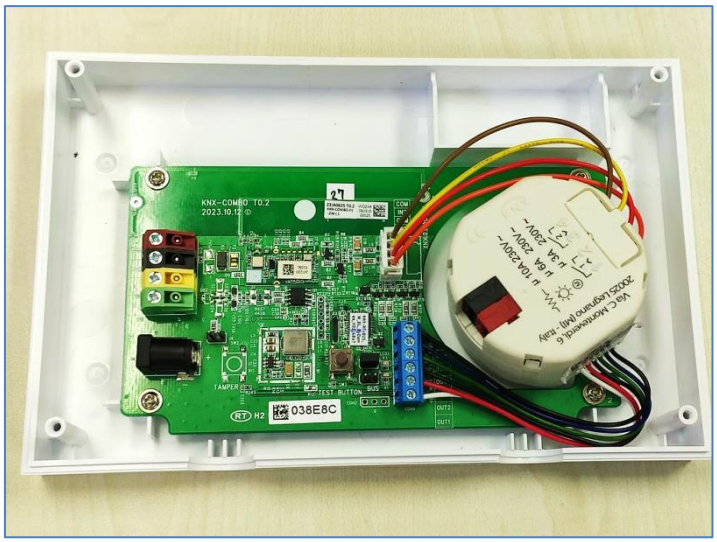


Installation and Wire Management

The EELECTRON IO42E01KNX interface device can be connected to SMH-Combo and installed inside the SMH-Combo enclosure. Please follow the steps below to proceed.

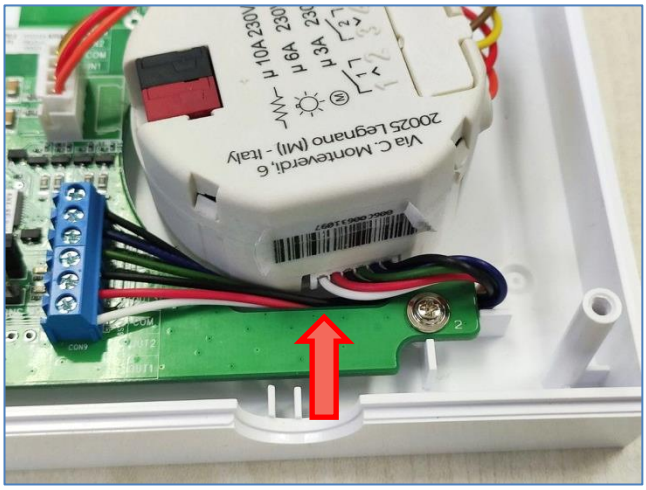
1) Attach the provided double-sided adhesive tape to the ELECTRON IO42E01KNX, aligning the notch on the tape with the hole on the device.

2) Connect EELECTRON IO42E01KNX to SMH-Combo. Please refer to the previous ***Wiring*** section for details.

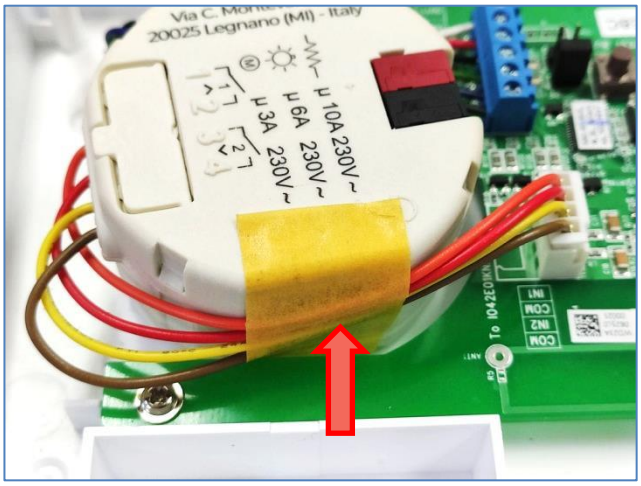


3) Peel off the layer of the double-sided tape and arrange the wires according to the recommended approach below.

A. Organize the 6-PIN wires under the PCB board.



B. Secure the 4-PIN wires to the side of EELECTRON IO42E01KNX using tape.



4) Attach the EELECTRON IO42E01KNX to the enclosure.

5) Route the wires through the wiring holes. Re-place the top cover and tighten the four fixing screws.

Align the teeth on the top cover and the base with the grooves on the grommets, and insert the grommets into the Wiring Holes.