



## Description

The ekinex® devices of the FF OMNIA series are low voltage Dry contact (model EK-ED2-NC-...) or Open Drain (model EK-ED2-NB-...) 3,3 - 24 Vdc pushbuttons, for the on/off control of utilities, lighting devices, the control of motorized drives or scenarios and other control functions, for example for the activation of relays placed on the back or in a junction box. The devices are equipped with 8 outputs and 8 inputs for driving the integrated LEDs. The low voltage outputs allow wide compatibility with many control systems. The devices are designed for mounting on a wall-mounted box, suitable for use in residential environments. They are powered by SELV DC voltage and integrate perfectly with the aesthetic parts of the ekinex® FF series.

## Main functional characteristics

- On/off switching of single loads or groups of loads
- Control of motor drives (for roller shutters, blinds, curtains, etc.)
- Different functions programmable for short pressure / long pressure of a rocker
- Control of third-party logics and interfaces
- Control of relays (EK-ED2-NB only)
- LED for status indication

## Technical data

- Power Supply: LED 5 - 24 Vdc, Dry contact pushbuttons 3,3 - 24 Vdc
- Control and signalling elements: physical buttons, white LEDs
- Physical connection via pre-assembled flat cables or rear board with adapter (to be screwed onto the back of the button panel) and spring contacts
- Permitted wiring diagrams:
- connection of an I/O module with digital inputs and Open Drain outputs
- connection of a series of output pulse relays for driving lamps without electronics (protection diode not supplied)
- Direct connection of inputs and outputs with Crestron C2N-UNI8IO interface
- Current absorption per output < 50mA (200mA for EK-ED2-NB)
- LED driving current: settable via dip-switch

## Environmental conditions

- Operating temperature: - 5 ... + 45°C
- Storage temperature: - 25 ... + 55°C
- Transport temperature: - 25 ... + 70°C
- Relative humidity: 95% not condensing

## Other characteristics

- Housing in plastic material
- Wall installation in flush mounting box
- Protection degree IP20 (installed device)
- Classification climatic 3K5 and mechanical 3M2 (according to EN 50491-2)
- Pollution degree 2 (according to IEC 60664-1)
- Weight 65 g (with mounting support)
- Dimensions (LxHxW) 82 x 79 x 19 mm

## Delivery

The square metal support, the plastic screws and the fixing screws (1 pair of M2.9x25 mm screws and 1 pair of M2.9x38 mm flat countersunk head screws) are included in the supply of the device.

## Accessories

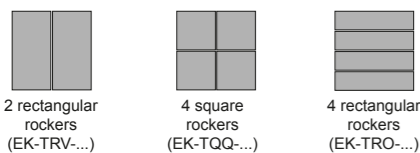
The following accessories can be ordered on request:

- EK-ACC-SCM: universal adapter with terminal block
- EK-ACC-CAA: universal pre-wired connector
- EK-ACC-CAC: pre-wired connector for Crestron product compatibility

## Set of rockers

Set code *	Rocker form	Nr.	Mod. W x H [mm]
EK-TRV-xxx	rectangular	2	40 x 80
EK-TQQ-xxx	square	4	40 x 40
EK-TRO-xxx	rectangular	4	80 x 20

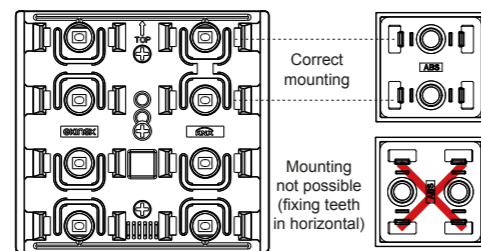
(\*) To be completed with the extension for colour and material



The pushbutton has to be completed with a set of plastic, aluminum or Fenix NTM® rockers, which makes it usable as a 2 or 4-channel button. In the 4-channel configuration it can have a choice of square buttons or rectangular buttons (the latter arranged horizontally).

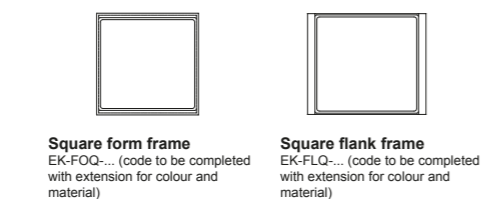
## Note on installation of rockers

To assemble the rockers on their seats, the fixing teeth must be aligned vertically.



## Finishing frame

The pushbutton is completed with a square ekinex® frame of the form or flank series in plastic material, aluminum or Fenix NTM®. The 'NF (No Frame) versions have to be mounted without any frame.

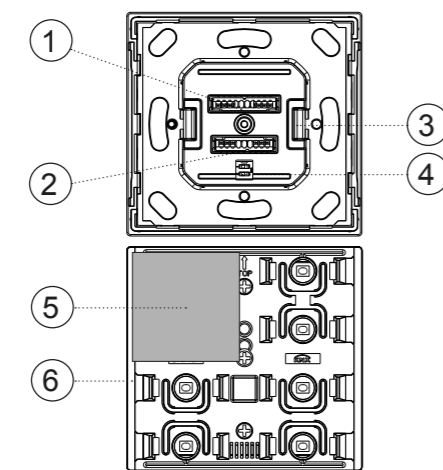


**Note.** Rockers, plate and possible frame for completing the device must be ordered separately. For more information on available materials, colours and finishes, see also the ekinex® product catalog or browse [www.ekinex.com](http://www.ekinex.com)

## Switching and connection elements

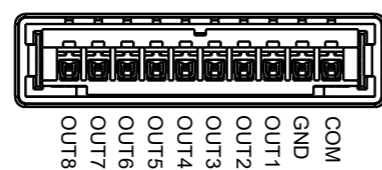
The device is equipped with 8 independent physical buttons for operation and 8 white LEDs with lightguide for signaling.

On the back of the device there are the terminals for the electrical connections (1) and (2).

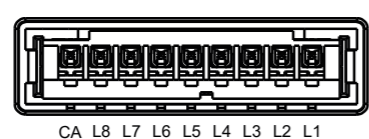


- Power and output connection terminal
- Input / LED connection terminal
- Fixing springs
- Dip-switch for brightness setting
- Rocker (in the example: 40 x 40 mm square)
- Lightguide for LED light diffusion

## 10-pin terminal for power and outputs

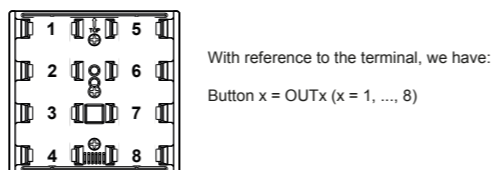


## 9-pin terminal for inputs and LEDs



Label	Connection
COM	Common pole for switches
GND	Ground
OUTx	Output-x (x = 1,...,8)
CA	Common anode
Lx / INx	LED-x cathode or Input-x (x = 1,...,8)

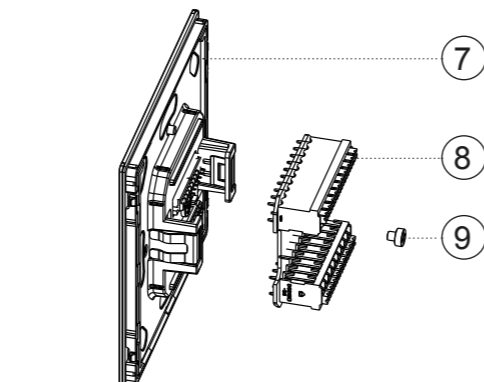
## Button layout



## Wiring diagrams

1. Standard with universal adapter and terminal block (code EK-ACC-SCM)

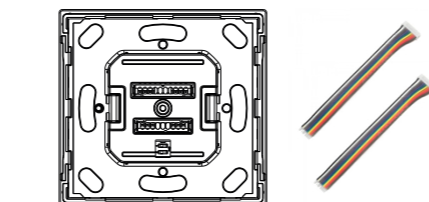
To connect any product with digital input or output relay and drive the LED inputs via dedicated electronics, insert the adapter (7) supplied on the back of the button (6) and secure it with the dedicated screw (8).



- Pushbutton
- Universal adapter
- Fixing screw for the universal adapter

## 2. Standard with flat cable

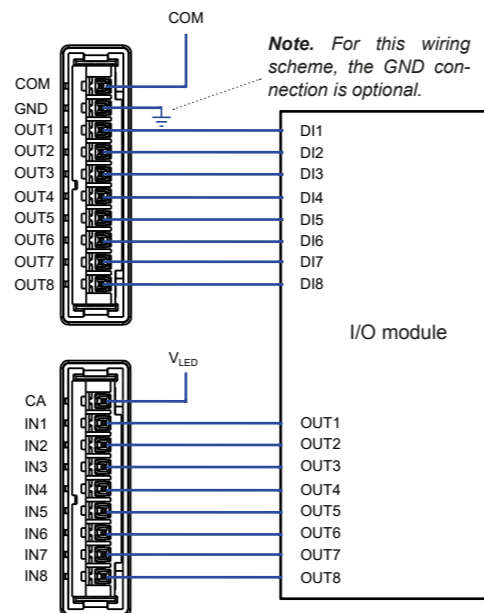
Direct connection to the connectors via flat cables, to be ordered separately.



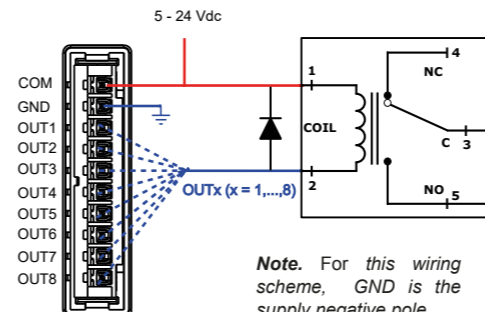
**Note.** This diagram is valid for the EK-ED2-NB model (MOSFET version, current 200mA) only.

In both cases, the following connection diagrams can be used:

- Connection of an I/O module with digital inputs and open collector (open drain) outputs



COM is the common pole for switches: depending on the logic module connected to the output it can be Vcc or GND.

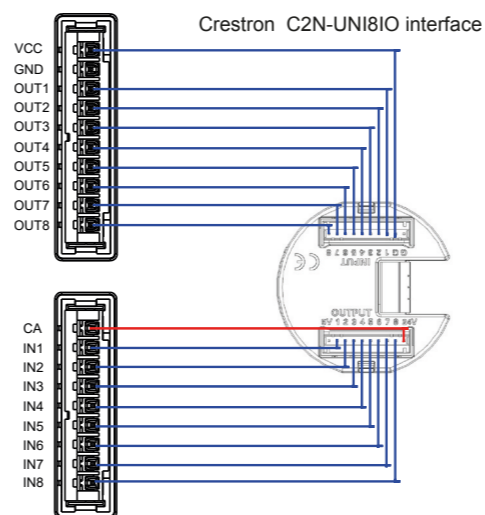


- connection of a series of output pulse relays for driving lamps without electronics.

The protection diode is not included in the product.

**Warning!** The pulse relay scheme is to be used exclusively with the EK-ED2-NB model with MOSFET.

## 3. Dedicated wiring with Crestron C2N-UNI8IO interface



This scheme allows the installer to connect inputs and outputs natively, without making any physical connections.

## Mounting

The device has degree of protection IP20, and is therefore suitable for use in dry interior rooms. The assembly of the device differs depending on whether it is done with a frame (flank or form series) or without a frame ('NF series'). Carry out the following operations:

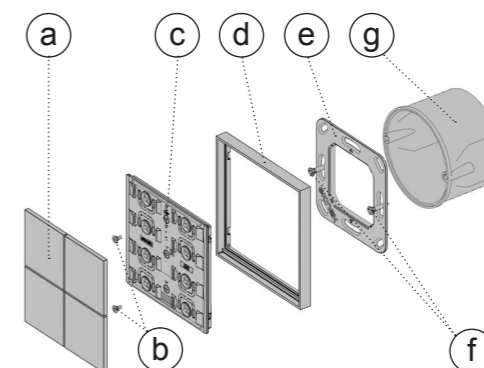
- fix the metallic support (e) with the screws (f) on a wall-mounting box (g) provided with suitable fixing holes;
- if required by the device version, snap a frame (d) of the form or flank series, inserting it from the rear of the device (c);
- connect the cables according to the desired wiring diagram;

- set the LED brightness using the dip-switch selector on the back of the device, according to the following table:

Settings	Brightness level
	Low
	Medium
	High

- install the device (c) on the metallic support (e) through the spring system, tightening then the two screws (b). When mounting the device, follow also the indication TOP (arrow tip pointing up) on the front side of the device.
- snap the rockers (a) on the device.

The pushbutton has to be mounted on a round or square flush-mounting box with distance between fixing holes of 60 mm. If necessary, the metallic support for mounting on the wall box can also be ordered separately using the code EK-SMQ-71.



- Rockers (to be ordered separately)
- Screws for device (included in the delivery)
- Pushbutton
- Frame (to be ordered separately, not for 'NF versions)
- Mounting support (included in the delivery)
- Screws for mounting support (included in the delivery)
- Wall mounting box (not delivered by ekinex®)

**Note.** The screws supplied in the package are suitable for standard installations. For more specific applications, where the screws have to be replaced, only flat-head screws must be used.

**Note.** The supplied plastic screws (# 2) must be used exclusively to fix the push-button panel in position, therefore they must not be tightened with excessive force (max. torque 0.4 Nm). The screws for the metal support must be tightened with a max. torque of 1.0 Nm.

## Power and outputs connection

The connection to the power supply and outputs is made using the adapter (8) which can be ordered separately and inserted into the appropriate slot located on the back of the device, connected to the 10-wire connector cable.

**Warning!** The electrical connection of the device can be carried out only by qualified personnel. The incorrect installation may result in electric shock or fire. Before making the electrical connections, make sure the power supply has been turned off.

## Power and output terminal characteristics

- Spring conductor clamping (with adapter)
- 10 conductor seats

## Inputs / LEDs connection

The connection to the inputs / LEDs is done by using the adapter (7) which can be ordered separately and inserted into the appropriate slot located on the back of the device, connected to the 9-wire connector cable.

## Input / LED terminal characteristics

- Spring conductor clamping (with adapter)
- 9 conductor seats

## Commissioning

The commissioning of the device must be carried out according to the design of the building automation system done by a qualified planner.

For commissioning the device the following activities are required:

- perform the electrical connections as indicated above, depending on the selected wiring diagram;
- power on the device, connecting it to the required power supply.

## Marks

- CE, UKCA: the device complies with the RoHS III Directive (2011/65/EU) and the Low Voltage Directive (2014/35/EU). Tests carried out according to EN 63044-5-1:2019; EN 63044-5-2:2019

## Maintenance

The device is maintenance-free. To clean use a dry cloth. It must be avoided the use of solvents or other aggressive substances.

## Disposal

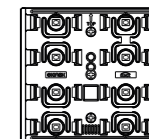
At the end of its useful life the product described in this datasheet is classified as waste from electronic equipment in accordance with the European Directive 2012/19/EU (WEEE recast), and cannot be disposed together with the municipal undifferentiated solid waste.

## FF series pushbutton "OMNIA" EK-ED2-NC (Dry contact) / EK-ED2-NB (Open Drain)

Codes: EK-ED2-NC-... / EK-ED2-NB-...



Foglio istruzioni



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FISPEKED2NCBIEX0

**Warning!** Incorrect disposal of this product may cause serious damage to the environment and human health. Please be informed about the correct disposal procedures for waste collecting and processing provided by local authorities.

## Warnings

- Installation, electrical connection, configuration and commissioning of the device can only be carried out by qualified personnel in compliance with the applicable technical standards and laws of the respective countries
- Opening the housing of the device causes the immediate end of the warranty period
- In case of tampering, the compliance with the essential requirements of the applicable directives, for which the device has been certified, is no longer guaranteed
- ekinex® defective devices must be returned to the manufacturer at the following address: EKINEX S.p.A. Via Novara 37, I-28010 Vaprio d'Agogna (NO) Italy

## Other information

- The instruction sheet must be delivered to the end customer with the project documentation
- For further information on the product, please contact the ekinex® technical support at the e-mail address: support@ekinex.com or visit the website [www.ekinex.com](http://www.ekinex.com)
- Each ekinex® device has a unique serial number on the label. The serial number can be used by installers or system integrators for documentation purposes and has to be added in each communication addressed to the EKINEX technical support in case of malfunctioning of the device
- Fenix NTM® is a registered trademark of Arpa Industriale S.p.A. - Italy

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