ekinex
CONTROL YOUR LIVING SPACE

Pushbutton 71 Series

Codes: EK-E13-TP-..

      EK-E23-TP-..

KNX   CE   S   TP1   Datasheet STEKE13E23TP_EN

KNX device for switching and control of single loads or groups of loads and room temperature regulation. It has to be used in KNX installations for control of homes and buildings.

REFLEKE13TP

REFLEKE132TPR

Description

The ekinex® pushbutton of 71 Series is a KNX S-mode device for on/off switching of loads, dimming of lighting devices, controlling of motor drives or other programmable switching and control functions. The integrated temperature sensor (for EK-E13-TP-... versions only) allows the use as a room or zone temperature controller. It is equipped with an integrated KNX bus communication module and is designed for wall installation on flush-mounting box. Each channel can be freely configured to carry out 1 or 2 bus functions and is provided with programmable LED (blue/green or red/white) e.g. as a staus feedback or orientation nightlight (for EK-E13-TP-... versions only). Pressing a rocker, the device sends on the bus a telegram, which is received and executed by one or more KNX actuators depending on the configuration carried out. The device is powered by the KNX bus line with a SELV voltage 30 Vdc and does not require auxiliary power.

> **i**
>
> *Note. The set of rockers, the plastic adapter, the metal support, the plate and the optional frame for completing the device must be ordered separately. For more information, see also the ekinex® product catalog or browse www.ekinex.com*

Main functional characteristics

- On/off switching of single loads or groups of loads
- Dimming of lighting devices
- Control of motor drives (for roller shutters, blinds, curtains, etc.)
- Room temperature regulation (for EK-E13-TP-... versions only)
- Logic functions
- Sending on the bus of values (temperature, brightness, etc.)
- Switching to forced functioning (lock)
- Recalling and saving of scenes
- Measuring of room temperature through integrated sensor
- Different functions programmable for short pressure / long pressure of a rocker
- Status feedback or orientation nightlight through 2-colour programmable LEDs (for EK-E13-TP-... versions only)

Other characteristics

- Housing in plastic material
- Wall installation in flush mounting box
- Protection degree IP20 (according to EN 60529)
- Classification climatic 3K5 and mechanical 3M2 (according to EN 50491-2)
- Pollution degree 2 (according to IEC 60664-1)
- Weight 40 g (70 g with mounting support)
- Dimensions 81 x 77 x 21 mm (WxHxD)

Technical data

- Power supply 30 Vdc from KNX bus line
- Current consumption < 15 mA
- Power from bus < 360 mW

Environmental conditions

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

Delivery

The delivery of the pushbutton includes the fixing screws (2 pairs) and the KNX terminal block for connection of the KNX bus line.

Completion of the pushbutton

The pushbutton is completed through a separate order of:

- a set of rockers that allows the use as a 1-fold, 2-fold or 4-fold pushbutton;
- a plastic adapter;
- a metal support for either round or rectangular flush-mounting box;
- a 1-fold plate (square, EK-PQS-...) or a 2-fold plate (rectangular, EK-P2G-... or EK-P2S-...) in combination with another bus device of 71 Series or a 55 x 55 mm flush-mounting insert;
- a square frame of the ekinex® Form or Flank Series (not for the 'NF - No Frame versions).

Rockers

Three-positions rockers with central neutral position have to be mounted on the pushbutton. Pushing one side of a rocker (for example the upper one), the pushbutton sends on the bus a telegram for switching on, increasing the brightness of luminaires or raising the blinds, while pushing the other side (for example the lower one), it sends a telegram for switching off, reducing the brightness of luminaires or lowering the blinds. Each channel is equipped with LEDs (for EK-E13-TP-... versions only)

which can be freely programmed as status feedbacks of the loads and as orientation nightlight.

Plate

The pushbutton may be completed by a square 1-fold plate or by a rectangular 2-fold plate. In both cases the plate must be necessarily provided with a 60 x 60 mm window for the mounting of the device.

| Plate code *	Type	Appearance	Window modularity [mm]
EK-PQS-...	1-fold **		60 x 60
EK-P2G-...	2-fold ***		55 x 55 (1) 60 x 60 (1)
EK-P2S-...	2-fold ***		60 x 60 (2)

(*) To be completed with the extension for colour, material and finishing
(**) For mounting without frame ('NF) it requires the EK-TAQ adapter
(***) For mounting without frame ('NF) it requires the EK-A71-... adapter
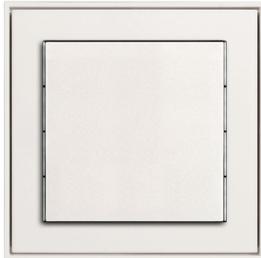
Device completed with square plate, 1-fold Form frame and set of rockers EK-T1Q-...

Device completed with square plate, 1-fold Form frame and set of rockers EK-T2R-...
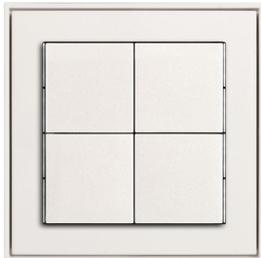
Device completed with square plate, 1-fold Form frame and set of rockers EK-T4Q-...
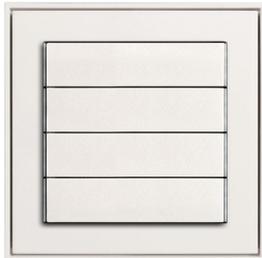
Device completed with square plate, 1-fold Form frame and set of rockers EK-T4R-...

Code set of rockers *	Appearance	Nr. and type of rockers	Modularity [mm]
EK-T1Q-xxx		1 square	60 x 60
EK-T2R-xxx		2 rectangular	30 x 60
EK-T4Q-xxx		4 square	30 x 30
EK-T4R-xxx		4 rectangular	60 x 15

(*) To be completed with the extension for the colour: xxx = GAA (white), xxx = GAG (silver), xxx = GAE (black)

Frame

The pushbutton can be completed by a square 1-fold frame or by a rectangular 2-fold frame of the Flank or Form Series. The 'NF (No Frame) versions of the pushbutton do not require any frame.

Mounting

The device has degree of protection IP20, and is therefore suitable for use in dry interior rooms. The installation of the device differs depending on the mounting with or without frame ('NF Series).

Mounting with frame, version for round box

Carry out the following steps:

- fix the metal support (h) with the pair of screws (g) on the flush-mounting box (i) equipped with fixing holes at 60 mm distance;
- press for fixing the pushbutton (d) on the adapter (e);
- insert pushbutton and adapter (d+e) in the metal support (h). Mounting the device follow also the indication TOP (arrow tip pointing up) on the rear side of the device;
- snap a square frame (f) of the Form or Flank Series, inserting it from the rear of the pushbutton (d);
- enter the bus terminal block, previously connected to the bus cable in its slot on the rear side (see also: "Connection of the KNX bus line"). At this point it is recommended to carry out the commissioning of the device (see also "Configuration and commissioning") or at least the download of the physical address;

ESEKE13TP
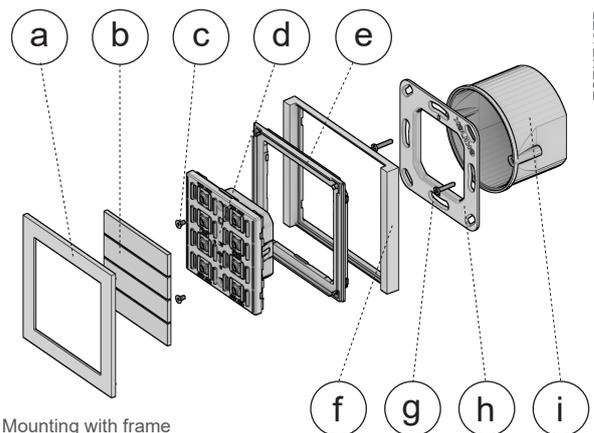
Mounting with frame

a) 1-fold square plate, with a 60 x 60 mm window
b) Rockers
c) Fixing screws (for device)
d) Device (pushbutton 71 Series)
e) Plastic adapter for mounting with frame
f) Frame (square, Form or Flank Series)
g) Fixing screws (for metal support)
h) Metal mounting support
i) Flush-mounting box

- fasten the device on the metal support supplied with the pair of screws (c);
- snap the rockers (b) for the operation of the device;
- snap the plate (a).

Mounting without frame ('NF Series), version for round box

Carry out the following steps:

- insert the metal support (f) on the adapter (g);
- fix adapter and support (f+g) with the pair of screws (e) on the flush-mounting box (h) equipped with fixing holes at 60 mm distance;
- enter the bus terminal block, previously connected to the bus cable in its slot on the rear side (see also: "Connection of the KNX bus line"). At this point it is recommended to carry out the commissioning of the device (see also "Configuration and commissioning") or at least the download of the physical address;
- insert the pushbutton (d) on the metal support (f);
- fasten the device on the metal support supplied with the pair of screws (c);
- snap the plate (a);
- snap the rockers (b) for the operation of the device.
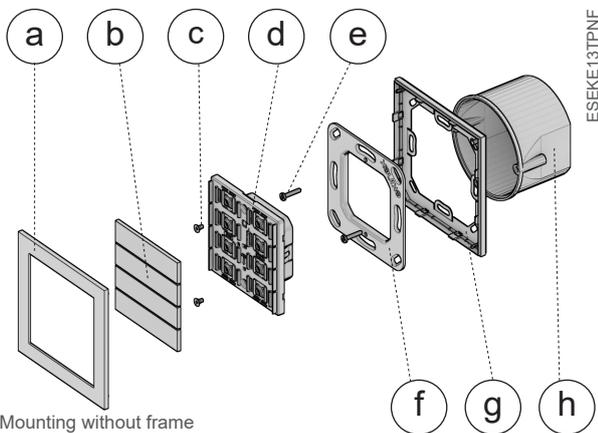
Mounting without frame

a) 1-fold square plate, with a 60 x 60 mm window
b) Rockers
c) Fixing screws (for device)
d) Device (pushbutton 71 Series, 'NF version)
e) Fixing screws (for metal support)
f) Metal mounting support
g) Adapter for 'NF Series
h) Flush-mounting box

Mounting, version for rectangular box

Carry out the following steps:

- insert the metal support (f) on the adapter (g);
- only for the versions which require a frame: snap a rectangular frame (h) of the Form or Flank Series, inserting it from the rear of support-adapter (f+g);
- fix adapter-support (f+g) (and the possible frame, d) with the screws (e) on a flush-mounting box (i) provided with suitable fixing holes (83,5 mm holes distance);
- insert the bus terminal, previously connected to the bus cable, in its slot on the rear side (see also: "Connection of the KNX bus line"). At this point it is recommended to carry out the commissioning of the pushbutton (see also "Configuration and commissioning") or at least the download of the physical address;

- insert pushbutton (d) in the support-adapter (f+g). Mounting the pushbutton follow the indication TOP (arrow tip pointing up) on the front side of the device;
- tighten the pushbutton in the support-adapter (f+g) with the two screws (c);
- snap the rectangular plate (a);
- snap the rockers (b) for operating the device.

If necessary, the metal support for mounting on the wall box can be ordered separately, with code EK-S71. For mounting the pushbutton in combination with a double plate, refer to the instructions delivered in the plate package.
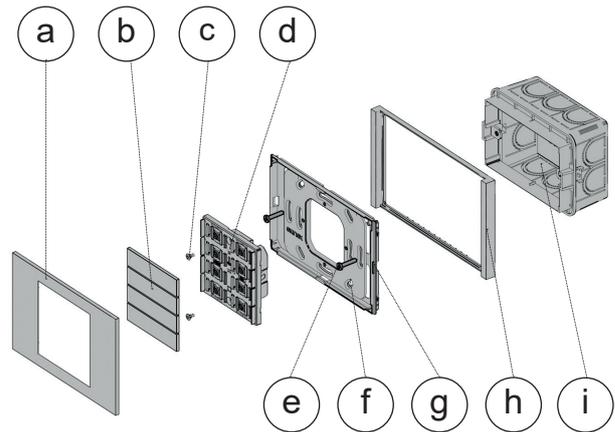
a) Plate (rectangular, with 60 x 60 mm window)
b) Rockers
c) Screws (for device)
d) Device
e) Screws (for metal support)
f) Metal support
g) Plastic adapter
h) Rectangular frame (not for 'NF versions)
i) Flush-mounting box (not delivered by EKINEX)

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.

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.

Mounting position

If the integrated sensor is used for temperature regulation (for EK-E13-TP-... versions only), the device has to be installed preferably lon an internal wall at the height of 1,5 m and at least 0,3 m far from doors. The device can not be installed close to heat sources such as radiators or houshold appliances or in position subjected to direct sunlight. If necessary, for the regulation can be used a weighted average value between the value measured by the integrated sensor and a value received via bus by another KNX device.
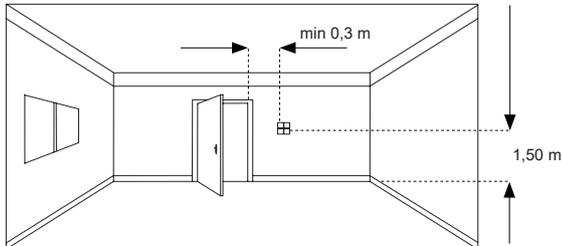
Use as a room temperature controller (only for EK-E13-TP-... versions only)

The pushbutton can be also used as a room temperature controller for single-stage heating/cooling systems with radiators, radiant panels and electrical heaters. As the device has no user interface, it must receive the operational parameters by the bus (e.g. operating mode, seasonal conduction mode or a change of the setpoint value).

Main functional characteristics (room temperature controller)

• Temperature measuring through integrated sensor with possibility of sending the value on the bus
• 2-point (on/off) or proportional (PWM or continuous) room temperature regulation
• Seasonal conduction modes: heating and cooling with possibility of changeover via bus or automatic depending on the configuration
• Operating modes: comfort, standby, economy and building protection with different setpoint for heating and cooling
• Automatic switching of the operating modes triggered by window opening/closing
• Weighted average of two temperature values
• Temperature control alarm
• Anti-locking function for valves (hydronic systems)

Switching, display and connection elements

The device is equipped with four mechanisms for switching, four LEDs for each channel (for EK-E13-TP-... versions only), a programming LED and a programming pushbutton (for EK-E23-TP-... only) and a terminal block for connection of the bus line.

Switching elements

• Pushbutton (8) for switching between the normal and programming operating modes (for EK-E23-TP-... only)
• One, two or four rockers (4) for independent switching of single or group of loads

Display elements

• Red LED (7, for EK-E23-TP-... only) for indication of the active operating mode (on = programming, off = normal operation)
• Freely programmable LED with lightguide (5) e.g. for feedback status and orientation nightlight LED (for EK-E13-TP-... versions only)
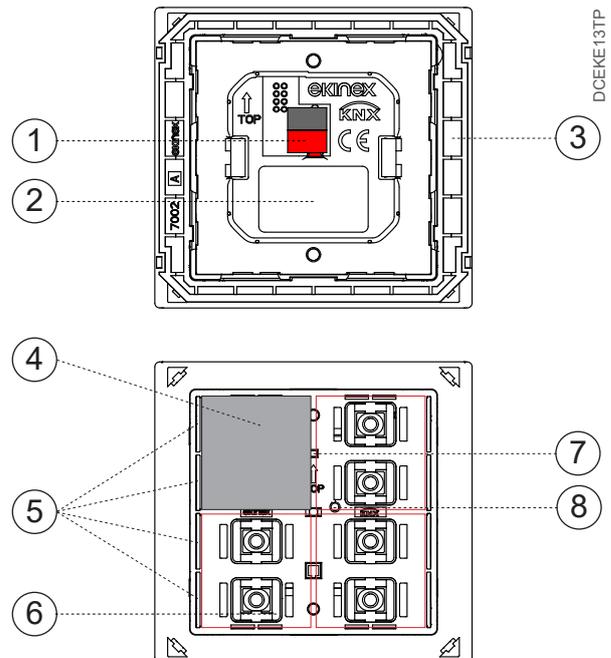
1) Connection terminal block for KNX bus line
2) Product label
3) Adapter
4) Rocker (in the example: 30 x 30 mm square type)
5) LED-lightguide (for EK-E13-TP-... versions only)
6) Positioning of the temperature sensor (for EK-E13-TP-... versions only)
7) Programming LED (for EK-E23-TP-... versions only)
8) Programming pushbutton (for EK-E23-TP-... versions only)
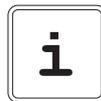
> **Note.** Programming pushbutton and LED (where available) are accessible from the front side of the device. It is better addressing the device before the final assembly of rockers and frame. Once the addressing has been performed, the device configuration can be later downloaded without pressing the programming pushbutton.

Connection of the KNX bus line

The connection of the KNX bus line is made with the terminal block (black/red) included in delivery and inserted into the slot of the housing.

Characteristics of the KNX terminal block

• spring clamping of conductors
• 4 seats for conductors for each polarity
• terminal suitable for KNX bus cable with single-wire conductors and diameter between 0.6 and 0.8 mm
• recommended wire stripping approx. 5 mm
• color codification: red = + (positive) bus conductor, black = – (negative) bus conductor
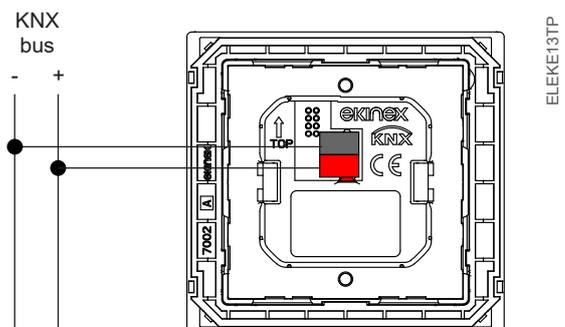
> **Warning!** The electrical connection of the device can be carried out only by qualified personnel. The incorrect installation may result in electric shock or fire. Before making the electrical connections, make sure the power supply has been turned off.

Configuration and commissioning

Configuration and commissioning of the device require the use of the ETS® (Engineering Tool Software) program V4 or later releases. These activities must be carried out according to the design of the building automation system done by a qualified planner.

Note. *The configuration and commissioning of KNX devices require specialized skills. To acquire these skills, you should attend the workshops at KNX certified training centers.*

Configuration

For the configuration of the device parameters the corresponding application program or the whole ekinex® product database must be loaded in the ETS program. For detailed information on configuration options, refer to the application manual of the device available on the website www.ekinex.com.

Product code	Application program (## = release)	Communication objects (nr. max)	Group adresses (nr. max)
EK-E13-TP	APEKE13TP##.knxprod	311	254
EK-E23-TP	APEKE23TP##.knxprod	229	229

Commissioning

For commissioning the device the following activities are required:

- make the electrical connections as described above;
- turn on the bus power supply;
- switch the device operation to the programming mode as described in the next table;
- download into the device the physical address and the configuration with the ETS® program.

At the end of the download the operation of the device automatically returns to normal mode; in this mode the programming LED (where available) and/or the LEDs of the second color (for EK-E13-TP-...) are turned off. Now the bus device is programmed and ready for use

Reset of the device

To reset the device:

- if the programming button is present, remove the connection to the bus network by extracting the bus terminal from its seat. Keeping the programming button pressed, reinsert the bus terminal in its seat; the programming LED flashes quickly. Release the programming button and extract the clamp again; the reset has been performed.
- If, on the other hand, the programming button is not present, repeat the programming sequence by holding down the buttons for about 10 seconds. The LEDs of the second color first flash, then go off; the reset has been performed.

| Product code	FW version	Programming sequence	Visual feedback
EK-E13-TP	04.xxx and previous	*Pressing the programming button*	*Programming LED on steady.*
	from 05.xxx to 06.018	*Simultaneous press of the first and last button on the left side for 5 seconds.*	*All LEDs of the second color flash. Programming LED (if present) on steady.*
	06.019 and later	*Simultaneous pressing of the first button on the left side and the last button on the right side for 5 seconds.*	*All LEDs of the second color flash.*
EK-E23-TP	All	*Pressing the programming button*	*Programming LED on steady.*
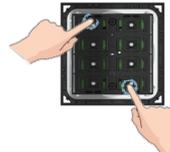
Dimensions [mm]

Pushbutton for round wall box
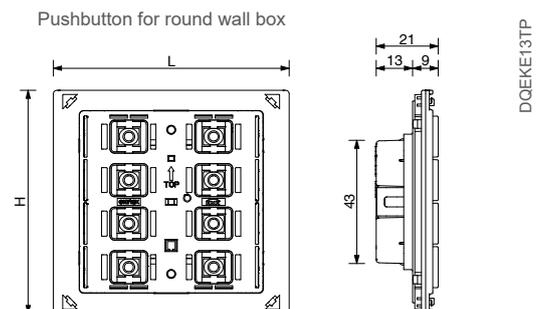
DQEKE13TP

Versions	Dimensions L x H [mm]
for mounting with frame	81 x 77
for mounting without frame	80 x 80

Pushbutton for rectangular wall box
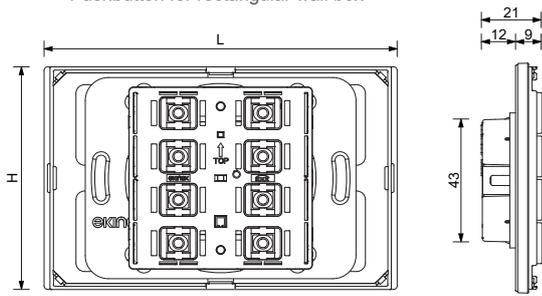
DQEKE13TPR
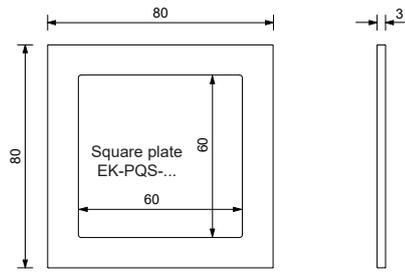
Versions	Dimensions L x H [mm]
for mounting with frame	122 x 77
for mounting without frame	121 x 80

Rockers

DQTASTI71

Square plate
EK-PQS-...

Rectangular frame of
Form Series
EK-FOR-...

Rectangular frame of
Flank Series
EK-FLR-...

Rectangular
plate
EK-PRS-...

Square frame of
Form Series
EK-FOQ-...

Square frame of
Flank Series
EK-FLQ-...
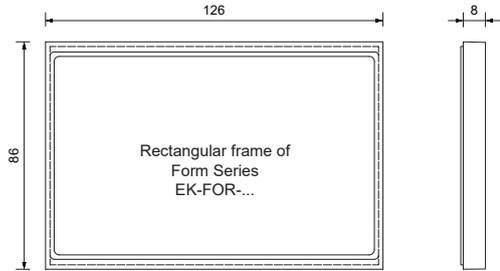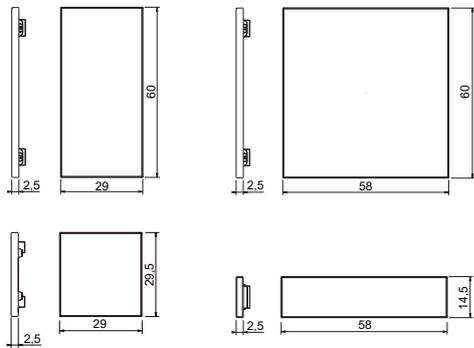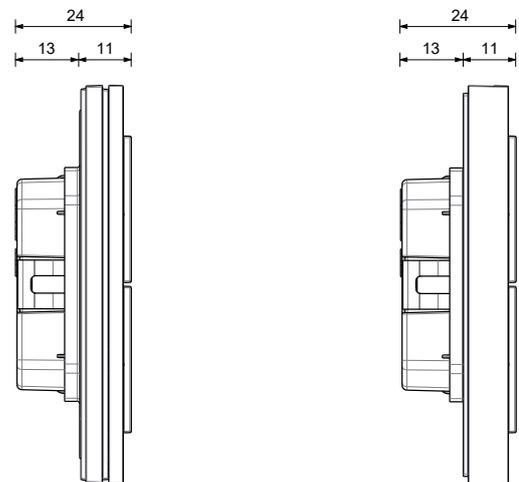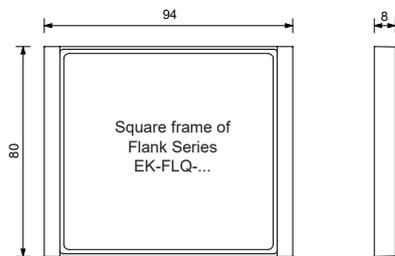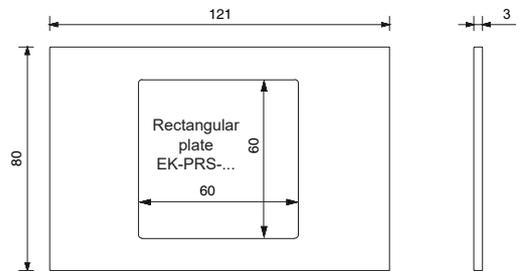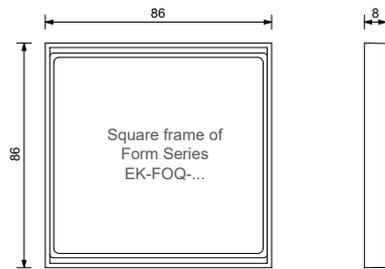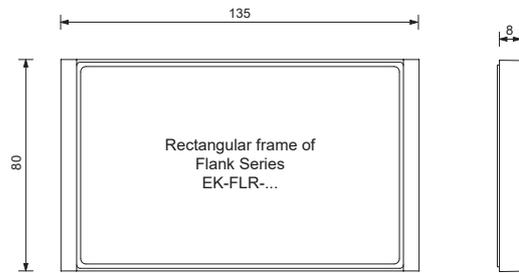
71 Series pushbutton for
mounting without frame ('NF
series), completed with rockers
and plate EK-PQS-...

71 Series pushbutton for
mounting with frame of Form or
Flank Series, completed with
rockers and plate EK-PQS-...

6

Annex 1. Installation

The ekinex 71 Series pushbutton comes with an integrated KNX communication module. Both the EK-E13-TP-.. and the EK-E23-TP-.. versions are suitable for mounting into a flush-mounting box, round (q) or square (r) provided with fixing holes 60 mm apart, or rectangular (s) 3-seater according to the Italian installation standard provided with fixing holes 83,5 mm apart. Each pushbutton requires its metal support (o, p) and the plastic adapter, that have to be ordered separately. The screws for mounting and the KNX terminal block are included in the supply. The pushbutton must be finished off with a set of rockers and a plate with at least a 60 x 60 mm window. A frame is optional, depending on the installation (Form, Flank or 'NF). The rockers are available in either square (e, g) or rectangular (f, h) shapes, in plastic, aluminum or Fenix NTM® materials and in several variations of color. The pushbutton has built-in LEDs that can be freely programmed (for EK-E13-TP -... versions only): for example, to act as status signaling or night orientation light. Two color combinations are available for the LEDs: blue/green or white/red. The square (i, l) and rectangular (m, n) frames are available in two formal solutions (Form and Flank), in plastic or aluminum and in several variations of color and finishing. The 'NF versions of the pushbutton are mounted without a frame and have a side profile in either black or white color.
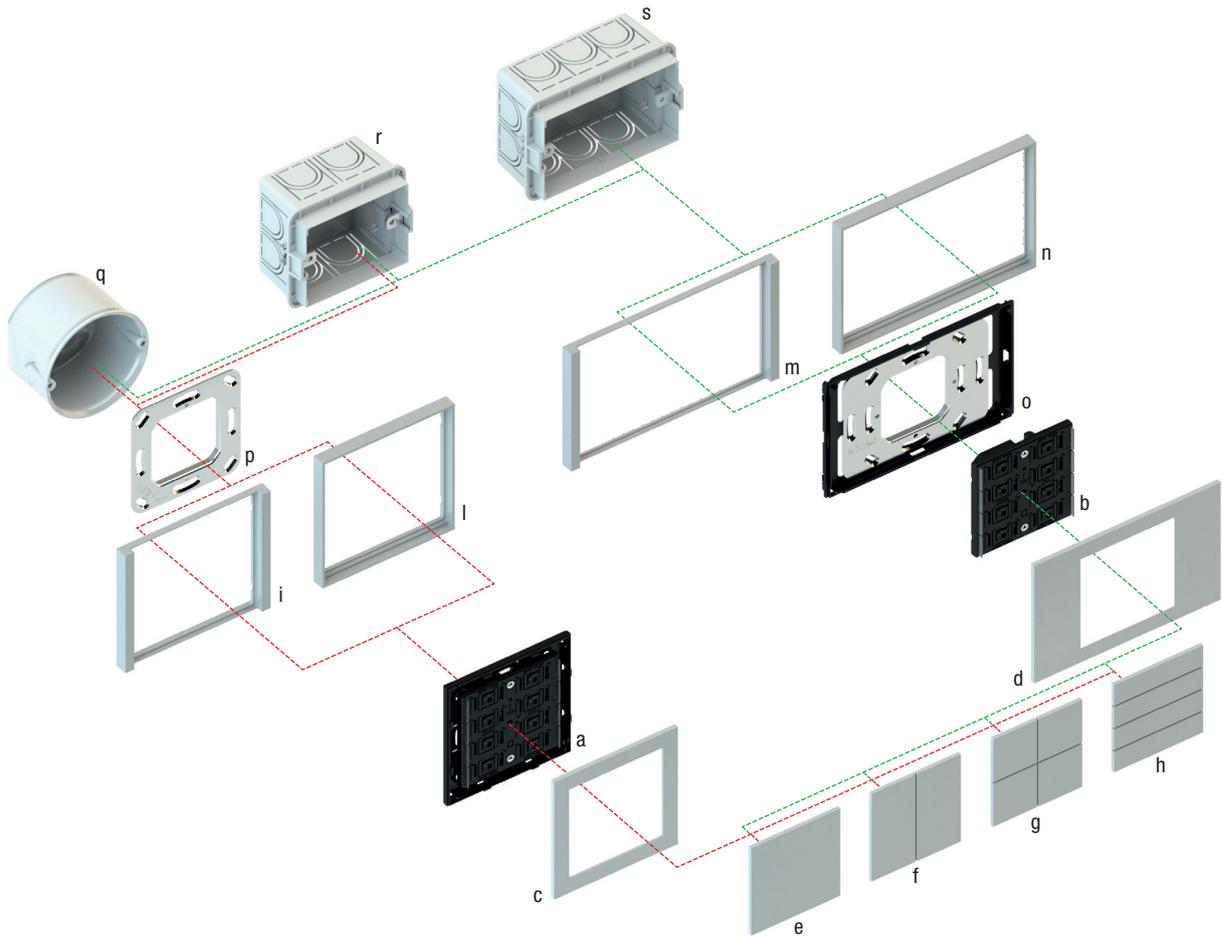

Legenda

Description	Code
a) Series 71 pushbutton for round wall box	EK-E13-TP-.. EK-E23-TP-..
b) Series 71 pushbutton for rectangular wall box	EK-E13-TP-.. EK-E23-TP-..
c) Square plate (60 x 60 mm window)	EK-PQS-...
d) Rectangular plate (60 x 60 mm window)	EK-PRS-...
e) Square rocker (1)	EK-T1Q-...
f) Vertical rectangular rockers (2)	EK-T2R-...
g) Square rockers (4)	EK-T4Q-...
h) Horizontal rectangular rockers (4)	EK-T4R-...
i) Square frame of Flank Series	EK-FLQ-...

Description	Code
l) Square frame of Form Series	EK-FOQ-...
m) Rectangular frame of Flank Series	EK-FLR-...
n) Rectangular frame of Form Series	EK-FOR-...
o) Metal mounting support with adapter	EK-TAR-...
p) Metal mounting support	EK-SMQ-71
q) Round wall mounting box	not delivered by ekinex®
r) Square wall mounting box	not delivered by ekinex®
s) Rectangular wall mounting box (3 modules)	not delivered by ekinex®

Annex 2. Finishing

Form square frame,
square plate

Form rectangular frame,
rectangular plate

Form double frame,
double plate

60 x 60 mm

60 x 60 mm   60 x 60 mm

55 x 55 mm   60 x 60 mm

Form

Flank square frame,
square plate

Flank rectangular frame,
rectangular plate

Flank double frame,
double plate

60 x 60 mm

60 x 60 mm   60 x 60 mm

55 x 55 mm   60 x 60 mm

Flank

Square plate

Rectangular plate

Double plate

60 x 60 mm

60 x 60 mm   60 x 60 mm

55 x 55 mm   60 x 60 mm

'NF

Marks

• KNX
• CE: the device complies with the RoHS III Directive (2011/65/EU) and the Electromagnetic Compatibility Directive (2014/30/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 2002/96/EC (WEEE), and cannot be disposed together with the municipal undifferentiated solid waste.

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.

Documentation

This datasheet refers to the release A2.0 of the ekinex® devices EK-E13-TP... and EK-E23-TP-..., and is available for download at www.ekinex.com as a PDF (Portable Data Format) file.

File name	Device release	Updating
STEKE13E23TP_EN_v.4.2.pdf	A2.0	05 / 2023

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® KNX 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

• This datasheet is aimed at installers, system integrators and planners
• 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
• 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

• KNX® and ETS® are registered trademarks of KNX Association cvba, Brussels