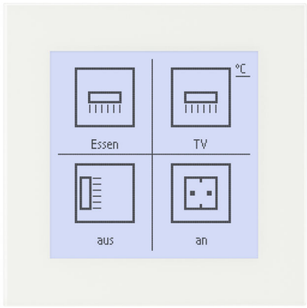
Nunio KNX M-T Push Button

Technical specifications and installation instructions
Item number 71280



1. Description

The **Nunio KNX M-T push button** is a touch switch that be universally used for the KNX building system. It has a monochrome touch display, on which buttons can be displayed in various arrangements. The functions of the buttons are defined individually. As a result, the sensor is extremely flexible with regard to changing requirements (change of tenant in residential or commercial properties, hotel rooms, etc.).

A temperature sensor is integrated into **Nunio KNX M-T push button**. An external temperature reading can be received via the bus and processed with its own data to create a total temperature (mixed value).

Nunio KNX M-T has a PI controller for heating and cooling. A temperature control display can also be represented on the screen. The target temperature, mode and, if applicable, the fan speed can be set there.

Communication objects can be linked via AND and OR logic gates.

The switch-sized device has an integrated glass frame, which is backlit by the screen's lighting. It installed in a switch box.

Functions:

- **Display screen** with one, two, three or four touch buttons. Icon and text selectable for each button. Each button can be configured as a switch, changer, drive (shutter, blind, awning or window with short/long difference), window, dimmer, 8 or 16-bit encoder or to call/save scenes
- **Display lighting** with adjustable basic brightness (standby) and operating brightness. With active operating lighting, the **outsides of the frame are also illuminated.**
- **Area function**if touched with the hand or when wiping. Can be configured as switch, selector switch, as 8 or 16 bit encoder or for scenario recall
- **Menu for temperature control** with +/- buttons (warmer, cooler), target value display, mode selection button and fan speed setting
- Display lighting adjustable, including switched off in standby mode
- **Temperature** measurements. **Mixed value** from own measured value and external values (proportion can be set by percentage), output of minimum and maximum values
- **PI-controller for heating** (one or two-level) and **cooling** (one or two-level) according to temperature. Control according to separate setpoints or basic setpoint temperature. With fan-coil control
- **2 AND and 2 OR logic gates** each with 4 inputs. Switching events as well as 8 logic inputs (in the form of communications objects) can be used as inputs for the logic gates. The output from each gate can be configured optionally as 1-bit or 2 x 8-bit

1.1. Scope of delivery

- Sensor with integrated frame
- Base plate

1.1.1. Accessories required

- Device socket according to DIN 49073

1.2. Technical data

General:	
Casing	Genuine glass, plastic
Colours	similar to RAL 9010 pure white
Assembly	on device socket according to DIN 49073
Size	85 mm × 85 mm (W × H), Installation via socket approx. 10.5 mm, Total depth approx. 31 mm, Support frame approx. 71 mm × 71 mm (W × H)
Total weight	approx. 140 g
Display resolution	160 × 160 px
Ambient temperature	0…+55°C
Ambient humidity	5...80% RH, non-condensing
Storage temperature	-30…+80°C
Overvoltage category	III
Degree of contamination	2
KNX bus:	
KNX medium	TP1-256
Configuration mode	S-Mode
Group addresses	max. 254
Assignments	max. 254
Communication objects	106
Nominal voltage KNX	30 V ⎓ SELV
Power consumption KNX	maximum 25 mA
Connection	KNX plug terminals
Duration after bus voltage restoration until data is received	approx. 5 seconds
Sensor:	
Temperature measurement range	0…+55°C
Temperature resolution	0.1°C

The product conforms to the conditions of the EU Directives.

1.2.1. Accuracy of the measurement

Measurement variations from permanent sources of interference (see chapter *Installation position*) can be corrected in the ETS in order to ensure the specified accuracy of the sensor (offset).

When **measuring temperature**, the self-heating of the device is considered by the electronics. The heating is compensated by the software.

Configuration is made using the KNX software ETS 5. The **product file** can be downloaded from the ETS online catalogue and the Elsner Elektronik website on **www.elsner-elektronik.de** in the “Service” menu.

1.2.2. Device structure

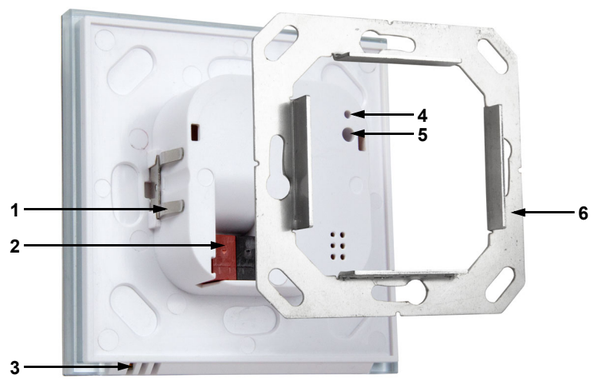


Fig. 1: Back
1 Catches
2 KNX terminal BUS +/-
3 Ventilation slot temperature measurement
4 Programming LED (recessed)
5 Programming LED (recessed) for teaching the device
6 Base frame

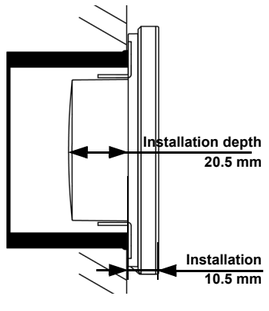


Fig. 2: Cross-section representation

2. Safety and operating instructions

2.1. Installation notes

Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.

CAUTION!
Live voltage!
There are unprotected live components inside the device.
- National legal regulations are to be followed.
- Ensure that all lines to be assembled are free of voltage and take precautions against accidental switching on.
- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

The device is only to be used for the intended purpose described in this manual. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

3. Installation

3.1. Installation location and preparation

The **Nunio KNX M-T push button** is installed on a socket. For correct temperature recording, a wind-tight socket must be used. The casing of the device must not be opened.

May be installed and operated in dry interior rooms only. Avoid condensation.

When selecting an installation location, please ensure that the measurement results are affected as little as possible by external influences. Possible sources of interference include:
- Direct sunlight
- Drafts from windows and doors
- Draft from ducts which lead from other rooms or from the outside to the junction box in which the sensor is mounted
- Warming or cooling of the building structure on which the sensor is mounted, e.g. due to sunlight, heating or cold water pipes
- Connection lines and ducts which lead from warmer or colder areas to the sensor

Measurement variations from permanent sources of interference can be corrected in the ETS in order to ensure the specified accuracy of the sensor (offset).

3.2. Connection

For installation and wiring at the KNX connection, the provisions and standards applicable to SELV circuits must be complied with!

The socket, in which the **Nunio KNX M-T push button** is installed, must not contain cabling with 230 V.

First install the windproof socket with feed line. Seal the inlet tubes as well, in order to prevent draughts.

Then screw the baseplate to the box.

Connect the **KNX databus** +/- to the KNX connection terminal (black-red). A braided sleeve must be used here, which isolates the cables and shields the bus line.

Insert the device firmly onto the metal frame using the catches so that the device and the housing are fixed together.

4. Commissioning

After the bus voltage has been applied, the unit will enter an initialisation phase lasting approx. 5 seconds. During this period, no information can be received or transmitted via the bus.

4.1. Address the device on the bus

The physical address is assigned by the ETS. The device has a sensor and a control LED (fig. 1, No. 4+5).

The equipment is delivered with the bus address 15.15.255. Another address can be programmed using the ETS.

5. Views and device operation

5.1. Buttons

One, two, three or more buttons can be represented on the display. The definition is entered into ETS. The functions and symbols are allocated here, and two text variants, each with 12 letters/numbers are entered.

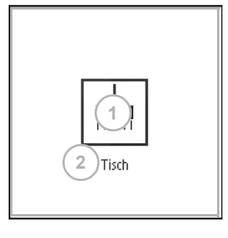


Fig. 3: 1 button
Touch area
1 Area for symbol
2 Individual text

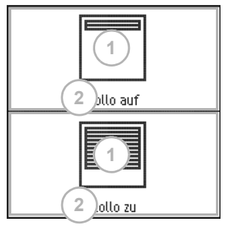


Fig. 4: 2 buttons horizontal
Touch areas
1 Areas for symbols
2 Individual text

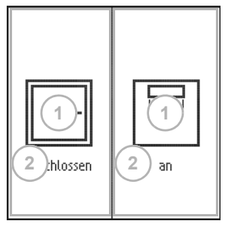


Fig. 5: 2 buttons vertical
Touch areas
1 Areas for symbols
2 Individual text

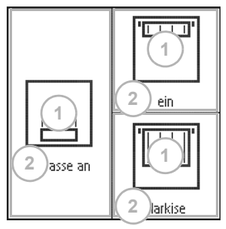


Fig. 6: 3 buttons
Touch areas
1 Areas for symbols
2 Individual text

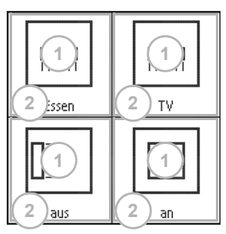
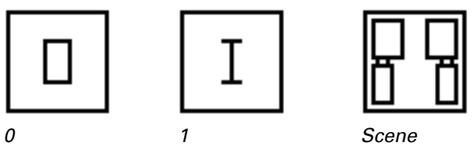


Fig. 7: 4 buttons
Touch areas
1 Areas for symbols
2 Individual text

5.2. Symbol overview

The following symbols can be selected in the device application (ETS):



None *0* *1* *Scene*

Socket *Light* *Suspended lights* *Standard lamp*

Table lamp *Wall lights* *Ceiling lights* *Floor lamp*

Blind closed *Blind open* *Shutters closed* *Shutters open*

Awning retracted *Awning extended* *Windows closed* *Windows open*

5.3. Area function

If the area function in ETS has been activated, another function is available alongside the regular key functions. This is triggered by touching or wiping over an area, e.g. if you touch the sensor with the palm of your hand.

Using the area function

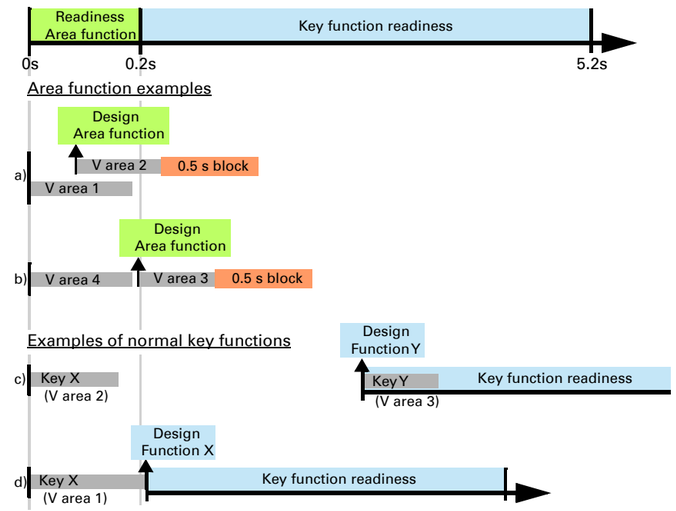
The display area of the sensor is divided into four virtual areas, which correspond to the buttons for the setting “4 buttons”. The virtual areas are independent of the buttons shown. They remain the same, irrespective of whether one, two, three or four buttons are displayed.

If one of the four areas is touched and another (different) virtual real is touched within 0.2 seconds a key is pressed and another (different) key is touched within one second, the action set in the ETS is performed for the area operation (Siehe a) and b)). The touch function is then blocked for 0.5 seconds.

Using the normal key function

If one of the key areas displayed is pressed and no other virtual area is touched within 0.2 seconds, the normal key function is enabled for 5 seconds (Siehe c) and d)). This that if the 0.2 seconds have passed, different buttons or even the same button can be pressed multiple times and the normal button function is executed. With each new touch of a button, the readiness for the normal button function is extended by 5 seconds.

Fig. 8
V area = virtual area



If the area function in the ETS is disabled, the keys can be used normally at any time.

5.4. Temperature controller menu

If the temperature controller of the **Nunio KNX M-T** is used, a temperature controller menu can be represented. The temperature controller menu must be activated in the ETS.

An area **°C** is then shown at the top right of the button display. Tap it to open the temperature controller menu.

Button display

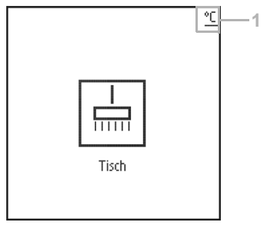


Fig. 9 a
1 To the temperature controller menu

Temperature controller menu

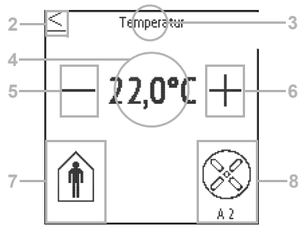


Fig. 9 b
2 Return to scanner
3 Temperature controller labelling field (free text)
4 Target value display (value of the active mode)
5 - Lower target value
6 + Increase target value
7 Mode display and selection
8 Fan controls (optional)

Change target temperature

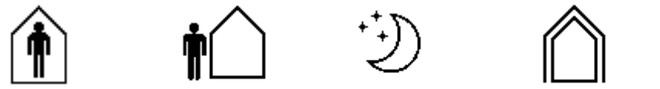
The **target value** for the active heating or cooling mode is displayed (Fig. 9b, No. 4) and can be changed with +/- (Fig. 9b, No. 5+6).

In the device application (temperature controller, ETS), however, it can be specified that the target cannot be changed for each mode. If the manual modification of the nominal value is blocked in one mode, the symbol "Manual blocked" is briefly shown when an attempt is made to modify the value.

The increment and the possible setting range are also specified in the application's temperature controller. Whether the manually changed values are retained after a mode change (e.g. Eco mode over night), or if the stored values are reapplied, is also defined here.

Change mode

Tap the **Mode** symbol (Fig. 9b, No. 7) in order to display the possible operating modes one after another. This causes a frame around the symbol to flash. To confirm the selection and activate the displayed mode, remain on the symbol for a little longer. The frame briefly flashes faster and then disappears. The mode is activated.



Comfort *Standby* *Eco* *Building protection*

The manual selection possibility can be restricted in the device application (temperature controller, ETS).

A small additional symbol indicates whether heating or cooling is in progress (manipulated variable not equal to zero).

Heating mode *Cooling mode*

Touch the symbol “**Comfort extension**” in order to change from Eco mode briefly into Comfort mode. This allows the user to maintain the nominal comfort value for a longer time, e.g. when having guests.

Comfort extension

The duration of this comfort extension period is set in the ETS. The remaining time is shown next to the symbol. After the comfort extension period is terminated, the system returns to Eco mode.

The comfort extension option may also be blocked in the ETS (symbol does not appear for selection).

Change fan speed

If **Control of a fan** (fan coil) is selected in the ETC, touching the fan symbol (Fig. 9b, No. 8) switches between
AX = Automatic with current level
M0 = Manually switched off
M1 = Manual level 1
M2 = Manual level 2
M3 = Manual level 3

When switching through the levels, a frame around the fan symbol flashes. To confirm the selection and activate the displayed mode, remain on the symbol for a little longer. The frame briefly flashes faster and then disappears. The mode is activated.

Blocking and jumping back

The **button function** of the temperature controller display can be **prevented** because of an active operating mode with priority 1 (e.g. building protection during window ventilation). This is displayed by the symbol “Manual change blocked”.

In the application one can specify that the display automatically **jumps back** to “Sensor” if the display in the temperature controller menu has not been touched for the entered time.

6. Maintenance

Ventilation slits must not be dirty of covered. If required, wipe the device with a soft, dry cloth.

7. Disposal

After use, the device must be disposed of or recycled in accordance with the legal regulations. Do not dispose of it with the household waste!