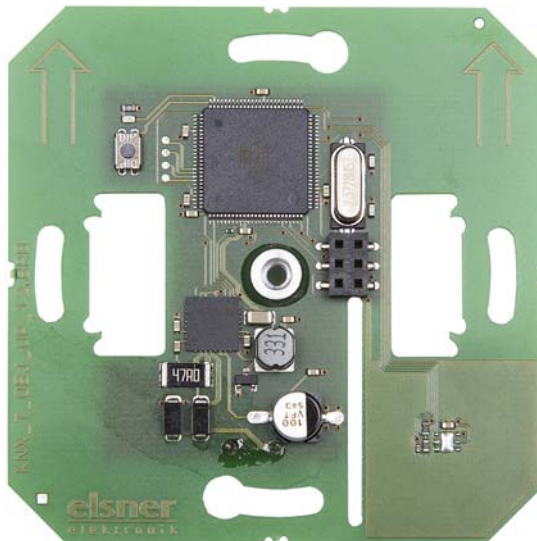




KNX T-Objekt-UP Temperature Sensor

Technical specifications and installation instructions

Item number 70179



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1. Description

The **Temperature Sensor KNX T-Objekt-UP** measures ambient temperature. The sensor can receive an external measured value via the bus and process it with the own data to an overall temperature (mixed value).

The **KNX T-Objekt-UP** provides three switching outputs with adjustable threshold values. The switching outputs and further communication objects can be linked via AND and OR logic gates. Additionally, an integrated actuating variable comparator can compare and output values that are received via communication objects. The sensor has got a PI controller for heating and cooling.

The device is completed with a frame and cover of the switching series installed in the building and thus merges with the interior.

Functions:

- Measurement of **temperature**
- **Mixed value** from own measured value and external value (proportions can be set in percentage)
- **PI controller for heating** (one or two step) and **cooling** (one or two step) depending on temperature. Control according to separate target values or basic target temperature
- **3 switching outputs** with adjustable threshold values (Threshold values can be set by parameter or via communication objects)
- **8 AND and 8 OR logic gates** with each 4 inputs. Every switching incident as well as 8 logic inputs (in the form of communication objects) may be used as inputs for the logic gates. The output of each gate may optionally be configured as 1 bit or 2 x 8 bits
- **2 actuating variable comparators** for output of minimum, maximum or average values. Each with 5 inputs (for values received via communication objects)

Configuration is made using the KNX software ETS. The **product file**, the data sheet and the manual can be downloaded from the Elsner Elektronik homepage on www.elsner-elektronik.de in the "Service" menu.

1.1. Scope of delivery

- Sensor board, serves as base plate

You will need *in addition* (not supplied):

- Socket Ø 60 mm, 42 mm deep
- Frame according to the switching programme used in the building
- Cover according to the switching programme

1.2. Technical specifications

Mounting	In-wall (in socket Ø 60 mm, 42 mm deep)
Dimensions	Mounting plate approx. 70 x 70 (W x H, mm)
Total weight	approx. 20 g
Ambient temperature	Operation -20...+70°C, storage -55...+150°C
Ambient air humidity	max. 95% R. H., avoid bedewing
Operating voltage	KNX bus voltage
Bus current	max. 6 mA,
	max. 10 mA when programming LED is active
Data output	KNX +/- bus terminal plug
BCU type	Own micro controller
PEI type	0
Group addresses	max. 254
Allocations	max. 254
Communication objects	151
Measurement range	-40...+80°C
Resolution	0.1°C
Accuracy	±0,5°C at -40...+25°C
	±1,5°C at -40...+45°C

* Mind the notes on *Accuracy of the measurement*, page 3

The product conforms with the provisions of EC guidelines

- EMC Directive 2004/108/EC
- Low Voltage Directive 2006/95/EC

The following standards and/or technical specifications have been applied:

- EN 50491-5-1: 2010
- EN 50491-5-2: 2011
- EN 60730-1: 2011

1.2.1. Accuracy of the measurement

Measurement variations from sources of interference (see chapter *Installation position*) must 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 reducing the measured temperature by the self-heating of 1.8°C. The indicated indoor temperature measured value approaches the actual room temperature during a 2 hours heating period.

2. Installation and commissioning

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.
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The device is only to be used for its intended purpose. 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.

2.2. Installation position

The sensor will be installed concealed within a socket (Ø 60 mm, 42 mm deep).



The sensor 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
- When mounted in-wall: Draft from ducts which lead from other rooms 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 which lead from warmer or colder areas to the sensor

Temperature variations from such sources of interference must be corrected in the ETS in order to ensure the specified accuracy of the sensor (temperature offset).

2.3. Composition of the sensor

2.3.1. Front side

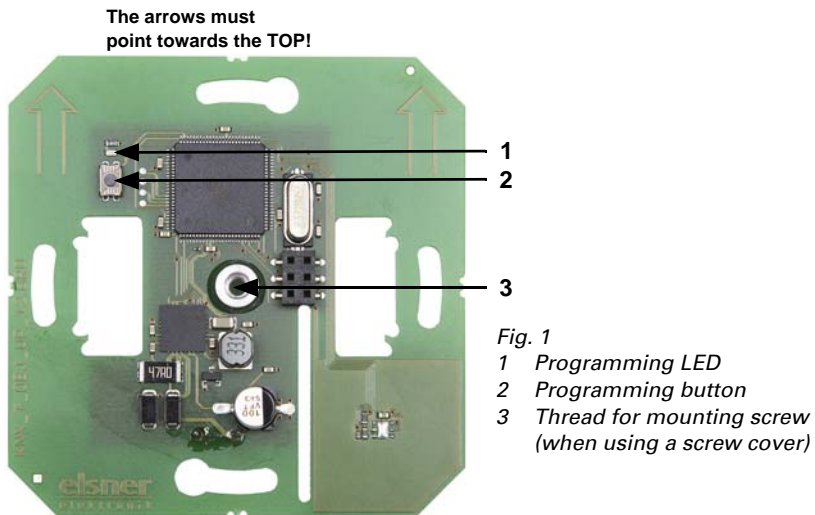


Fig. 1

- 1 Programming LED
- 2 Programming button
- 3 Thread for mounting screw (when using a screw cover)

2.3.2. Rear view with connection

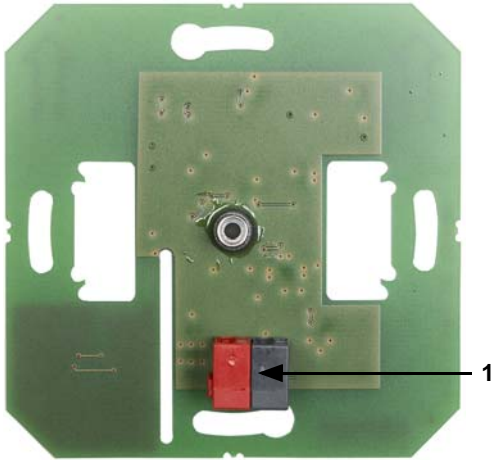


Fig. 2
1 KNX terminal BUS +/-

2.4. Assembly

First of all fit the socket with connection. Seal inlet pipes to avoid infiltration.

Connect the bus line +/- (black-red plug) to the terminals provided on the sensor board of the sensor. Screw the board/base plate on the socket. Ensure that the front side with the programming LED and button is directing out of the wall and that the arrows point towards the top.

After teaching the bus fit or screw on the frame and cover of the switching programme.

2.5. Notes on mounting and commissioning

Never expose the device to water (e.g. rain) or dust. This can damage the electronics. You must not exceed a relative humidity of 95%. Avoid condensation.

After the bus voltage has been applied, the device will enter an initialisation phase lasting a few seconds. During this phase no information can be received or sent via the bus.