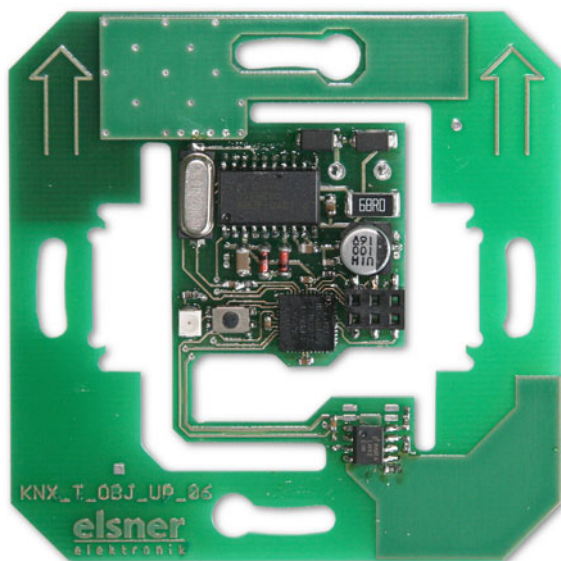# KNX T-Objekt-UP
Temperature Sensor

Technical specifications and installation instructions

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 four switching outputs with adjustable threshold values as well as additional AND and OR logic gates. 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)
- **4 switching outputs** with adjustable threshold values (Threshold values can be set by parameter or via communication objects)
- **4 AND and 4 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

Configuration is made using the KNX software ETS. The **programme file** (format VD), 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. 184
Allocations	max. 184
Communication objects	80
Measurement range	-40…+80°C
Resolution	0.1°C
Accuracy	±1°C at -10…+85°C
	±1.5°C at -25…+150°C

The following standards have been considered for the evaluation of the product in terms of electro magnetic compatibility:

Transient emissions:
- EN 60730-1:2000 Section EMV (23, 26, H23, H26) (threshold category: B)
- EN 50090-2-2:1996-11 + A1:2002-01 (threshold category: B)
- EN 61000-6-3:2001 (threshold category: B)

Interference resistance:
- EN 60730-1:2000 Section EMV (23, 26, H23, H26)
- EN 50090-2-2:1996-11 + A1:2002-01
- EN 61000-6-1:2004

The product has been tested for the above mentioned standards by an accredited EMV laboratory.

2. Installation and commissioning

2.1. Notes on installation

⚡ **Installation, inspection, commissioning and troubleshooting of the device must only be carried out by a competent electrician.**

Disconnect all lines to be assembled, and take safety precautions against accidental switch-on.

The device is exclusively intended for appropriate use. With each inappropriate change or non-observance of the instructions for use, any warranty or guarantee claim will be void.

After unpacking the device, check immediately for any mechanical damages. In case of transport damage, this must immediately notified to the supplier.

> ⚡ **If damaged, the device must not be put into operation.**

If an operation without risk may supposedly not be guaranteed, the device must be put out of operation and be secured against accidental operation.

The device must only be operated as stationary system, i.e. only in a fitted state and after completion of all installation and start-up works, and only in the environment intended for this purpose.

Elsner Elektronik does not assume any liability for changes in standards after publication of this instruction manual.

2.2. Installation position

The sensor will be installed concealed within a socket (Ø 60 mm, 42 mm deep) and fitted with a frame from the switching programme used in the building. 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).

> ⚠ **The sensor may be installed and operated in dry interior rooms only. Avoid condensation.**
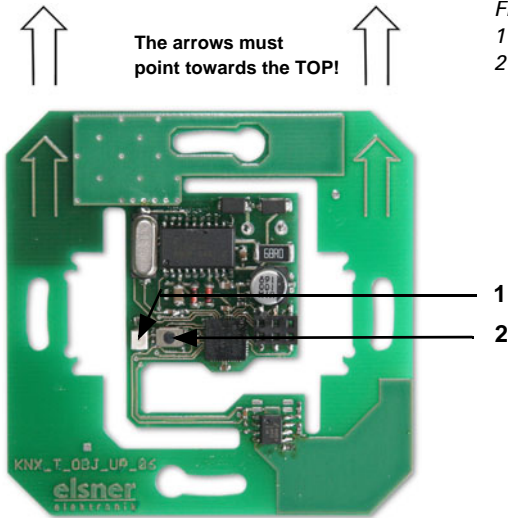
2.3. Composition of the sensor

2.3.1. Front side

Fig. 1
1   Programming LED
2   Programming button for
     teaching instrument

The arrows must point towards the TOP!

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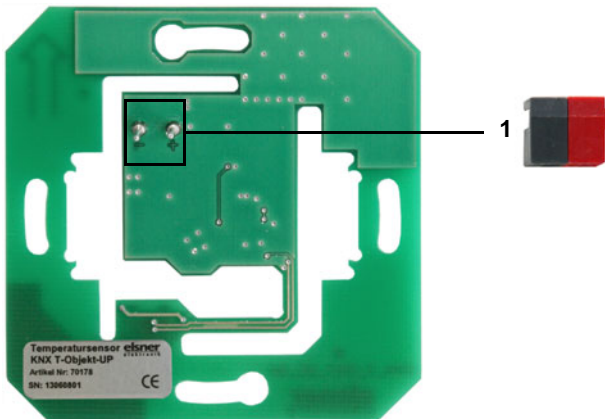**2**

2.3.2. Rear view with connection

Fig. 2
1   Slot for KNX terminal BUS +/-

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2.4. Assembly

First of all fit the socket with connection. Seal inlet pipes to avoid infiltration.
Then screw the base plate onto the socket and position the frame of the switching pro-
gramme. Connect the bus line +/- (black-red plug) to the terminals provided on the sen-
sor 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 ar-
rows point towards the top.

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

2.5. Notes on mounting and commissioning

Sensor must not be exposed to water (rain) or dust. This could result in the electronic
being damaged. A relative air humidity of 95% must not be exceeded. Avoid bedewing.

After the bus voltage has been applied, the device will enter an initialisation phase las-
ting 5 seconds. During this phase no information can be received via the bus.