



Thermo-Hygrometer KNX TH-UP basic



Technical Data and Installation Notes

Description

The Indoor Sensor KNX TH-UP basic measures temperature and humidity and calculates the dew point. The sensor can receive external measured values via the bus and process them with the own data to an overall temperature and overall air humidity (mixed values).

The KNX TH-UP basic provides seven 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 (depending on temperature) and for ventilation (depending on air humidity) and it can emit a warning to the bus as soon as the area of optimum comfort (according to DIN 1946) is left.

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

Functions:

- Measurement of **temperature and air humidity** (relative, absolute), calculation of dew point
- **Mixed values** from own measured values and external values (proportions can be set in percentage)
- **PI controller for heating** (one or two step) and cooling (one or two step) depending on temperature
- **PI controller for ventilation** depending on humidity: Dehumidify/humidify (one step) or dehumidify (one or two step)
- **7 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 VD2) and the **manual** can be downloaded from the Elsner Elektronik homepage on www.elsner-elektronik.de in the "Service" menu.

Scope of delivery

- Housing with sensor board
- Base plate

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

- Socket Ø 60 mm, 42 mm deep
- Frame (for element 55 x 55 mm), suitable for the switching programme used in the building

Technical specifications

Housing:	Plastic material (partly lacquered)
Colours:	<ul style="list-style-type: none"> • White glossy (similar to RAL 9016 Traffic White) • Aluminium matt • Anthracite matt • Stainless steel • Special colours on request
Mounting:	In-wall (in socket Ø 60 mm, 42 mm deep)
Protection category:	IP 20
Dimensions:	Housing approx. 55 × 55 (W × H, mm), mounting depth approx. 15 mm, base plate approx. 71 × 71 (W × H, mm)
Total weight:	approx. 45 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:	110
Measurement range temperature:	-40...+100°C
	Resolution: 0.1°C
	Accuracy: ± 0.4°C at 25°C
Measurement range humidity:	0...100%
	Resolution: 0.1%
	Accuracy: 0...20 % = ± 5% R. H. 20...80 % = ± 3% R. H. 80...100 % = ± 5% R. H.
	Drift: ± 0.5% R. H. per year in normal air

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.

Installation and Commissioning

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



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

The sensor 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 sensor 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 sensor 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.

Installation position

The KNX TH-UP basic 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.

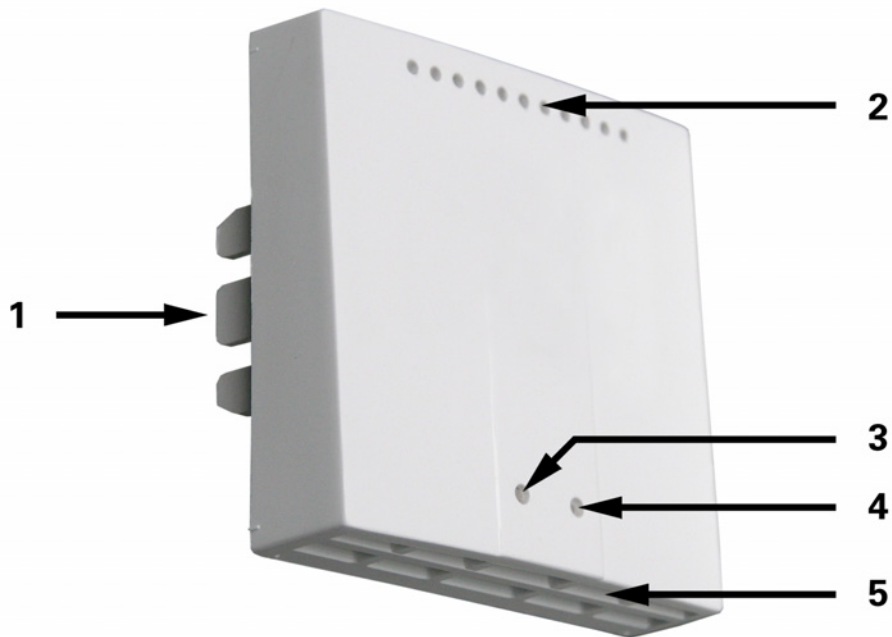
In selecting an installation location, please take care that no direct sunlight, heating element or draught from windows or doors will distort the values measured. Infiltration from pipes that lead to the socket where the sensor is installed from other rooms may cause false measurement results, too.

The sensor may be installed and operated in dry interior rooms only. Avoid condensation.



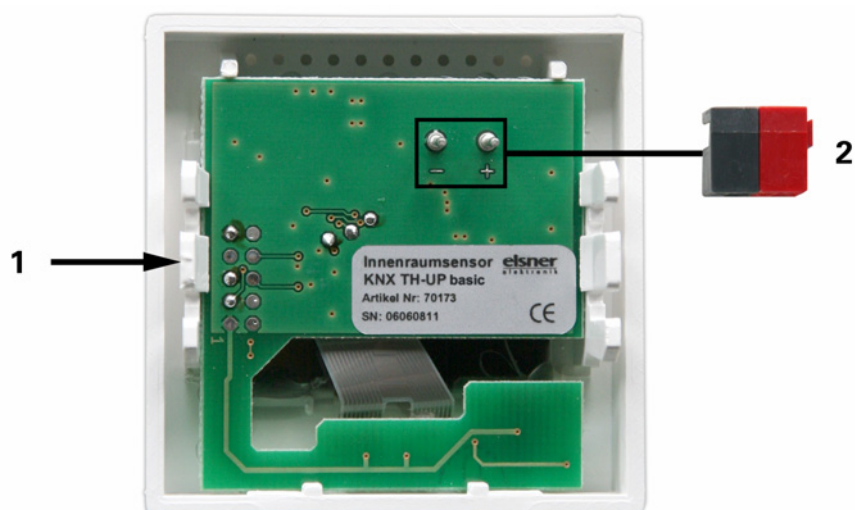
Composition

Casing



- 1 Notches
- 2 Air circulation holes
- 3 Programming LED (recessed)
- 4 Programming button (recessed) for teaching instrument
- 5 Air circulation holes (BOTTOM)

Rear view of casing with sensor board



- 1 Notches
- 2 Slot for KNX terminal BUS +/-

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 programme.

Connect the bus line +/- (black-red plug) to the terminals provided on the sensor board of KNX TH-UP basic. Pin the sensor with the notches on to the metal frame, so that sensor and frame are fixed.

Notes on installation

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.