KNX T-UN

Temperature Sensor

Technical specifications and installation instructions

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1. Description

The **Temperature Sensor KNX T-UN** consists of evaluation electronics and measuring sensor. The sensor measures temperature in indoor and outdoor areas. 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-UN** 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.

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. Technical specifications

Housing	Plastic material, sensor sleeve metal
Colour	Housing white, cable black
Installation	Mounting
Protection category meas. sensor	IP 68
Dimensions evaluation electronics	approx. 38 x 47 x 24 (W x H x D, mm)
Dimensions measuring sensor	length sensor sleeve approx. 20 mm, diameter approx. 6 mm, cable length approx. 300 cm
Ambient air humidity	Evaluation electronics: max. 95% R. H., avoid bedewing
Operating voltage	KNX bus voltage
Bus current	max. 8 mA
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	-30…+130°C	
Accuracy at +25°C housing temperature of evaluation electronics	Sensor temperature ±0°C -30…+25°C -30…+70°C -30…+130°C	Max. difference of measured value ± 1.0°C ± 1.5°C ± 2.5°C ± 4.0°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 evaluation electronics of the sensor is installed in a socket. When selecting an installation location for the measuring sensor, please ensure that the measurement results are affected as little as possible by external influences. Possible sources of interference include:

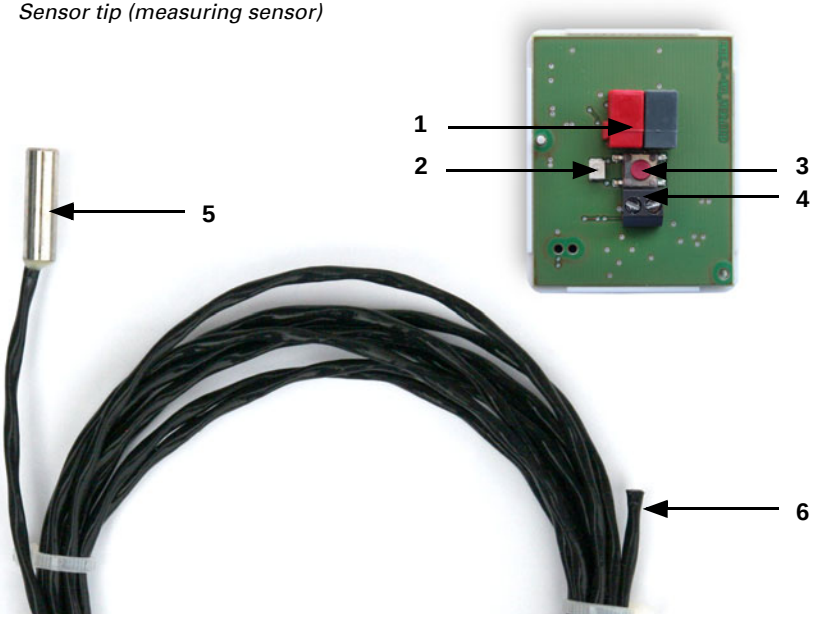
- Direct sunlight
- Drafts from windows and doors
- Warming or cooling of the building structure on which the sensor is mounted, e.g. due to sunlight, heating or cold water pipes
- Connection lines which lead from warmer or colder areas to the sensor

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. Mounting and connection

2.3.1. Composition of the sensor

1 *Slot for KNX terminal +/-*
2 *Programming LED*
3 *Programming button for teaching the instrument*
4 *Connection clamp for measuring sensor*
5 *Connection cable measuring sensor*
6 *Sensor tip (measuring sensor)*



2.3.2. Connection of the sensor

Connect the cable of the measuring sensor to the clamp of the evaluation electronics (connection is reverse polarity protected). The cable connection may be extended up to 20 m maximum.

2.4. 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 lasting 5 seconds. During this phase no information can be received via the bus.

3. Maintenance

The sensor must regularly be checked for dirt twice a year and cleaned if necessary. In case of severe dirt, the sensor may not work properly anymore.

As a precaution, the device should always be separated from bus current for maintenance works.