

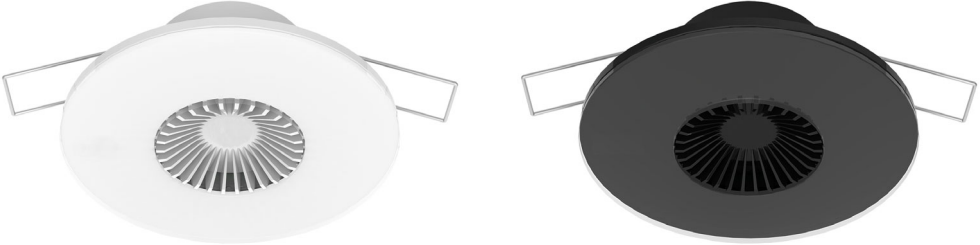
Intra-Sewi KNX TH

Ambient Climate Sensor,

Intra-Sewi KNX T Temperature Sensor

Technical specifications and installation instructions

Item numbers
Intra-Sewi KNX TH 70669 (white), 70666 (black)
Intra-Sewi KNX T 70659 (white), 70665 (black)



1. Description

The **Sensors Intra-Sewi KNX T and Intra-Sewi KNX TH** for the KNX building bus system measure the ambient temperature. **Intra-Sewi KNX TH** additionally captures the air humidity and calculates the dew-point. Via the bus, the indoor sensors can receive external values of temperature or humidity and process them further with their own data to a total value (mixed value, e.g. room average).

All measurement values can be used for the control of limit-dependent switching outputs. States can be linked via AND logic gates and OR logic gates. In addition, an integrated actuating variable comparator can compare and output variables that were received via communication objects.

An integrated PI-controller controls a heating/cooling (according to temperature). **Intra-Sewi KNX TH** offers a second controller for ventilation (humidification/dehumidification according to humidity) and a warning can be output to the bus as soon as the comfort field, as per DIN 1946, is left.

- Measuring the **temperature**, with **mixed value calculation**. The share of internal measurement value and external value can be set as a percentage
- **Threshold values** can be adjusted per parameter or via communication objects
- **PI-controller for heating** (one or two-stage) and **cooling** (one or two-stage) according to temperature. Regulation according to separate setpoints or basic setpoint temperature
- **4 AND and 4 OR logic gates**, each with 4 inputs. All switching events as well as 16 logic inputs (in the form of communications objects) can be used as inputs for the logic gates. The output of each gate can be configured optionally as 1-bit or 2 x 8-bit
- **2 actuation variable comparators** to output minimum, maximum or average values. 5 inputs each for values received via communication objects

Intra-Sewi KNX TH additionally:

- Measuring the **air humidity** (relative, absolute), with **mixed value calculation**. The share of internal measurement value and external value can be set as a percentage
- Bus message, whether the values for temperature and air humidity are within the **comfort field** (DIN 1946)
- **Dew point** calculation
- **PI controller for humidity** according to humidity: Ventilate/Air (one-stage) or Ventilate (one or two-stage)

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

1.0.1. Scope of delivery

- Sensor
 - Pre-assembled clamps for false ceiling installation
 - Support ring for connector socket installation
- For socket installation you will need *in addition* (not supplied):
- Socket Ø 60 mm, 42 mm deep

1.1. Technical data

| General: | |
|----------------------------------|--------------------------------------------------------------------------------------------|
| Housing | Plastic, glass |
| Colour | • similar to pure white RAL 9010 • similar to jet black RAL 9005 |
| Assembly | built-in, in false ceiling or connector socket |
| Dimensions Ø x height above wall | approx. 80 mm x approx. 5 mm height in wall (installation) approx. 31 mm (incl. clamps) |
| Degree of protection | IP 30 |
| Weight | approx. 50 g |
| Ambient temperature | -20...+60°C |
| Ambient humidity | 5...95% RH, non-condensing |
| Storage temperature | -20...+70°C |
| KNX bus: | |
| KNX medium | TP1-256 |
| Configuration mode | S-Mode |

| Group addresses | max. 254 |
|---------------------------------------------------------------|-------------------------------------------------|
| Assignments | max. 254 |
| Communication objects | Intra-Sewi KNX TH: 183 Intra-Sewi KNX T: 129 |
| Nominal voltage KNX | 30 V $\overline{\text{---}}$ SELV |
| Power consumption KNX | max. 10 mA |
| Connection | KNX plug terminals |
| Duration after bus voltage restoration until data is received | approx. 5 seconds |
| Sensors: | |
| Measurement range | -20°C ... +60°C |
| Resolution | 0.1°C |
| Humidity sensor (only Intra-Sewi KNX TH): | |
| Measurement range | 0% rH ... 100% rH |
| Resolution | 0.1% rH |

The product is compliant with the provisions of the EU guidelines.

1.1.1. Measuring accuracy

Deviations in measured values due to interfering sources (see chapter *installation location*) must be corrected in the ETS in order to achieve the specified accuracy of the sensor (offset).

During the **Temperature measurement**, the self-heating of the device is taken into consideration by the electronics. It is compensated by the software, therefore the displayed/output indoor temperature measuring value is correct.

2. Safety and use instructions

2.1. General 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.
- When planning and installing electrical systems, observe the applicable directives, regulations and provisions of the respective country.
 - Ensure that the device or system can be disconnected. During installation, disconnect all cables from the power supply and take safety precautions against unintentional switch-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



Install and use only in dry interior rooms! Avoid condensation.

The **Sensors Intra-Sewi KNX T and Intra-Sewi KNX TH** are installed in a false ceiling or on wall or ceiling in a standard connection socket (Ø 60 mm, 42 mm deep).

When selecting an installation location, please ensure that the measurement results of **temperature or humidity** are affected as little as possible by external influences. Possible sources of interference include:

- Direct sunlight
- Drafts from windows and doors
- Draughts from ducts coming from other rooms or the outdoors
- 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 empty ducts which lead from warmer or colder areas to the sensor

Measurement variations from such sources of interference must 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 connection is made with the KNX terminal (red/black) to KNX TP.

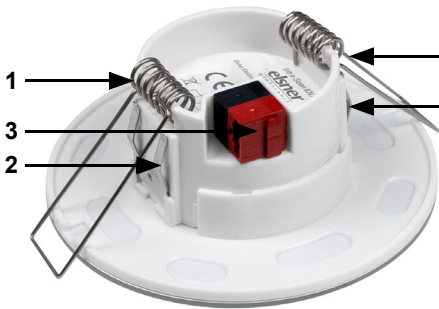


Fig. 1
1 Clamps for installation in false ceiling
2 Springs for installation in support ring
3 KNX terminal

3.2.1. Assembly

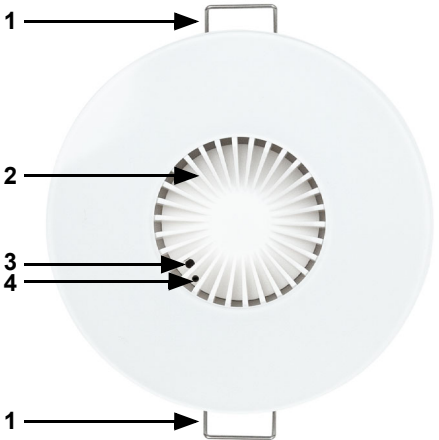


Fig. 2
1 Clamps for installation in false ceiling
2 Airing lamella
3 Programming button (recessed, larger opening)
4 Programming LED (recessed, smaller opening)

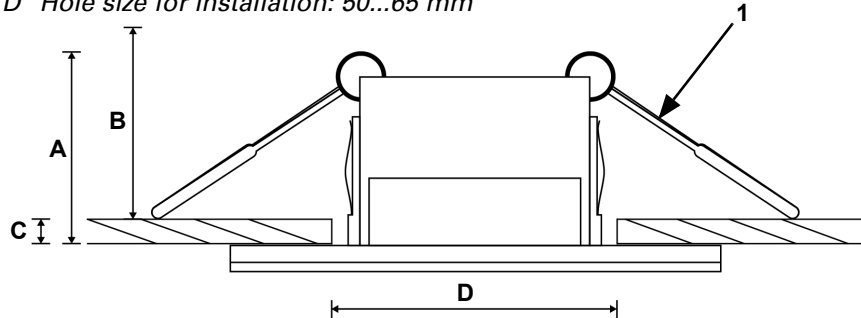
Installation in false ceiling

Connect the bus line to the KNX terminal (red/black).

Place the device in the installation opening in the ceiling. For this, fold the clamps upwards and guide the device through the installation opening with the clamps first.

Intra-Sewi KNX T(H) is automatically fixed by the clamps.

Fig. 3
1 Clamps for installation in false ceiling
A Height in wall (built-in): approx. 31 mm
B Space behind the false ceiling, necessary for insertion (clear dimension): approx. 31 mm
C Maximum wall thickness: 20 mm
D Hole size for installation: 50...65 mm



Installation in connector socket

Before socket installation, remove the clamps for the false ceiling installation.

Screw the support ring onto the socket. Pay attention to the orientation as shown in the chapter *Coverage area of the motion detector*.

Connect the bus line to the KNX terminal (red/black).

Clamp the device in the support ring so that the springs on the device snap over the tabs of the support ring.

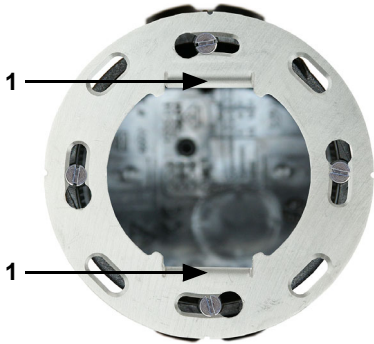
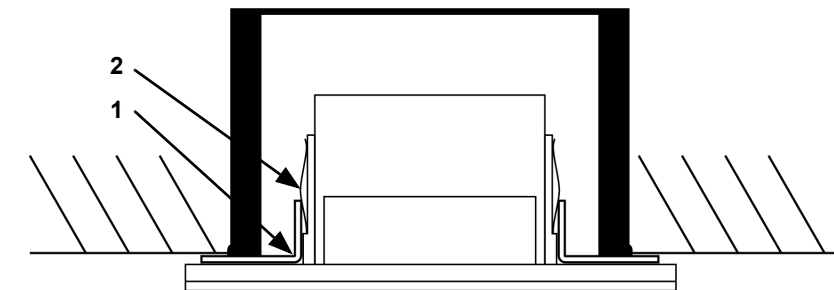


Fig. 4: Support ring
1 Tabs

Fig. 5
Connector socket with Ø 60 mm, 42 mm deep.
1 Support ring, screwed to the socket
2 Springs hold the device firmly on the support ring



4. Commissioning

The ventilation slots on the side must not be dirty, painted over or covered.

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

The presence sensor has a start-up phase of approx. 15 seconds during which the presence of persons is not detected.

4.1. Addressing the equipment

The individual address is assigned via the ETS. For this purpose there is a button with a control LED on the unit (Fig. 2, No. 3+4).

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

5. Maintenance

As a rule, it is sufficient to wipe the device with a soft, dry cloth twice a year.

6. 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!