

Product Page

The KNX-Sensor Neo-TTHC-VOC-x is used for measuring and controlling indoor air parameters

- Air temperature (sensor in the housing) also weighted with external temperature
- Humidity (sensor in the housing)
- VOC level (sensor in the housing) (see page 2)
- Calculated values absolute humidity, dew point temperature and energy content (enthalpy)
- Additional floor, ceiling or component temperature (Terminal for external PT1000)
- Control functions for heating and cooling applications (can be combined)
- Setpoint temperatures for Comfort, Standby, Economy and Protection, selectable via KNX HVAC objects
- Setpoint change via objects
- Storage of minimum- and maximum-temperature
- Heat- and frost-alarm
- Limits for temperature, humidity and VOC level
- Fan control by humidity, VOC limits and external inputs
- Detecting of dew point temperature and alarm / regulation at risk of condensation
- Adaptation for setpoint and maximum temperatures
- Controller output 0...100% or programmable PWM for thermal actuators
- Valve rinse function
- Second temperature controller as auxiliary controller

Four binary inputs / outputs (floating)

- Light control as switch / button with short, long, double and both function
- Dimmer
- Blind and shutter control
- Programmable Encoder
- Temperature adjustment
- The binary contacts can be configured as outputs.
Possibility of connecting low-current LEDs without a series resistor.

Four logic blocks for the logical link between internal and external signals.

- 10 associated logic inputs / outputs
- Heat- and cooling-request as additionally available signals
- Functions "AND, OR, NOT, XOR" for binary logic
- Functions "+ - *" for 8-bit values
- Function "=" for conditional forwarding of events

Applications

- Detection and control of room temperature and humidity
- Detection of VOC level
- Decentralized control for steady KNX-valves or thermal actuators
- Decentralized ventilation control depending on humidity and air quality
- Detecting of component temperature and temperature control (Terminal for external PT1000) to prevent condensation and structural damage
- Evaluation of external switches and push buttons for switching functions

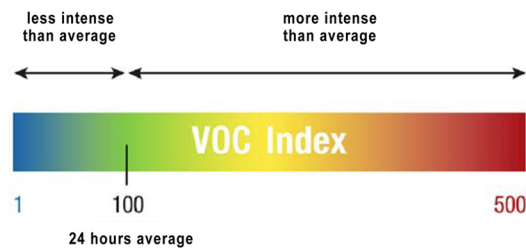


VOC level

Two different VOC sensor chips from Sensirion are used.

1. The new type is used with devices starting with serial number 03501516.

The gas index algorithm used by Sensirion automatically adjusts its output to any indoor environment and maps all VOC events to a VOC index scale ranging from 1 to 500 VOC index points (see figure).



Output data type: 2-byte float without unit

The value 100 refers to the average indoor gas composition over the past 24 hours. While values between 100 and 500 indicate a deterioration, values between 1 and 100 inform about improvement of the air quality.

To ensure that the 24-hour average value does not swing up, a regular fresh air event (shock ventilation) is indispensable.

2. The previous type is used for devices up to serial number 03501515.

The value is composed of a mixture of volatile gases in ppb (parts per billion) and converted into a CO₂ equivalent ppm value.

Its output data type is a 2 byte float and can take values between 400 - 59000 ppm.

This sensor registers a deterioration in the air and its value increases.

If the air pollution remains constant, this condition is rated as "good" again.

If the air pollution now increases, the output value also increases.

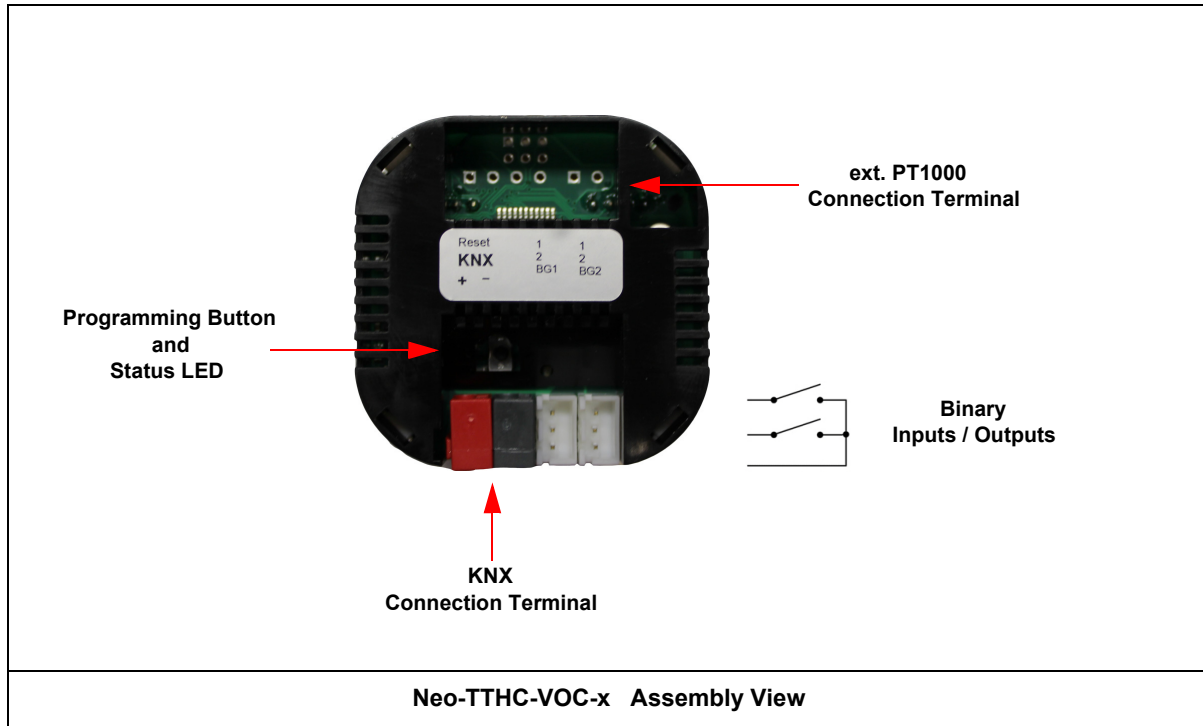
This behavior can cause the measured value to swing up.

For this reason, a regular fresh air event (shock ventilation) is indispensable.

If the value remains high, the sensor must be reset to the delivery status and reprogrammed.

Startup

The KNX sensor is initialized via the ETS from version 4 in conjunction with the associated application program.
 The sensor is delivered unprogrammed.
 All functions are programmed and parameterized with ETS.
 Please read the ETS instructions.



Assembly

The **Neo-TTHC-VOC-x** sensor is designed for mounting in a standard flush-mounted socket (60/68) mm and is located in an IP20 plastic housing with aluminum cover.

In Case of Bus Voltage Recurrence

All changes made using the help key for the KNX bus are saved if the device has been correctly parameterized..
 By using the weighted mixture temperature, the external temperature scaling is set to 0% until an external temperature value is received.

The measuring and control values start with their current values (integral component=0 by PI-Controller).
 The ETS parameter settings are retained.

Discharge Program and Reset Sensor

In order to delete the programming (projecting) and to reset the module back to delivery status, it must be switched off (disconnect the KNX bus).

Press and hold the programming button while reconnecting the KNX bus and wait until the programming LED lights up (approx. 5-10 seconds).

Now you can release the programming button.

The module is ready for renewed projecting.

If you release the programming button too early, repeat the aforementioned procedure.

Technical Data

Technical Data - Neo-TTHC-VOC-x

Measurement	temperature rel. humidity VOC concentration Temperature (PT1000, external)
Calculated Values	abs. Humidity, Dewpoint Temperature, Enthalpie
Control	integrated
Temperature Range	-25 .. +80°C
Resolution	0.02°C
Accuracy	± 0.4°C (5..60°C), sonst ± 0.8°C
Humidity Range	10 .. 95% r.H
Accuracy	± 3% r.H (20..80%) at +20°C, else ± 5% r.H
Measurement Range VOC	depends on used sensor - see page 2
PT1000 not included	
Temperature Range	-50 .. +400°C (depending on the sensor used)
Resolution	0.02°C
Accuracy	depending on the sensor used
Binary In- / Output	4
Operating Voltage	KNX Bus Voltage 21 .. 32VDC
Power Consumption	approx. 240mW (at 24VDC)
Environment Temperature KNX-Module	Operating: -25 .. +80°C Storage: -25 .. +80°C
Environment Humidity KNX-Module	10 .. 95% r.H Non Condensing
Bus Coupler	integrated
Auxiliary Supply	not required
Startup with the ETS Version 4 or higher	HLK305
Curcuit Points	KNX 2-pole clamps (red / black)
Protection Class	IP20
Housing KNX-Module	Cover aluminum anodized (black) square: (80 x 80 x 6) mm round: Ø 84 x 6 mm Standard flush-mounted socket (60/68 mm) in the dry interior
Article Number	30543563 Aluminum, square, sanded 30543564 Aluminum, square, sanded, black

Imprint

Publisher: Arcus-EDS GmbH, Rigaer Str. 88, 10247 Berlin

Responsible for the content: Hjalmar Hevers, Reinhard Pegelow

Reprints, including excerpts, are only permitted with the approval of Arcus-EDS GmbH.

All information without guarantee, subject to technical changes and price changes.

Liability

The selection of the devices and the determination of the suitability of the devices for a specific purpose are solely the responsibility of the purchaser. No liability or guarantee is assumed for these. The information in the catalogs and data sheets does not represent a guarantee of particular properties, but results from empirical values and measurements. Liability for damage caused by incorrect operation/project planning or malfunctions of the devices is excluded. Rather, the operator/planner must ensure that no further damage can occur as a result of incorrect operation, incorrect configuration and malfunctions.

Safety regulations

Caution! Installation and assembly of electrical devices may only be carried out by a qualified electrician.

The buyer/operator of the system must ensure compliance with the relevant safety regulations of the VDE, TÜV and the responsible energy supply companies. No warranty is accepted for defects and damage caused by improper use of the devices or non-observance of the operating instructions.

Disposal



The crossed-out wheeled bin symbol on the device or packaging means that the product must not be disposed of with other general waste at the end of its useful life.

Warranty

We provide warranty within the scope of the legal provisions.

In the event of a claim, please contact us and send the device, with a description of the error, to our company address below.

Manufacturer



The CE mark is a free trade mark, which is aimed exclusively at the authorities and does not include any assurance of properties.



Registered trademark of the Konnex Association