Product Page

The KNX-Sensor SK20-TTHC-VOC-2B is used for measuring and controlling indoor air parameters

Article No. 30543261

SK10-TTHC-VOC-2B

- Air temperature (sensor on housing) also weighted with external temperature
- Relative humidity (sensor on housing)
- VOC level (sensor in the housing) (see page 2)
- Calculated values absolute humidity, dew point temperature and energy content (enthalpy)
- External PT1000 connector (PT1000 not included)

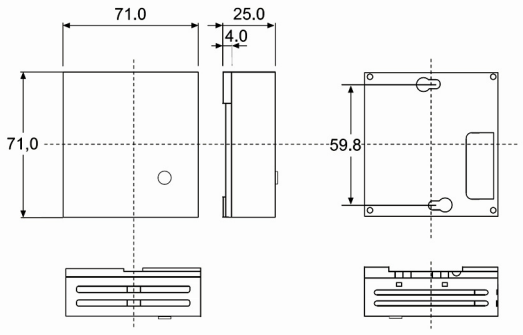
- Control functions for heating and cooling applications (can be combined)
- Setpoint temperatures for Comfort, Standby, Economy and Protection, selectable via KNX HVAC objects
- Setpoint change via objects
- Storage of minimum- and maximum-temperature
- Heat- and frost-alarm
- Limits for temperature and humidity
- Fan control by humidity 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

Two binary contacts.

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

Sensor:	HTU21
ext. Sensor	PT1000 (not included)
Measurement Ranges:	
Temperature:	-25 .. +80°C
Resolution:	0.02°C
Accuracy:	± 0.4°C (5..60°C), else ± 0.8°C
rel. Humidity:	10 .. 90% r.H
Resolution:	0.02% r.H
Accuracy:	± 3% r.H (20..80%) @ 25°C, else ± 5%
VOC level:	400 .. 10000 ppm, CO2 equivalents
ext. Temperature:	-50 .. +400°C (depending on the sensor used)
Resolution:	0.02°C
Accuracy	depending on the sensor used
Operation Temperature:	-25 .. +80°C
Storage Temperature:	-25 .. +80°C
Protection Class:	IP20



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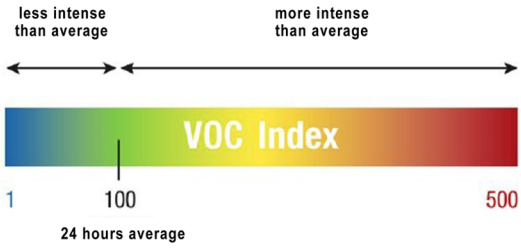
VOC level

Two different VOC sensor chips from Sensirion are used.

1. The new type is used with devices starting with serial number 01323423.

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 01323422.

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.

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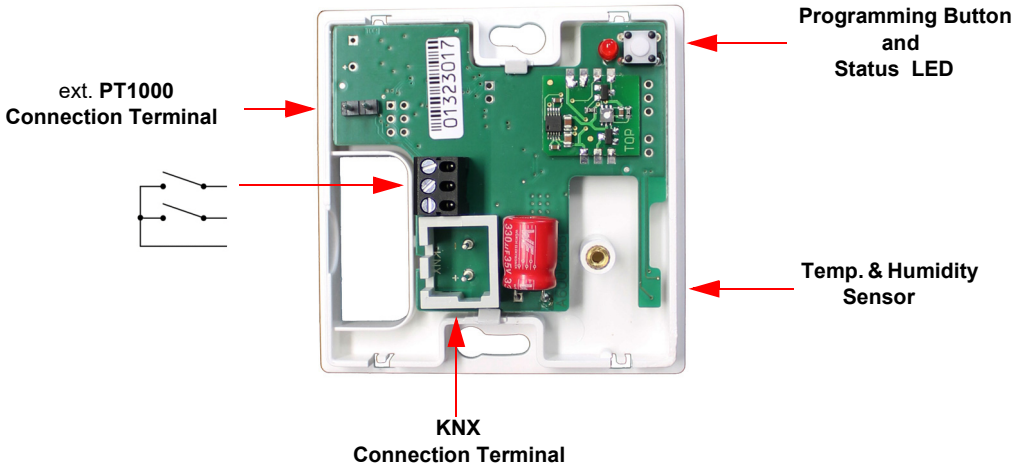
Startup

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.



SK20-TTHC-VOC-2B Assembly View

Assembly

The **SK20-TTHC-VOC-2B** sensor is for indoor areas.
The sensor is located in an IP20 plastic housing.
The sensor is mounted on the wall with two screws.

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.

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Technical Data

Technical Data - SK20-TTHC-VOC-2B

Measurement	temperature rel. humidity VOC concentration Temperature (PT1000, external)
Calculated Values	Absolute Humidity Dewpoint Temperature Enthalpie
Control	Integrated
Temperature Range	-25 .. +80°C
Resolution	0.02°C
Accuracy	± 0.4°C (5..60°C), else ± 0.8°C
rel. Humidity Range	10 .. 95% r.H
Resolution	0.02% r.H
Accuracy	± 3% r.H (20..80%) @ 25°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 inputs	2
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	Plastic white
Dimensions Housing KNX-Module	(71 x 71 x 25) mm
Article Number	**30543261**

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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

arcus-eds electronic design services KNX

CE

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

KNX

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