

## Product Page

### The KNX-Sensor SK10-THC-VOC-AFF is used for measuring and controlling air parameters

- 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 )
- 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 CO2 concentration
- 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

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

Article No. 30533053



SK10-THC-VOC-AFF

#### Measurement Range

Temperature: -25 .. +80°C  
Resolution: 0.02°C  
Accuracy: ± 0.4°C (5..60°C), else ± 0.8°C

rel. Humidity: 10 .. 95% r.H  
Resolution: 0.02% r.H  
Genauigkeit: ± 3% r.H (20..80%) @ 25°C, else ± 5%

VOC level: see page 2

Operation Temperature: -25 .. +80°C  
Storage Temperature: -25 .. +80°C

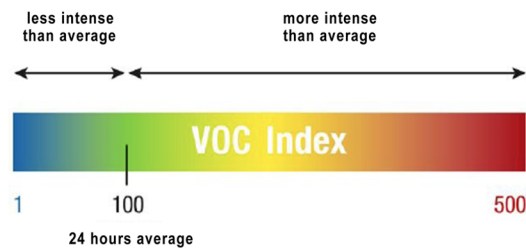
Protection Class: IP54/65

## VOC level

Two different VOC sensor chips from Sensirion are used.

### 1. The new type is used with devices starting with serial number 03201465.

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 03201464.

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

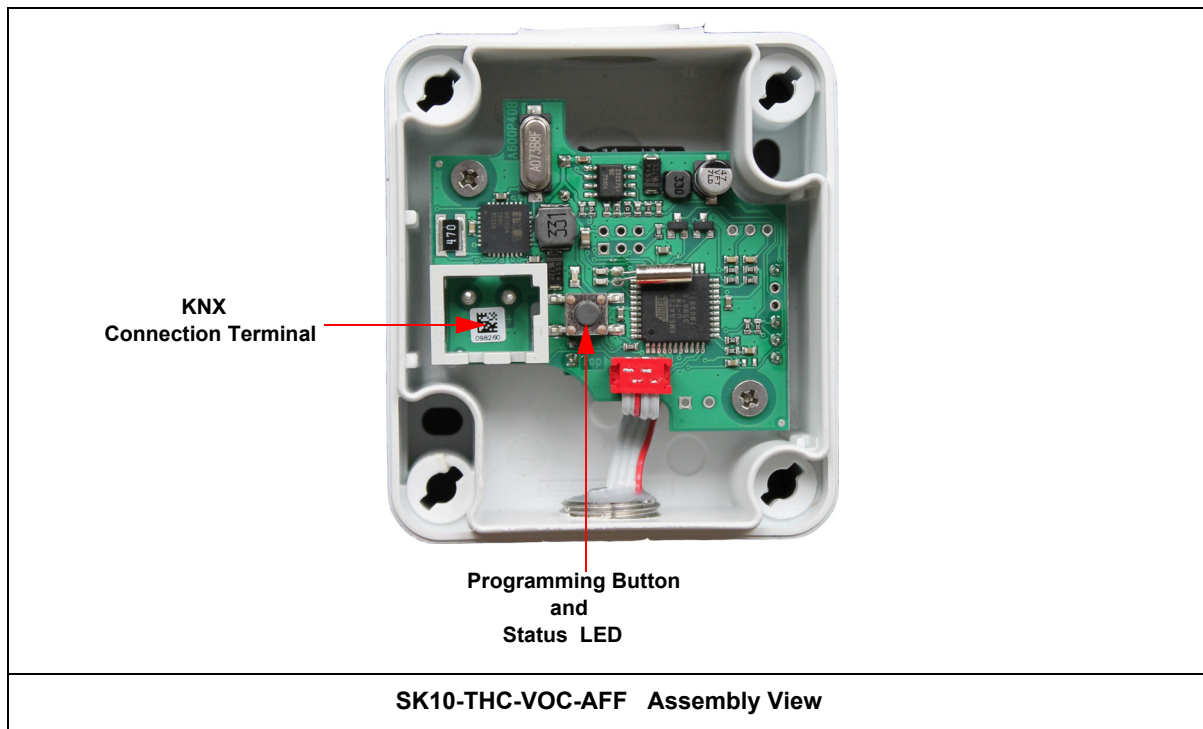
Its output data type is a 2 byte float and can take values between 400 - 59000 ppm.

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 **SK10-THC-VOC-AFF** sensors are for outdoor and ( moist ) indoor areas.  
The sensor is located in an IP54/65 plastic housing.  
The sensor is mounted on the wall with two screws.

**Caution, the mounting must be done with the sensor downwards !**

## 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 - SK10-THC-VOC-AFF

Measurement	temperature rel. humidity VOC level
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
VOC Range	depends on used sensor - see page 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	<b>HLK305</b>
Curcuit Points	KNX 2-Pole Clamps ( red / black )
Protection Class	IP54/65
Housing KNX-Module	Plastic
Dimensions Housing KNX-Module	( 72 x 64 x 40 ) mm
Article Number	30533053

## Imprint

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## 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



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