KNX-Sensor Temperature/Humidity/Climate with External Probe + Measuring Point Temperature PT1000, SK01-TTFK-AFF

The KNX-Sensor Temperature/Humidity/Climate SK01-TTFK-XX is used to measure the air temperature and humidity both outdoors and in damp locations (IP65), and contains a second temperature measuring point. The integrated KNX bus coupler does not need additional auxiliary supply. The temperature-humidity probe is enclosed in a sheath tube outside the casing. Using an additional external PT1000 Probe, a second temperature reading can be taken and used directly with the dew point regulator.

Several controllers are available in the application software (HVAC, Continuous, PWM) for the temperature, and a two-position controller is available for humidity.   Additional functions include frost alarm, temperature and humidity limits, minimum/maximum value and update. The climate controller displays absolute humidity (g/kg), dew point temperature (°C), enthalpy (kJ/kg) and comfort according to DIN 1946. Using the second temperature reading, an additional two-position controller for the external temperature or the calculated dew point can be added on. The sensor is configured with ETS (KNX Tool Software) and the application program. Controlling functions such as HVAC, switching threshold and various adjustment parameters are parameterized with ETS.

Article-Nr.: 30401053

SK01-TTFK-AFF
KNX-Sensor with External Probe
Multiple Temperature Controller

The second temperature reading enables the user to add on an additional two-position controller based on the external temperature or dew point reading. The additional temperature reading is especially useful in preventing structural damage. The SK01-TTFK-XX calculates the dew point temperature with its integrated probe by measuring the room temperature and humidity content. The extra external sensor is placed directly on the coldest part of the structure and activates an alarm or makes an adjustment when the dew point temperature is approached.

Areas of Application:
- Recording the temperature and relative humidity indoors/outdoors/damp room areas
- Decentralized heating regulation for constant KNX-Valves or electro-thermal valves
- Decentralized ventilation controller
- Dew point controller and alarm for cooling ceilings or winter gardens
- Dew point alarm for identification of possible mould build-up in cellars
- Shows saved maximum and minimum values on external displays
- Room temperature controller with options Comfort/Standby/Night/Frost Protection
- Direct set point presetting and display of current set point via KNX-Bus
- Various disable options for the controller
- Dew point controller of ventilation and deaerator systems
- Dew point controlled heating systems and construction safeguarding

Probe:
External Probe Temperature/Humidity

Sensor Application:
The sensor can be used both indoors and outdoors, in the cold, in ventilation technology, greenhouses and halls. The devices are fitted to the wall or channel with 2 screws. Main functions are the dew point controller and alarm.
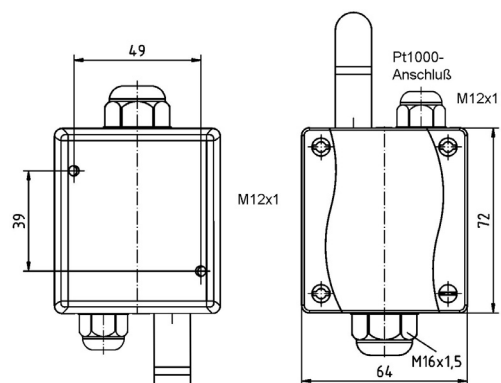
Probe Description:
Capacitor humidity probe with integrated temperature probe (Sensirion SHT11), condensation-proof with high long term stability. The probe is protected from condensation and dust by a Poroplast protective coating. The metal tube (Ø=14mm, L: 45mm) protects from mechanical load. Maximum operating temperature of the Poroplast coating about 100°C.

Storage Temperature: -25...+50 °C
Operating Temperature: -5...+55°C
Humidity Range: 0...100% rH
An additional PT1000 Probe can be attached with two clamps to the casing and lead outside through the M12 cable fitting, length up to 20 m

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Technical Data	SK01-TTFK-AFF
Measurement:	Temperature, Humidity
Temperature Controller HVAC Modes:	HVAC with increase/decrease options
	HVAC with relative set point adjustment
	HVAC with absolute set point adjustment
Temperature Controller Options:	Comfort Temperature, Stand-by Comfort Temperature, Stand-by Temperature
	Night Temperature, Frost Protection Temperature
Temperature Controller Controller Output:	Continuous / Switching PI-Controller / Two-Position Controller with hysteresis
Temperature Controller HVAC-Display:	HVAC-Status Byte, HVAC-Status-Bits
Limit Alarm (Upper/Lower):	Temperature, Humidity
Minimum/Maximum Temperature:	Saved minimum/maximum actual temperature
Frost Protection Alarm:	Falling below frost protection temperature
Dew Point Alarm:	Surpassing the dew point
Humidity Controller Mode:	Controller with increase/decrease options
Humidity Controller, Controller Output:	Two-position controller with hysteresis
Update:	Temperature, Humidity, Dew Point
Comfort Field:	Comfort Output Text
Calculated Value:	Absolute Humidity, Dew Point Temperature, Enthalpy
Adjustment Parameters:	Offset adjustment, Elevation, Output Inversion
Lock and Reset Objects:	Humidity Controller, Temperature Controller, Minimum/Maximum Temperature
Send Options:	Do Not Send, Periodic Sending by Adjustments
Humidity Controller Mode:	Controller with increase/decrease options
Temperature/Humidity Probe:	Sensirion, SHT11 embedded in sheath tube
PT1000-Input	16Bit-ADC, accuracy: +/- 0,4°C, resolution +/- 0,01°C
Environment Temperature :	Storage -25...+50°C, Operating -5...+55°C
Environment Humidity :	0…100% rH
Temperature Range:	-20...+80°C
Accuracy of Temperature:	+/- 0,5 °C
Temperature Resolution:	+/- 0,01 °C
Humidity Range:	0…100% rH
Accuracy of Humidity:	3% rH
Operating Voltage:	EIB/KNX Bus voltage 24 V DC
Power Consumption ca.:	10 mA at 24V DC
Auxiliary Supply:	Not necessary
PT1000-Connector:	2 screw clamps
Bus Coupler:	Integrated
Start-up with ETS:	ARC_TFK.VD2 Product: Sensor Temperature/Humidity/Climate + IP65
Circuit Points:	KNX-2-pol clamp (red/black)
Protection:	IP65
Fittings:	Finery, 2 screws
Casing:	White plastic
Measurements:	72 mm x 64 mm x 39,4 mm (W x H x D)
Article Number:	**30401053**

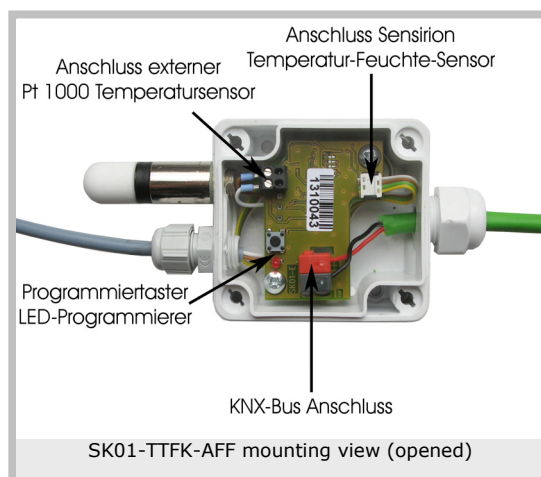| Optional Available:		
SK01-TTFK-AFF		**KNX-Sensor with External Probe, active dew point sensor**
SK01-TTFK-AFF		With connector for additional PT1000-Probe	30401053

Start-up:
The KNX Sensor is set up using the ETS (KNX Tool Software) and the applicable application program. The sensor is delivered unprogrammed. All functions are programmed and parameterized with ETS. Please read the ETS instructions.

Installation:
SK01-TTFK-xx sensors are for outdoor use and for (moist) indoor areas. They fulfil protection class IP65. The sensor is attached to the wall with two screws.

SK01-TTFK-AFF mounting view (opened)

The lid can be opened to a 90° angle by loosening the screws.

The cable for the external temperature sensor (PT1000) can be detached from the terminal block. When reattaching, it is not necessary to pay attention to the polarity of clamps 1 and 2.

After the sensor has been mounted onto the wall or ceiling, lead the KNX bus cable through the hole in the casing (PK screw connection).
Remove the bus clamps from the device and connect the cable to it. Place the bus clamps back onto the device. After programming the device, place the lid back on by twisting the screws 90°.

→ Be careful not to damage the electronics during the installation process.

In case of bus line voltage restoration (voltage outage):
All temperature defaults on the KNX/EIB bus are restored. After a line voltage restoration the temperature data is rounded up or down to 0.5°C of the actual value. The controller and outputs start with their current values. The HVAC mode byte is set to 0. ETS Parameter adjustments are restored.

Program de-activate and reset sensor:
If there is an error in programming and the sensor no longer reacts, you can delete the project by pressing the program button. Press the program button down while connecting the EIB bus clamp and wait for the program LED to light up. This takes from 5-10 seconds.

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