

KNX Sensor Soil and Air Humidity / Temperature, SK08-BFTLFT-AFF-WMT

The KNX Sensor Soil and Air Humidity/Temperature SK08-BFTLFT-AFF-WMT is a sensor/controller from the series S8 for recording the soil humidity and the soil temperature and the air humidity and air temperature. The sensor/controller is equipped with an external sensor device which is inserted into the ground at the area to be measured. The SK08-BFTLFT-AFF-WMT has an integrated KNX bus coupler and does not require additional voltage. The transducer with the bus coupler is enclosed in a durable, sealed, glass ball-reinforced plastic casing which fulfills protection degree IP65.

In the application software there are several controllers (two-position or PI controller with continuous or pulsed output) for measuring the pH value and redox potential. Additional functions include the display of upper and lower thresholds and switching between the set point and threshold.

The sensor is configured with ETS (KNX Tool Software) and the application program. Controlling functions such as signal threshold and other adjustments are parameterized using ETS.



Areas of Application:

- Decentralized irrigation and watering control for gardens and landscaping
- Active sprinkling control for flat roofs with vegetation
- Industrial soil humidity controller for areas such as snail and insect breeding
- Recording of soil humidity and soil temperature
- Sprinkling control via integrated control functions
- Environmentally friendly and timed sprinkling control (early afternoon)
- Alarm when upper or lower threshold for soil humidity is surpassed
- Up-to-date measurements and status readings for monitoring on the KNX bus

Applicable Sensor:
Inside the soil humidity probe is a sealed plastic tube with the Watermark® Granular Matrix Sensor 200SS and a PT1000 element.

External Probe Temperature/Humidity

Accuracy of the Sensor:
Watermark® Sensor: 0,01 hPa/mbar, 1 Pa
PT-1000: +/- 1°C
SHT11: +/- 0,5°C & 3%rH

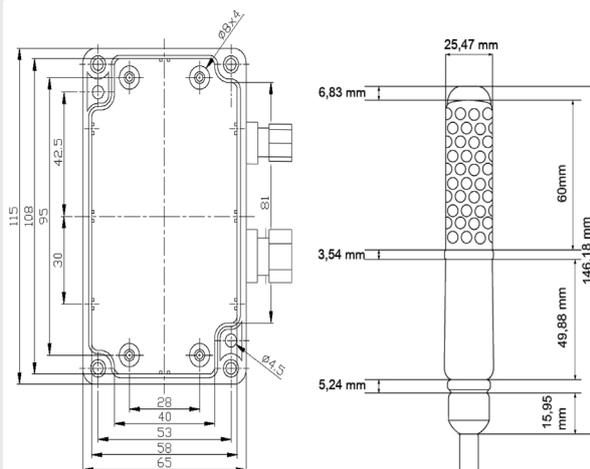
Measuring Amplifier:
Entrance Area: 550Ohm bis 50KOhm

Use:
Electronic measuring equipment on flat surfaces, sensor connectors pointing down

Measuring Area: 1...2000 hPa/mbar, 1-200.000 Pa
-25...+45°C

Ambient Air Temperature Transducer: -20 ... +80°C
Ambient Air Temperature Sensor: -25 ... +45°C

Protective Housing Transducer: IP65



Technical Data	SK08-BFTLFT-AFF-WMT
Measured Data:	Soil and air humidity (suction power for soil), soil and air temperature
Sending options	No sending, periodic sending, sending when change occurs
Parameters	Periodic sending with variable cycle duration, sending when changes occurs with variable hysteresis.
Functions	2-byte float, 4-byte float, 1-byte unsigned integer
Controller Modi:	Two-position controller static, two-position controller pulsed, PI controller static, PI controller pulsed (PWM)
Parameter Two-Position Controller Static	Set point, differential gap, controller
Parameter Two-Position Controller Pulsed	Set point, differential gap, controller, cycle duration, duty cycle
Parameter PI Controller Static	Set point, reset time, proportional factor, controller
Parameter PI Controller PWM	Set point, reset time, proportional factor, controller, cycle duration, threshold pitch
Lock Function:	For pH and ORP controller, parameter driven release or lock
Controller for Control Variable Output:	Switching output (1/0), 1-Bit
	Switching output pulsed, parameter driven duty cycle and cycle duration, 1 Bit
	Switching output pulsed, parameter driven cycle duration, duty cycle variable driven (PWM) with threshold pitch, 1 Bit
	Control variable static, 1-byte
Control Variable Periodic Sending	None or 10-250 seconds parameter driven
Threshold:	Upper threshold, lower threshold
Auxiliary Quantities:	Set point, lower threshold, upper threshold
Bus Power Failure	Saving changed auxiliary quantities is parameter driven
Calibration:	none
Ambient Temperature KNX Sensor:	Storage -20...+70°C, Operation -20...+65°C (Transducer and Sensor)
Ambient Humidity KNX Sensor:	0...95% rH not condensating
Ambient Temperature Watermark® Sensor:	Storage -30...+55°C, Operation -25...+45°C
Ambient Humidity Watermark® Sensor:	0...99% rH
Measured Area Soil Humidity:	1...2000 hPa/mbar, 1-200.000 Pa
Accuracy Soil Humidity:	5 hPa/mbar, 500 Pa
Resolution Soil Humidity:	0,01 hPa/mbar, 1 Pa
Measured Area Soil Temperature:	-25...+45°C
Accuracy Soil Temperature:	+/- 1 °C
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 21-32V DC
Power Consumption ca.:	240 mW (at 24V DC)
Auxiliary Supply:	not necessary
Bus Coupler:	integrated
Start-up with ETS:	ARC_S8.VD2 Produkt: SK08-BFTLFT-AFF-WMT
Circuit Points:	EIB-2-pole clamps (red/black)
Protection Class:	IP65
Assembly Type Transducer:	Finery/on-surface assembly with two screws
Housing Transducer:	Grey plastic
Housing Dimensions:	115 mm x 64mm x 56 mm (L x H x D)
Article Number:	30805021
Sensor:	Watermark® Sensor, SHT11
Sensor cable:	Adjustable length

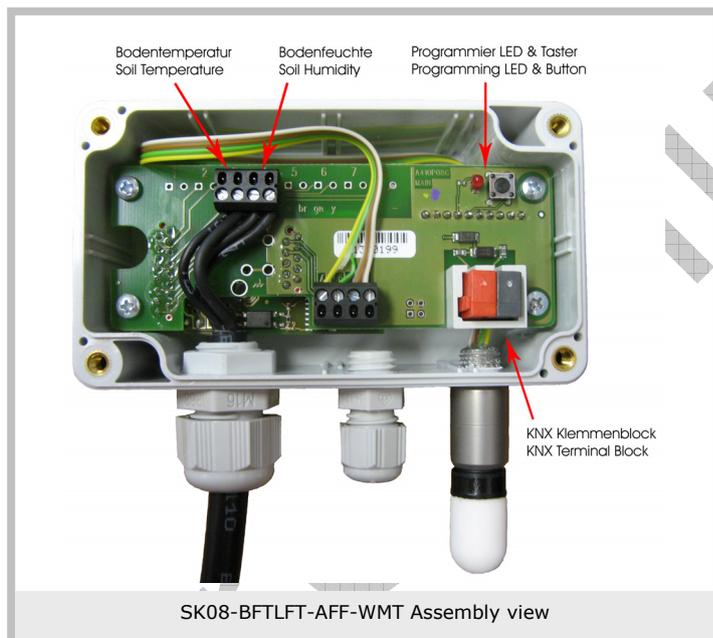
Order:			
SK08-BFTLFT-AFF-WMT		KNX Sensor Soil Humidity / Temperature	
SK08-BFTLFT-AFF-WMT		Sensor, Measuring Amplifier, Bus Coupler	30805001
WMT		Sensor (Replacement) for SK08-BFTLFT-AFF-WMT cable (Art.-Nr.:90200500) not included	91100000

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.

Assembly:

The sensor SK08-BFTLFT-AFF-WMT is intended for outdoor use and is attached to the wall with two screws. It fulfills protection class IP65.



The transducer lid is opened by loosening the screws.

The cable for the external measuring probe (soil humidity/temperature) is inserted into the PG connection slot and assembled as shown above. The probe wires are numbered (**Watermark® Sensor: 1-2; PT1000: 3 and shrink hose tagged wire**). After mounting the sensor to the wall or ceiling, lead the KNX bus cable through the PG connection slot. Remove the bus clamps. Connect the wires to the bus clamp and then reattach the clamps to the sensors. Once the device is successfully programmed, screw the lid back on. In order to fulfill IP65 protection class the gasket ring must be carefully placed in the lid.

→ Be careful not to damage the electronics with tools and cable heads.

In Case of Bus Voltage Recurrence:

All changes made using the help key for the KNX/EIB bus are saved if the device has been correctly parameterized. The controller and outputs start with the current values. The ETS parameter settings are saved.

Discharge Program and Reset Sensor:

Should the sensor crash due to a programming malfunction, the previous project can be deleted by pressing the programming button. Hold the programming button down while connecting the EIB bus clamp and wait until the programming LED display appears. This will take 5 – 10 seconds. Any calibrations undertaken will be lost.

Imprint:

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

Responsible for Content: Hjalmar Hevers, Reinhard Pegelow

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