Interior temperature and humidity sensors, analog output 0 ÷ 10V - types HTU, HNU

The sensors are designed to measure relative air humidity and possibly air temperature without aggressive additives in interiors with increased aesthetic demands while maintaining the design of the electrical installation used.
The output of relative air humidity (hereinafter referred to as RH) is a voltage signal of 0 ÷ 10V. The output of the measured temperature is a voltage signal of 0 ÷ 10V, or the device may be without the possibility of measuring temperature.
The sensor electronics consist of two parts. The RH + T sensor is placed in the front cover of the device of the desired design. The main part with the terminal blocks is inserted into the installation box. Both parts are removably connected by a wire.
The sensors must be protected from dirt, excessive dust or direct exposure to water!

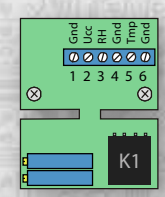
Basic technical parameters:

Supply voltage (Ucc)	15 ÷ 30 VDC *1
Max. consumption	10mA
Range of RH (RH = 0 ÷ 10V)	0 ÷ 100%
Accuracy - humidity	±3% (10 ÷ 90%)
Standard temperature ranges (temp. = 0 ÷ 10V)	0 ÷ 35 °C 0 ÷ 50 °C
Accuracy - temperature	±1% from range
Load impedance of voltage outputs (Rz)	> 50kΩ
Galvanic separation of outputs	no
Range of recommended working temp. *2	0 ÷ 50 °C / 0 ÷ 95 %RH
Range of recommended storage temp. / RH	-20 ÷ 60 °C / 0 ÷ 95 %RH
Protection type	IP30
Terminal board	CPP (max. 1 mm^2)

*1 If 24VAC supply voltage is required, an MN24 voltage converter can be ordered for the device (for placement in the KU68 installation box).

*2
The sensor steadily works within the recommended measurement range that is 10 ÷ 80 % RH. The long-term exposition to the high humidity, namely >80% RH causes the gradually increasing reading deviation of RH (+3% RH after 60 hours >80% RH). After returning back to normal range the RH measurement gets slowly back to calibrated values.
Long-term exposure to extreme conditions can accelerate sensor aging.
Detailed information on conditions of long-term use of the sensor SHT31 under conditions out of the standard range, especially at the relative humidity >80% RH, are shown directly at the producer´s website at: http://www.sensirion.com

Connection plan (fig.1):



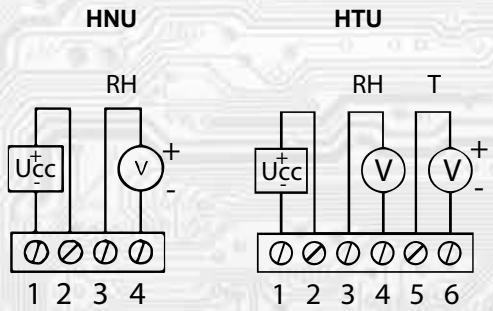
Terminal 1..... - GND, negative pole
Terminal 2.....+ Ucc, positive pole
Terminal 3..... positive pole RH (0 ÷ 10V)
Terminal 4..... common pole RH (GND)
Terminal 5..... positive pole temperature (0 ÷ 10V)
Terminal 6..... common pole T (GND)
Terminals 1, 4 and 6 are galvanically connected.

K1.....connection of sensor T+RH

List of available types:

Type of outputs	RH = 0 ÷ 10V, temperature = NO	RH = 0 ÷ 10V, Temp. 0÷35°C = 0 ÷ 10V	RH = 0 ÷ 10V, Temp. 0÷50°C = 0 ÷ 10V
Type of sensor	**HNU**	**HTU/0÷35°C**	**HTU/0÷50°C**

Connection of output signals and power supply (Fig. 2):



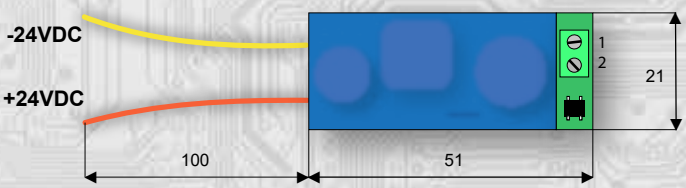
Assembly and connection:

The sensors are designed to be installed into the standard installation boxes (KU68).
The electrical connection of the conductors is done on the terminal, which is on the main part of the instrument by a conductor with a maximum cross section of 1mm² according to Fig. 1 and 2.
After connecting the terminal block, the main part of the device is inserted into the installation box. Then the device frame is screwed into the installation box and both parts of the electronics are connected by a wire with a connector. The front cover is placed in the device frame. This completes the mechanical installation.
Disassembly is carried out in the reverse order.

Using the sensors in 24VAC systems

Using the MN24 converter, these devices can also be used in 24VAC measurement and control systems.
The converter can be placed in a deeper flush-mounted box, e.g. KU68.

Dimensions



Terminals 1, 2 :
input voltage 24VAC