Humidity sensor (external sensor)

Sensor chip

In the RFSE-DL, the humidity sensor is located on a 65 mm extension of the PCB which can be lengthened, for example, for mounting from the outside through a sauna ceiling.

Installation and connection

The sensor is connected to the data link (DL bus) and sensor earth. The polarity of the data link is interchangeable.

The DL bus must be connected and addressed before installation. Then attach the plastic housing over the PCB. Mount the heat shrink tubing over the sensor extension.

Data link (DL bus)

Any cable with a cross-section of 0.75 mm² (e.g. twin core) can be used as a data link,

up to max. 30 m in length. For longer cables, we recommend the use of a screened cable. If using screened cables, the screen must be connected to the controller on one side. Data link (DL bus)

The sensor is supplied with power from the DL bus (data link) and returns the relevant measurement to the controller upon request.

The request is made up of the address of the sensor and the index of a measurement captured there.

 The **address** is set using the DIP switches. In the delivered condition, the address is set to 1 (factory setting).

Provided no other sensors are connected to the DL bus, no change of address is required.

The effective address is derived from address 1 (= factory setting) plus the sum of all the values of the selected DIP switch settings.

Example: Required address 6   = 1 (from factory setting) + 1 + 4

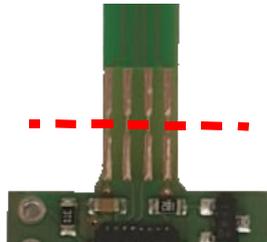   = DIP switches 1 and 4 must be set to **ON**.

The **index** of each measurement is fixed:

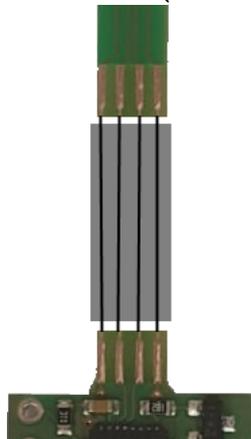| Index	Measurement
1	Relative humidity [0.1 %]
2	Temperature [0.1 °C]
3	Dew point [0.1 °C]
4	Absolute humidity [1.0 g/m³]

Lengthening the sensor

The sensor sits on a 6.5 cm-long extension of the PCB. This can be lengthened by **max. 50 cm** using a ribbon cable.

1. Cut the PCB extension **at precisely the marked location.**

2. Solder a 4-pole ribbon cable to both ends (clearance between the poles 1.27 mm).

Technical data

Measuring range	Relative humidity	0 – 95 %
	Temperature	-20 to +100 °C
Accuracy	Relative humidity	Typically ± 2.0 %
	Temperature	Typically ± 0.3 °C
	Dew point	Typically ± 2.5 K (20 - 90 % relative humidity)
Permissible ambient temperature		Evaluation electronics: -20 °C to +80 °C
		Sensor chip: -20 °C to +120 °C
Bus load (DL bus)		6 %
Dimensions (W x H x D)		30 x 30 x 85 mm