Humidity sensor
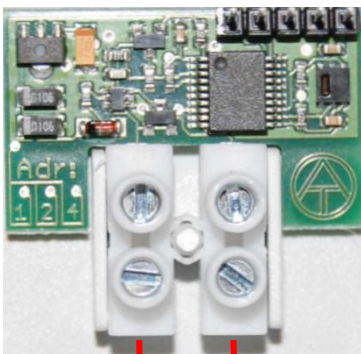

Assembly and connection

To prevent water ingress, wall mounting with downward cable output is specified. The sensor has to be connected to data link (DL-bus) and sensor mass.

The polarity of the data link is interchangeable.

For distances up to 30 m, a cable cross section of 2 x 0.75 mm² is adequate.

Data link (DL-Bus)

The sensor takes its power supply from the DL-bus (data link) and returns the corresponding measurement when requested by the controller (**ESR31** and **UVR63** (from version 1.0), **ESR21**, **UVR61-3** and **UVR63H** from version 5.0, **UVR1611** from version A3.00 **and** serial number 13286, plus **X2 devices**).

The request is made up of the address of the sensor (adapter PCB) and index of a measurement recorded there.

Disconnectable conductors
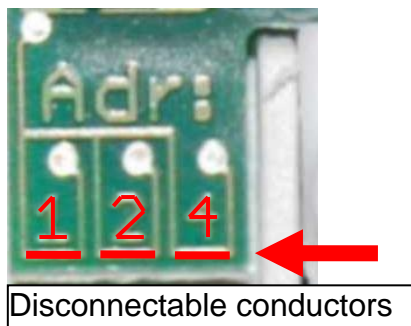
The **address** is specified on the adapter by breaking the conductors which are labelled 1, 2 and 4. These are located on the left at the lower edge board, close to the screw terminal. If none of the conductors are cut, the adapter is assigned address 1 (factory setting). Provided no other sensors are connected to the DL-bus, no change of address is required.

The new address is derived from address 1 (= factory setting) plus the sum of all the disconnected values.

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

= conductors 1 and 4 must be cut.

The **index** of the respective measurements is fixed:

Index:	Measurement:
1	Relative humidity [0.1%]
2	Temperature [0.1°C]
3	Dewpoint [0.1°C]
4	Absolute humidity [1°C ≙1g/m³]

ESR21, ESR31, UVR61-3, UVR63, UVR63H: The desired measured values are imported as "External sensors" (setting in the menu "EXT DL"), where address and index are specified.

Example:

Here the sensor value of **Address 1**, with **Index 3** was allocated to the external sensor **E3**, i.e. the dewpoint of the sensor.

X2 devices: The measured values are parameterised in the menu "**DL bus**".

UVR1611: The measurements are parameterised as **analogue** network inputs:

```
network node:           address of the sensor
analog network output:  index of the measurement
source:                 DL
```

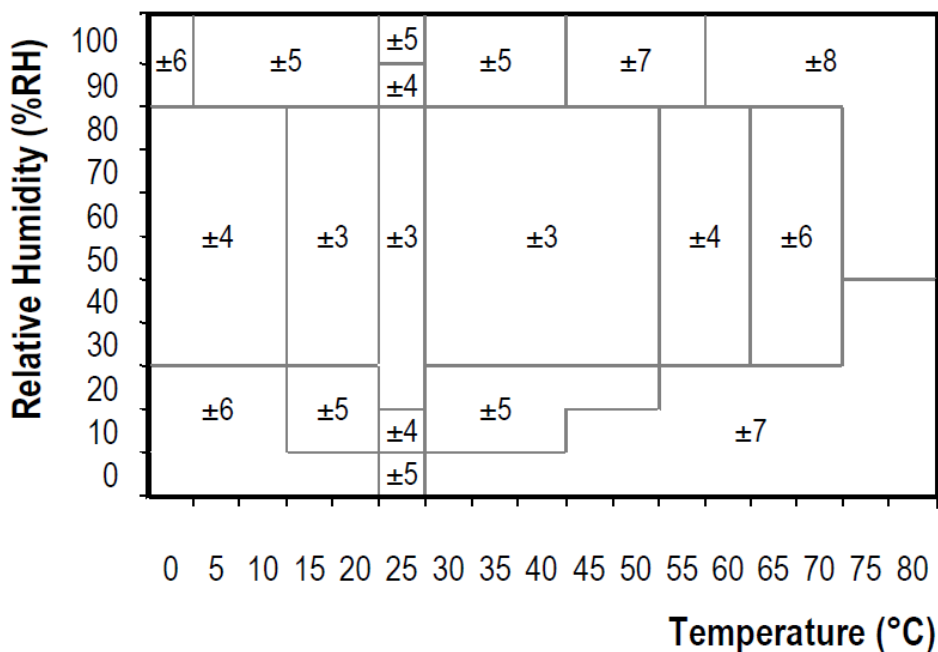**TAPPS2 Programming UVR1611:**
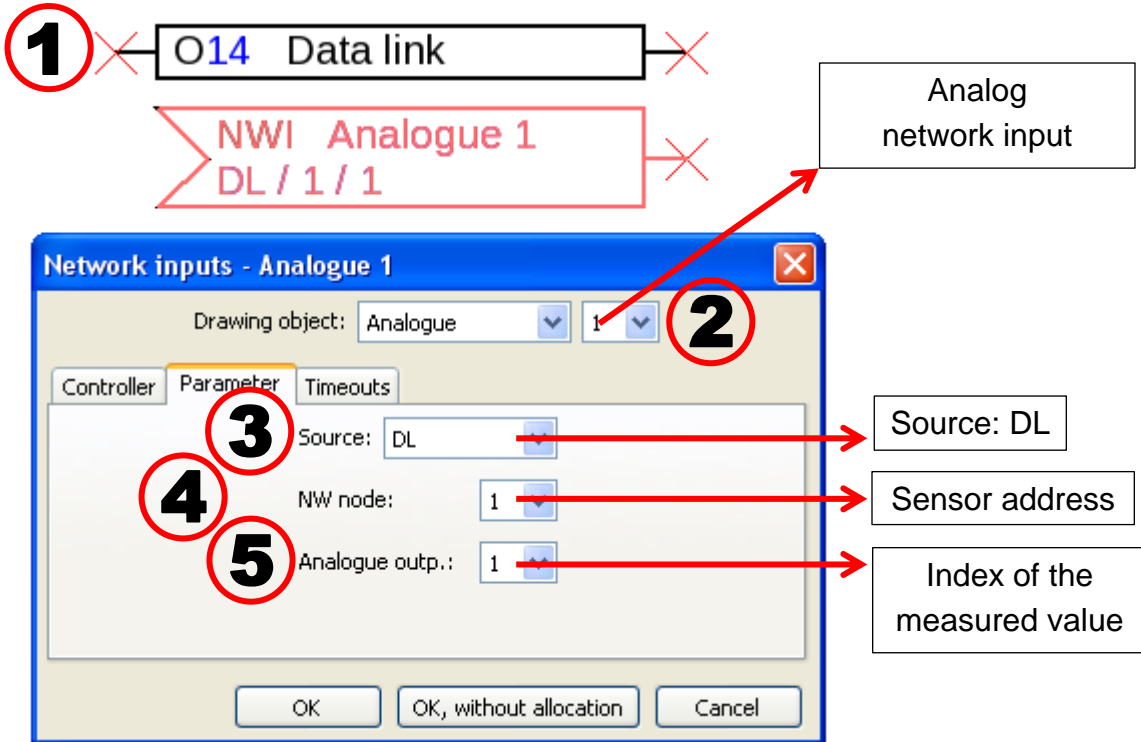
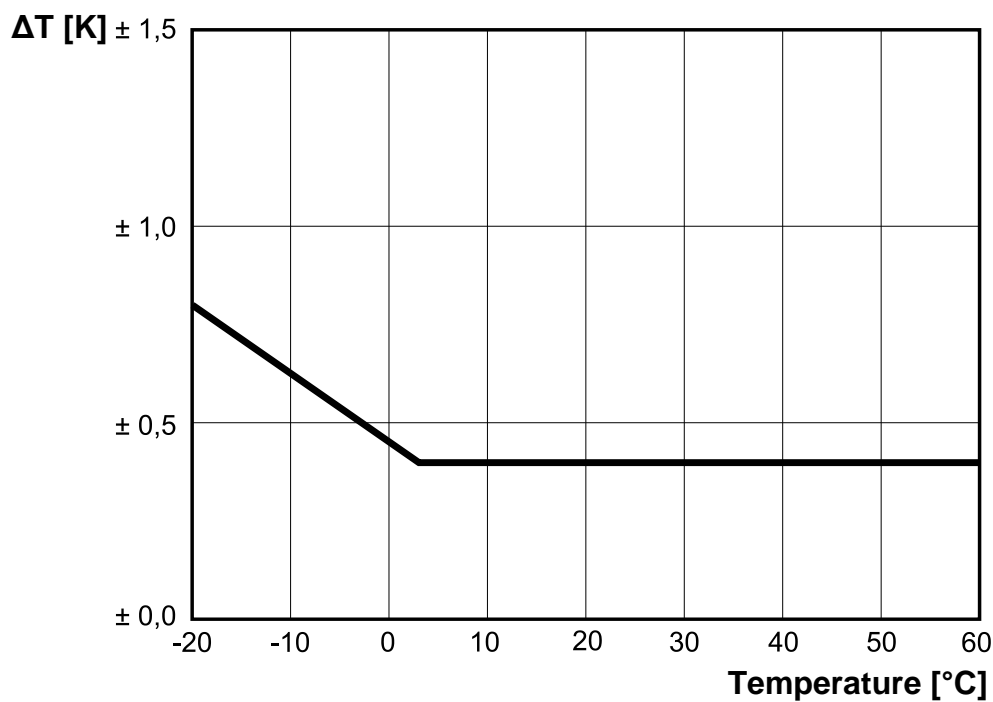A still unused network input variable must be selected for each new value.

Technical data

Dimension (WxHxD):   40 x 54 x 23 mm
Permissible ambient temperature: -10°C to +50°C

Accuracy relative humidity:

Relative Humidity (%RH) vs Temperature (°C) chart:

RH range	Temperature zones (accuracy values)
90–100	±6, ±5, ±5, ±5, ±7, ±8
85–90	±4 (at ~25°C)
25–85	±4, ±3, ±3, ±3, ±4, ±6
10–25	±6, ±5, ±5, ±7
5–10	±4
0–5	±5

Temperature axis: 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80

Accuracy temperature:

ΔT [K] vs Temperature [°C] chart. Curve starts at approximately ±0.8 K at −20°C, decreasing linearly to about ±0.4 K at ~5°C, then constant at ±0.4 K up to 60°C.

Y-axis: ± 0,0 / ± 0,5 / ± 1,0 / ± 1,5
X-axis (Temperature [°C]): -20 -10 0 10 20 30 40 50 60

Measurement range rel. humidity:	0 to 100%
Dewpoint measurement range:	-10 to 50°C
Dewpoint measurement accuracy:	± 2.5K (20 - 80°RH)
Bus load (DL-Bus):[2]	8 %