

HUMIDITY / TEMPERATURE / DEW POINT / FROST POINT CALIBRATION



The procedure of dew point and frost point calibrations are equal with the procedure of humidity calibrations!

The EE23 transmitter series can be calibrated in two ways:

- 1-point humidity / temperature calibration: quick and simple calibration on a defined humidity / temperature point (working point).
- 2-point humidity / temperature calibration: simple calibration for accurate measuring results over the whole humidity / temperature working range.



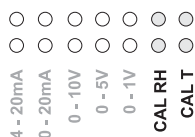
- To reach a temperature balance it is recommended to keep the transmitter and the reference chamber (e.g. HUMOR 20,...) for minimum 4 hours in the same room.
- During calibration procedure it is important to keep the temperature constant!
- For calibration the humidity sensor probe must be stabilised at least 30 minutes in the reference chamber.
- Replace a used dirty filter cap before calibration!

2-point humidity calibration / 2-point temperature calibration

For accurate adjustment over the whole working range a two point calibration is recommended.



- Start calibration at the low calibration point!
- The difference between the two calibration points should be $> 30\%RH$ / $> 30\text{ degC}$ ($86^{\circ}F$)



2-point humidity calibration procedure / temperature calibration procedure (Start at low calibration point):

1. At the beginning of a humidity calibration set the jumper to CAL RH / for a temperature calibration set the jumper to CAL T.

2. Insert the sensor probe into the reference humidity / reference temperature 1 (low calibration point) and stabilise for at least 30 minutes.

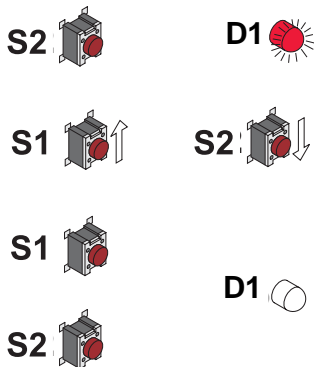
3. **BUTTON S2**: Pressing the button for 3 seconds starts the procedure for the low calibration point. The calibration mode is indicated by the lit LED "D1" and by the symbol "CAL<" on the LC display.

4. **BUTTON S1 (up) and S2 (down)**: Pressing the two buttons will adjust the measuring value in steps of 0.1% / 0.1 degC up or down to the reference value. The actual measuring value is indicated on the display or can be measured with the analogue output.

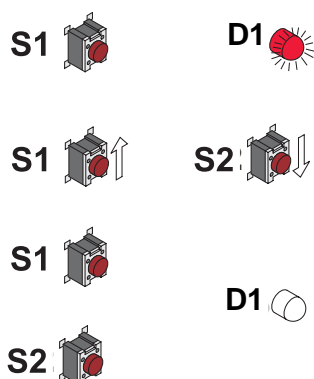
5. **BUTTON S1**: Pressing the button for 3 seconds the calibration value is stored and the procedure is ended. Exiting the calibration mode is indicated by deactivation of the LED "D1" and the symbol "CAL<" on the LC display.

BUTTON S2: Pressing the button for 3 seconds the calibration procedure will be ended without storing the calibration values. Exiting the calibration mode is indicated by deactivation of the LED "D1" and the symbol "CAL<" on the LC display.

low calibration point:



high calibration point:



6. Insert the sensor probe into reference humidity / reference temperature 2 (high calibration point) and stabilise for minimum 30 min.

7. **BUTTON S1**: Pressing the button for 3 seconds starts the procedure for the high calibration point. The calibration mode is indicated by the lit LED "D1" and by the symbol "CAL>" on the LC display.

8. **BUTTON S1 (up) and S2 (down)**: Pressing the two buttons will adjust the measuring value in steps of 0.1% / 0.1 degC up or down to the reference value. The actual measuring value is indicated on the display or can be measured with the analogue output.

9. **BUTTON S1**: Pressing the button for 3 seconds the calibration value is stored and the procedure is ended. Exiting the calibration mode is indicated by deactivation of the LED "D1" and the symbol "CAL>" on the LC display.

BUTTON S2: Pressing the button for 3 seconds the calibration procedure will be ended without storing the calibration values. Exiting the calibration mode is indicated by deactivation of the LED "D1" and the symbol "CAL>" on the LC display.

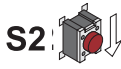
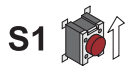
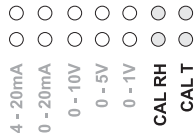
1-point humidity calibration / 1-point temperature calibration

When the working range is limited to a certain more narrow range, a calibration at one humidity point / one temperature point is sufficient.



- In accordance with the working range, either the high or low calibration point should be selected. (CP > or < 50% RH / CP > or < 50% of measurement value)
- This calibration causes an extra inaccuracy for the rest of the working range.

1-point humidity calibration procedure / temperature calibration procedure



1. At the beginning of a humidity calibration set the jumper to CAL RH / for a temperature calibration set the jumper to CAL T.

2. Insert the sensor probe into the reference humidity / reference temperature (calibration point) and stabilise for at least 30 minutes.

3. **BUTTON S1** (Calibration point > 50% RH / > 50% of measurement value): Pressing the button for 3 seconds starts the procedure. The calibration mode is indicated by the lit LED "D1" and by the symbol "CAL>" on the LC display.

or

BUTTON S2 (Calibration point < 50% RH / < 50% of measurement value): Pressing the button for 3 seconds starts the procedure. The calibration mode is indicated by the lit LED "D1" and by the symbol "CAL<" on the LC display.

4. **BUTTON S1 (up)** and **S2 (down)**: Pressing the two buttons will adjust the measuring value in steps of 0.1% / 0.1 degC up or down to the reference value. The actual measuring value is indicated on the display or can be measured with the analogue output.

5. **BUTTON S1**: Pressing the button for 3 seconds the calibration value is stored and the procedure is ended. Exiting the calibration mode is indicated by deactivation of the LED "D1" and the symbol "CAL" on the LC display.

BUTTON S2: Pressing the button for 3 seconds the calibration procedure will be ended without storing the calibration values. Exiting the calibration mode is indicated by deactivation of the LED "D1" and the symbol "CAL" on the LC display.

Resetting the customer calibration to the factory calibration:



BUTTON S1 and S2: To reset the RH or T values, the jumper has to be set on the respective location before starting the factory calibration.

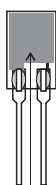
In neutral mode pressing both buttons simultaneously for 5 seconds customer calibration settings are reset to factory calibration. A short flash of the LED "D1" indicates the reset.

Maintenance

sensor exchange



- After changing the sensor it is necessary to perform a two point calibration to reach the specified accuracy again!
- The factory calibration is no longer valid after performing a sensor exchange!
- Touch the sensor elements on the connection wires only!



aktive Seite /
active Side

1. Switch off the supply voltage

2. Unscrew the filter cap

3. Pull out the humidity sensor element with a tweezer

4. Put in the new humidity sensor - the active side (side with the sensor pads) has to face the inside.

5. Screw the filter cap on again (in case of pollution replace it by a new filter cap)

6. Switch on the supply voltage

7. Perform a humidity calibration (refer to 2 point humidity calibration)