5. HUMIDITY CALIBRATION

The EE99-1 transmitter series can be calibrated in two ways.

- 1 point humidity calibration: quick and simple calibration on a defined humidity point (working point)
- 2 point humidity calibration: simple calibration for accurate measuring results over the whole humidity 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 stabilisation period and calibration procedure it is important to keep the temperature constant in the reference climate chamber.
- For calibration the humidity sensor probe must be stabilised at least 30 minutes into the reference chamber.
- Replace a used dirty filter cap before calibration!

5.1 2 point humidity calibration

For accurate adjustment over the whole working range or in case of sensor exchanges a two point calibration is recommended.

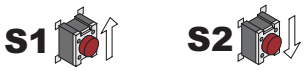
- Start calibration at the low humidity calibration point!
- The humidity difference between the two points should be > 30%RH

Procedure for 2 point humidity calibration (start at low calibration point)**:**

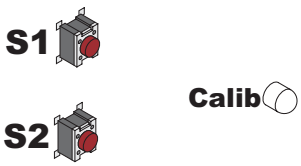
low calibration point:

1. Insert the sensor probe into the reference chamber 1 (low humidity calibration point) and stabilise for minimum 30 min.

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



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

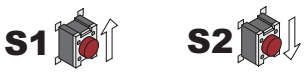


4. PUSHBUTTON S1: Pressing the button for 3 seconds the calibration value is stored and the procedure is ended. Exiting the calibration mode is indicated by deactivation of the LED "Calib" and the symbol "CAL" on the LC display.
or PUSHBUTTON S2: Pressing the button for 3 seconds the calibration procedure will be ended without storing the calibration values. Exiting the calibration mode is indicated by deactivation of the LED "Calib" and the symbol "CAL" on the LC display.

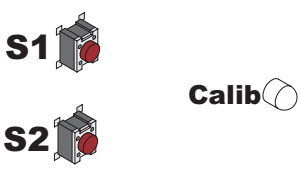
high calibration point:

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

6. PUSHBUTTON S1: Pressing the button for 3 seconds starts the procedure for the high calibration point. The calibration mode is indicated by the lit LED "Calib" and by the symbol "CAL" on the LC display.



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



8. PUSHBUTTON S1: Pressing the button for 3 seconds stores the calibration value and the procedure is ended. Exiting the calibration mode is indicated by deactivation of the LED "Calib" and the symbol "CAL" on the LC display.
or PUSHBUTTON 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 "Calib" and the symbol "CAL" on the LC display.

5.2 1 point humidity calibration

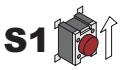
When the working range is limited to a certain more narrow range, a calibration at one humidity point is absolutely sufficient.

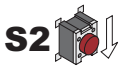
This calibration causes an extra inaccuracy for the rest of the working range.

Procedure for 1 point humidity calibration:

1. Insert the sensor probe into the reference chamber 1 (humidity calibration point) and stabilise for minimum 30 min.

2. PUSHBUTTON S1 (calibration point > 50%RH.): Pressing the button for 3 seconds starts the procedure for the low calibration point. The calibration mode is indicated by the lit LED "Calib" and by the symbol "CAL" on the LC display.
or
PUSHBUTTON S2 (calibration point < 50%RH): Pressing the button for 3 seconds starts the procedure for the low calibration point. The calibration mode is indicated by the lit LED "Calib" and by the symbol "CAL" on the LC display.





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

4. PUSHBUTTON S1: Pressing the button for 3 seconds the calibration value and the procedure is ended. Exiting the calibration mode is indicated by deactivation of the LED "Calib" and the symbol "CAL" on the LC display.
or PUSHBUTTON 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 "Calib" and the symbol "CAL" on the LC display.

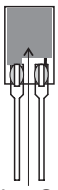
5.3 Reset the customised calibration to factory calibration:

PUSHBUTTON S1 and S2: In neutral mode pressing both buttons simultaneously for 5 seconds customer calibration settings are reset to factory calibration.
A short flash of the LED "Calib" indicates the reset.

6. MAINTENANCE

6.1 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!



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. (see diagram)
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)

6.2 Self diagnosis and error messages

Status LED on the circuit board:

- **Green LED**

flashing ⇒ Supply voltage applied / Microprocessor is active
constantly lit ⇒ Humidity sensor element damaged