

miniClima *Manual LVB*

Topic: Supplement to the Manual EBC; instructions for usage and installation of the optional Air Distribution Boxes.

Valid for: Set of Air Distribution Boxes (types LVB25, LVB32) for miniClima Constant Humidity Devices EBC of series EBC10/11.

1 BUILD UP IN PRINCIPLE

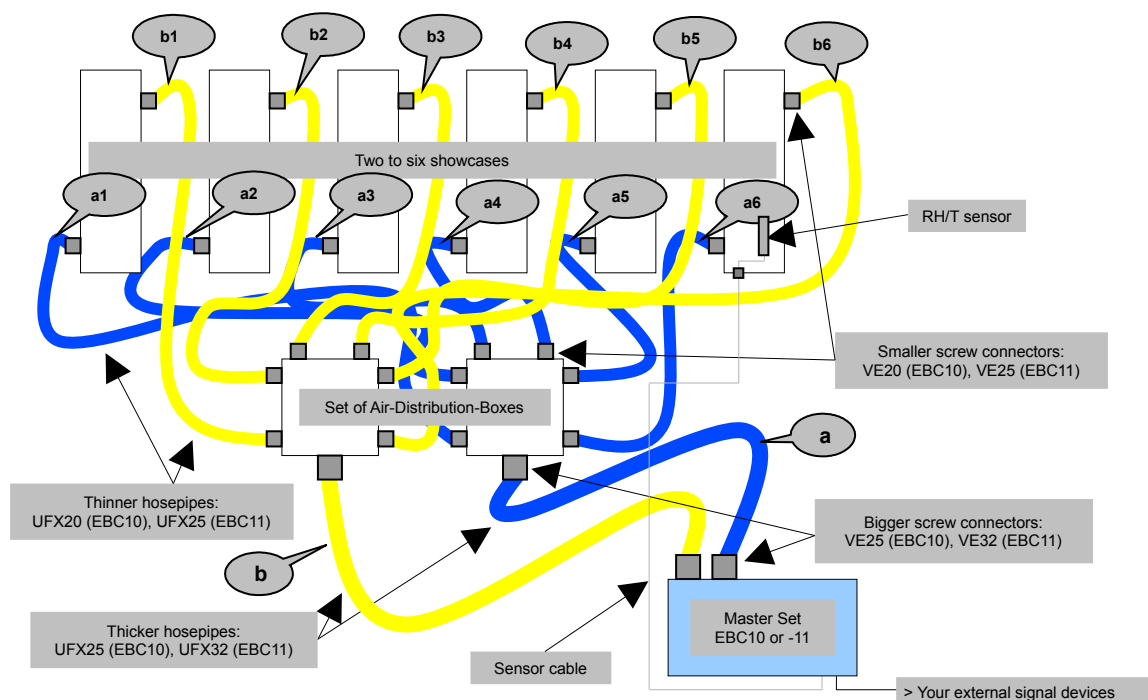


Fig. 1
 a = the hosepipe from the device ("Air Outlet") to the first box - hose type: UFX25 (EBC10) or UFX32 (EBC11)
 a1 through a6 = the different (up to six) hosepipes from the first box to the individual showcases - hose type: UFX20 (EBC10) or UFX25 (EBC11)
 b1 through b6 = the different (up to six) hosepipes from the individual showcases to the second box - hose type: UFX20 (EBC10) or UFX25 (EBC11)
 b = the hosepipe from the second box to the device ("Air Inlet") - hose type: UFX25 (EBC10) or UFX32 (EBC11)

2 GENERAL INFORMATION

The air-distribution-boxes are optional accessories thought for use with miniClima Constant Humidity Devices (EBC10 or -11). They offer the possibility to connect one single EBC unit to up to 6 showcases. Two sizes of boxes are available: a smaller box for the Constant Humidity Device EBC10 and a bigger one for EBC11. Two same-sized boxes are necessary for each device (air inlet/air outlet).



2.1 Requirements and important notes

The air-distribution-boxes can be used at circumstances where a sufficiently equal airflow will be given for all showcases. Essential requirements for this to reach are:

- 1) That all showcases are of virtually equal sizes and shapes, made of the same materials, and are of an equal air- and steam-tightness.
- 2) That all showcases are exposed to the same ambient conditions (i.e. location in the same room, same heat rate coming from light installations etc.).
- 3) That it is planned that all cases connected to the device shall be brought to the same humidity level.

All showcases will be controlled by one device only, thus there is no possibility to set different levels for different cases. Furthermore the RH/T sensor of the miniClima device will have to be placed into one of the several showcases alone. The data provided by this sensor will then be used as a reference for all cases, hence the above-mentioned requirements.

The maximum air volume (=the sum of all cases connected to the device) to be processed by the one device will be reduced as compared to the capacity of the device when it is used for one showcase alone. This reduction depends mainly on the number of showcases connected to the device and on the overall length of the used hosepipes. Your EBC might have been (case specific) built with one of the stronger air circulation fans (UFX+ or UFX++) to better overcome the relatively higher air resistances caused by the length of the hosepipes (see the rating plate on the backside of the EBC).

3 ADDITIONALLY DELIVERED ITEMS

(per miniClima-device)

- ✓ 2 boxes (one for the air inlet, one for the air outlet)
- ✓ Appropriate amount and kind of hosepipes and screw connections (see the Manual EBC for pictures and details)

4 INSTALLATION

Screw connections have already been affixed to the miniClima device and to the air-distribution-boxes. You need to bring on the ones on the showcase walls. At first you need to define the ideal positions for these air in-/outlets on the showcase walls so as to enable an equal distribution of the conditioned air in all the showcases that shall be connected to the EBC (⚡ **NOTE:** The positions shown in Fig. 1 do not represent a



general solution or recommendation). Firstly, mind the rules and hints given in the main manual of your EBC (Manual EBC). Additionally consider these LVB specific notes:

- ✓ Choose virtually the same positions for the screw connections on all showcases.
- ✓ Try to keep equal lengths for the hosepipes interconnecting the LVBs and the showcases (supply hosepipes on the one hand, return hosepipes on the other) (cp. Fig. 1):
 $a1=a2=a3=a4=a5=a6$
 $b1=b2=b3=b4=b5=b6$

4.1 Mounting the screw connections¹

The diameters for the boreholes, which are needed on the showcase wall or on the intermediate pieces (see Manual EBC) are different from those needed when using the EBC without LVBs:

EBC10 with LVB25: Ø 20mm (VE20)

EBC11 with LVB32: Ø 25mm (VE25)

When using our flanges the required diameters result from the size of the counter nut of the respective hosepipe connector:

VE20 (EBC10 with LVB25): Ø 33,0mm

VE25 (EBC11 with LVB32): Ø 42,5mm

All further information is found in the Manual EBC.

4.2 Connecting the boxes to the cases

⚠ **NOTE:** See the Manual EBC on how to handle the screw connections.

Unscrew the union nuts of the screw connections on the cases as well as those of the smaller screw connections on the air-distribution-boxes. Take out the clamping rings. Dispose of the protective coverings on the screw connection, if any. Establish the hose connections between the cases and the boxes using hose type UFX20 on LVB25 or UFX25 on LVB32. See Fig. 1 for help.

¹ Mind that purpose-made solutions might be sized differently. Always measure off the screw joint (or the counter nut, respectively) of the connector before cutting/drilling/cracking.



4.3 Connecting the boxes to the EBC

🔧 **NOTE:** See the Manual EBC on how to handle the screw connections.

Unscrew the union nuts of the two already installed screw connections on the device as well as those of the bigger screw connections on the air-distribution-boxes. Take out the clamping rings. Dispose of the protective coverings on the screw connection, if any. Establish the hose connection between the boxes and the device using hose type UFX25 on LVB25/EBC10 or UFX32 on LVB32/EBC11. See Fig. 1 for help.

4.4 RH/T sensor

How to choose the right showcase for placing the sensor: If all showcases that are connected to the one EBC are actually equal with respect to all variables (size, shape, kind & tightness, ambient conditions, but also: the presented object's extent of sensitivity towards humidity changes), then all showcases are equally qualified for hosting the sensor. In case the showcases do differ in some respects, the following thoughts should be considered for choosing the showcase that shall provide the reference values for all other showcases:

- ✓ The most humidity sensitive object should be placed in the showcase that hosts the RH/T-Sensor.
- ✓ If the sensor is placed in the showcase with the smallest volume (which is recommended), then the humidity-changes within the bigger showcases will take place with a delay: the bigger the difference in size as compared to the RH/T-Sensor hosting showcase, the more pronounced the delay.
- ✓ If you choose to place the sensor in the biggest case, then the humidity curve inside the smaller cases will more or less remarkably overshoot the set point in the beginning.

In general, the air of all the showcases connected to the EBC via the LVBs is going to be intermingled as long as the EBC is switched on. In other words: The different showcases share the same system air, and after some time this system air will - through the work of the EBC - be at an even humidity level all over the air circuit.

🔧 **NOTE:** See the Manual EBC on where to best position the sensor within the case.