



## Universal Ventilation Controller

This new control system includes all programs of the Previous controllers 100-720, 100-730, and 100-740, but with more setting options and possibilities than before.

All values of the sensors are immediately and clearly visible in six displays. The values are determined and calculated using a total of four processors. As in the other controllers, the relative humidity and the temperature are measured and the dew point is calculated in a formula, the purpose being is always to ensure ventilation, and that the air introduced does not insert additional moisture into the rooms.

This prevents the adjustable dew point difference between internal and external sensors, which is always needed. Limitations of the interior temperature and the times of the ventilation are individual adjustable.

## Cellar dehumidify

According to statistics, there are 2 million houses in Germany with partial or significant problems with moisture in basements and basement rooms. Airing is often done wrong, so that condensation is added to the existing moisture. The walls take in the condensation which means full and large-area mould formation is only a matter of time.

## We dehumidify naturally

We use nature`s help and dehumidify with dry outdoor air in a more cost-effective manner as the previously known expensive renovation measures, which usually ended without Long-term success.

An automatic ventilation and venting system ensures a long-term operation remedy. This should be designed as a cross ventilation with at least two (in larger cellars several) fans with high airflow. We have the matching fans to our ventilation systems also in our assortment.

If the wall moisture was measured in weight units, the wall moisture content would be from 10 to 16% by weight. And to verify, this is up to 160 liters water tied in a ton of masonry. If the humidity in the basement is lowered, the wall gives back moisture into the air through evaporation.

Because, physically justified, only about 10 grams of water in one cubic meter of air can be transported, the fans should be designed in that way that even a lot of moist air can be transported.

This is done, if the conditions are favorable with our dew point-controlled Universal ventilation completely automatically. And if not, our fans close with their flaps the rooms off so tightly that no unwanted air is exchanged. This is how you naturally dehumidify your basement today with the most modern computer technology.

## Service

Press the Prog key to enter the menu mode and first select the program. With the keys Up / Down you can now select the desired program /parameters.

## Adjustable parameters

- 0 = Displays the version number of the software
- 1 = Select the operating program (see program)
- 2 = Display brightness in 4 steps 0-3  
Factory setting 3 / Light
- 3 = min. Internal temperature in 0.1 ° C steps  
Adjustable from 0.0 ° C to 29.9 ° C, Factory setting 8 ° C
- 4 = max Internal temperature adjustable in steps of 0.1 ° C  
From 15.0 ° C to 79.9 ° C, Factory setting 50 ° C
- 5 = Dew point difference adjustable in steps of 0.1 ° C  
0.0 ° C to 9.9 ° C / Factory setting 5.0 ° C
- 6 = Activation time Fan interval in seconds.  
0 to 1999 seconds  
Factory setting 600 seconds = 10 minutes
- 7 = Passive time Fan interval in minutes.  
0 to 1999 seconds. Factory setting 1999 seconds
- 8 = Desired relative humidity (Drying room ventilation) in  
0.1% steps. 50.0% to 79.9% / factory setting 65%

## Short description of the programs

- 0 = No display
- 1 = Display measured values without ventilation
- 2 = Test function relay / relay on shows „Luft ein“ (air on)

## 3 Winery Ventilation

The room climate in a wine cellar is extremely important for the maturation of the wine and without automatic ventilation very difficult to get under control.

Our wine cell ventilation continuously measures with the climatic conditions outside and inside precision sensors. The program optimizes the climatic conditions on the basis of the measured values in the wine cellar. In doing so, a wine cellar temperature is optimized from 10 - 14 ° C and a humidity control between 50 - 80% rel. moisture is targeted. On the Preferred core range of 60 to 70% rel. moisture is given priority by the program.

## 4 Basement ventilation

In case of flooded cellars or extremely damp cellars this ventilation program is recommended. The control ventilates only in continuous mode, if the dew point outside is lower than inside. Because physically a cbm of air can transport about 20 grams of water, An amount of air throughput must be ensured. So with little energy expenditure one can turn a wet cellar into a dry one. Prerequisites are fans with a high airflow.

## 5 Basement interval ventilation

Moisture, mould smell and mould prevention is possible with a controlled ventilation. The ventilation intervals are adjustable within wide ranges, see Parameter. This is done with our dew point ventilation control complete automatically when the conditions are favorable. And if not, our fans close the flaps and make the rooms nearly that there is only low unintended air exchange.

## 6 Ventilation for fans with heat recovery (HR)

The controller constantly measures the dew point difference and at the time of favorable conditions the fan will be provided with voltage. The fans with heat recovery decide over the interval of the ventilation which is ideal for apartments, offices and commercial premises. Saving energy with HR is a useful thing. However, HR fans are not suitable for dehumidifying basements.

## 7 Drying room ventilation

Who does not know the musty smell in drying rooms which are used by several rental parties. An automatic ventilation system is a remedy. The program Dry room ventilation constantly measures the climatic conditions in the drying room and at the same time the external conditions. When laundry is hung in a drying room moisture is rapidly increased by evaporation. If the ventilation immediately starts, there is no condensation on the inner walls and the clothes then dry very quickly in a short time.

## 8 Cooling with outside air

Cooling systems and other processes produce heat which reduces the efficiency of the installations. To increase efficiency, warm air must be moved outside. With the adjustable parameters optimum cooling with the outside air can be achieved. This results in a cost-effective, energy-saving cooling.

## 9 Heating / heating with external air

The sun delivers about 1.2 kW / qm of energy. Using air collectors this energy is very easy to gain. Two fans let the heat into rooms, such as basements and cold rooms in order to save enormous heating costs. With the parameters the system can be adapted and optimized.

## Please read carefully

The value of inside sensor is located on the left side of the display in the reading direction, the outside sensor on the values is on the right side. The function selection is activated by the right button (MOD). The individual parameters are selected with the upper arrow key. The places are to be changed with the lower arrow key. A selected parameter is activated by the MOD key. In parameter 1, the selection of the programs appears. The programs can be switched with the upper arrow key. The number of the selected program is displayed in the right display. Pressing the MOD button activates each selection. The last selected function will be retained during power down when the unit is switched on again. If sensor failure occurs, the corresponding display stays dark (also the point), the fans remain off. The ventilation ends when the adjusted lower internal temperature is undershot (default + 8 ° C) or when the exceeding the set upper internal temperature (default + 50 ° C).



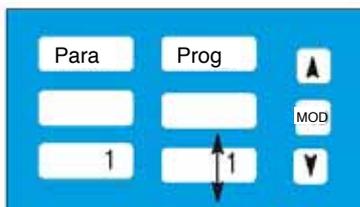
## Reset the settings

If you are not sure which settings you have made, reset the controller to factory default. This is done by pressing both arrow keys simultaneously and then briefly removing and then reinserting the power plug.



## Software version number

To specify the program version, press the MOD Button once. The parameter setting appears on the left, the program on the right. Press the lower arrow key until the 0 appears. Press again the MOD button and the controller will display the program version in the middle. Press the MOD button again to return to the measurement mode.



## Program selection

Press the MOD button to enter the menu. When a number appears below Parameter, use the lower arrow key to set 1. When pressing the MOD key again, the number 1 will now flash on the right side. Now select the program. Press again to show Process „PROZ“ as well as the program number. Afterwards the control unit automatically returns to the measuring mode.

## Program descriptions

**Prog 1** is used to display the measured values of both sensors.

The relay is not active. With this function the sensors can be checked. Likewise, program 1 can be used as precision climatization.

**Prog 2** shows „Luft ein“ (= air on) in the middle display line.

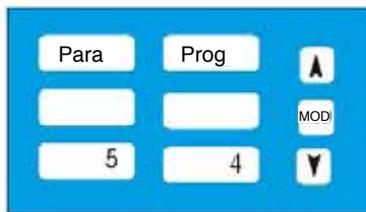
The upper and lower display lines remain dark. The relay is permanently switched on, the relay LED is lit. This function can be used to test the relay and its connection to the connected fans.



**Prog 3** Winery ventilation.

This program is an optimization program for the optimal climatic conditions of a wine cellar. The fans are activated under different conditions, which are explained as follows: 1) The internal humidity is higher than maximum (70%) and the outside humidity is lower than the indoor humidity (-10%).

2) The internal temperature is higher than the temperature optimum + 0.5 ° C (12.5 ° C) and the outside temperature is lower than the internal temperature -1 ° C. 3) The internal temperature is smaller, Than the temperature extremes -0.5 ° C (11.5 ° C) and the outside temperature is higher than the indoor temperature + 1 ° C. If the external conditions are outside the specified ranges, the fans do not switch on. The displays „Temp“ and „% rF“ indicate by flashing that the external conditions are not fulfilled. The blinking of a single display indicates that the external conditions to regulate the internal conditions are not sufficient. Both displays also flash if both conditions are not met. The values-display is only active in normal operation. There is no priority between temperature and moisture, both are equivalent.



#### Prog 4 Basement air ventilation with dew point monitoring

This program is recommended for extremely damp cellars or after flooding. For fast drying, a high air throughput is required, as in the best case one cbm of air can transport only about 20 grams of water. The control measures constantly the climatic conditions and, if these are favorable, it is aired. Until the dew point difference drops below 1 ° C Tp. Then the fan stops and the controller waits until the dew point difference is met again by evaporation. The Dehumidification starts again. It is also recommended to start dehumidification with this program until success is achieved. Then you can switch to intermittent ventilation as a maintenance ventilation.

#### Parameter 5 sets the dew point difference

Here you can adjust the dew point difference individually. Without modification the factory setting of 5 ° C (50 digits) is maintained. Press MOD once to enter the menu. On the left, you can set parameter 5 using the arrow keys. Press the MOD button again to display the right hand display 50 with flashing point. The display is in tenths of a degree C, so the display 50 corresponds to a value of 5.0 ° C. Use the lower arrow key to move the flashing point to the position you want to change. Use the upper arrow key to change the difference Between 2.0 ° C to 9.9 ° C (20 - 99). Remember that 5 ° C is an optimum and that if the difference is too high, i.e. 9.9 ° C, the ventilation will only switch on when the outside air is extremely dry. After setting press MOD again to return to the measurement mode.



#### Parameter 3 Internal temperature limitation

With this parameter you can limit the indoor temperature, so on cool days the temperature in the cellar does not fall too far. (Factory setting: + 8 ° C). Switch to parameter 3 and on the right the number 80 (for 8.0 ° C appears). You can now use the arrow keys Set the temperature from 20 (2.0 ° C) to 299 (29.9 ° C). Undercutting these set temperatures, the control remains stationary and the fans passive.



#### Prog 5 Basement Interval ventilation with dew point monitoring

If you want to change from continuous ventilation (Prog. 4) to the intermittent ventilation, set the parameter again to Program Change 1 and press again MOD button, you will now see the current program (flashing). Now set the program selection to 5 and confirm. You are now in the „Interval ventilation“ program. The program operates with adjustable time grid, in the „On time“ the relay is active, and in „off-time“ passive. On and off times are defined and adjusted parameter 6 (active time) and 7 (passive time). The time counter is only reset at the end of the runtime.



#### Parameter 6 Set the active time

Press the MOD button to enter the menu. Set the parameter to the left to 6 and confirm with MOD. You will now see the factory setting of 0600, meaning 600 seconds (equivalent to 10 minutes). You can now change this active time, From 300 to 1999 seconds (= from 5 minutes on time to 33 minutes). Factory setting: 10 minutes.



#### Parameter 7 Setting the passive time

Press the MOD key to enter the menu. Set the parameter to the left to 7 and confirm with MOD. You will now see the factory setting of 1800, i. There are 1800 Seconds. This corresponds to 60 minutes. You can now change this active time from 300 to 1999 seconds (= from 5 minutes switch-on time to 33 minutes). Factory setting of 30 minutes. Explanation: When calling the menu (function selection) the Time counter is also reset, thus starting a new interval. The relay switches on, if the dew point inside Delta-Tau (2.0 ° C to 9.9 ° C adjustable in parameter 5 Dew point difference) is greater than outside. The relay switches off when the dew point inside is only 1.0 ° C higher than the dew point outside (hysteresis = 1 ° C). The airing stops when the set lower internal temperature falls below + 2 ° C to + 29.9 ° C, Adjustable in 0.1 ° C increments.





### Prog 6 Ventilation with heat recovery (only for third-party products)

Fans with heat recovery contain a memory and an automatic switch (every 70 seconds). They are used for ventilation with heat recovery. In doing so, the Parameter 5 is set to 2°C dew point difference and parameter 3 is set to the desired minimum internal temperature. The ventilation works within these limits and ensures that the room air is not further moistened.



### Prog 7 Drying room ventilation with dew point monitoring

The drying chamber ventilation operates only when an event occurs, i.e. if wet laundry is hanged out (humidity increases rapidly). Before this moisture arrives the wall is aired. With parameter 8, the desired residual moisture content of the room air is given. Thus under dew point conditions, ventilation continues until the set residual moisture has been reached. Factory setting 65% rel. moisture.



### Parameter 8 adjust the rel. humidity

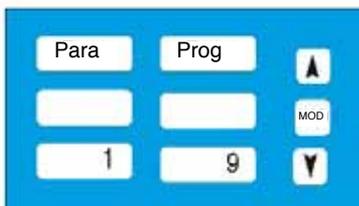
Press MOD again; The parameters are shown on the left. Set the parameter to 8 and confirm with MOD again. You will see the factory setting in the right display in tenths, setting 650 corresponds to 65% rel. moisture. You can now change any flashing position. The lower arrow key relates to the position. The upper arrow key changes the number of the addressed position. Adjustable 500 (50.0% relative humidity) to 799 (79.9% relative humidity). After setting, return with MOD measuring mode by pressing MOD.

**Explanation:** The relay switches on as long as the selected humidity (dryness) is not reached and the dew point internally, set by the dew point difference (parameter 5) is larger than outside. The relay switches off when the dew point inside is only 1.0°C greater than the dew point outside (hysteresis = 1°C).



### Prog 8 Cooling with outdoor air

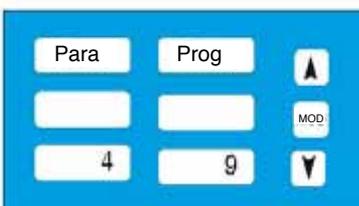
This program is required to divert process heat from cooling aggregators or similar, which otherwise would lead to a worsening of the efficiency levels. Is the indoor temperature higher than the outside temperature, plus the adjusted difference (parameter 5), then the fans turn on. The internal air humidity increases during cooling until it reaches the desired humidity (parameter 8). Does the indoor humidity exceed this value, then the fans remain passive. When the temperature difference is lower than 1°C, the fans remain passive. For parameter settings see page 3, Settings for parameter 8 see above.



### Prog 9 Heating with outside air

For quite some time, there have been solar air collectors that use a lot of heating energy to heat rooms with natural heat. Similarly heating cellars and cold rooms in the summer by only using warm air from outside is possible.

**Explanation:** If the internal temperature is lower than the outside temperature minus the adjusted difference (parameter 5), the fans switch on until the desired humidity (parameter 8) is reached. A higher temperature in this case means the fans remain passive. When the temperature difference is smaller than 1°C, the fans remain passive. Settings for parameter 5 see page 3, parameter settings 8 see above.



### Parameter 4 Adjust the internal temperature

With this parameter you can limit the top indoor temperature. So, when heating the temperature in the room does not become too high. Factory setting + 50 ° C. When the parameter 4 is selected, the number 500 (corresponds to 50.0 ° C) appears you can now use the arrow keys to set the upper temperature from 150 (15.0 ° C) to 799 (79.9 ° C). When this set temperature is exceeded, the fans are passive.

### Parameter 2 Adjust the display brightness

In dark rooms, the display may look too bright. To reduce the brightness, use parameter 2 factory setting 3 Bright. The brightness can then be adjusted with the Numbers 2, 1 and 0 and reduced as desired.





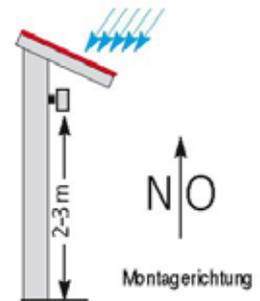
### Connection

You receive the dew point ventilation control ready for operation with a connected 230 Volt power cable. Two 4-pin flat cables of 10 meters each with 2 modular RJ11 connectors are included in the delivery. The control and the sensors are equipped with RJ11 sockets. The sensor on the left is the inside sensor (Innensensor), the sensor on the right is the outside sensor (Außensensor). The sensors are both the same and can be mounted inside or outside. To connect the terminal box, you must be authorized by profession, because internally open terminals carry voltage. To the left RJ11 socket, the inside sensor is to be connected. The external sensor must be connected to the right RJ11 socket.

The fans are connected to the terminals with the designation fan voltages (Lüfterspannungen). The terminals directly supply the fans with 230 V when the dew point conditions are met. On top is a red LED which serves as a checklight. The 230 Volt output can be loaded with 2 Ampere. Higher loads should be used with switch protectors/contactors. For a more effective ventilation exchange, a fan for supply air and a fan for exhaust air are recommended. We also supply the appropriate fans. The fans are not included in this package.

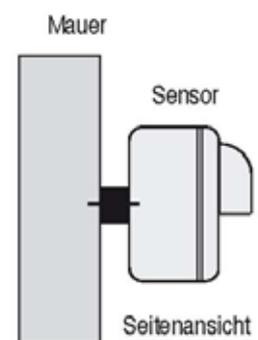
### Outside sensor

The outside sensor should be rain-protected and mounted in a northerly direction without sunlight and at a height of at least 2-3 meters on a outer wall of a house. Please note that direct sun exposure to the outside sensor may lead to incorrect measurements. Direct rain effects destroy the sensors. Mounting under a roof protrusion is ideal. The sensors contain special precision sensors, which must never be allowed to breathe, otherwise they will lose sensitivity. Unpack the sensor and open the screws. Screw the enclosed rubber lip into the desired hole and insert the cable to the sensor board.



### Interior sensor

Between the air temperature and the wall temperature in a cellar, differences of up to 3°C may occur, because the grounding walls (outer walls) are usually colder. In order to reduce the heat transfer, the sensors have two spacer rings and the corresponding screws with dowels. Mount the sensors as shown in the sketch. Do not install the sensors at a distance, the distance between the sensors is included in the scope of delivery, and it is advisable to install the interior sensor on an inner wall and in the space of the exhausting air (near the exhaust fan) The sensors contain special precision sensors, which should never be allowed to breathe, otherwise they would lose sensitivity.



### Radio remote sensor option

For type 100-144 as well as type 100-145, the outer sensor is mounted on the north or east wall, as described above at a height of approximately 2-3 meters. The receiver is mounted next to the control unit on the wall and connected to the controller via the short 4-pin cable (2x RJ11 plug) (as in the operating instructions described, connection of outside sensor). In the receiver housing is an RJ11 socket for connection to the 30cm long sensor cable. The range is according to. Manufacturer 30 m (can be shortened depending on construction). Therefore, please test the spark gap. The receiver should be installed first become.



## Maintenance and safety instructions

If it is to be assumed that safe operation is no longer possible, the device must be taken out of service and disconnected from the power supply. The installation may only be carried out by a qualified electrician working with the related regulations. The VDE regulations must be complied with.

## Warranty

(1) The warranty period is two years from delivery of the goods to commercial customers.

(2) They are obligated to examine the goods immediately and with due diligence on quality and quantity deviations and to notify obvious defects within 7 days from receipt of the goods to the seller in writing, the timely sending is sufficient. This also applies to later discovered hidden defects. The assertion of the warranty claims is excluded in the case of infringement of the obligation to examine and to notify.

(3) In the event of defects, the Seller shall, at his choice, make a warranty by repair or replacement delivery. If the defect rectification fails twice, you may demand a reduction of your choice or withdraw from the contract. In the case of rectification, the seller shall not bear the increased costs resulting from the shipment of the goods to a place other than the place of performance, provided that the shipment does not correspond to the intended use of the goods.

## Service

We are delighted that you have chosen a product of our product range. Should a defect occur in spite of all inspection by the factory, we ask you to return the device (stamped) to us. For technical questions, please select +49(0)89/904 868 - 0 or Fax: +49(0)89 1904 868 - 10.

## Technical Specifications

Process-controlled control unit	in total 4 processors	
Operating voltage	230V / 50 Hz	
Power consumption without fan	4.5 Watt	
Fan current	max. 2A	
Max. cooling fan	max. 230V	
Connection type	Lift clamp	
Display	6 x LED 10mm red	
Resolution	0.1 degrees	
Measuring range temperature	-26°C to +76°C	
Accuracy	± 0,5 % ± 2 digits	
Measuring range Humidity	5% to 99%	
Accuracy	± 1,8 % ± 3 digits	
Measuring range Dew point	-54°C to +75°C	
Accuracy	± 1,8 % ± 2 digits	
Sensor length	per 10m standard	
Special length	up to 50m possible (per sensor)	
Dimensions of wall housing	210 x 155 x 70mm	
Dimensions of sensor housing	85 x 185 x 90mm	
Working temperature control	-20°C to 50°C	
Working temperature probe	-20°C to 50°C	
Mounting type	wall mounting	Technical specifications, technical
Protection type control	IP51	changes and errors expected
Degree of protection	IP51	As of October 2017