Schwille - Elektronik

Dew point ventilation control 100 - 720

Worldwide exist two millions of houses in Germany with considerable problems with moi- sture in basement rooms. Ventilation often is done incorrectly and to the existing condensati- on moisture is added too. The walls are filled with clamminess and extensive mold growth is just a matter of time. An automatic ventilation brings permanent relief.

When you change humid air against dry air, you will receive as result a slow drying on the inner wall. The moisture in the masonry can be moved slowly outside. Usually people had lifted only if the air outside was cooler. This is related to the absolute humidity. Cooler air keeps less water vapor, so the absolute humidity is lower. If the air is warmed by the basement, so the mixed air is able to absorb air with a higher humidtiy. It's possible that the outdoor humidity is very dry.

Only through the use of precision dew point sen- sors and a perfect calculation program the optimal ventilation conditions are determined. This allows control over the year, the wet basement or ambient air is exchanged with dry air from oustide. Our micro controller based 100 – 720 ventilates the premises only if the air (outdside) is actually able to absorb and transport moisture. This is determined by measuring the dew point.

The ventilation starts if the dew point temperature difference is lower than 5°C in the basement. The dewpoint temperature is calculated as the absolute humidity and temperature in the air. The lower the dew point temperature, the more water vapor can be absorbed.

Depending on the basement and ventilation requirements, you can choose between nine different ventilation inter- vals. In addition, there is an opportunity to select the basement temperature if the winter tempera- ture is too low. On the front panel there are three buttons available. With them the program inter- val is selectable. With the two displays and the buttons you can toggle between temperature, relative humidity and the dew point.

First measure: automatic ventilation!

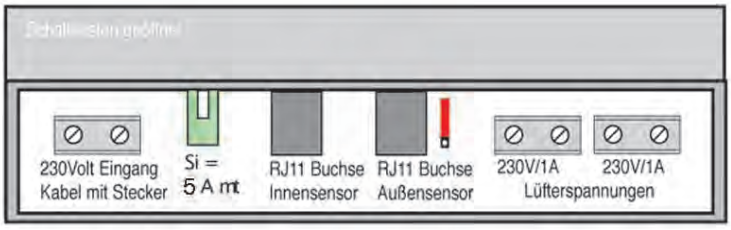
If cellars smell musty and objects are covered with mold, measures must be taken. Automatic dew point ventilation guarantees that only drier air enters the cellar. It is equipped with two precision sensors that continuously measure temperature and relative humidity inside and outside the cellar. Thus the control system always knows what climatic conditions prevail inside and outside. The respective dew point is calculated from temperature and relative humidity (absolute humidity). Ventilation only makes sense if the absolute humidity is significantly lower outside than inside. With the dew point difference of 5°C, in the best case up to 10 gr. of water per cubic meter are transported. This makes it clear that a lot of drier air is needed to keep a damp cellar dry over time and permanently by means of automatic shock ventilation.

How does the dehumidification take place??

The control starts with program 1 (automatic impulse ventilation) when the set dew point difference is reached (factory setting 5°C Tp) and continues to ventilate until a balance with the outside air is achieved. Below 1°C dew point difference the system switches off again (hysteresis 4°C Tp.) and waits until the humidity in the cellar has risen again due to evaporation. Then the shock ventilation starts again.

The outside dew point must be lower by the dew point difference. In this way your cellar will become drier step by step with program 1 (automatic impulse ventilation). If you are satisfied with the result, you can switch to one of the eight interval programs (maintenance ventilation).

Keyboard Lock



To switch the keyboard lock on or off, first pull the power plug. Then open the connection box
with a screwdriver. To the right of the socket of the external sensor is a slide switch with a red slider. To prevent unauthorized program changes, the Prog button can be locked by sliding the slider down. If you move the slider back up, the Prog button is functional again.

The perfect combination for your cellar!

We supply the suitable fans!

With our low-noise fans you get the right combination. The fans have a high-quality motor with overload protection and are therefore very durable. They open silently and close tightly by means of an internal flap. The ventilation direction is programmable by wire bridge (supply/exhaust air). The ventilators are suitable for installation directly in windows as well as in core drillings through the wall. A screw set for wall installation is available from us as an accessory. The screw set is required per fan. The screw set is required for overcoming greater wall thicknesses (up to 45 cm) for wall installation. Please ask for a separate data sheet with offer.

Artikelnr.	Fan Diameter.	Core drlling	cbm/h	Performance	Water transport
100 - 150	150 mm	190 mm	235 cbm/h	25 Watt	2,35 Liter/h
100 - 230	230 mm	260 mm	480 cbm/h	26 Watt	4,8 Liter/h

Program selection

Prog

∧ r.F.-Tp.

∨ Te.-

Prog

By pressing the Prog key, the menu mode is activated and the program is selected first. The desired program can now be selected with the Up/Down keys. Program 3 is set at the factory. Press the Prog. key again to return to the operating mode. If the machine is in normal operating mode, the display can be switched between dew point and temperature by pressing the (Te-Tp) key, and between dew point and relative humidity by pressing the (r.F.-Tp) key. Thus, the current values can be read from both sensors. The dimensions for the respective measured values light up in the window. The selection remains also in case of a power failure or unplugging of the device.

Program 0: Automatic ventilation stopped, measurements continue

Program 1: Automatic airing (dehumidification program)
Always start the dehumidification with Prog 1. For the dehumidification of cellars an automatic airing is carried out here. The cellar air is exchanged relatively quickly with dry outside air through the cross ventilation without the walls cooling down. Afterwards, the control stops (at dew point < 1°C) and waits again for the set ventilation conditions. The control is also suitable for fans with heat recovery (WRG). The interval programs for maintenance ventilation are set when dehumidification has been successfully completed.

Program 2 - 9: Interval ventilation programs
The interval programs are used for maintenance ventilation and can be set independently of summer or winter.

Program 2: Interval ventilation. 5 minutes ventilation on at an interval of 20 minutes.
Program 3: Interval ventilation. 5 minutes fan on at 30 minute intervals.
Program 4: Interval ventilation. Fan on for 5 minutes at 40 minute intervals.
Program 5: Interval ventilation. Fan on for 5 minutes at 50 minute intervals.
Program 6: Interval ventilation. Fan on for 5 minutes at 60 minute intervals.
Program 7: Interval ventilation. Fan on for 5 minutes at 70 minute intervals.
Program 8: Interval ventilation. Fan on for 5 minutes at an interval of 80 minutes.
Program 9: Interval ventilation. Fan on for 5 minutes at 90 minute intervals.

Program 10: shows the software version number VER - 3.X

Program 11: tests the fans, without measurement; 230 volts are connected to output terminals

Program 12: Setting the dew point difference
The control unit only works according to the set dew point difference (absolute humidity). The factory setting is at 5°C dew point. This is an empirical value over many years to ensure dehumidification and the events in which the external conditions are suitable for it. However, you can also change the difference in Prog 12 from 2°C to 9°C dew point. If you reduce the difference, i.e. let it go towards 2, ventilation is very often performed, but hardly any dehumidification takes place. This can of course be very useful for the ventilation of workshops or offices. Conversely, if you increase the dew point difference towards 9 °C, more dehumidification will occur, but the events that the conditions are suitable for this will be less frequent.

Program 13: Setting the indoor temperature
This program item can be used to limit the lowering of the interior temperature, at which the ventilation stops and the air flaps of our fans seal tightly. The selection can be made between 5°C and 25°C in 1 degree steps. (Factory setting: 8°C). To effectively dehumidify a cellar, a temperature difference between inside and outside is required. If the temperature is limited to 5°C, dehumidification becomes more effective and events become more frequent. In winter, you don‘t have to be afraid that too cold air will enter the cellar and cause some freezing.

A good average is the factory setting of 8°C. If you now set the indoor temperature higher, the events in which effective dehumidification can take place will quickly become fewer. Example: If the indoor temperature is limited to 16°C, dehumidification can no longer take place at 12°C outdoor temperature.

Maintenance and safety instructions

If it can be assumed that safe operation is no longer possible, the device must be taken out of operation and disconnected from the power supply. The installation may only be carried out by a qualified electrician who is familiar with the associated regulations. The VDE regulations must be observed.

Warranty

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

(2) You are obliged to examine the goods immediately and with due diligence for deviations in quality and quantity and to notify the seller in writing of obvious defects within 7 days of receipt of the goods. This also applies to hidden defects discovered later from the time of discovery. In case of violation of the duty of examination and notification of defects, the assertion of warranty claims is excluded.

(3) In the event of defects, the Seller shall, at its option, provide warranty by repair or replacement. If the
If the removal of defects fails twice, you can choose to demand a reduction or withdraw from the contract. In the case of rectification of defects, the seller does not have to bear the increased costs that arise from the transfer of the goods to a place other than the place of performance, if the transfer does not correspond to the intended use of the goods.

Service

We are pleased that you have chosen a device from our product range. If a defect should occur despite all factory checks, we ask you to send the device (postage paid) to us. For technical questions please call: +49(0)89/904 868 - 0 or fax: +49(0)89 /904 868 - 10.

Technische Daten

Operating voltage	230V / 50Hz / 3.5W
Fan current	max. 5A, 230V
Connection type	Liftklemmen
Display	2 x LED 12.5mm rot
Resolution	0.1 Grad
Measuring range temperature	-26°C bis +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
Accurady	± 1,8 % ± 2 Digits
Probe length	je 10m standard
special length	up to 50m possible (each Sensor)
Dimensions wall housing	165 x 155 x 70mm
Dimensions sensor housing	65 x 92 x 59mm
Working temperature control	-20°C to 50°C
Working temperature sensor	-20°C to 50°C
Mounting method	Wall mount
Protection class control	IP51
Protection class sensor	IP51

Technical changes and errors excepted. Status November 2020