Humidity Control

15. Reduction of Room Humidity

15.1 Control by Air Flow

(sensors not in standard product programm of FISCHBACH)

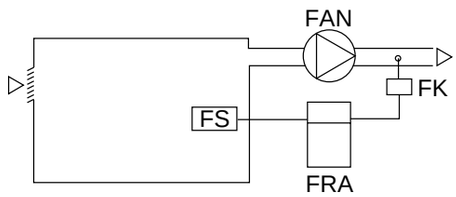
Humidity is controlled by varying air flow by means of **Fischbach Automatic Controller, Humidity Sensor and Preset**.

To reduce the humidity the ventilation plant extracts the humid air replacing it with dryer fresh air. In conventional plants these systems are controlled via room hygrostats on an on/off basis resulting in wild fluctuations in humidity, noise and higher costs. With the **Fischbach Compact Fans** and Controller the volume is varied to suit the amount of air which is required to be extracted to maintain a constant humidity level.

15.2 Sensing Humidity Level "In-Duct" Example: ILL. 15.2

The Actual Humidity Sensor is situated in the extract duct with a separate Pre Set situated where required. With this system a minimum volume should be set to maintain a true reading in the duct.

ILL. 15.2



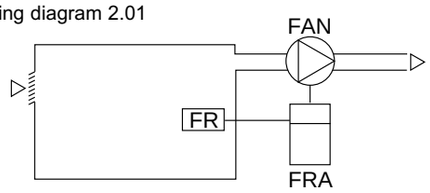
FK/FS – see wiring diagram 2.00

15.3 Sensing Humidity in the Room - Example: ill. 15.3

Same principal as 15.2 but Actual Sensor and Pre Set are combined and situated in the room.

FR – see wiring diagram 2.01

ILL. 15.3



Application:
De-humidification of swimming pools, showers, bath-rooms, kitchens, laundries. Also where constant humidity levels are required for storage etc.

Control via one External 0-10 V Signal

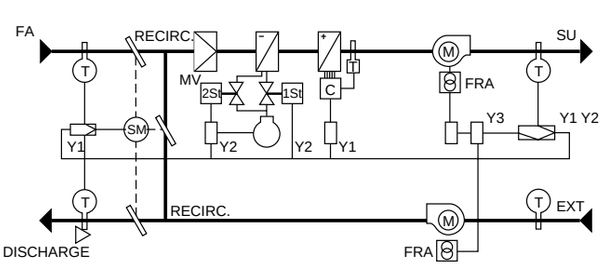
Control of FISCHBACH-AUTOMATIC-CONTROL through controllers of international manufacturers.

17. Set nominal value

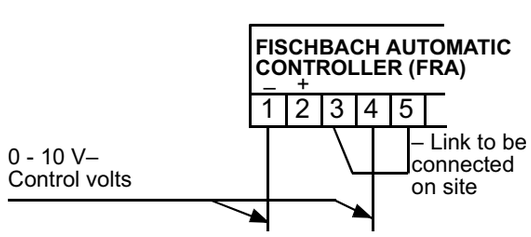
It is possible to connect an external voltage signal 0..10 V - direct current to the **FISCHBACH-AUTOMATIC-CONTROL** to terminal 1 and 4. The position of the **FISCHBACH-AUTOMATIC-CONTROL** is transmitted via a feedback signal 0...10 V - over a bridge from 5 to 3.
Therefore, it is possible to link the **FISCHBACH-AUTOMATIC-CONTROL** with the **FISCHBACH-COMPACT-FANS** in the controlling system with external products or in the Building Management Systems (BMS). Wiring diagram 2.24.

Application:
Part ventilation- and full ventilation units for data-processing units, office buildings and similar applications for example as sequence (series) to vary the air volume in the sequential control of heater, cooler and mixer of an air conditioning unit.

Example: When cooling is required in the building and fresh air is available the volume, is increased up to a 100 % to cool with fresh air. If the extract temperature still increases the **FISCHBACH-COMPACT-FANS** are controlled via **FISCHBACH-AUTOMATIC-CONTROL** up to maximum. If the extract temperature increases even more cooling is achieved via a direct evaporator with cooling machine. In a first step readily, the second directly. The air mixer operates with fresh air until the fresh air is warmer than the extract air, then the air mixer changes to the minimum-fresh air quantity.



Heating runs with minimum air quantity and minimum fresh air quantity without air volume control. The Heating is controlled via heater.
For signal and control reasons, it is possible to obtain a remote indication 0...10 V- between terminal 1 and 5. Input voltage 0...10 V D.C. on terminal 1 + 4 . Terminal 1 = (-). The input is internally equipped with a capacity of 470 nF in order to surpress interference. If using controller supplied by others with tendency towards oscillation equip signal line with resistance R = 1KW (0,25 W) for appr. attenuation.



Y1 = Controller output heating valve respectively E-heating and dampers
Y2 = Cooling valve controller output; compressor connection
Y3 = Fan controller output (Automatic Control)
T = Temperature sensor
SU = Supply
EXT = Extract
FA = Fresh Air
A = Actuator
EXH = Exhaust
RE = Recirculated Air
FRA = FISCHBACH-SPEED-CONTROLLER with actuator or FISCHBACH-AUTOMATIC-CONTROL voltage signal 0...10V–
CO = Compressor
1.st. = cooling valve 1. step
2.st. = cooling valve 2. step
MV = motor valve
C = contactor for E-heating-steps
M = FISCHBACH-DISC-ROTOR-MOTOR in FISCHBACH-COMPACT-FAN