

# AutoFan : Automatic Min Vent Reduction

## Programs : FSC 011-121 and greater with Autofan option

AutoFan Min Vent Reduction is aimed at helping to maintain room temperatures during short periods of exceptionally low outside temperature.

### How it Works

As long as room temperature is maintained within a small temperature band a little below Set Temp, Min Vent is maintained at the current Min Vent setting. Or if a curve is running, the Min Vent setting specified in the curve. Heating, if installed, operates in the usual way.

If room temperature falls further, minimum is progressively reduced. The temperature range over which minimum is reduced, and the amount of reduction are adjustable.

### Explanation

At any one time, a building has a potential "Temperature Lift" above ambient. For example, given a certain number and size of animals, supplementary heating capacity, heat loss through insulation and ventilation, it might be 21°C. Hence this particular building can maintain 20°C as long as it is -1°C or more outside. In this case, -1°C is the "trigger value".

But if outside temperature drops below the trigger value, then room temperature will fall exactly in line with outside, though still at the "temperature lift" above it. For example, if outside falls to -5°C, inside will fall to 16°C, regardless of Set Temperature. This explains why, in buildings which usually maintain temperature well, you will sometimes see an unusually low minimum (on your Min-Max) - outside temperature may have dipped briefly to a particularly low temperature in the middle of the night.

The only variable in this equation is Min Vent rate. In the short term, heat from animals and heaters, and insulation values, are fixed. Reducing Min Vent will reduce heat loss through ventilation, and therefore help to maintain room temperature, though at the cost of air quality and humidity while it is active.

Room temperature will still be below Set Temp, but will not drop in exact proportion to outside temperature. Depending on set up - but more importantly, depending on how much of the heat loss is due to ventilation - room temperature may drop, say, ½° for every 1° drop outside.

Note : Auto Min Reduction can only reduce ventilation to the degree determined by the system. For example, if your fan setup can only reduce ventilation to 5%, then this is the lowest level which will result.

### Configuration Settings

AutoFan Min Vent Reduction is configured in Control Settings : AutoFan settings.

#### AutoMin Offset

This is the temperature below set at which AutoMin Reduction starts. E.g. If Set Temp = 22.0 and AutoMin Offset = 2.0, then AutoMin Reduction starts below 20.0. This should be no lower than Heat Offset + Heat Band. E.g. If Heat Offset + Heat Band = 1.5°, then AutoMin Offset should be no lower than 1.5.

#### AutoMin Band

This is the temperature band (below Offset) over which Min Vent is reduced. E.g. If AutoMin Offset = 1.5° and AutoMin Band = 1.0, then Min Vent becomes lowest value at (Set Temp - 2.5°)

If AutoMin Band is set to 0.1 then reduction occurs as soon as temperature falls below Offset.

#### AutoMin Reduction%

This is the amount of Min Vent reduction as a percentage of normal setting. For example, if Min Vent (User Setting or curve value) is 10%, and AutoMin Reduction is 30%, then the lowest level of Min Vent is 7% (i.e. It's reduced by 30% of 10%).

Note : This is only effective to the degree to which the system setup allows. For example, if you have a single stage system without Fan Cycling set up, the lowest possible is 10%. Even if you set AutoMin to reduce this to 5% (i.e. you set AutoMin Min% at 50%), this will have no effect. To allow reduction below 10%, you would need to enable Cycle Fans. Two stage fan systems allow minimum down to 5% without Cycle Fans.