

COVID-19 Ventilation Guidance (Winter 2020-21)

In accordance with the current Government, HSE and
CIBSE guidance documents

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Recommended System Use

Based on the current Government, HSE and CIBSE guidance documents, outlined later in this document, we would recommend using our systems as follows:

1. **Leave the units switched on**
(at the fused spur and the wall-mounted key switch) and in automatic mode, as normal.
2. **Enable timed ventilation**
Press the 'Timed Max Vent' button as required to provide an increased outside air flow rate for a set time period (the default time period is 30 minutes, but this value can be adjusted by your Building Management System if the units are connected to it). You may want to enable the 'Timed Max Vent' mode for one of the following reasons:
 - a. to help purge the room during breaks
 - b. if there are increased occupancy levels in the space
 - c. if occupants are undertaking activities that can increase aerosol generation (e.g. aerobic exercise, singing, or talking loudly). [Aerosols are small, light-weight particles which can linger in the air and could contain virus particles. They can be removed/diluted by ensuring adequate ventilation]
 - d. if higher CO₂ levels (above 1500ppm) are detected for a prolonged period of time. [The units should automatically lower the CO₂ level within the space, so higher CO₂ levels should only occur if the design occupancy is exceeded, or if the occupants are more active than allowed for at design stage]

As our units are designed to control the CO₂ levels in the winter months without causing uncomfortable cold draughts, we recommend that all of our systems are left in automatic mode. In this mode, the units control the ventilation rate based on the internal CO₂ and temperature readings within the space and will always be providing fresh air when the CO₂ level indicates that there is a demand for ventilation. Keeping the units on and in the automatic mode is especially important for our NVHR+ units (NVHR® units with integral LTHW heater coil) because they provide heating as well as ventilation, and so if the units are disabled by occupants then

the rooms will not be heated. In winter conditions, our NVHR® and e-stack products do recirculate some air from the classroom to help prevent cold draughts, and this is acceptable according to the regulations because the units are also supplying the room with fresh air and because there is no recirculation between different rooms of the building.




In buildings which use our atrium systems (A Series), there is the potential for air to be recirculated from one room to another via the atrium. We would recommend that the set points for the atrium are altered to make it as fresh as possible; depending on the setup of your system you may be able to change these set points using the Building Management System, if not please contact us for assistance.

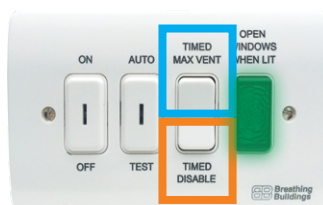
The units control the ventilation rate based on the internal CO₂ and temperature readings, providing fresh air when the CO₂ level indicates that there is a demand for ventilation

Activating Timed Max Vent Mode

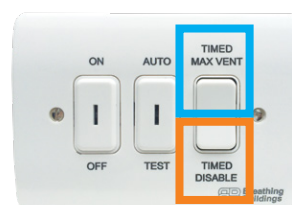
When the unit is on and in 'Auto' mode, press the 'Timed Max Vent' button on the key switch to activate 'Timed Max Vent' mode. The unit will return to automatic mode when the timer elapses (normally 30 minutes but this can be set to a different value by the BMS, if connected) or when the 'Timed Disable' button is pressed. Pressing the 'Timed Max Vent' button again resets the timer (i.e. giving you another 30 minutes of 'Timed Max Vent' mode).

Key:

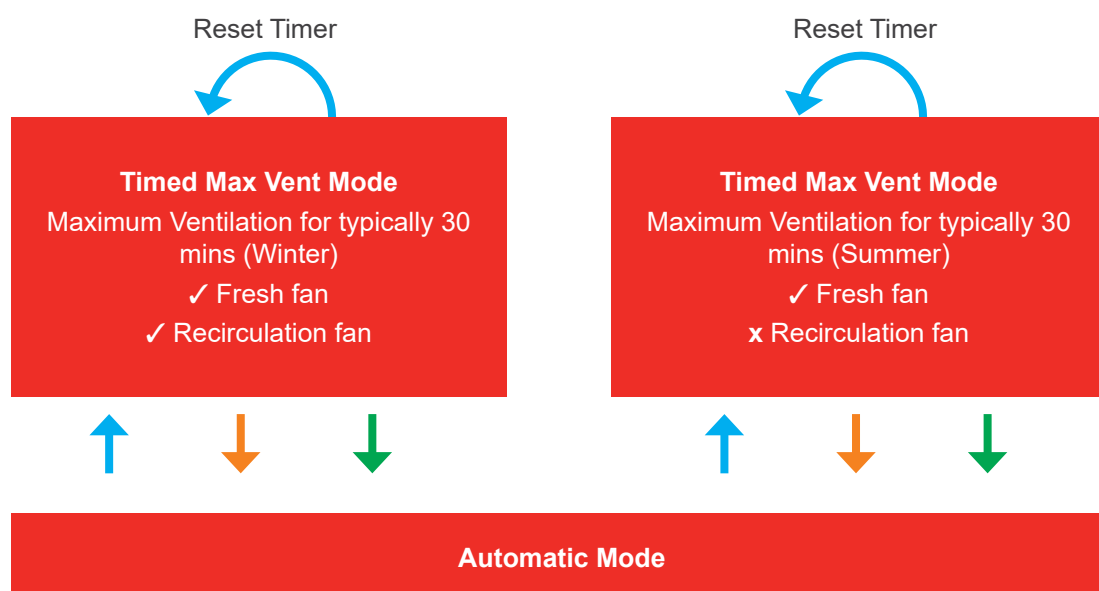
-  'Timed Max Vent' press
-  'Timed Disable' press
-  Auto timer expiry



Type 1 Key Switch
Light Flashes (one flash per second) in 'Timed Max Vent'



Mode
Type 2 Key Switch



Please Note: To enable 'Timed Max Vent' mode, the unit must be in auto mode and on at both the fused spur and the key switch

Government Guidance for Schools



The latest government guidance for schools¹ stresses the need to ensure that schools are well ventilated, but also says that a comfortable teaching environment should be maintained. For detailed ventilation guidance, it refers readers to the HSE and CIBSE guidance documents. These documents specify how to maintain adequate internal temperatures when the ventilation rate is increased. It suggests options such as purging spaces while they are unoccupied, for users to wear warmer clothes, and use heating only as necessary to maintain a comfortable room temperature.

In winter conditions, our NVHR® and e-stack products do recirculate some air from the classroom to help prevent cold draughts, and this is acceptable according to the regulations because the units are also supplying the room with fresh air and because there is no recirculation between different rooms of the building. In buildings which use our atrium systems (A Series), there is the potential for air to be recirculated from one room to another via the atrium. We would recommend that the set points for the atrium are altered to make it as fresh as possible; depending on the setup of your system you may be able to change these set points using the BMS, if not please contact us for assistance.

Health and Safety Executive Guidance

The HSE web page 'Air conditioning and ventilation during the coronavirus pandemic'² asks user to consider increasing the amount of fresh air entering spaces, for example through opening windows and doors (not fire doors). Their guidance also asks people to consider the use of ceiling fans or desk fans to help prevent pockets of stagnant air in rooms, this should only be done in spaces with an adequate supply of outside air.

CIBSE Guidance

The Chartered Institute of Building Services Engineers have issued guidance on the operation of ventilation units during the current COVID-19 outbreak (CIBSE Covid Ventilation Guidance Version 4³). This guidance provides some advice on how our natural/hybrid units should be operated to help reduce the risk of Covid-19 transmission within buildings, and the key points for summer operation are summarised on the following page.

¹ <https://www.gov.uk/government/publications/actions-for-schools-during-the-coronavirus-outbreak/guidance-for-full-opening-schools#keeping-occupied-spaces-well-ventilated>

² <https://www.hse.gov.uk/coronavirus/equipment-and-machinery/air-conditioning-and-ventilation.htm>

³ <https://cibse.org/coronavirus-covid-19/emerging-from-lockdown>

4.1.1.3 Roof turrets

Roof turrets should usually open proportionally in response to air quality and temperature in the space in their normal operation mode if they are correctly set up. If the space with roof turrets has a high occupancy, for example during lunch in a school hall, then it is advisable to use the manual boost to temporarily increase the ventilation rate. Manual boost should also be used if the occupants are undertaking activities that can increase aerosol generation eg aerobic exercise, singing or talking loudly. It should be noted that if activities that increase aerosol generation are to be undertaken the latest Government advice should be considered. Breathing Buildings is able to provide product specific guidance.



Note: Images of our R Series and S Series (e-stack) product range in varying application to assist in identifying them.

4.1.3 Mixing boxes

These devices are designed to supply air to a single room or zone, so the mixing mode can still be used if this enables more outside air to be supplied to the room and reduces draughts when the outside air temperature is low. However, to maximise outside air provision the device should be used in full outside air mode if reasonable to do so.



Note: Images of our NVHR® product range in varying application to assist in identifying them.

For winter operation, the guidance for our units is less clear however the document does make recommendations on the CO₂ levels needed ensure adequate ventilation. The guidance recommends that multi-occupant spaces shouldn't experience CO₂ levels above 1500ppm for prolonged periods (section 5.2) and that spaces with low occupancy or where enhanced aerosol generation is likely (e.g. singing, loud speech, exercise) "*should aim to ensure ventilation is sufficient to maintain CO₂ concentrations below 800ppm*", as well as considering other risk mitigation measures.



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