

Unity CV2.1HT

Decentralised Mechanical Extract Ventilation (dMEV) Installation and Operating Instructions

The Unity CV2.1HT is a continuously running (dMEV) extract fan, designed to offer a simplistic approach to meet Building Regulations and provide an energy efficient domestic ventilation solution to improve indoor air quality in dwellings.



Please read instructions before commencing the installation.

Please make these instructions available for the user.

Notice:

For Wall Mounting:

To ensure IPX5 install fan with orientation  arrows facing upwards.
(See 'Step 3')



The Unity CV2.1HT is a continuously running fan that revolves around 'one product', which has been designed to be flexible in application and to meet the performance requirements of all 'wet' rooms within a dwelling.

This product features on the PCDB, part of the process will require the Installation and Commissioning Checklist for dMEV products to be completed, see page 7 for details.

Your Unity CV2.1HT features TimerSMART and HumidiSMART technology (fully automatic integral delay / overrun timer and humidity functions) which monitor the homeowners' environment.

The boost speed facility is provided to increase the ventilation rate during peak times, helping to provide a comfortable indoor environment. Either a 'switch-live' light switch or an alternative boost switch (not supplied) should be wired to provide this operation.

Note: These functions only affect the higher extract boost mode, your fan will continue to ventilate at the lower trickle mode.

Key: Installer Information **pages 2 - 8**

User Information **pages 9 - 11**

Important:

Please read these instructions before commencing the installation

- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision. Ensure the fan is switched off from the mains supply before cleaning commences.
- Where an open-flued oil or gas-fuelled appliance is installed, precautions must be taken to avoid a back-flow of gases into the room.
- When installing wall mounted fans, ensure that there are no buried cables or pipes in the way. It is recommended that this fan is mounted >1.8m above floor level and within 400mm of the finished ceiling.
- The fan should not be sited where it would be subject to a direct heat source in excess of 40°C.
- Observe appropriate safety precautions if working on steps or ladders.
- Wear eye protection when breaking out wall or ceiling materials, etc.
- To disassemble the unit, disconnect from mains supply and use a screwdriver to segregate the electronic components and motor from the plastic housing. Dispose items in accordance with WEEE.

WEEE Statement

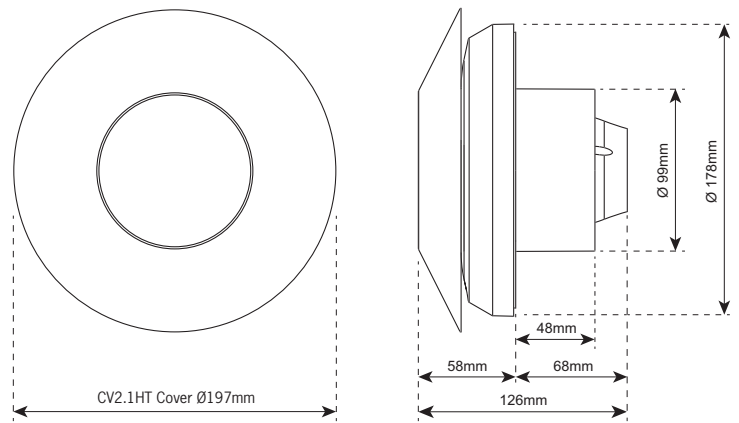
This product may not be treated as household waste. Instead it should be handed to an appropriate collection point for the recycling of electrical and electronic equipment. For more detailed information about the recycling of this product, please contact your local council office or your household waste disposal service.



Installation Preparation

Electrical installation must only be carried out by a qualified Electrician and in accordance with local regulations.

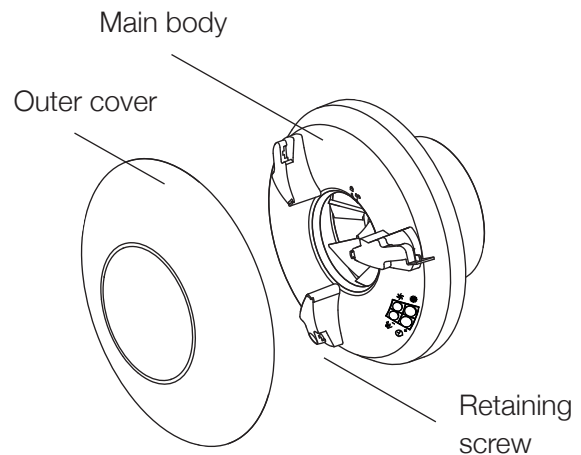
The Unity CV2.1HT fan is supplied with a 100mm nominal spigot for connection of ducts for installation - 100mm diameter rigid or 110mm semi-rigid ducting should be used to provide the best performance levels required for compliance with Building Regulations.



Preparing your fan for installation

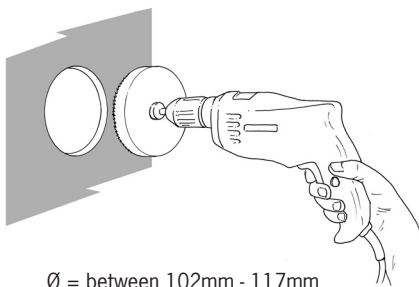
Upon removal from packaging, rotate 'outer cover' anticlockwise until retaining clips are released and place the cover to one side.

Loosen retaining screw in main body cover and rotate anticlockwise to remove.



The unit can be installed on a wall, window (with separate adaptor kit) or ceiling mounted and ducted.

Wall Preparation

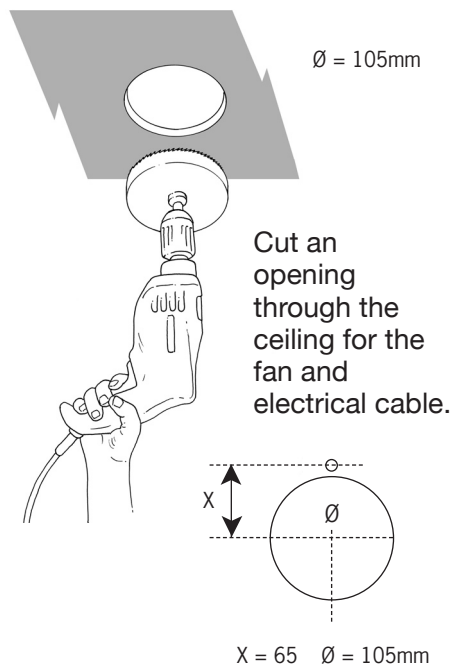


\varnothing = between 102mm - 117mm
(to suit ducting dimensions)
Allow a clearance of 50mm from wall/ceiling edges around the fan.

Cut the duct to depth of the plasterboard or tiled wall with slight fall to exterior (Make provisions for cable).

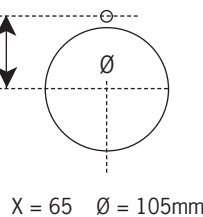
Fill in any gaps with mortar or foam and make good internal and external walls. Make sure that ducting retains its original shape.

Ceiling Preparation



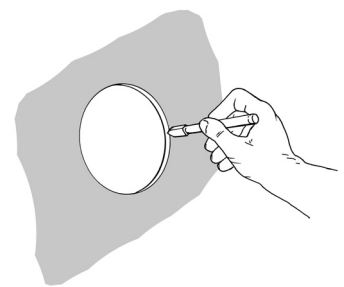
\varnothing = 105mm

Cut an opening through the ceiling for the fan and electrical cable.



See instructions with CTA110 for installation with semi-rigid ducting.

Window Preparation



Cut circular hole within window pane.

- minimum \varnothing = 118mm
- maximum \varnothing = 130mm

See instructions with window kit for installation details.

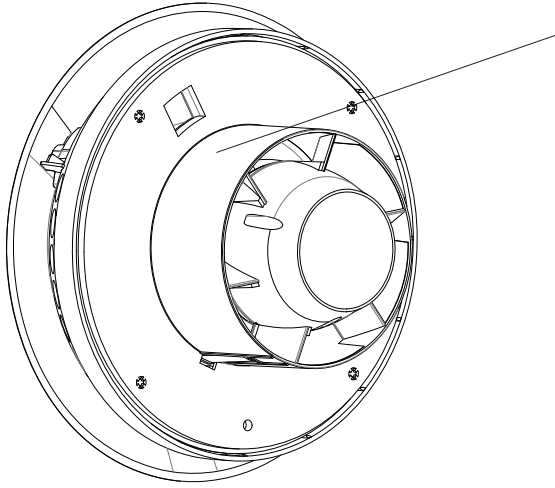
Installation

STEP 1

Connect ducting to the spigot on the back of the Unity CV2.1HT.

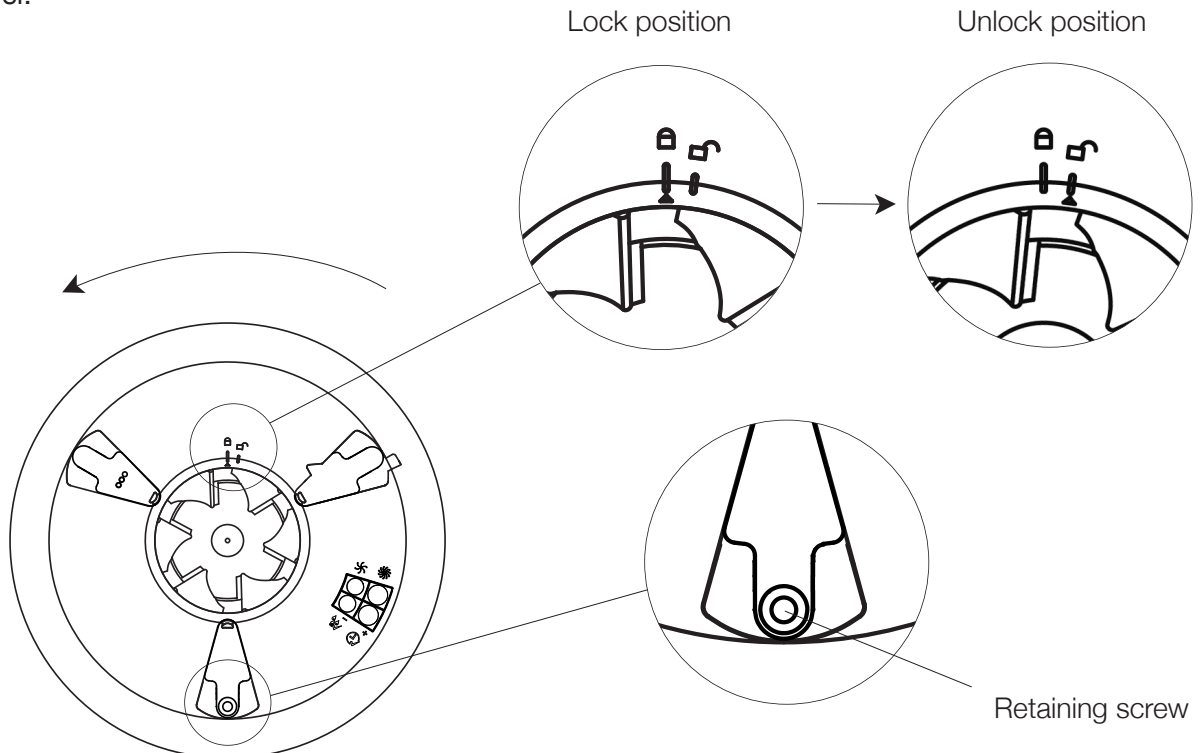
Note: If using flexible ducting, ensure this is pulled taut (to a min. 90% stretch capacity) between fan and termination.

If ducting is installed outside of the thermal envelope insulated ducting or a condensate trap should be fitted. Horizontal ducts should be angled away from the CV2.1HT, sloping slightly downwards.



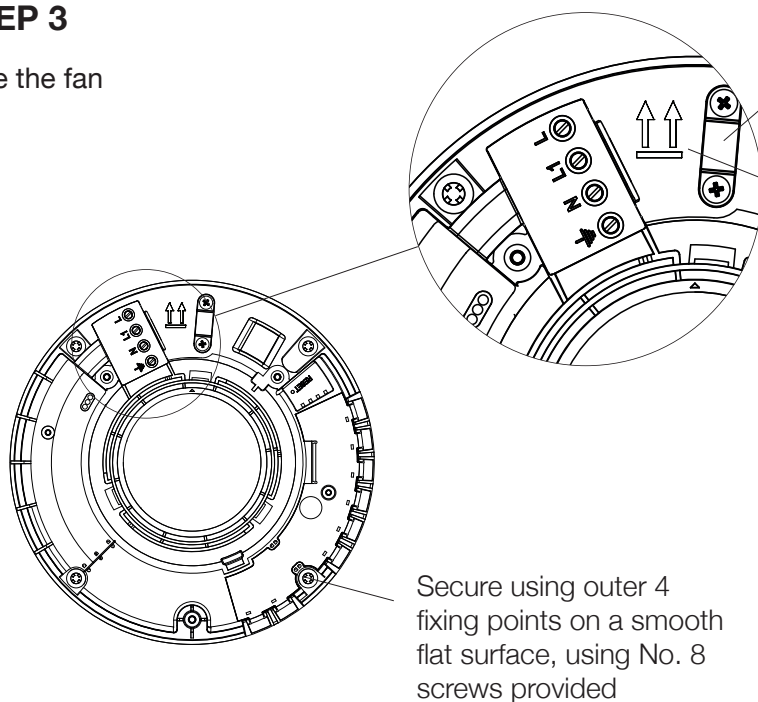
STEP 2

Loosen retaining screw until you can rotate main body cover of the fan anticlockwise to 'unlock position' and remove cover.



STEP 3

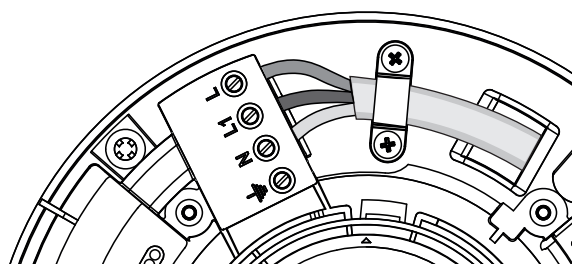
Wire the fan



Secure via cable clamp

Note: This part must be fitted to comply with safety standards.

Note: To maintain IPX5 and avoid possible hazard, please mount the fan within a 45° left or right allowance from the upwards orientation symbol.



Electrical Installation Preparation

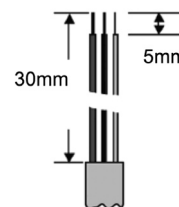
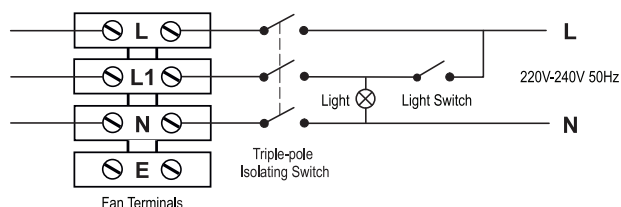
Installation or disconnection must be carried out by a qualified Electrician and all wiring must conform to local regulations. Isolate electricity supply before starting work.

A triple-pole switch having a minimum contact separation of 3mm must be used to provide isolation for the unit. When supplied from a 6 amp lighting circuit no local fuse is required. If electricity is not supplied via the lighting circuit, a localised 3 amp fuse must be used.

Unity 230V Wiring Details

☐ IPX5 Wall, IPX4 Ceiling, 220-240V ~ 50Hz / 1Ph, 6 Watts max.

Cable size: Fixed flat wiring 2 core 1mm², 3 core 1/1.5mm²



Strip cable to correct lengths and insert cable through cable entry point at the back of the fan.

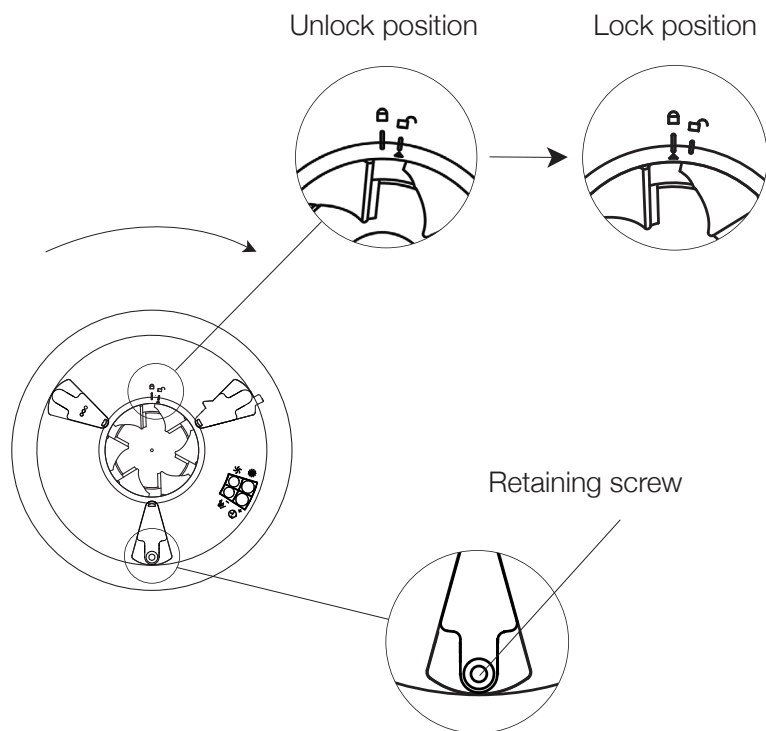
Tighten cable clamp and push wires into the terminal block as per wiring diagram, tighten screws of the terminal block.

Note: A facility to park the earth cable has been provided; as the fan is double insulated no connection to earth is required.

STEP 4

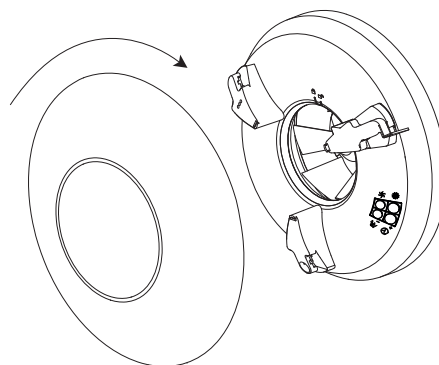
Locate main body cover via the arrow & unlock position, rotate clockwise to 'lock position'.

Tighten retaining screw until main body cover cannot be opened. Turn power on and follow respective commissioning on page 7.



STEP 5

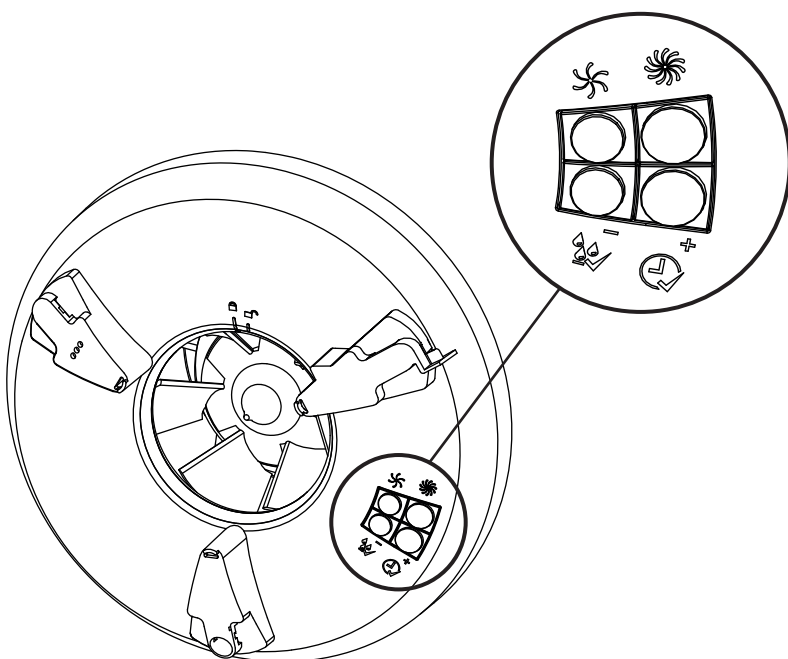
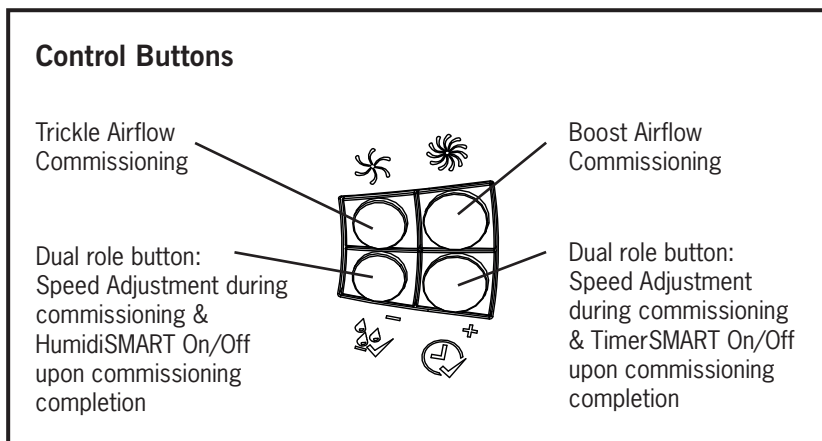
Reattach the front cover by rotating clockwise, utilising the guidance rail, until firmly secured by the retaining clips.



A 100mm nominal diameter spigot is provided for connection to ducting. Ductwork should be securely connected to the back of the fan. Failure to do this will cause unnecessary air leakage and may impair performance. For optimal air flow, it is recommended that either rigid or semi-rigid ducting is used.

Commissioning your Unity CV2.1HT

Upon first power up, your Unity CV2.1HT will commence a diagnostic check, whereby the buttons will flash in sequence. Following successful diagnostic completion, only the 'Boost' button will start to flash, please follow the steps for commissioning airflow (see troubleshooting section, page 11, for fault indications):



Note: For Kitchen installations please follow steps 1 & 2, increasing airflow to 13 l/s Boost & 8 l/s Trickle

Installation Checklist & Inspection Record

This product features on the PCDB, part of the process will require the Installation and Commissioning Checklist for dMEV products to be completed and submitted to building control and incorporated into the homeowner pack.

This documentation is available via the QR codes in this section.

Step 1

Boost Airflow button will flash
– factory setting:



Bathroom 8 l/s

Press speed adjustment buttons indicated with – and + for decreasing or increasing airflow adjustment. Press and hold for faster adjustment.

- re-press Boost button to confirm

Step 2

Trickle Airflow button will flash
– factory setting:



Bathroom 6 l/s

Press speed adjustment buttons indicated with – and + for decreasing or increasing airflow adjustment. Press and hold for faster adjustment.

- re-press Trickle button to confirm

After airflow setting completion, wait 10 seconds for the Unity CV2.1HT to come out of airflow commissioning mode (at this time the airflow settings will 'lock out' - to reactivate refer to page 8).

You can now set your SMART timer / humidity control requirements:

Step 3

For HumidiSMART press the 'bottom' left button to turn on - light will come on to indicate that the function is active

Step 4

For TimerSMART press the 'bottom' right button to turn on - light will come on to indicate that the function is active

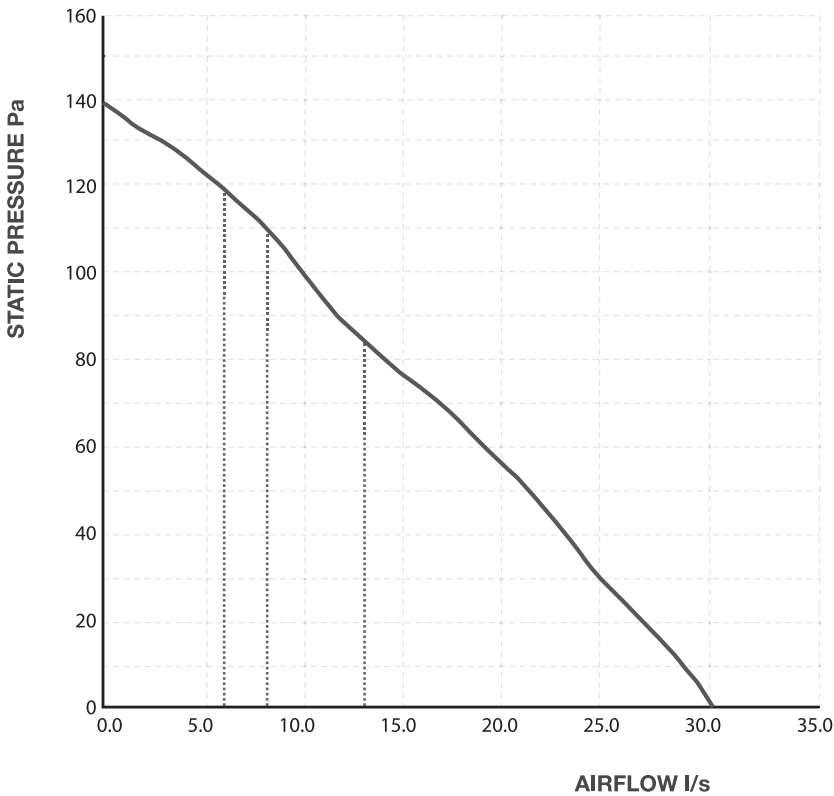


Scan for
Installation
Checklist



Scan for
Inspection
Record

Performance Graph - airflow characteristics



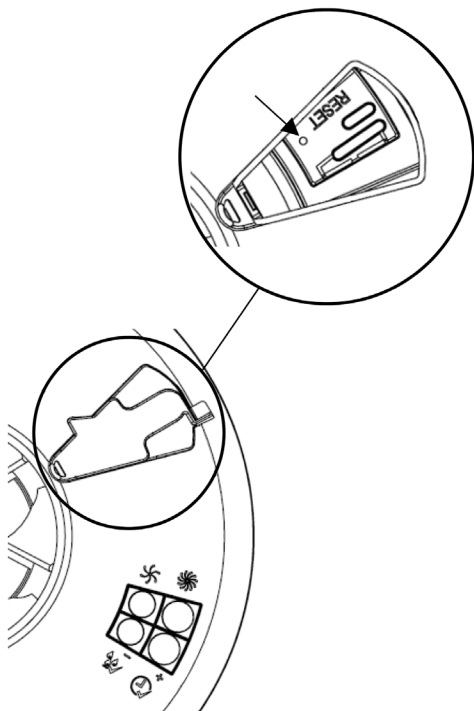
Airflow Settings l/s	Bathroom (Default)	Kitchen
Trickle	6	8
Boost	8	13

Key

————— Unity CV2.1HT 100% variable setting

..... for manual airflow volume setting

To Reactivate Commissioning Mode of your Unity CV2.1HT



Resetting your Unity CV2.1HT must be carried out by a qualified electrician or competent person.

Whilst the fan is running, remove by hand the plug-in module (shown in diagram).

Locate the 'reset' button (shown in diagram) and depress using a small 'pin-sized' tool for 3 seconds until Boost light flash - airflow settings from previous commissioning should be recalled, these can now be re-adjusted ... follow steps on page 7.

Replace plug-in module and front cover once finished.

Note: To 'master reset' press and hold the 'reset' for approximately 10 seconds until all lights flash in sequence to indicate the fan has been reset to factory settings. It will then revert to the 'Boost' LED starting to flash at the start of commissioning mode, to recommission see pages 7 & 9.

SMART Technology

To maintain a healthy indoor environment the Unity CV2.1HT includes SMART technology for Over-run Timer (TimerSMART) and Humidity (HumidiSMART).

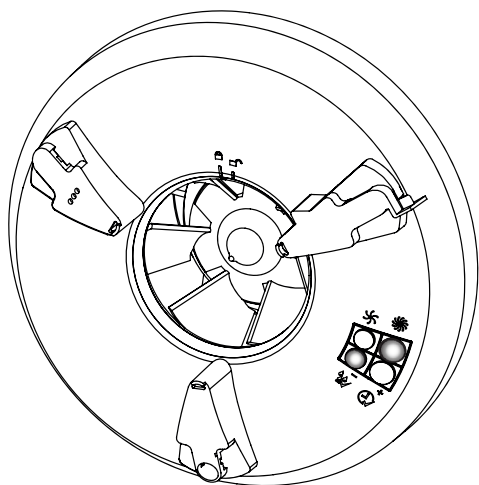
TimerSMART monitors the length of time that there is an occupancy presence within a wet room (via the 'switch-live') and provides a fixed over-run time period to best match the length of time that the 'switch live' is active (as shown below):

Time 'Switch Live' is Active	Over-run Boost Period
0 – 5 minutes	No over-run
5 – 10 minutes	5 minutes
10 – 15 minutes	10 minutes
15+ minutes	15 minutes

Note: the first 5 minutes will not activate an over-run.

HumidiSMART monitors the ambient humidity within the wet room environment and looks for short peaks of humidity made by either showering or bathing. This smart technology ensures that your Unity CV2.1HT is not on boost for prolonged periods of time, removing nuisance running noise and unnecessary energy wastage typically associated with increases to background humidity which naturally occurs with the changing seasons.

To View Fan Set Up / Status



Press any button to activate the panel. The current fan set up / status will be shown via the green LED lights.

Example shows:

- Boost mode activated
- HumidiSMART feature selected

Note: The Unity CV2.1HT is commissioned during installation to provide the correct airflow requirements for your dwelling. Post adjustment of the room setting or airflow speeds is not available.

To Change the TimerSMART / HumidiSMART Settings

To identify current fan status, press any button to activate the panel. Upon identification of controls status, press the button adjacent to the respective symbol:



to activate or deactivate the TimerSMART



to activate or deactivate the HumidiSMART

Please note the light should come on to indicate that the function is active.

Note: After approximately 10 seconds of inactivity, the LED lights should turn off and save selection settings.

Note: Both features are factory set to 'off', both can be activated at the same time.

Servicing / Maintenance

Service / Maintenance must be carried out by a trained / competent person.

The Unity CV2.1HT fan contains a unique backward curved mixed flow impellor that has been designed to reduce build-up of dirt. The fan motor has sealed for life bearings, which do not require lubrication.

Periodic cleaning of the fans front cover and casing can be carried out using a soft damp cloth.


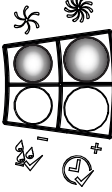
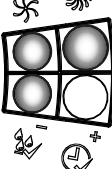
Always isolate fan from mains supply before cleaning.

Do not use solvents to clean this fan.

Cleaning and user maintenance shall not be made by children without supervision.

Please note that your stored fan settings will not be lost during any interruptions to your fan's power supply.

Troubleshooting

Question	Answer
<p>I don't think that my fan is working</p>	<p>The fan is very quiet when the room's light is off, but it is still extracting and working to provide you with enhanced comfort.</p> <p>If in doubt, remove the front cover to expose the fan. If the fan impellor is not rotating then contact your local installer.</p>
<p>My fan is running all the time</p>	<p>This is correct; it will run at a low speed whilst your room is unoccupied to provide continuous ventilation.</p>
<p>My fan is running faster and noisier</p>	<p>Your fan will automatically go into "boost" mode when you turn the light on or if the HumidiSMART is activated, when you have a bath / shower / generate steam via cooking.</p> <p>The fan will run at a faster speed which generates more noise as more air is being extracted. See page 9 on how to view the fan status.</p>
<p>My fan still runs faster and noisier when I turn the light off</p>	<p>Has the bathroom light been left on for more than 5 minutes?</p> <p>If yes, your fan has the TimerSMART activated and the fan will run at the higher noisier "boost" rate between 5 - 15 minutes and it will then return to the lower quieter continuous speed setting. See page 9 on how to view the fan status.</p>
<p>Why can't I turn the fan off</p>	<p>Your fan has been designed to ventilate the room continuously (i.e. 24/7) to improve the indoor air quality and enhance your comfort.</p>
<p>How do I change my fan's settings</p>	<p>See page 9 for how to view your fan status / setup and how to activate or deactivate your SMART Humidity & Timer functions.</p> <p>Note: Both features can be activated at the same time.</p>
<p>Diagnostic fault indicators</p>	<p>Following commissioning / fan status review, If the green LED light combinations are flashing your CV2.1HT is indicating a fault, please contact Technical Services for support:</p> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; align-items: center; margin-bottom: 20px;">  <div style="margin-left: 20px;">Humidity sensor fault</div> </div> <div style="display: flex; align-items: center; margin-bottom: 20px;">  <div style="margin-left: 20px;">Motor fault</div> </div> <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;">Humidity & Motor fault</div> </div> </div>

All information is believed correct at time of going to press. All dimensions referred to are in millimetres unless otherwise shown. E&OE.

All goods are sold according to Zehnder Group International Sales Standard Conditions of Sale which are available on request. See website for warranty period details.

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