Odyssey®

Operation Manual

Bradford™
Ventilation
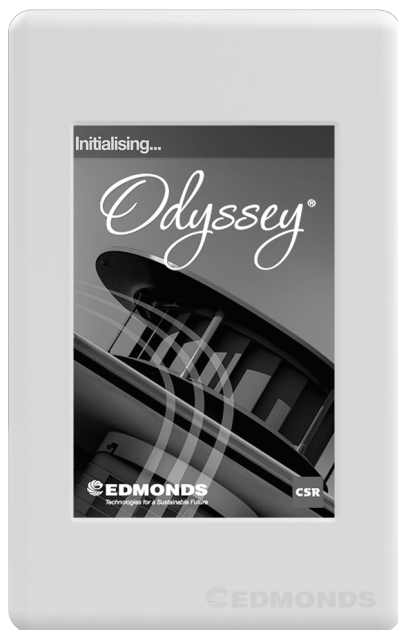
CSR

Safety Precautions

• This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

• Please ensure that Odyssey is switched OFF from the mains before conducting any system inspections or repairs.

• DO NOT remove any protection covers. Odyssey's electronics are not user servicable.

• Children should be supervised to ensure that they do not play with the appliance.

• The Valve/Controller, Temperature Sensors and LCD User Interface Panel are designed for operation in dry environments. Ensure that these devices are not exposed to direct contact with water or moisture.

• The system is not designed for use in areas contaminated with oil vapour from cooking or other oils. Oil vapour may cause crack damage, electrical failure or fire.

• High strength magnets are used in the grille. Ensure these are not removed or left near children.

• Do not touch the exposed ventilator rotor. The unit can switch to power mode automatically when in operation.

• Always switch the system off when performing cleaning or maintenance.

• There are slow moving parts in the valve. Do not touch the valve while in operation.

• Never disassemble the controller or ventilator motor as they contain hazardous voltage.

• Do not block air inlets or outlets.

• Do not modify the system or any of its components.

CAUTION: In order to avoid a hazard due to inadvertent resetting of the thermal cut-out, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.

Quick Start Guide

Once the system has been installed and connected according to the installation manual it should be ready for operation.

To start using your Odyssey system simply:

1   Touch the user interface panel screen to display the home menu screen
2   Press the On button so that the button turns red
3   Press the Set Point button to display the temperature set point screen
4   Press the ∧ or ∨ buttons to adjust the set point as required
5   Press the Home button to return to the home screen

The Odyssey System

The Edmonds Odyssey home ventilation system provides energy efficient ventilation to cool and freshen homes and similar buildings. It consists of a hybrid (natural and electrically powered) roof ventilator, a roof space mounted flow diverter valve and a ceiling grille for living space air removal.

The system is automatically controlled by the valve mounted controller which constantly monitors environment data gathered by its three sensors. One temperature sensor is integrated into the controller for roof space environment monitoring. The other two environment sensors are located remotely. One remote sensor is located internally in the living space whilst the other is mounted externally. Interaction with the system is achieved through an LCD touch screen user interface panel.

The Odyssey system constantly monitors the environmental conditions and determines what the optimal ventilation solution is for the building at any given time. The user is simply required to set a desired living space temperature via the set point on the panel, and open or close windows as required.

Operating Logic Modes

Odyssey has three logic modes of operation so that Odyssey can be set to maintain optimal performance depending on the building situation. The different logic modes can be interacted with via the mode section of the settings page on the LCD interface.

It is recommended to leave Odyssey on the default Cooling & Warming logic. This will allow Odyssey to automatically select the best ventilation strategy for the given environmental conditions. As a result this will create the most comfortable year round living environment for the building occupants. The Cooling Only and Warming Only logic modes are for specific applications where the heating or cooling functions are not desired.

Cooling & Warming Mode (Default):

Cooling & Warming mode is a combination of the cooling, warming and roof space moisture control logic strategies.

In this logic condition Odyssey uses its sensors to continuously monitor the environmental conditions.

Odyssey treats different conditions with varying priority. Odyssey will attempt to cool the home to the set point as its primary objective. If this is not appropriate, Odyssey will focus on eliminating potentially damaging moisture from the roof space. Similarly, if this is not required then Odyssey will check if the home can potentially be warmed to the desired set point using the environmental conditions. Finally, Odyssey will monitor the roof space temperature and work to maintain the best conditions to minimise the roof space's effect on the living space comfort.

Summarising, Odyssey's operating logic in Cooling & Warming mode has the following priority:

Living Space Cooling > **Roof Space Moisture** > **Living Space Warming & Air Circulation** > **Roof Space Temperature Control.**

To cool, Odyssey will constantly monitor its sensors until the conditions mean that there is a benefit of flushing cooler external air throughout the building. This typically occurs during the evenings and throughout the night as the heavy building mass struggles to cool with the cooling external environment.

To heat, Odyssey will constantly monitor its sensors until the conditions mean that there is a benefit of flushing the warmer external air throughout the building. This typically occurs during the mornings when the outside air is rapidly heated by the sun whilst the large building mass lags behind.

To control moisture, Odyssey monitors the roof space conditions. Odyssey is constantly calculating the dew point, and comparing it to a calculated surface temperature. If there is potential of damaging condensation forming then Odyssey will check to see if flushing the roof with external air will be beneficial. If Odyssey determines that it will be beneficial then it will flush the roof with external air, in an attempt to reduce or eliminate the formation of condensation.

Operating Logic Modes continued

During the cooler months where the temperatures are typically lower than the set point, Odyssey will constantly look for opportunities to eliminate roof space moisture. If these oppertunities are not present then Odyssey will try to ventilate the building without causing a detrimental effect on the buildings living space temperature.

This ventilation occurs when the temperature inside is equal with the temperature outside. Doing this allows for fresh air to be drawn through the building and helps to alleviate problems of condensation, and mould in the living space. When it's not beneficial to ventilate the living space, or actively reduce roof space moisture Odyssey will operate as a natural (wind) ventilator for the roof space. This will assist in preventing the building up of damaging moisture from the roof space.

During the warmer months Odyssey will also keep roof space temperatures down to optimise the performance of the ceiling insulation.

When the living space temperature is above the set point and the environmental conditions are not suitable to cool the living space, Odyssey will operate as a natural (wind) ventilator and reduce heat build-up in the roof space. When extreme days occur and the roof space exceeds the roof space set point (default 45°C), Odyssey will power ventilate the roof space to ensure that the roof space temperatures are kept in check.

Cooling Only Mode:

In this logic condition Odyssey will only focus on cooling the building to try and maintain the set point temperature. To do this Odyssey constantly monitors its sensors until it determines that it will be beneficial to flush cooler external throughout the building. When it's not beneficial to ventilate the living space Odyssey will monitor the roof space to eliminate possible condensation and to keep the temperatures in check.

Whilst working on the roof space Odyssey will function as a natural (wind) ventilator. On extreme days the roof space may exceed the roof space set point (default 45°C). In this case Odyssey will engage the motor and power ventilate the roof space.

This ensures that the roof space maintains a reasonable temperature which reduces loads on air conditioning systems and ceiling insulation.

Whilst in Cooling Only logic mode, Odyssey will make no attempt to heat the building even if conditions are suitable.

Summarising, Odyssey's operating logic in Cooling Only mode has the following priority:

Living Space Cooling > **Roof Space Moisture** > **Roof Space Temperature Control.**

Warming Only Mode:

In this logic condition Odyssey will monitor the roof space conditions to detect the possible occurrence of condensation. Odyssey will actively respond if required to maintain a healthy roof space. If there is no risk of condensation forming then Odyssey will focus on heating the home to try and maintain the set point temperature.

To do this Odyssey will constantly monitor its sensors until it determines that it is beneficial to flush warmer external air through the building. When this is not the case Odyssey will attempt to circulate air throughout the building to reduce condensation and promote a fresher living environment. This will occur when Odyssey detects that the living space and external temperatures are the equal and that the living space temperature is below the desired set point.

Finally, if none of the conditions above exist then Odyssey will operate as a natural (wind) ventilator for the roof space. This will assist in removing damaging moisture and condensation from the roof space.

Whilst in Warming Only mode, Odyssey will not perform any cooling functions even if the conditions are suitable.

Summarising, Odyssey's operating logic in Warming Only mode has the following priority:

Roof Space Moisture > **Living Space Warming & Air Circulation** > **Roof Space Temperature Control.**

LCD User Interface Panel

The user interface panel allows the user to interact with the operations of Odyssey. The panel is used to switch Odyssey between on/standby, initiate the BOOST function, change the system settings, view logged historical data and adjust the set point temperatures.

The UI panel also presents useful building information to the user. The main screen displays the living space, external and roof space environmental data as measured by Odyssey. The set point temperature is also displayed. Additionally, the current operating task and zone of focus is displayed so that the user can quickly understand what Odyssey is doing at any time.

Adjusting the Set Point Temperature

The UI Panel allows for a user to adjust the set point temperatures at any time. The set point is a target temperature for Odyssey to try and achieve for that zone. Due to Odyssey relying on the environment for is effectiveness it should be noted that the set point is merely a goal for the system and may or may not be reached.

To adjust the set point temperature, press the Set Point button on the main screen. This will change the visible screen to the Set Point screen. Once on this screen press the ∧ or ∨ buttons to adjust the set point as required. To prevent an unsuitable goal from being expected, the set point temperature has a restricted range.

Once set press the HOME button to return to the main screen.

Engaging BOOST mode

BOOST mode is designed to allow the user to override the system's logic and manually ventilate the living space of a building irrelevant of the environmental conditions. This is useful for exhausting odors or fumes caused by cooking etc. Additionally a user may want to use BOOST to quickly freshen up a home and then return the unit to auto mode.

To use BOOST simply press the BOOST button. The button graphic will change and the message at the top of the display will reflect the function. BOOST will run for a maximum of two hours and then return to automatic control. Additionally, the user may turn off BOOST at any time by pressing the BOOST button again.

Adjusting the Operating Logic Mode

On first startup Odyssey defaults to Cooling & Warming mode, however the other two modes can be used if the situation requires. Further information on the specifics of each mode can be found on pages 5-7.

To change between modes the user must go to the settings screen by pressing the settings button on the home screen. Once on the settings page, press the mode icon to enter the logic adjustment screen.

Pressing on the current logic icon will result in the system changing to the next mode.

It is intended for the Cooling & Warming mode to be used for general use. The other modes are avaliable if a specific reason requires it (such as the system fighting with a heating product during the colder months).

Switching Odyssey to Standby

To place the Odyssey into standby press the power button on the lower left corner of the LCD UI panel. The button will change colour and a message will appear at the top of the screen advising of Odyssey's state.

This standby state is just a soft off state and will result in Odyssey only functioning as a natural roof space ventilator. Odyssey will remain in this state until the system is turned on again at the LCD UI panel.

To turn the Odyssey completely off, it needs the mains power disconnected. This can be achieved by unplugging the Odyssey from the plug base found in the roof space, or by turning off the power circuit that Odyssey is connected to.
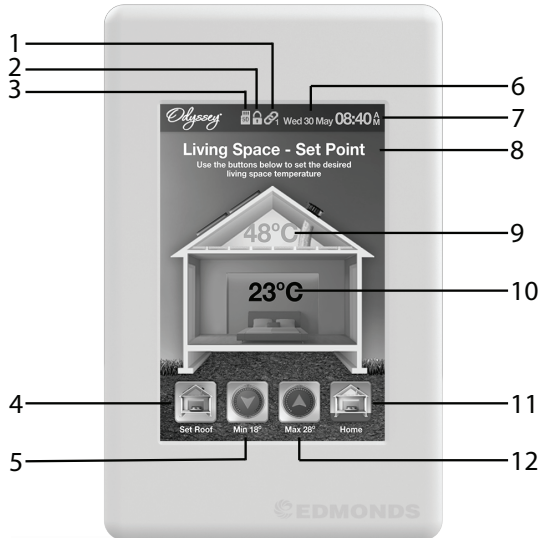
User Interface Panel

Home Screen
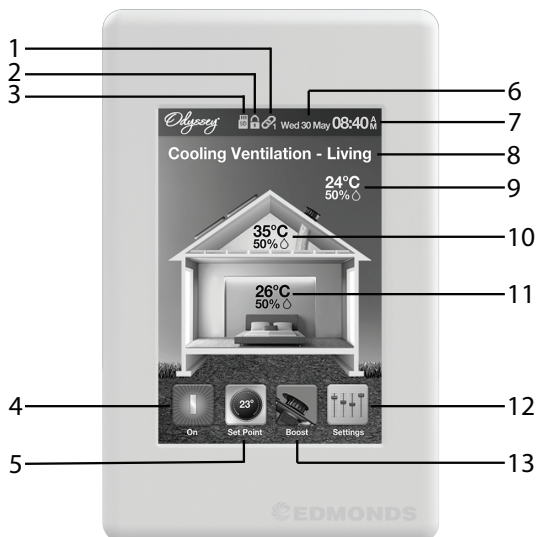
1.	System Link and Number of Connected Devices
2.	Function Lock On
3.	Micro SD card detected
4.	System On/Standby Button
5.	Set Point Button (Opens Set Point Screen, see page 11)
6.	Date Indicator (If Set)
7.	Time (AM/PM if 12hour clock is selected)
8.	Current System Operating Task and Zone of Focus
9.	External Temperature & Relative Humidity Indicator
10.	Roof Space Temperature & Relative Humidity Indicator
11.	Living Space & Relative Humidity Indicator
12.	Settings Page button
13.	Boost Button (see page 8)

User Interface Panel

Set Point Screen

1.	System Link and Number of Connected Devices
2.	Function Lock On
3.	Micro SD card detected
4.	Change Set Point Selection Zone
5.	Decrease Set Point Value Button
6.	Date Indicator (If Set)
7.	Time (AM/PM if 12hour clock is selected)
8.	Selected Set Point Zone
9.	Roof Space Set Point Value
10.	Living Space Set Point Value
11.	Home Button (return to Home Screen, see page 10)
12.	Increase Set Point Value Button

Operating Functions

Odyssey's LCD UI screen displays messages to inform the operator what the current function of Odyssey is. These messages are a quick summary of what the system is currently doing and the targeted zone in the building.

Cooling Ventilation - Living

Odyssey has detected that the building's living space temperature is above the set point. It has also detected that the external temperature is colder than the living space temperature and that it is beneficial for the living space to flush the building with the cooler external air.

In this function Odyssey has engaged the ventilator motor at full speed. Odyssey has opened the valve so that the air is drawn out of the buildings living space.

This mode will typically occur during the evenings and throughout the nights during the hotter months.

Heating Ventilation - Living

Odyssey has detected that the building's living space temperature is lower than the set point. It has also detected that the external temperature is warmer than the living space temperature and that it is beneficial for the living space to flush the building with the warmer external air.

In this function Odyssey has engaged the ventilator motor at reduced speed. Odyssey has opened the valve so that the air is drawn out of the buildings living space.

This mode will typically occur during the mornings in the cooler months.

Air Circulation - Living

Odyssey has detected that the living space temperature is lower than the set point. It has also determined that the living space and external temperatures are equal. Odyssey is now promoting air circulation throughout the buildings living space to create a fresher environment. Additionally, this mode is helping to reduce condensation occurrence.

In this function Odyssey has engaged the ventilator motor at reduced speed. Odyssey has opened the valve so that the air is drawn out of the building's living space. This mode will typically occur during the day in the colder months.

Operating Functions continued

Boost Ventilation - Living

Odyssey has detected that a building occupant has pressed the BOOST button on the LCD UI panel. Odyssey is now flushing the living space air at maximum flow rate.

In this function Odyssey has engaged the ventilator motor at full speed. Odyssey has opened the valve so that the air is drawn out of the buildings living space.

This mode will remain active for a period of two hours, or until the BOOST button is pushed again. When the time elapses or the button is pressed again, Odyssey will return to automatic operations.

Natural Ventilation - Roof

Odyssey has determined that there is no benefit to actively ventilating the buildings living space. The system is now performing natural ventilation of the roof space. This will help to alleviate heat build-up during the warmer months and condensation during the colder months. This natural ventilation function harnesses the wind and roof space stack pressure to operate without any electrical assistance.

In this function Odyssey has disengaged the ventilator motor. This allows the ventilators impeller to rotate freely and act as a natural (wind) ventilator. Odyssey has closed the valve so that the air is drawn out of the building's roof space.

This mode will typically occur during the day in the warmer months.

Powered Ventilation - Roof

Odyssey has determined that there is no benefit to actively ventilating the buildings living space. Additionally, Odyssey's roof space temperature sensor has detected that the roof space temperature has exceeded the set point (default 45°C). Therefore natural ventilation of the roof space is not sufficient and Odyssey is now power ventilating the roof in order to keep the temperatures down.

In this function Odyssey has engaged the ventilator motor at full speed. Odyssey has closed the valve so that the air is drawn out of the building's roof space.

This mode will typically occur during hot days in the warmer months.

Operating Functions continued

Moisture Control - Living

Odyssey has detected that the building's roof space has the potential of damaging condensation forming. This has been determined due to the roof space's calculated surface temperature coming close the the dew point.

Odyssey has also caclulated the moisture content in the external air and after comparing it against the moisture content of the roof space air, has determined that it is benificial to flush the roof space with external air.

In this function Odyssey has engaged the ventilator motor at full speed. Odyssey has closed the valve so that the air is drawn out of the buildings roof space.

This mode will typically occur during the evening and nights in the cooler months.

Natural Ventilation - Off

Odyssey has detected that a building occupant has pressed the Power button on the LCD UI panel. Odyssey has now gone to an idle state. In this idle state Odyssey will only function as a natural ventilator for the roof space.

Odyssey will remain in this state until the Power button is pressed again.

NOTE: This power off mode is a soft off state. Power is still being supplied to Odyssey's electronics. To turn Odyssey completely off, disconnect or turn mains power off to the unit.

Maintenance

The Odyssey System requires little regular maintenance other than cleaning of some items described below.

Ceiling Grille

The ceiling grille is held magnetically to allow removal for cleaning. Simply pull the grille downwards and it will detach from the grille frame.

The grille can then be cleaned with a brush or vacuum cleaner. It should not be immersed or sprayed with water as the magnets on the reverse side can be damaged or corrode.

Re attach the grille to the grille frame, ensuring that all 4 magnets are in place.

User Interface Panel

Dirt and fingerprint oil can stain the surface of the LCD screen. Gently wipe the screen with a soft dry cloth only.

Moisture can damage the display. Gently wipe off any moisture with a soft dry cloth.

Roof Mounted Ventilator

After storms or other high wind events, the roof mounted ventilator should be checked to make sure that no debris is in contact with the rotating parts.

FAQ & Troubleshooting

Q: How do I know the system is operating?

A: Due to its quiet operation it is difficult to hear the unit running.

The system may also run in natural ventilation mode depending on conditions. A simple check is to press the boost button so that boost mode is initiated. When boost is active the button graphic will change. This will result in the valve switching into living space ventilation mode and cause the ventilator start running in power mode. When in boost mode you should be able to notice that air is being extracted from the living space when standing next to the ceiling grille.

The operating mode can also be checked on the user interface panel.

Problem	Possible Actions
System not running	Check power is on and all electrical connections are secure
Water leaks when raining	Check installation integrity of ventilator on roof Re-seal around edge of flashing if required
Controller status is "waiting for master"	The internal and external sensors have not been detected by the system. Check the connections
Temperature sensor reads 0°C but it's not that cold.	Possible connection break. Check and reconnect cable to both the problem sensor and the controller

Technical Data

Ventilation System

Type:	Free air cooling & ventilation system
Nominal system diameter:	400 mm
Model Number:	ODY400-D
Electrical:	240 VAC 50 Hz Max. 55W

Ventilator

Type:	Hybrid (natural & powered) backward curved centrifugal
Inlet Throat nominal diameter:	400 mm
Turbine/Impeller diameter:	500 mm
Flow Rate @ $\Delta psF=0$:	2100 m3/hr
Noise SPL @ 2m:	30 dB(A)
Motor:	Electronic Commutating (EC) brushless motor
Motor Voltage:	240 VAC 50 Hz
Material:	Housing & Rotor: Plastic (ASA & PPS-GF40) Flashing & Collar: Soft Aluminium - Powdercoated
Screws:	Stainless Steel (304) & Class 4 Coated Steel.
Rivets:	Aluminium & Steel Z/P
Weight:	9.21 kg

Diverter Valve

Type:	2 way, 2 position air source diverter valve
Inlet/outlet nominal diameter:	400 mm
Actuator Voltage:	24 VDC
Material:	Housing & Flaps: Plastic (ASA) Linkages: Plastic (PA6-GF30)
Screws:	Steel Z/P
Weight:	2.97 kg

Technical Data

Ducting

Type:	Flexible metallised polyester film with helix wire support.
Diameter:	400 mm
Length:	2 m
Colour:	Black internal, reflective foil external

Ceiling Grille

Type:	Return air grille with removable grille
Diameter:	400 mm
Material:	Grille & Grille Frame: Plastic (ASA)
	Ceiling Clips: Plastic (PA6-GF30)
	Screws: Steel Z/P
	Weight: 1.06 kg

User Interface Panel

Type:	8.9cm (3.5") colour touch screen
Cable Length:	15 m

Temperature Sensors

Type:	Temperature & relative humidity sensor
Accuracy:	Temperature ±0.4 °C
	Relative Humidity ±3%
Cable Length:	10 m

Contact Details

General Enquiries and Support

      PH: 1300 760 233

      Email: sales@csr.com.au

Technical Ventilation Enquiries

      PH: 1800 354 044

bradfordventilation.com.au