veneco
ventilation systems

Installation manual
Veneco Ventilation Systems - V4000 series

11/2014 - V 1.6 - ENG

www.veneco-ventilation.be

Veneco Ventilation Systems by Elek Trends Productions nv
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INDEX

PREFACE

This manual consists of two parts:

1. Instruction manual for the end user
2. Installation manual for the installer

This manual contains all the information you will need to complete the installation of a Veneco ventilation unit in compliance with the applicable ventilation standards and guidelines. The manual can also be used as a reference source to learn more about the various features of the unit. The end-user is strongly advised not to attempt to carry out the operations in this manual that are intended for qualified installers.

Elek Trends Productions s.a. continually strives to improve its ventilation units and therefore reserves the right to make changes to products and specifications without notice.

1. INTRODUCTION

1.1. Application

Since 1 January 2006 ventilation systems have been subject to stringent building energy performance (BEP) regulations which must be adhered to in all new-build projects. Not only is ventilation obligatory, but it is also a "must-have" feature in every home.

Sufficient ventilation is essential to your health and comfort, as well as in removing moisture from your home. It is important to remember that damp is the number one enemy of buildings. It can occur as rising damp from the ground, due to the amount of rainfall, or simply because the house is being lived in. In the course of our domestic activities we produce around 15 to 20 litres of moisture per day per person (breathing, cooking, washing, etc.). All of this needs to be extracted from the building.

To ensure good air quality in your home you should never disconnect the ventilation unit.

So choosing an effective ventilation unit is very important.

The Veneco ventilation unit is a high-efficiency ventilation unit with heat recovery. The unit is powered by DC motors (see § 3.2. Glossary on page 15-16), which ensures a constant rate of air exchange in your home. This is essential in ensuring a healthy indoor climate in the home.

1.2. CE-marking

The Veneco ventilation unit conforms to CE standards. Each Veneco ventilation unit is labelled with the illustration below.

VENECO **VENTILATION UNIT**

Model V4xxx (XX XXXX)

Serial n°. xxxxx.xx.xx.xx

Power

CE **MADE in Belgium**

Elek Trends Productions nv- Rue des Bengalis 4 - BE - 7700 Moeskroen
Tel.: +32 (0)56 48 15 90 - Fax.: (0)56 48 15 91 - www.veneco-ventilation.be

Note: The CE mark is a mark of conformity only and does not constitute a quality mark.
Appendix 1: Declaration of Conformity

1.3. Warranty terms and conditions

All Elek Trends Productions (ETP) products are developed and manufactured to the most demanding quality requirements possible. However, should a problem occur with one of our products, it will be covered by the ETP warranty under the terms and conditions set out below.

The ETP warranty is valid for manufacturing or installation defects only.

The warranty period begins on the date of purchase of the product or date of invoice issued by an authorised distributor, and ends as described below.

The ETP warranty will be valid provided that the product has been used in accordance with the instructions for use and its intended purpose. The original proof of purchase (invoice, sales slip or receipt) must also be presented, showing the date of purchase, distributor's name, model (type) and product reference.

The ETP warranty will be void in the following cases:

- if the installation is not in accordance with the manual and was not carried out by a qualified installer.
- if something has been altered, crossed out, deleted or made illegible in the above documents
- if the model reference (type) or serial number has been altered, crossed out, deleted or made illegible on the product
- if repairs or modifications have been carried out by unqualified organisations or persons
- if the damage is the result of an external cause (outside the product), e.g. lightning, flood, fire, misuse or accident
- if the damage was caused by a peripheral device, an accessory or equipment connected to the device other than those specified by ETP
- if the damage was caused by animals
- if the unit is faulty due to normal wear and tear of replacement parts described as consumables.

ETP reserves the option to repair or replace the defective unit at its discretion. This warranty excludes any other damage, including indirect, commercial or consequential loss, and is limited only to the cases mentioned in these terms and conditions.

In the event that the warranty is invoked, the unit must not be dismantled without the manufacturer's explicit permission.

VENECO

- 2 years warranty for the unit
- One year warranty for installation materials and accessories.
- The warranty for replacement parts only applies if they are purchased from the manufacturer or from an authorised installer.

1.4. Safety precautions

The essential safety precautions described in this manual must be followed at all times. Failure to do so may result in personal injury or damage to the Veneco ventilation unit.

1. Safety precautions for the ventilation unit user.

- Keep this manual handy near your ventilation unit.
- Installation, initial startup and adjustment of the ventilation unit must be carried out by a certified ventilation installer
- The filters must be replaced regularly.
- Never put foreign objects into the air ducts.
- You are strongly advised to take out a maintenance contract.
- The Veneco ventilation unit must always be installed in a dry and insulated space.
- Never rotate the valve plugs. If this happens contact your installer.
- Take steps to prevent water ingress

2. Safety precautions for the ventilation unit.

- The ventilation unit is not suited for suction of toxic substances.
- The ventilation unit is not suited for use in pools, storage room for hazardous, explosive substances, industrial buildings. If in doubt consult the manufacturer of installer.
- Never turn off the ventilation unit
- Do not place the ventilation unit in a room > 40°C.
- The air that passes through the ventilation must be <40° C..
- Use only the Veneco prehaeter with the Veneco Ventilation unit.

2. Safety precautions for the ventilation unit installer

- The essential safety precautions described in this manual must be followed at all times.
- The instructions for cleaning the filters and valve plugs must be strictly followed.
- Always isolate the unit from the power supply before opening the ventilation unit or the electronic panel.
- NEVER put your hands in the air connections of the unit while it is running
- Do not connect any peripheral device to the ventilation unit.
- Never remove the SD card when the ventilation unit is connected on the network. This can be seen when the SD-led is lit.
- The ventilation unit installation must conform to the applicable ventilation standards in all cases. (see WTCB website: www.wtcb.be)
- It is recommended to provide a separate seal for the Veneco ventilation unit.

1.5. Tests and results

All Veneco ventilation units have been officially tested in accordance with European standards using accredited procedures.

These tests were performed to the following standards:

- NBN EN 60034-1:2010 applicable to all rotating electrical machines
- NBN EN 13141-4:2004 Ventilation for buildings - Performance testing of components/products for residential ventilation - Part 4: Fans used in residential ventilation systems
- NBN EN 308:1997 Heat exchangers. - Test procedures for establishing performance of air to air and flue gases heat recovery devices
- NBN EN 13141-7:2009 Ventilation for buildings - Performance testing of components/products for residential ventilation - Part 7: Performance testing of mechanical supply and exhaust ventilation units (including heat recovery)
- NBN EN 13141-8:2006 Ventilation for buildings - Performance testing of components/products for residential ventilation - Part 8: Performance testing of un-ducted mechanical supply and exhaust ventilation units
- NEN 5138-2004 Heat recovery in buildings - Methods of determining the energy efficiency of heat recovery units for individual ventilation systems

Here are the test results obtained for the various models.

Calibrated measurement results

Type of test	Veneco 4275	Veneco 4375	Veneco 4450
External leaktightness test	0,6 l/s > 0,78%	0,5 l/s > 0,48%	0,7 l/s > 0,56%
Internal leaktightness test	0,7 l/s > 0,91%	0,6 l/s > 0,57%	0,6 l/s > 0,48%
Specific fan power (SFP)	0,8 – 1,07 W/l/s	0,87 – 1,11 W/l/s	0,98 - 1,23 W/l/s
Thermal efficiency (Sap appendix Q)	till 91%	till 91%	Till 91%

All certificates and test reports can be obtained upon request.

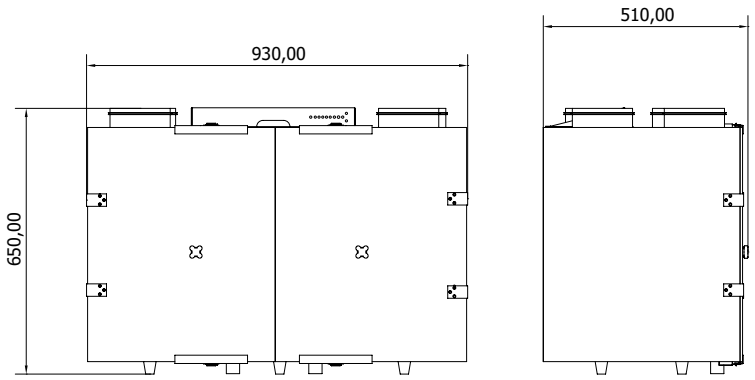
2. THE VENECO VENTILATION UNIT

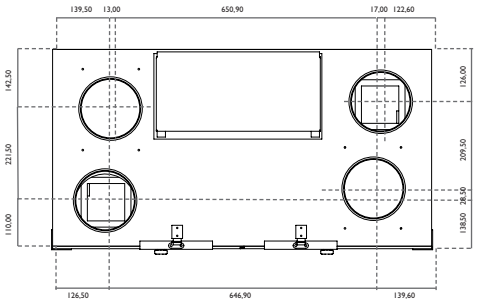
The Veneco ventilation unit is delivered ready to operate. The unit must be connected as follows:

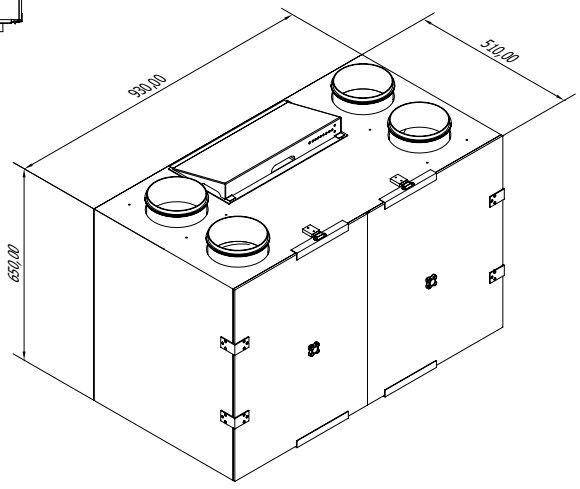
1. Connect the 4 air ducts
2. Connect the condensate drains
3. Connect the control panel
4. Connect the power supply

2.1. Dimensions of the ventilation unit

Unit dimensions: 0,930 x 0,650 x 0,510 (L x H x D)

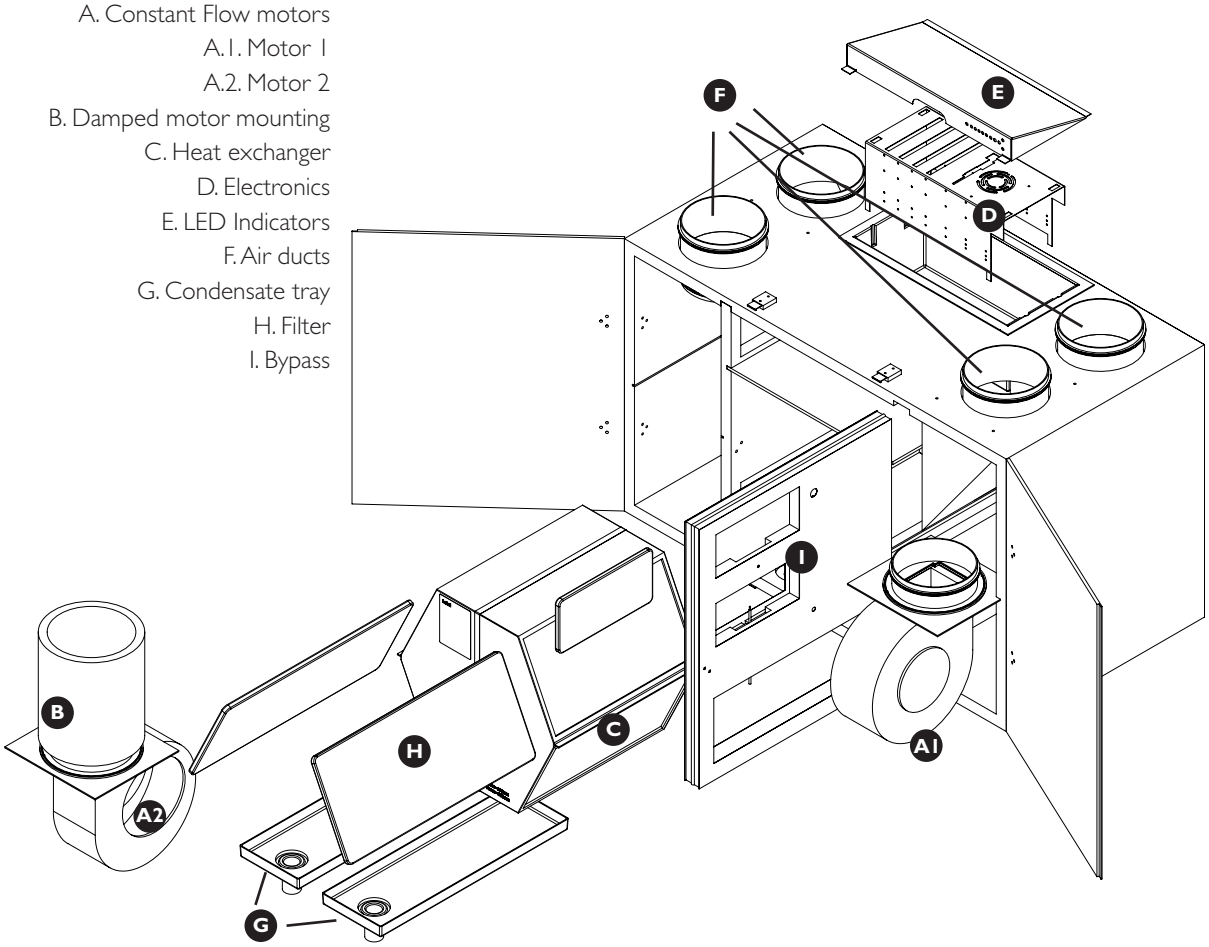






2.2 Exploded view

A. Constant Flow motors
A.1. Motor 1
A.2. Motor 2
B. Damped motor mounting
C. Heat exchanger
D. Electronics
E. LED Indicators
F. Air ducts
G. Condensate tray
H. Filter
I. Bypass



2.3 Pack contents

The pack contains :

1. Veneco ventilation unit
2. Adaptor 150 > 180 (V4450P only)
3. Power cord (2,5m)
4 . Installation manual

2.4 Types

The Veneco ventilation unit comes in three different types:

- Veneco 4275 (275m³/h)
- Veneco 4375 (375 m³/h)
- Veneco 4450P (450m³/h)

3. FOR THE USER

3.1. Operation of the ventilation unit

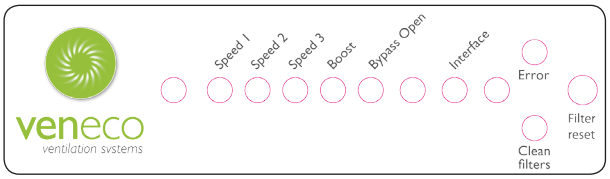
3.1.1. LED-indicators

On top of the PCB are LED's that show the position of the ventilation unit. Following LED's can light up:

- **Position 1**: The unit is in the low-speed position. Used when the ventilation requirement is low.
- **Position 2**: The unit is in the medium-speed position. Used when the ventilation requirement is moderate.
- **Position 3**: The unit is in the high-speed position. Used when the ventilation requirement is high.
- **Position 4/Boost:** The unit is in the Boost position.

=> None of these LEDs can be lit simultaneously.

- **Error:** This LED lights up if the unit has a fault. Contact your installer.
- **Filter**: When this LED lights up the filters should be changed or cleaned. Make sure the filter is not frayed, otherwise it must be replaced. It is possible that before the LED lights up cleaning is necessary. After cleaning the filters the filter LED ca be switched off by pressing the filter reset button. The reset is confirmed when the filter LED flashes fast.
- **Indication LED status**: When this LED flashes fast, you need to put the SD card into the SD card reader or check the SD card. When the SD card works perfectly this LED will flash at longer intervals.
(see drawing SD card pg.13)



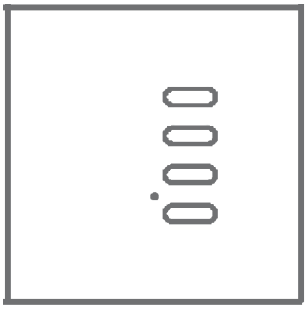
3.1.2. Control features

The switches are only to be used with a Veneco ventilation unit.

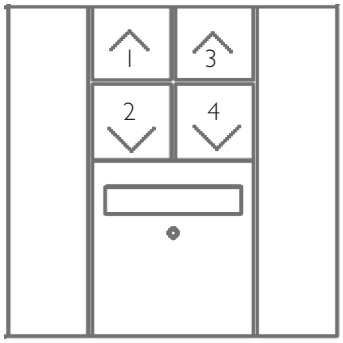
- **4-speed selector: a 4-position switch**
allows you to pre-set the positions of the ventilation unit. You can ask your installer to set these positions for you.
Bypass is only an automatic function.

- **4-speed selector with manual bypass**
With the rotary switch with manual bypass you can manually turn the bypass on or off. In tis way the resident can decide the state of the bypass.
If the switch is tilted to the "O" the bypass will work automatically (if selected in the software). If the switch is tilted to the "I" the bypass will open (no heat exchange anymore). If the automatic bypas is activated you can always close the bypass manuallt by tilting the switch to "I" and then tilt to "0".
The bypass can be activated manually

- **The RF intense is a 4 push button switch**
  that controls all positions of the Veneco ventilation unit.
  Bypass is only an automatic function.



- **Remote control 4 buttons and timer**:
  the RF timer has a timer function, allowing up to 6 settings per day and providing the possibility to link commands to sunrise and sunset.
  Bypass is only an automatic function.



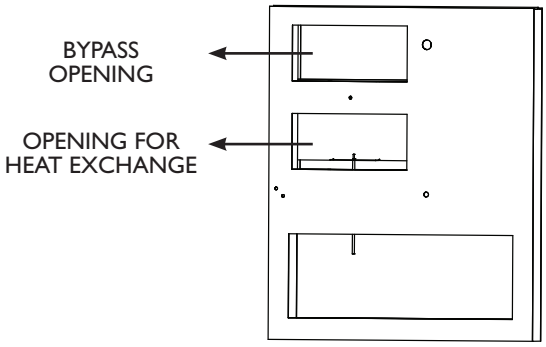
3.1.3. Bypass

Your bypass ventilation unit has a 100% bypass function. (See § 3.2. Glossary on page 15). In summer the bypass opens automatically when it becomes too hot inside and it is cooler outside. This provides a direct flow of fresh air into your home. This will continue until a pre-set comfort temperature is reached in the house.

An ingenious system ensures that the bypass does not operate during the winter.

The bypass system can also be opened manually by pressing the bypass button (only available with the standard 4-speed selector with manual bypass). More information is given in § 4.6. Programming the ventilation unit on p.25

Bypass: see exploded view (i)



3.1.4. Frost protection settings

Your Veneco ventilation unit has automatic frost protection. This means that when the outside temperature drops below -5° C the motor on the intake side will automatically start to run more slowly. The heat-exchanger remains protected against freezing. Watch out for higher freezing temperatures, the condensation in your unit may still freeze. It is recommended to use a heater unit in colder locations.

3.1.5. SD card

IMPORTANT:
Your ventilation unit contains an SD card. Only use this card for your ventilation unit and not for other applications!!!

Never remove the SD card when the Veneco ventilation group is activated. Disconnect the unit by removing the power cord from the socket.

To remove your SD card you just need to press it. Now it can be removed without any problems.

When backing up the files CORE.VEN and USER.VEN are generated. These files can be used when resetting the Veneco ventilation unit.

With the file LOG000000 you can follow all parameters of the Veneco ventilation unit. Every ten minutes all temperatures, engine speeds and state of the bypass are stored in an excell file. Each Logging (saving the parameters) has a serial number. If an error occurs in logging XXXX then this error in the file ERR00000 becomes the same serial number. (See attachment)

In the file ERR000000 all errors are stored. (See attachment)

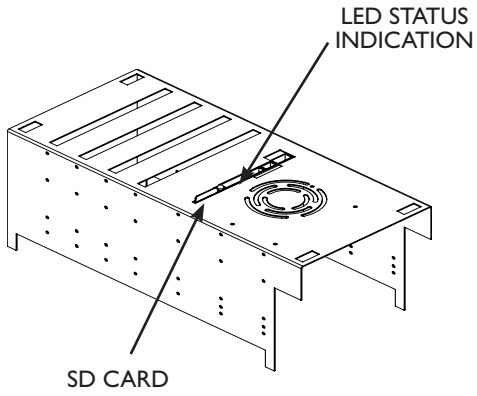
In the file MSG00000 all events, including change of position, activation of the functions in the software and the bypass state change are stored. This allows all the events to be followed in detail. (See attachment).

An example of these files can be found on pg. 34.

Following data are available on the SD card.

- CORE.VEN
- ERR00000
- LOG00000
- MSG00000
- POTMR.VEN
- USER.VEN

NEVER delete anything from this card. Only use it to copy the data to your PC if you wish.
The SD card is an essential troubleshooting aid for your installer.



WARNING !!!
Always check that the SD card is properly installed.

3.1.6. How to open the ventilation unit

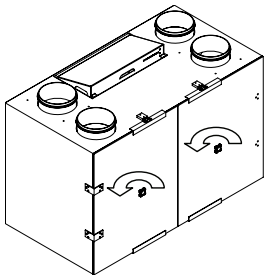
IMPORTANT:

First disconnect the unit by removing the power cord from the socket. There are rotating motors inside the unit!! Before disconnecting the unit wait until the "diagnosis" LED is no longer flashing.

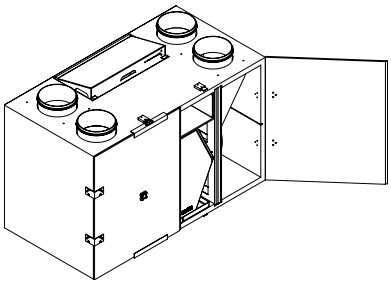
Make sure that the unit does not need to be opened for maintenance. You will not need any tools.

Proceed as follows:

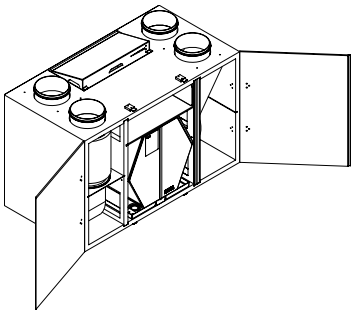
1. Fully rotate the black buttons



2. Open the right-hand door by releasing the top and bottom locking levers



3. Now open the left-hand door in the same way.



=> All parts of the unit are now within easy reach!

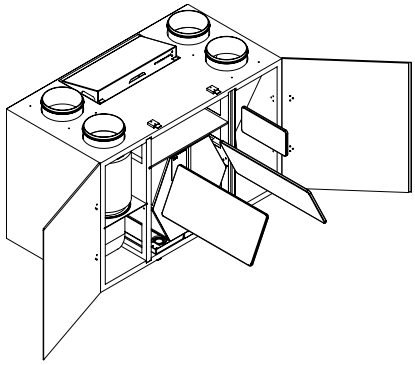
3.1.7. User maintenance

The unit must be cleaned regularly.

Important!: Cleaning intervals can vary depending on where you live!!

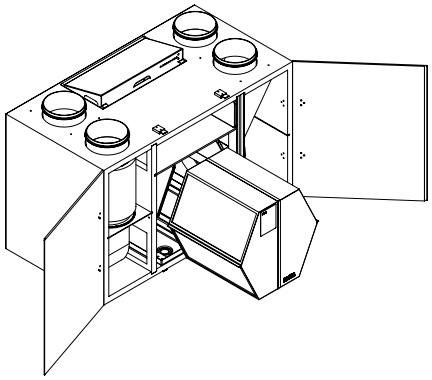
- Filter cleaning 1 x / month
  Vacuum clean on a steady surface
  (take care not to fray the fibres)
- Filter replacement 1 x /year
- Heat exchanger cleaning 1 x /year
  Rinse with warm water then dry
- Condensate tray cleaning
  Clean with a damp cloth and a little detergent

Removing the filters



Removing the heat-exchanger

Important: always lift by the strap



3.1.8. Troubleshooting

No LEDs are lit

- First check the power cord and make sure the power is on

The Veneco ventilation unit runs at the high-speed setting only

- contact your installer

The Veneco ventilation unit has become noisy

- contact your installer

3.2. Glossary

EC-Motors

EC (electronically commutated) motors are actually DC motors equipped with a specific internal or external connection system. This makes these motors highly controllable and more efficient. Understandably with these features they command a higher price. Because they consume far less electricity only EC motors are used in Veneco ventilation units.

Constant Flow motors

Constant flow (CF) motors are EC motors which adjust their output to a constant level, independently of back pressure, through the use of built-in controls. For example, the control system automatically compensates for flow losses created by dirty filters. To ensure sufficient air cooling only constant-flow motors are installed in Veneco 4 ventilation units.

Heat-exchanger

This component must ensure that the temperature of the two air streams is exchanged as efficiently as possible. It is virtually impossible to achieve 100% efficiency, but for low volumes values over 90% are easily achievable. It is important that the heat-exchanger is big enough and that it has an optimal shape. This has a major influence on back pressure and heat recovery.

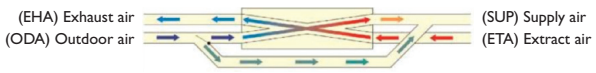
Bypass

To bypass the heat-exchanger, the ventilation units are fitted with a bypass system. This can be useful when the outside temperature starts to drop while the indoor temperature is still very high. Our system uses two types of bypass:

Partial bypass: an opening (air passage) is formed next to the heat-exchanger. When the system is running part of the air will be blown directly into the house, the other part will pass through the heat-exchanger.

100% bypass: a new air passage is created to deliver fresh air while the heat-exchanger opening is closed off.

Heat exchanger



100 % bypass

Condensate removal

Condensate removal ensures that condensation arising in the heat-exchanger is effectively eliminated. It is important to be aware that the heat-exchanger may contain up to six litres of condensate.

Filtration class

Filtration classes are divided into G (coarse), M (medium) and F (fine) followed by a number. They range from G1 and F9 and indicate what percentage of particles of a certain size will be retained by a filter of the corresponding class. For ventilation applications, class G3, G4, M5, M6 and F7 filters are the most commonly used.

Note: The finer the filter the greater the back pressure and power consumption.

Sandwich panel

This product is commonly used in construction for its insulating properties (acoustic and thermal). The sandwich panel is in fact the basis of the Veneco design. Elek Trends Productions has patented its use for ventilation units..

Bus-system

BUS topology defines the mode of communication between various electronic components and is known primarily for its IT and home automation applications. Its great advantage lies in its flexibility when adding or removing system components.

Air Flow

Air flow is often expressed in litres/second or m³/hour. It is the unit most commonly used to express the ventilation capacity of a unit.

Back pressure

Whenever air passes through a duct, filter, heat-exchanger, etc., pressure losses due to friction or turbulence are encountered. These losses are expressed as back pressure (Pascals).
When this back pressure increases, the ventilation unit will automatically run faster to achieve the required air flow and will then consume more electricity. In extreme situations the back pressure may even be too high for the specified air flow to be reached. Back pressure affects not only the unit internals (filters, heat-exchanger, etc.) but also components external to the unit (ducts, vents, etc.) It is possible to calculate the back pressure in the basic unit, but this value will change due to the effect of filters, condensation in the heat-exchanger, and air flow.

Specific Fan Power

Specific fan power (SFP) or specific consumption is the ratio between the electrical power used (in watts) and the ventilation flowrate (litres/second or m³/hour). A low value means that the fans have good electrical efficiency.

Internal leakage

The internal leakage value indicates the percentage of reciprocal exchange between the warm (stale) air stream and the fresh (clean) air stream. It is logical that this figure should be as low as possible.

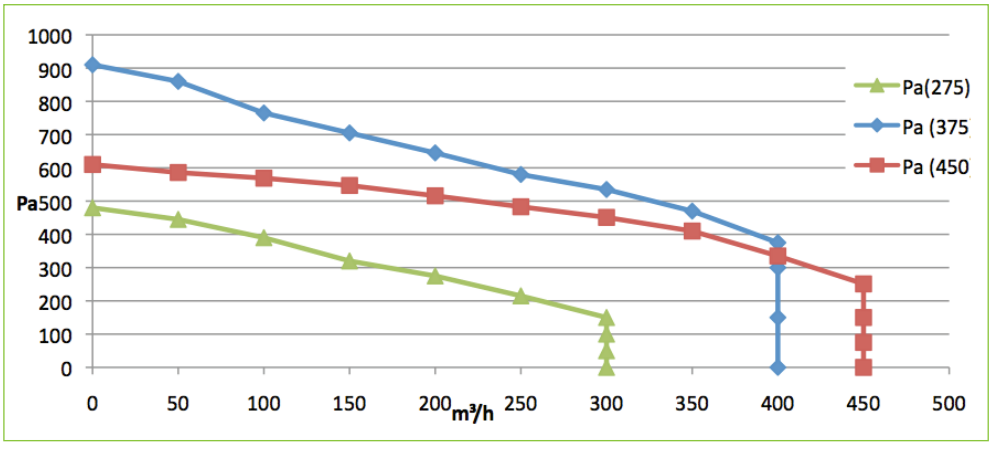
External leakage

The external leakage value indicates the percentage of air in the ventilation unit that is lost to the outside. This value can be measured by placing the unit under pressure and calculating the amount of air escaping.

4. FOR THE INSTALLER

4.1. Technical specifications

	Veneco 4275	Veneco 4375	Veneco 4450P
	General data		
Filters	2*G4		
Duct connection *	150mm		
Condensate connection	2 * 28mm		
Dimensions (L*H*D)	0,930*0,650*0,510 m		
Weight	35 KG	36KG	36,5KG
	Characteristics		
Power supply	220-250VAC, 50Hz		
Max. power	2*67W	2 * 170W	2 * 160W
Max. current	2 * 0,5A	2 * 1,2A	2 * 1,30A
Max. speed	2300RPM	2870RPM	4230RPM
Fuse	4A	4A	3,5A
Thermal efficiency (SAP appendix Q)	88% - 91%	88% - 91%	88% - 91%



*The Veneco 4450P is available with dia.150 → dia.180mm adapters

Operating curves for the various Veneco ventilation units are shown on the following chart. These curves show the useful pressure for a given flowrate. Taking the Veneco 4375 as an example, this means that a useful pressure of 420 Pa corresponds to an air flow of 375 m³/h. This useful pressure can then be used for the ducting system and filters.

4.2. Default settings of the Veneco ventilation unit

4.2.1 Positions

The Veneco ventilation unit is delivered ready for use. The factory settings are given in the table below. All settings can be easily changed using the Veneco user interface software.

	Veneco 4275			Veneco 4375			Veneco 4450P		
	Q(m³/h)	P(W)	I(A)	Q(m³/h)	P(W)	I(A)	Q(m³/h)	P(W)	I(A)
Position 1	100	15	0,5	115	10	0.6	100	14	0,06
Position 2	165	23	0,75	225	25	0.95	220	32	0,14
Position 3	235	35	0,9	320	50	1,1	330	80	0,35
Position 4	300	70	1,1	400	110	1,3	450	194	0,85

4.2.2 Bypass

The Veneco ventilation unit is supplied with a 100% bypass system. The bypass will be activated automatically in relation to certain settings. These settings can be changed in the Veneco UI software. How to change these settings is explained later in this manual (see page 26). Of course the bypass can also be activated manually. Automatic bypass can be disabled in the Veneco software

4.2.3 Frost protection settings

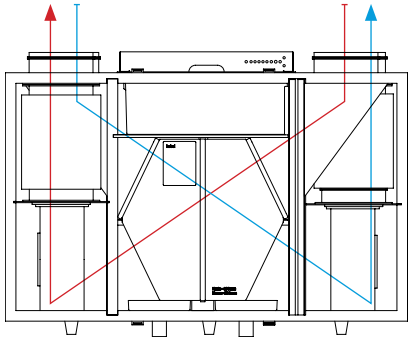
The Veneco ventilation unit will normally operate in unbalanced mode when the outside temperature reaches -5°C. If desired, this value can be changed via the user interface programming cable and software. Where a preheater is provided to prevent the heat-exchanger from freezing, the Veneco ventilation unit will not run unbalanced.

4.3 Mounting the Veneco ventilation unit

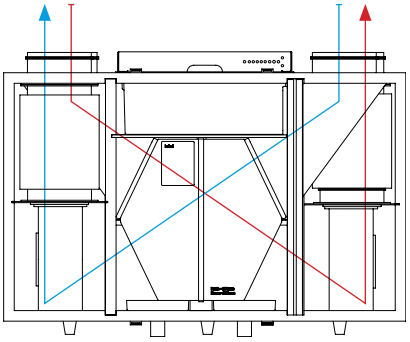
4.3.1 Universal mounting orientation

The Veneco ventilation unit has a universal mounting orientation. This means that the house side can be connected to the right or left. This is illustrated in the figure below.

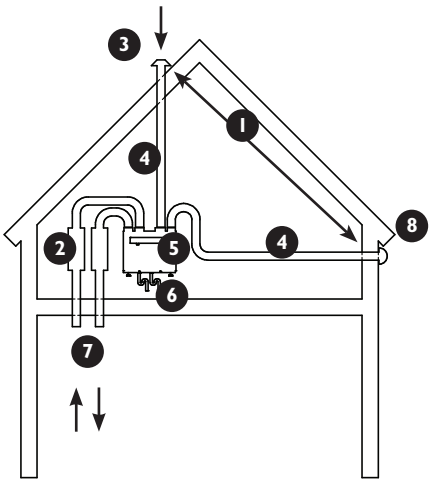
Right version



Left version



4.3.2 Positioning of vents



1. Always maintain a minimum distance of 5m between the air intake and discharge
2. Silencer
3. Air supply
4. Insulate the air intake and discharge
5. Ventilation unit (installed perfectly level)
6. Connect the condensate trays according to the manual (2 off)
7. As far as possible install the air intake and discharge lines using rigid ducts
8. Air discharge

The air intake can also be placed on the building facade. It is preferable to install the air intake on the north or northeast side of the house. This side gives the best performance in both winter and summer. If the fresh air is drawn in under the tiles, take care to ensure that condensation does not form in the roof fabric and that water cannot enter the duct. As far as possible try to avoid surface condensation

Attention! Place the valves of the suction side in such a way that they never can suck up harmfull gasses.

4.3.3 Positioning the ventilation unit

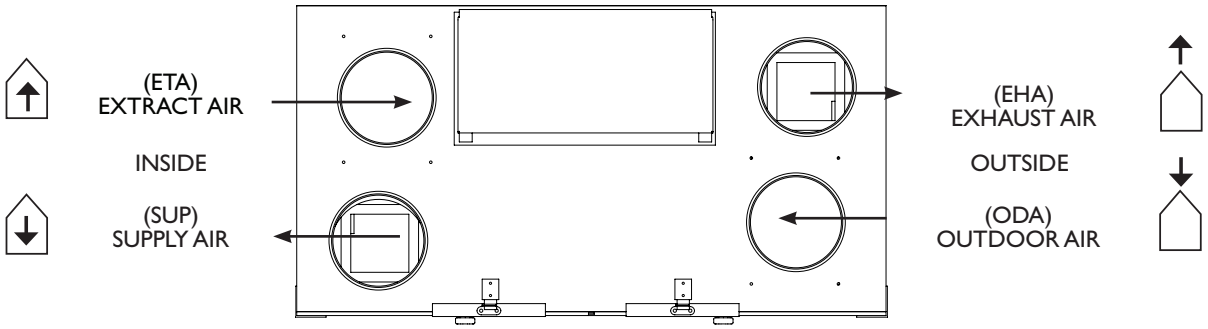
Choose a suitable location for the ventilation unit. The ideal place is usually the attic, in the middle of the house. This ensures a short duct system which is therefore more efficient and economical. Make sure that this location will always remain accessible for maintenance of the unit in the future. The maintenance required is minimal, but the filters and heat-exchanger should be cleaned occasionally to maintain the highest possible efficiency.

The ventilation unit can be floor mounted (on four rubber feet) or wall mounted (using a hanger system).

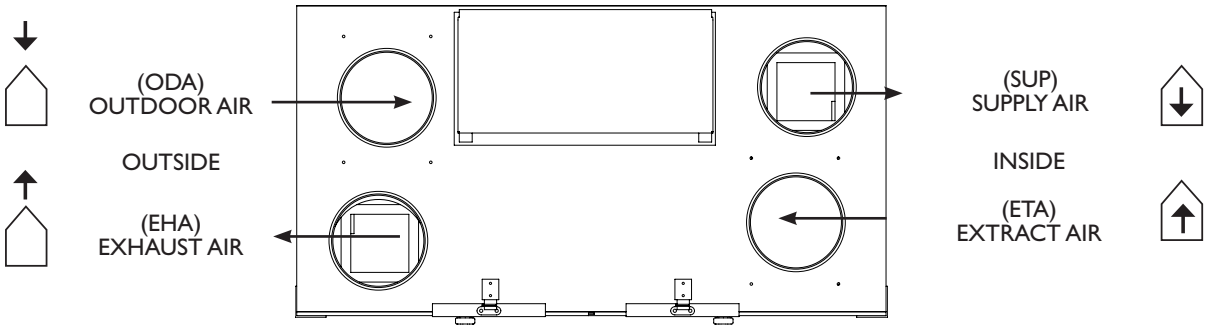
A European electrical outlet (250VAC/50Hz) is required next to the unit plus a second outlet for an optional external heater unit.

The installation location must be protected against freezing. Allow a minimum clearance of 80 cm in front of the unit for filter cleaning and maintenance.

(L)Left-side installation



(R)Right-side installation



ODA: Outdoor air
EHA: Exhaust air
SUP: Supply air
ETA: Extract air

4.3.4 Hanger mounting

The ventilation unit is supplied with a hanger mounting kit on demand.

The kit contains the following:

- 3 brackets
- 1 central mounting rail
- Fasteners
- Levelling feet

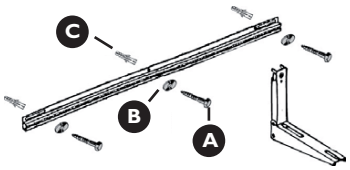
The hanger mount is assembled as follows:

1: Fixing the central rail

Choose a solid surface on which to hang the Veneco ventilation unit. The central rail should be fixed at 3 points for a secure installation. Three slots are provided in the central rail for this purpose. The figure below shows how to attach the central rail.

Depending on the type of surface, the supplied anchor plugs should be fitted.

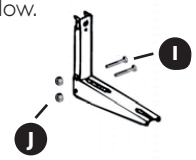
Important: The fixing accessories are only suitable for concrete (plugs and screws) or for wood (screws)



A. Screw
B. Washer
C. Plug

2: Hanger bracket assembly

Unfold the brackets. Then tighten the bolts and nuts as shown below.



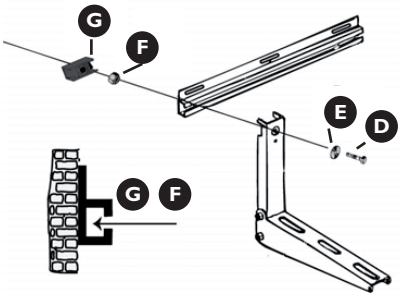
I. Bolt
J. Nut

The leveling feet can be fitted as shown below. How they are adjusted will be explained later in this manual.

H. Adjusting bolt

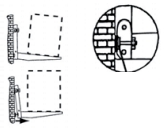
3: Assemble bracket to central rail

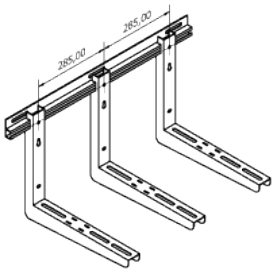
The hanger brackets can be fitted as shown below. Insert part F (nut) into the mounting block (G). Now slide the blocks into the central rail to enable the hanger brackets to be fitted using components E and D

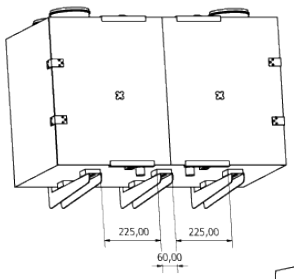


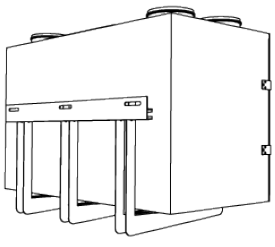
D. Screw
E. Washer
F. Nut
G. Mounting block

To position the ventilation unit horizontally use the adjustable feet which are fitted according to the manual. Before making the final connections ensure that the Veneco ventilation unit is positioned horizontally using the condensate trays inside the unit as a reference point.









4.3.5 Vertical mounting

A vertical mounting option is also available. Choose this option when placing your order.
Before making the final connections ensure that the Veneco ventilation unit is positioned horizontally using the condensate trays inside the unit as a reference point.

4.3.6 Use of heater units

Preheating is recommended in locations where the temperature remains below zero for a long time. The heater is only activated when it is colder than the preset value. This ensures that preheating will never be active for longer than necessary. The heat-exchanger will thus be kept frost-free and will continue to provide ventilation.

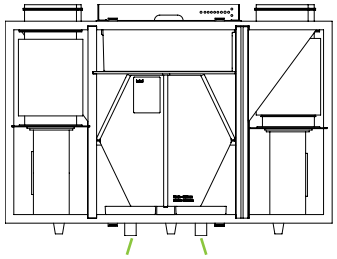
NB: It is important that the unit be placed in a dry and frost-free place.

4.3.7 Duct connections

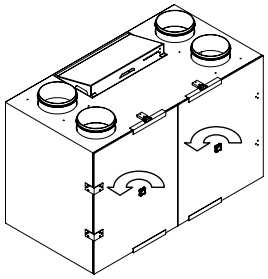
Once the unit is mounted the ducting can be connected.
On one side of the unit there are ducts leading to and from the house, and on the other side there are ducts leading to the outside (see Figure in § 4.3.2). To avoid condensation on the outside of the air intake and discharge ducts, these two lines must be insulated between the wall/roof and the unit. It is advisable to fit a silencer on the two ducts leading to the house. For maximum effectiveness the silencers should have a minimum length of 0.9 m and can be installed directly next to the ventilation unit

4.3.8. Condensate fittings

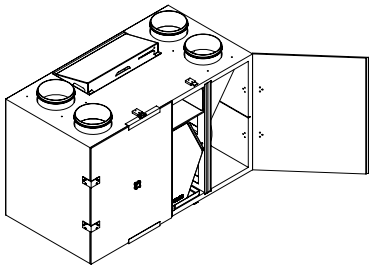
The condensate trays are inside the ventilation unit and should be connected after the unit has been installed.



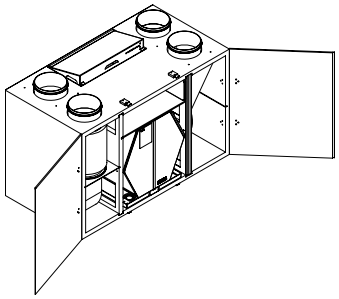
Follow these steps to connect the condensate trays:
1. Fully rotate the black buttons



2. Open the right-hand door by releasing the top and bottom locking levers.



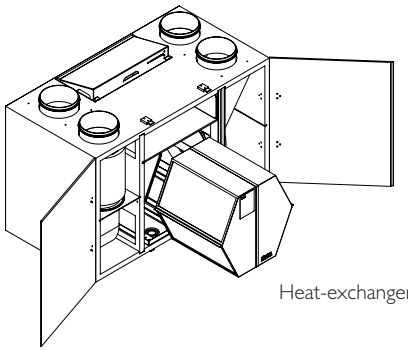
3. Now open the left-hand door in the same way.



=> All parts of the unit are now within easy reach!

Follow these steps to connect the condensate trays:

The doors of the ventilation unit must be opened to facilitate removal of the heat-exchanger. Once this has been done the condensate fittings can be hooked up. The connections are made to the condensate trays using an O-ring seal to prevent leakage.

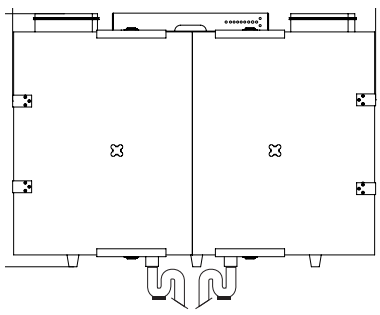


Heat-exchanger

It is essential to mount a trap on the two condensate trays. This is to prevent air leakage between the two condensate trays. Without a trap it is possible that undesirable odours could reach the fresh air through the outlet.

The method of installing the trap can be seen in the figure below. Ensure that a sufficient slope is available to remove the water quickly. Otherwise condensation problems could occur.

Pour water into the trap to create a seal before putting the ventilation unit into service.



4.3.9 Installation of supply/extraction vents

4.3.9.1. Choice of supply vents

Air supply vents should be installed in living spaces. These include dry areas and rooms where people may be present for long periods without a specific source of pollution. Some examples: lounge, bedroom, study, etc.

It is desirable to mount the supply vents as far away from the doors as possible. In this way the air flow must pass through the entire room before reaching an extraction point.

The required supply air flow should be calculated in accordance with the applicable local ventilation standards. In large rooms it is sometimes better to opt for several smaller vents dispersed throughout the space. Supply vents are available in different shapes (square, rectangular, etc.), sizes and materials, and in adjustable or non-adjustable versions.

NB: For your customer's comfort we recommend that you do not place supply vents close to where a person may be present for long periods of time, such as a bed, sofa, desk, etc. These choices are best made in consultation with the customer.

4.3.9.2. Choice of extraction vents

Air extraction vents should be placed in all wet areas and in places where steam and odours tend to reduce the air quality. Some examples: kitchen, bathroom, toilet, laundry room, etc.

It is desirable to place the extraction points high up and as close as possible to the pollution sources. In kitchen areas the extraction vent should preferably be located above the sink. The required extraction air flow should be calculated in accordance with the applicable local ventilation standards. In large rooms it is sometimes better to opt for several smaller vents dispersed throughout the space. Extraction vents are available in different shapes (square, rectangular, etc.), sizes and materials, and in adjustable or non-adjustable versions.

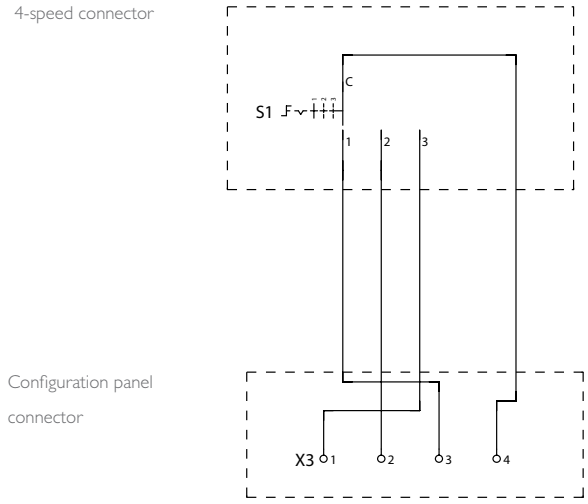
Caution! Never connect a kitchen extractor hood to the ventilation system. A separate ventilator must always be provided. (Stale air)

4.4 Wiring

4.4.1 Connecting the configuration panel

4.4.1.1 Connecting the 4-speed selector switch

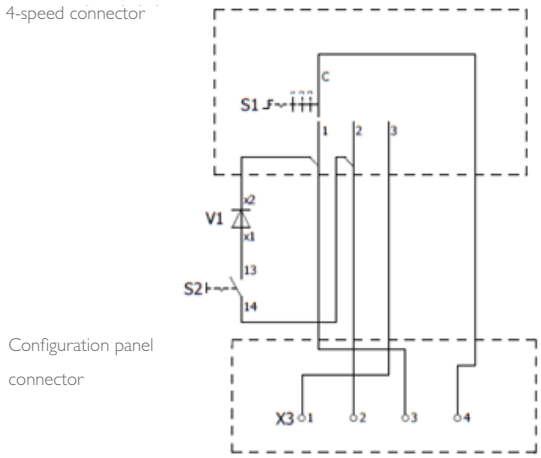
The diagram below shows the position of the rotary switch connections



S1 = 4-speed connector

4.4.1.2 Connecting the 4-speed selector swicth with manual bypass.

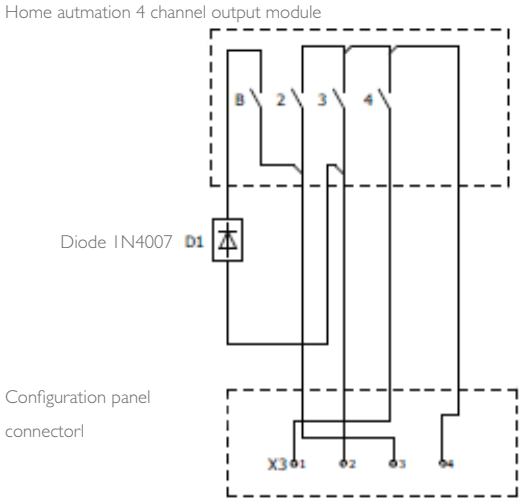
In diagram below the connections of the selector switch with manual bypass are clarified.



S1 = 4-speed connector with bypass

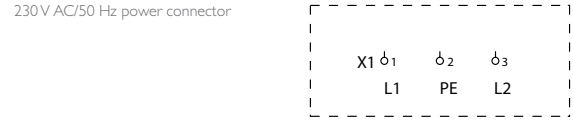
4.4.1.3 Connection for home automation

The diagram below shows the position for the home automation connection.



4.5. Starting the ventilation unit

The Veneco ventilation unit is supplied as standard with a power supply connector to facilitate startup of the Veneco ventilation unit. This power connector is wired to the first connector, i.e. X1. The power cable is connected as follows.



When all of the above steps have been completed according to the manual, you can proceed to the following steps.

The power cable provided can now be connected to the 230VAC 50Hz mains supply.

When the Veneco ventilation unit is powered up it will run through an initialisation sequence during which a number of functions will be checked. The heat-exchanger will also be activated for a status check. During this initialisation sequence the LED position indicators will be activated in turn.

Once this is complete the following steps can be carried out.

NOTE :

VENECO SOFTWARE IS NOT SUPPORTED BY MAC OS.

4.6. Programming the Veneco ventilation unit

System requirements: software installation
Operating systems:
Windows 2000 with full updates
Windows XP with Microsoft .NET Framework 4 installed
Windows vista with Microsoft .NET Framework 4 installed
Windows 7 with Microsoft .NET Framework 4 installed
Windows 8 with Microsoft.NET Framework 4 installed
Memory : Minimum 2GB RAM
Resolution: minimum : 1025 * 432

The Veneco Software will only work when above requirements are installed.

Using the Veneco UI software it is possible to configure a number of settings depending on particular requirements. To use this software you will need the Veneco UI programming cable. The Veneco UI software and installation instructions are supplied with the cable. The cable must be purchased.

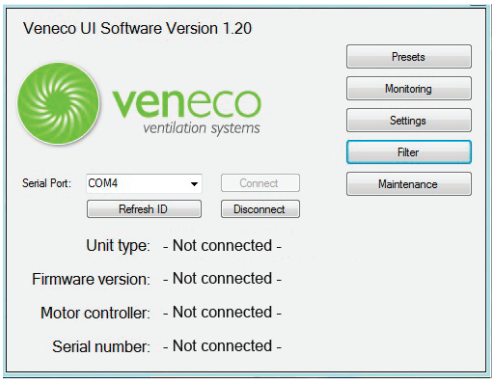
4.6.1. Starting and connecting the Veneco software

Before using the Veneco UI software connect the programming cable to your computer.

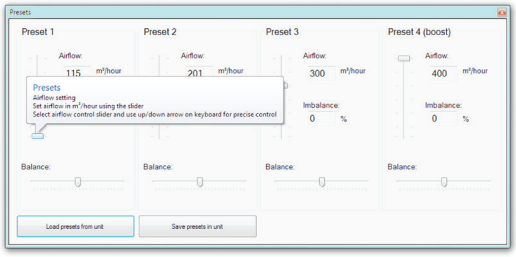
To launch the software double click on the icon on your desktop.

The application will then open and the following screen will appear.

The application will then open and the following screen will appear.

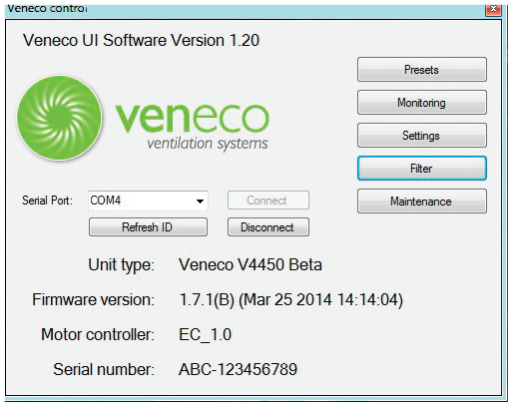


The Veneco software contains explanations of each function. The picture below clarifies this. Move the mouse over a slide bar and a tool tip will appear.



On the screen you will see the Veneco UI software connecting to the ventilation unit. The correct communication port will appear on the screen. Click "connect" to make the connection.

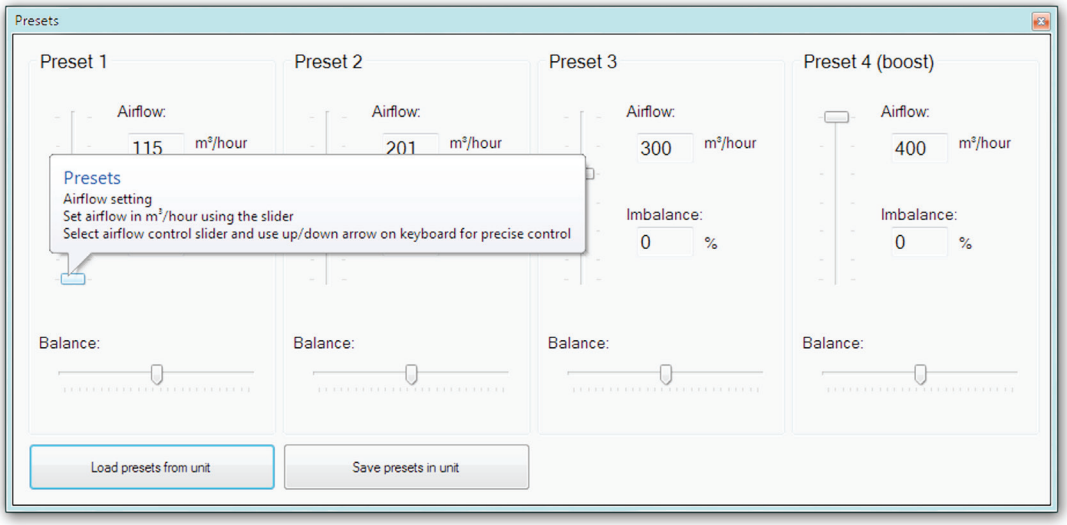
Once connected the ventilation unit ID will appear on the screen.
See figure below.



4.6.2. Programming the air flow for each position

Once the Veneco ventilation unit is connected to the Veneco UI software the various position settings of the unit can be programmed to suit the user.

The various positions can be programmed via the "Presets" menu. You will see the screen below.



1: "Load presets from unit" = If this button is pressed the Veneco user interface software retrieves the current settings of the Veneco ventilation unit.

2: "Airflow" = Starting on the left of the screen move the slider to set the rate for each position (i.e. Preset 1, Preset 2, Preset 3 and Preset 4). Drag the slider to increase or decrease the air flow. The airflow can be fine-tuned to within 1 m³/h using the arrow keys on your keyboard.

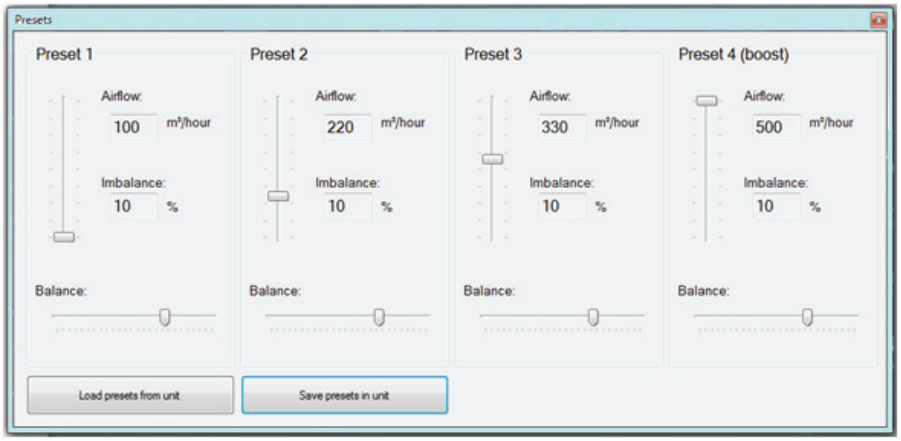
3: "Imbalance" = Select the balance for each preset using the slider at the bottom of the screen. This is shown as a percentage. If the value is negative the building will be placed under negative pressure. If the value is positive the building will be under positive pressure. Depending on the building concerned, this function can also be used if the house has a flue. In this way the house can be placed under positive pressure to prevent smoke being forced into the rooms.

4: "Save Presets" = Click this button to activate the new settings.

Important: While adjusting the vents you will need to make sure that the bypass is closed and the frost protection is not operating. Also, all doors and windows must be closed to obtain a correct measurement.

"Fireplace function"

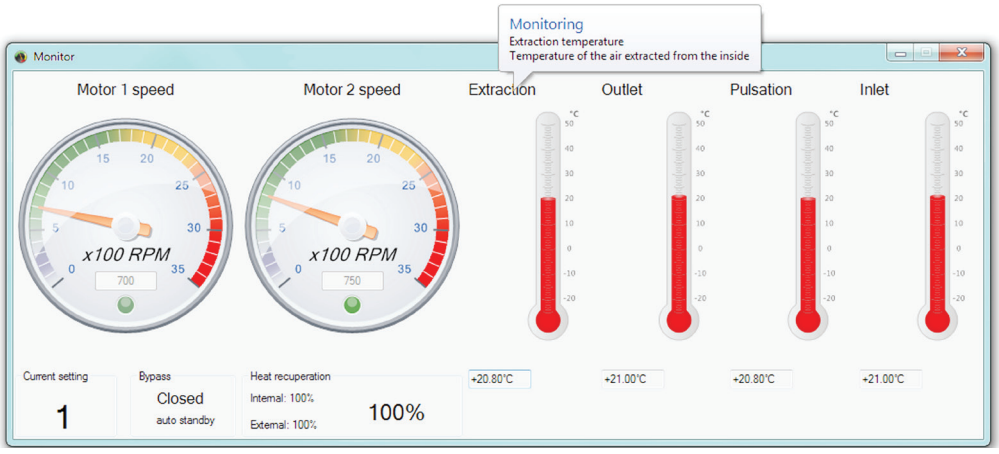
After the adjustment of the installation it can happen that due to external influences 'wind, polluted filters and rotation,...) the set flow changes. At the same time it can also prevent smoke pass less smoothly through the chimney and ending up in the house.
To prevent this, one can set an off balance in the Veneco Software. When a fireplace is present a positive balance can be set which has the result that there that there will be more air (in%) supplied than discharged. Thus, the smoke is "helped" to leave the house through the chimney.
if, for example, no more air is supplied through blockage of the rotor than the house would be placed under pressure through the exhaust valves and possible suck smoke in to the house.
If the positive off balance ist set it will work as an indicator of a fireplace. This means that if the supply fan stops (o RPM) the exhaust fan will also be powered off to prevent suction of smoke through the chimney.



In the above image at each position a balance is set of 10%, this setting has as influence that the supply fan will supply 10% more than discharge. This shows that ther is an open fire and safety function is active.

4.6.3. Read current data

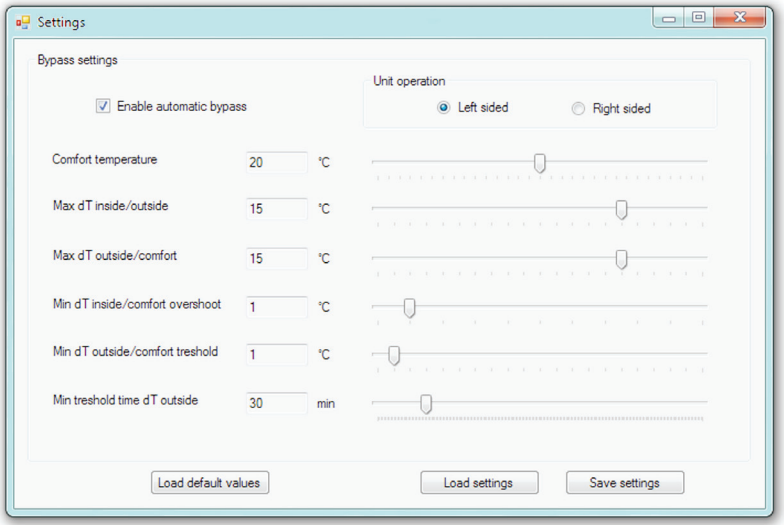
The "Monitoring" menu lets you read the current data of the ventilation unit.
The "Monitoring" screen below provides a range of "live" readouts.



"Motor Speed 1" = This readout indicates the right-hand motor speed.
"Motor Speed 2" = This readout indicates the left-hand motor speed.
"Current setting" = This readout shows the position of the Veneco ventilation unit
"Bypass" = This readout shows the bypass status (see § 4.6.4.)
"Closed disabled" = This readout shows that the bypass is disabled in the "Settings" menu
"Closed auto standby" = This readout shows that the bypass is closed and in standby mode.
"Closed auto armed" = This readout shows that the bypass is ready to open. In this condition the bypass is capable of detecting whether the temperature has increased due to the heating in the house or outside influences. Energy losses are thus minimised.
"Active Auto Open" = This readout shows that the bypass is opened automatically.
"Open Manual" = This readout shows that the bypass is opened manually.
"Heat recuperation" = This readout, expressed in %, gives the average internal and external efficiency.
"Internal" = This readout shows the efficiency of internal heat recovery
"External" = This readout shows the efficiency of external heat recovery.
"Extraction - ETA" = This readout shows the temperature in °C of the extraction in the building.
"Outlet - EHA" = This readout shows the temperature in °C of the exhaust air after recovery.
"Pulsation - SUP" = This readout shows the temperature in °C of the fresh air supplied after recovery.
"Inlet - ODA" = This readout shows the temperature in °C of the air drawn in from outside.

4.6.4. Bypass settings

The screen below shows the bypass settings. If desired, a number of settings affecting the operation of the bypass can be configured on this screen.



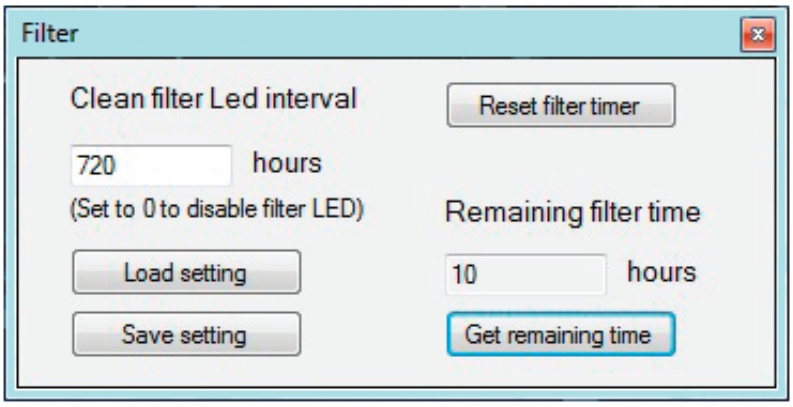
All of these settings are explained in order.

"Enable automatic bypass" = Check this box to allow the bypass to be activated automatically.
" Unit operation" =
"Left-sided" = If this option is checked, the Veneco ventilation group will work left version (house side is therefore left connected)
"Right-sided" = If this option is checked, the Veneco ventilation group will work right version (house side is therefore right connected)

"Comfort temperature" = This setting affects the comfort temperature. The Veneco ventilation unit will try to maintain this value in relation to other conditions.
"Max dt Inside/Outside" = This setting determines the maximum difference between the inside and outside temperature irrespective of the comfort temperature. If this value is exceeded the bypass is deactivated.
"Max dt Outside/Comfort" = This setting determines the maximum difference between the outside temperature and the set comfort temperature. This is designed to avoid uncomfortable temperatures. If this value is exceeded the bypass is deactivated.
"Min dt Inside /Comfort overshoot" = This setting affects the bypass activation temperature. If this setting is increased by a number of degrees, the bypass will only activate at a correspondingly higher number of degrees. This avoids continual opening and closing of the bypass.
"Min dt outside/comfort temperature threshold" = This setting affects the status of the bypass. If the outdoor temperature is higher than the comfort temperature + threshold value for some time (Min threshold time dt outside - next setting) the bypass will switch to ready mode
"Min threshold time dT outside" = This setting affects the activation of the bypass. If the temperature is higher than a certain value (previous setting) for some time the bypass will switch to ready mode.
"Load default values" = By pressing this key, the default values are displayed. After clicking the "Save settings" button these parameters are saved. These values are to be set in consultation with the customer.

4.6.5 Filter reset

In the picture below you can find the filter parameter window. Here, if desired, you can set certain parameters concerning the filter reset.

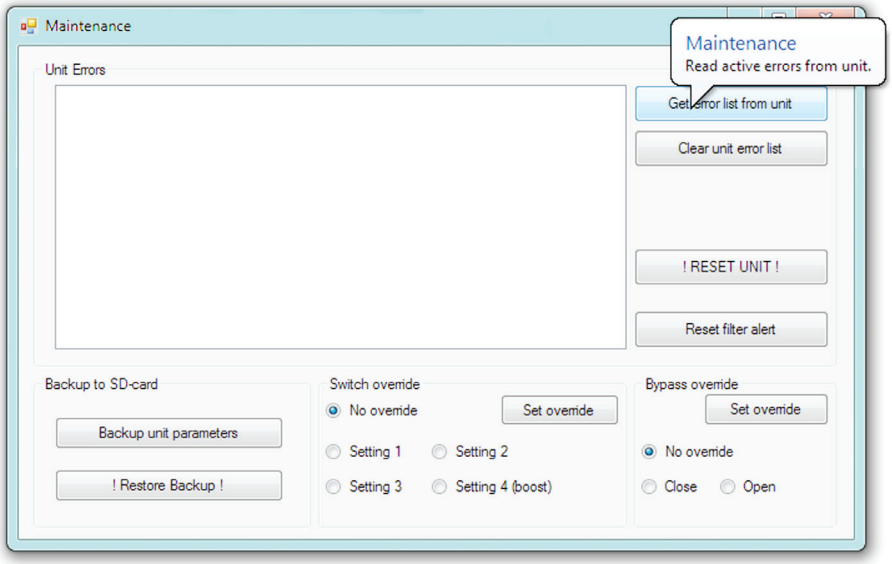


Buttons filter window:

"Reset filter timer" = Pressing the reset filter timer button will reset the timer.
" Load setting" = Press to load the timer interval ..
"Save setting" = When you changed the filter interval press **"Save settings"** to save the setting.
"Get remaining time" = Press this button to find out how many hours the filter should be cleaned.
(All settings are displayed in hours, 1 day = 24u, 1 month = 720u)

4.6.5. Maintenance

Here below you can see the window "Maintenance".The image below clarifies what features are available to perform diagnostics on the Veneco ventilation group.



"Unit Errors" = This screen displays possible errors.

"Get error list from unit" = When selecting this button, a list of 10 most recently occured errors are displayed. In order to check all current faults, all errors can be cleared by pressing the **"Clear unit error list"** button. The complete history of all errors will stay recorded on the SD card.

"Clear unit error list" = If this button is selected all errors will be cleared.

"!RESET UNIT!" = If this button is selected the Veneco ventilation unit is rebooted. Thus, a disruption of the network is simulated and the group will start again.

"Reset filter alert" = If this button is selected the filter indicator is reset

"Backup to SD-card" = After presetting the group Veneco ventilation its is recommended to store the data on the SD card. In this way stored data can be updated. Both functions are explained below.

- **"Backup unit parameters" =** If this button is selected, the current settings are written to the SD card.
- **"!Restore Backup!" =** If this button is selected the backup of the SD card is updated.

"Switch override" = When performing a diagnosis or in the control of the settings the positions can be set by the software. Don't forget to turn off the override afterwards!

- **"Set override" =** If this button is selected the selected position can be activated. Each of the four different positions can be selected.

Bypass override" = When performing a diagnosis or in the control of the settings the bypass can be set by the software. Don't forget to turn off the override afterwards!

- **"Set override" =** If this button is selected the selected setting will be activated, both open and closed.

4.7. Maintenance by the installer

The Veneco ventilation unit must be isolated from the power supply before carrying out maintenance.
Caution: you must not switch off the power if the LED next to the memory card is lit.

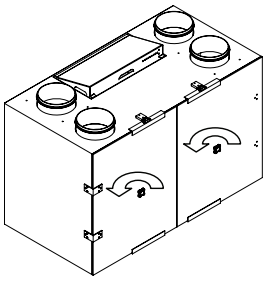
4.7.1. Maintenance and cleaning of filters

IMPORTANT:
First disconnect the unit by removing the power cord from the socket. There are rotating motors inside the unit!
Before disconnecting the unit wait for the "diagnosis" LED to stop flashing.

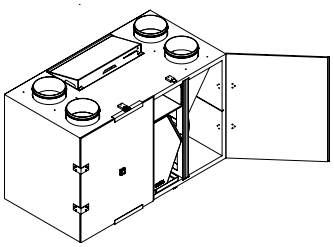
Make sure that the unit does not need to be opened for maintenance. You will not need any tools.

Proceed as follows:

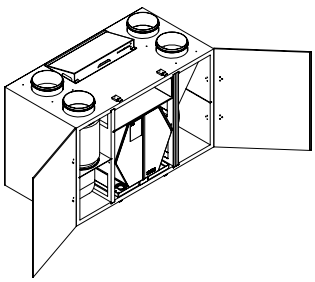
1. Fully rotate the black buttons



2. Open the right-hand door by releasing the top and bottom locking levers

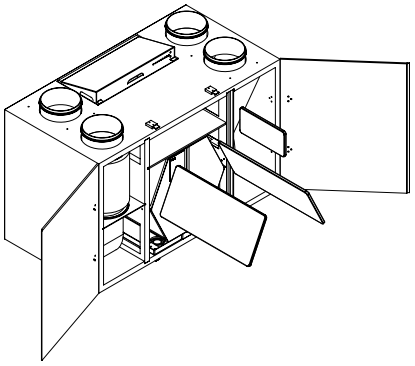


3. Now open the left-hand door in the same way.



=> All parts of the unit are now within easy reach!

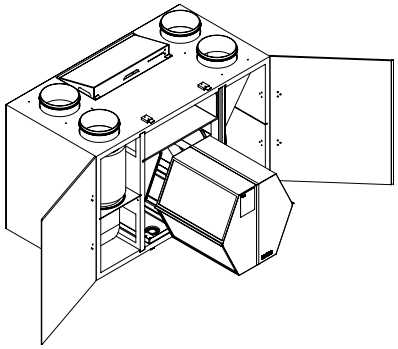
When the doors are open the filters can be easily removed for cleaning.



The filters can be cleaned with a vacuum cleaner.

4.7.2. Heat-exchanger maintenance

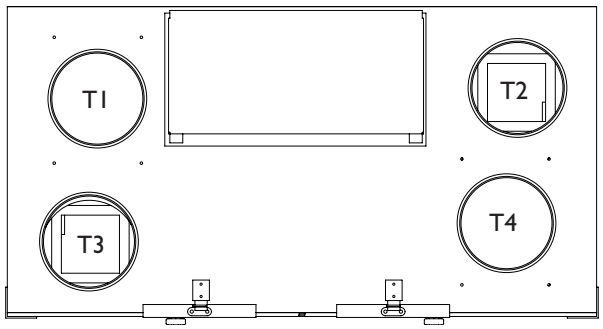
To clean the heat-exchanger follow the same steps to open the ventilation unit as for the filters. Once the filters have been removed you can take out and clean the heat-exchanger.



The heat-exchanger is removed by gently pulling on the strap.

The heat-exchanger is best cleaned as follows: Immerse the heat-exchanger in warm water (+/-40°C). Then rinse the heat-exchanger with warm water.
Shake off excess water from the heat-exchanger and leave to dry.

4.8. Attachments



4.8.1. Parameters of the ventilation unit LOG000000

Logging	T1	T2	T3	T4	RPM motor 1	RPM motor 2	control motor 1	control motor 2	stand unit	bypass manual	auto bypass armed	auto bypass active	frostprotection	Preset overide
1	18,7	20,3	18,7	20,0	5815	4791	x2E	x2E	1	0	0	0	0	0
2	19,0	20,3	18,7	20,0	5745	3907	x32	x2E	1	0	0	0	0	0
3	18,7	20,3	18,7	20,0	5259	4399	x27	x26	1	0	0	0	0	0
4	18,7	20,0	18,7	20,0	4859	4361	x27	x26	1	0	0	0	0	0
5	18,7	20,0	18,7	20,0	4844	4358	x27	x26	1	0	0	0	0	0
6	18,7	20,0	18,7	20,0	4841	4344	x27	x26	1	0	0	0	0	0
7	18,7	20,0	18,7	20,0	4838	4344	x27	x26	1	0	0	0	0	0
8	18,7	20,0	18,3	20,0	4808	4322	x27	x26	1	0	0	0	0	0
9	18,7	20,3	18,3	20,0	4793	4315	x27	x26	1	0	0	0	0	0
10	18,7	20,0	18,3	20,0	4780	4297	x27	x26	1	0	0	0	0	0
11	18,7	20,0	18,3	20,0	4651	4275	x27	x26	1	0	0	0	0	0
12	18,7	20,0	18,3	20,0	4796	4313	x27	x26	1	0	0	0	0	0
13	18,7	20,0	18,3	20,0	4818	4332	x27	x26	1	0	0	0	0	0
14	18,3	20,0	18,3	20,0	4849	4343	x27	x26	1	0	0	0	0	0
15	18,3	20,0	18,3	20,0	4892	4368	x27	x26	1	0	0	0	0	0
16	18,0	20,0	18,0	20,0	4889	4366	x27	x26	1	0	0	0	0	0
17	18,0	20,0	18,0	19,7	4878	4357	x27	x26	1	0	0	0	0	0
18	17,7	20,0	17,7	19,7	4895	4364	x27	x26	1	0	0	0	0	0
19	17,7	19,3	18,3	20,0	4936	5078	x27	x26	1	0	0	1	0	0
20	17,7	19,0	18,3	20,0	4870	5043	x27	x26	1	0	0	1	0	0
21	17,3	19,0	18,0	19,7	4786	5007	x27	x26	1	0	0	1	0	0
22	17,3	18,7	18,3	19,7	4793	5012	x27	x26	1	0	0	1	0	0
23	17,0	18,7	18,0	19,7	4803	5044	x27	x26	1	0	0	1	0	0
24	17,0	18,3	18,0	19,7	4860	5067	x27	x26	1	0	0	1	0	0
25	17,0	18,3	18,0	19,7	4838	5074	x27	x26	1	0	0	1	0	0
26	16,7	18,3	18,0	19,7	4802	5054	x27	x26	1	0	0	1	0	0
27	16,7	18,0	18,0	19,7	4715	4970	x27	x26	1	0	0	1	0	0
28	16,7	18,0	17,7	19,3	4798	5047	x27	x26	1	0	0	1	0	0
29	16,7	18,0	17,7	19,7	4803	5052	x27	x26	1	0	0	1	0	0
30	16,3	17,7	17,7	19,7	4778	5021	x27	x26	1	0	0	1	0	0
31	16,3	17,7	17,3	19,3	4706	4974	x27	x26	1	0	0	1	0	0
32	16,3	18,0	17,7	19,7	4734	5009	x27	x26	1	0	0	1	0	0
33	16,3	17,7	17,7	19,3	4701	4974	x27	x26	1	0	0	1	0	0
34	16,0	17,7	17,7	19,3	4720	4999	x27	x26	1	0	0	1	0	0
35	16,0	17,3	17,7	19,3	4759	5039	x27	x26	1	0	0	1	0	0
36	16,0	17,3	17,7	19,3	4734	5015	x27	x26	1	0	0	1	0	0
37	16,0	17,3	17,3	19,3	4703	4985	x27	x26	1	0	0	1	0	0
38	15,7	17,3	17,3	19,3	4743	5028	x27	x26	1	0	0	1	0	0
39	16,0	17,0	17,3	19,3	4745	5024	x27	x26	1	0	0	1	0	0
40	16,0	17,0	17,3	19,3	4731	5006	x27	x26	1	0	0	1	0	0
41	15,7	17,0	17,3	19,3	4704	4992	x27	x26	1	0	0	1	0	0
42	15,7	17,0	17,3	19,3	4693	4979	x27	x26	1	0	0	1	0	0
43	15,7	17,0	17,0	19,3	4687	4970	x27	x26	1	0	0	1	0	0
44	15,7	17,0	17,3	19,3	4749	5044	x27	x26	1	0	0	1	0	0

4.8.2. ERROR codes ERR000000

ERRORS	Description
11010	No SD-Card inserted
11011	SD-Card write protected
11012	No free space on SD Card
12010	"Temperature sensor out of range"
13005	Setting memory initialisation problem
13010	Setting memory write failure
13011	Setting memory read failure
20011	Motor 1 stalled
20012	Motor 2 stalled
20020	Motor PCB Communication failiure

4.8.3. Message codes MSG000000

Main PCB	Description
0x0120F0	Reserved for test of message subsystem
0x012010	Unit was started, powercycled or reset
0x012011	Unit power-on self test passed
0x012021	Unit restored core parameters from SD backup
0x012022	Unit tried to restore backup but failed

HMI	Description
0x013000	HMI switch manual switch control started
0x013001	HMI switch to position 1
0x013002	HMI switch to position 2
0x013003	HMI switch to position 3
0x013004	HMI switch to position 4
0x013011	HMI switch override position 1
0x013012	HMI switch override position 2
0x013013	HMI switch override position 3
0x013014	HMI switch override position 4
0x013021	HMI filter reset with button on unit

Bypass	Description
0x014000	Bypass system initialised
0x014001	Bypass valve set to open position
0x014002	Bypass valve set to closed position
0x014011	Automatic bypass disactivation
0x014012	Automatic bypass activation
0x014013	Automatic bypass disarming
0x014014	Automatic bypass armed
0x014015	Automatic reactivation holdoff timer activated
0x014020	Bypass system override command used
0x014021	Bypass system activated manually

PC service control	Description
0x015051	PC presets have been saved
0x015052	PC bypass settings saved
0x015053	PC unit inversion saved
0x015054	PC core settings updated
0x015055	PC unit serial number has been set
0x015061	PC issued preset override command
0x015062	PC preset control reactivated
0x015063	PC issued HMI override
0x015071	PC reset active error log
0x015080	PC issued parameter backup to SD card
0x015081	PC issued manual parameter restore from SD
0x015091	PC filter reset issued with PC interface

Filter Subsystem	Description
0x016011	Filter clean filter LED activated
0x016012	Filter clean filter LED reset

4.8.4. Example (After merging all excell files)

	Logging	T1	T2	T3	T4	RPM motor 1	RPM motor 2	control motor 1	control motor 2	stand unit	bypass manual	auto bypass armed	auto bypass active	frostprotection	Preset ovveride	
MES	0	12011														Unit power-on self test passed
MES	0	12010														Unit was started, powercycled or reset
MES	0	14000														Bypass system initialised
MES	0	13002														HMI switch to position 2
MES	0	13001														HMI switch to position 1
MES	0	13002														HMI switch to position 2
LOG	1	+19,67	+20,00	+19,67	+20,00	3107	4372	x42	x42	2	0	0	0	0	0	
LOG	2	+71,33	+15,00	+17,00	+15,00	11619	11503	xCF	xCF	2	0	0	0	0	0	
MES	2	15051														PC presets have been saved
LOG	3	+17,67	+14,00	+17,33	+13,33	11810	11928	xCF	xCF	2	0	0	0	0	0	
LOG	4	+17,33	+13,67	+17,67	+13,33	11745	12013	xCF	xCF	2	0	0	0	0	0	
LOG	5	+17,67	+13,67	+17,67	+13,33	10145	11137	x78	x78	2	0	0	0	0	0	
MES	5	14000														Bypass system initialised
LOG	6	+17,67	+13,67	+17,67	+13,00	9600	10808	x78	x78	2	0	0	0	0	0	
LOG	7	+18,00	+13,33	+17,33	+13,33	9321	10505	x78	x78	2	0	0	0	0	0	
MES	7	13002														HMI switch to position 2
ERR	7	11010														No SD-Card inserted
LOG	8	+18,00	+13,33	+17,67	+13,00	9602	10785	x78	x78	2	0	0	0	0	0	
LOG	9	+18,00	+13,33	+17,67	+13,33	9775	10894	x78	x78	2	0	0	0	0	0	
LOG	10	+18,00	+13,33	+17,67	+13,00	9556	10758	x78	x78	3	0	0	0	0	0	
MES	10	13003														HMI switch to position 3
LOG	11	+17,67	+13,33	+17,67	+13,33	9541	10711	x78	x78	3	0	0	0	0	0	
LOG	12	+17,67	+13,33	+17,33	+13,00	9455	10643	x78	x78	3	0	0	0	0	0	
LOG	13	+17,67	+13,33	+17,33	+13,33	9440	10650	x78	x78	3	0	0	0	0	0	
LOG	14	+17,67	+13,33	+17,33	+13,33	9307	10618	x78	x78	3	0	0	0	0	0	
LOG	15	+17,67	+13,33	+17,33	+13,00	9234	10481	x78	x78	1	0	0	0	0	0	
MES	15	13001														HMI switch to position1
ERR	15	11012														No free space on SD card
LOG	16	+17,33	+13,33	+17,33	+13,00	9246	10508	x78	x78	4	0	0	0	0	0	
MES	16	13004														HMI switch to position 4
LOG	17	+17,33	+13,33	+17,00	+13,33	9293	10502	x78	x78	4	0	0	0	0	0	
LOG	18	+17,33	+13,67	+17,33	+13,33	9185	10467	x78	x78	4	0	0	0	0	0	
LOG	19	+17,33	+13,67	+17,00	+13,33	9116	10407	x78	x78	4	0	0	0	0	0	
LOG	20	+17,33	+13,67	+17,00	+13,00	9076	10375	x78	x78	3	0	0	0	0	0	
MES	20	13003														HMI switch to position 3

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