



GEOVENT

INSTRUCTION MANUAL



GRTU 3800+

Roof Top Air Handling Unit

Contents

1.0 Introduction	3
2.0 Safety	3
2.1 General safety	3
2.2 Danger	3
3.0 Machine overview	4
3.1 Description	4
3.2 Intended use	4
3.3 Machine specifications	4
3.3.1 Design	4
3.3.2 Technical data	5
3.3.3 Efficiency	5
4.0 Transport, handling and storage	5
5.0 Assembly, installation and start of operation	5
5.1 Location	5
5.2 Installation	6
5.3 Control and test of the security system	6
6.0 Commissioning	6
6.1 After installation	6
7.0 Control, test and maintenance	6
7.1 Control	6
7.2 Maintenance	7
7.3 Replacing filter	7
8.0 Cleaning	8
9.0 Troubleshooting	8
10.0 Dismantling, disabling and scrapping	10
11.0 Dimensions	10
12.0 Liability	11
13.0 Declaration of conformity	11
14.0 Spare part list	11

1.0 Introduction

This manual is made and designed in order to facilitate the best and most secure interaction with the product. The manual is relevant for people involved in transportation, stocking, installation, using, maintaining and all other thinkable interaction with the product.

The manual must be read in full and understood before interacting with the product.

When the manual has been read and understood in full, the table of contents can be used to find the relevant information in each case.

The product is manufactured by:

Geovent A/S
Hovedgaden 86
DK-8861 Løgstrup
DENMARK

Tel.: (+45) 86 64 22 11
E-mail: salg@geovent.dk
www.geovent.com

This manual is to be used for all interactions with the product including: Transportation, stocking, installation, operation and maintenance.

This product is marked with: (example)



2.0 Safety

2.1 General safety

Carefully read this manual before use and observe the safety instructions in order to avoid injuries! Keep this manual in a safe place!

Secure that all users of the product have read this manual and that they follow the instructions as described. Observe all instructions marked on the product! Observe the indications of the manufacturer. Never use the product if you are in doubt about how it works or what you should do.

When doing maintenance follow the instructions in chapter 7.0.

Do not modify the product or use spare parts from other suppliers than Geovent, as this may hamper the product and the function.

2.2 Danger

You must wear safety gloves when handling or using the product to protect your hands from scratches etc.

Be aware that the product may tilt when you move it. You must handle the product with care and tie it safely to the truck or the fork lift when it is in transport.

Follow the instructions in chapter 7.0 when the product is maintained.

When handling the product be sure that there is no risk for the installer, and secure that there are no people around the product, secure that the product cannot fall down risking to injure persons or subjects.

The product is not to be used in areas categorised as ATEX zones, e.g. with dust from aluminium, flour, wood, and other mediums that present an explosion hazard.

If a repair is not possible you should dispose of the product. Please follow the instruction for disposal in chapter 10.0.

3.0 Machine overview

3.1. Description

Geovent GRTU 3800+ is built around a rotary heat exchanger that recovers up to 84% of the heat in the extracted air.

The hot exhaust air is drawn through EU7 filters and releases the heat to the rotary heat exchanger before being ejected.

Conversely, fresh outdoor air is sucked into the unit, filtered through EU7 filters and receives the heat from the rotor exchanger before being blown into the room.

3.2 Intended use

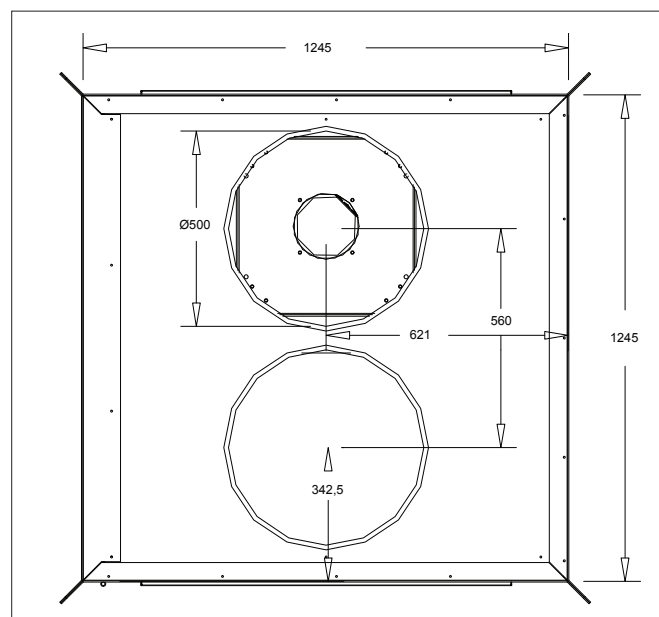
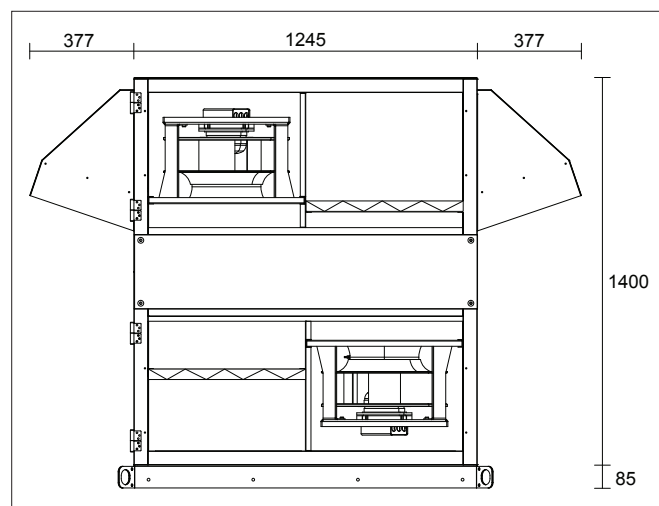
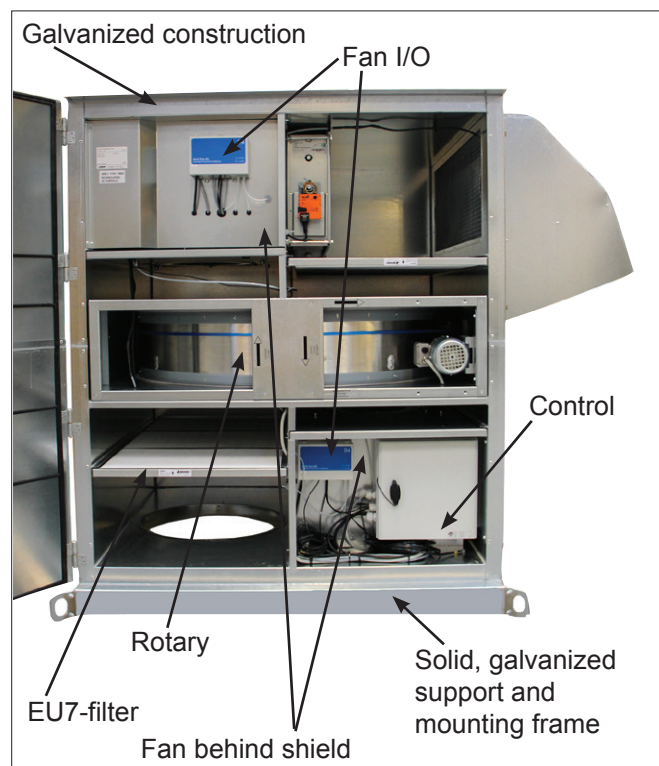
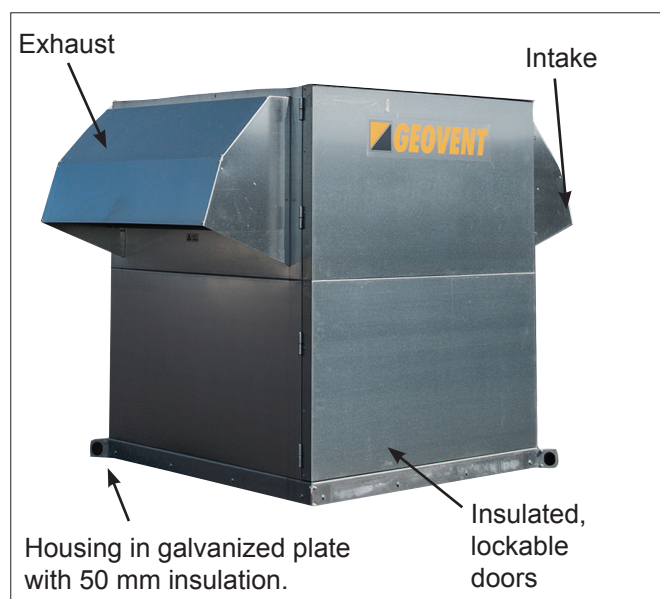
Geovent GRTU 3800+ is usually roof-mounted, but can be installed indoors in e.g. an industrial hall. It is used for comfort ventilation of industrial premises, car repair shops, sports halls, etc.

GRTU 3800+ is recommended to be used with an attached pipe system and supply air bags for best effect, but can also be used with an attached diffuser for mixing.

Can, for example, be expanded with heating surfaces or dampers to incorporate more functions.

3.3 Machine specifications

3.3.1 Design



Cabinet: Galvanized plate with 50 mm insulation.

Module construction with rail system facilitates inspection/replacement of parts.

The entire construction is galvanized and sealed in joints.

Fans: 2.5 kW EC motors, Ziehl-Abegg
 Fans: 2x2500 W
 Rotor: Hoval
 Capacity: up to 4,500 m³/h
 Automation/control: OJ Air2
 GRTU 3800+: 3x400V, 50 Hz, 8.0 A
 K-factor: 121

Weight: 400 kg

Filter size: 565x1137x24
 Cassette filter EU7

When used indoors, the inlet and outlet will be adapted for installation of ventilation pipes.

3.3.2 Technical data

Dimensions

Model/Dimension	Width [mm]	Height [mm]	Inlet [mm]
GRTU 3800+	1999	1485	ø500
GRTU 3800+ Recumbent	1245	1485	ø500
GRTU 3800+ Standing	1485	1245	ø500

Model/Dimension	Outlet [mm]		Weight [kg]
GRTU 3800+	ø500	1250	400
GRTU 3800+ Recumbent	ø500	1250	400
GRTU 3800+ Standing	ø500	1250	400

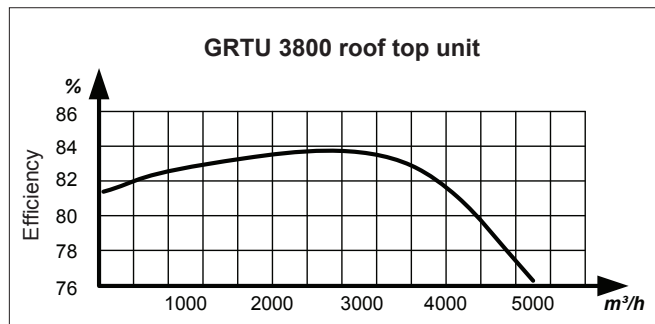
Sound pressure from fans at 2100 rpm. The unit's self-damping is not included.

Sound power Hz	63	125	250	500	1K	2K	4K	8K	In to-tal
Blow in.	45	57	66	67	63	61	58	58	72
Exhaust	43	55	64	64	61	59	56	56	70

Ambient sound (measured):

* Inlet opening: 75 dB(A)
 * Exhaust: 87 dB(A)

3.3.3 Efficiency



4.0 Transport, handling and storage

During transport in a truck or in another means of transportation the product must be securely packed in a box or a pallet and covered with a water proff material. The product must be securely stowed in the truck so that it will neither tilt nor shift during transport.

During transport over a short distance e.g. in a stock or a factory, the product can be moved by means of a forklift or a stabeler.

When moved it must be secured that the product does not tilt or shift. And it must be secured that the limitations of the means of transportation is not exceeded.

The product must be placed in a dry place and covered securely, in order to secure that moist, metal parts or other substances do not damage the product. It is not allowed to place anything on top of the product.

5.0 Assembly, installation and start of operation

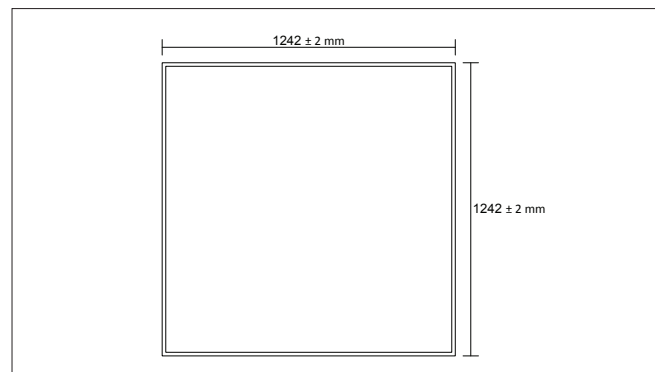
5.1 Location

Roof mounting

The GRTU Roof Top Unit can be mounted on both flat and sloped roof.

For both roof types, proper roof support must be used. In the case of sloped roof, it is recommended that the inspection side is towards the sloping side.

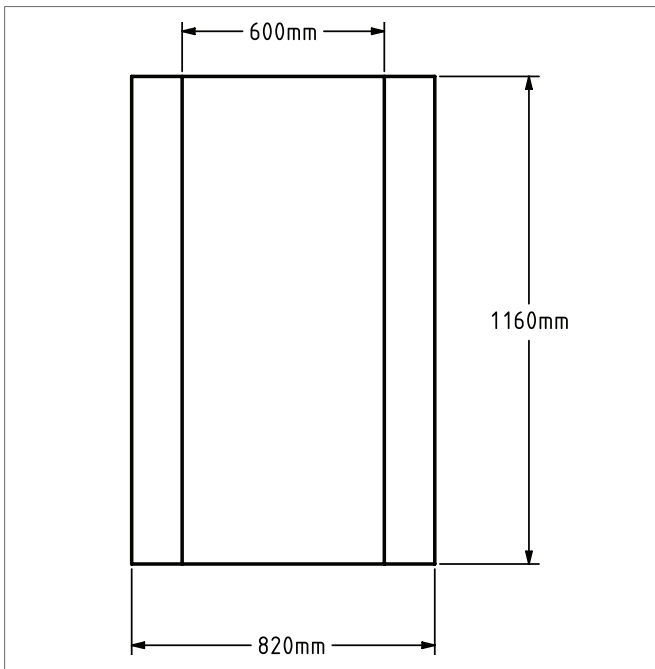
Construction dimensions for roof structure (outsite dimensions):



Example of roof structure



For directly mounted diffuser solution, the hole in the roof must be 1160 x 820 mm.



5.2 Installation

Can be installed indoors in e.g. an industrial hall. In this case, the inlet and outlet will be adapted for the installation of ventilation pipes.

Electrical wiring

Wiring for supply voltage (3x400) and wiring for remote control can be routed externally (through the side of the unit) or inside the inlet duct. Typically, the cables are placed in the duct.

5.3 Control and test of the security system

The automatic is OJ Air2 control and consists of: Master controller, filter guard (Fan IO) and hand terminal. Everything is internally wired and ready for use, however, sensors and hand terminal outside the unit must be mounted.

The controller maintains the set air volume and continuously regulates the fans. Shows alarm in case of malfunction and filter change. Can handle recirculation and heating coil.

Day and week setting allow for personal adjustments. The automation is set by the technician for the current installation. See separate technician instructions.

NB: During installation, a filter measurement must be performed by the technician.

Hand terminal



6.0 Commissioning

The Geovent GRTU 3800+ is ready to use once the above installation is complete.

6.1 After installation

Check the installation according to chapter 5.3.

7.0 Control, test and maintenance

7.1 Control

Check the installation according to chapter 5.3.

7.2 Maintenance

The daily operation of the GRTU 3800+ takes place via the handheld terminal, which is operated by the Touch screen, see subsequent menus.

Alarms from the system are displayed on the display.

User menus

The following menus show the parameters available to the daily user.

Fan operation

Setting the operational program for the unit:

- Stop: The unit is stopped. The automatic remains active and the unit can be started by changing the operating program.
- Low: The unit runs at constant low airflow. The desired amount of air is kept constant by regulating the fan speed. By default, the air volume is set to 1.500 m³/h.
- High: The unit runs at constant high airflow. The desired amount of air is kept constant by regulating the fan speed. By default, the air volume is 4.500 m³/h.

Weekly

program: The unit has 3 weekly programs for adjusting operating variations. See below.

Weekly Program

Selecting and setting the weekly program. 4 timers can be set per point/image in the menu. Settings for Stop, Low or High. See above.

The weekly program is overridden by extended operation.

1. The entire week: A time schedule that applies for all 7 days of the week.
2. Weekdays and weekends: two settings for weekdays and weekends respectively.
3. Daily program: Setting up the time program for each day of the week.

Temperature

Setting the supply air temperature. Only used when heating coil is installed.

Alarms

Alarms are shown in the display of the hand terminal. The unit will turn off the alarm when the cause is corrected.

If the filter is replaced during service, you must perform a filter measurement

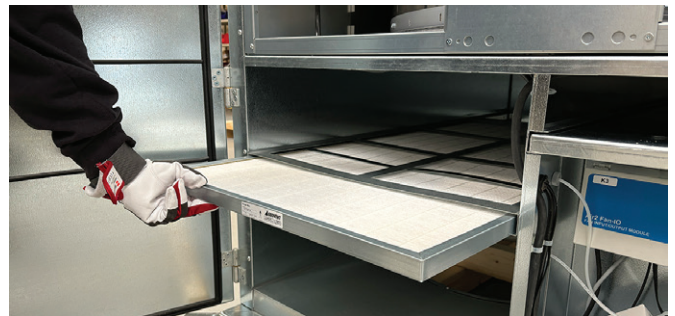
7.3 Replacing filter

The frequency of filter replacement depends partly on the load on the filter and partly on the application.

When the pressure loss across the filter becomes too high, this is shown in the handheld terminal display. This requires replacement of the filter.

Procedure:

1. Before opening the door, it is important that the service technician is wearing the necessary personal safety measures, such as respiratory protection and gloves, which must comply with the Danish Working Environment Authority's rules for working with contaminated dust.
2. All power must be disconnected and it must be ensured that the power cannot be activated during service.



3. Open the door and pull out the filter media.
4. Place the dirty filter media in a plastic bag and dispose of it according to local rules and regulations.
5. Install the clean filter by repeating the above steps in reverse order.
6. Check the filter for function and leaks before use.

If the filter is replaced during service, a filter measurement must be performed.

Error messages - explanation

Code	Reason / explanation	Motor response
Off	No input voltage	Can voltage be measured?
		Explanation: The device automatically disconnects and connects when voltage is available.
On	Normal operation	
1 X blinks	No enable =OFF No connection between "D1" - "24V" Missing start signal..	No start signal from Fan IO
2 X blinks	Reduced operation. The unit is equipped with temperature sensor that protects against high temperatures. To avoid a breakdown, the unit runs at reduced strength.	When the temperature reaches a safe level, the operation resumes.
		NB: Ensure that the motor is sufficiently cooled.
3 X blinks	Error in signal from HALL sensor	The control switches off the motor. Automatic restart if the cause of the error is corrected.
4 X blinks	Line error (only for 3 phase motors) This unit is equipped with a phase monitoring function. In case of low voltage/no voltage at one or more phases, the device is interrupted after a short delay - Approx. 60ms.	After a power failure, a restart will be attempted 15 seconds later, if the voltage is high enough. This happens until all 3 phases are operating. Examine the power supply.
5 X blinks	Motor blocked. If the motor is not turning the following error is reported: Motor blocked.	The motor switches off and tries to restart after approx. 2.5 sec. After four attempts, a reset is required or that you disconnect the power and switch it back on again.
		Solution: It must be ensured that the motor rotates freely.
6 X blinks	Short circuit on earthing or motor windings.	The motor switches off and tries to restart after approx. 60 sec. The motor will disconnect if the error persists. After that a reset is required or that you disconnect the power and switch it back on again.
		Solution: Check that ground connections are set up correctly.
7 X blinks	Too low DC voltage If a voltage drop is detected the motor stops.	If the voltage increases again within 75 sec. an automatic start test is carried out. If the motor does not start, a reset is required or that you disconnect the power and switch it back on again.
8 X blinks	Too high DC voltage. The motor is switched off.	If the voltage drops again within 75 sec. an automatic start test is carried out. After that a reset is required or that you disconnect the power and switch it back on again.
9 X blinks	IGBT overheating. Cooling - 60 sec - attempt twice. Then Error 6.	

10.0 Dismantling, disabling and scrapping

Deactive the product by disconnection the electrical mains. Dismantle compressed air pipes and other pipes or wires etc.

Dismantle the filter cartridge by unscrewing the finger screws and remove the service hatch.

Turn the filter cartridge so that is loosens from the latches at the top of the cartridge.

Carefully remove the contaminated filter cartridge, place it in a plastic bag and seal the bag.

Dispose of it according to local regulations.

The inside of the product must be cleaned by means of a vacuum cleaner with a filter which suits the purpose.

The inside of the product must be cleaned by means of a vacuum cleaner with a filter which suits the purpose.

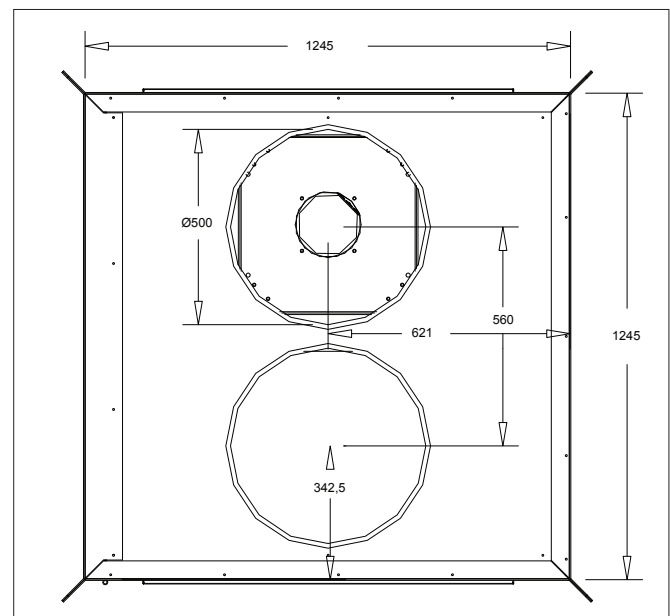
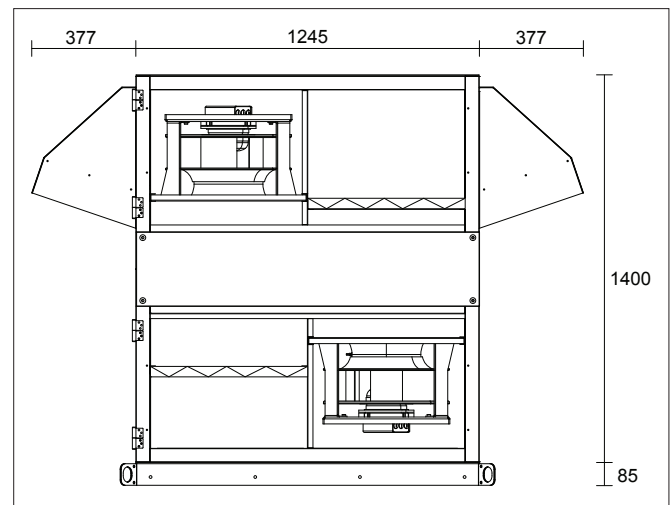
Dismantle the metallic parts by unscrewing screws and bolts. Afterwards cut the larger pieces into smaller pieces and dispose of it according to local regulation.

Dismantle plastic parts and dispose of it according to local regulations.

The packing material must be sorted according to local regulations in order to be able to reuse the material.

11.0 Dimensions

GRTU 3800+



12.0 Liability

Warranty

Geovent A/S grants a warranty for products, which are defective, when it can be proved that the defects are due to poor manufacture or materials on the part of Geovent. The warranty comprises remedial action (reparation or exchange) until one year after the date of shipment.

No claims can be made against Geovent A/S in relation to loss of earnings or consequential loss as a result of defects on products from Geovent.

Wear on parts such as filter cartridges and hose is not included in the warranty.

User liability

In order for Geovent to be capable of granting the declared warranty, the user/fitter must follow this instruction manual in all respects.

Under no circumstances may the products be changed in any way, without prior written agreement with Geovent A/S.

Please refer to the current sales and delivery conditions at www.geovent.com

13.0 Declaration of conformity

The manufacturer: GEOVENT A/S
HOVEDGADEN 86
DK-8831 LØGSTRUP

Hereby declares that:

The product: Roof top unit
Model: GRTU 3800+
GRTU 3800+ Recumbent
GRTU 3800+ Standing

Complies with the relevant parts of the following directives and standards:

Directive 2006/42 / EC of the European Parliament and of the Council of 17 May 2006 on machines and amending directives 95/16 / EC.

This declaration is no more valid if changes are made to the product by others than the manufacturer.

Authorized to collect the technical file:

Lise Cramer

Date: 03.01.2025

Position: Director
Name: Thomas Molsen



Signature: _____



14.0 Spare part list

Art. No.	Description
02-717	Cassette filter EU7/ePM1 70% Set of 2 pcs. filter Str. 1137x565x24 mm
02-717A	Cassette filter M5/ePM10 55% Set of 2 pcs. filter Str. 1137x565x24 mm

Appendix

Alarm No:	Alarm text	Alarm type	Auto reset	Aggregat stop	Troubleshooting
1	Fire alarm	A			Digital input "Fire alarm" open.
2	External fire thermostat alarm	A		*	Digital input "External fire thermostat" open.
3	Internal fire alarm	A		*	Supply air / exhaust air temperature values is above the specified limits.
4	External stop	B	*		Digital input "External stop" open.
9	Filter monitor flow compensation not calibrated	B	*		Pressure reference for filter not completed. Alarm shown after 20 min.
10	Handset: No communication	B	*		Handterminal not connected, bus cable failure.
11	FanIO 1: no communication	A	*	*	FanIO not connected to bus in FanIO socket A, Error in bus cable, FanIO DIP switch position is wrong
12	FanIO 2: no communication.	A	*	*	FanIO not connected to bus in FanIO socket A, Error in bus cable, FanIO DIP switch position is wrong
20	Temperature sensor fault: Supply	B	*		Supply sensor disconnected/short-circuited, Sensor not configured for a temperature input
21	Temperature sensor fault: Extract	B	*		Extract sensor disconnected/short-circuited, Sensor not configured for a temperature input
22	Temperature sensor fault: Room	B	*		Room sensor disconnected/short-circuited, Sensor not configured for a temperature input
23	Temperature sensor fault: Exhaust	B	*		Exhaust sensor disconnected/short-circuited, Sensor not configured for a temperature input
24	Temperature sensor fault: Outside	B	*		Outside sensor disconnected/short-circuited, Sensor not configured for a temperature input
25	Temperature sensor fault: Return water	A	*	*	Return water sensor disconnected/short-circuited, Sensor not configured for a temperature input
26	Temperature sensor fault: Heat recovery	B	*		Heat recovery sensor disconnected/short-circuited, Sensor not configured for a temperature input
27	Pump alarm, heating	B	*		Digital input "Heating battery error" open, Alarm from circulation pump.
28	Frost alarm, water Heater	A		*	Low water temprature, circiulation pump malfunction, low outdoor temperature
30	Inlet frequency conv.: Low supply voltage (Vlo)	B			Low supply voltage
31	Inlet frequency conv.: High supply voltage (Vhi)	B			High supply voltage
32	Inlet frequency conv.: High output current (Ihi)	B			Motor or cable shortcircuit, Motor blocked, Wrong motor type
33	Inlet frequency conv.: High temperature (Thi)	B			High ambient temperature, frequency converter overload.
34	Inlet frequency conv.: Lacking supply phase	B			Supply voltage is missing a phase
35	Inlet frequency conv.: High internal ripple voltage	B			Supply voltage unstable, Frequency converter overload
37	Frequency converter alarm, Supply	B			Digital input " Frequency converter alarm, Supply " open
38	Filter, Supply	B			Supply filter pressure drop to high, dirty filter
39	FanIO 1: +24V DC overloaded	A		*	24V DC from FanIO 1 terminal 14,16,18 short circuit, consumption from FanIO 1 is greater than 0,6A.
41	Exhaust frequency conv.: High supply voltage (Vhi)	B			High supply voltage, braking time is to short
42	Exhaust frequency conv.: High output current (Ihi)	B			Motor or cable shortcircuit, Motor blocked, Wrong motor type
43	Exhaust frequency conv.: High internal temperature	B			High ambient temperature, frequency converter overload.
44	Exhaust frequency conv.: Lacking supply phase	B			Supply voltage is missing a phase
45	Exhaust frequency conv.: High internal ripple voltage	B			Supply voltage unstable, Frequency converter overload
47	Frequency converter alarm extract	B			Digital input " Frequency converter alarm, Extract " open
48	Filter, extract	B			Extract filter pressure drop to high, dirty filter

49	FanIO 2: +24V DC overloaded	A	*	24V DC from FanIO 2 terminal 14,16,18 short circuit, consumption from FanIO 2 is greater than 0,6A.
58	Frost alarm, heat exchanger	B		Exhaust temperature below frost limit, although By-pass damper is fully open.
60	Low supply temperature	B		Supply temperature has been 5 C° too low for more than 10 minutes. Not enough heat available, low outside temperature.
61	High inlet temperature	B		Supply temperature has been 5 C° too high for more than 10 minutes. Not enough cooling available, high outside temperature.
62	Low extract temperature	B		Extract temperature has been 5 C° too low for more than 20 minutes. Max supply temperature too low, airvolume too low.
63	High extract temperature	B		Extract temperature has been 5 C° too high for more than 20 minutes. Max supply temperature too high, airvolume too low.
65	Heating cut out due to low air volume	B	*	Output too heating coil reduced.
66	Electric battery: overheating alarm	B		Heating coil overheated.
70	High CO2	B	*	CO2 level too high for more than 20 minutes. Min. Supply temperature too high. airvolume too low.
71	Low supply air volume	B		Supply air volume 10% too low for more than 10 minutes.
72	High supply air volume	B		Supply air volume 10% too high for more than 10 minutes.
73	Low extract air volume	B		Extract air volume 10% too low for more than 10 minutes.
74	High extract air volume	B		Extract air volume 10% too high for more than 10 minutes.
75	Low inlet air pressure	B		Supply pressure 10% too low for more than 10 minutes.
76	High inlet air pressure	B		Supply pressure 10% too high for more than 10 minutes.
77	Low exhaust air pressure	B		Extract pressure 10% too low for more than 10 minutes.
78	High exhaust air pressure	B		Extract pressure 10% too high for more than 10 minutes.



GEOVENT

HOVEDGADEN 86 • DK-8831 LØGSTRUP
(+45) 8664 2211 • salg@geovent.dk