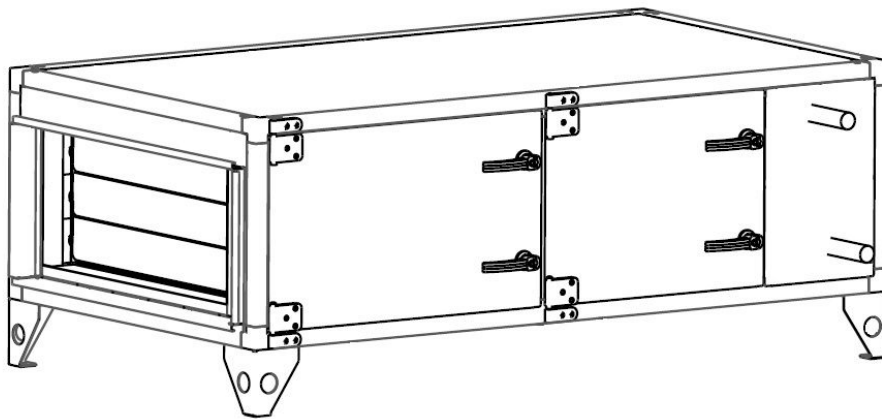


# DVCompact Supply Unit



## **GB** Operation and Maintenance Instructions

## Contents

1 Warnings.....	1
2 Product Description.....	2
2.1 Component description EL and HW units .....	2
2.2 Description of Internal components.....	2
2.2.1 Supply air Fan .....	2
2.2.2 Supply air Filter.....	3
2.2.3 Temperature sensors.....	3
2.2.4 Heater Battery .....	3
3 Interface description.....	3
3.1 Control panel .....	3
3.1.1 Operating the Control panel.....	4
4 Maintenance.....	5
4.1 Important .....	5
4.2 Maintenance Intervals.....	5
4.3 Maintenance Instructions .....	6
4.3.1 Changing Supply air filter.....	6
4.3.2 Checking the Fan.....	6
4.3.3 Checking the Hot water heating battery .....	6
4.3.4 Checking the Frost protection .....	6
4.3.5 Checking the Electrical heating battery.....	6
4.3.6 Checking the Water cooling battery .....	6
4.3.7 Changing the Internal Battery .....	7
5 Troubleshooting .....	8
5.1 Alarms .....	8
6 Service.....	9

# 1 Warnings

The following admonitions will be presented in the different sections of the document.

## **Danger**

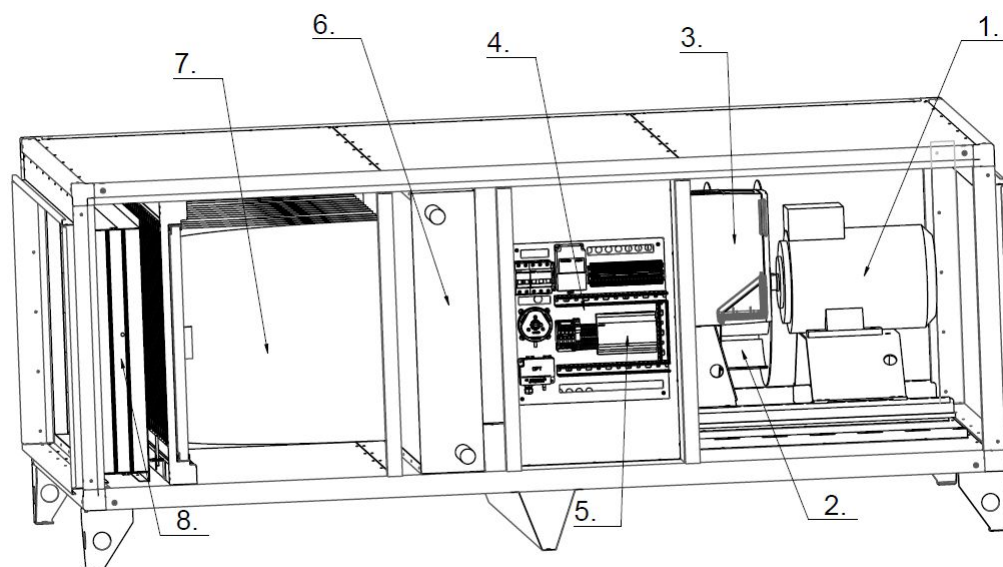
- Make sure that the Mains supply to the unit is disconnected before performing any maintenance or electrical work!
- All electrical connections must be carried out by an authorized installer and in accordance with local rules and regulations.

## **Warning**

- Although the Mains supply to the unit has been disconnected there is still risk for injury due to rotating parts that have not come to a complete standstill.
- Beware of sharp edges during mounting and maintenance. Use protective clothing.
- This product is not intended to be used by children or people with reduced physical or mental ability or lack of experience and knowledge, if no instruction concerning the use has been given by the person responsible for their safety or that this person is supervising the operation. Children should be supervised so that they can not play with the product.

## 2 Product Description

### 2.1 Component description EL and HW units



**Fig. 1 Components EL/HW units**

**Table 1: Component descriptions EL and HW units**

Position	Description
1	Fan motor, supply air
2	Fan impeller, supply air
3	Frequency converter, supply air
4	Electrical connection box
5	Controller
6	Heater
7	Filter, supply air
8	Damper, supply air

## 2.2 Description of Internal components

### 2.2.1 Supply air Fan

The fan and motor in the smaller units mounted on vibration dampers and can be taken out for service and maintenance. Dust and dirt can build up on the impeller which can create imbalance and vibration. The impeller should be checked annually and cleaned when necessary. At the same time vibration dampers should be checked. Damaged vibration dampers must be replaced.

The drive motor has permanently lubricated bearings that should not be greased.

### 2.2.1.1 Pressure transmitter Fan

Built in pressure transmitters maintain the airflow at a constant level by measuring the differential pressure over the inlet cone of the fan impeller. In DVCompact Supply unit with control system the pressure transmitter is installed from factory in all units with CAV control. In VAV units pressure sensors will be delivered loosely with the unit to be mounted in the supply air duct, see "Installation instructions" for more information concerning VAV installations. The built in pressure transmitter will then work as monitor of the actual airflow.

## 2.2.2 Supply air Filter

The filters are of bag filter type with filter quality G4, M5, M6, or F7 for the supply air filter. The filters need to be replaced when polluted. New sets of filters can be acquired from your installer or wholesaler.

### 2.2.2.1 Pressure guard filter

A pressure guard measures the differential pressure over the supply air filter. When the pressure drop reaches the set value an alarm is triggered in the main regulator. The differential pressure can be set between 40 and 300 Pa. The pressure switch is preset from factory to 200 Pa.

## 2.2.3 Temperature sensors

2 temperature sensors (PT1000) are included in the unit from factory:

- Supply air sensor
- Outdoor air sensor

In DVCompact Supply unit with control system all temperature sensors are mounted and wired inside the unit. The supply air sensor is wired to terminals in the electrical connection box and is placed loosely delivered inside the unit in a cardboard box. The sensor needs to be installed in the supply air duct externally from the unit. See "Installation instructions" for more detailed information.

## 2.2.4 Heater Battery

The units are delivered without re-heater battery as standard.

Re-heater batteries (water or electric) can be acquired as accessories. The heater batteries are installed externally from the unit on the supply air connection. Pumps, valve actuators and frost protection sensors are wired to terminals inside the electrical connection box. More information concerning electrical connections are found in the "Installation instructions" and enclosed wiring diagram.

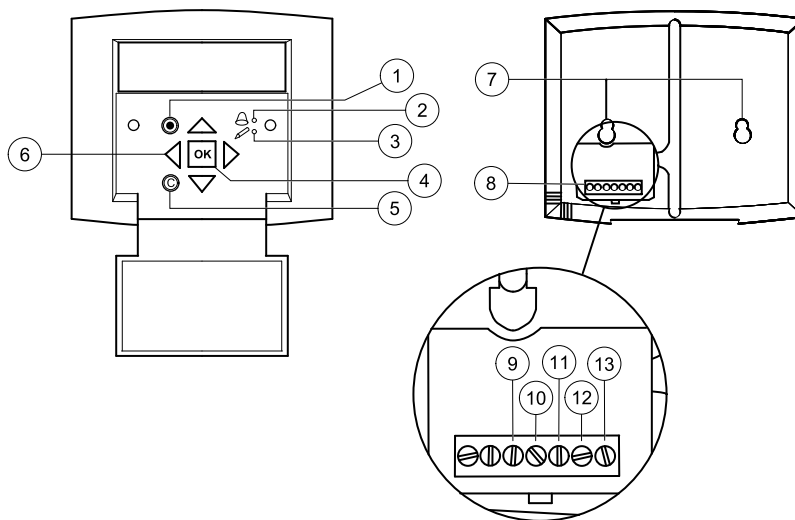
# 3 Interface description

## 3.1 Control panel

The SCP control panel is delivered with a 10 m cable that is connected to the panel and with a fast coupling contact, connected to the DVCompact unit. The contact is connected to the **Corrigo** controller in the electrical connection box. The cable can be unscrewed in the back of the control panel (figure 2).

General information is shown in figure 2.

### 3.1.1 Operating the Control panel



**Fig. 2 The control panel**

Position	Explanation
1	Alarm button: Gives access to the alarm list
2	Alarm LED: Indicates alarm by flashing red light
3	Write LED: Indicates by flashing yellow light that parameters can be set or changed
4	OK button: Press this button to be able to change or set parameters whenever possible. Also used to move between changeable parameters in one dialogue window frame
5	Cancel button: Used to abort a change and return to the initial setting
6	Right/Left & Up/Down buttons: Used to move up, down, left & right in the menu tree. Up/Down buttons are also used to increase or decrease values when setting or changing parameters
7	Mounting holes
8	Connection block
9	Connection to yellow cable
10	Connection to orange cable
11	Connection to red cable
12	Connection to brown cable
13	Connection to black cable

#### 3.1.1.1 Navigating the Menus

The start display (the display normally shown) is at the root of the menu tree. Pressing DOWN will move you through the menu options. UP will move you back through the options. To enter a higher menu level, use UP or DOWN to place the cursor at the menu you wish to access and press RIGHT. If you have sufficient log on privileges the display will change to the menu you have chosen.

At each level there may be several new menus which you move through using UP/DOWN. Sometimes there are further sub menus linked to a menu or menu item. This is indicated by an arrow symbol at the right-hand side of the display. To enter a menu, press RIGHT again. To step back to previous menu level, use LEFT.

## 4 Maintenance

### 4.1 Important

#### **Danger**

- Make sure that the Mains supply to the unit is disconnected before performing any maintenance or electrical work!
- All electrical connections must be carried out by an authorized installer and in accordance with local rules and regulations.

#### **Warning**

- Although the Mains supply to the unit has been disconnected there is still risk for injury due to rotating parts that have not come to a complete standstill.
- Beware of sharp edges during mounting and maintenance. Use protective clothing.

### 4.2 Maintenance Intervals

The table below shows recommended maintenance intervals for the unit and the installation. To ensure a long operation lifetime for the unit it is important to perform maintenance according to below recommendations and that they are performed according to the operation and maintenance instructions. A thorough and recurrent maintenance is a must for a valid guarantee.

Type of maintenance	Every 3 months	Once a year	When necessary
<b>Unit</b>			
<ul style="list-style-type: none"> <li>• Cleaning the unit</li> <li>• Inspection of seals and locks</li> </ul>		X	
<b>Fan</b>			
<ul style="list-style-type: none"> <li>• Cleaning the fan</li> <li>• Inspection of vibration dampers and flexible connections</li> </ul>		X	
<b>Re-heater battery</b>			
<ul style="list-style-type: none"> <li>• Venting</li> <li>• Checking the status of the battery</li> <li>• Inspection of the over heat protection thermostat (EL battery)</li> </ul>		X	
<b>Cooling battery</b>			
<ul style="list-style-type: none"> <li>• Venting</li> <li>• Cleaning the drain pan</li> <li>• Checking the status of the battery</li> <li>• Inspection of the droplet separator</li> </ul>		X	
Cleaning supply air diffusers			X
Cleaning the outdoor air intake		X	
Cleaning the duct system			X <sup>1</sup>

1. Or in accordance with local rules and regulations

## 4.3 Maintenance Instructions

### 4.3.1 Changing Supply air filter

The bag filter cannot be cleaned and must be changed when necessary. New filters can be ordered from Systemair. Operation time between filter changes depends on the air pollution at the installation site. A differential pressure switch indicates when it's time to change the filters. This will trigger an alarm in the control panel.

When this occurs do the following:

1. Replace the filters with new ones as described below
2. Acknowledge the alarm by pressing the red button on the control panel (pos.1 figure 2) followed by OK (pos.4 figure 2)
3. Choose →Acknowledge by pressing OK

### 4.3.2 Checking the Fan

Even if the required maintenance, such as change of filters, is carried out dust and grease may slowly build up inside the fans. This will reduce the efficiency.

The fans may be cleaned with a cloth or a soft brush. Do not use water. White spirit can be used to remove obstinate settlements. Allow drying properly before remounting.

The fan motor bearings are life time lubricated and should not be re-greased.

### 4.3.3 Checking the Hot water heating battery

After long periods of operation (usually several years) dust may have deposited on the surface of the battery. This may reduce batteries capacity. The battery can be cleaned with a pressure washer with misting jets, or with compressed air. Cleaning should be carried out carefully so as not to damage the batteries aluminium fins. Once a year the battery water circuit needs to be vented to maintain the batteries capacity.

### 4.3.4 Checking the Frost protection

The frost protection function needs to be tested at least once a year, before winter. Cool down the frost protection sensor until the alarm message appears on the control panel. Check that the protection sequence behaves correctly: Fans should be stopped, dampers should be closed and the water valve should open completely.

### 4.3.5 Checking the Electrical heating battery

After long period of time dust and pollutants can build up on the heating rods. This can cause unpleasant odors and in the worst case fire. Clean with compressed air, vacuum or brush. The heating power can be measured, in the electrical connection box, before the heating season. By large discrepancies each rod needs to be measured . The automatic safety function needs to be tested and verified.

### 4.3.6 Checking the Water cooling battery

Drain pan under the battery, and its condensate drain and trap, should be cleaned once a year. If a droplet separator is mounted, it should be checked annually and cleaned when necessary.



## 4.3.7 Changing the Internal Battery

### Note:

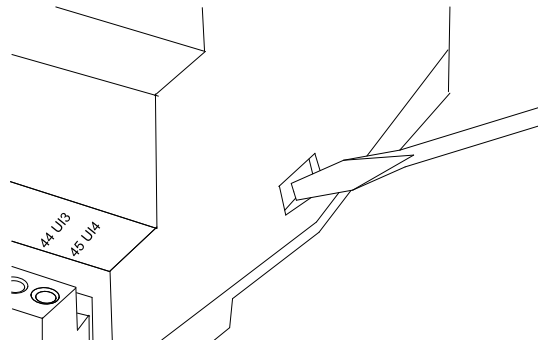
This procedure requires knowledge of proper ESD protection; i.e. an earthed wristband must be used!

When the alarm "Internal Battery" is activated and the battery LED lights up red, the battery for backup of program memory and real-time clock has become too weak. The battery is replaced as described below. A backup capacitor saves the memory and keeps the clock running for at least 10 minutes after the power supply is removed. Therefore, if the battery replacement takes less than 10 minutes, there will be no need to reload the program, and the clock will continue to run normally.

The replacement battery must be of the type CR2032.

**1**

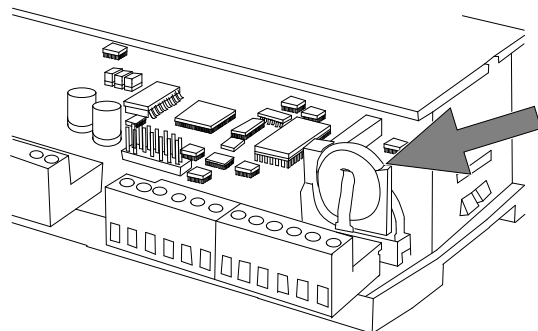
Remove the cover by pressing down the locking torques at the edge of the cover using a small screwdriver, and at the same time pulling the edges outwards.



**2**

Grip the battery firmly with your fingers and lift it upwards until it rises from its holder.

Press the new battery firmly down into place. Note that to preserve correct polarity, the battery can only be inserted the "right way round".



## 5 Troubleshooting

Should problems occur, please check or correct the following before contacting your service representative. Always check if there are any alarms active in the control panel.

### 1. Fan(s) do not start

- Check if there are any alarm messages
- Check that the fuses are not defect
- Check the settings in the control panel (times, week schedule, auto/manual operation etc.)

### 2. Reduced airflow

- Check the settings for medium and low fan speed
- Check that the outdoor/exhaust air damper (if used) opens
- Check if filters need changing
- Check if diffusers and louvres need cleaning
- Check diffuser/louvre openings
- Check if fans and exchanger block need cleaning
- Check if the roof unit or air intake is clogged
- Check ducts for visible damage and/or build up of dust/pollution

### 3. Cold supply air

- Check the control temperature on the control panel
- Check if the overheating thermostat has tripped. If necessary reset the manual overheat protection situated on the electrical heater frame
- Check if the extract filter needs to be changed
- Check if the fans have stopped due to overheating. If so the thermal contact might have tripped (shows as `Fan alarm` in the control panel)

### 4. Noise/vibrations

- Check that the unit is completely levelled
- Clean the fan impellers
- Check that the screws holding the fans are tightened properly
- Check anti vibration pads and flexible connections

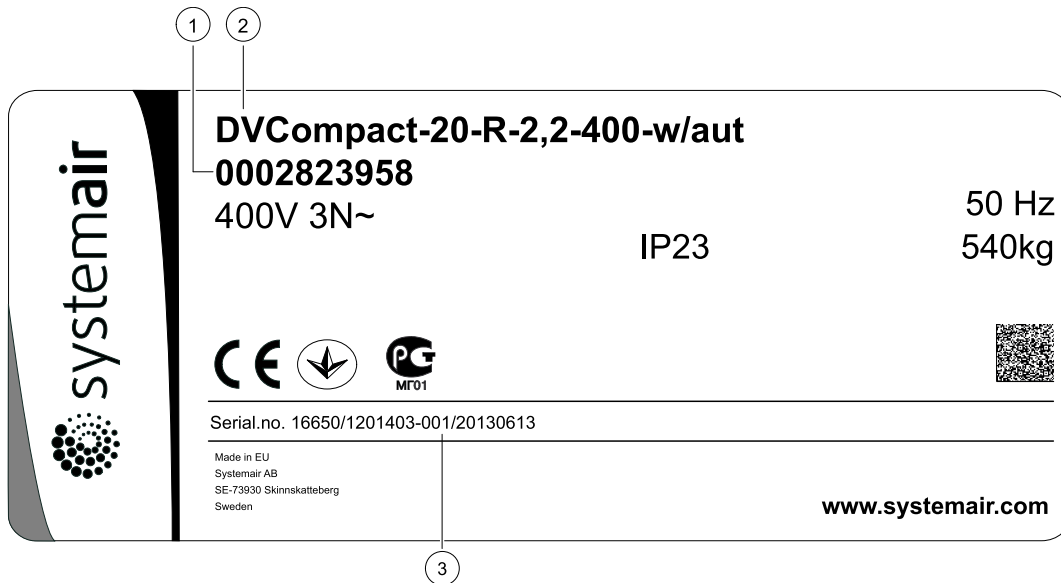
## 5.1 Alarms

The alarm button (pos. 1, figure 2) opens the alarm queue. When pressing this button active and non-acknowledged alarms will be displayed in the menu window. The alarm-LED (pos. 2, figure 2) is flashing if there are non-acknowledged alarms and steady if the alarms are still active but have been acknowledged. If there are multiple alarms, use UP/DOWN to move between them. An alarm can be acknowledged or blocked by using OK and UP/DOWN. To abort and go back to start menu press cancel and then press LEFT.

See Commissioning record for an overview of possible alarms.

## 6 Service

Before calling your service representative, make a note of the specification and production number from the type label (figure 3)



**Fig. 3 Type label**

Position	Description
1	Order number
2	Product code (product specification)
3	Item number/production number/consecutive number/date

Systemair AB reserves the right to make changes and improvements to the contents of this manual without prior notice.



Systemair AB  
Industrivägen 3  
SE-739 30 Skinnkatteberg, Sweden

Phone +46 222 440 00

Fax +46 222 440 99

[www.systemair.com](http://www.systemair.com)