Installation Instructions

HEAT-RECOVERY-UNIT

CWL - 180 Excellent

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Standards and regulations

Standards

For the Comfort domestic ventilation units of CWL Excellent series, check the following standards and requirements:

- EC Directive 2004/108/EC on the approximation of the laws of Member States relating to electromagnetic compatibility (EMC Directive)
- EC Directive 2006/95/EC relating to electrical equipment designed for use within certain voltage limits (Low Voltage Directive)
- EC Directive 2011/65/EU on the restriction of use of certain hazardous substances in electrical and electronic equipment (RoHS Directive)
- DIN EN 12100/1+2 Safety of machinery; general design principlese
- DIN EN ISO 13857 Safety of machinery safety distances
- DIN EN 349 Safety of machinery; minimum gaps
- VDE 0700/500 Safety of electrical appliances for household and similar purposes
- EN 60335/1 EN 60730 Safety of electrical appliances; general requirements
- EN 6100 Electromagnetic compatibility

For the planning and execution of a controlled ventilation following standards and regulations must be observed:

EN 12792	Ventilation Technology, terminology and symbols
DIN EN 13779	Ventilation Technology; Health Technical Requirements
DIN 1946-6	Ventilation Technology, ventilation of apartments
DIN 1946-10	Ventilation Technology, ventilation of apartments
DIN 4719	Residential ventilation - Requirements, testing and marking of performance ventilation devices
DIN 18017-3	Ventilation of bathrooms and toilet rooms without outside windows with fans
DIN EN 832	Thermal performance of buildings; calculation of heating energy needs - residential building
VDI 2071	Heat recovery ventilation systems
VDI 2081	Noise generation and noise reduction in ventilation systems
VDI 2087	Air duct systems - bases
VDI 3801	Operation of ventilation systems
VDI 6022	Hygienic standards for ventilation systems
EnEV	Energy Saving Regulation

These instructions must be kept available as a part of the unit supplied!

Explanation markers

General information

These service instructions are only applicable to CWL-180 180 Excellent

Authorised personnel should read these instructions before any commissioning: or maintenance work.

Observe the instructions given in this document. Installation, commissioning: and maintenance work must only be carried out by trained personnel.

These instructions should be considered an integral part or the unit supplied, and should always be easily accessible.

Failure to observe these installation and service instructions voids any Wolf GmbH, warranty.

Reference symbols

The following symbols are used in this instruction manual. This important information concerns personal as well as operational safety."

"Safety instructions" are instructions which you must follow exactly, to prevent risks or injuries to individuals, and damage to the unit.

Danger through 'live' electrical components!Please note: Turn off the ON/OFF switch before removing the casing.Never touch electrical components or contacts when the ON/OFF switch is in the ON position. This would lead to a risk of electrocution that may lead to injury or death.The main supply terminals are 'live' even when the ON/OFF switch is in the OFF position.

Please note

"Please note" designates technical instructions which you must observe to prevent the unit malfunctioning or being damaged.

Safety instructions

Only qualifiedand trained personnel may be appointed for the installation, commissioning, servicing and operation of the unit.

Electrical installation and repair work on electrical components may only be carried out by qualified electricians.

Only qualified electricians are permitted to work on the electrical systemVDE regulations [or local regulations] and those of your local power supply utility are applicable to electrical installation work.

The CWL -180 Excellent ventilation unit must only be operated within the power range that is specified in the technical documentation supplied by the wolf.

Safety and monitoring equipment must not be removed, bypassed or put out of operation in other ways.

Only operate the unit when it is in perfect technical condition. Any faults or damage which impact or might impact upon the safety or correct function of the unit must be remedied immediately by qualified personne
In this case shut off the appliance immediately to prevent further use.

Intended use

The CWL-180 Excellent ventilation unit is a central ventilation system with integrated heat recovery for ventilation and venting of one or more rooms in apartments and houses.
With this device, the used air is extracted from the kitchen, bathroom and toilet, filtered and removed from the heat transported through the heat exchanger into the open.
At the same time fresh outside air is sucked in, cleaned by an air filter, heated by the heat exchanger and supplied to areas such as living room, bedroom and nursery.

Explanation markers

Determining the proper use

The intended use of the device includes the exclusive use for ventilation purposes.
Only air may be displaced
The unit must only be permitted to handle air. This air must not contain any harmful, combustible, explosive, aggressive, corrosive or otherwise dangerous substances, as these would be distributed throughout the duct system or building, where they could cause a risk to health of, or even kill the occupants, animals or plants living there.

Exhaust ventilation systems such as Hoods, laboratory extractors, vacuum systems, etc. must not be connected to the device.
These exhaust systems have to be operated separately.

Installation site

The device may only be installed in a frost-protected area.
The device must be mounted horizontally.
The site is so determined that sufficient condensate drain can be guaranteed.
The device must not be in the immediate vicinity of flammable liquids and gases, or in places with high humidity (eg swimming pools) or chemical attack aggressively modified installed.
For maintenance, a space of 70 cm in front of the appliance is required.

Operating instructions

Let instruct you on the operation by which the practitioner is responsible for the installation of the device and its control.

Do not make any changes to the device.

Change at longer periods of standstill for hygiene reasons, the filter before being used again.

In homes with ventilation systems subject to open flue combustion equipment of DIN 1946-6.

Maintenance

Check the unit periodically for function, damage and dirt.

During maintenance, disconnect the appliance from the mains and secure it against accidental reconnection.

Only replace faulty components and equipment with original WOLF spare parts.
Any modification of the appliancee and when NOT using original Wolf spare parts, the warranty claim against the company Wolf goes out.

Disposal

For the disposal of faulty system components or the system and recycling at the end of the product service life, observe the following information: Dispose of all equipment in accordance with applicable regulations, i.e. separate material groups correctly. The aim should be the maximum possible recycling of basic materials with the least environmental impact. Never throw electrical or electronic scrap into the household waste, but recycle it appropriately. Generally, dispose of materials in the most environmentally responsible manner according to environmental, recycling and disposal standards.

1. Delivery

1.1 Scope of delivery

Before starting installation of the heat recovery appliance, check that it has been supplied complete and undamaged.

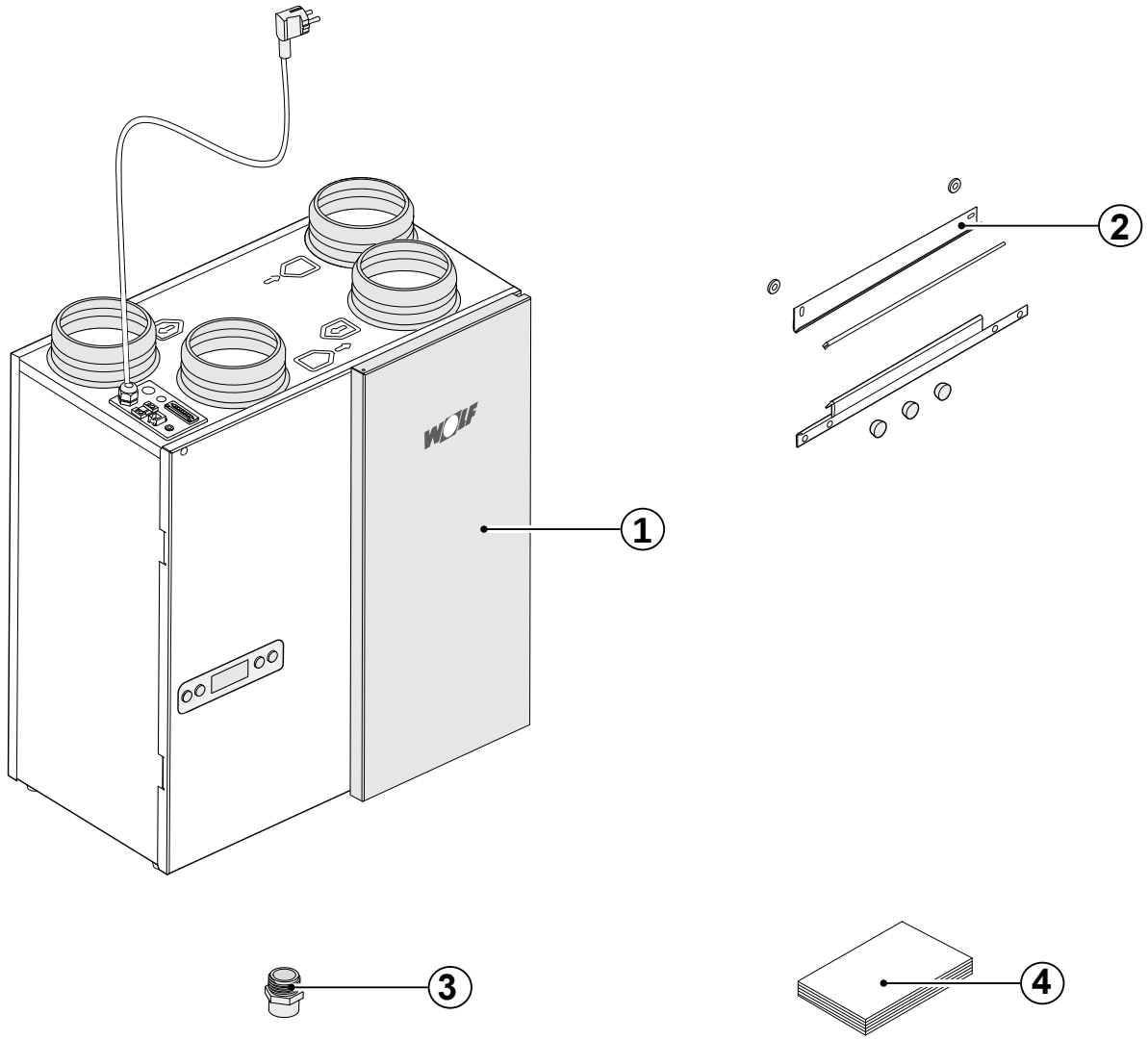
The scope of delivery of the heat recovery appliance type CWL-180 Excellent includes the following components:

① Heat recovery appliance typeCWL-180 Excellent

② Wall mounting bracket kit containing:
- 2 x suspension strips
- 3x protective caps
- 1 x rubber strip
- 2 x rubber rings
- 1 x mounting instructions

③ PVC condensate discharge connection containing:
- 1x PVC insert expanding liner 1.5” x 20 mm

④ Documentation set consisting:
- 1 x installation instructions
- 1 x occupants instructions



2. Application

The CWL-180 Excellent is a heat recovery ventilation appliance with an efficiency of 95%, a maximum ventilation capacity of 180 m^3 /h and low-energy fans.
Characteristics CWL-180 Excellent:

- steplessly adjustable air flowrates through a control panel;
- filter indication on the appliance and the possibility for filter indication on the multiple switch;
- a completely new intelligent frost protection system which ensures that also at low outdoor temperatures the appliance's performance remains optimal and that, if necessary, it activates the optional preheater;
- low sound level;
- comes as standard with automatic bypass function
- constant flow control;
- low energy consumption
- high efficiency

An extension kit is optionally available for the CWL-180.

The CWL-180 Excellent with extension kit has more connection possibilities than the standard CWL-180 Excellent.

These installation instructions describe both the standard CWL-180 Excellent and the CWL-180 Excellent with extension kit.

The CWL-180 Excellent -with or without extension kit- is available in a left-handed or right-handed version. A left-handed version has the filters on the left behind the filter door; a right-handed version has the filters on the right behind the filter door. The position of the air ducts differs for these two versions! For the correct position of the connection ducts and dimensions see §3.3.1 or §3.3.2 respectively.

When ordering an appliance, always state the correct type; subsequent conversion to a different version is not possible.

The CWL-180 Excellent comes ready to plug in with a 230 V mains plug and a connection for a low-voltage multiple switch on the outside of the appliance.

Remark When using hearths with open combustion air and ventilation systems and equipment that extract air from the rooms where they are placed.

Observe local regulations.
Assess this in the design stage.

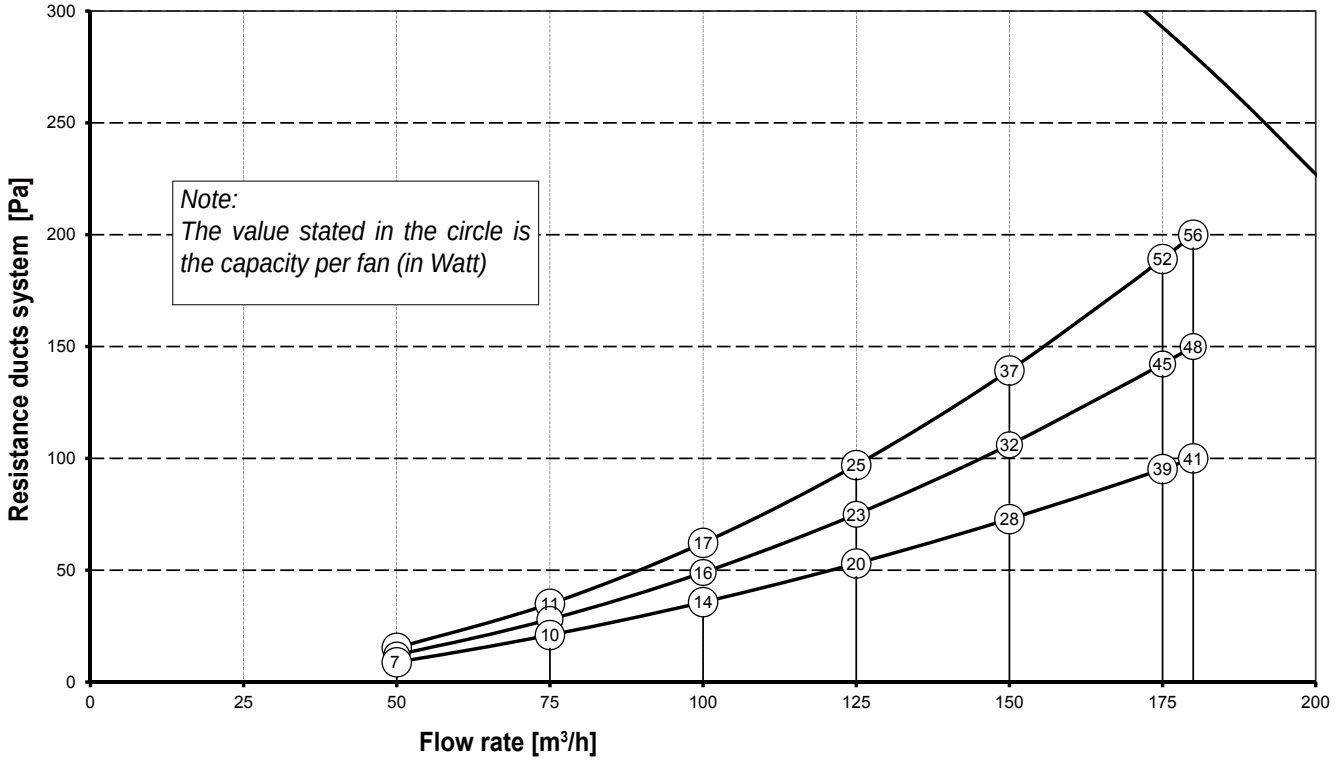
3.1 Technical information CWL- 180 Excellent

	CWL-180 Excellent			
Supply voltage [V/Hz]	230/50			
Protection degree	IP30			
Dimensions (w x h x d) [mm]	560 x 600 x 315			
Duct diameter [mm]	Ø 125			
External diameter condensate discharge [mm]	Ø 20			
Weight [kg]	25			
Filter class	G4			
Fan setting (factory setting)		1	2	3
Ventilation capacity [m³/h]	50	75	100	150
Permissible resistance ducts system [Pa]	9 - 15	21 - 35	36 - 62	73 - 139
Rated power [W]	13 - 14	20 - 22	28 - 34	56 - 74
Rated current [A]	0,12 - 0,14	0.19- 0.20	0.26 - 0.29	0.51 - 0.62
Max. rated current [A]	1.48			
Cos φ	0.44 - 0.48	0.45 - 0.49	0.47 - 0.51	0.48 - 0.52

Sound power CWL-180 Excellent				
Ventilation capacity [m³/h]		**75**	**100**	**150**
Sound power level Lw (A)	Static pressure [Pa]	40	80	160
	Housing emission [dB(A)]	32	39	48
	Duct “to dwelling” [dB(A)]	31	37	45.,5
	Duct “to dwelling” [dB(A)]	49	56	66

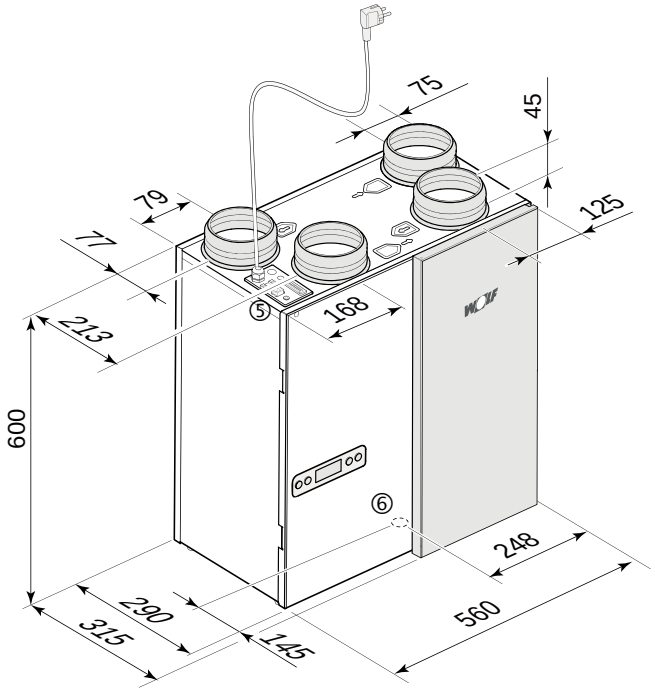
In practice, the value may deviate 1 dB(A) as a result of measuring tolerances.

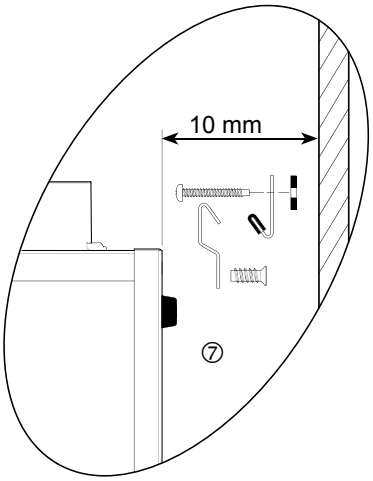
3.2 Fan graph CWL-180 Excellent



3.3 Connections and dimensions CWL-180 Excellent

3.3.1 CWL-180 Excellent, right-handed version

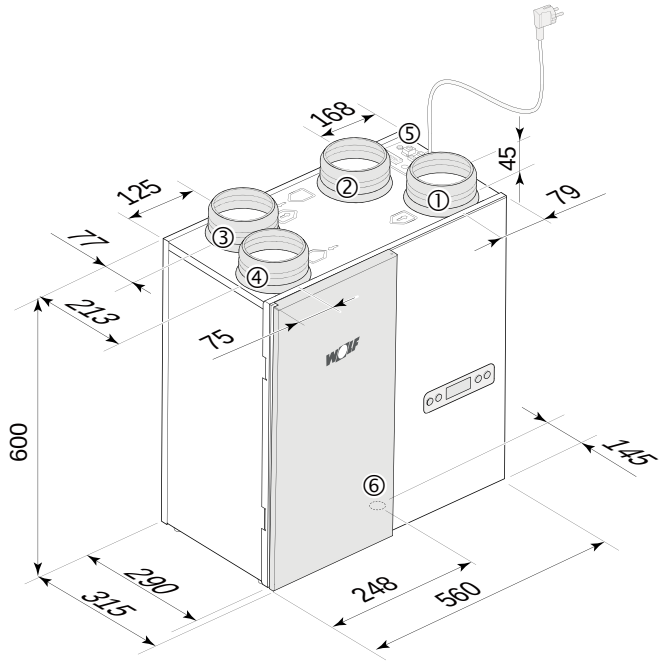




Wall mounting kit
The kit comes with mounting instructions.

CWL-180 Excellent right-handed 4/0

3.3.2 CWL-180 Excellent, left-handed version



1 = To dwelling

2 = To atmosphere

3 = From dwelling

4 = From atmosphere

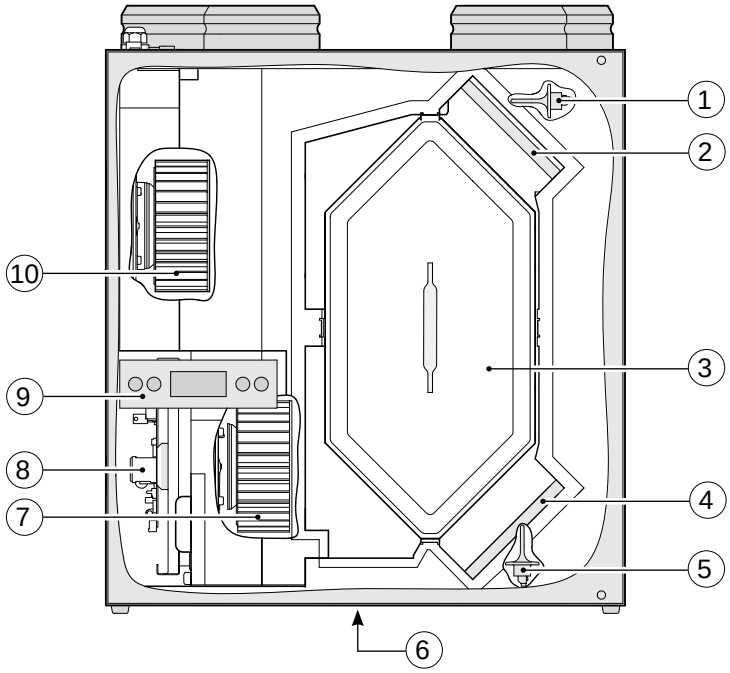
5 = Electric connections

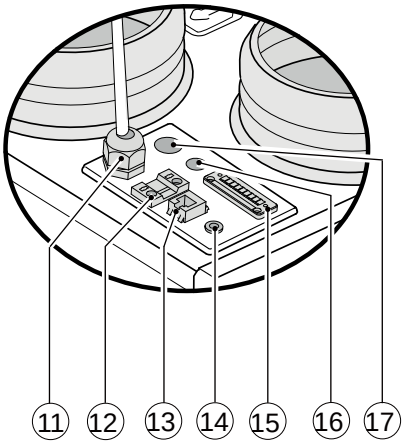
6 = Connection condensate discharge

7 = Wall mounting bracket (note the correct position of the rubber strip, washers and caps)

CWL-180 Excellent left-handed 4/0

3.4 Exploded view appliance





Connections top appliance

1	Indoor temperature sensor	Measures the dwelling exhaust air temperature
2	Exhaust air filter	Filters air flow from dwelling
3	Heat exchanger	Ensures heat transfer between supply and exhaust air
4	Supply air filter	Filters outdoor air supplied to the dwelling
5	Outdoor temperature sensor	Measures outdoor air temperature.
6	Condensate discharge	Connection condensate discharge
7	Exhaust fan	Discharges air from the dwelling to the atmosphere.
8	Control board	Contains the control electronics for the functions.
9	Display and 4 control buttons	Interface between user and control electronics.
10	Supply fan	Feeds fresh air into the dwelling.
11	Mains cable 230 V	Gland power cable 230 V
12	eBus connection	Two-pole screw connector for eBus connection
13	Modular connector multiple switch	Connections to multiple switch, optionally with filter indicator.
14	Service connector	Computer connection for service purposes.
15	Connector 9-pole	contains the various control inputs and outputs; only with extension kit
16	Extra gland	For instance for cable to RH (humidity) sensor
17	Extra gland	For instance for 230 V cable to preheater or postheater; only with extension kit

4.1 Description

The appliance comes plug and play and operates fully automatically. The exhaust air from indoors heats up the fresh, clean outdoor air. That saves energy and fresh air is sent to the required rooms.
The control system has four ventilation modes.

Dependent on the connected multiple switch, 3 or 4 ventilation modes can be used. The air flowrate can separately be adjusted for each ventilation mode. The constant volume control system ensures that the air flowrate of the supply and exhaust fans is realised independent of the duct pressure.

4.2 Bypass function preconditions

The appliance features a bypass function.
When the bypass function preconditions are satisfied, the supply fan will be switched off. That way the warm indoor air is carried off.
When the bypass function preconditions are no longer satisfied, the supply fan switches on again.

The bypass function is or is not active dependent on a number of preconditions(refer to the table below for the bypass function preconditions).
The operation of the bypass function can be adjusted using step number 5, step number 6 and step number 7 in the settings menu (see chapter 13).

Bypass function preconditions	
Bypass function active	- The outdoor temperature is higher than 10°C **and** - the outdoor temperature is lower than the indoor temperature in the dwelling **and** - the temperature in the dwelling is higher than the temperature set at step no. 5 in the settings menu (set as standard at 22°C)
Bypass function not active	- The outdoor temperature is lower than 10°C **or** - the outdoor temperature is higher than de indoor temperature in the dwelling **or** - the temperature from the dwelling is higher than the temperature set at step no. 5 in the settings menu minus the preset temperature at hysteresis (step no. 6); the factory setting for this temperature is 20°C (22.0°C minus 2.0°C).

4.3 Frost safety

To prevent freezing of the heat exchanger at extremely low outdoor temperatures, the CWL-180 Excellent features intelligent frost control. Temperature sensors measure the temperatures across the heat exchanger and, if an optional preheater is installed, it will be switched on when required.

That guarantees a proper ventilation balance, also at very low outdoor temperatures. If, with switched on preheater, the exchanger temperature still starts to drop below zero, stepless unbalance is created in the appliance.

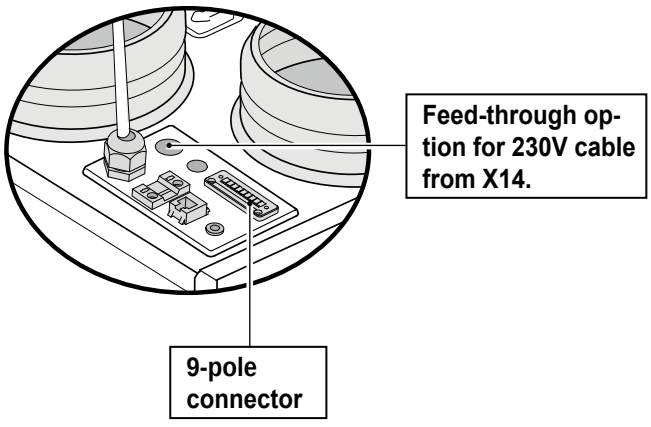
4.4 CWL-180 Excellent with extension kit

In addition to the standard version, the CWL-180 Excellent is also available with extension kit. This version has more connection options for various applications.

Only the version with extension set is equipped with a 9-pole connector (connected to X15 on control board) that is accessible from the outside of the appliance.

If a post heater or optional preheater is connected to connector X14 (accessible after opening the front panel) the 230 V cable to be connected here by the installer, must be routed out of the appliance. Use a gland with strain reliever (not supplied with the appliance).

See § 11.1 for more information on the connection possibilities of connectors X14 and X15, when a CWL-180 Excellent is equipped with an extension kit.



5. Installation

5.1 Installation general

Installing the appliance
1. Placing the appliance (§5.2)
2. Connecting the condensate discharge (§5.3)
3. Connecting the ducts (§5.4)
4. Electric connection:
   Connecting the mains power (§ 5.5.1, multiple switch (§ 5.5.2) and, if necessary, the eBus connection (§ 5.5.3).

Installation must take place under:

- Regulations for ventilation of dwellings and residential buildings
- The safety regulations for low-voltage installations
- The regulations for connection to interior sewers in dwellings and residential buildings
- Any additional regulations of the local utilities
- The installation, operating and maintenance manual CWL-180 Excellent

5.2 Placing the appliance

The CWL-180 Excellent can directly be mounted to the wall using the suspension brackets supplied for that purpose. For a vibration-free result the appliance must be mounted to a solid wall with a minimum mass of 200 kg/m^2 . A gypsum block or metal stud wall does not suffice! Additional measures such as double panelling or extra studs are required in that case.

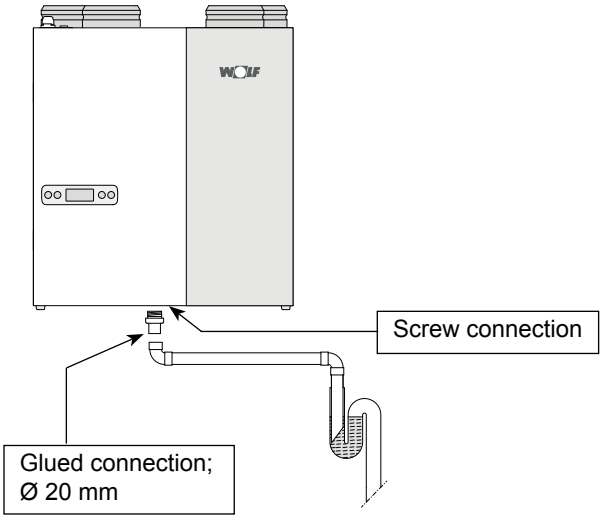
In addition, the following aspects must be taken into account.
- The appliance must be placed level.
- The installation room must be such that a good condensate discharge with air trap and pitch for condensate can be made.
- The installation room must be frost-free.
- Make sure, for cleaning the filters and carrying out maintenance, that there is a free space of at least 70 cm at the front of the appliance and a free headroom of 1.8 m.

5.3 Connecting the condensate discharge

The condensate discharge line for the CWL-180 Excellent is fed through the lower panel. The condensate must be discharged through a drainpipe.

The condensate discharge connection comes separately with the appliance and the installer must screw it into the underside of the appliance. Use PTFE (Teflon) tape to obtain a leakproof connection. Maximum torque is 10 Nm. This condensate discharge connection has an external connection diameter of 20 mm.

The condensate discharge line can be glued to it, if necessary using a square bend. The installer can glue the condensate discharge in the desired position into the lower part of the appliance. The drain must discharge under the water level in the U-trap. Before connecting the condensate discharge to the appliance, pour water into the U- or S-trap to create an air seal.

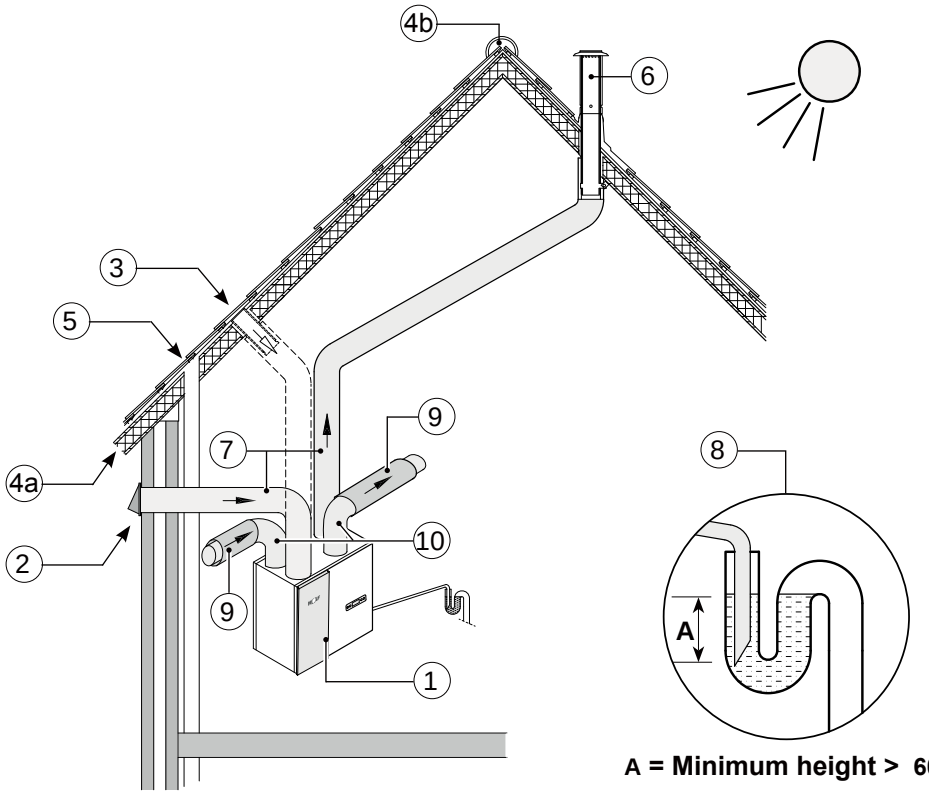


5.4 Connecting ducts

The air exhaust duct does not have to be fitted with a control diffuser. The appliance itself controls the air flowrates.
To prevent condensation on the outside of the outdoor air supply duct and the air exhaust duct from the CWL-180 Excellent, these ducts must be provided with an external vapour barrier as far as the appliance. If ISO duct (EPE) is used here, additional insulation is not necessary.
For optimum fan noise damping, acoustic dampers must be used between the appliance and the ducts from and to the dwelling.

Pay attention to crosstalk and installation noise, also for incorporated ducts. Design the duct with separate branches to the diffusers to prevent crosstalk. If necessary, the supply ducts must be insulated, for instance when they are installed outside the insulated envelope.

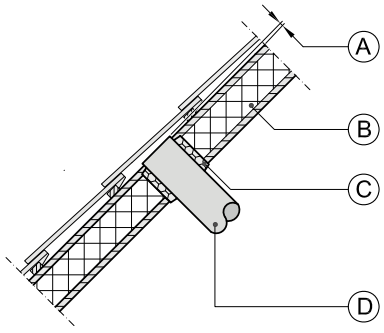
A duct diameter of 125 mm is required for the CWL-180 Excellent.



A = Minimum height > 60 mm

1 = CWL-180 Excellent left-handed 4/0 (install level)
2 = Preferred ventilation air supply
3 = Ventilation air supply under the tiles
4a = Free suction bottom roof area
4b = Free suction top roof area
5 = Sewage system vent stack
6 = Preferred location exhaust ventilation air; use insulated ventilation roof sleeve.
7 = Synthetic high efficiency HRV duct
8 = Condensate discharge
9 = Acoustic damper
10 = Ducts from and to dwelling

- Arrange the exterior air supply from the shadowed side of the dwelling, preferably from the wall or an overhang. If the outdoor air is sucked in from under the tiles, it must be ensured that no condensation develops in the roof boarding and no water can run in. Ventilation air can be sucked in from under the tiles if air can access freely at the top and the bottom of the roof area and the sewage vent stack does not end under the tiles.



A = Spacing 10 mm above roof deck
B = Roof insulation
C = Seal with foam
D = Pipe for make-up air to be carefully insulated and provided with vapour barrier

- Feed the output duct through the roof boarding in such a manner that no condensation develops in the roof boarding.
- Install the exhaust duct between the CWL-180 Excellent and the roof sleeve in such a manner that surface condensation is prevented.
- Always use an insulated ventilation roof sleeve.
- The maximum permissible resistance in the duct system is 150 Pa at the maximum ventilation capacity. If the resistance of the duct system is higher, the maximum ventilation capacity will be lower.
- The location of the mechanical ventilation outlet and the sewer stack vent relative must be chosen to prevent nuisance.
- Choose the location of the supply valves to prevent fouling and draught.

Install sufficient overflow openings, door gap 2 cm.

5.5 Electric connections

5.5.1 Connecting the power plug

The appliance can be connected to an easily accessible, earthed wall socket with the plug that is mounted to the appliance. The electric installation must comply with the requirements of your power company.

Make allowance for a 1000 W preheater/postheater that may optionally be connected.

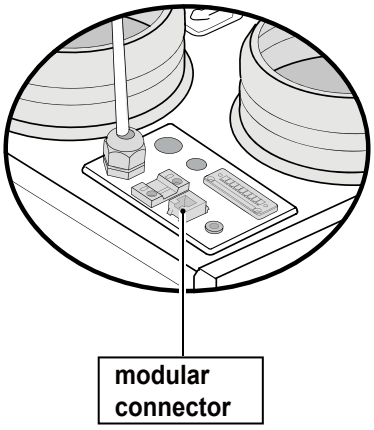
Warning
The fans and control board carry a high voltage. Always take the voltage from the appliance by pulling the power plug when working on the appliance.

5.5.2 Connecting the multiple switch

The multiple switch (not supplied with the appliance) is connected to the modular connector type RJ12 (connected to X2 on the control board) that is placed at the top of the appliance.

- Application of a 4-way switch with filter indication in all cases requires an RJ12 plug in combination with a 6-core modular cable

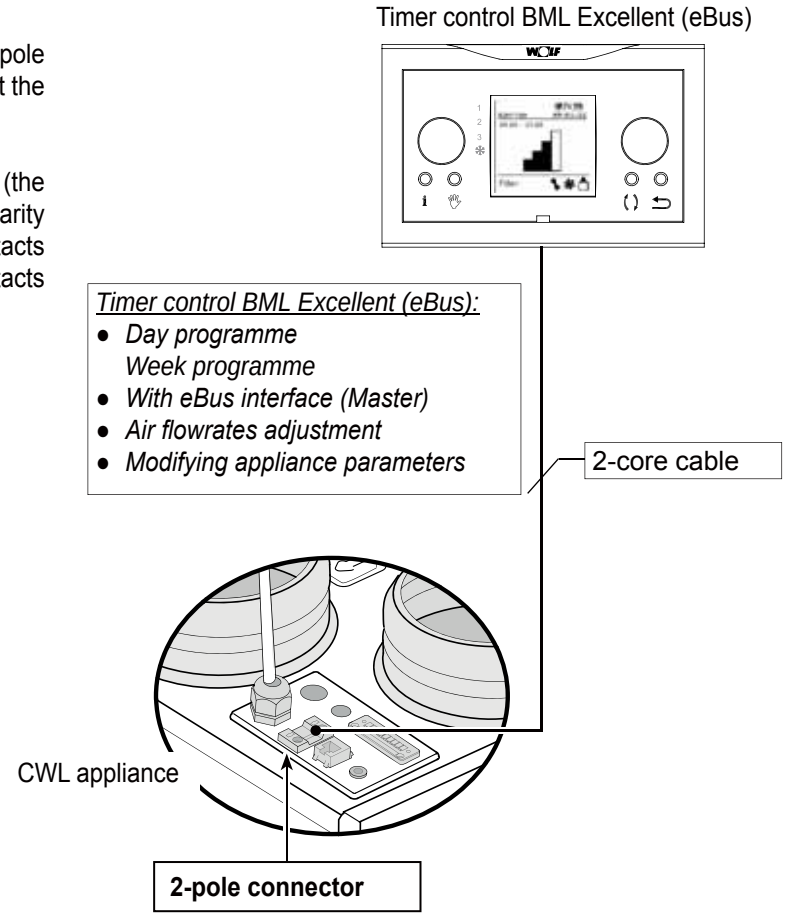
Refer to diagrams §11.2.1 to §11.2.4 for connection examples multiple switch.
Other options include wireless remote control or a combination of multiple switches.



5.5.3 Connecting the eBus connector

The CWL-180 Excellent uses the eBus protocol. The 2-pole -detachable- screw connector for the eBus connection is at the top of the appliance.

The eBus protocol may for instance be used to connect (the cascade control of) appliances (see §11.3). Because of polarity sensitivity, always connect contacts X1-1 to X1-1 and contacts X1-2 to X1-2; the appliance will not work when these contacts are interchanged!



6. Display image

6.1 General explanation control panel

The display shows the appliance's current operating mode. Four control keys can be used to call up and modify settings in the control unit programme.
When the mains power to the CWL-180 Excellent is switched on, all display symbols will appear during 2 seconds; at the same time the backlight is switched on for 60 seconds.
When one of the control keys is operated, the display will light up during 30 seconds.

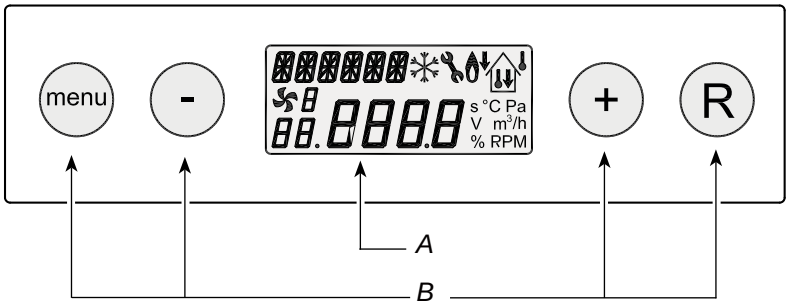
When no keys are operated or when no deviating situation has developed (such as a blocking fault) the display will show the **operating mode** (see § 6.2).

After operating the key 'Menu', the keys "+" or "-" can be used to select from three different menus, including:

- **Settings menu** (SET); see § 6.3
- **Readout menu** (READ), see § 6.4
- **Service menu** (SERV), see § 6.5

Press the R key to leave any menu and return to operating mode.

Briefly press the R key (shorter than 5 seconds) to switch on the display backlight without changing anything in the menu.

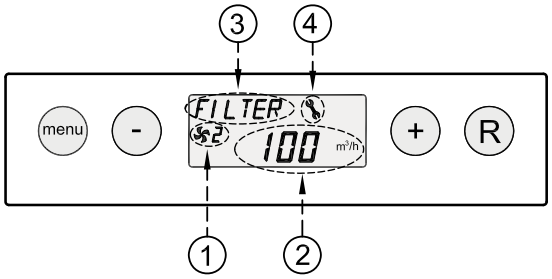


A = display
B = 4 control keys

Key	Function key
Menu	Activate the settings menu; to the next step in the submenu; confirm value change
-	Scroll; modify value; Switching on or off the CWL-180 Excellent from operating mode (press for 5 seconds)
+	Scroll; modify value
R	One step back in menu; cancel value modification; filter reset (press for 5 seconds), delete fault history

6.2 Operating mode

In operating mode, the display may simultaneously show 4 different situations/values.



1 = Status fan mode, shows coupled appliances (**see § 6.2.1**)

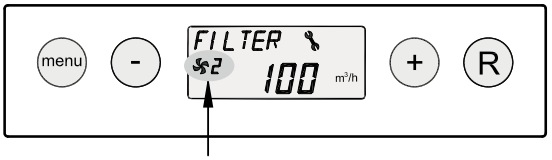
2 = Air flowrate (**see § 6.2.2**)

3 = Message text e.g. text filter status, activation external switch contact etc. (**see § 6.2.3**)

4 = Fault symbol (**see § 8.1 and § 8.2**)

6.2.1 Status system fan

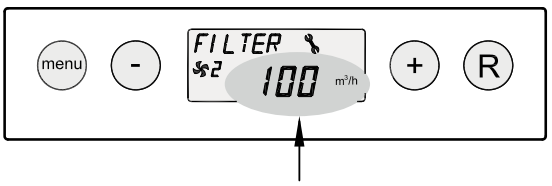
This part of the display shows a fan symbol together with a number.
When the supply and exhaust fans are running, the fan symbol is displayed. When the fans are stopped, the fan symbol is not visible.
The number behind the fan symbol indicates the fan mode.
Refer to the table below for an explanation of the numbers.



Status fan mode on display	Description
	The supply and exhaust fans are running at 50 m³/h or they are stopped. This situation depends on the setting of step number 1 (see chapter 13).
1	The supply and exhaust fans are running under mode 1 of the multiple switch. The air flowrate depends on the setting of step number 2 (see chapter 13).
2	The supply and exhaust fans are running under mode 2 of the multiple switch. The air flowrate depends on the setting of step number 3 (see chapter 13).
3	The supply and exhaust fans are running under mode 3 of the multiple switch. The air flowrate depends on the setting of step number 4 (see chapter 13).
□	This CWL-180 Excellent is linked through eBus. The supply and exhaust fans of the CWL-180 Excellent are running under the switched mode of the ventilation mode “master” CWL-180 Excellent; in addition, (only for cascade connection) the display shows the “slave” number of the relevant CWL-180 Excellent. Air flowrate depends on the set step numbers “master”- CWL-180 Excellent.

6.2.2 Display air flowrate

This shows the air flowrate setting of the supply or exhaust fan.
When the air flowrates of the supply and exhaust fans differ, for instance when using an external switch contact, in all cases the highest air flowrate is shown.

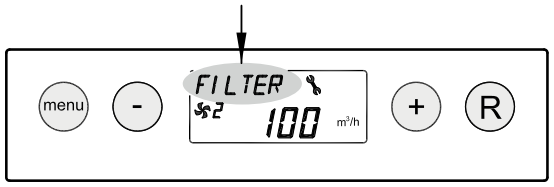


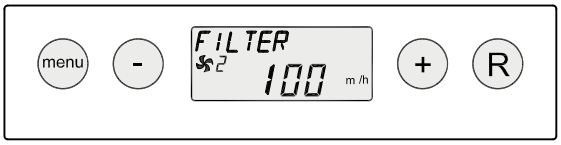
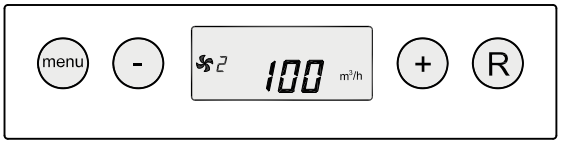
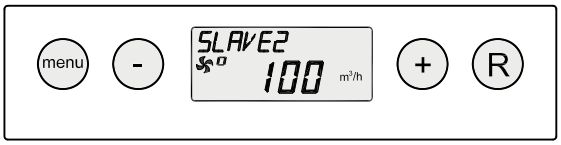
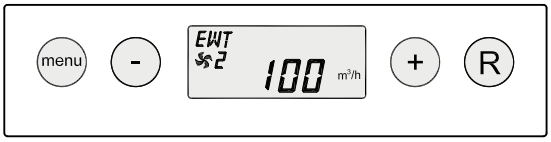
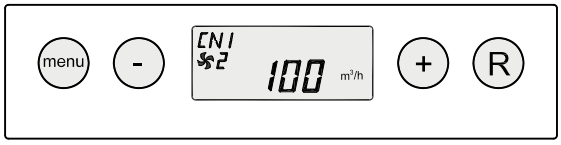
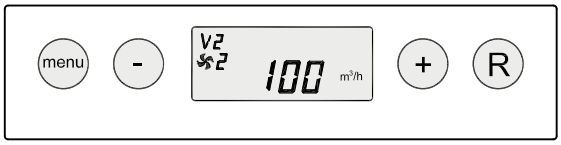
When the appliance is switched off through software, the text “OFF” appears here (see §7.1).

6.2.3 Message text for operating mode

This part of the display may show a message text. The message text “Filter” always takes precedence over the other message texts.

The following message texts may appear during operating mode.



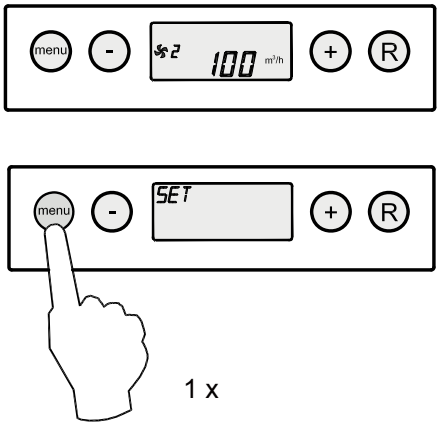
Message text on display	Description	
FILTER	When the text “FILTER” appears on the display, the filter must be cleaned or replaced; for detailed information on this subject see § 9.1	
Slave 1, Slave 2 etc.	For coupled appliances, the message text shows which appliance is “Slave 1” - “Slave 9”; for detailed information on this subject see §11.3 The “Master” appliance displays the regular layout regarding ventilation mode.	 *Master - appliance*  *Slave - appliance*
EWT (Only for version with extension kit)	When the text “EWT” appears on the display, the geo-heat exchanger is active. For detailed information, also refer to§11.6.	
CN1 or CN2 (Only for version with extension kit)	When the text “CN1 or CN2” appears on the display, one of the external switch inputs is active, also see §11.7.	
V1 or V2 (Only for version with extension kit)	When the text “V1 or V2” appears on the display, one of the external 0 - 10 V inputs is active, also see§11.8.	

6.3 Settings menu

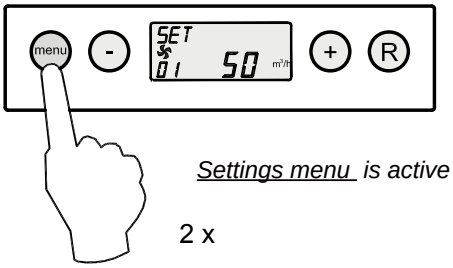
For optimum performance of the appliance, set values can be modified in the settings menu to adjust the appliance to the installation situation; refer to chapter 13 for a list of the set values. A number of set values, such as the air flowrates, are laid down in the design data.

Modifying the set value in the settings menu:

1 In operating mode, press the '**MENU**' key. Now the display shows the **settings menu.**

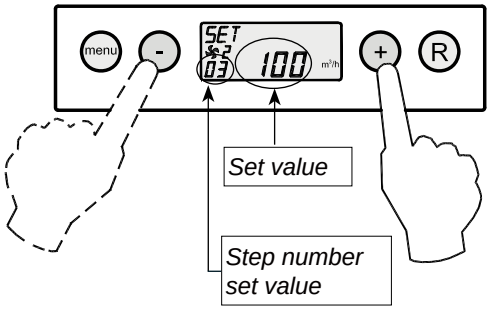


2 Press the 'MENU' key to activate the '**settings menu**'.



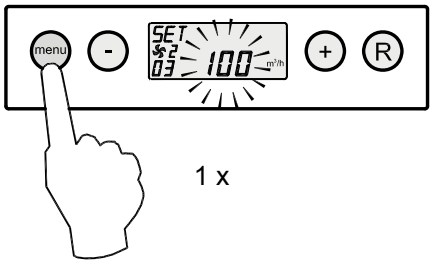
Settings menu is active

3 Select the set value to be modified with the '**+**' or '**-** ' key.

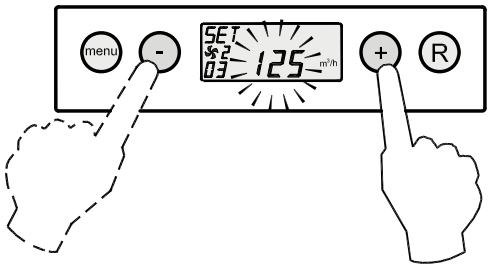


Select set value to be modified

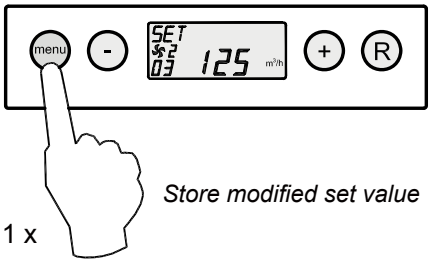
4 Press the '**Menu**' key to select the required set value.



5 Use keys '**-**' and '**+**' to modify the selected set value.

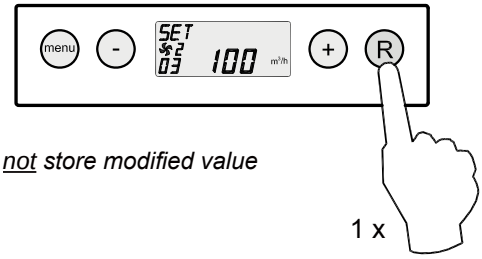


6 **Store** the modified set value



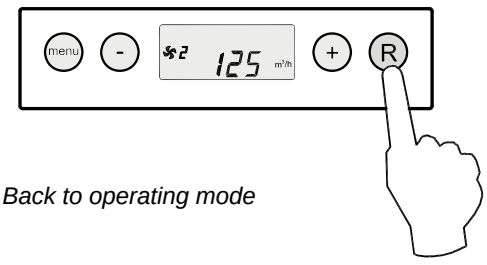
Store modified set value

Do not store the modified set value



Do not store modified value

7 To modify other set values, repeat steps 3 - 6. When you do not want to modify any more set values and return to operating mode, then press the **R-**key.



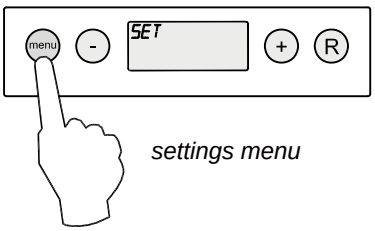
Back to operating mode

6.4 Readout menu

The readout menu can be used to call up a number of current sensor values to obtain more information on the appliance's performance. Modifying values or settings is **not** possible in this menu. The **readout menu** is displayed as follows:

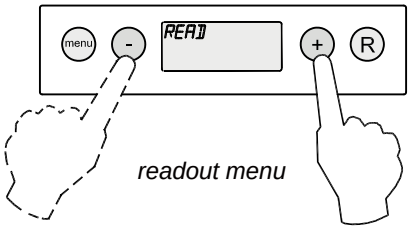
1. In operating mode, press the ' **Menu** 'key. Now the display shows the **settings menu**

operating mode



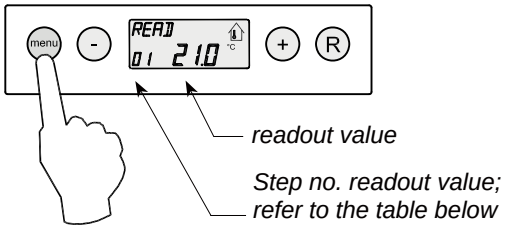
settings menu

2. Use the '**+**' and '**-**' keys to go to the**readout menu**.



readout menu

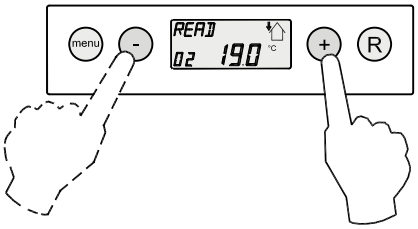
3. Activate the **readout menu**.



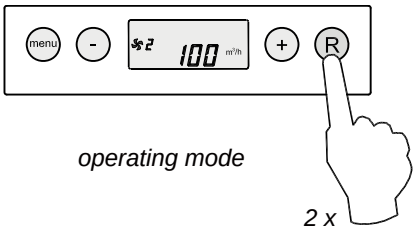
readout value

Step no. readout value; refer to the table below for an explanation

4. Use the '**+**' and '**-** ' keys to scroll through the readout menu'.



5. Press the '**R**' key twice to go to operating-mode. If no key is operated during 5 minutes, the appliance automatically returns to operating mode.



operating mode

2 x

Step no. readout value	Description readout value	Unit
01	Current temperature from dwelling	°C
02	Current temperature outdoor sensor	°C
03	Bypass status (ON = bypass function active, OFF = bypass function not active)	
04	Status frost protection (ON = frost protection active, OFF = frost protection not active)	
09	Current relative humidity	%

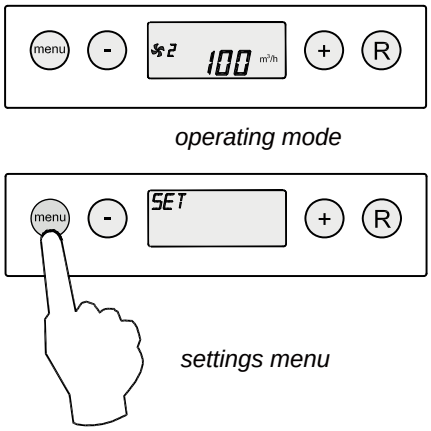
6.5 Service menu

The service menu shows the most recent 10 fault messages.

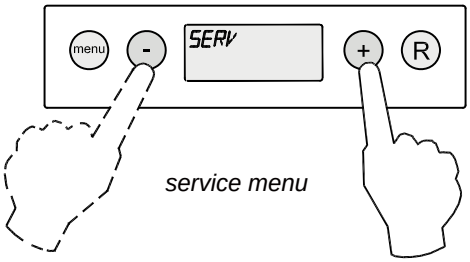
In the event of a locking fault, the settings menu and the readout menu are blocked and only the service menu can be opened. Pressing the 'menu' key directly opens the service menu (only for a locking fault).

The **service menu** can be called up as follows:

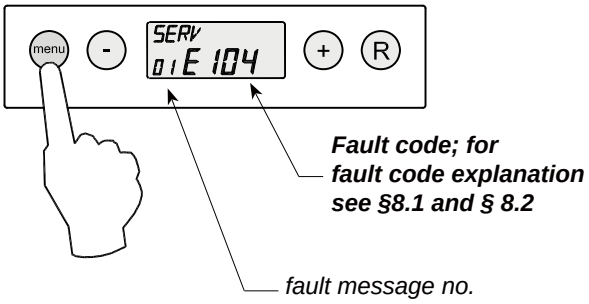
1. In operating mode, press the '**MENU**key. The display now shows the settings menu.



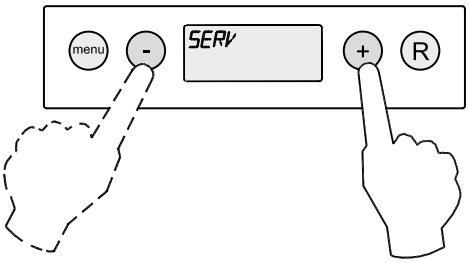
2. Use the '+' and '-' keys to go to the **service menu.**



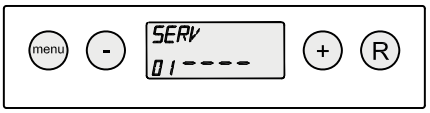
3. Activate the **service menu**.



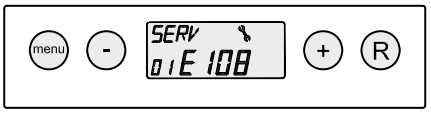
4. Use the '**+**' and '**-**' keys to scroll through the messages in the service menu'.



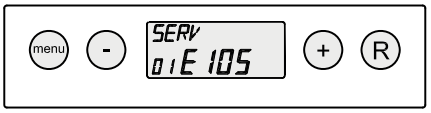
-Display not any fault message.



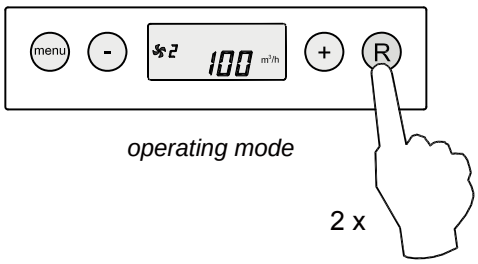
-Current fault message (spanner on display).



- Unsolved fault message (no spanner on display).



5. Press the '**R**' key twice to go to operating mode.
If no key is operated during 5 minutes, the appliance automatically returns to operating mode.



All fault messages can be deleted by pressing the "R" key in the service menu during 5 seconds; This is only possible when there is no active fault!

7. Putting into operation

7.1 Switching the appliance on and off

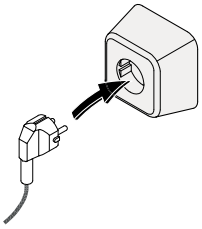
There are two methods to switch the appliance on or off.

- Switching on and off by inserting or pulling the power plug
- Switching on and off through software on the appliance display

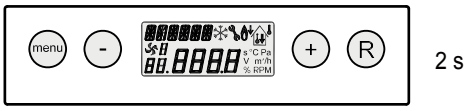
Switching on:

- Switching on the mains power:

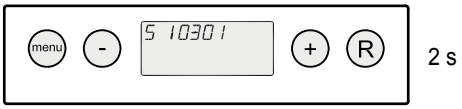
  Connect the 230 V power plug to the electric system.



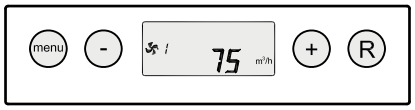
All display symbols appear during 2 seconds.



The software version appears during 2 seconds.



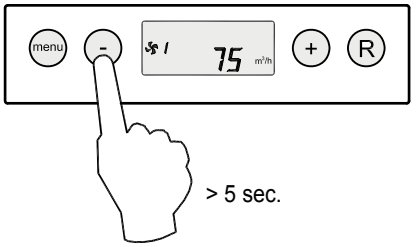
Directly after that the CWL-180 Excellent will be running in the mode as set on the multiple switch. If no multiple switch is connected, the appliance will always run in mode 1.



- Switching on through software

  When the CWL-180 Excellent has been switched off through software, the display will show the text “OFF”.

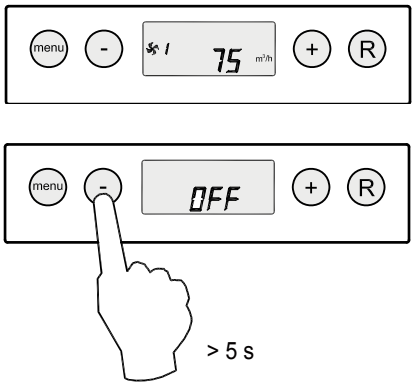
The appliance can be switched on by pressing the key ‘-’ during 5 seconds.



Switching off:

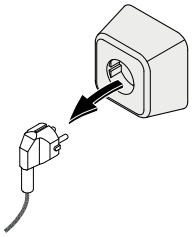
- Switching off through software:

  Press the “**-**” key for 5 sec. to switch off the appliance through software. The text 'OFF' appears on the display.

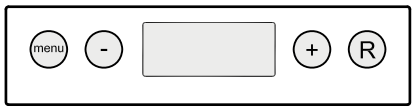


- Switching off the mains power;

  Pull the 230 V mains plug from the mains to take the voltage from the appliance.



Nothing is shown on the display now.



Warning
When working on the appliance, always take the voltage from the appliance by first switching it off through software and subsequently pulling the power plug.

7.2 Setting the air flow

The air flowrates from the CWL-180Excellent are set ex factory at 50, 75, 100 and 150 m³/h. The performance and the energy consumption of the CWL-180 Excellent depend on the pressure drop in the duct system as well as on the filter resistance.

Important:
Setting : is 0 or 50 m³/h,
Setting 1: must always be lower than setting 2,
Setting 2: must always be lower than setting 3,
Setting 3: adjustable between 50 and 180 m³/h.

If these conditions are not complied with, the air flowrate of the higher mode will automatically be adjusted.

For modifying the air flowrates in the settings menu, see § 6.3.

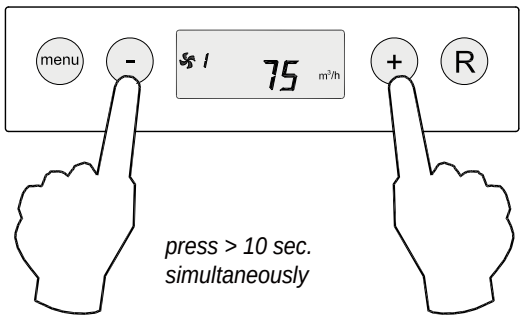
7.3 Other settings installer

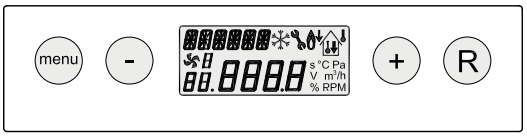
Various other settings of the CWL-180 Excellent can also be modified. How to modify these is explained in §6.3.

7.4 Factory setting

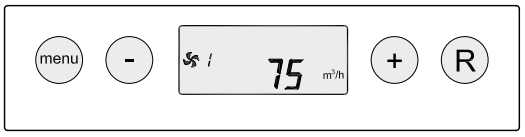
It is possible to reset all modified settings back to factory setting in one go.

All modified settings will be at the values they had when the CWL-180 Excellent was supplied ex factory; all message codes / fault codes will be erased from the service menu as well. The filter message will not be reset!





3 sec. displayed



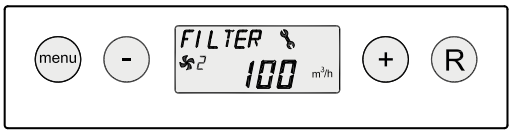
operating mode

8.1 Trouble shooting

When the appliance control system detects a fault, it is indicated on the display with a spanner symbol, possibly together with a fault code.

The appliance makes a distinction between a fault at which the appliance keeps running (limitedly) and a serious (locking) fault at which both fans are switched off.

In case of locking fault, the settings and readings menu is switched off as well and only the service menu is available.

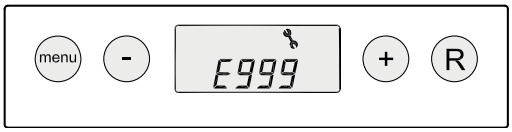


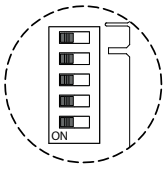
The appliance remains in this fault mode until the problem in question has been solved. Then the appliance will reset itself (auto reset) and the display will once more show the operating mode.

Fault E999

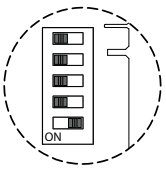
If message **E999** appears on the display directly when the appliance is powered up, the mounted control board is not suitable for this appliance or the dip switches on the control board are set incorrectly.
See § 10.1 for the location of the dip switches on the board.

In that case, check whether the dip switches on the control board are set as shown in the drawing of the dip switch settings; if they are, and the message E999 still appears, then replace the control board by a board of the correct type.





Correct settings dip switches CWL-180 Excellent



Correct settings dip switches CWL-180 Excellent with extension kit

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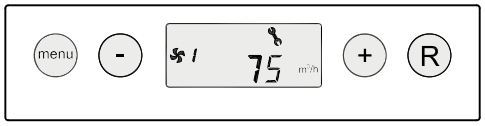
8.2 Display codes

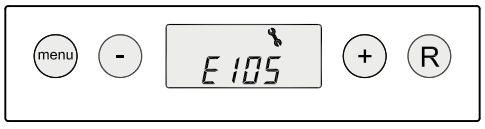
Non-locking fault

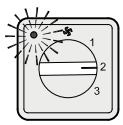
When the appliance detects a non-locking fault, it will still keep running (limitedly). The display does show the fault symbol (spanner).



Locking fault

When the appliance detects a locking fault, it will no longer work. The (permanently lighted) display shows the fault symbol (spanner) together with a fault code. The red LED on the multiple switch (if applicable) will be blinking. Contact the installer to remedy this fault. A locking fault cannot be remedied by taking the voltage from the appliance; first the fault must be solved.



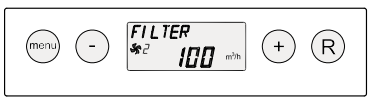


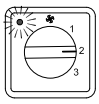
Fault code	Cause	Action appliance	Action installer
E104	Extract fan fault.	- Both fans are switched off. - If applicable: Preheater is switched off. - If applicable: Postheater is switched off. - Restart every 5 minutes.	• Take the voltage from the appliance. • Replace exhaust fan. • Put voltage back on appliance; fault is automatically reset. • Check cabling.
E105	Supply fan fault.	- Both fans are switched off. - If applicable: Preheater is switched off. - If applicable: Postheater is switched off. - Restart every 5 minutes.	• Take the voltage from the appliance. • Replace supply fan. • Put voltage back on appliance; fault is automatically reset. • Check cabling.
E106	The temperature sensor that measures the outdoor temperature is defective.	- Both fans are switched off. - If applicable: Preheater is switched off. - Bypass function is switched off.	• Take the voltage from the appliance. • Replace temperature sensor. • Put voltage back on appliance; fault is automatically reset.
E107	The temperature sensor that measures the temperature of the exhaust air is defective.	- Bypass function is switched off.	• Take the voltage from the appliance. • Replace indoor temperature sensor.
E108	If mounted: The temperature sensor that measures the external temperature is defective.	- If applicable: Postheater is switched off. - If applicable: Geo-heat exchanger is switched off.	• Replace external temperature sensor.
E111	If mounted: RH sensor defective	- Appliance keeps running	• Take the voltage from the appliance. • Replace RH sensor
E999	Dipswitches on control board not set correctly.	- Appliance does nothing; red fault LED on multiple switch is not activated either.	• Set dipswitches to correct position (see § 8.1).

Note!
If mode 2 of a multiple switch does not work, the modular connector of the multiple switch has been connected the wrong way round. Cut off one of the RJ connectors to the multiple switch and mount a new connector the other way round.

9.1. User maintenance

User maintenance is limited to periodically cleaning or replacing the filters. The filter only has to be cleaned when that is indicated on the display (it shows the text **"FILTER"**) or, if a multiple switch with filter indication is installed; when the red LED at the switch lights up.

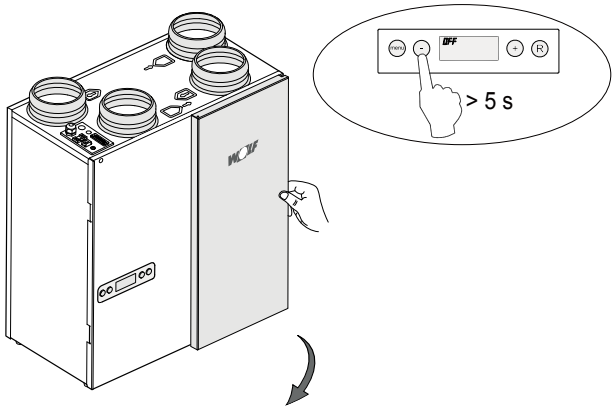




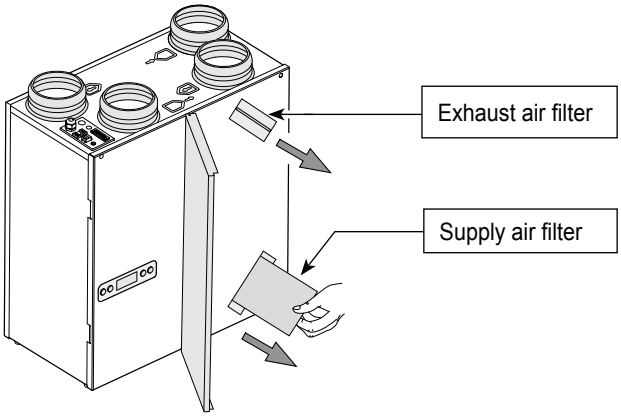
The filters must be replaced every year. It is not permitted to use the appliance without filters.

Cleaning or replacing the filters:

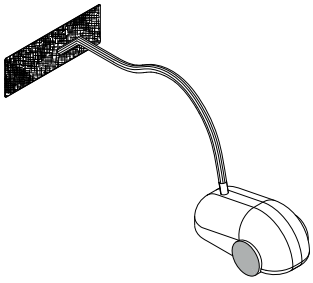
1 - Press the **'-'** key for 5 seconds.
- Open the filter door.



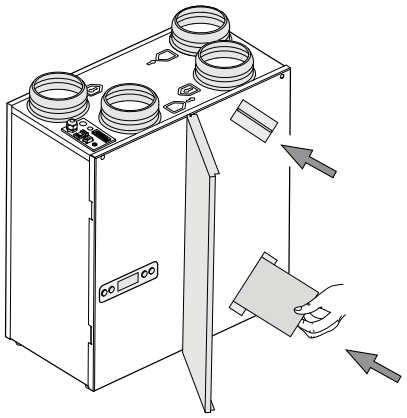
2 Take out the filters. Remember in what way the filters are taken out (clean side of the filters facing the heat exchanger).



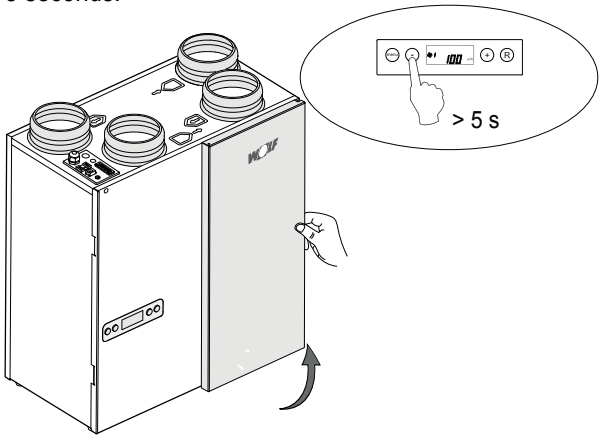
3 Filter cleaning.



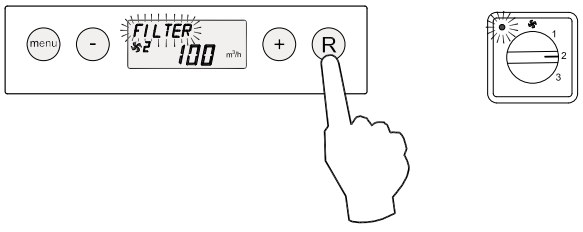
4 Place the filters back the same way as they were taken out.



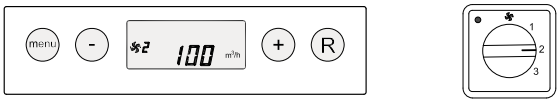
5 - Close the filter door.
- Switch on the appliance by pressing the "**-**" key during 5 seconds.



6 After the filters have been cleaned or replaced, press the "**R**"key for 5 seconds to reset the filter indication.
The text "**FILTER**" will blink briefly to confirm that the filters have been reset. Also when the message "**FILTER**" has not yet appeared on the display, a filter reset can be carried out. the "counter" will be reset to zero.



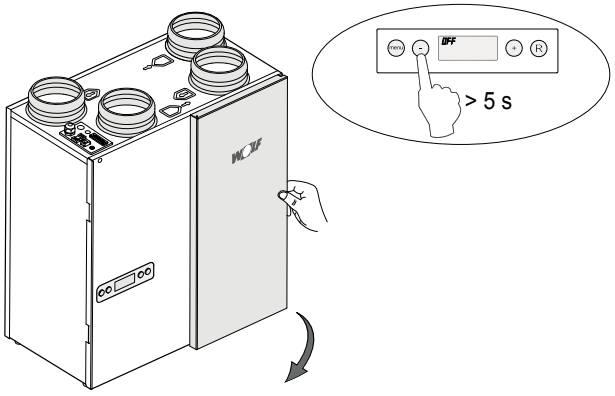
After the filter reset, the text **FILTER** disappears; the light at the multiple switch is off and the display is back to operating mode.



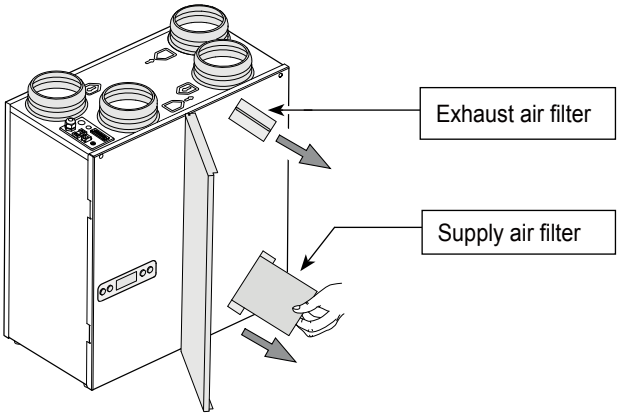
9.2 Installer maintenance

Installer maintenance includes cleaning the heat exchanger and fans. Dependent on the conditions, this must done about once every three years.

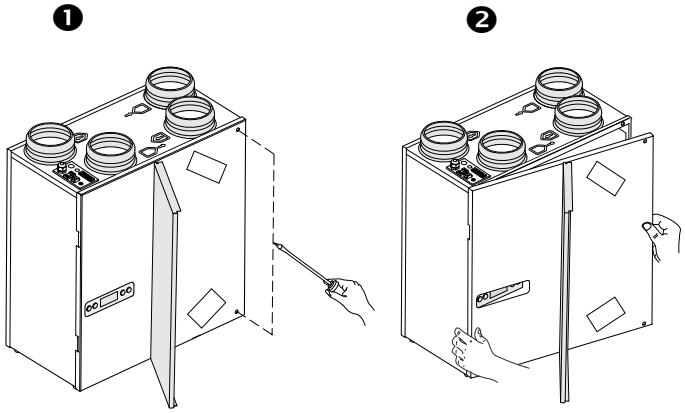
1 Switch off the appliance on the operating panel (press the **'-'** key during 5 seconds; the appliance is switched off through software) and switch off the power.
Open the filter door.



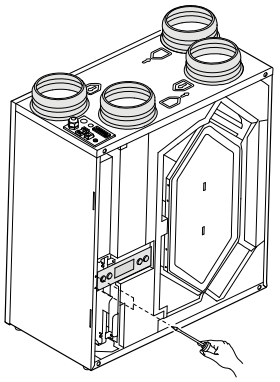
2 Take out the filters.



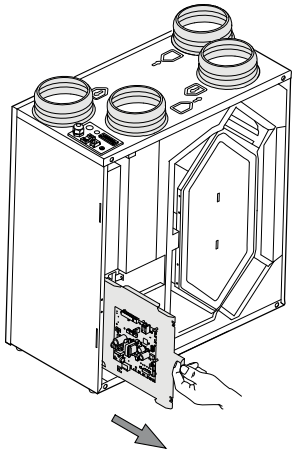
3 Remove the front cover.



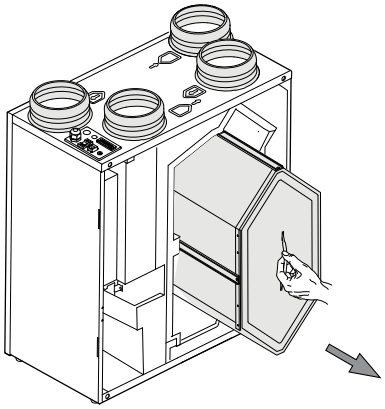
4 Remove the display.



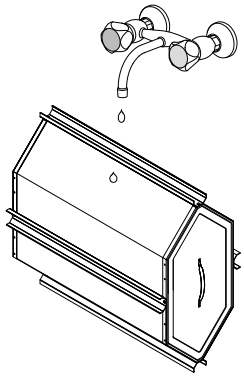
5 Pull out the slide on which the control board is mounted. Pull all connectors from the board that are connected to connectors at the top of the appliance. Take the earth wire from the housing.



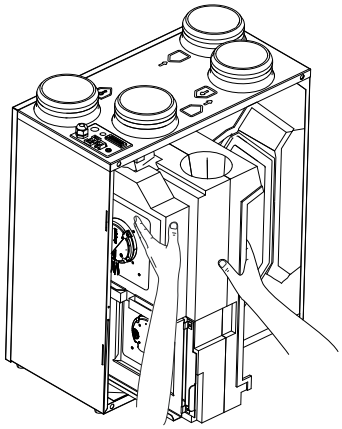
6 Remove the heat exchanger. Be careful not to damage the foam parts in the appliance.



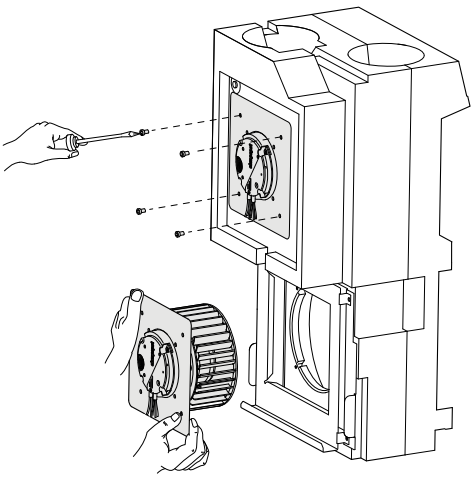
7 Wash the exchanger with hot water (max. 55) and a regular detergent. Rinse the exchanger with hot water.



8 Slide the fan assembly out of the appliance.



9 Both fans are now accessible and can be taken out.



10 Clean the fans with a soft brush.
Make sure the balancing weights do not shift!

11 Place the removed fans back.

12 Place the complete fan assembly back into the appliance.

13 Connect the fan cables to the board again.
Refer to the sticker in the appliance for the correct position of the connectors.

14 Slide the mounting plate with the control board into the appliance and mount the display. Reconnect all disconnected cables back into their original positions.

15 Place the heat exchanger back into the appliance.

16 Place the front cover.

17 Place the filters back into the appliance with the clean side facing the exchanger.

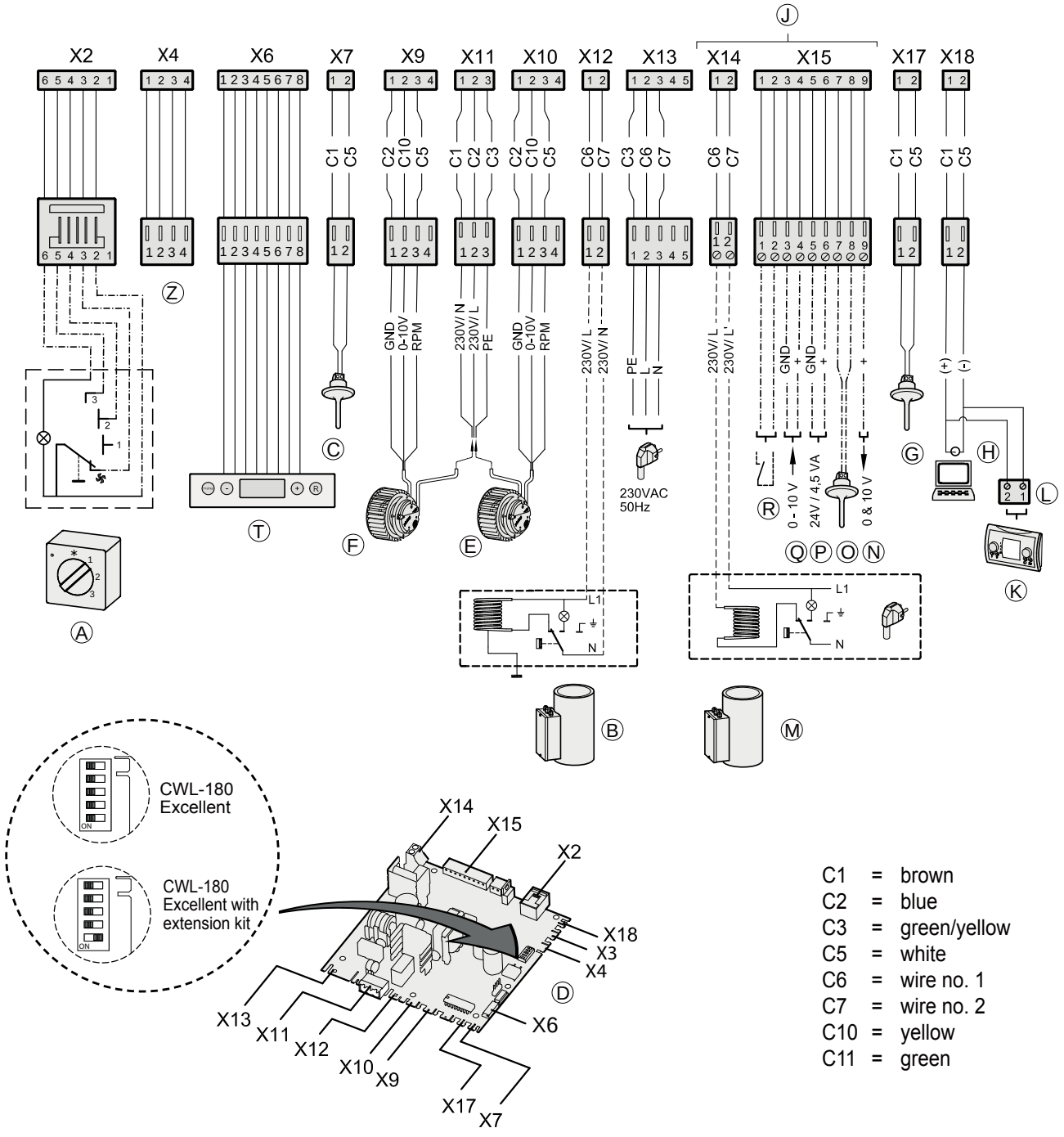
18 Close the filter door.

19 Switch on the power supply.

20 Switch on the appliance on the control panel (press key "**-**" for 5 seconds).

21 After cleaning the filter or placing a new filter, reset the filter indication by pressing the key "**R**" for 5 seconds.

10.1 Wiring diagram



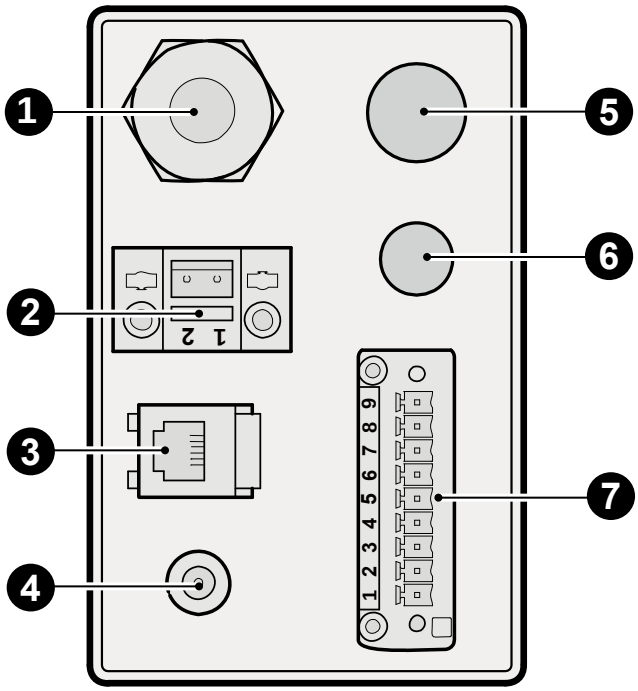
C1 = brown
C2 = blue
C3 = green/yellow
C5 = white
C6 = wire no. 1
C7 = wire no. 2
C10 = yellow
C11 = green

A = Multiple switch
B = Preheater (optional)
C = Outdoor temperature sensor
D = Control board
E = Supply fan
F = Exhaust fan
G = Indoor temperature sensor
H = Service connector
K = Timer control BML Excellent (accessory)
*L = eBus-plug (polarity-sensitive), (**not suitable for 230 V!***

M = Postheater (optional) [1)]
N = Output 0-10 V (optional) [1)]
O = Sensor postheater or outdoor geo-heat exchanger[1]
P = 24 V connection [1)]
Q = Input 0-10 V (or NO contact) [1)]
R = NO contact or input 0-10 V) [1)])
T = Control panel
Z = RH sensor (optional)

[1)]Only for installed extension kit

11.1 Connections connectors



1 **Power supply cable 230 V**

2 **eBus connector**
Two-pole screw connector
Only suitable for low voltage!
Note: This connector is polarity sensitive.

3 **Modular connector for rpm control**
Modular connector type RJ-12
Only suitable for low voltage!

4 **Service connector**
Computer connection for service purposes

5 **Extra cable gland**
Gland for (double insulated) 230 V cable from X14 when connecting a postheater (only for installed extension kit) or (double insulated) 230 V cable from X12 for preheater. Always use a strain reliever.

6 **Extra cable gland**
Gland low voltage cable, for instance for installation of an RH (humidity) sensor. Cut out an opening in the available grommet for feeding through the cable.

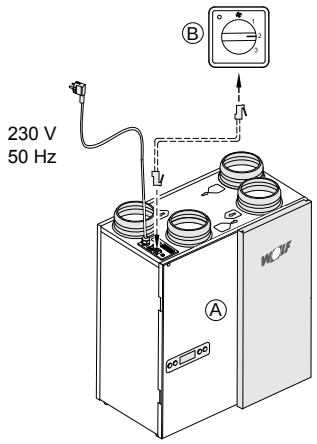
7 **9-pole screw connector (only for extension kit)** Connected with X15 of the control board

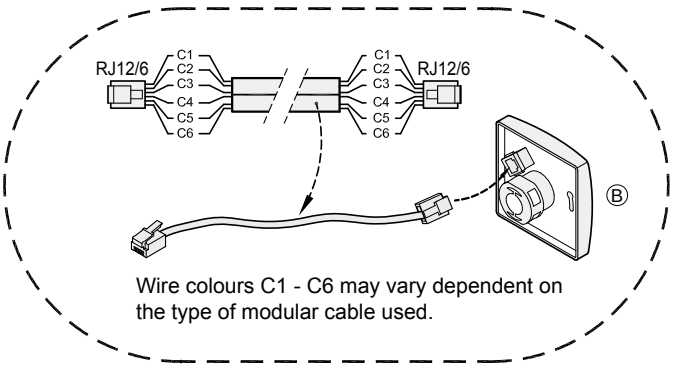
Connection	Application	
1 & 2	**Step no.15 = 0:**	**NO contact** (= factory setting) (§11.6)
(input 1)	Step no.15 = 1:	0 - 10 V input; X15-1= GND & 15-2=0-10 V (see §11.7)
	Step no.15 = 2:	NC contact
	Step no.15 = 3:	switching output 1: bypass function active →12V; bypass function not active →0V
	Step no.15 = 4:	switching output 1: bypass function active → 0V; bypass not active → 12V
3 & 4	Step no. 21 = 0:	NO contact
	Step no.21 = 1:	**0 - 10 V input** (= factory setting) see §11.7.
(input 2)	Step no. 21 = 2:	NC contact
	Step no. 21 = 3:	switching output 2: bypass function active →12V; bypass not active →0V
	Step no. 21 = 4:	switching output 2: bypass function active →0V; bypass not active → 12V
5 & 6	**Connection 24 V**, Max. 4.5 VA; (5 = ground , 6 = +)	
7 & 8	**Connection postheater sensor or outdoor geo-heat exchanger**	
9	**Control signal valve 0 or 10 V** (9 = + , 5 = ground)	

11.2 Connection examples multiple switch

A multiple switch can be connected to the modular connector X180 of the CWL-180 Excellent. This modular connector is directly accessible from the top of the appliance (see §11.1)

11.2.1 Multiple switch with filter indication

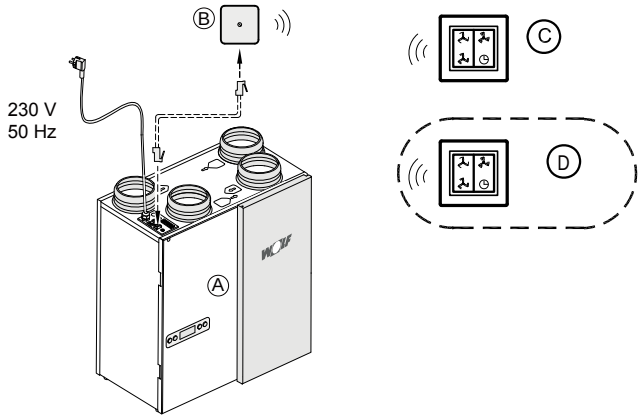




A = CWL-180 *Excellent*
B = *Multiple switch with filter indication*

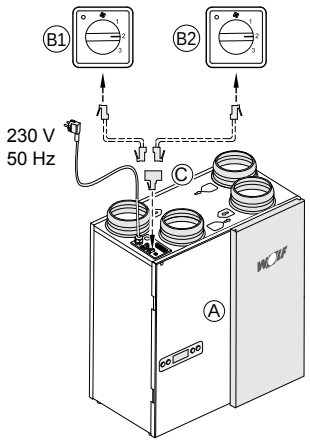
Note: For the modular cable used, the “tab” of both modular connectors must be mounted facing the mark on the modular cable.

11.2.2 Wireless remote control (without filter indication)



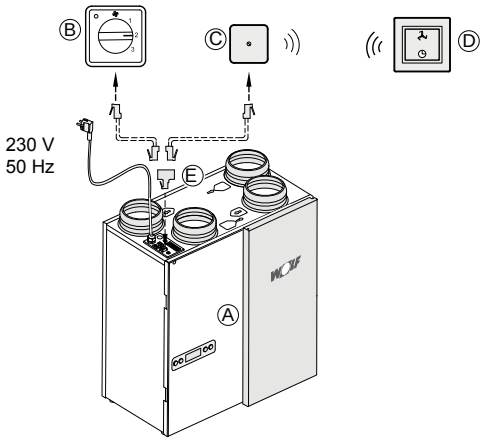
A = CWL-180 *Excellent*
B = *Receiver for wireless remote control*
C = *Transmitter with 4 settings (for instance the kitchen)*
D = *Any additional 4-settings transmitters (A maximum of 6 transmitters can be logged on to 1 receiver)*

11.2.3 Additional multiple switch with filter indication



A = CWL-180 *Excellent*
B1 = *Multiple switch with filter indication*
B2 = *Additional multiple switch with filter indication*
C = *Splitter*

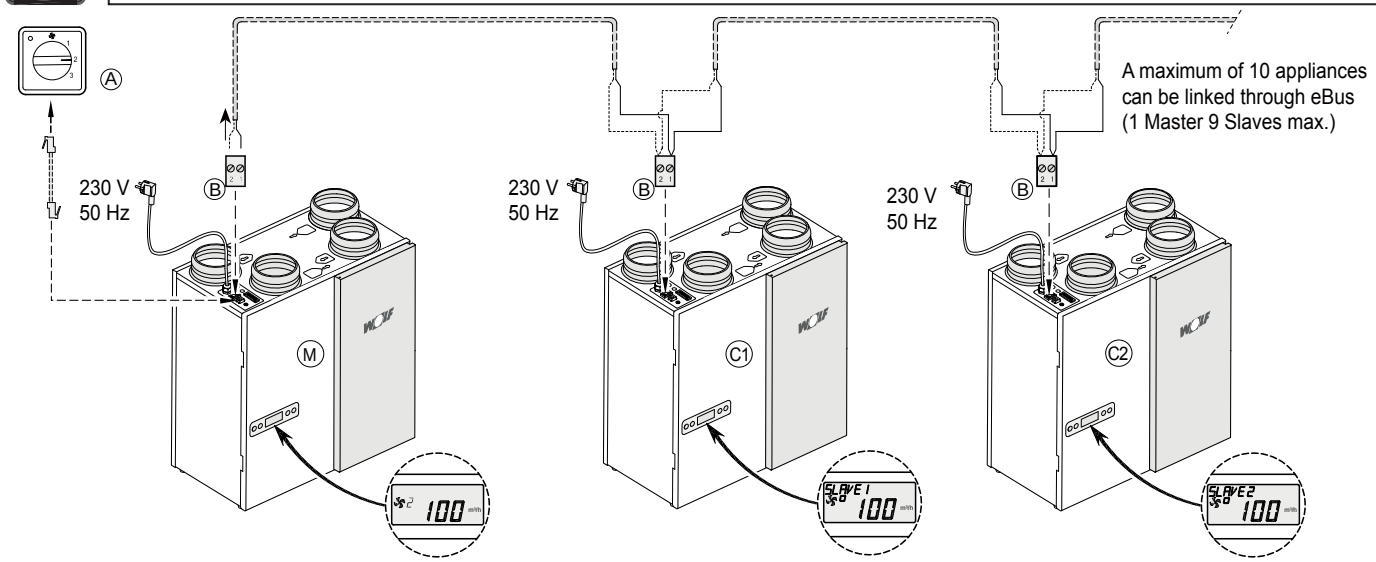
11.2.4 Additional multiple switch wireless remote control



A = CWL-180 *Excellent*
B =*Multiple switch with filter indication*
C = *Receiver for wireless remote control*
D =*Transmitter with 2 settings*
E = *Splitter*

11.3 Coupling several CWL-180 Excellent appliances through eBus contact; all appliances equal air flowrate

Important: Because of polarity sensitivity, always connect contacts X1-1 and contacts X1-2 with each other. Never connect X1-1 and X1-2!



For M (Master):
Set step number 8 to 0 (= factory setting).
Display shows ventilation mode 1, 2 or 3.

For C1 (Slave1):
Set step number 8 to 1 (= 1 Slaves max).
Display always shows ventilation mode □.

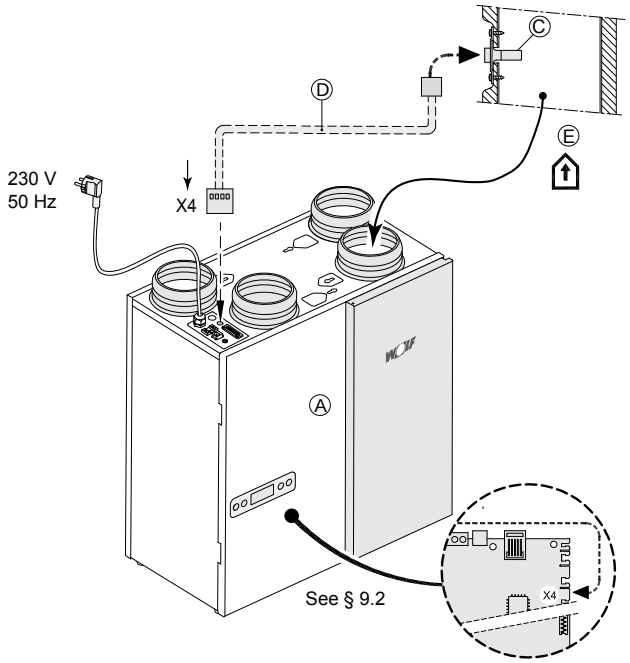
For C2 (Slave2):
Set step number 8 to 2 (= 2 Slaves max).
Display always shows ventilation mode □.

A = Multiple switch
B = 2-Pole connector
M = CWL-180 Excellent (Master)
C1 - C = CWL-180 Excellent (Slave)*

All CWL-180 appliances have the same air flowrate as the CWL-180 set as "Master".

Step no.	Description	Factory setting	Range
8	eBus address	0	0 = master 1 - 9 = slave 1 - 9

11.4 Connecting RH (humidity) sensor)



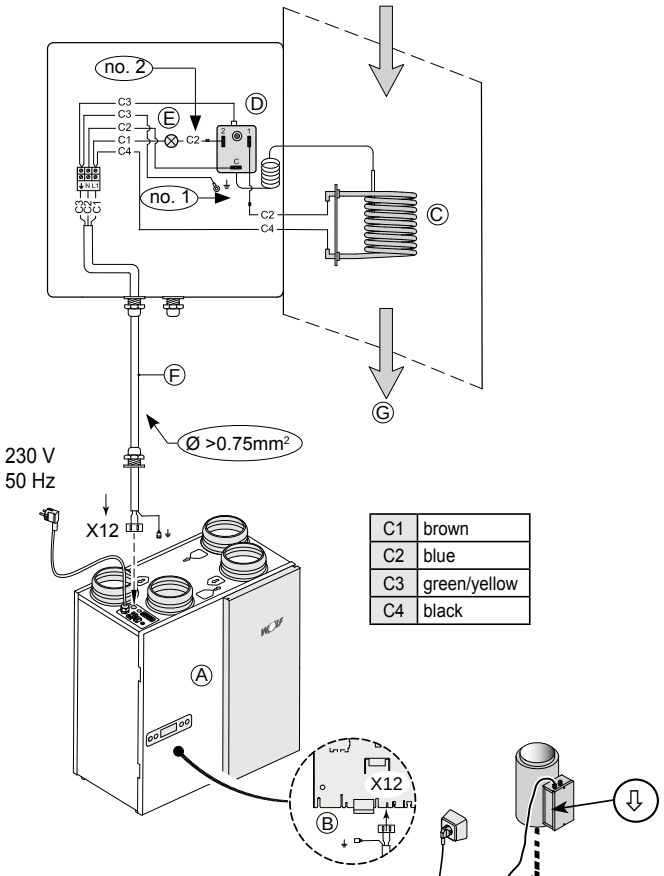
A = CWL-180 Excellent
B = Control board; to access board, see §9.2 item 1 - 5
C = RH (humidity) sensor
D = The cable that comes with RH sensor; Cut out an opening in the available grommet for feeding through the sensor cable
E = Duct "from dwelling"

Step no.	Description	Factory setting	Range
30	Switching on RH sensor	OFF	OFF = switched off ON = switched on
31	Sensitivity	0	+2 most sensitive +1 ↑ 0 basic setting RH sensor -1 ↓ -2 least sensitive

11.5 Connection preheater or postheater (postheater only possible for CWL-180 Exc. with extension kit)

The postheater (only for CWL-180 Excellent with extension kit) or preheater are connected electrically to connector X14 and connector X12 on the control board (accessible after sliding the board out of the appliance; see §9.2 point 1 - 5); just for a postheater there is also a temperature sensor that must be connected to no. 7 and no. 8 of the 9-pole connector. Please refer to the supplied mounting instructions for more extensive information regarding installation of the postheater or the extra preheater.

Preheater



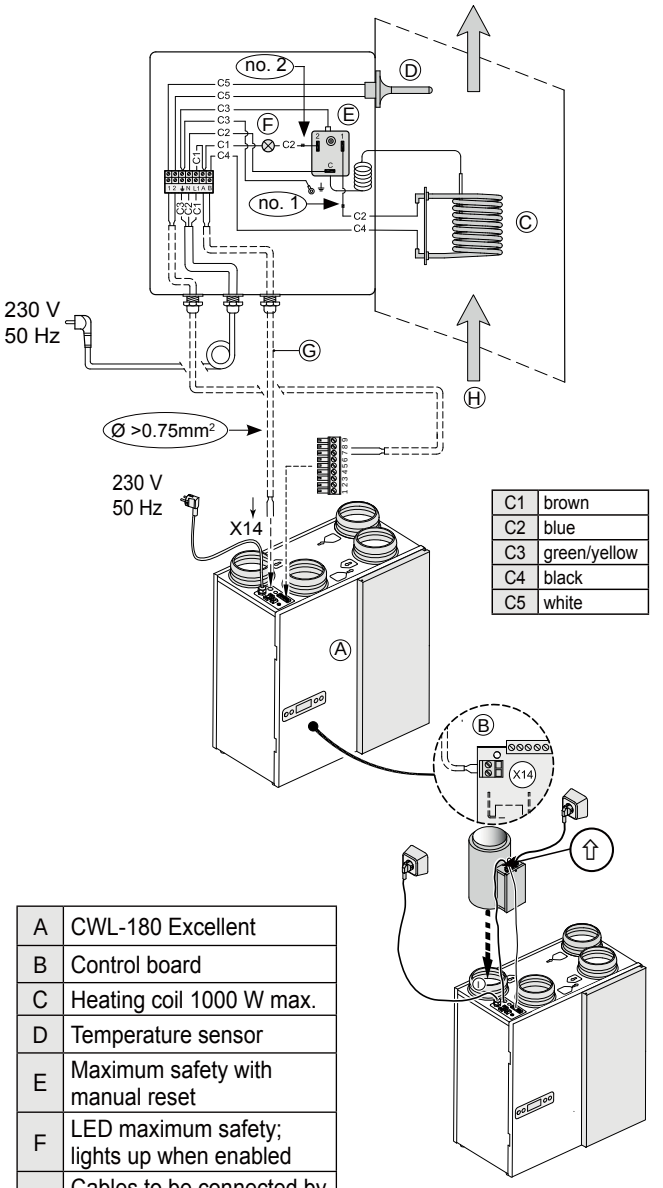
C1	brown
C2	blue
C3	green/yellow
C4	black

A	CWL-180 Excellent
B	Control board
C	Heating coil 1000 W max.
D	Maximum safety with manual reset
E	LED maximum safety; lights up when enabled
F	Cable to be connected by installer
G	Air flow direction through heater

I =	⇩	To dwelling
II =	⇧	To atmosphere
III =	⇩	From dwelling
IV =	⇧	**From atmosphere**

Step no.	Description	Factory setting	Range
12	Preheater connected	OFF	OFF = switched off **ON = switched on**

Postheater (only possible with extension kit)



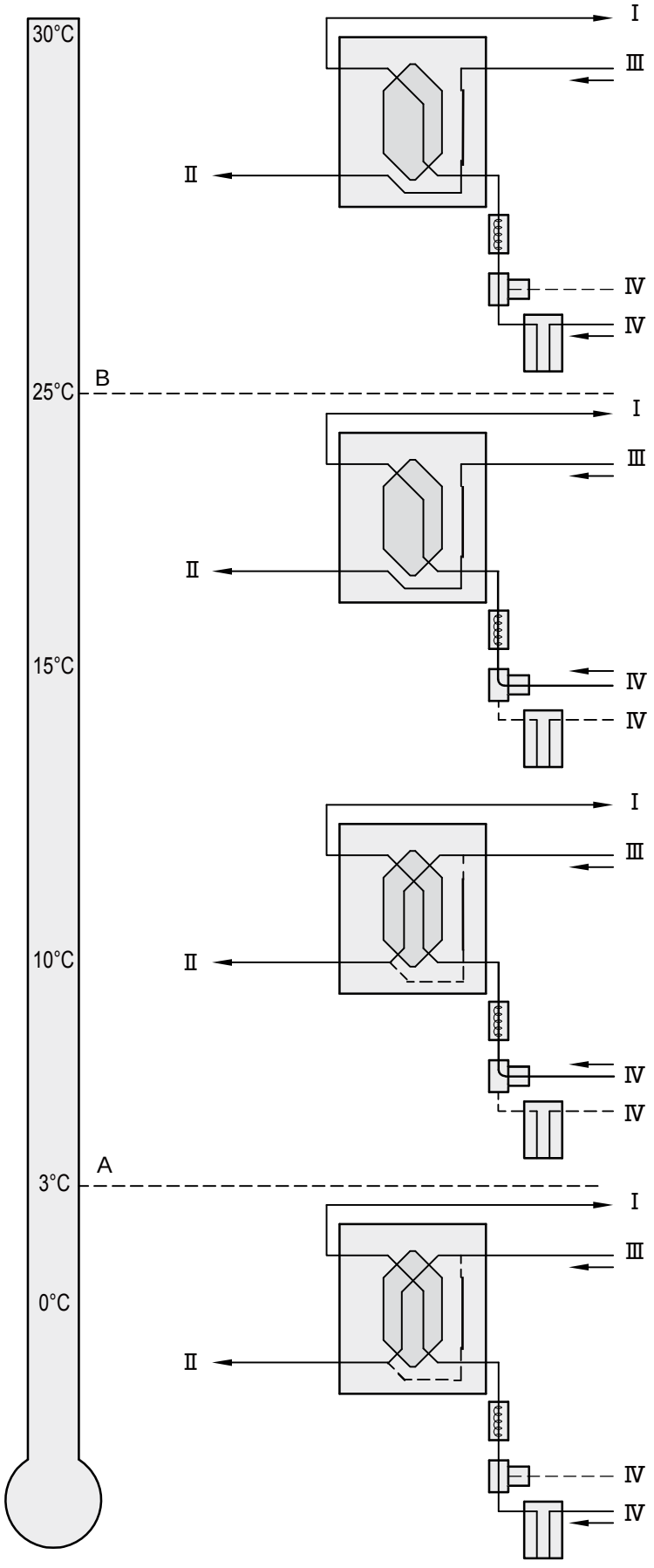
C1	brown
C2	blue
C3	green/yellow
C4	black
C5	white

A	CWL-180 Excellent
B	Control board
C	Heating coil 1000 W max.
D	Temperature sensor
E	Maximum safety with manual reset
F	LED maximum safety; lights up when enabled
G	Cables to be connected by installer
H	Air flow direction through heater

I =	⇩	**To dwelling**
II =	⇧	To atmosphere
III =	⇩	From dwelling
IV =	⇧	From atmosphere

Step no.	Description	Factory setting	Range
13	Heater	0	0 = off 1 = preheater **2 = postheater**
14	Temp. postheater	21°C	15°C - 30°C

11.6 Connection example geo-heat exchanger (only possible for CWL-180 Excellent with extension kit)



A geo-heat exchanger can be connected to the CWL-180 Excellent.
The geo-heat exchanger can be connected to connection no. 5 (GND), no. 6 (24 V) and no. 9 (0-10 V) of the 9-pole connector; this 9-pole connector is directly accessible at the top of the appliance. Connect the outdoor temperature sensor to no. 7 and no. 8 of the 9-pole connector.

When the geo-heat exchanger is connected, it is no longer possible to connect a postheater to the CWL-180 Excellent !

A = Minimum temperature

B = Maximum temperature

I = To dwelling

II = To atmosphere

III = From dwelling

IV = From atmosphere

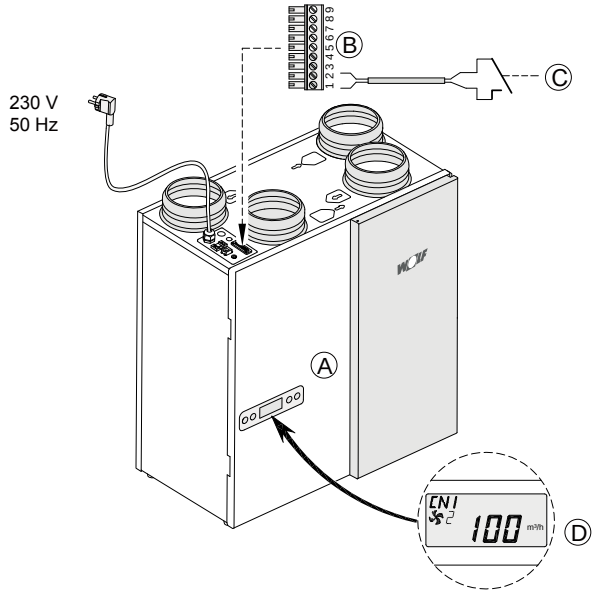
When using a geo-heat exchanger, step number 27 must be changed from “OFF” to “ON”. When the air is routed through the geo-heat exchanger, the CWL-180 Excellent display shows the text “EWT”.

Step no.	Description	Factory setting	Range
27	Switching on geo-heat exchanger	OFF	ON = Switched on OFF = Switched off
28	Minimum temperature geo-heat exchanger	5°C	0 - 10°C
29	Maximum temperature geo-heat exchanger	25°C	15 - 40°C

11.7 Connection external switch contact (only possible CWL-180 Excellent with extension kit)

An external switch contact (e.g. switch or relay contact) can be connected to the CWL-180 Excellent with extension kit. This external switch contact can be connected to connections no. 1 and no. 2 of the 9-pole connector; this 9-pole connector is directly accessible at the top of the appliance (also refer to §11.1).

If a second input is required as external switch contact, if necessary connections no. 3 and no. 4 of the 9-pole connector, which as standard are preprogrammed as 0-10 V input, can be reprogrammed as second input switch contact. Changing step number 21 from "1" to "0" or "2" makes this 0-10V input an NO contact or NC contact respectively. On application of to switch inputs, switch contact 1 (9-pole connector no. 1 & no. 2) always takes precedence over switch contact 2 (9-pole connector no. 3 & no. 4).



A = CWL-180 Excellent with extension kit
B = 9-pole connector
C = Contact connected to switch input 1; for instance a switch or a relay contact
D = Display CWL -180 Excellent (text "CN1" appears when contact C is closed.)

Modifying step number 18 enables, when closing the input external switch contact 1 no. 1 and no. 2, setting five different modes for the supply and exhaust fans; dependent on the setting of step numbers 19 and 20, the supply and exhaust fans can run at various flowrates (highest flowrate is shown on the display).

Setting step no. 18	Function conditions	Mode supply fan and exhaust fan	Setting step no. 19 and 20	Action supply or exhaust fan when closing 9-pole connector no. 1 and no. 2
0 (factory setting	Contact input 1 no. 1 & no. 2 closed	No action possible because contact input 1 has not been activated yet (step number 18 is still at 0)		
1	Contact input 1 no. 1 & no. 2 closed	Action dependent on setting supply fan (step number 19) and exhaust fan (step number 20)	0	Fan switches off
2	Contact input 1 no. 1 & no. 2 closed Satisfies bypass function conditions active[1]		1	Fan minimum flowrate (50 m³/h)
			2	Fan to flowrate setting 1
3	Contact input 1 no. 1 & no. 2 closed	Bypass function active; automatic bypass control in CWL-180 Excellent is"overruled"; action fans dependent on step nos. 19 & 20.	3	Fan to flowrate setting 2
			4	Fan to flowrate setting 3
			5	Fan to flowrate multiple switch
4	Contact input 1 no. 1 & no. 2 closed	The bedroom diffuser[2] opens. Bedroom diffuser 24 V is connected to no. 5 (24V GND) no. 6 (24V +) and no. 9 (0-10 V control); action fans dependent on step nos. 19 & 20.	6	Fan to maximum flowrate
			7	No signal from fan

1) Bypass function active conditions: - Outdoor temperature higher than 10°C
- Temperature atmosphere is at least lower than temperature from dwelling
- Temperature from dwelling is higher than the preset bypass temperature (step no. 5)

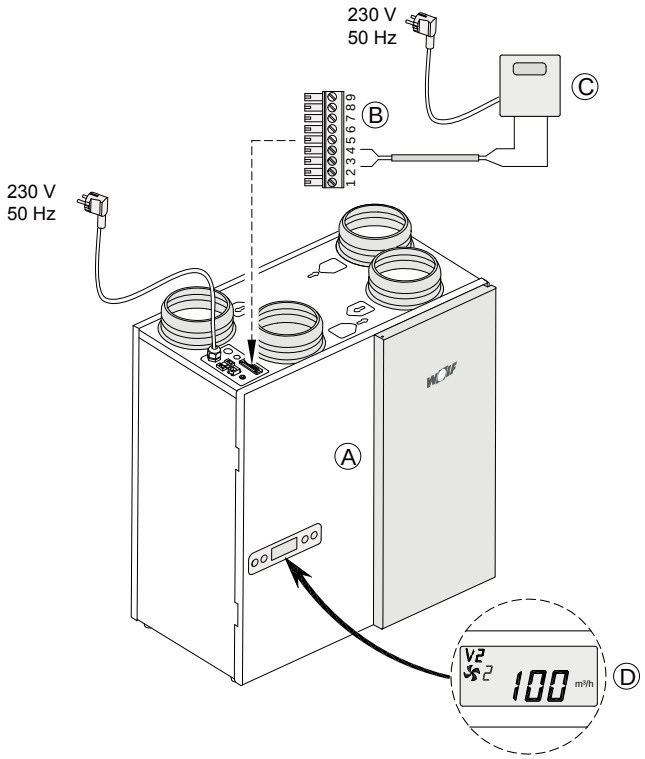
2) Not in range.

When connections no. 3 and no. 4 of the 9-pole connector are programmed as switch input 2, step number 24, 25 and 26 can be used to set the various modes the same as for contact input 1. When closing contact input 2, the display shows the text "CN2".

11.8Connection to 0-10 V input (only possible for CWL-180 Excellent with extension kit)

The CWL-180 Excellent with extension kit can be equipped with an external provision with 0-10 V control) (e.g. humidity sensor or CO_2 sensor). This external provision can be connected to pins no. 3 and no. 4 of the 9-pole connector; this 9-pole connector is directly accessible at the top of the appliance (also refer to §11.1).

As standard these connections are set as 0-10 V input; it is activated as standard. Ex factory, step number 21 is at “1”. When the connected provision is active, the display shows the message V2. The minimum and maximum voltage for a connected provision can be set between 0 and 10 V with step numbers 22 (minimum voltage) and 23 (maximum voltage). The minimum voltage for step number 22 cannot be set higher than the voltage set for step number 23; the maximum voltage for step number 23 cannot be set lower than the voltage set for step number 22.



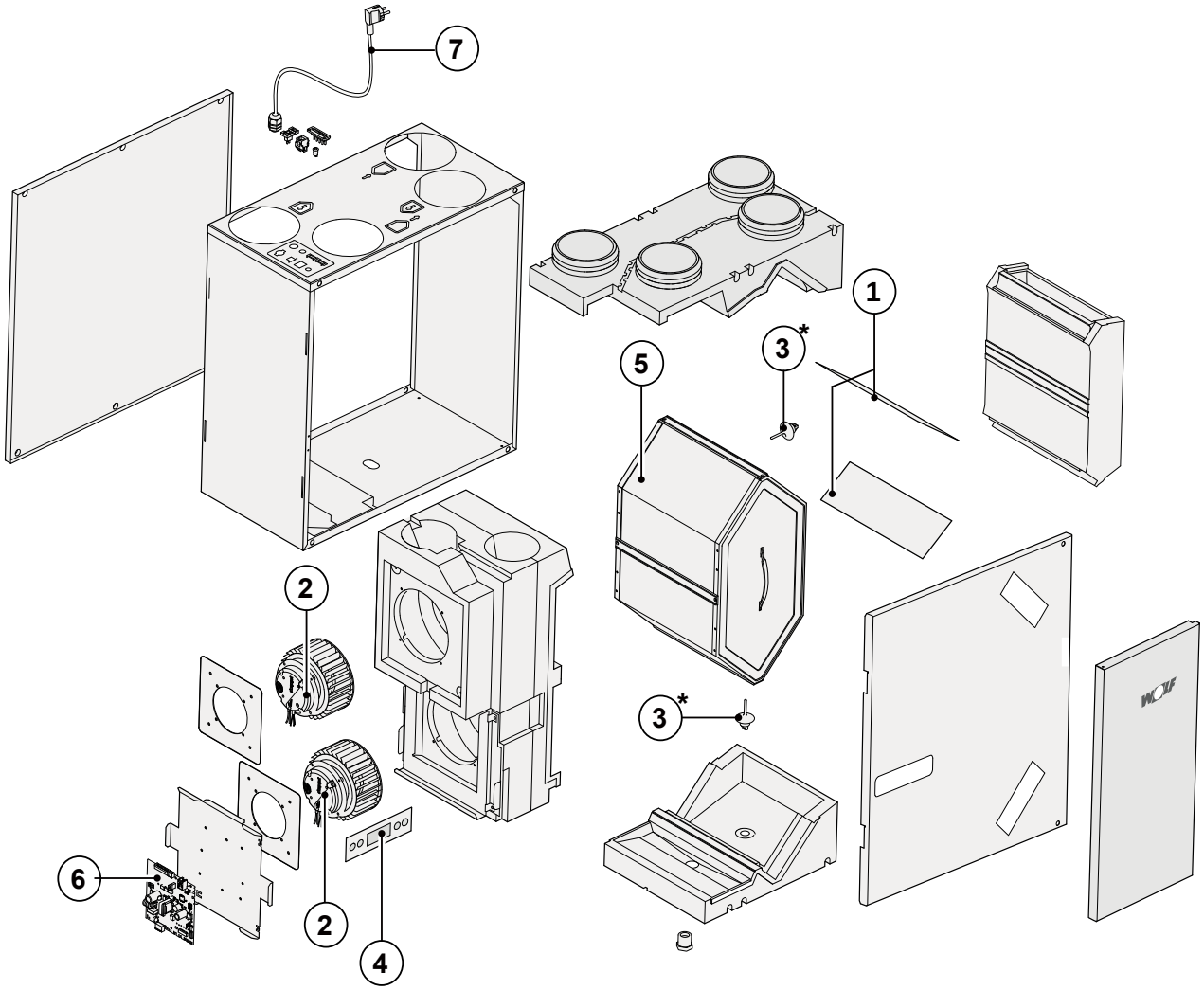
A = CWL-180 Excellent with extension kit
B = 9-pole connector
C = Provision connected to 0-10 V input; for instance a humidity sensor or a CO_2 sensor. Connected provision has its own power supply.
D = Display CWL-180 Excellent Excellent with extension kit (text “V2” appears when the provision is active on input 2).

If a second 0-10 V input is required, if necessary connections no. 1 and no. 2 of the 9-pole connector, standard preprogrammed as switch contact, can be reprogrammed to a second input 0-10 V. Modifying step number 15 from “0” or “2” to “1” makes this input a proportional 0-10 V input. When using two 0 - 10 V inputs, the 0 - 10 V input with the highest flowrate always takes precedence.

Ex factory activated 0 - 10 V input (when active, the display shows the text “V2)				
Connection 9-pole connector	Step number	Description	Setting range	Factory setting
No. 3 and no. 4	21	do/ do not activate 0 - 10 V input	1 = switched on 0 = NO contact 2 = NC contact	1
	22	minimum voltage 0 - 10 V	0.0 V - 10.0 V	0.0 V
	23	maximum voltage 0 - 10 V	0.0 V - 10.0 V	10.0 V

If connections no. 1 and no. 2 on the 9-pole connector are programmed as second 0-10 V input, step numbers 15, 16 and 17 can be used to modify the various modes just like for the standard 0-10 V input. When the provision is active on the optional second 0-10 V input, the display shows the text “V1”.

12.1 Service parts



* Resistance table temperature sensor NTC 10K						
-20°C = 96358	11°C = 19037	16°C = 15056	21°C = 11990	26°C = 9612	35°C = 6535	60°C = 2490
-10°C = 55046	12°C = 18202	17°C = 14414	22°C = 11493	27°C = 9224	40°C = 5330	70°C = 1753
0°C = 32554	13°C = 17368	18°C = 13772	23°C = 10995	28°C = 8835	45°C = 4372	80°C = 1256
5°C = 25339	14°C = 16533	19°C = 13130	24°C = 10498	29°C = 8447	50°C = 3605	90°C = 915
10°C = 19872	15°C = 15698	20°C = 12488	25°C = 10000	30°C = 8059	55°C = 2989	100°C = 677

Modifications reserved
Wolf GmbH continuously strives after improvement of products and reserves the right to change the specifications without prior notice.

No.	Article description	Article code
1	Filter kit 2x G4 Filter	1668492
2	Fan CWL-180 Excellent (1 pcs)	2138034
3	Temperature sensor (1 pc)	2745155
4	Control panel	2745156
5	Heat exchanger CWL-180 Excellent	2070707
6	Control board (Suitable for application with extension kit); When replacing, please note the correct settings of the dip switches; see §8.1	2745159
7	Cord with mains plug 230 V *	2745401

* The mains cable has a print connector.
When replacing it, always order a replacement mains cable from Wolf.

12.2 Notes

13. Setting values

STEP NO.	DESCRIPTION	FACTORY SETTING	SETTING RANGE	STEP	DISPLAY TEXT + SYMBOLS
01	Air flowrate CWL-180: setting	50 m³/h	0 m³/h or 50 m³/h		
02	Air flowrate CWL-180: setting 1	75 m³/h	50 m³/h - 180 m³/h	5 m³/h	1
03	Air flowrate CWL-180: setting 2	100 m³/h	50 m³/h - 180 m³/h	5 m³/h	2
04	Air flowrate CWL-180: setting 3	150 m³/h	50 m³/h - 180 m³/h	5 m³/h	3
05	Bypass function temperature	22.0 °C	15.0°C - 35.0°C	0.5 °C	BYPASS
06	Bypass function hysteresis	2.0 °C	0.0°C - 5.0°C	0.5 °C	BY HYS
07	Operation bypass function	0	0 (= bypass function automatic) 1 (= bypass function permanently not active) 2 (= bypass function permanently active)		BYPASS
08	Bus address	0	0 - (9 (0 = Master)		BUSADR
09	Central heating + heat recovery	OFF	OFF (= Central heating+heat recovery off) ON (= Central heating+heat recovery on)		Central heating + heat recovery
10	Imbalance permissible	ON	OFF (= flowrate supply equals exhaust) ON (= imbalance permissible)		
11	Fixed imbalance	0 m³/h	-50 m³/h - 50 m³/h	1 m³/h	
12	Preheater connected	OFF	ON (= preheater connected) OFF (= no preheater)		
STEP NO.	**DESCRIPTION**	**FACTORY SETTING WITH EXT. KIT**	**SETTING RANGE**	**STEP**	
13	Heater	0	0 (= off) 1 (= preheater) 2 (= postheater)		HEATER
14	Temperature postheater	21.0 °C	15.0°C to 30.0°C	0.5 °C	HEATER
15	Selection input 1 (*contact R, page 28)*	0	0 (= NO contact) 1 (= 0 - 10V input) 2 (= NC contact) 3 (= switching output 1/bypassfunction active → 12V; bypassfunction not active → 0V) 4 (= switching output 1/bypassfunction active → 0V; bypassfunction not active → 12V)		V1
16	Minimum voltage input 1 (*contact R, page 28)*	0.0 V	0 V - 10 V	0.5 V	V1 MIN
17	Maximum voltage input 1 (*contact R, page 28)*	10.0 V	0 V - 10 V	0.5 V	V1 MAX
18	Conditions switching input 1 (*contact R, page 28)*	0	0 (= off) 1 (= On) 2 (= On if conditions bypass active satisfied) 3 (= Bypass function control) 4 (= Bedroom diffuser)		CN1
19	Supply fan mode switching input 1 (*contact R, page 28)*	5	0 (= Supply fan off) 1 (= Absolute min. flowrate 50 m³/h) 2 (= Flowrate setting 1) 3 (= Flowrate setting 2) 4 (= Flowrate setting 3) 5 (= Multiple switch) 6 (= Maximum flowrate) 7 (= No signal supply fan)		CN1

13. Setting values

STEP NO.	DESCRIPTION	FACTORY SETTINGS MET EXT. KIT	SETTING RANGE	STEP	DISPLAY TEXT + SYMBOLS
20	Exhaust fan mode switching input 1 (*contact R, page 28)*	5	0 (= Exhaust fan off) 1 (= Absolute min. flowrate 50 m^3/h) 2 (= Flowrate setting 1) 3 (= Flowrate setting 2) 4 (= Flowrate setting 3) 5 (= Multiple switch) 6 (= Maximum flowrate 7 (= No signal exhaust fan)		CN1
21	Selection input 2 (*contact R, page 28)*	1	0 (= NO contact) 1 (= 0 - 10V input) 2 (= NC contact) 3 (= switching output 2/bypassfunction active → 12V; bypassfunction not active → 0V) 4 (= switching output 2/ bypass function active → 0V; bypassfunction not active → 12V)		V2
22	Minimum voltage input 2 (*contact R, page 28)*	0.0 V	0.0 V - 10.0 V	0.5 V	V2 MIN
23	Maximum voltage input 2 (*contact R, page 28)*	10.0 V	0.0 V - 10.0 V	0.5 V	V2 MAX
24	Conditions switching input 2 (*contact R, page 28)*	0	0 (= off) 1 (= On) 2 (= On if conditions bypass function active satisfied) 3 (= Bypass function control) 4 (= Bedroom diffuser)		CN2
25	Supply fan mode switching input 2 (*contact R, page 28)*	5	0 (= Supply fan off) 1 (= Absolute min. flowrate 50 m^3/h) 2 (= Flowrate setting 1) 3 (= Flowrate setting 2) 4 (= Flowrate setting 3) 5 (= Multiple switch) 6 (= Maximum flowrate) 7 (= No signal supply fan)		CN2
26	Exhaust fan mode switching input 2 (*contact R, page 28)*	5	0 (= Exhaust fan off) 1 (= Absolute min. flowrate 50 m^3/h) 2 (= Flowrate setting 1) 3 (= Flowrate setting 2) 4 (= Flowrate setting 3) 5 (= Multiple switch) 6 (= Maximum flowrate) 7 (= No signal exhaust fan)		CN2
27	Geo-heat exchanger	OFF	OFF (= Diffuser control geo-heat exchanger off) ON (= Diffuser control geo-heat exchanger on)		EWT
28	Minimum temperature geo-heat exchanger (Below this temperature the diffuser opens.)	5.0 °C	0.0°C - 10.0°C	0.5 °C	EWT T-
29	Maximum temperature geo-heat exchanger (Above this temperature the diffuser opens.)	25.0 °C	15.0°C - 40.0°C	0.5 °C	EWT T+
30	RH sensor	OFF	OFF (= RH sensor switched off) ON (= RH sensor switched on)		
31	Sensitivity RH sensor	0	+2 most sensitive +1 ↑ 0 basic setting RH sensor -1 ↓ -2 least sensitive		

Productdatasheet conform Ecodesign (EU), nr. 1254/2014 (Annex IV)					
Supplier:		**Wolf GmbH.**			
Model:		**CWL 180 Excellent**			
Climate zone	**Type of control**	**SEC-Value in kWh/m²/a**	**Energyclass (SEC)**	**The annual electricity consumption (AEC) in kWh**	**The annual heating saved (AHS) in kWh**
Average	Manual	-33,11	B	433	4277
	Clock	-34,35	A	414	4305
	1 Sensor (RH/CO_2/VOC)	-36,67	A	375	4362
	2 or more Sensors (RH/CO_2/VOC)	-40,73	A	297	4475
Cold	Manual	-74,49	A+	970	6528
	Clock	-76,00	A+	951	6571
	1 Sensor (RH/CO_2/VOC)	-78,87	A+	912	6657
	2 or more Sensors (RH/CO_2/VOC)	-84,02	A+	834	6830
Warm	Manual	-9,41	F	388	2251
	Clock	-10,48	E	369	2266
	1 Sensor (RH/CO_2/VOC)	-12,49	E	330	2296
	2 or more Sensors (RH/CO_2/VOC)	-15,92	E	252	2355
Type of ventilation unit:		Ventilation unit with heat recovery			
Fan:		Variable speed EC fan			
Type of heat exchanger:		Recuperative plastic cross-counterflow heatexchanger			
Thermal efficiency:		82%			
Maximum flow rate:		180 m³/h			
Electric power input:		82 W			
Sound power level Lwa:		42 dB(A)			
Reference flow rate :		126 m³/h			
Reference pressure difference:		50Pa			
Specific Power Input (SEL):		0,31 W/m³/h			
Control factor:		1,0 in combination with manual switch			
		0,95 in combination with clock			
		0,85 in combination with 1 sensor			
		0,65 in combination with 2 or more sensors			
Leakage*:	Internal	0,7%			
	External	0,8%			
Filterwarning:		On the display of the ventilation unit / Manual switch / clock control. **Attention!** For optimal energy efficiency and a proper operation a regular filter inspection, cleaning or replacement is necessary.			
Internet address for Assembly instructions:		http://www.wolf-heiztechnik.de/downloads/download-center/montage-und-bedienungsanleitungen/			
Bypass:		Yes (supply air fan off)			

** Measurements executed by TZWL according to the DIBT-standards (TZWL-report M.94.10.01.095.AA.0409, Octobre 2007)*

Classification from 1 January 2016	
SEC klasse (“average climate”)	SEC in kWh/m²/a
A+ (most efficient)	SEC < -42
A	-42 ≤ SEC < -34
B	-34 ≤ SEC < -26
C	-26 ≤ SEC < -23
D	-23 ≤ SEC < -20
E	-20 ≤ SEC < -10
F	-10 ≤ SEC < 0
G (least efficient)	0 ≤ SEC

DECLARATION OF CONFORMITY (according to ISO/IEC 17050-1)

Nr.:	**3063650 (CWL-180 Excellent 4/0 R)** **3063650 (CWL-180 Excellent 4/0 L)**
Manufacturers:	**Wolf GmbH**
Address:	**Industriestr. 1** **D-84048 Mainburg**
Product:	**Comfort domestic ventilation unit** **with heat recovery** **CWL- 300/400 Excellent**

The product described above complies with the following documents:

DIN EN 12100 Part 1 and 2; 04/2004
DIN EN ISO 13857; 06/2008
DIN EN 349; 09/2008
EN 60335 Part 1; 02/2007
EN 60730; 06/2009
EN 61000-6-2;02/2007
EN 61000-6-3; 03/2006
EN 61000-3-2; 03/2010
EN 61000-3-3; 06/2009

Under the provisions of the following directives:

2006/95/EWG (low voltage directive)
2004/108/EWG (EMC directive)
RoHS 2011/65/EU(substances directive)
2009/125/EG (EU ErP-directive)

The product bears the CE label:

CE

Mainburg, 24.02.11

Gerdewan Jacobs
Technical Director

Klaus Grabmaier
Product Approval

613796/B

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