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Installation Instructions

HEAT-RECOVERY-UNIT

CWL - 300 (B)

CWL - 400 (B)

WITH OPTION-PCB



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The functionality of CWL 300 & 400 can be extended with the separately available option pcb.

This option pcb allows connection of various extras. This manual describes how the various connections must be made (§ 2.2 and chapter 6) and what the setting parameters are (§ 4.3). For general information on the CWL-series we refer to the installation instructions of the CWL- 300/400.

The CWL-appliance can be equipped with an option pcb. It provides the following functions.

Input 0-10 V for a carbon dioxide sensor

When there are more people in the home, more CO₂ is produced and then this sensor automatically increases the ventilation quantity. For that purpose the CO₂ sensor must have a 0 to maximum 10V control.

Input 0-10 V for a moisture sensor

When the moisture content in the dwelling increases, for instance when someone is taking a shower, this sensor automatically increases the ventilation quantity. The moisture sensor must have a 0 to maximum 10V control.

Switching input for bedroom valve.

With this input (make contact) the bedroom valve can be controlled, for example by using a time switch.

Switching output for bedroom valve 24 VAC

The option pcb has a built-in control for a 24 VAC bedroom valve. Such a valve can directly be connected to the pcb. The valve can be controlled from the switching input for the bedroom valve.

Switching output for 24 VAC flue gas safety valve

If it is recommended to combine the discharge of the central heating and the CWL appliance, the CWL connection to the joint discharge must be protected with a flue gas safety valve. The valve can directly be connected to this pcb. When the output fan has stopped or if it is defective, this valve is activated.

Control for preheater up to 1000 W

The preheater ensures that the input air is kept above 0°C, so the CWL-appliance can continue the balanced ventilation also at very low atmospheric temperatures. The option pcb contains a control for a preheater up to 1000 W. The preheater can be connected to the option pcb without separate control. The hook-up wire of the preheater must be fed into the appliance; the 230 V power cable must separately be connected to the option pcb (see § 6.6).

It is also possible to connect a preheater to the basic pcb of the CWL-appliance if no option pcb is mounted (see §9.4 of the installation instructions CWL-300/400).

Control for postheater up to 1000 W

The postheater ensures that the supply air that is blown into the dwelling can be kept at the preset temperature. That way additional warmth can be brought into the dwelling. The option pcb contains a control for a postheater up to 1000 W. The postheater can be connected to the option pcb without separate control. The hook-up wire of the postheater must be fed into the appliance; the 230 V power cable must separately be connected to the option pcb (see § 6.5).

Two freely programmable make contact inputs

These inputs make it possible :

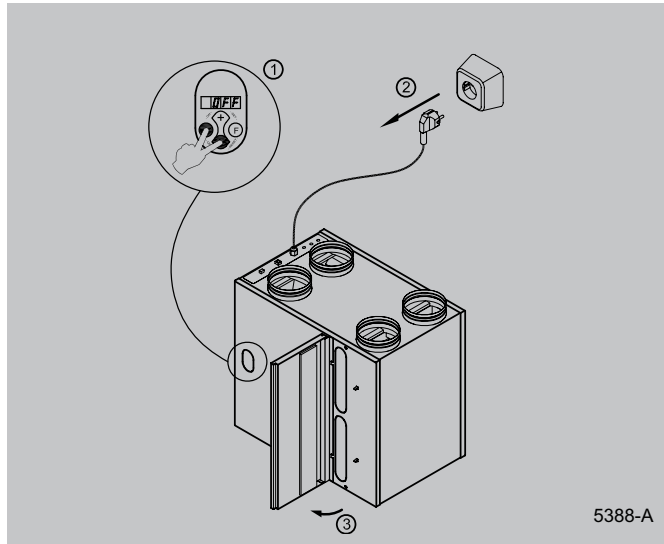
- to open the bypass without regard for the temperature conditions;
- to switch the input or output low or high, to circumvent the frost protection;
- to switch the input low when the bypass opens.

Switch input for incidents

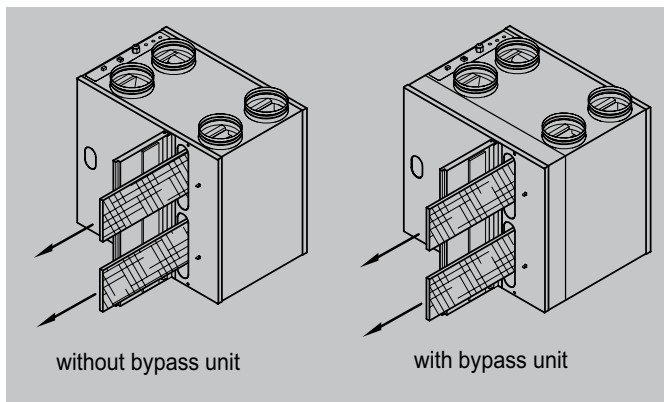
A fire alarm can be connected to this input. As soon as the fire alarm is triggered, the appliance switches to incident mode. As standard that is set to switch off the fans.

2.1 Assembly option pcb by installer

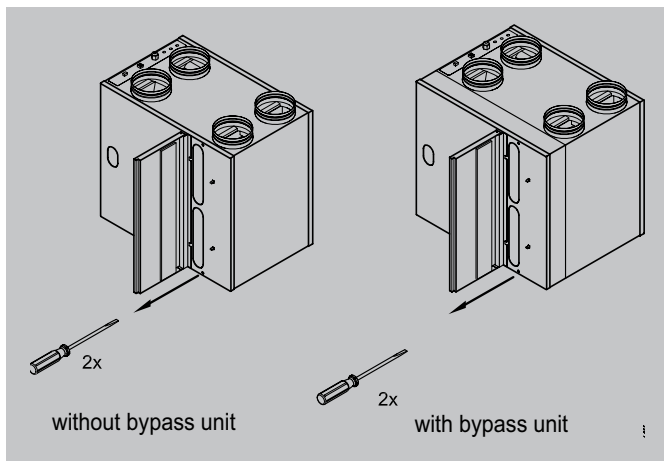
- 1 Switch off the appliance on the control panel (simultaneously press keys "OK" and "-" for 3 seconds) and switch off the power supply. Open the filter door .



- 2 Remove the filters.

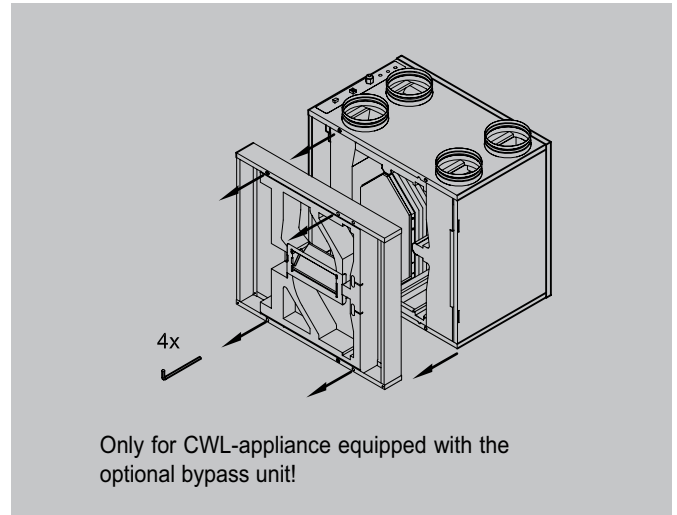


- 3 Remove the front cover.

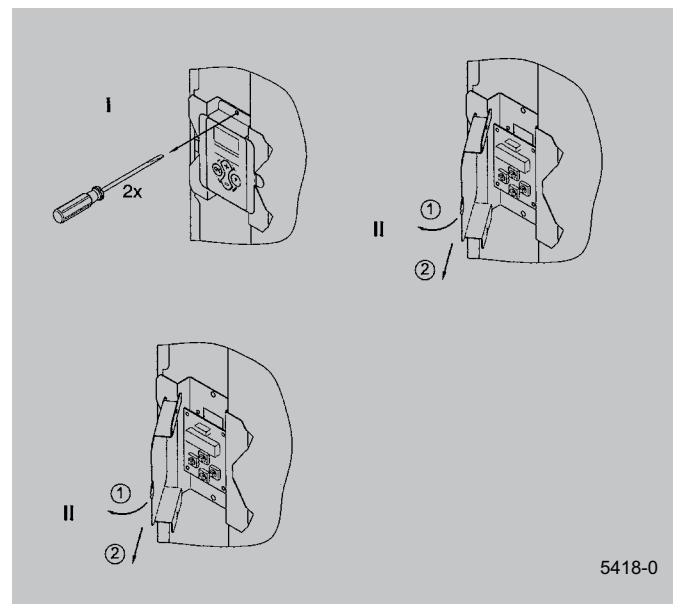


- 4 If the appliance is equipped with the optional bypass unit, it must now be removed.

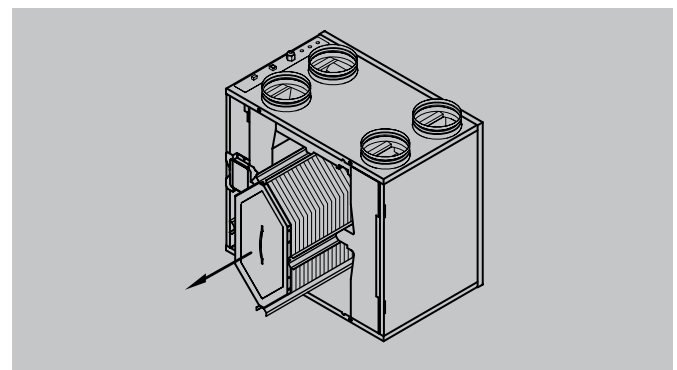
First remove the display (see item 5 for appliance without bypass unit) and unscrew the four hexagon socket bolts M6 x 16; pull out the connectors and remove the bypass unit from the appliance.



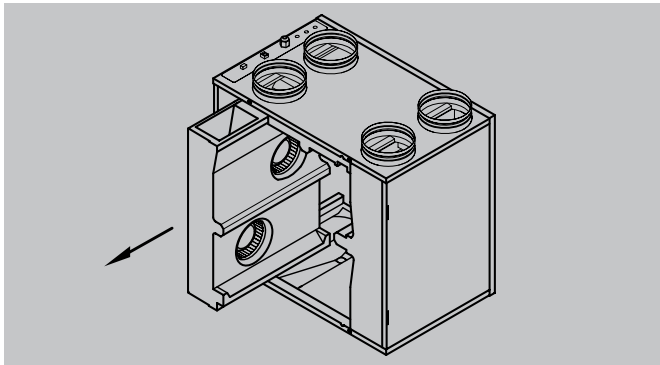
- 5 Remove the control panel.



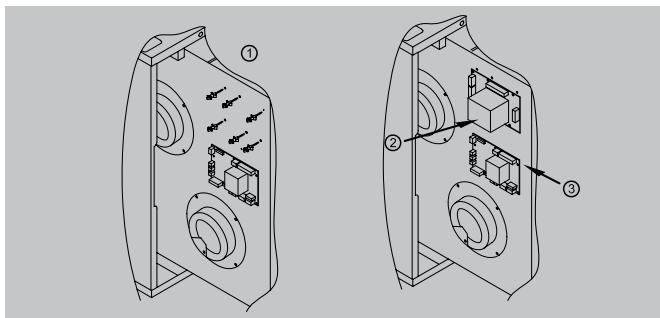
- 6 Remove the heat exchanger. Be careful not to damage the foam parts in the appliance.



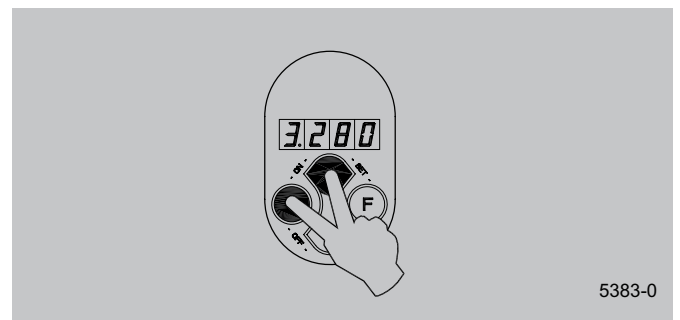
- Slide the fan unit forward from the appliance far enough to access the basic pcb.



- Mount the 6 pcb feet that came with the option pcb. Then press the option pcb on the pcb feet and connect the 2 cables from the option pcb to the basic pcb (connector X12 and X13; see also §9.4 in the installation instructions CWL 300/400). Connect the desired options to the option pcb; remove the sealing plugs, mount the necessary swivels in the top panel and feed the additional cables through those out of the appliance.



- Slide the fan unit back into the appliance.
- Refit the control panel. (For an appliance with bypass unit, first mount the heat exchanger and the bypass unit)
- Place the heat exchanger back into the appliance.
- Place the front cover.
- Place the filters in the appliance with the clean side facing the exchanger.
- Close the filter door and switch on the power supply.
- Switch on the appliance on the control panel (simultaneously press keys "OK" and "+" for 3 seconds).

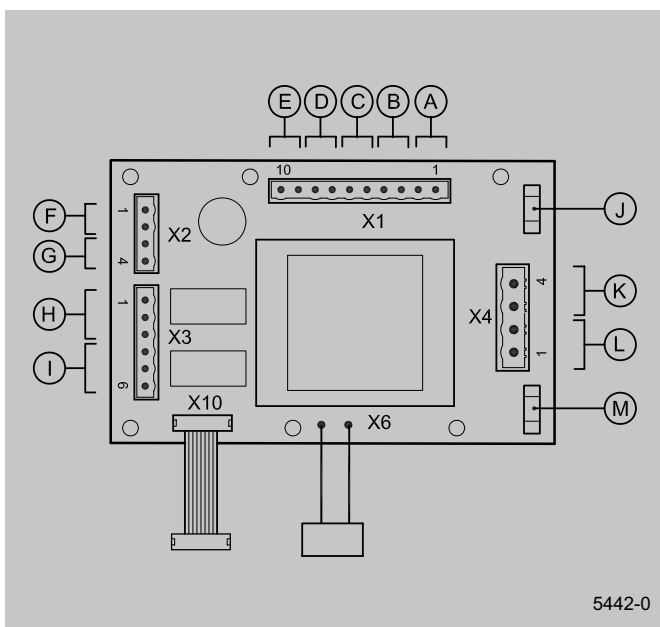


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- After cleaning the filter or a placing a new filter, the filter indication must be reset by pressing key "OK" for 1 second.

2.2 Connections option pcb

The option pcb is fitted with a number of screw connectors. These can be used to connect various components. The figure below shows the location of the various terminals.



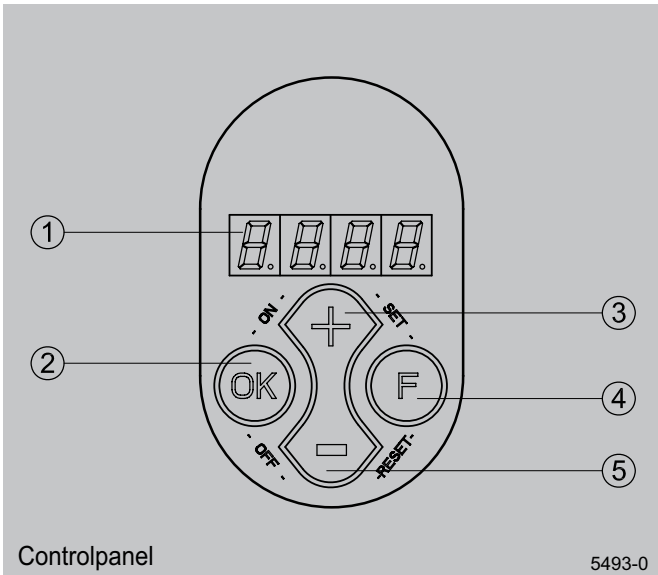
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The moment the option pcb is connected, it will automatically be detected by the basic pcb.

- A = Switching input for incident
- B = Switching input for bedroom valve.
- C = Programmable make contact P1
- D = Programmable make contact P2
- E = Temperature sensor postheater
- F = Input moisture sensor
- G = Input CO₂ sensor
- H = Switching output for bedroom valve 24 VAC
- I = Switching output flue gas valve 24 VAC
- J = Fuse postheater 4AT
- K = Switching output postheater
- L = Switching output preheater
- M = Fuse preheater 4AT

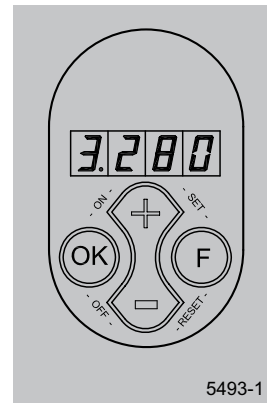
3.1 LED display control panel

The CWL-appliance is fitted with a control panel. It can be used to retrieve and modify the settings in the control unit program. The control panel has four keys and a display



- 1 = Display
- 2 = Key "OK" (confirm, ready, filter indication reset)
- 3 = Key increase parameter
- 4 = Function key
- 5 = Key reduce parameter

On the left the display indicates the ventilation setting or the parameter type. On the right it shows the readout value, for instance the preset air flow.



Example:

The display now shows that the appliance is running at ventilation setting 3 at a flow rate of 280 m³/h.

The 4 keys have the following functions:

- F Function key / switching on and off parameter menu
- + Next parameter / increase value
- - Previous parameter / decrease value
- OK Switching on and off settings menu / manual fault reset/ filter indication reset

Other commands can be entered with key combinations.

- F & + (set), confirm parameter value
- F & - (reset), parameter value back to factory setting
- OK & + (ON), switch on appliance
- OK & - (OFF), switch off appliance

Wherever this booklet states that a key has to be pressed, the key in question is printed in quotation marks and in bold.

Example: - press key "**OK**".

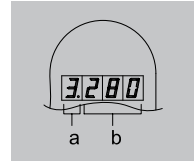
3.2 Menu structure control panel

The menu structure is divided into a readout section and a settings section. The number of visible parameters depends on the parameter set. The user has the parameter set "user"; a

more comprehensive parameter set "installer" is available for the installer.

4.1 Reading out settings

As standard the present position of the multiple switch and the connected output volume are shown (Operational mode). On the left the position of the multiple switch (position 1, 2 or 3) is shown and to the right of the dot the volume of the output fan is shown.

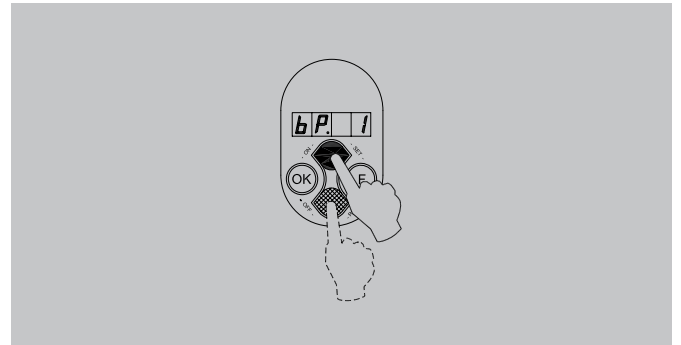


a = Setting multiple switch
b = Volume output fan

4.1.1 Read out settings by the user

The user can read out other relevant data using keys "+" and "-" (step 0 to step 8). Step numbers are not shown on the display! See the table of section 4.2.1 for user readout; when no key is operated for 5 minutes, the display automatically returns to operational mode. Key "+" can be used to scroll through the menu; key "-" always takes you back to step 0. Modifying settings is not possible in this situation.

When an option pcb is mounted, the installer has two additional readout option compared to the standard version, that is steps no 7 and 8.



4.1.2 Read out settings by the installer

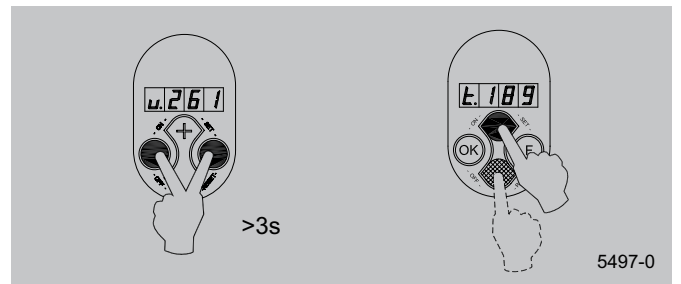
A more comprehensive readout program is available for the installer. Pressing keys "F" and "OK" for 3 seconds calls up all installer data. In this menu the values cannot be modified.

Activating this menu always calls up step no. 9 (see table section 4.2.1); pressing key "+" calls up the installer and user data and pressing key "-" takes you back to step no. 1.

After 5 minutes this menu automatically disappears and the display will show the operational situation again.

When an option pcb is mounted, the installer has one additional readout option compared to the standard version, that is step no.16.

In the event of a fault, the fault code appears on the display; see also chapter 5



4.1.3 Readout data user / installer

The next page (page 6) contains a table with all step numbers, with description, for the user as well as the installer.

4.2 Modifying settings

A number of settings can be modified to adapt the appliance to the specific situation. Again a distinction is made between

settings that can be modified by the user or by the installer.

4.2.1 Modifying settings by the user

The user can modify a limited number of settings, that is U1 to U8 inc. (see table section § 4.2.3); how to modify these settings is shown in the menu structure diagram §6.5 and described in

detail in §6.2 of the installation instructions CWL-300/400.

Step no.	Readout (example)	Description	Remark
No.1	2,200	Current position output volume [m ³ /h]	
No.2	C 0	Message code operating condition	C0 = No message C3 = Input fan running at constant pressure C6 = Output fan running at constant pressure C7 = Correction maximum air flow C8 = Imbalance detected, if not permissible (I7=0). No response to multiple switch until "OK" has been pressed C12= Incident setting triggered
No.3	bP.1	Bypass status (only if mounted)	0 = bypass valve shut, 1 = bypass valve automatic 2 = input at minimum
No.4	tP.9	Temperature from atmosphere [°C]	At negative temperature (< 0°C) then readout tP.9.
No.5	tS.21	Temperature from indoors [°C]	
No.6	In.0	Not applicable	
No.7	P1.6.2	Voltage on proportional input 1 (V) for moisture sensor	Input P1 with a voltage of 6.2 Volt
No.8	P2.5.2	Voltage on proportional input 2 (V) for carbon dioxide sensor (P2)	Input P2 with a voltage of 5.2 Volt
No.9	u.186	Current input volume [m ³ /h]	
No.10	v.186	Current output volume [m ³ /h]	
No.11	t.180	Current pressure input duct [Pa]	
No.12	A.180	Current pressure output duct [Pa]	
No.13	u0.0	Status frost protection	0 = not active 1 to 4 = imbalance 5 = input fan off
No. 14	St.9	Temperature to atmosphere (sensor not connected as standard)	If not connected Pt.75
No.15	Pt.18	Temperature to dwelling [°C] (sensor not connected as standard)	If not connected Pt.75
No.16	tn.25	Temperature postheater [°C]	0 = 0°C (not active)

user

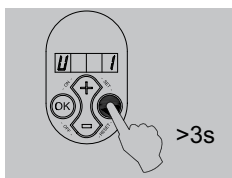
installer

4.2.2 Modifying settings by the installer

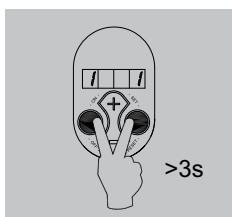
The installer can modify more settings. When parameters are set incorrectly, the appliance can no longer perform up to standard, so make sure no parameters are modified incorrectly. Also refer to the menu structure diagram § 6.5.1 in the installation instructions CWL-300/400. The following actions are required to modify the settings from operational mode.

(By way of example parameter I8 is changed from 1 to 2.)

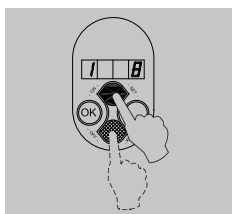
1. Press key "F" during 3 seconds to activate the settings menu.



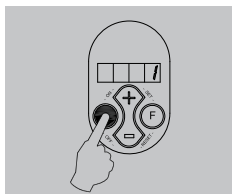
2. Press key "F" and "OK" for 3 seconds to activate the comprehensive installer parameters set.



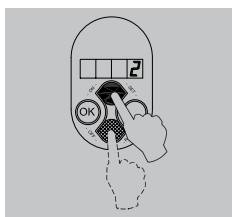
3. The desired parameter can be found with the aid of keys "+" and "-".



4. Pressing key "OK" calls up this setting.

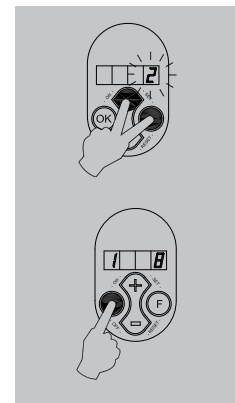


5. Use keys "+" and "-" to modify the value.

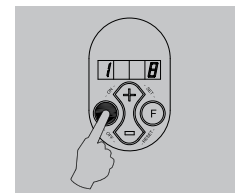


6. The modified setting can now be:
 - A saved and stored
 - B be removed
 - C restored to factory setting

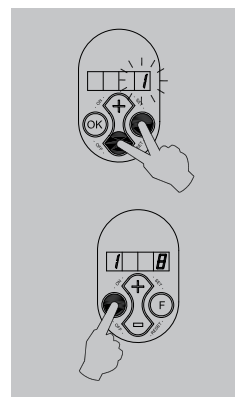
A Simultaneously press keys "F" and "+" (first "F" and then "+") to save the modified setting; the modified value will now blink 3x as confirmation; the value remains on the display. Press key "OK" to return to the settings menu; if desired, more settings can now be changed. (see item 2 to 5) Continue with step 7.



B Press key "OK" to go back to the settings menu without saving the modified setting; the previous setting will be maintained. Continue with step 7.



C Simultaneously press keys "F" and "-" (first press "F" and then "-") to go back to the factory setting. The factory setting will blink 3 times and remain at that value. The modified setting has now been removed. Press key "OK" to return to the settings menu. Continue with step 7.



7. Press key "F" for 1 second to leave the settings menu.



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4.2.3 Explanation setting parameters

The user-adjustable parameters are indicated with "U".

The installer-adjustable parameters are indicated with "I" (basic pcb) and "P" (option pcb).

U1 to U5 & U8	These settings are described in chapters 6.2 , 6.3 and 6.7.3 of the general installation instructions CWL 300/400(B).	
U6	Target temperature postheater (only if a postheater is mounted)	
U7	Determines how the control responds to the voltages at the proportional inputs. A = only 3-way switch b = moisture sensor C = carbon dioxide sensor d = moisture sensor and carbon dioxide sensor (moisture sensor before carbon dioxide sensor)	
I1 - I19	These settings are described in chapters 6.4 and 6.7.3 of the general installation instructions CWL 300/400(B)	
P1	Air quantity input fan when incident input is switched	
P2	Air quantity output fan when incident input is switched	
P3	Additional air quantity input fan when input bedroom valve is closed	
P4	Additional air quantity output fan when input bedroom valve is closed	
P5	Determines how programmable make contact 1 is linked to other functions:	0 = not linked 1 = overrule frost protection 2 = link to bypass conditions 3 = link to frost conditions 4 = control bypass damper
P6	Determines how the input fan responds when make contact 1 is made:	0 = volume to absolute minimum 1 = volume as per setting 3-way switch 2 = volume as per setting 3 of the 3-way switch 3 = fan off
P7	Determines how the output fan responds when make contact 1 is made:	0 = volume to absolute minimum 1 = volume as per setting 3-way switch 2 = volume as per setting 3 of the 3-way switch 3 = fan off
P8	Determines how programmable make contact 2 is linked to other functions:	0 = not linked 1 = overrule frost protection 2 = link to bypass conditions 3 = link to frost conditions 4 = control bypass damper
P9	Determines how the input fan responds when make contact 2 is made:	0 = volume to absolute minimum 1 = volume as per setting 3-way switch 2 = volume as per setting 3 of the 3-way switch 3 = fan off
P10	Determines how the output fan responds when make contact 2 is made:	0 = volume to absolute minimum 1 = volume as per setting 3-way switch 2 = volume as per setting 3 of the 3-way switch 3 = fan off
P11	Determines the target voltage of proportional input 1. Within the preset conditions, the volume control tries to change the input voltage to the target voltage.	
P12	Determines the maximum voltage of the device connected to proportional input 1. The proportional band of the PI controller is adapted automatically.	
P13	Determines the integration time of the PI controller of proportional input 1. The PI controller will control purely proportional when the integration period is 0 seconds.	
P14	Determines the target voltage of proportional input 2. Within the preset conditions, the volume control tries to change the input voltage to the target voltage.	
P15	Determines the maximum voltage of the device connected to proportional input 2. The proportional band of the PI controller is adapted automatically.	
P16	Determines the integration time of the PI controller of proportional input 2. The PI controller will control purely proportionally when the integration period is 0 seconds.	
P17	Linking bedroom valve:	0 = no link, 1 = link to bypass control 2 = link to frost safety

4.2.4 Setting range and factory setting parameters

	Adjustable parameter	Description	Setting range	Factory setting
User	U 1	Volume setting 1	50..(max. -10)	100
	U 2	Volume setting 2	50..(max. -5)	150 CWL-300/200 CWL-400
	U 3	Volume setting 3	50..300 CWL-300/ 50..400 CWL-400	225 CWL-300/ 300 CWL-400
	U 4	Minimum atmospheric temperature bypass	5..20	10
	U 5	Minimum indoor temperature bypass	18..30	22
	U 6	Target temperature postheater	0..30	0
	U 7	Modus proportional inputs	A,b,C,d	A
	U 8	N.a.	0.1	0 (off)
	I 1	Fixed imbalance	-100..+100	0
	I 2	No contact step	0,1,2,3	1
	I 3	N.a.	2,3	2
	I 4	Switch setting 1	0,1,2,3	1
	I 5	Switch setting 2	0,1,2,3	2
	I 6	Switch setting 3	0,1,2,3	3
	I 7	Imbalance permissible	0.1	1 (Yes)
	I 8	Bypass mode	0.1, 2	1
	I 9	Hysteresis indoor temperature bypass	0..5	2
	I 10	Constant pressure switched off	0.1	0 (no)
	I 11	Preheater or postheater	0, 1, 2, 3	0
I 12	Offset temperature preheater	-30 ...+30	0,5	
I 13	Filter message on/off	1, 0	1 (on)	
I 14	Option pcb present	1, 0	0 (no)	
I 15	Heat recovery configuration	0.1	0 (Heat recovery)	
I 16	Fan off	1,2,3	1 (output fan)	
I 17	Repeat time	1 .. 24	24 (hour)	
I 18	Min. switch-off time fan(s)	1 .. 240	60 (second)	
I 19	Min. switch-off time fans after switching on 230V.	1 .. 240	1 (second)	
installer	P1	Input volume at incident	0..max	0
	P2	Output volume at incident	0..max	0
	P3	Bedroom correction input fan	-100..+100	-20
	P4	Bedroom correction output fan	-100..+100	-20
	P5	Link make contact 1	0,1,2,3,4	0
	P6	Input mode make contact 1	0,1,2,3	0
	P7	Output mode make contact 1	0,1,2,3	1
	P8	Link make contact 2	0,1,2,3,4	0
	P9	Input mode make contact 2	0,1,2,3	0
	P10	Output mode make contact 2	0,1,2,3	1
	P11	Target voltage proportional 1	0..10	8
	P12	Maximum voltage proportional 1	0..10	10
	P13	Integration time proportional 1	0..1250	0
	P14	Target voltage proportional 2	0..10	4
	P15	Maximum voltage proportional 2	0..10	10
	P16	Integration time proportional 2	0..1250	0
	P17	Link bedroom valves	0.1, 2	0

4.3 Modifying setting parameters

Chapter 1 indicates the connection possibilities offered by the option pcb. When connecting the various components, para-

meters must also be set on the control panel. Setting or modifying parameters is described in § 4.2.1 and 4.2.2.

4.3.1 Switch input incidents

Parameters P1 and P2 must be set on the control panel. P1 represents the air quantity of the input fan and P2 represents the air quantity of the output fan. When the switch

contact is made, both fans will run at the preset air quantities P1 and P2. The setting parameters as shown in § 4.2.4.

4.3.2 Switch input bedroom valve

Parameters P3 and P4 must be set on the control panel. P3 represents the additional air quantity of the input fan and P4 represents the additional air quantity of the output fan. When

the switch contact is made, both fans will run at the air quantity of the 3-way switch, increased by the preset air quantities P3 and P4. The setting parameters are shown in § 4.2.4.

4.3.3 Programmable make contact 1

Parameters P5, P6 and P7 must be set on the control panel. P5 indicates where make contact 1 must be linked to, P6 and P7

indicate what the air quantity must be for the input and output fan respectively. The setting parameters as shown in § 4.2.4.

4.3.4 Programmable make contact 2

Parameters P8, P9 and P10 must be set on the control panel. P8 indicates where make contact 2 must be linked to, P9 and P10

indicate what the air quantity must be for the input and output fan respectively. The setting parameters are shown in § 4.2.4.

4.3.5 Humidity sensor input

Parameters U7, P11, P12 and P13 must be set on the control panel. U7 indicates how the control responds to the voltage of the proportional input. P11 indicates the target voltage. P12

indicates the maximum voltage of the device connected to the input. P13 shows the integration time of the PI controller. The setting parameters are shown in § 4.2.4.

4.3.6 Input for CO2 sensor

Parameters U7, P14, P15 and P16 must be set on the control panel. U7 indicates how the control responds to the voltage of the proportional input. P14 indicates the target voltage. P15

indicates the maximum voltage of the device connected to the input. P16 shows the integration time of the PI controller. The setting parameters are shown in § 4.2.4.

4.3.7 Control postheater up to 1000 W

Parameter U6 must be set on the control panel. U6 shows the target temperature of the postheater. The setting parameters

are shown in § 4.2.4.
Refer to § 6.5 for connecting the postheater.

4.3.8 Control preheater up to 1000 W

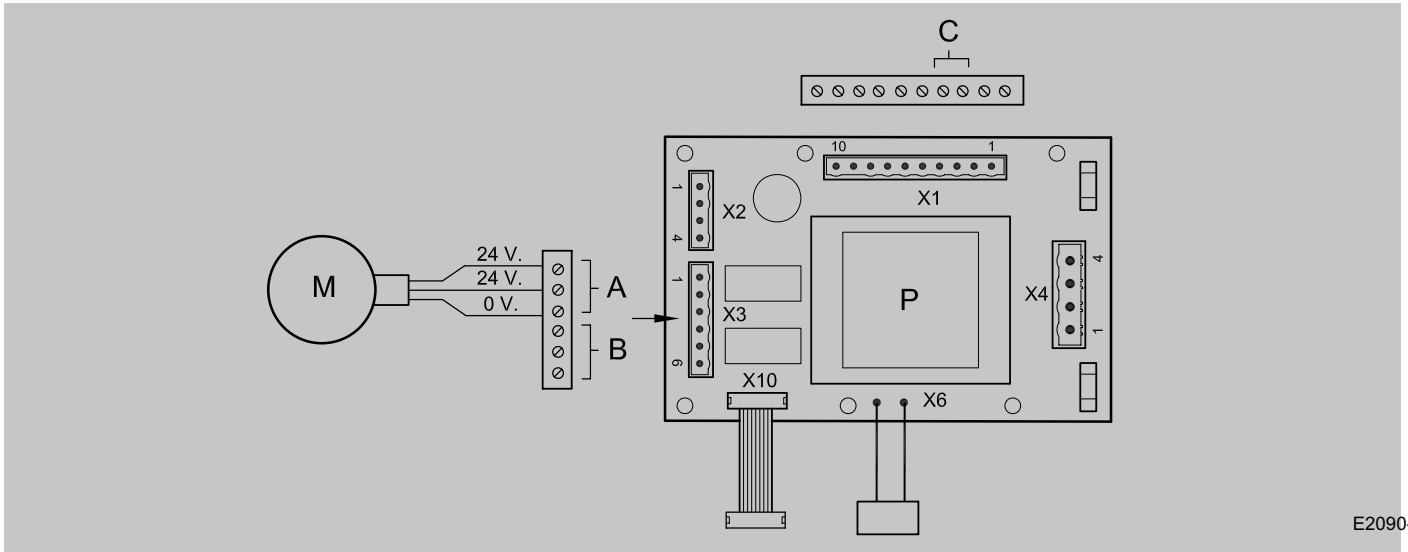
Parameter U17 must be set on the control panel. P17 indicates whether or not a preheater is present. The setting parameters

are shown in § 4.2.4.
Refer to § 6.6 for connecting the preheater.

5.1 Fault codes table CWL 300/400(B) with option pcb

Fault code	Cause	Action user	Action installer
F2	The input fan has stopped.	Contact the installer.	<ul style="list-style-type: none"> • Replace the input fan.
F5	The output fan has stopped.	Contact the installer.	<ul style="list-style-type: none"> • Replace the output fan.
F9	The temperature sensor that measures the temperature of the input air is defective. The appliance operates as expected, but the bypass is out of operation.	Contact the installer.	<ul style="list-style-type: none"> • Check the wiring from the sensor to the basic pcb. • Check the sensor connection to the wiring. • Replace the sensor.
F10	The temperature sensor that measures the temperature of the output air is defective. The appliance operates as expected, but the bypass is out of operation.	Contact the installer.	<ul style="list-style-type: none"> • Check the wiring from the sensor to the basic pcb. • Check the sensor connection to the wiring. • Replace the sensor.
F11	The postheater sensor is not connected, defective, short-circuited or it has come loose. CWL operates as expected, but the postheater is out of operation.	Contact the installer.	<ul style="list-style-type: none"> • Check the wiring and the connection to the postheater sensor. • Replace the sensor.

6.1 Connection diagram bedroom valve 24 VAC

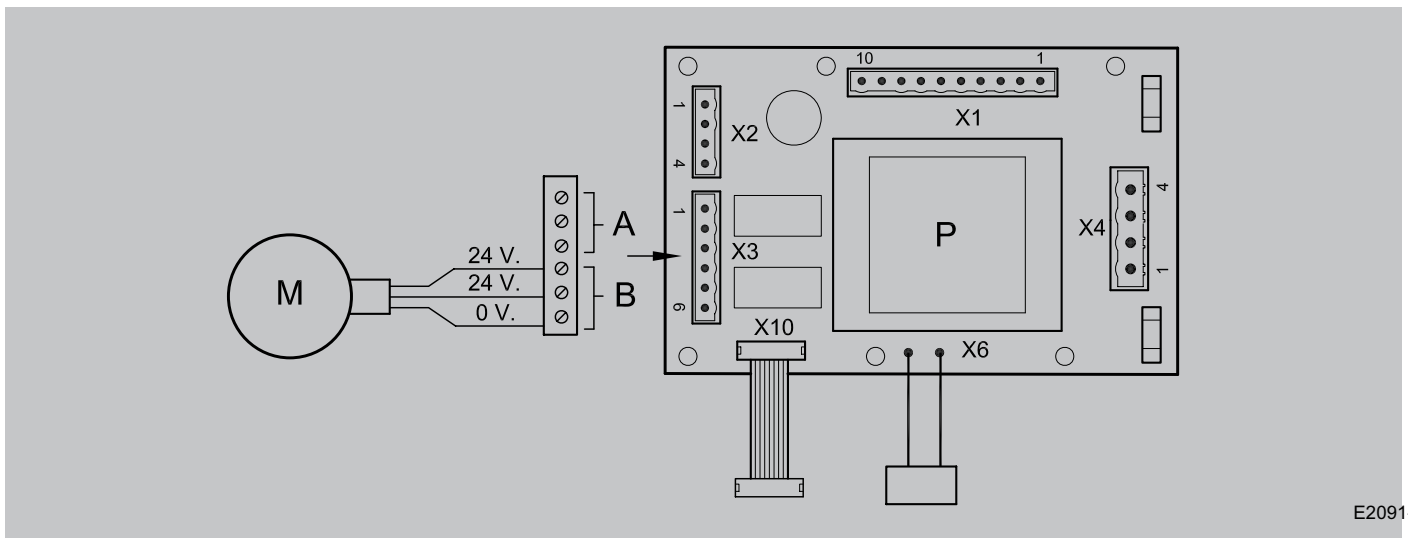


E2090-0

- A = Connection control valve
- B = Connection safety valve
- C = Switch input bedroom valve
- M = Valve motor control valve 24 VAC, 10 VA (e.g. bedroom valve)
- P = Option pcb

When “switch input bedroom valve” is not made, there is 24 V on position 1 of the X3 connector. When “Switch input bedroom valve” is made, there will be 24 V on position 2 of the X3 connector.

6.2 Wiring diagram flue gas valve 24 VAC

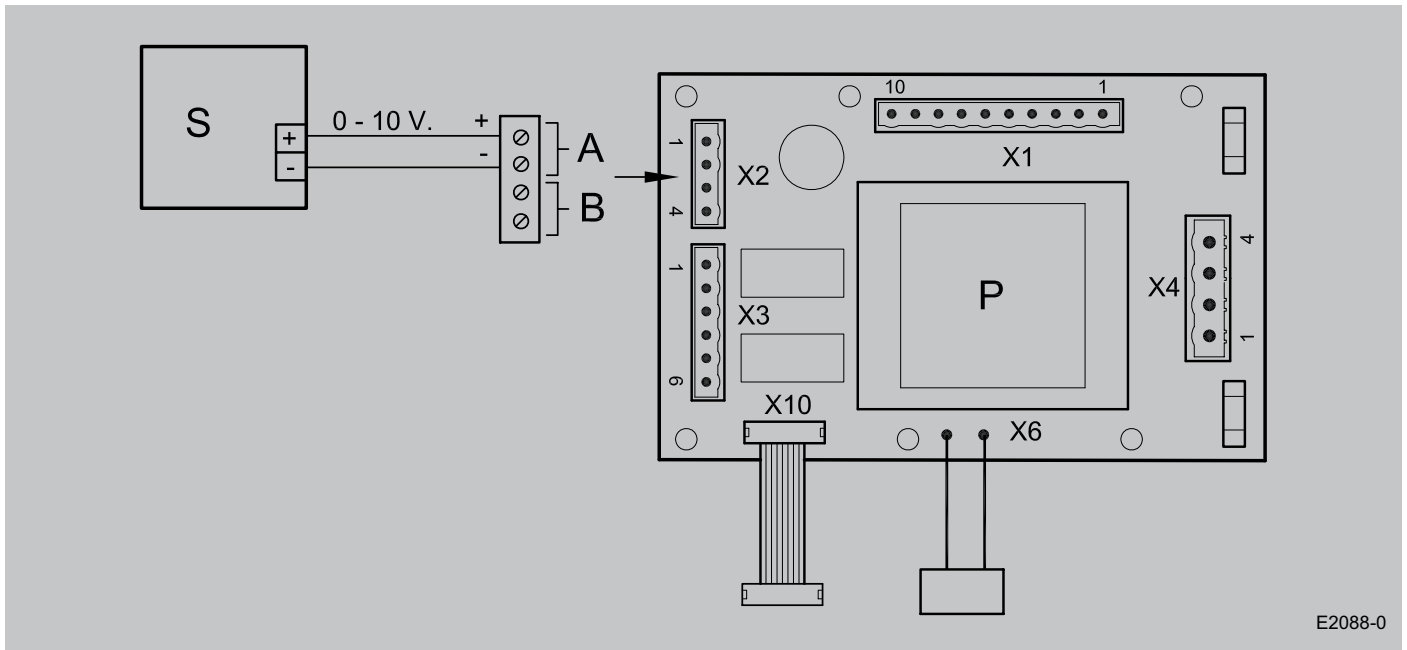


E2091-0

- A = Connection control valve
- B = Connection safety valve
- M = Valve motor safety valve 24 VAC, 10 VA (e.g. flue gas valve)
- P = Option pcb

When the output fan is running, there is 24 V on position 4 of the X3 connector. When the output fan is stopped or defective, there will be 24 V on position 5 of the X3 connector.

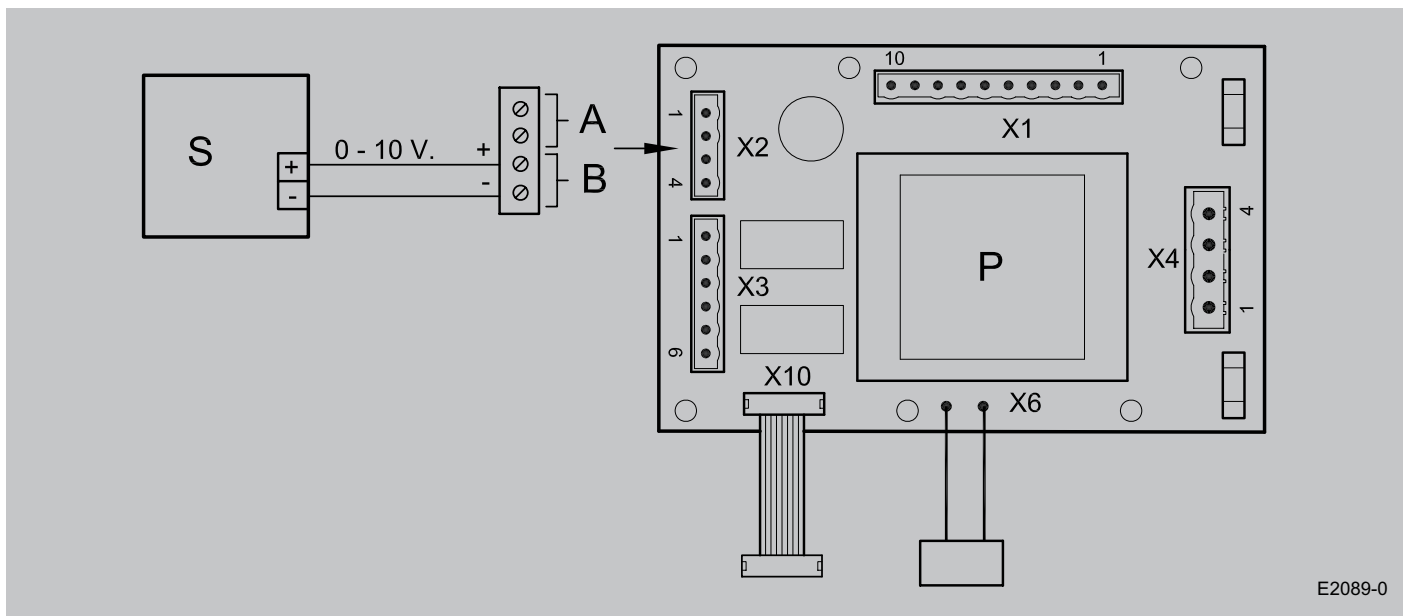
6.3 Wiring diagram proportional input 1



E2088-0

- A = Connection proportional input 1 (e.g. moisture sensor)
- B = Connection proportional input 2
- P = Option pcb
- C = Control 0 – 10 V, from own power

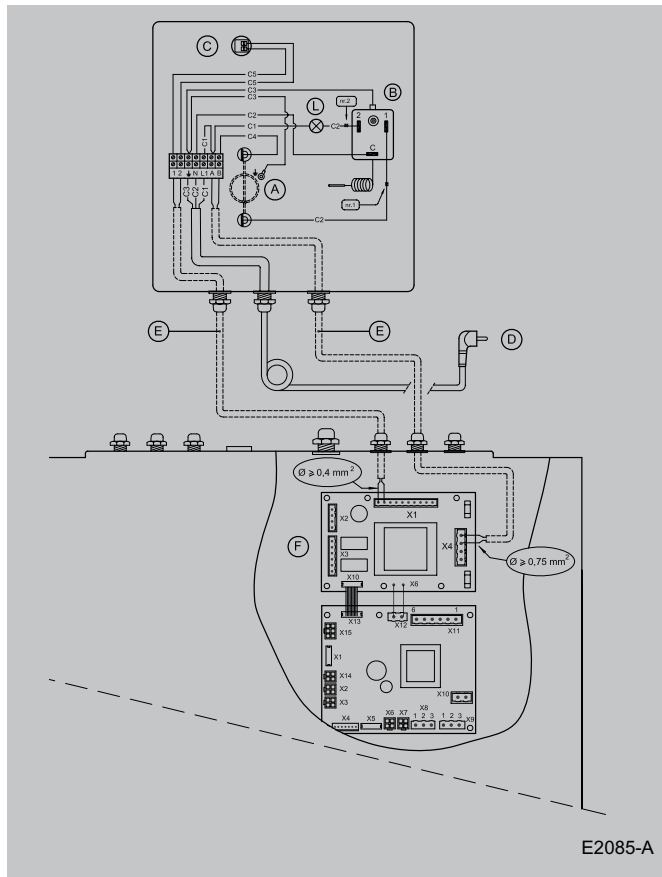
6.4 Wiring diagram proportional input 2



E2089-0

- A = Connection proportional input 1
- B = Connection proportional input 2 (e.g. CO₂ sensor)
- P = Option pcb
- C = Control 0 – 10 V, from own power

6.5 Wiring diagram postheater



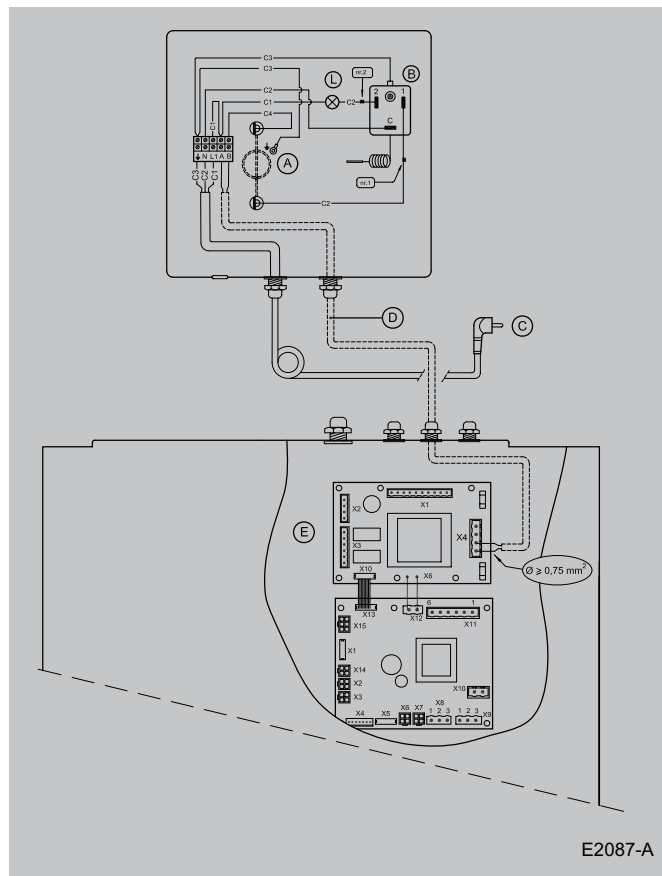
- A = Heating coil (max. 1000 W)
- B = Maximum safety
- C = Temperature sensor
- D = Plug 230 V.
- E = Cables to be connected by installer
- F = Option pcb
- L = LED maximum safety switched on

- C1 = Brown
- C2 = Blue
- C3 = Green/yellow
- C4 = Black
- C5 = Yellow

The postheater sensor is connected to the X1 connectors no. 9 and no. 10 of the option pcb.

The postheater control signal (230 V) is connected to the X1 connectors no. 3 and no. 4 of the option pcb.

6.6 Wiring diagram preheater



- A = Heating coil (max. 1000 W)
- B = Maximum safety
- C = Plug 230 V.
- D = Cable to be connected by installer
- E = Option pcb
- L = LED Maximum safety operational

- C1 = Brown
- C2 = Blue
- C3 = Green/yellow
- C4 = Black

The preheater control signal (230 V) is connected to the X4 connectors no. 1 and no. 2 of the option pcb.

EU - DECLARATION OF CONFORMITY



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We explain hereby that those correspond in the following designated devices due to its conceiving and design as well as in the version brought by us on the market to the relevant fundamental safety and health requirements of the European Union guideline. With one with us this explanation their validity loses not co-ordinated change of the devices.

Designation
the devices: **Heat Recovery units with option PCB**

Type **CWL – 300**
CWL – 400

Relevant
EG-directive: **98/37/EG** EG-Maschine directive

Applied
harmonized
Standards: **DIN EN 12100 Part 1 and 2** Security of machines - fundamental ideas, general organization guiding principles
DIN EN 294 Machine safety – Safety margins against reaching danger places with the upper appliance measured
DIN EN 349 Machine safety – Minimum distances for the avoidance of squeezing parts of the body

The electrical equipment for these devices as well as the regulation accessories correspond to the following regulations:

Relevant
EG-device: **73/23/EWG** Low voltage directive. 93/68/EWG
89/336/EWG EMV-Device 93/68/EWG
RoHS 2002/95/EG Device for the restriction of the use of certain dangerous materials in electrical and electronics devices

Applied
harmonized
Standards: **EN 60335 Part 1** Security of electrical devices
EN 60730 Automatic electrical Regulation- and Safety equipment
EN 61000-6-2 and -3 Electromagnetic compatibility
EN 61000-3-2 and -3 Electromagnetic compatibility

Mainburg, den 12.03.08

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