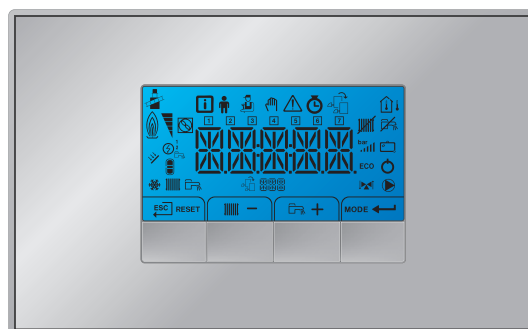


INNOVENS PRO



User and Installation Manual

Control panel & Control PCB

Inicontrol 2

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1 Safety

1.1 Liabilities

1.1.1 Manufacturer's liability

Our products are manufactured in compliance with the requirements of the various Directives applicable. They are therefore delivered with the CE marking and any documents necessary. In the interests of the quality of our products, we strive constantly to improve them. We therefore reserve the right to modify the specifications given in this document.

Our liability as manufacturer may not be invoked in the following cases:

- Failure to abide by the instructions on installing the appliance.
- Failure to abide by the instructions on using the appliance.
- Faulty or insufficient maintenance of the appliance.

1.1.2 Installer's liability

The installer is responsible for the installation and initial commissioning of the appliance. The installer must observe the following instructions:

- Read and follow the instructions given in the manuals provided with the appliance.
- Install the appliance in compliance with prevailing legislation and standards.
- Carry out initial commissioning and any checks necessary.
- Explain the installation to the user.
- If maintenance is necessary, warn the user of the obligation to check the appliance and keep it in good working order.
- Give all the instruction manuals to the user.

1.1.3 User's liability

To guarantee optimum operation of the system, you must abide by the following instructions:

- Read and follow the instructions given in the manuals provided with the appliance.
- Call on a qualified professional to carry out installation and initial commissioning.
- Get your installer to explain your installation to you.

- Have the required inspections and maintenance carried out by a qualified installer.
- Keep the instruction manuals in good condition close to the appliance.

2 About this manual

2.1 Symbols used in the manual

This manual uses various symbols to draw attention to special instructions. We do this to improve user safety, to prevent problems and to guarantee correct operation.

**Caution**

Risk of material damage.

**Important**

Please note: important information.

**See**

Reference to other manuals or pages in this manual.

3 Description of the product

The MCA boiler is delivered with a combination of the control panel and control PCB. The combination is based on the following software and navigation information:

- Boiler MCA



Important

- Content of this manual is based on software version 0.17
- Name / navigate to: `F5B--WHB--HE--150--300`

- Control panel Inicontrol 2



Important

- Content of this manual is based on software version 2.0
- Name / navigate to: `HMI`

- Control PCB SCB-01



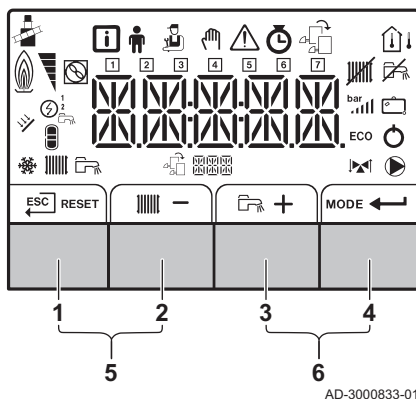
Important

- Content of this manual is based on software version 0.2
- Name / navigate to: `SCB--01`

3.1 Control panel description

3.1.1 What each key means

Fig.1 Control panel



- 1 Escape: Back to the previous level.
RESET Reset: Manual reset.
- 2 CH flow temperature Access to set temperature.
—Min. key: Lowering the value.
- 3 DHW temperature: Access to set temperature.
+ Plus key: Raising the value.
- 4 **MODE** CH/DHW function: Toggles function ON/OFF
 Enter key: Confirms selection or value.
- 5 Chimney-sweeping keys



Important

Press the 1 and 2 keys simultaneously.

- 6 Menu keys





















Important

Press the 3 and 4 keys simultaneously.

3.1.2 Meaning of the symbols on the display

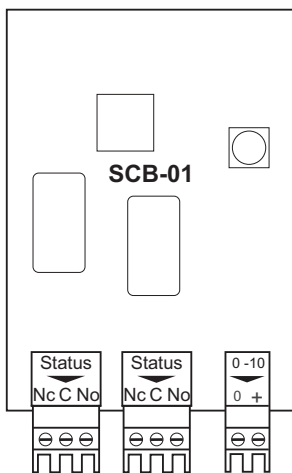
Tab.1 Possible symbols in the display (depending on available devices or functions)

	Chimney sweep mode is enabled (forced full load or part load for O ₂ measurement).
	Information menu: read out various current values.
	User menu: settings for user level parameters can be changed.
	Installer menu: parameters at installer level can be changed.
	Manual mode menu: manual mode can be configured.
	Error menu: errors can be read out.
	Hour counter/timer program/time display menu.

	Control PCB menu: (optional) control PCBs can be read out.
	The outside temperature sensor is connected.
	The room temperature sensor is connected.
	The burner output level (1 to 5 bars, with each bar representing 20% output)
	The heat pump is switched on.
	Day display
	Central heating operation is switched off.
	DHW operation is switched off.
	The solar boiler is on and the heat level of the boiler displayed.
	Displaying the system water pressure.
	The holiday program is enabled.
	Frost protection operation is enabled.
	Central heating operation is enabled.
	DHW operation is enabled.
	Displaying the selected PCB.
	The three-way valve is connected.
	The circulation pump is turning.
ECO	ECO mode operation is enabled.
	Switch the appliance off then on again.

3.2 Expansion board description

Fig.2 SCB-01 expansion board



AD-000660-01

The expansion board SCB-01 has the following features:

- 0–10 V connection for a PWM system pump
- Two potential-free contacts for status notification

i Important

- If the boiler is fitted with the SCB-01 board, then this is automatically recognised by the automatic control unit of the boiler.
- On removing this board, the boiler will show an error code. To prevent this error, carry out an auto-detect immediately after removing this board.



For more information, see

Carrying out an auto-detect, page 18

4 User instructions

4.1 Use of the control panel

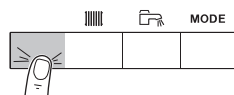
4.1.1 Browsing in the menus

i Important

- Depending on the devices or control PCBs connected, the control panel shows selection options in some menus.
- First, select a device, control PCB or zone to view or amend a setting.

1. Press any key to activate the controller from the stand-by screen.

Fig.3 Step 1



MW-3000377-02

Fig.4 Step 2



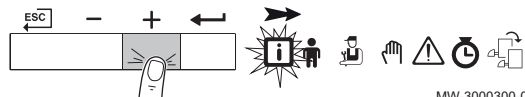
MW-3000299-01

2. Access the available menu options by pressing the two keys on the right simultaneously.

Tab.2 Possible menu choices

i	Information Menu
	User menu
	Installer Menu
	Manual mode menu
	Failure Menu
	Hour Run Meters / Timer Program / Clock menu
	PCB menu ⁽¹⁾
(1) The icon is displayed only if an optional control PCB has been installed.	

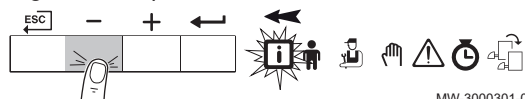
Fig.5 Step 3



MW-3000300-02

3. Press the **+** key to move the cursor to the right.

Fig.6 Step 4



MW-3000301-02

4. Press the **-** key to move the cursor to the left.

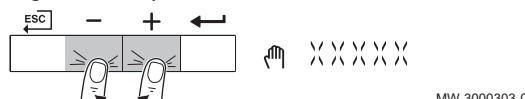
Fig.7 Step 5



MW-3000302-01

5. Press the **←** key to confirm selection of the required menu or parameter.

Fig.8 Step 6



MW-3000303-01

6. Press the **+** or **-** key to modify the value.

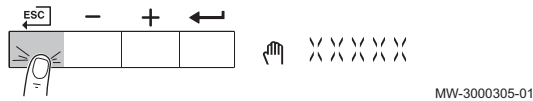
Fig.9 Step 7



MW-3000304-01

7. Press the **←** key to confirm the value.

Fig.10 Step 8



8. Press the \leftarrow key to go back to the main display.



Important

The stand-by screen appears if no key is pressed for three minutes.

4.2 Setting the language and time



Important

First set the desired language, then the correct time, day and date before further use of the control panel.

Fig.11 Step 2



Fig.12 Step 3

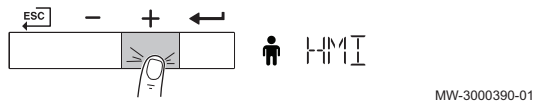


Fig.13 Step 4

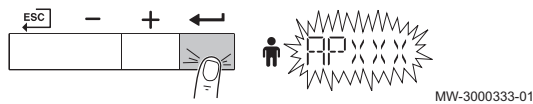


Fig.14 Step 5

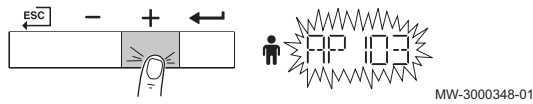


Fig.15 Step 6



Fig.16 Step 7

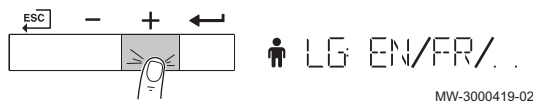
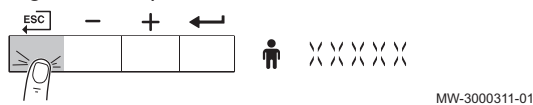


Fig.17 Step 8



Fig.18 Step 9



4.2.1 Setting the language

1. Navigate to the User menu.
2. Press the \leftarrow key to open the User menu.

3. Keep pressing the $+$ key until **HMI** is displayed.

4. Press the \leftarrow key to confirm the selection.

5. Keep pressing the $+$ key until **AP 103** is displayed.

6. Press the \leftarrow key to confirm the parameter.

7. Keep pressing the $+$ key until the required language code is displayed.

8. Press the \leftarrow key to confirm the choice of language.

9. Press the \leftarrow key multiple times to go back to the main display.

4.2.2 Setting the time and date

1. Navigate to the Counter menu.

Fig.19 Step 2



Fig.20 Step 3

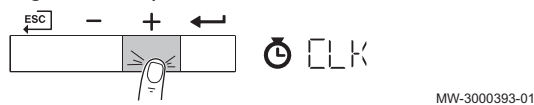


Fig.21 Step 4



Fig.22 Step 5



Fig.23 Step 6



Fig.24 Step 7

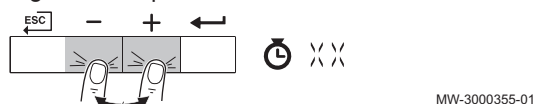


Fig.25 Step 8



Fig.26 Step 9



2. Press the ← key to open the counter menu.
3. Keep pressing the + key until the Time display menu is displayed.
4. Press the ← key to access the hours.
5. Press the + key to access the following parameters:
 - Minutes
 - Day
 - Month
 - Year
6. Press the ← key to confirm the parameter.
7. Press the + or - key to modify the value.
8. Press the ← key to confirm the value.
9. Press the ESC key multiple times to go back to the main display.

4.3 Changing the central heating flow temperature

The central heating flow temperature can be raised or lowered separately from the heating requirement.

Fig.27 Step 1



Fig.28 Step 2

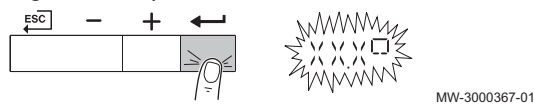
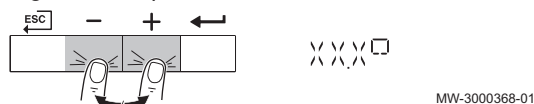
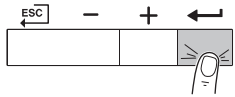


Fig.29 Step 3



1. Press the MODE key to select the central heating flow temperature.
2. Press the ← key to access the central heating flow temperature.
3. Press the + or - key for the required CH flow temperature.

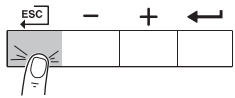
Fig.30 Step 4



MW-3000369-01

- Press the ← key to confirm the value.

Fig.31 Step 5



MW-3000370-01

- Press the ESC key to go back to the main display.



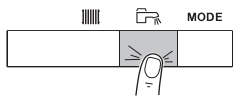
Important

The flow temperature is matched automatically when using a:

- weather-dependent regulator
- **OpenTherm** regulator

4.4 Changing the DHW temperature

Fig.32 Step 1

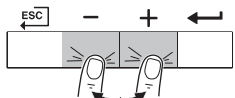


MW-3000371-01

The temperature of the domestic hot water can be changed as needed.

- Press the MODE key to select the domestic flow temperature.

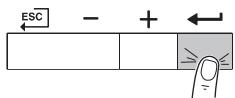
Fig.33 Step 2



MW-3000368-01

- Press the + or - key for the required DHW temperature.

Fig.34 Step 3



MW-3000369-01

- Press the ← key to confirm the value.

4.5 Setting the Timer Program

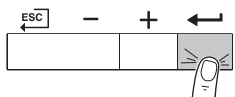
If a timed thermostat is not being used, the timer program for the appliance can be used. The Timer Program can be used to lower the heating temperature during the night or an absence during the day. A start and end time for the lower temperature can be set in the Timer Program.



Note

- Activate the timer program using the parameter: CP320
- The timer program can be set for each zone (heating, domestic hot water or cooling).

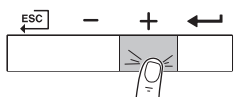
Fig.35 Step 2



MW-3000320-01

- Navigate to the Counter menu.
- Press the ← key to open the menu.

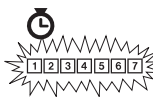
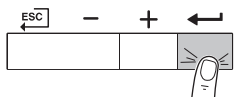
Fig.36 Step 3



MW-3000404-01

- Keep pressing the + key until the required zone is displayed.

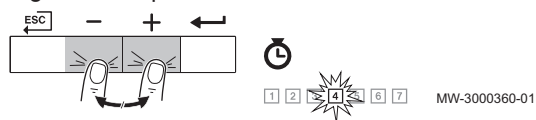
Fig.37 Step 4



MW-3000405-01

- Press the ← key to confirm the selection.
⇒ The icons dedicated to the days of the week all flash at the same time: [1][2][3][4][5][6][7].

Fig.38 Step 5



5. Select the required day number by keeping the + or - key pressed until the icon for the required day flashes.

Tab.3 Day numbers

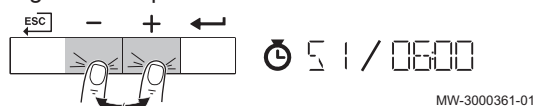
Day selected	Description
1 2 3 4 5 6 7	Every day of the week
1	Monday
2	Tuesday
3	Wednesday
4	Thursday
5	Friday
6	Saturday
7	Sunday

Fig.39 Step 6



6. Press the ← key to confirm the selection.

Fig.40 Step 7

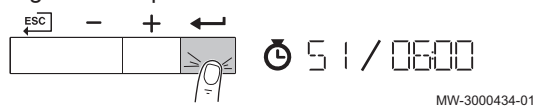


7. Set the start time S1 by pressing the + or - key.

Tab.4 Options

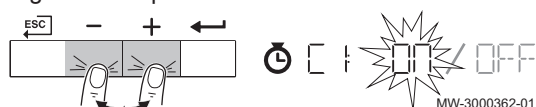
Abbreviation	Description
END	End of programming
S	Switching time or end of day indication (max. 6 switching times)
C	Temperature setting (lower night or comfort temperature)

Fig.41 Step 8



8. Press the ← key to confirm the selection.

Fig.42 Step 9

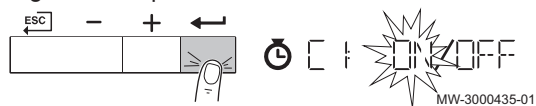


9. Select the status C1 corresponding with the switch time S1 by pressing the + or - key.

Tab.5 Statuses C1 to C6 for the periods S1 to S6

C1 to C6	Description
ON	Comfort temperature
ECO	Lower night temperature

Fig.43 Step 10



10. Press the ← key to confirm the selection.
11. Repeat the steps to define the switch times (S1 to S6) and the corresponding statuses (C1 to C6).
12. Press the ESC key multiple times to go back to the main display.

Tab.6 Example

Times	1 Monday	2 Tuesday	3 Wednesday	4 Thursday	5 Friday	6 Saturday	7 Sunday
06:00	S1 C1 = ON	S1 C1 = ON	S1 C1 = ON	S1 C1 = ON	S1 C1 = ECO	S1 C1 = ECO	S1 C1 = ON
08:00	S2 C2 = ECO	S2 C2 = ECO	S2 C2 = ECO	S2 C2 = ECO		S2 C2 = ON	
10:00		S3 C3 = ON	S3 C3 = ON		S3 C3 = ON	S2 C2 = ECO	S3 C3 = ECO
12:00	S4 C4 = ECO		S4 C4 = ECO	S4 C4 = ECO	S2 C2 = ON		
14:00		S3 C3 = ON				S4 C4 = ECO	S4 C4 = ECO
16:00	S3 C3 = ON		S4 C4 = ECO	S4 C4 = ECO	S2 C2 = ON		
18:00		S3 C3 = ON				S4 C4 = ECO	S4 C4 = ECO
20:00	S3 C3 = ON		S4 C4 = ECO	S4 C4 = ECO	S2 C2 = ON		
22:00		S3 C3 = ON				S4 C4 = ECO	S4 C4 = ECO
23:50	S3 C3 = ON		S4 C4 = ECO	S4 C4 = ECO	S2 C2 = ON		

4.6 Changing user parameters

The parameters in the user menu can be changed by the end user or the installer.

i Important
First, select a device, control PCB or zone to view or amend a setting.

! Caution
Modification of the factory settings may impair operation of the device, control PCB or zone.

1. Navigate to the User menu.
2. Press the ← key to open the menu.
3. Keep pressing the + key until the required device, control PCB or zone is displayed.
4. Press the ← key to confirm the selection.
5. Keep pressing the + or - key until the required parameter is displayed.
6. Press the ← key to confirm the selection.

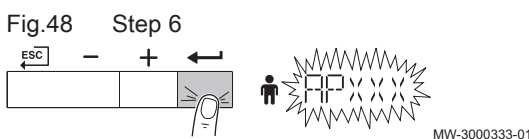
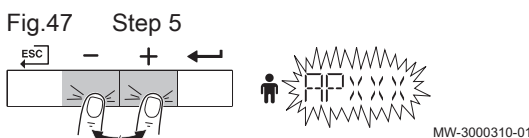
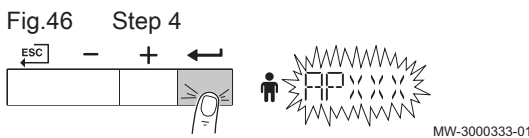
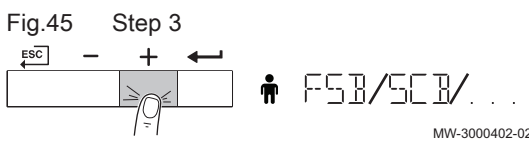
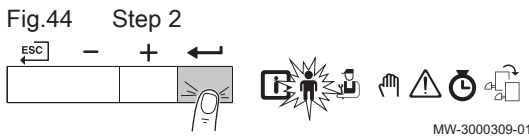
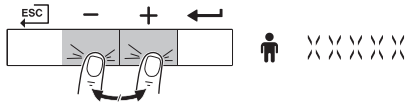


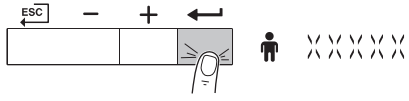
Fig.49 Step 7



MW-3000334-01

7. Press the **+** or **-** key to modify the value.

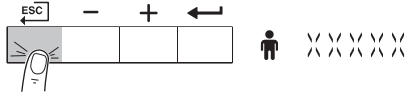
Fig.50 Step 8



MW-3000335-01

8. Press the **←** key to confirm the value.

Fig.51 Step 9



MW-3000311-01

9. Press the **ESC** key multiple times to go back to the main display.

5 Installer instructions

5.1 Changing installer parameters

The parameters in the Installer Menu must only be changed by a qualified professional. Code **0012** must be entered in order to change the parameters.



Important

First, select a device, control PCB or zone to view or amend a setting.



Caution

Modification of the factory settings may impair operation of the device, control PCB or zone.

1. Navigate to the Installer menu.
2. Press the ← key to open the menu.
3. Keep pressing the + key until the code **0012** is displayed.
4. Press the ← key to confirm opening the menu.
5. Keep pressing the + key until the required device, control PCB or zone is displayed.
6. Press the ← key to confirm the selection.
7. Keep pressing the + or - key until the required parameter is displayed.
8. Press the ← key to confirm the selection.
9. Press the + or - key to modify the value.
10. Press the ← key to confirm the value.

Fig.52 Step 2



Fig.53 Step 3

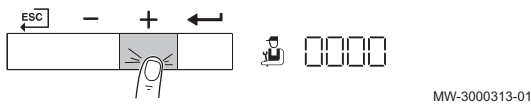


Fig.54 Step 4

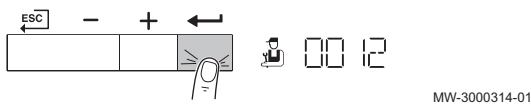


Fig.55 Step 5



Fig.56 Step 6



Fig.57 Step 7

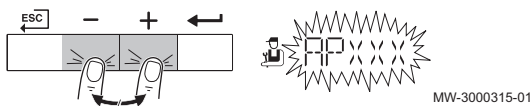


Fig.58 Step 8

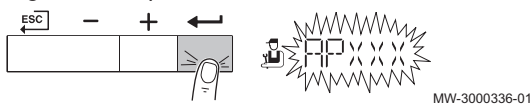


Fig.59 Step 9

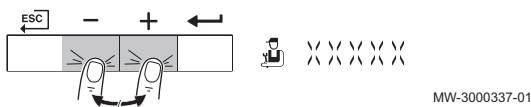


Fig.60 Step 10



Fig.61 Step 11



11. Press the \leftarrow key multiple times to go back to the main display.

5.2 Adjusting advanced parameters

The advanced parameters at installer level may only be changed by a qualified professional. Code 0012 must be entered in order to change the parameters.



Important

First, select a device, control PCB or zone to view or amend a setting.



Caution

Modification of the factory settings may impair operation of the device, control PCB or zone.

1. Navigate to the Installer menu.
2. Press the \leftarrow key to open the menu.

Fig.62 Step 2



Fig.63 Step 3



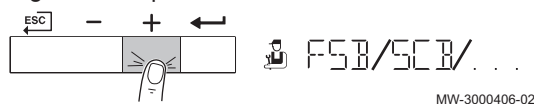
3. Keep pressing the $+$ key until the code 0012 is displayed.

Fig.64 Step 4



4. Press the \leftarrow key to confirm opening the menu.

Fig.65 Step 5



5. Keep pressing the $+$ key until the required device, control PCB or zone is displayed.

Fig.66 Step 6



6. Press the \leftarrow key to confirm the selection.

Fig.67 Step 7



7. Keep pressing the $+$ key until ADV is displayed.



Important

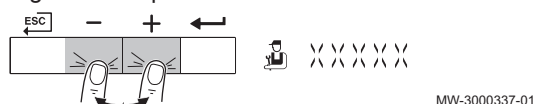
The text ADV can only appear if the advanced parameters for the appliance, control PCB or zone are available.

Fig.68 Step 8



8. Press the \leftarrow key to confirm the selection.

Fig.69 Step 9



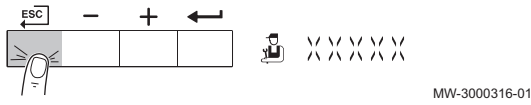
9. Press the $+$ or $-$ key to modify the value.

Fig.70 Step 10



10. Press the ← key to confirm the value.

Fig.71 Step 11



11. Press the ESC key multiple times to go back to the main display.

5.3 Carrying out an auto-detect

Carry out an auto-detect after removing or replacing an (optional) control PCB.

1. Navigate to the Installer menu.
2. Press the ← key to open the menu.

Fig.72 Step 2



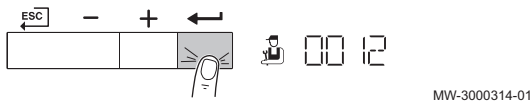
3. Keep pressing the + key until the code 0012 is displayed.

Fig.73 Step 3



4. Press the ← key to confirm opening the menu.

Fig.74 Step 4



5. Keep pressing the + key until the device is displayed.

Fig.75 Step 5



6. Press the ← key to confirm the selection.

Fig.76 Step 6



7. Keep pressing the + key until AD is displayed.

Fig.77 Step 7



8. Press the ← key to carry out the auto-detect.
9. After a while, the main display is shown; auto-detect is complete.

Fig.78 Step 8



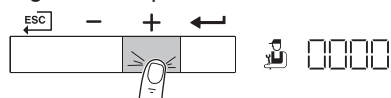
5.4 Restoring to factory settings

1. Navigate to the Installer menu.
2. Press the ← key to open the menu.

Fig.79 Step 2

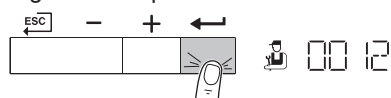


Fig.80 Step 3



MW-3000313-01

Fig.81 Step 4



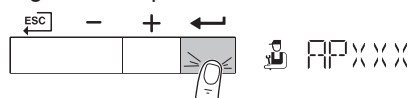
MW-3000314-01

Fig.82 Step 5



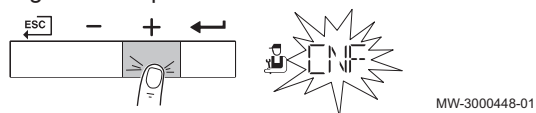
MW-3000406-02

Fig.83 Step 6



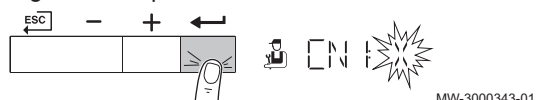
MW-3000407-01

Fig.84 Step 7



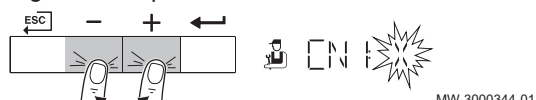
MW-3000448-01

Fig.85 Step 6



MW-3000343-01

Fig.86 Step 7



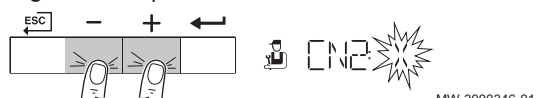
MW-3000344-01

Fig.87 Step 8



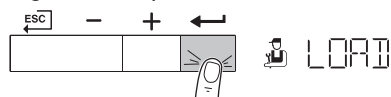
MW-3000345-01

Fig.88 Step 9



MW-3000346-01

Fig.89 Step 10



MW-3000347-01

3. Keep pressing the **+** key until the code **00 12** is displayed.

4. Press the **←** key to confirm opening the menu.

5. Keep pressing the **+** key until the required device or PCB is displayed.

6. Press the **←** key to confirm the selection.

7. Keep pressing the **+** key until **CNF** is displayed.

8. Press the **←** key to open the first factory setting **CN1**.

9. Press the **+** or **-** key to modify the value.

**See**The data plate for the **CN1** value.

10. Press the **←** key to confirm the value.

11. Press the **+** or **-** key to modify the value.

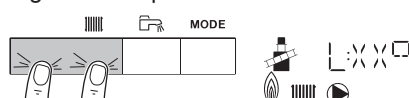
**See**The data plate for the **CN2** value.

12. Press the **←** key to confirm the value.

⇒ The factory settings are reset. The display shows various information and returns to the main display after 3 minutes.

5.5 Chimney sweep mode (forced full load or part load)

Fig.90 Step 1

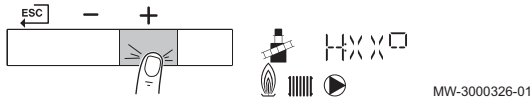


MW-3000325-01

1. Press the two keys on the left simultaneously to select chimney sweep mode.

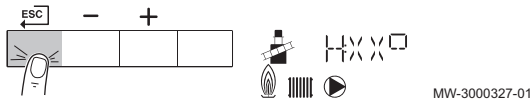
⇒ The device is now running at part load. Wait until **L:XXX** appears on the display.

Fig.91 Step 2



2. Press the **+** key twice.
⇒ The device is now running at full load. Wait until **H:XX.X** appears on the display.

Fig.92 Step 3



3. Press the **ESC** key to go back to the main display.

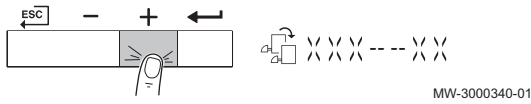
5.6 Connected control PCBs

Fig.93 Step 2



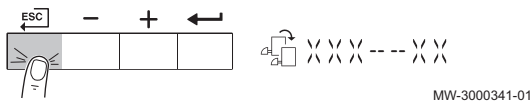
1. Navigate to the control PCB menu.
2. Press the **←** key to open the menu.

Fig.94 Step 3



3. To see which control PCBs are connected, press the **+** key.

Fig.95 Step 4



4. Press the **ESC** key twice to go back to the main display.

5.7 Activating the manual mode menu

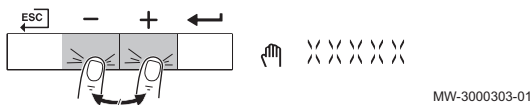
In some cases, it may be necessary to set the device to manual mode, for example when the controller has not yet been connected.

Fig.96 Step 2



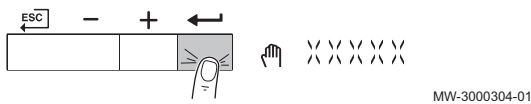
1. Navigate to the manual mode menu.
2. Press the **←** key to open the menu.

Fig.97 Step 3



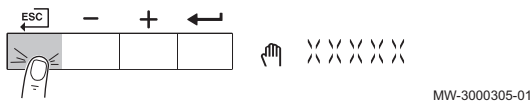
3. Press the **+** or **-** keys to modify the required flow temperature in manual mode.

Fig.98 Step 4



4. Press the **←** key to confirm the value.
⇒ Manual mode is switched on.

Fig.99 Step 5



5. Press the **ESC** key twice to go back to the main display.
⇒ Manual mode is switched off.

5.8 Shutdown

Fig.100 Step 1

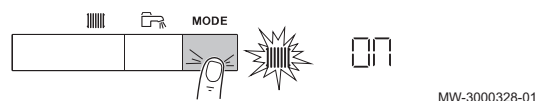


Fig.101 Step 2



Fig.102 Step 3

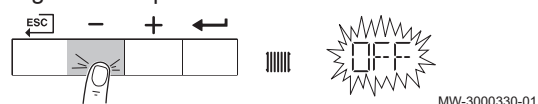
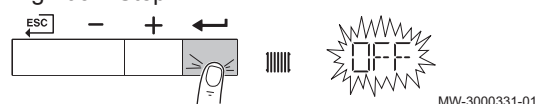



Fig.103 Step 4



5.8.1 Switching off the central heating

1. Press the **MODE** key for about 2 seconds.
2. Press the **←** key to confirm the selection for the central heating.
3. Press the **—** key to change the current CH status.
4. Press the **←** key to confirm the changed status.
⇒ The heating has been switched off. The main display appears, together with the  symbol.

i Important
The frost protection function continues to run.

5.8.2 Switching off DHW production

Fig.104 Step 1

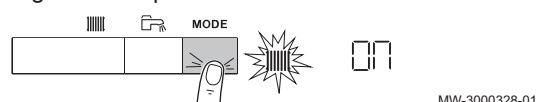


Fig.105 Step 2

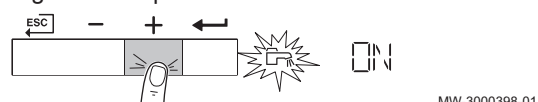


Fig.106 Step 3

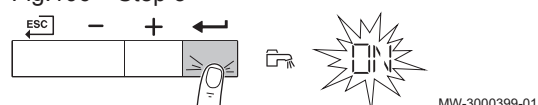


Fig.107 Step 4

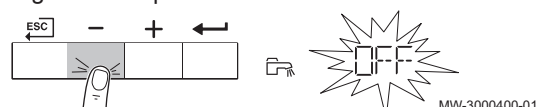
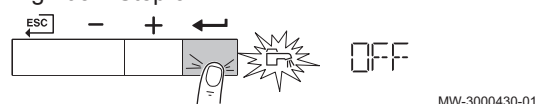



Fig.108 Step 5



1. Press the **MODE** key for about 2 seconds.
2. Press the **+** key to select DHW production.
3. Press the **←** key to confirm the selection of DHW production.
4. Press the **—** key to change the current status of DHW production.
5. Press the **←** key to confirm the changed status.
⇒ DHW production is switched off. The main display appears, together with the  symbol.

i Important
The frost protection function continues to run.

5.9 Reading out the Counter menu

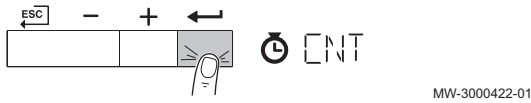
1. Navigate to the Counter menu.

Fig.109 Step 2



2. Press the ← key to open the menu.

Fig.110 Step 3



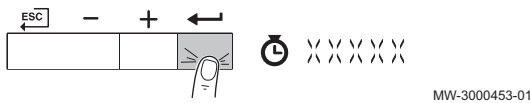
3. Press the ← key to confirm the selection.

Fig.111 Step 4



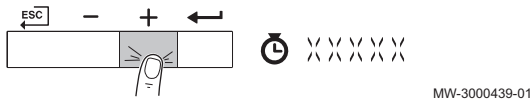
4. Keep pressing the + key until the required device, control PCB or zone is displayed.

Fig.112 Step 5



5. Press the ← key to confirm the selection.

Fig.113 Step 6

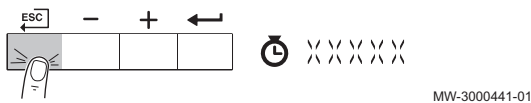


6. Keep pressing the + key until the required value is displayed.
Tab.7 Counter menu

Value	Description
SERVICE	Resetting service hours

See
Other manuals for more values

Fig.114 Step 7

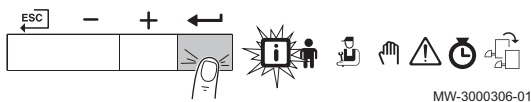


7. Press the ESC key multiple times to go back to the main display.

For more information, see
Counters - SCB-01, page 28

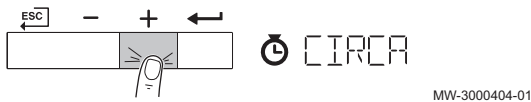
5.10 Reading out current values

Fig.115 Step 2



1. Navigate to the Information menu.
2. Press the ← key to open the menu.

Fig.116 Step 3



3. Keep pressing the + key until the required device, control PCB or zone is displayed.

Fig.117 Step 4



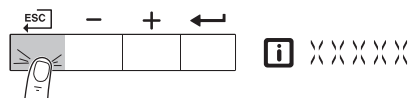
4. Press the ← key to confirm the selection.

Fig.118 Step 5



5. Keep pressing the + or - key until the required value is displayed.

Fig.119 Step 6



MW-3000308-01

6. Press the key multiple times to go back to the main display.
Tab.8 Current values

Value	Description
F X X , X X	Software version
P X X , X X	Parameter version

See
Other manuals for more values

For more information, see
Signals - SCB-01, page 28

5.11 Status and Sub-status

The information menu gives the Status and Sub-status numbers.

For more information, see
Status and sub-status - SCB-01, page 29

6 Installation

6.1 Electrical connections

Fig.120 Status notifications

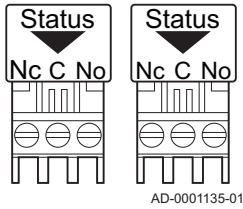
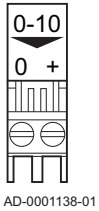


Fig.121 0–10 V output



6.1.1 Connecting status notifications

The two potential-free contacts, **Status**, can be configured as required. Depending on the setting, a particular status can be transmitted by the boiler. Connect a relay contact to the **C** and **No** terminals when the status specified occurs (a relay contact will open in the **C** and **No** terminals in these cases). Select the desired status notification (setting) using parameter $EP018$ and $EP019$.



For more information, see

Changing user parameters, page 14

Description of the parameters - SCB-01, page 27

6.1.2 Connecting 0–10 V output

The **0-10** contact can be used to connect a PWM system pump. Depending on the make and type of pump, the pump can be controlled by a 0–10 V or a signal. The speed of the pump is modulated based on the signal received from the boiler.

Connect the system pump controller to connector **0-10**.

- Select the type of signal (setting) that will be received from the boiler using the parameter $EP029$.
- Select the type of signal that controls the pump using the parameter $EP028$.



Caution

- If possible, use the pump modulation signal. This provides the most accurate pump control.
- If the automatic burner unit does not support pump modulation, the pump will behave as an on/off pump.



For more information, see

Changing user parameters, page 14

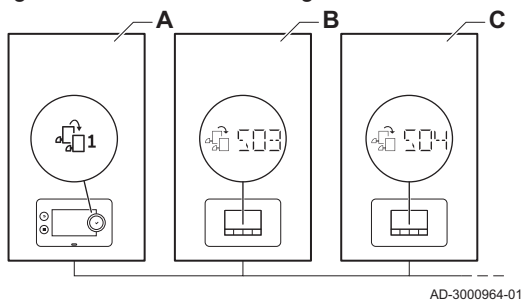
Description of the parameters - SCB-01, page 27

7 Operation

7.1 Cascade control

Up to 7 boilers equipped with the Inicontrol 2 can be managed in cascade with the Diematic Evolution mounted in the master boiler. The system sensor is connected on the master boiler. All the boilers from the cascade are connected by a S-BUS cable. The boilers are automatically numbered:

Fig.122 Cascade numbering

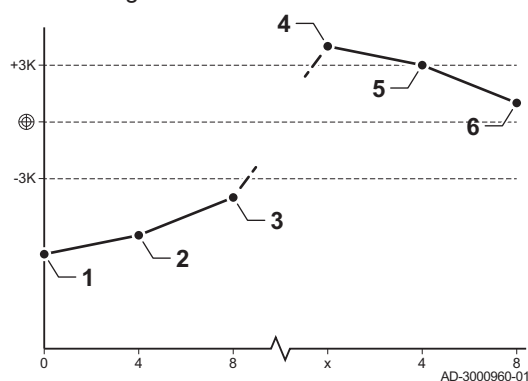


- A** The master boiler is number 1.
- B** The first slave boiler is number 3 (number 2 does not exist).
- C** The second slave boiler is number 4; and so on.

There are two options for cascade control management:

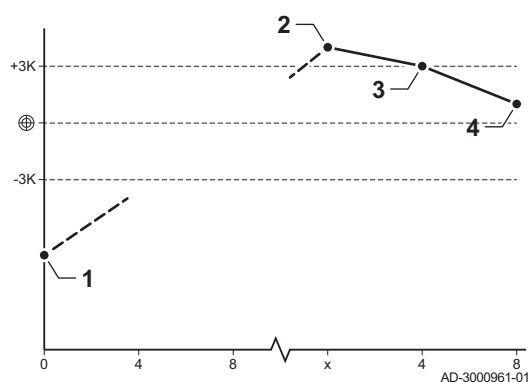
- Adding supplementary boilers successively (traditional control).
- Adding supplementary boilers simultaneously (parallel control).

Fig.123 Traditional cascade control management



- 1 First boiler starts running when system temperature is 3°C below set point.
- 2 After 4 minutes the second boiler starts running if $\Delta T < 6K$ and the system temperature is still more than 3°C below set point.
- 3 After 8 minutes the third boiler starts running if $\Delta T < 6K$ and the system temperature is still more than 3°C below set point.
- 4 First boiler stops running when system temperature is 3°C above set point.
- 5 After 4 minutes the second boiler stops running if $\Delta T < 6K$ and the system temperature is still more than 3°C above set point.
- 6 After 8 minutes the third boiler stops running if $\Delta T < 6K$ and the system temperature is still more than 3°C above set point.

Fig.124 Parallel cascade control management



- 1 All boilers in cascade start running when system temperature is 3°C below set point.
- 2 First boiler stops running when system temperature is 3°C above set point.
- 3 After 4 minutes the second boiler stops running if $\Delta T < 6K$ and the system temperature is still more than 3°C above set point.
- 4 After 8 minutes the third boiler stops running if $\Delta T < 6K$ and the system temperature is still more than 3°C above set point.

Cascade algorithm type temperature, the setpoint sent to the running boiler is :

- Power; requested by the zones.
- Temperature; flow setpoint requested by the zones + error calculation.

Cascade algorithm type power, the setpoint sent to the running boiler is :

- Power; accordingly PI algorithms.
- Temperature; -90°C

8 Settings

8.1 List of parameters

The parameters are arranged in three levels:

- 1 End user level
- 2 Installer level
- 3 Advanced installer level

The code of the parameters always contain two letters and three numbers.
The letters stand for:

- AP** Appliance related parameters
- BP** Buffer related parameters
- CP** Zone related parameters
- DP** DHW related parameters
- EP** Smart Solutions parameters
- GP** Gas fired heat engine related parameters
- HP** Heat pump related parameters
- MP** Combustion engine parameters
- NP** EM platform related parameters
- OP** Oil fired related parameters
- PP** CH parameters

8.1.1 Description of the parameters - Inicontrol 2

Tab.9 Factory settings -  > 

Code	Display text	Description	Range	Inicontrol 2
AP067	BKL	Setting background illumination	0 = Background illumination off after 3 minutes 1 = Background illumination remains on	0
AP082	DLS	Setting summer time	0 = Manual switching summer/winter time 1 = Automatic switching summer/winter time	1
AP103	LG	Setting language	0 = No language EN = English FR = French DE = German NL = Dutch IT = Italian ES = Spanish PL = Polish PT = Portuguese	0
AP104	CRT	Setting contrast	0 - 3	3
AP105	UNT	Setting units	0 = bar / °C 1 = psi / °F	0

8.1.2 Description of the parameters - SCB-01

Tab.10 Status information -  > SCB-01

Code	Display text	Description	Range	SCB-01
EP018	Status relay func.	Status relay function	0 = No Action 1 = Alarm 2 = Alarm Inverted (fails safe) 3 = Burning 4 = Not burning 5 = Reserved 6 = Reserved 7 = Service request 8 = Boiler on Central Heating 9 = Boiler on Domestic Hot Water 10 = Central Heating pump on 11 = Locking or Blocking	0
EP019	Status relay func.	Status relay function	0 = No Action 1 = Alarm 2 = Alarm Inverted (fails safe) 3 = Burning 4 = Not burning 5 = Reserved 6 = Reserved 7 = Service request 8 = Boiler on Central Heating 9 = Boiler on Domestic Hot Water 10 = Central Heating pump on 11 = Locking or Blocking	0

Tab.11 Mandatory platform -  > SCB-01

Code	Display text	Description	Range	SCB-01
AP022	Configuration	Configuration code for the appliance and customer settings	0 - 65535	0
AP050	Time of day	Actual time of day. Format as defined in CiA301		01/01/1984 00:00

Tab.12 0-10 volt or PWM out -  > SCB-01

Code	Display text	Description	Range	SCB-01
EP028	Function 10V-PWM	Selects the function of the 0-10 Volt output	0 = 0-10 Volts 1 (Wilo) 1 = 0-10 Volts 2 (Grundfoss GENI) 2 = PWM signal (Solar) 3 = 0-10 Volts 1 limited 4 = 0-10 Volts 2 limited 5 = PWM signal limited 6 = PWM signal (UPMXL heating)	0

Code	Display text	Description	Range	SCB-01
EP029	Source 10V-PWM	Selects the source signal for the 0-10 Volt output	0 = Boiler PWM 1 = Boiler requested power 2 = Boiler actual power	0

8.2 List of measured values

8.2.1 Counters - SCB-01

Tab.13 Mandatory platform -  > 



Value	Display text	Description	Range
AC001	Hours on mains	Number of hours that the appliance has been on mains power	0 Hours - 4294967295 Hours

8.2.2 Signals - SCB-01

Tab.14 Status information -  > 

Value	Display text	Description	Range
AM200	Status contact 1	Status of status contact 1. The meaning is dependant on the current function setting.	0 = Off 1 = On
AM201	Status contact 1	Status of status contact 1. The meaning is dependant on the current function setting.	0 = Off 1 = On

Tab.15 Mandatory platform -  > 

Value	Display text	Description	Range
AM004	Blocking code	The current blocking code	0 - 255
AM005	Locking code	The currently active locking code.	0 - 255
AM012	Status Appliance	Current main status of the appliance.	 See Status and sub-status - SCB-01, page 29
AM014	Sub status Appliance	Current sub status of the appliance.	 See Status and sub-status - SCB-01, page 29

Tab.16 0-10 volt or PWM out -  > 

Value	Display text	Description	Range
AM010	Pump speed	The current pump speed	0 % - 6553.5 %
AM015	Pump running	Is the pump running?	0 = Inactive 1 = Active
GM011	Power setpoint	Power setpoint in % of maximum	0 % - 655.35 %

8.2.3 Status and sub-status - SCB-01

Tab.17 Status numbers

Status	
0	Standby
1	Heat Demand
2	Burner Start
3	Burning Central heating
4	Burning Dhw
5	Burner Stop
6	Pump Post Run
7	Cooling Active
8	Controlled Stop
9	Blocking Mode
10	Locking Mode
11	Load test min
12	Load test CH max
13	Load test DHW max
15	Manual Heat demand Central heating On
16	Boiler Frost Protection
17	DeAiration
18	Control unit Cooling
19	Reset In Progress
20	Auto Filling
21	Halted
200	Device Mode

Tab.18 Sub-status numbers

Sub-status	
0	Standby
1	AntiCycling
2	CloseHydraulicValveRelay
3	ClosePump
4	WaitForBurnerStartConditions
10	CloseExtGasValveRelay
11	BurnerStartToGlueGasValveRpm
12	CloseFlueGasValveRelay
13	FanToPrePurge
14	WaitForReleaseSignal
15	BurnerOnCommandToSu
16	VpsTest
17	PreIgnition

Sub-status	
18	Ignition
19	FlameCheck
20	Interpurge
30	NormalInternalSetpoint
31	LimitedInternalSetpoint
32	NormalPowerControl
33	PowerControlOnGradLevel1
34	PowerControlOnGradLevel2
35	PowerControlOnGradLevel3
36	PowerCtrlForFlameProtection
37	StabilizationTime
38	ColdStart
39	ChResume
40	RemoverBurnerOnSuRequest
41	FanToPostPurge
42	OpenExtGasAndFlueGasValveRelay
43	BurnerStopFanToFLueGasValveRpm
44	StopFan
45	LimitedPowerOnTflueGas
60	PumpPostRunning
61	OpenPump
62	Open?HydraulicValveRelay
63	SetBoilerAntiCycleTimer
200	Initialising Done
201	Initialising Csu
202	Initialising Identifiers
203	Initialising Blocking Parameters
204	Initialising Safety Unit
205	Initialising Blocking

9 Troubleshooting

9.1 Error codes

Error codes are displayed at three different levels:

- Warning
- Blocking
- Lock-out

The meaning of the code can be found in the various error code tables. Make a note of the code displayed.



Important

The error code is needed to find the cause of the fault quickly and correctly and for any support from De Dietrich.

9.1.1 Warning

A warning is displayed if an error may occur. The control panel shows the warning code as follows:

- The symbol
- The code, for example `R00.00`



Important

The device continues to operate but the cause of the warning must be investigated. A warning can change into a blocking or lock-out.

9.1.2 Blocking

Blocking occurs as a result of an error. The control panel shows the blocking code as follows:

- The symbol
- The code, for example `H00.00`



Important

The appliance starts up again automatically only when the cause of the blocking has been rectified. A blocking can change into a lock-out.

9.1.3 Lock-out

A lock-out occurs as a result of an error. The control panel shows the lock-out code as follows:

- The symbol
- The code, for example `E00.00`
- The button **RESET**



Important

The appliance starts up again automatically only when the cause of the lock-out has been rectified.

9.2 Error memory

The control panel includes an error memory in which the last 32 errors are stored. Details of the error are stored with the error codes. Included are the status, sub-status, flow temperature, return temperature, fan rotation speed and the ionisation current.

Fig.125 Step 2



Fig.126 Step 3

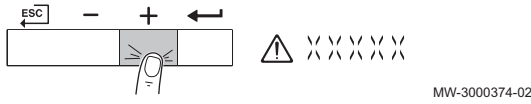


Fig.127 Step 4

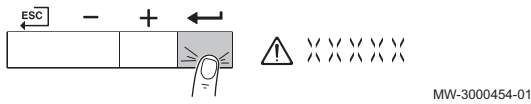


Fig.128 Step 5

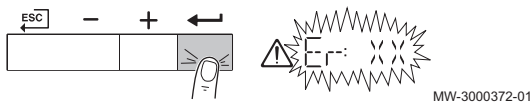


Fig.129 Step 6



Fig.130 Step 7



Fig.131 Step 8

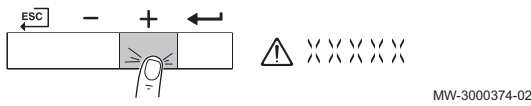
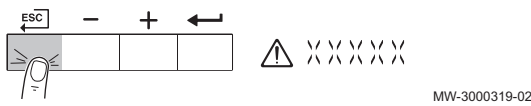


Fig.132 Step 9



9.2.1 Reading out the Error memory

1. Navigate to the Error menu.
2. Press the ← key to open the menu.
3. Keep pressing the + key until the required device, control PCB or zone is displayed.
4. Press the ← key to confirm the selection.
5. Press the ← key to view the error messages. XX is the number of stored error messages.
6. Press the + or - key to scroll through the list of messages.
7. Press the ← key to view details of the message.
8. Press the + or - key to scroll through the details.
9. Press the ESC key multiple times to go back to the main display.

9.2.2 Clearing the error memory

1. Navigate to the Error menu.
2. Press the ← key to open the menu.
3. Keep pressing the + key until the required device, control PCB or zone is displayed.
4. Press the ← key to confirm the selection.

Fig.133 Step 2



Fig.134 Step 3

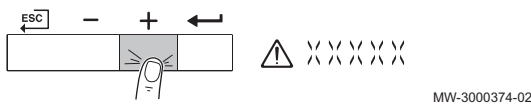


Fig.135 Step 4

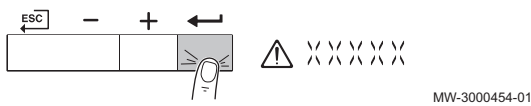
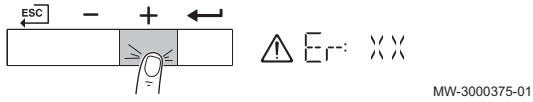
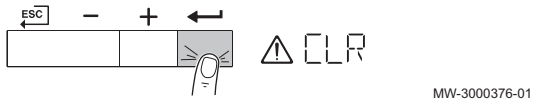


Fig.136 Step 5



5. Keep pressing the **+** key until the clear error memory menu is displayed.

Fig.137 Step 6



6. Press the **←** key to delete the errors from the error memory.

Fig.138 Step 7



7. Press the **ESC** key to go back to the main display.

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