INNOVENS PRO

User and Installation Manual

Control panel & Control PCB

Diematic Evolution

De Dietrich

LE CONFORT DURABLE®

Contents

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 $C\epsilon$ 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.

> ℹ **Important**
> Please note: important information.

> 📖 **See**
> Reference to other manuals or pages in this manual.

3   Description of the product

The MCA 160 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 160

> **i** **Important**
> • Content of this manual is based on software version 0.17
> • Name / navigate to: FSB-WHB-HE-150-300

• Control panel Diematic Evolution

> **i** **Important**
> • Content of this manual is based on software version 1.8.2
> • Name / navigate to: System Setting Menu

• Control PCB SCB-10

> **i** **Important**
> • Content of this manual is based on software version 0.5
> • Name / navigate to: SCB-10

3.1   Control panel description

3.1.1   Description of the components

Fig.1   Components of the control panel

AD-3000932-01

1 Rotary knob to select a menu or setting
2 Button ✔ to confirm the selection
3 Back button ↰ to return to the previous level or previous menu
4 Menu button ☰ to return to the main menu
5 Display
6 LED for status indication:

  - continuous green = normal operation
  - flashing green = warning
  - continuous red = shutdown
  - flashing red = lockout

3.1.2   Description of the main screen

This screen is shown automatically after start-up of the appliance or when the control panel is used again with the display in standby mode (black screen). By using the back button ↰ you can navigate to this screen.

Fig.2   Icons on main screen
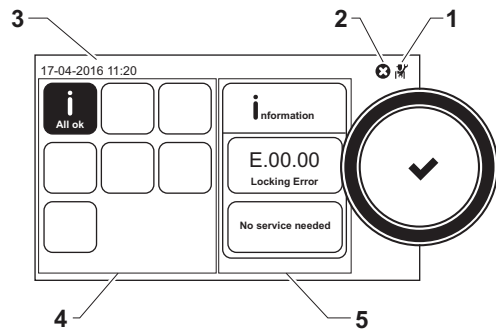
AD-3000933-02

1 Icon showing the actual status of the appliance
2 Error indicator (only visible if an error has been found)
3 Date and time
4 Information tiles
5 Detailed information on selected information tile

3.1.3 Description of the main menu

Fig.3 Items in the main menu

AD-3000934-01
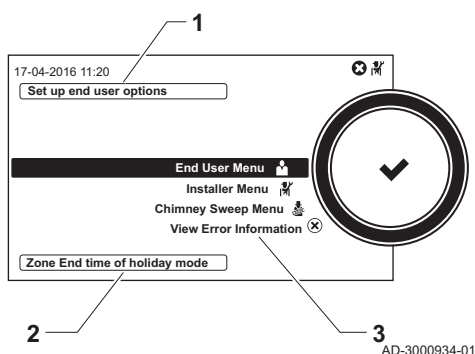
1 Brief explanation of the selected menu
2 Brief explanation of a specific setting and the parameter number, if applicable
3 Available menus

3.1.4 Meaning of the icons in the display

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

Icon	Meaning	Icon	Meaning
	User menu		Micro co-generation boiler
	Installer menu		Heat pump
	Installer menu closed		Solar calorifier
	Chimney sweep menu		Cascade
	Chimney sweep menu closed		Fuel oil burner
	Error display		Burner output level (1 to 5 bars, with each bar representing 20% output)
	System settings		Burner on
i	Information		Burner off
	Service		Central heating on
	Time display		Central heating off
	Timer program		DHW 1 on
	Temporary overwrite of the timer program		DHW 1 off
	Holiday program		DHW 2 on
	Manual		DHW 2 off
ECO	Energy-saving mode		DHW boost on
	Frost protection		All zones (groups)
bar	Water pressure		General zone (group)[1]
	Outside temperature sensor		Living room[1]
	Pump		Kitchen[1]
	Three-way valve		Bedroom[1]
	DHW tank		Study[1]
	Gas boiler		Cellar[1]

(1) Adjustable icon for heating zone (group).

3.2   Expansion board description

Fig.4   SCB-10 expansion board

AD-4000000-02
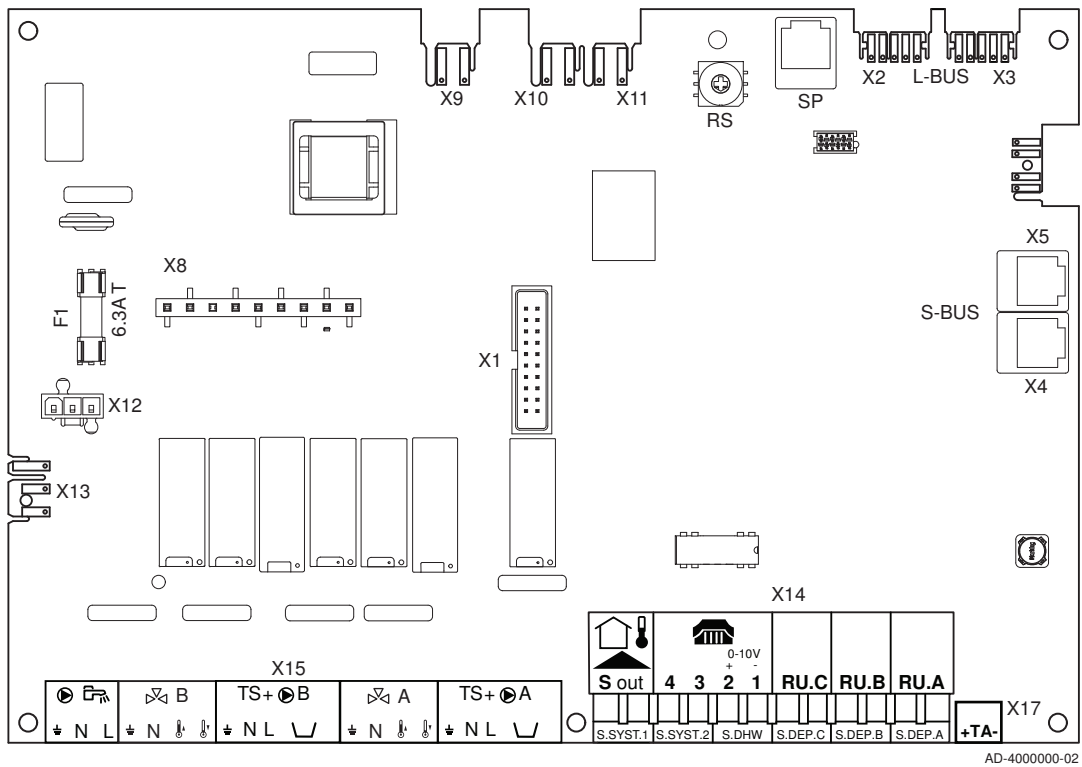
> ⚠️ **Caution**
> Connect the TAS (Titan Active System) anode of the calorifier tank to the connector TA. If the calorifier tank does not have a TAS anode, connect the simulation anode (= accessory)

The expansion board SCB-10 has the following features;

• control of 2 (mixing) zones fitted on connector X15
• control of a third (mixing) zone via an expansion board (= accessory) fitted on connector X8
• control of one domestic hot water (DHW) zone
• cascade layout options

> ℹ️ **Important**
> • If the boiler is fitted with the SCB-10 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: **Installer Menu > Advanced Service Menu > Reset CAN matrix > Confirm**

4   User instructions

4.1   Changing the display settings

4.1.1   Setting the country and language

The country and language are set by the installer at initial set-up, but you change the country and/or language if required.

1. Select **End User Menu > System Setting Menu > Select Country and Language**.
2. Select the country.
3. Select the language you prefer in the list of languages

4.1.2   Setting the date and time

The date and time are set by the installer at initial set-up, but you change the date and/or time if required.

1. Select **End User Menu > System Setting Menu > Set Date and Time**.
2. Select **Year**, **Month**, **Day**, **Hour** and **Minute** and change the setting.

4.1.3   Setting automatic change to daylight saving time

You can activate the daylight saving time function to switch automatically between summertime and wintertime.

1. Select **End User Menu > System Setting Menu > Daylight Saving Time**.
2. Select one of the following options:

Option	Description
On	Automatic switch between summertime and winter-time
Off	Same time used all year round.

4.1.4   Setting the screen brightness

You can adjust the brightness of the control panel screen.

1. Select **End User Menu > System Setting Menu > Set Screen Brightness**.
2. Set the screen backlight brightness.

4.1.5   Switching the click sound of the rotary knob on or off

The rotary knob on the control panel makes a click sound when you turn the knob. You can switch the sound on or off.

1. Select **End User Menu > System Setting Menu > Set click sound**.
2. Select **Enabled** to turn the click sound on or **Disabled** to turn the click sound off.

4.1.6   Creating a friendly name for a zone (room)

You can change the name of a zone (room) to make it more user-friendly, for example change the name to "living room" or "bedrooms" .

1. Select **End User Menu > Zone setup > Zone (room) > Zone friendly Name**.
   ⇨ A keyboard with letters, numbers and symbols is shown.
2. Change the name of the zone:
   - Press the rotary knob ✔ to repeat a letter, number or symbol.
   - Select ⬅ to delete a letter, number or symbol.
   - Select ⎵ to add a space.

3. Select the ✔ sign on the screen when the name is complete.
4. Press the rotary knob ✔ to confirm the selection.

4.1.7   Selecting an icon for a zone (room)

You can select an icon for a zone (room) to make it easier to identify.

1. Select **End User Menu > Zone setup > Zone (room) > Icon display zone**.
2. Select an icon in the list.

4.2   Changing the room temperature

4.2.1   Changing the room temperature temporarily

The room temperature is set as a fixed value in **Manual** mode or is varied by the active timer program in **Scheduling** mode. You can temporarily change the room temperature if you want a higher or lower temperature right now.

1. Select **End User Menu > Zone setup > Zone (room) > Short temperature change**.
2. Select **Duration of temporary overwrite**.
3. Set the appropriate duration in hours and minutes.
4. Select **Temporary Room Setp**.
5. Set the temporary room temperature.
   ⇨ The **Short temperature change** menu shows the duration and the temporary temperature.

You can delete or abort the temporary temperature period by selecting **Reset**.

4.2.2   Changing the room temperature to a fixed setting

You can change the room temperature that is used in manual mode. This room temperature is maintained all day. If you want different room temperatures during day and night time, you have to use a timer program.

1. Select **End User Menu > Zone setup > Zone (room) > OperatingZoneMode**.
2. Select **Manual** mode.
3. Select **End User Menu > Zone setup > Zone (room) > Manu ZoneRoomTempSet**.
4. Set the room temperature.

4.2.3   Creating a timer program to control the room temperature

You can vary the room temperature per day and per part of the day by using a timer program. You can create up to three timer programs. For example, you can create a program for a week with normal working hours and a programme for a week when you are at home most of the time.

1. Select **End User Menu > Zone setup > Zone (room) > Heating Schedule** .
2. Select timer program **Schedule 1**, **Schedule 2** or **Schedule 3**.
   ⇨ The **Heating Schedule** window shows all weekdays and their temperature intervals of the selected timer program.

■   **Changing the weekdays of a timer program**

You can change, add or delete temperature intervals in one or more weekdays of a timer program. For example, you can lower the temperature during the night and when you are out of the house. You can set the start time and the room temperature for each temperature interval of the timer program.

1. Select **End User Menu > Zone setup > Zone (room) > Heating Schedule > Schedule 1, Schedule 2 or Schedule 3**.

Fig.5   Weekday

AD-3000935-01
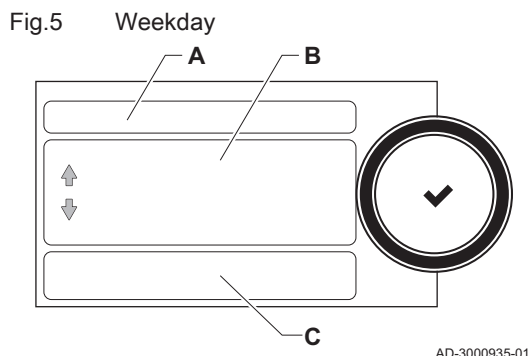
2. Select a weekday.

A   Select a weekday
B   Overview of intervals
C   List of actions
⇨ The temperature intervals are shown. At initial start-up, all week-days have two pre-progammed intervals; the daytime temperature starting at 6:00 and the nighttime temperature starting at 22:00.
3. Select the interval you want to change.
4. Change the start time and the activity.

Tab.2   Interval definition

Start time	Activity	Room temperature

⇨ The temperature of the interval is set by the selected activity.
5. Add a new interval by selecting **Add time and Activity**.
⇨ The start time of the new activity is added to the schedule. You can add up to 6 start times per weekday.
6. Delete an interval by changing the activity of the interval to **Delete**.
7. Use the copy function if you want to apply the same temperature intervals to other weekdays.
8. Repeat step 2 to 5 if you want to change a weekday that needs a different schedule.

■   **Copying a weekday of a timer program**

You can copy the schedule of one weekday to other weekdays, to speed up the creation of a timer program.

1. Select **End User Menu > Zone setup > Zone (room) > Heating Schedule > Schedule 1, Schedule 2 or Schedule 3**
2. Select a weekday.
3. Select **Copy to other day**.
4. Select the weekday(s) on which you want to copy the schedule.
5. Select **Copy and finish**.
⇨ The timer programme shows the weekdays with the new schedules.

■   **Changing the temperature of an activity**

The room temperature of a timer program interval is set by the selected activity. You can change the temperature of the activities.

1. Select **End User Menu > Zone setup > Zone (room) > Heating Schedule > Schedule 1, Schedule 2 or Schedule 3**
2. Select a weekday.
3. Select the option **Set activity temperatures**.
⇨ A list of all activities is shown.
4. Select an activity.
5. Change the temperature.

■   **Changing the name of an activity**

You can change the names of the activities in the timer program.

1. Select **End User Menu > System Setting Menu > Set Heating Activity Names** .
⇨ A list of 6 activities and their standard names is shown.
2. Select an activity.
⇨ A keyboard with letters, numbers and symbols is shown.
3. Change the name of the activity:
  - Press the rotary knob ✔ to repeat a letter, number or symbol.
  - Select ← to delete a letter, number or symbol.
  - Select ⎵ to add a space.
4. Select the ✔ sign on the screen when the name is complete.
5. Press the rotary knob ✔ to confirm the selection.

4.2.4   Activating a timer program to control the room temperature

When you have created a timer program, you have to activate the program to take control of the room temperature.

1. Select **End User Menu > Zone setup > Zone (room) > ZoneTimeProg Select**.
2. Select timer programme **Schedule 1**, **Schedule 2** or **Schedule 3**.
3. Select **End User Menu > Zone Configuration > Zone (room) > OperatingZoneMode**.
4. Select the **Scheduling** operating mode to activate the timer program.

4.2.5   Changing the day or night temperature

You can change the room temperature that is used during day or night time intervals. The room temperatures are linked to the activities of a timer programme.

1. Select **End User Menu > Zone setup > Zone (room) > Set Heating Activity Temperatures**.
2. Select an activity.
3. Change the temperature.

The start and end times of the day and night intervals are set by the active timer program. You can change this timer program, if required.

> **For more information, see**
> Creating a timer program to control the room temperature, page 10

4.3   Changing the domestic hot water temperature

4.3.1   Increasing the domestic hot water temperature temporarily

When the timer program is active with a reduced domestic hot water temperature, you can temporarily increase the hot water temperature.

1. Select **End User Menu > DHW setup > Hot water boost**.
2. Select **Duration of temporary overwrite**.
3. Set the duration in hours and minutes.
    ⇨ The hot water temperature is increased to the **DHW comfort setpoint**.

You can delete or abort the temporary overwrite by selecting **Reset**.

4.3.2   Creating a timer program to control the domestic hot water timer temperature

You can vary the domestic hot water temperature per day and per part of the day by using a timer program. You can create up to three timer programs. For example, you can create a program for a week with normal working hours and a program for a week when you are at home most of the time.

1. Select **End User Menu > DHW setup > DHW Schedule**.
2. Select timer program **Schedule 1**, **Schedule 2** or **Schedule 3**.
    ⇨ The **DHW Schedule** window shows all weekdays and their hot water temperature intervals of the timer program.

■   **Changing the weekdays of a timer program**

You can change, add or delete hot water temperature intervals in one or more weekdays of a timer program. For example, you can lower the temperature during the night and when you are out of the house. The timer program changes the hot water temperature by switching between the comfort and reduced temperature.
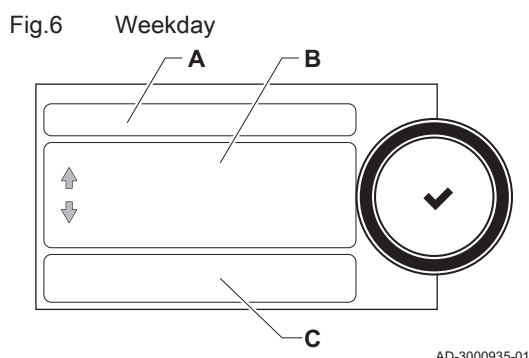
Fig.6   Weekday

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1. Select **End User Menu > DHW setup > DHW Schedule > Schedule 1, Schedule 2 or Schedule 3**.
2. Select a weekday.

A   Select a weekday
B   Overview of intervals
C   List of actions
   ⇨ The hot water temperature intervals are shown. At initial start-up, all weekdays have two pre-programmed intervals. At 6:00 in the morning the hot water production is switched on to reach the comfort temperature and at 22:00 in the evening the hot water production is switched off with the temperature decreasing to the reduced temperature.
3. Select an interval.
4. Change the start time and switch the comfort temperature on or off.

Tab.3   Interval definition

Start time	- On: Start of the comfort temperature interval - Off: Start of the reduced temperature interval - Delete: Remove the temperature interval	Comfort or reduced temperature

5. Add a new interval by selecting **Add time and Activity** .
   ⇨ The new interval is added to the schedule. You can create up to 6 intervals per weekday.
6. Delete an interval by changing the activity of the interval to **Delete**.
7. Use the copy function if you want to apply the same temperature intervals to other weekdays.
8. Repeat step 2 to 5 if you want to change a weekday that needs a different schedule.

■   **Copying a weekday of a timer program**

You can copy the schedule of one weekday to other weekdays, to speed up the creation of a hot water timer program.

1. Select **End User Menu > DHW setup > DHW Schedule > Schedule 1, Schedule 2 or Schedule 3**.
2. Select a weekday.
3. Select **Copy to other day**.
4. Select the weekday(s) on which you want to copy the schedule.
5. Select **Copy and finish**.
   ⇨ The timer program shows the weekdays with the new schedules.

■   **Changing the comfort and reduced hot water temperature**

You can change the comfort and reduced hot water temperature in the timer program.

1. Select **End User Menu > DHW setup > DHW Schedule > Schedule 1, Schedule 2 or Schedule 3**.
2. Select a weekday.
3. Select the option **Set activity temperatures**.
   ⇨ A list of two **Domestic Hot Water Setpoints** is shown:
      - **DHW comfort setpoint**: The hot water temperature when the hot water production is switched on.
      - **DHW reduced setpoint**: The hot water temperature when the hot water production is switched off.
4. Select the **DHW comfort setpoint** or **DHW reduced setpoint**.
5. Change the temperature.

4.3.3   Activating a timer program to control the domestic hot water timer temperature

When you have created a timer program, you have to activate the program to take control of the domestic hot water temperature.

1. Select **End User Menu > DHW setup > DHW timeprog.select**.

2. Select timer program**Schedule 1**, **Schedule 2** or **Schedule 3**.
3. Select **End User Menu > DHW setup > DHW mode**.
4. Select and confirm the **Scheduling** operating mode to activate the timer program.

4.4   Creating a timer program

You can use the control panel to create a timer program to vary the heating temperature of a zone or the domestic hot water temperature per day and per part of the day.

You have to create separate timer programs to control the heating temperature of the zone(s) and the domestic hot water temperature.

i	**Important** When a programmable room thermostat is connected to the installation, you can create a timer program on the thermostat.

📖	**For more information, see** Creating a timer program to control the room temperature, page 10 Activating a timer program to control the room temperature, page 12 Creating a timer program to control the domestic hot water timer temperature, page 12 Activating a timer program to control the domestic hot water timer temperature, page 13

4.5   Holiday programs

4.5.1   Activating all holiday programs

For a holiday period, the room temperature and/or the domestic hot water temperature can be reduced to save energy. With the following procedure you can activate the holiday setting for all room and hot water temperatures in one go.

1. Select **End User Menu > All holiday programs**.
   ⇨ The **Holiday Program** window opens.
2. Select **Start date holiday**.
3. Set the start date and time of your holiday.
4. Select **End date holiday**.
5. Set the end date and time of your holiday.
6. Select **RoomT. Holiday**.
7. Set the room temperature that must be used during your holiday.

You can delete or abort the holiday programme by selecting **Reset holiday programs**.

If required, you can activate the holiday setting for the room temperature and hot water temperature separately.

📖	**For more information, see** Activating the holiday program for the room temperature, page 14 Activating the domestic hot water holiday program, page 15

4.5.2   Activating the holiday program for the room temperature

When you go on a holiday you can lower the temperature for a room to save energy. This temperature will be applied all day round.

1. Select **End User Menu > Zone setup > Zone (room) > Holiday Mode**.
   ⇨ The **Holiday Program** window opens.
2. Select **Start date holiday**.
3. Set the start date and time of your holiday.
4. Select **End date holiday**.

5. Set the end date and time of your holiday.
6. Select **RoomT. Holiday**.
7. Set the room temperature that must be used during your holiday.

You can delete or abort the holiday program by selecting **Reset holiday program**.

4.5.3   Activating the domestic hot water holiday program

When you go on a holiday you can lower the hot water temperature to save energy.

1. Select **End User Menu > DHW setup > Holiday Mode**.
    ⇨ The **Holiday Program** window opens.
2. Select **Start date holiday**.
3. Set the start date and time of your holiday.
4. Select **End date holiday**.
5. Set the end date and time of your holiday.

You can delete or abort the holiday programme by selecting **Reset holiday program**.

4.6   Switching on/off the central heating

You can switch off the central heating function of an appliance, to save energy during e.g. the summer period.

1. Select **End User Menu > On/off CH function**.
2. Select **Off** to switch off the central heating function.
3. Select **On** to switch the central heating function on again.

4.7   Switching to antifrost mode

You can activate the antifrost protection mode for central heating and domestic hot water production, when you are out of the house in winter for a longer period of time.

1. Select **End User Menu > Zone setup > Zone (room) > OperatingZoneMode**.
2. Select **Antifrost** operating mode.
3. Select **End User Menu > DHW setup > DHW mode**.
4. Select **Antifrost** operating mode.

4.8   Reading the installer's name and phone number

The installer can set his name and phone number in the control panel. You can read this information when you want to contact the installer.

1. Select **End User Menu > System Setting Menu > Installer Details**.
    ⇨ The installer's name and phone number is shown.

5   Installer instructions

5.1   Accessing and leaving the installer menu

5.1.1   Accessing the installer menu

The Installer Menu is opened by entering a code.

1. Select **Installer Menu**.
2. Enter code 0012

⚠ **Caution**
- The settings in the installer menu may only be changed by a qualified professional.
- Modification of the factory settings may impair operation of the appliance.

5.1.2   Leaving the installer menu

When all settings have been made you have to close off the Installer Menu to prevent the user entering the menu.

1. Select **Installer Menu**.
2. Select **Leave Installer Acces**.

5.2   Configuring the installation

5.2.1   Changing the display settings

You can change the country, language, date, time, daylight saving time switch, heating activity names, screen brightness and click sound of the rotary knob of the display.

1. Select **Installer Menu > System Setting Menu**.
2. Select the setting you want to change.

📖 **For more information, see**
Setting the country and language, page 9
Setting the date and time, page 9
Setting automatic change to daylight saving time, page 9
Setting the screen brightness, page 9
Switching the click sound of the rotary knob on or off, page 9
Creating a friendly name for a zone (room), page 9
Selecting an icon for a zone (room), page 10

5.2.2   Setting the installer details

You can store your name and phone number in the control panel to be read by the user.

1. Select **Installer Menu > System Setting Menu > Installer Details**.
2. Enter your name.
3. Enter your phone number.

5.2.3   Configuring the installation parameters and settings

You can change the parameters and settings of the appliance and the connected control boards, sensors etc. to configure the installation.

1. Select **Installer Menu > Installation Setup**.
   ⇨ The zone(s) and all connected devices are displayed.
2. Select the zone or device you want to configure.

Fig.7 Parameters, counters, signals
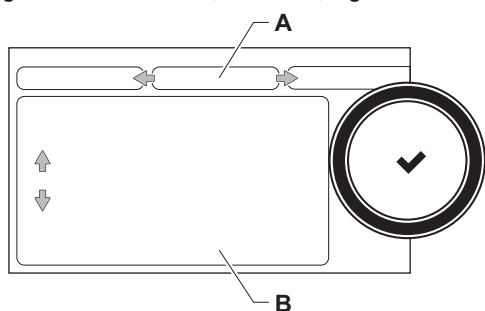
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3. Select **Parameters, counters, signals > Parameters** to change a parameter.

  A Select parameters, counters or signals
  B List of settings
4. If available, select **Parameters, counters, signals > Adv. Parameters** to change a parameter at the advanced installer level.

5.2.4 Adjusting the heating curve

When an outside sensor is connected to the installation, a heating curve is used to control the relationship between the outside temperature and the central heating flow temperature. You can adjust the standard heating curve.

1. Select **Installer Menu > Installation Setup > Zone > Heating Curve.**
   ⇨ A graphic display of the heating curve is shown.
2. Select **Slope:** and change the setting by rotating the rotary knob ✔.
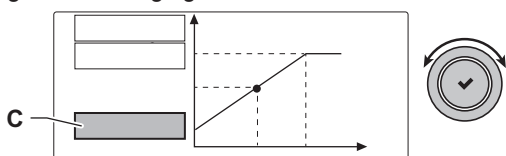
Fig.8 Changing the **Slope:**
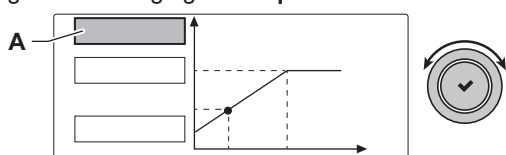
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  A Slope:
3. Press the the rotary knob ✔ to confirm the selection.
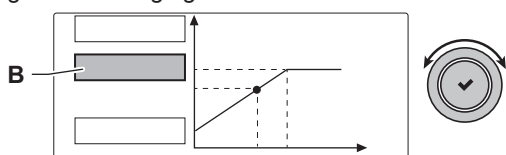
4. Select **Max:** and change the maximum temperature setting by rotating the rotary knob ✔.

Fig.9 Changing the **Max:**

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  B Max:
5. Press the the rotary knob ✔ to confirm the selection.

6. Select **Base:** and change the minimum temperature setting by rotating the rotary knob ✔.

Fig.10 Changing the **Base:**

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  C Base:
7. Press the the rotary knob ✔ to confirm the selection.

8. Select the large dot on the heating curve and press the rotary knob ✔.

Fig.11 Viewing the heating curve

AD-3000940-02

  D xx°C ; xx°C
9. Rotate the rotary knob ✔ to see the relationship between the flow temperature and the outside temperature in this curve.

5.2.5   Activating the screed drying program

You can use the screed drying program to reduce the drying time of a freshly poored screed floor.

1. Select **Installer Menu > Installation Setup > Zone > Set Screed Drying**.
2. Select **Zone screed drying** and set the number of days needed for screed drying.
3. Select **ScreedStartTemp** and set the start temperature of the screed drying program.
4. Select **ScreedStopTemp** and set the stop temperature of the screed drying program.
   ⇨ The screed drying program will start and continue for the selected number of days.

5.2.6   Creating a timer program

You can use the control panel to create a timer program to vary the heating temperature of a zone or the domestic hot water temperature per day and per part of the day.

You have to create separate timer programs to control the heating temperature of the zone(s) and the domestic hot water temperature.

> **i** **Important**
> When a programmable room thermostat is connected to the installation, you can create a timer program on the thermostat.

> 📖 **For more information, see**
> Creating a timer program to control the room temperature, page 10
> Activating a timer program to control the room temperature, page 12
> Creating a timer program to control the domestic hot water timer temperature, page 12
> Activating a timer program to control the domestic hot water timer temperature, page 13

■   **Creating and activating a heating timer program**

You can create a timer program to vary the heating temperature of a zone per day and per part of the day.

1. Select **Installer Menu > Installation Setup**.
2. Select the zone you want to create a timer program for.

> 📖 **For more information, see**
> Creating a timer program to control the room temperature, page 10
> Activating a timer program to control the room temperature, page 12

■   **Creating and activating a domestic hot water timer program**

You can create a timer program to vary the domestic hot water temperature per day and per part of the day.

1. Select **Installer Menu > Installation Setup > Internal DHW** .

> 📖 **For more information, see**
> Creating a timer program to control the domestic hot water timer temperature, page 12
> Activating a timer program to control the domestic hot water timer temperature, page 13

5.3   Commissioning the installation

The Commissioning Menu shows submenus and tests needed for the commissioning of the appliance.

1. Select **Installer Menu > Commissioning Menu**.
2. Select the submenu with settings you want to change or the test you want to perform.

5.3.1 Checking the combustion by using the chimney sweep function

You can use the chimney sweep function to check the combustion of the appliance at full load and part load.

> ⚠ **Caution**
> The Chimney sweep function must only be used by a qualified professional.

1. Select **Chimney Sweep Menu**.
2. Simultaneously press the ⤺ button and the ☰ button.
   ⇨ The following text appears briefly on the screen: **Perform load tests for chimney sweeping**
3. Select the test you want to perform in the **Change load test mode** menu.
4. View the load test data on the screen.
5. Change the load test parameters, if necessary.
   ⇨ Only the parameters shown in bold can be changed.
6. End the load test by pressing the ⤺ button
   ⇨ The message **Running load test(s) stopped!** is displayed.
7. Enter the **Chimney Sweep Menu** again to start another test.
8. When all required load tests are run, press the ☰ button and select **Leave chimney mode** to close the chimney sweep function.

5.3.2 Saving the commissioning settings

You can save all current settings on the control panel. These settings can be restored if necessary, for example after replacement of the control unit.

1. Select **Installer Menu > Advanced Service Menu > Save as commissioning settings**.
2. Select **Confirm** to save the settings.

When you have saved the commissioning settings, the option **Revert commissioning settings** becomes available in the **Advanced Service Menu**.

> 📖 **For more information, see**
> Restoring the commissioning settings, page 21

5.4 Maintaining the installation

5.4.1 Viewing the service notification

When a service notification appears on the display, you can view the details of the notification.

1. Select **Installer Menu > View Service Notification**.
   ⇨ A list with details is shown, including the operating hours since the last service.
2. Select the item you want to view.

5.4.2 Reading out counters and signals

You can read out the counters and signals of the appliance and the connected control boards, sensors and so on.

1. Select **Installer Menu > Installation Setup**.
   ⇨ The programmable functions of the appliance and all connected devices are displayed.
2. Select a function, zone or device.

Fig.12   Parameters, counters, signals
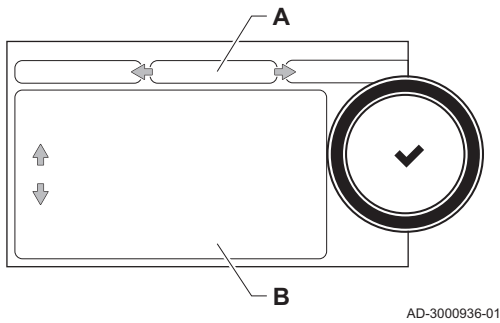
AD-3000936-01

3. Select Parameters, counters, signals.

  A Select parameters, counters or signals
  B List of settings

4. Select **Counters** or **Signals**.
  ⇨ A list of available counters or signals is shown.
5. Select the counter or signal you want to view.
  ⇨ A description and the number of the counter or signal is shown.
6. If available, select **Adv. Signals** or **Adv. Counters** to view a signal or counter at the advanced installer level.

5.4.3   Viewing production and software information

You can read details about the production dates, hardware and software versions of the appliance and all connected devices.

1. Select **Installer Menu > Version Information**.
2. Select the appliance, control board or any other device you want to view.

  A Select the appliance, control board or device
  B List of information

3. Select the information you want to view.

Fig.13   Version information
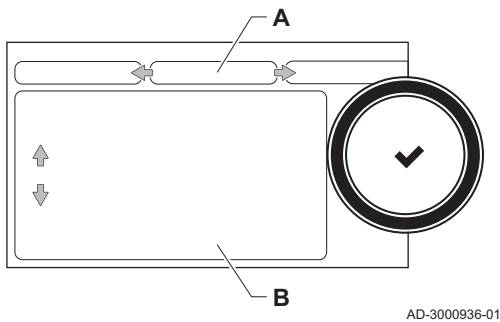
AD-3000936-01

5.4.4   Updating the control panel firmware

You can update the firmware of the control panel when you have received an USB stick with a new firmware version.

1. Remove the Diematic Evolution control panel from the appliance.
2. Locate the USB port at the bottom of the control panel's PCB.
3. Place the USB stick with the new firmware on the USB port.
4. Select **Installer Menu > System Setting Menu > Firmware Update**.
  ⇨ The message **Available Files:** appears on the screen.
5. Select the file.
  ⇨ The firmware update starts.
6. Wait till the update is finished.
  ⇨ The control panel is automatically restarted and the main display appears.
7. Do not switch off the power of the appliance for at least 5 minutes to ensure that the firmware update is stored correctly.

5.4.5   Changing the domestic hot water temperature temporarily

When the timer program is active with a reduced domestic hot water temperature, you can temporarily increase the hot water temperature for e.g. testing of the hot water production.

1. Select **Installer Menu > Installation Setup > Internal DHW > Hot water boost**.
2. Select **Duration of temporary overwrite** .
3. Set the duration in hours and minutes.
  ⇨ The hot water temperature is increased to the **DHW comfort setpoint**.

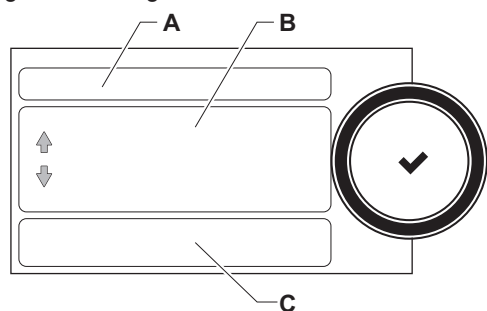You can delete or abort the temporary overwrite by selecting **Reset**.

5.5 Resetting or restoring settings

Fig.14 Configuration numbers

AD-3000935-01

5.5.1 Resetting the configuration numbers CN1 and CN2

The configuration numbers must be reset when indicated by an error message or when the control unit has been replaced. The configuration numbers can be found on the data plate of the appliance.

1. Select **Installer Menu > Advanced Service Menu > Set Configuration Numbers.**
2. Select the appliance, control board or any other device you want to reset.

   A Select the appliance, control board or device
   B Extra information
   C Configuration numbers

3. Select and change the **CN1** setting.
4. Select and change the **CN2** setting.
5. Select **Confirm** to confirm the changed numbers.

5.5.2 Carrying out an auto-detect for the CAN matrix

When the control unit or an SCB has been removed or replaced you have to reset the CAN matrix to reset and redetect all devices connected to the CAN bus.

1. Select **Installer Menu > Advanced Service Menu > Reset CAN matrix**.
2. Select **Confirm** to carry out the auto-detect.

5.5.3 Restoring the commissioning settings

This option is only available when the commissioning settings were saved on the control panel and allows you to restore these settings.

1. Select **Installer Menu > Advanced Service Menu > Revert commissioning settings**.
2. Select **Confirm** to restore the commissioning settings.

> **For more information, see**
> Saving the commissioning settings, page 19

5.5.4 Resetting to factory settings

You can reset the configuration of all connected devices to the default factory settings.
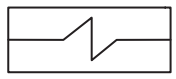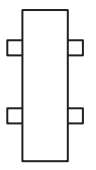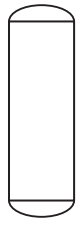
1. Select **Installer Menu > Advanced Service Menu > Reset to Factory Settings**.
2. Select **Confirm** to restore the factory settings.

6 Before installation

6.1 Connecting diagrams

6.1.1 Symbols used

Tab.4 Explanation of symbols in the hydraulics flow diagram

Symbol	Explanation	Symbol	Explanation
	Flow pipe		Return pipe
	Motorised three-way valve		Pump
	Make contact		Outside temperature sensor
	Sensor		Safety thermostat
	Shower		Plate heat exchanger
	Heating zone		Hot-air heater
	Low-loss header		Underfloor heating
	Instant boiler		DHW storage tank
	Swimming pool		

Caution

- The drawings shown are flow diagrams for the electrical connections of the relevant components. The drawings may not be used as working drawings for the hydraulics. Local regulations must be followed for the actual design and dimensioning of the hydraulic components and lines.

- The numbered components for the electrical connections are shown in the accompanying wiring diagram for each hydraulic connections example. Connector X14 has two terminal blocks on top of each other. To clarify the electrical connections, they are shown in the connection diagrams one above the other.

- Each hydraulic connections example has its own settings. Most factory settings for the SCB-10 are adequate. Only the settings to be changed are shown.

6.1.2 Boiler settings with SCB-10 control

When the boiler is fitted with the SCB-10 control board the following boiler parameter(s) must be adjusted:

Tab.5   Installer Menu > Installation Setup > **Gas fired heat engin** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	MCA	Adjust-ment
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW FWS EXT	1	0

For the hydraulic connections as shown, where some parameters must be adjusted, the parameter settings are arranged in three levels:

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

6.1.3   Connection example 1

Fig.15   1 boiler + 1 direct zone + domestic hot water (DHW) zone
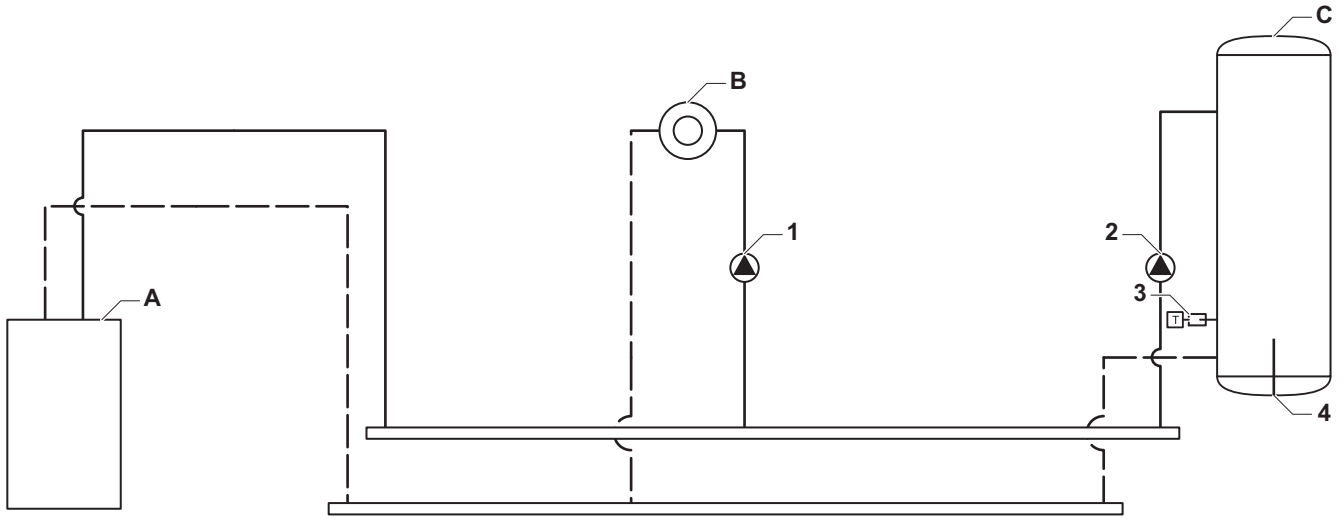
AD-4100034-01
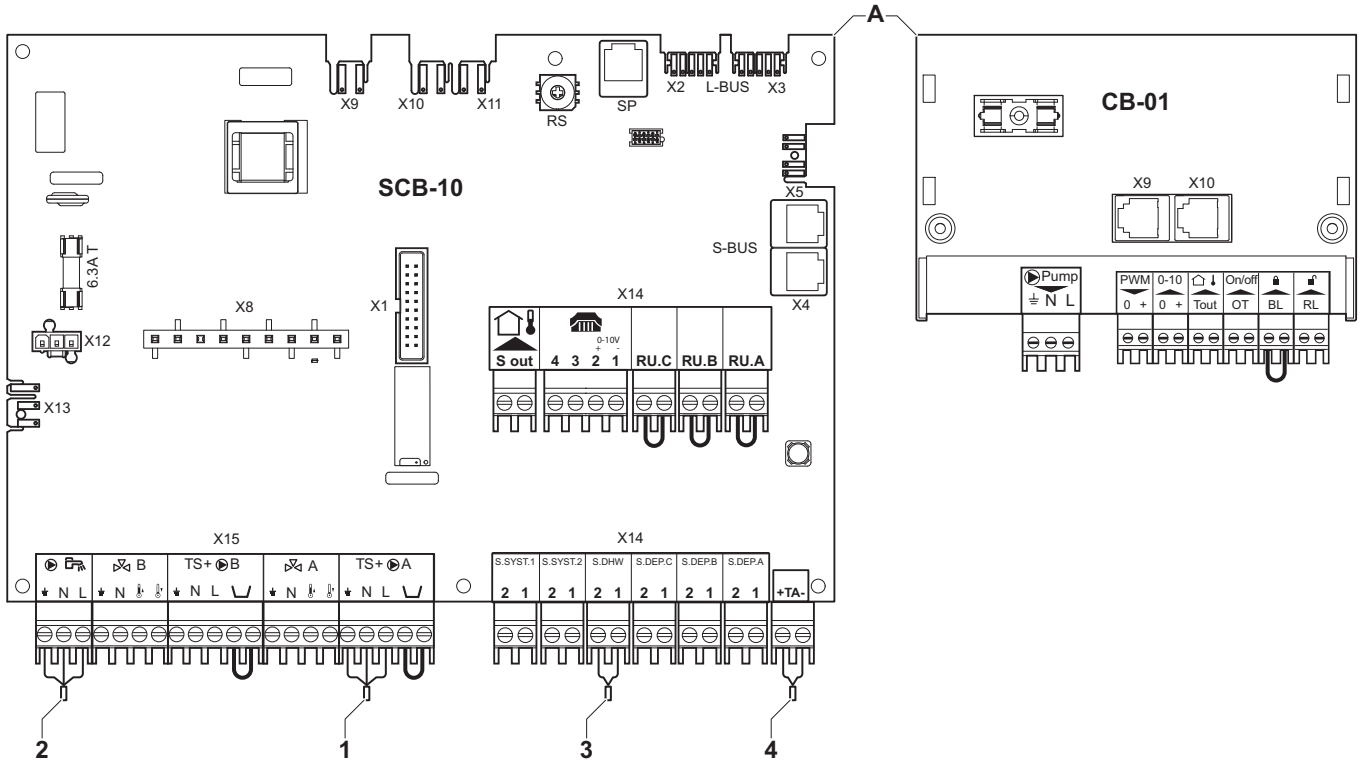
AD-4100046-01

A   Boiler
B   Direct zone-CircA

C   Domestic Hot water zone-DHW (1 sensor)

> **Note**
> All the factory settings of the SCB-10 are adequate for this connection.

6.1.4 Connection example 2

Fig.16 1 boiler + 1 direct zone + 1 mixing zone
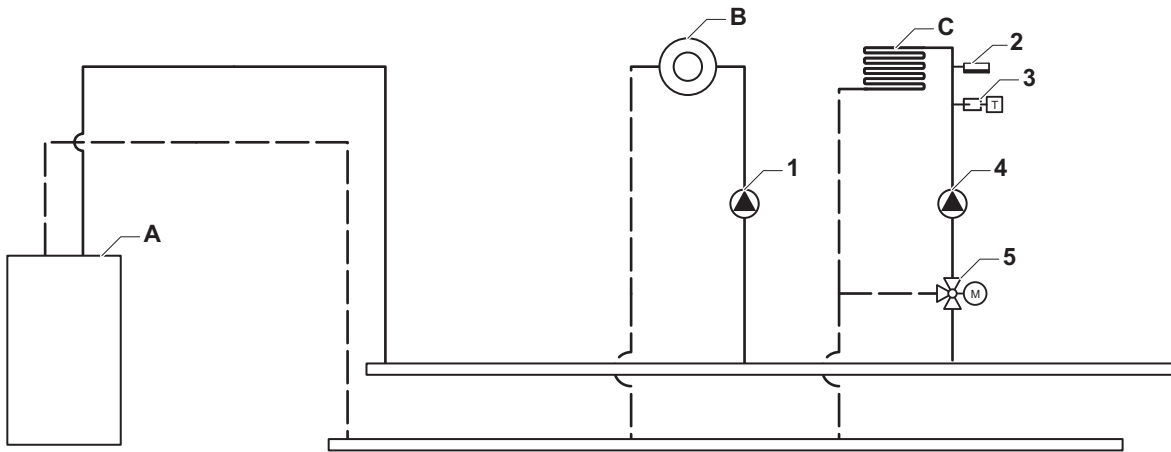
AD-4100035-01
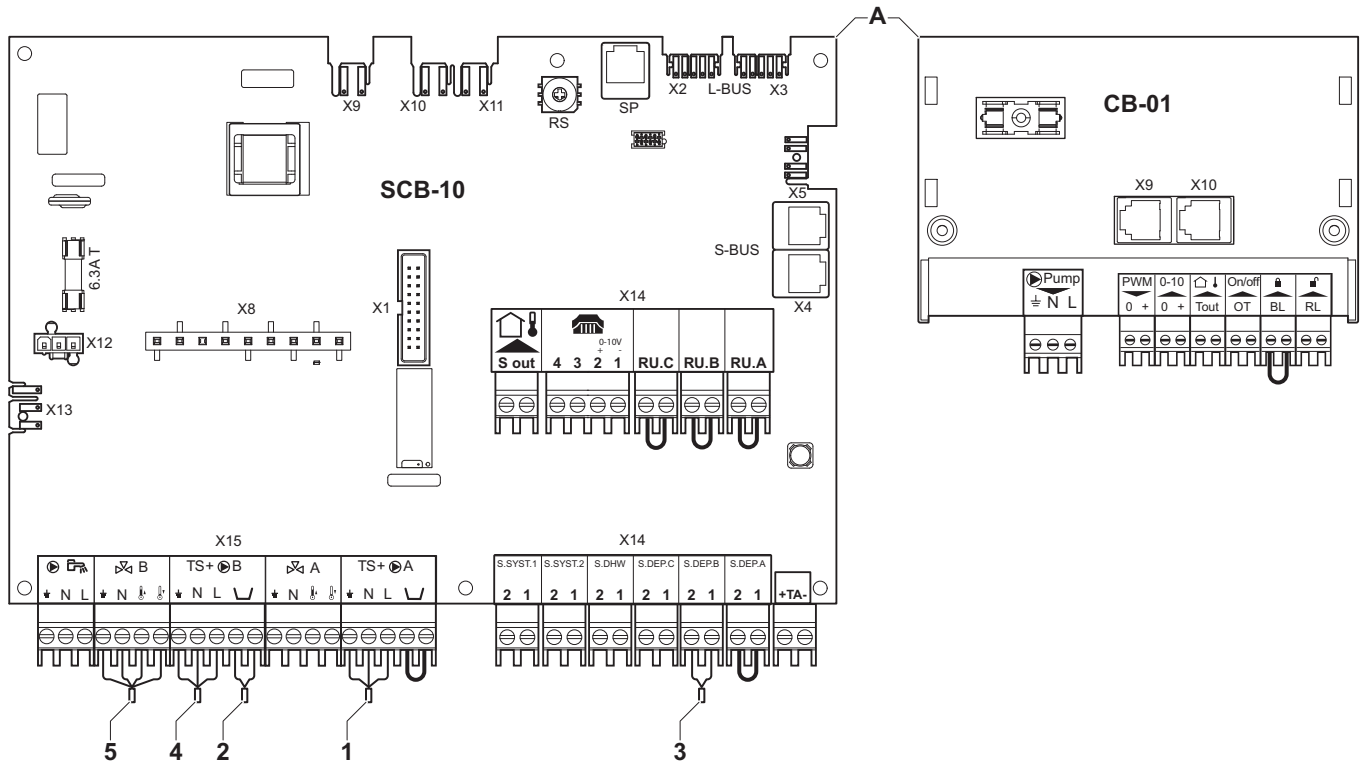
AD-4100047-01

A   Boiler
B   Direct zone - CircA

C   Mixing zone - CircB

> **Note**
> All the factory settings of the SCB-10 are adequate for this connection.

6.1.5 Connection example 3

Fig.17   1 boiler + 1 mixing zone + domestic hot water (DHW) zone
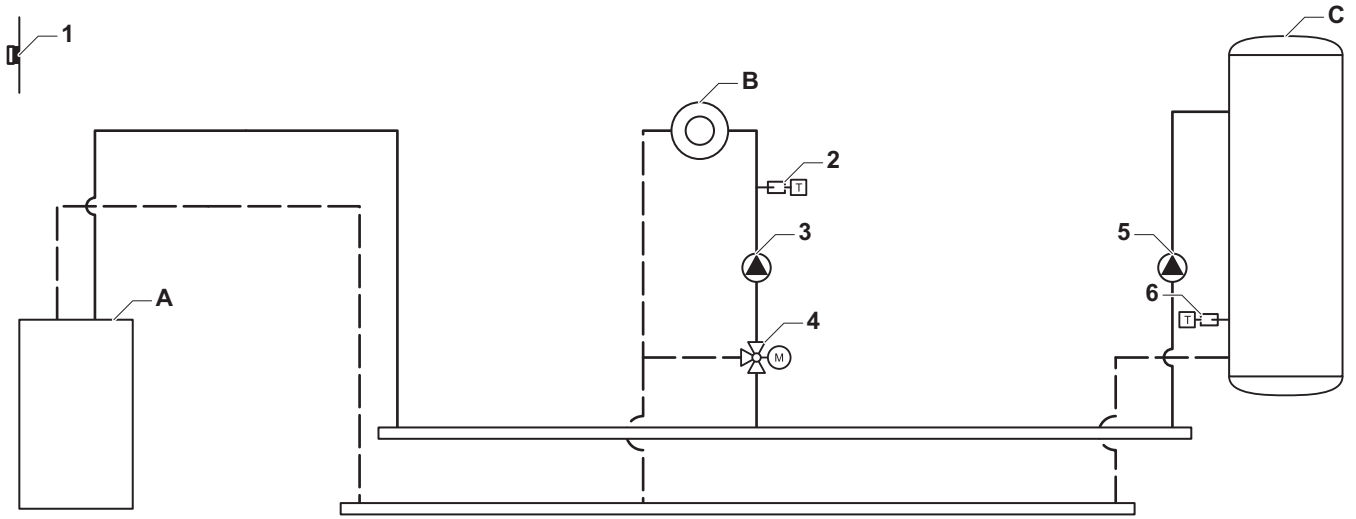
AD-4100036-01
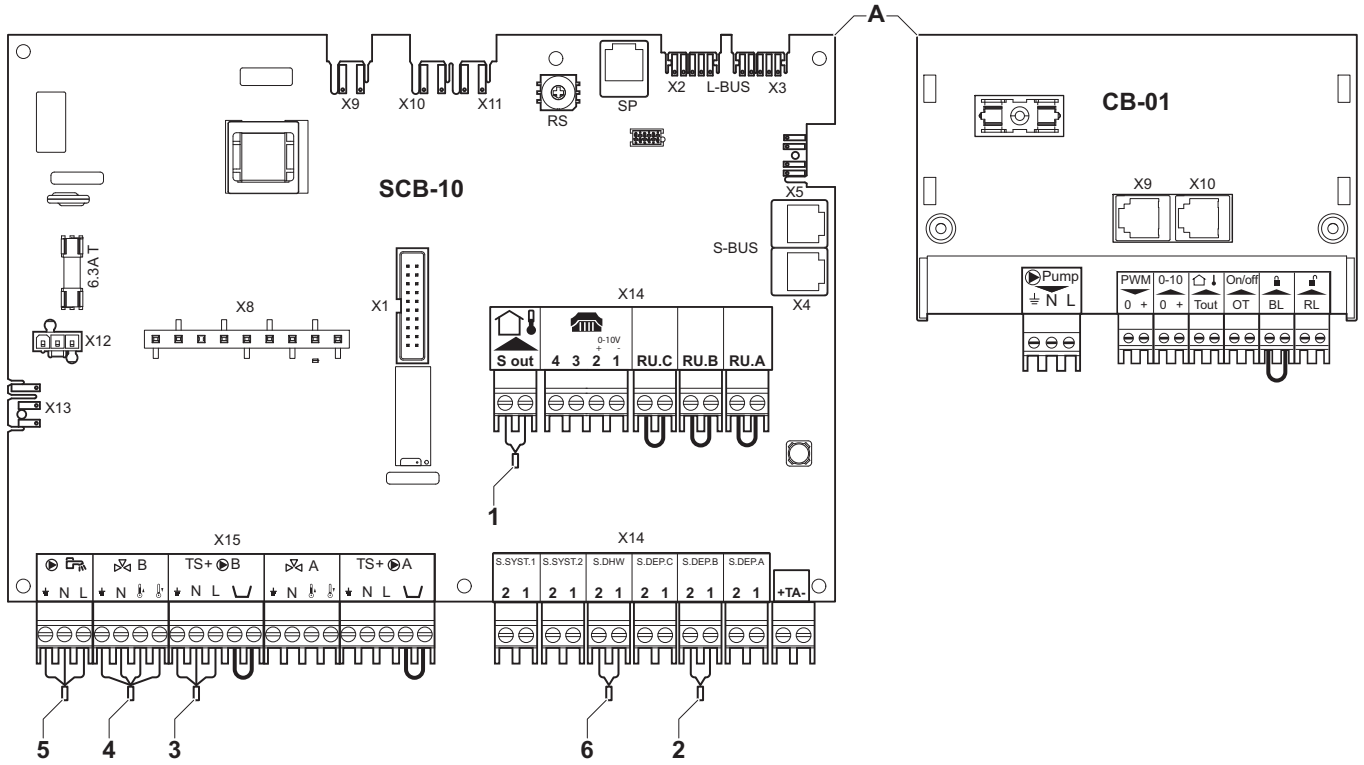
AD-4100048-01

A   Boiler
B   Mixing zone - CircB1

C   DHW zone - DHWA (1 sensor)

Note
All the factory settings of the SCB-10 are adequate for this connection.

6.1.6 Connection example 4

Fig.18   1 boiler + 1 direct zone + 1 mixing zone + domestic hot water (DHW) zone
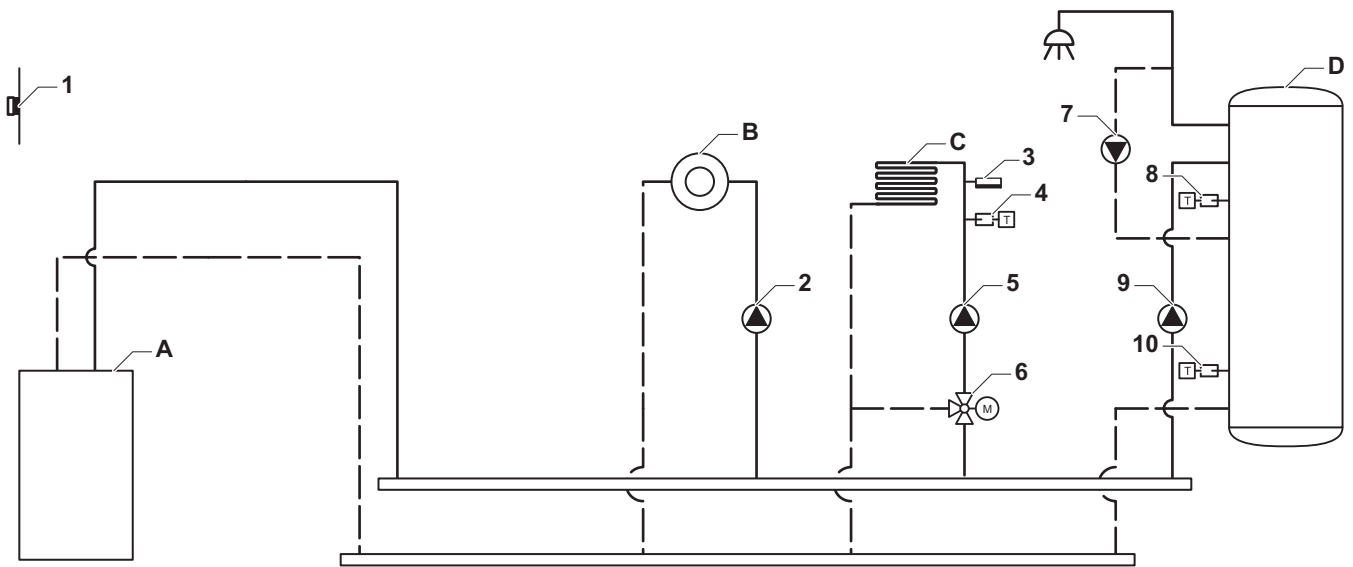
AD-4100037-01
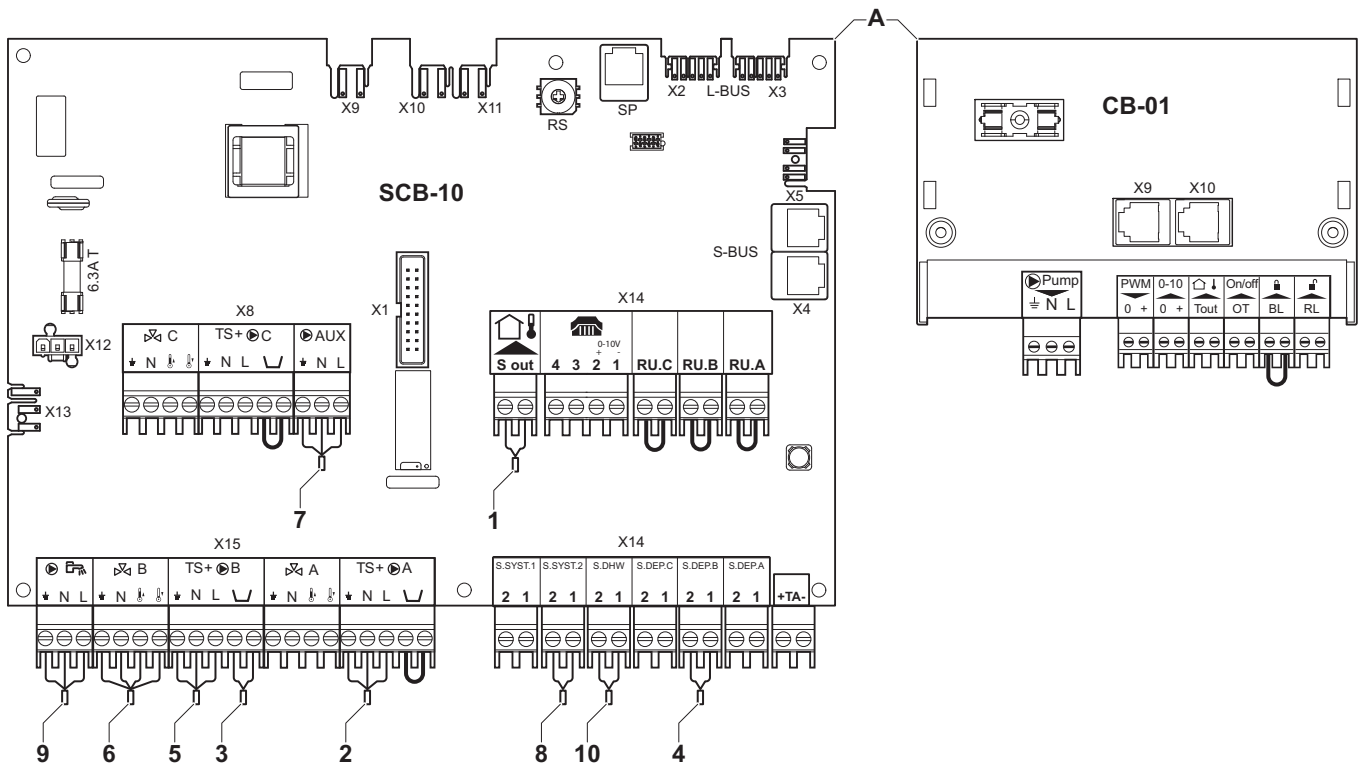
AD-4100049-01

A   Boiler
B   Direct zone - CircA1

C   Mixing zone - CircB1 (underfloor heating)
D   DHW zone - DHWA (layered calorifier-2 sensors)

Tab.6   Installer Menu > Installation Setup > SCB-10 > **DHWA** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP022	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	10

Tab.7   Installer Menu > Installation Setup > SCB-10 > **AUX** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	8

6.1.7   Connection example 5

Fig.19   1 boiler + buffer tank + 3 mixing zones + domestic hot water (DHW) zone

AD-4100038-01
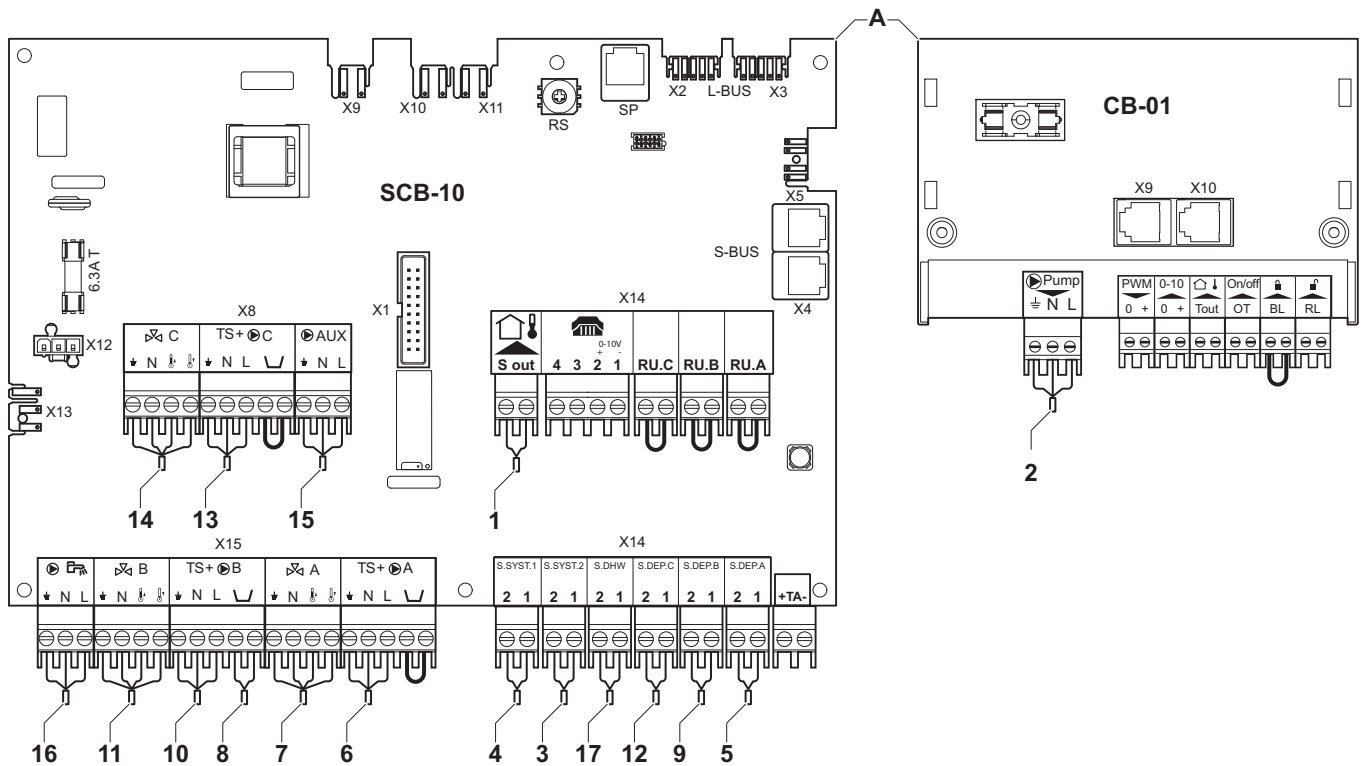
AD-4100050-01

A   Boiler
B   Buffer tank
C   Mixing zone - CircA1

D   Mixing zone - CircB1 (underfloor heating)
E   Mixing zone - CircC1
F   DHW zone - DHWA (1 sensor)

Tab.8   Installer Menu > Installation Setup > SCB-10 > **Pass.buff.tank 2sens** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
BP001	Type Buffer Tank	Type of Buffer Tank	0 = Disabled 1 = Buffer with one sensor 2 = Buffer with two sensors 3 = BufferWithThreeSensors	0	1

Tab.9   Installer Menu > Installation Setup > SCB-10 > **CIRCA1**> Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP000	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	7 °C - 100 °C	90	50
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	7 °C - 100 °C	75	40
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	1	2
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 - 4	1.5	0,7

6.1.8 Connection example 6

Fig.20 1 boiler + 1 mixing zone + 1 direct zone + swimming pool zone + domestic hot water (DHW) zone
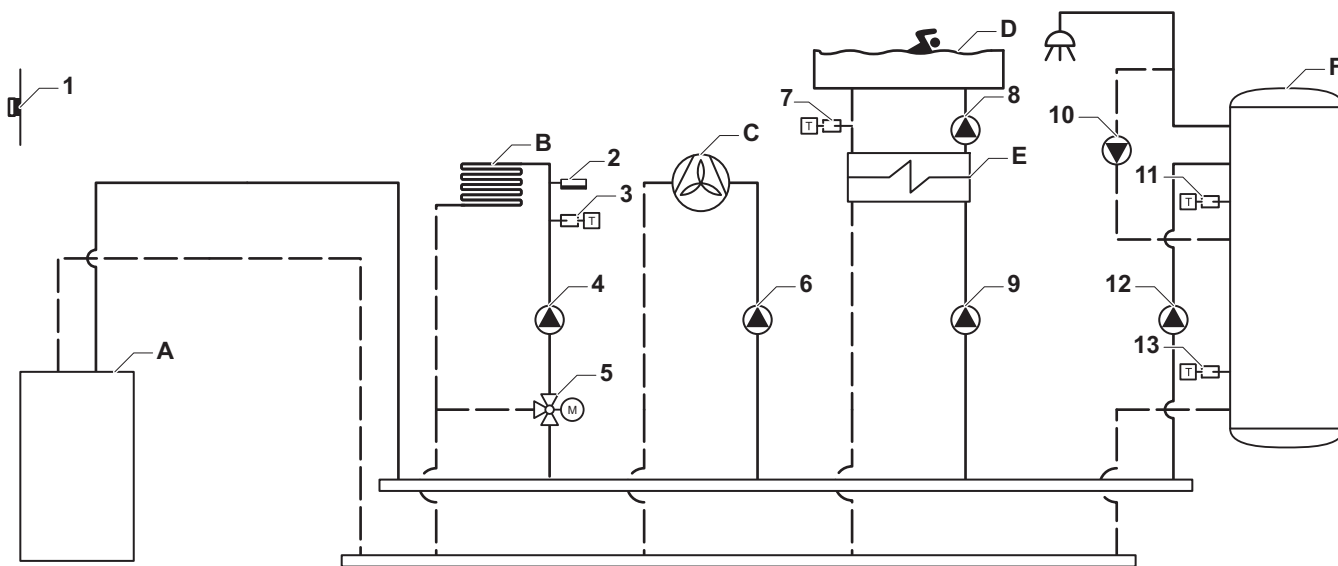
AD-4100039-01
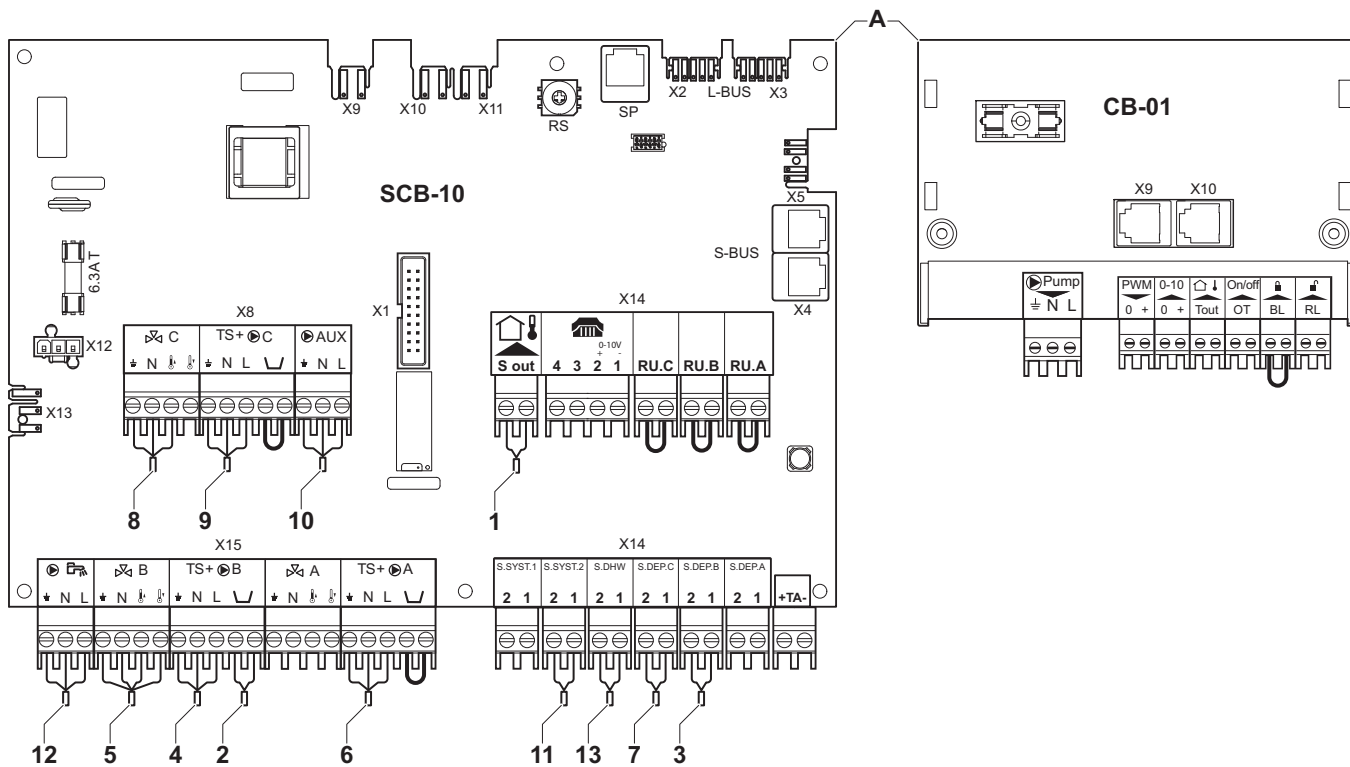
AD-4100051-01

A Boiler
B Mixing zone - CircB1 (underfloor heating)
C Direct zone - CircA1 (fan convector)

D Direct zone - CircC1 (swimming pool)
E Plate heat exchanger
F DHW zone - DHWA (layered calorifier- 2 sensors)

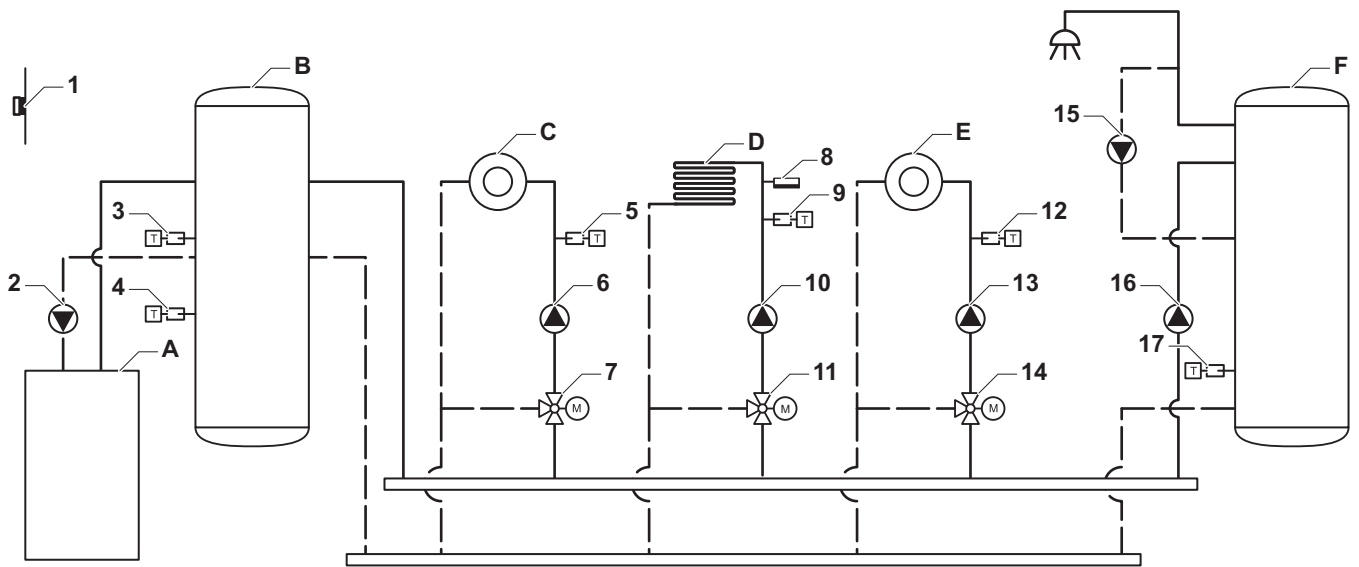Tab.10   Installer Menu > Installation Setup > SCB-10 > **CIRCA1**> Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	1	5

Tab.11   Installer Menu > Installation Setup > SCB-10 > **CIRCC1** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP023	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	3

Tab.12   Installer Menu > Installation Setup > SCB-10 > **DHWA** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP022	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	10

Tab.13   Installer Menu > Installation Setup > SCB-10 > **AUX** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	8

6.1.9   Connection example 10

Fig.21   1 boiler + low-loss header + 2 mixing zones + domestic hot water (DHW) zone

AD-4100040-01
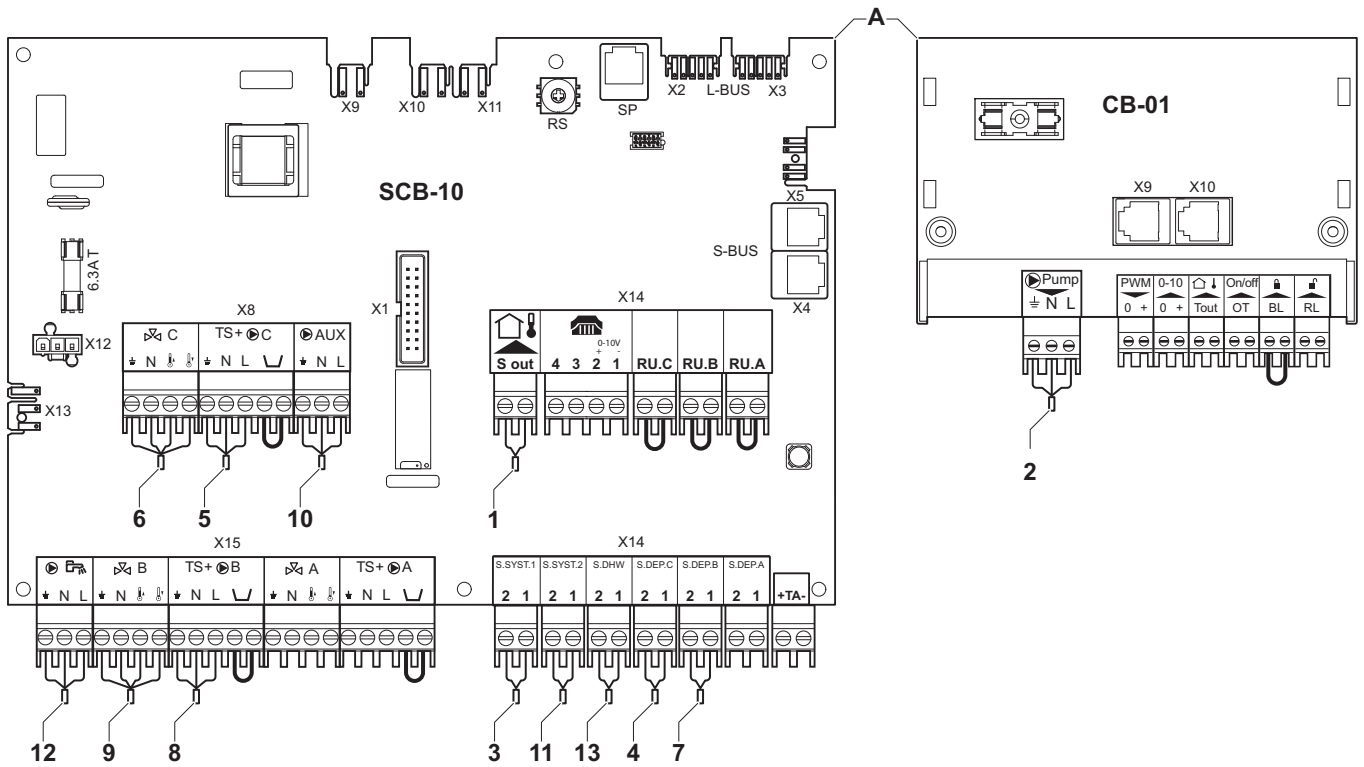
AD-4100052-01

A   Boiler
B   Low loss header
C   Mixing zone - CircC1

D   Mixing zone - CircB1
E   DHW zone - DHWA (layered calorifier-2 sensors)

Tab.14   Installer Menu > Installation Setup > SCB-10 > **DHWA** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP022	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	10

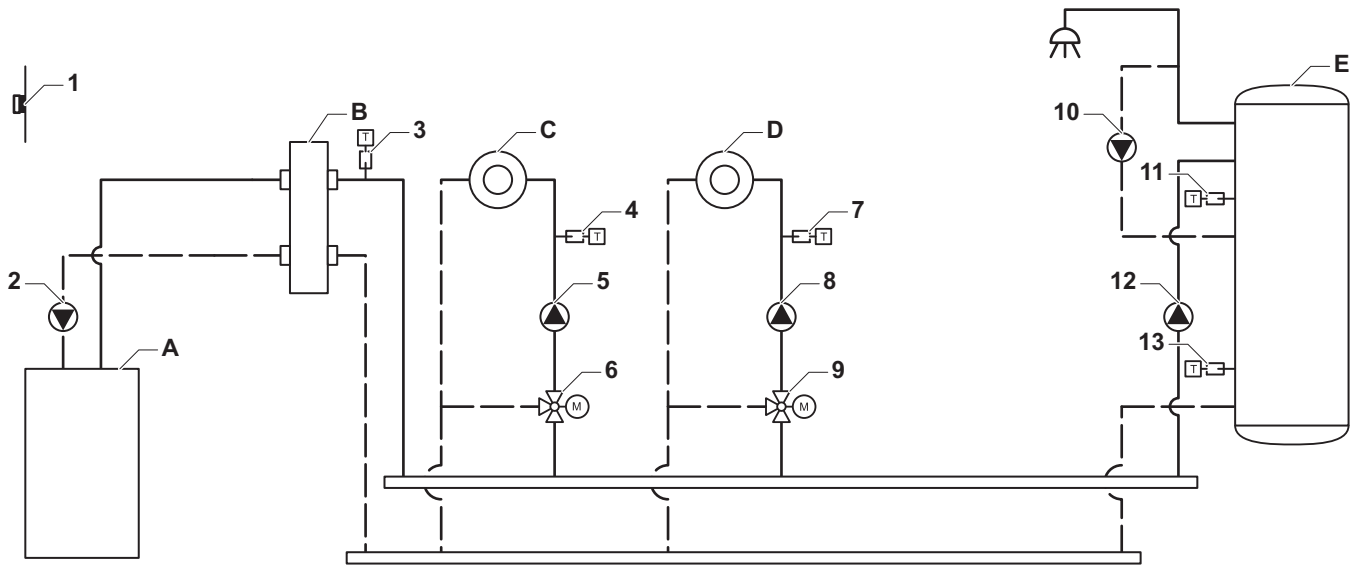Tab.15   Installer Menu > Installation Setup > SCB-10 > **AUX** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	8

Tab.16   Installer Menu > Installation Setup > SCB-10 > **Cascade management B** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
AP083	Enable Master func	Enable the master functionality of this device on the S-Bus for system control	0 = No 1 = Yes	0	1

6.1.10 Connection example 11

Fig.22   1 boiler + low-loss header + 3 mixing zones + domestic hot water (DHW) zone
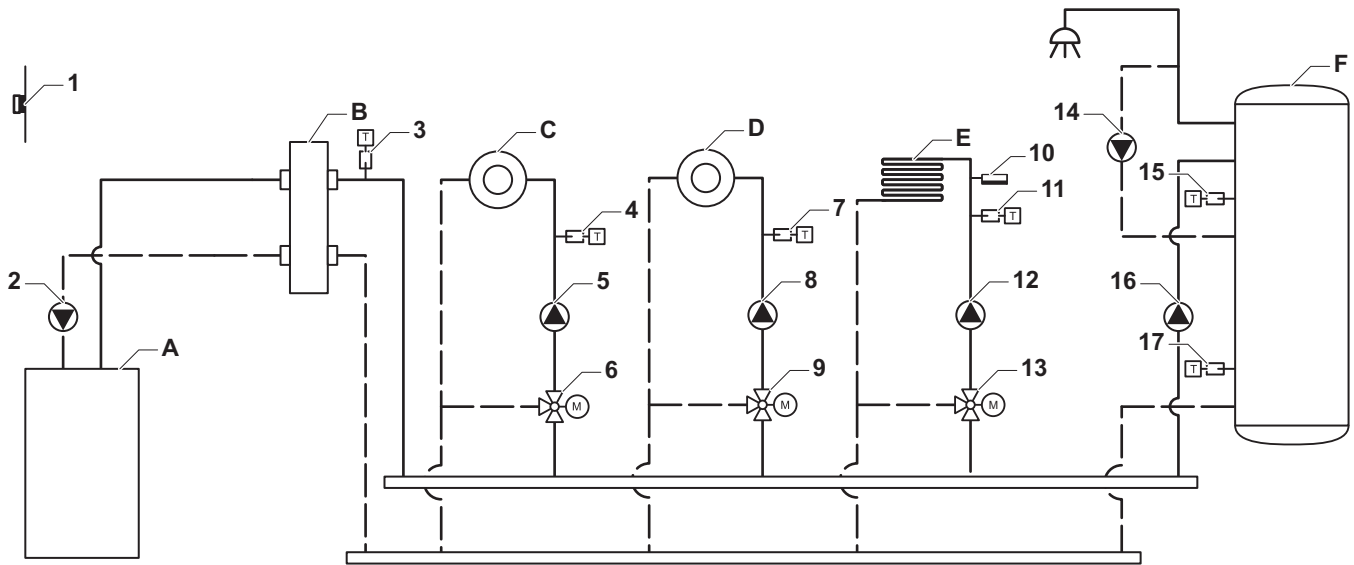
AD-4100041-01
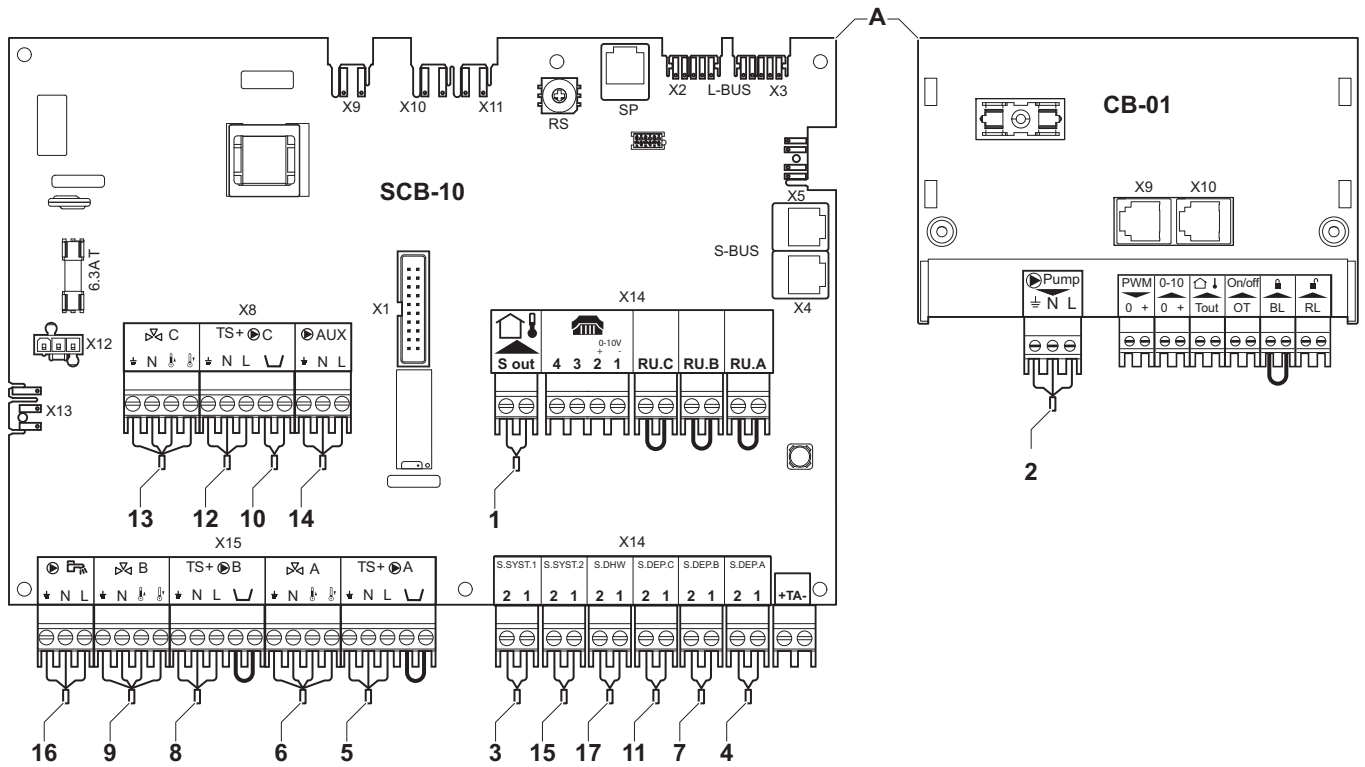
AD-4100053-01

A Boiler
B Low loss header
C Mixing zone - CircA1

D Mixing zone - CircB1
E Mixing zone - CircC1 (underfloor heating)
F DHW zone - DHWA (layered calorifier-2 sensors)

Tab.17   Installer Menu > Installation Setup >SCB-10 > **CIRCA1**> Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP000	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	7 °C - 100 °C	90	50
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	7 °C - 100 °C	75	40

Code	Display text	Description	Range	SCB-10	Adjustment
CP020	Zone Function	Functionality of the zone	0 Disable 1 Direct 2 Mixing Circuit 3 Swimming pool 4 High Temperature 5 Fan Convector 6 Domestic Hot Water tank 7 Electrical Domestic Hot Water 8 Time Program 9 ProcessHeat 10 Domestic Hot Water Layered 11 Domestic Hot Water Boiler Internal tank 31 DHW_FWS_EXT	1	2
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 - 4	1.5	0,7

Tab.18   Installer Menu > Installation Setup > SCB-10 > **DHWA** > Parameters, counters, signals > Parameters

Coder	Display text	Description	Range	SCB-10	Adjustment
CP022	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	10

Tab.19   Installer Menu > Installation Setup > SCB-10 > **AUX** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	8

Tab.20   Installer Menu > Installation Setup >SCB-10 > **Cascade management B** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
AP083	Enable Master func	Enable the master functionality of this device on the S-Bus for system control	0 = No 1 = Yes	0	1

Tab.21   Installer Menu > Installation Setup > SCB-10 > **Analogue input** > Parameters, counters, signals > Adv. Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
EP036	Sensor input config	Sets the general configuration of the sensor input	0 = Disabled 1 = Domestic Hot Water tank sensor 2 = Domestic Hot Water tank top sensor 3 = Buffer tank sensor 4 = Buffer tank top sensor 5 = System sensor (cascade)	0	2
EP037	Sensor input config	Sets the general configuration of the sensor input	0 = Disabled 1 = Domestic Hot Water tank sensor 2 = Domestic Hot Water tank top sensor 3 = Buffer tank sensor 4 = Buffer tank top sensor 5 = System sensor (cascade)	0	3

6.1.11 Connection example 12

Fig.23 1 boiler + low-loss header + 1 direct zone + 1 mixing zone + domestic hot water (DHW) zone
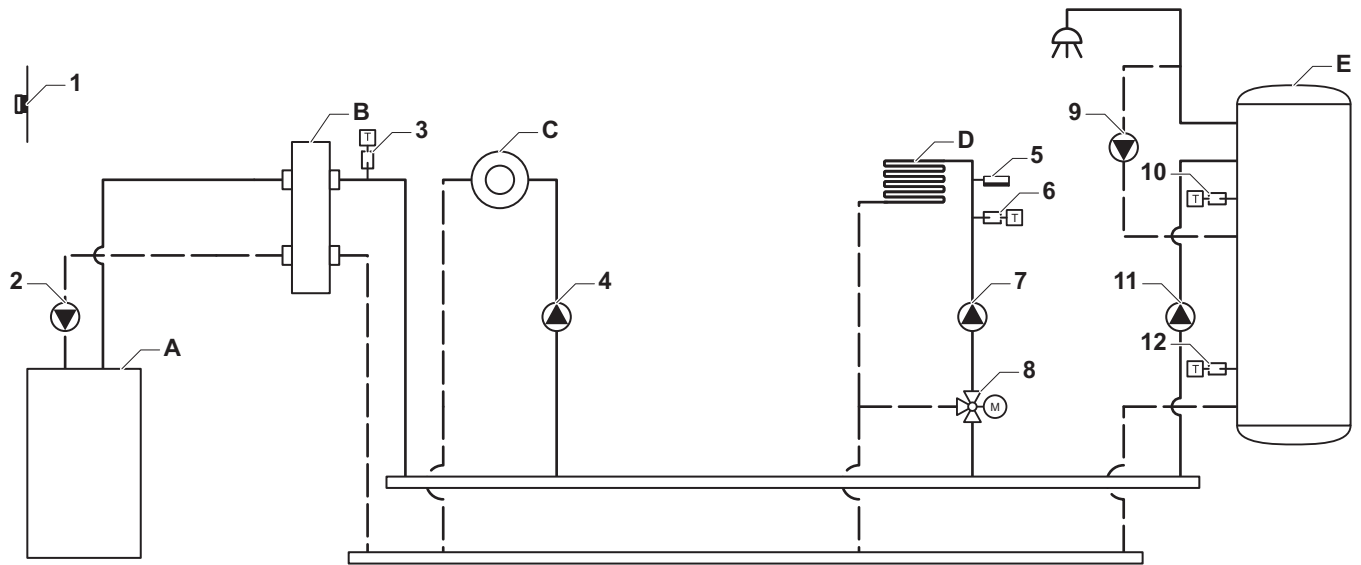
AD-4100042-01
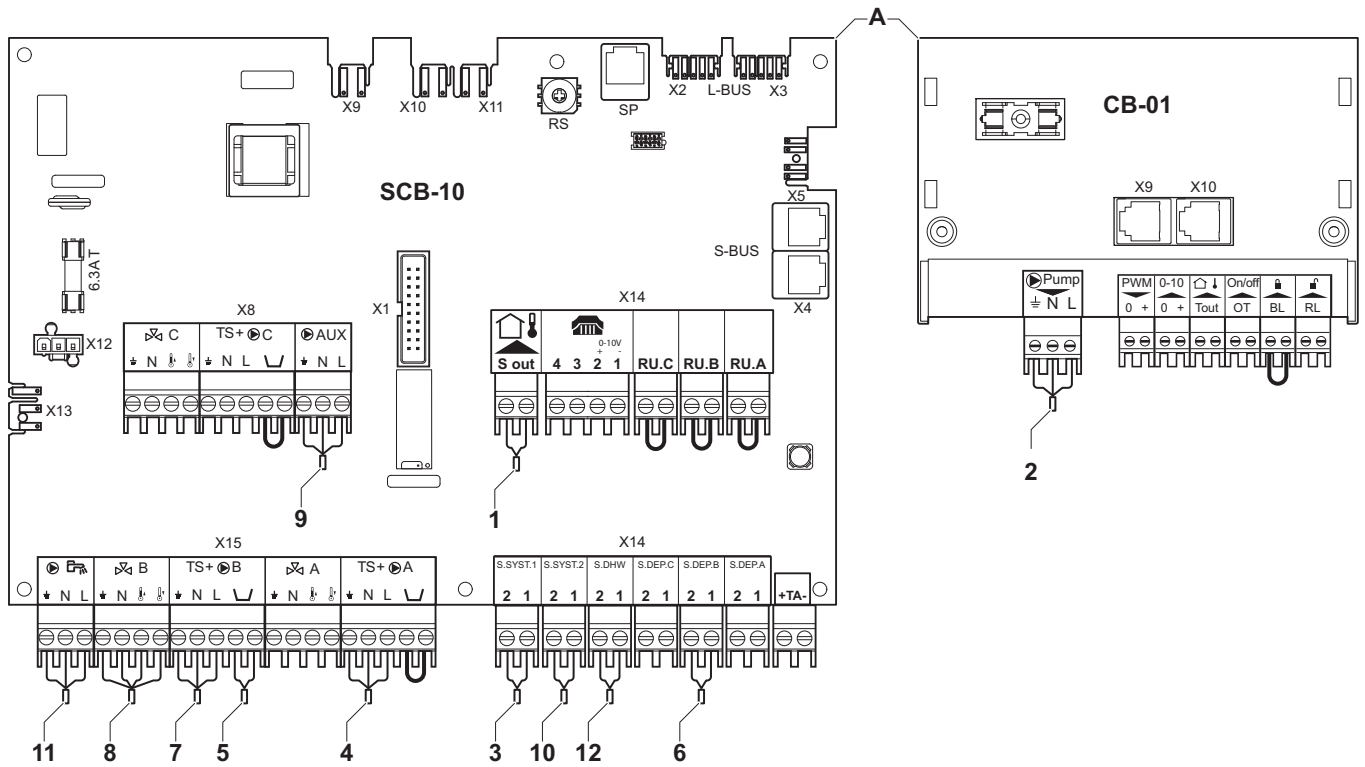
AD-4100054-01

A Boiler
B Low loss header
C Direct zone - CircA1

D Mixing zone - CircB1 (underfloor heating)
E DHW zone - DHWA (layered calorifier-2 sensors)

Tab.22   Installer Menu > Installation Setup > SCB-10 > **DHWA** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP022	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	10

Tab.23   Installer Menu > Installation Setup > SCB-10 > **AUX** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	8

Tab.24   Installer Menu > Installation Setup > SCB-10 > **Cascade management B** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
AP083	Enable Master func	Enable the master functionality of this device on the S-Bus for system control	0 = No 1 = Yes	0	1

Tab.25   Installer Menu > Installation Setup > SCB-10 > **Analogue input** > Parameters, counters, signals > Adv. Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
EP036	Sensor input config	Sets the general configuration of the sensor input	0 = Disabled 1 = Domestic Hot Water tank sensor 2 = Domestic Hot Water tank top sensor 3 = Buffer tank sensor 4 = Buffer tank top sensor 5 = System sensor (cascade)	0	2
EP037	Sensor input config	Sets the general configuration of the sensor input	0 = Disabled 1 = Domestic Hot Water tank sensor 2 = Domestic Hot Water tank top sensor 3 = Buffer tank sensor 4 = Buffer tank top sensor 5 = System sensor (cascade)	0	3

6.1.12   Connection example 14

Fig.24   2 boilers cascade + low-loss header + 1 mixing zone + domestic hot water (DHW) zone
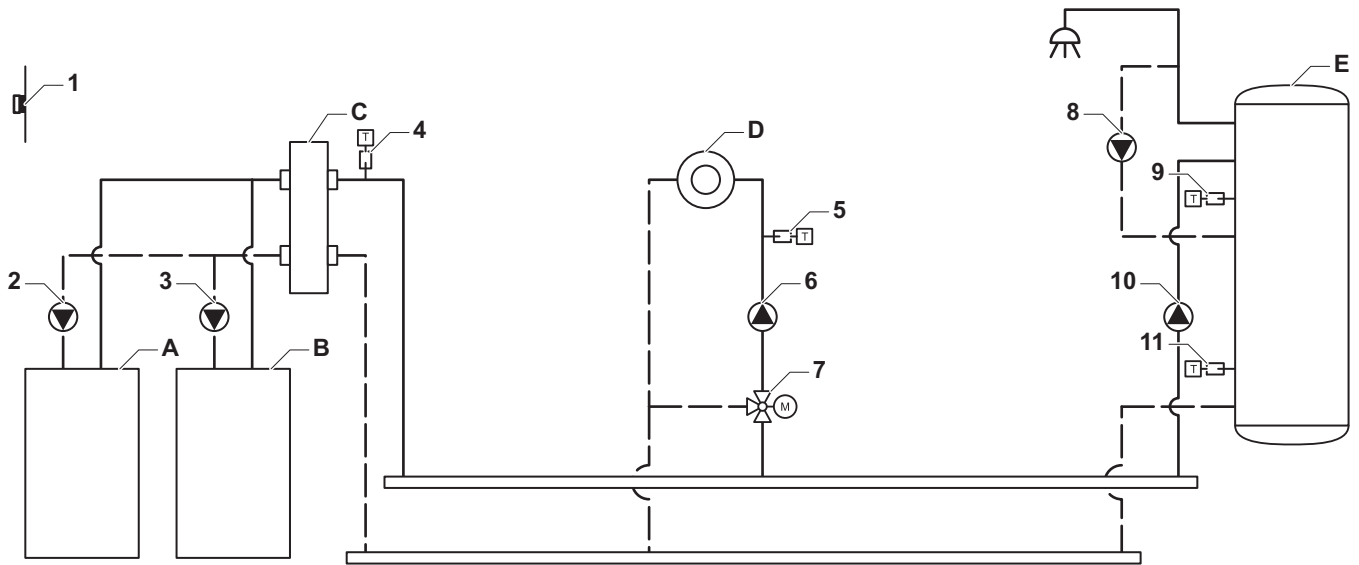
AD-4100043-01
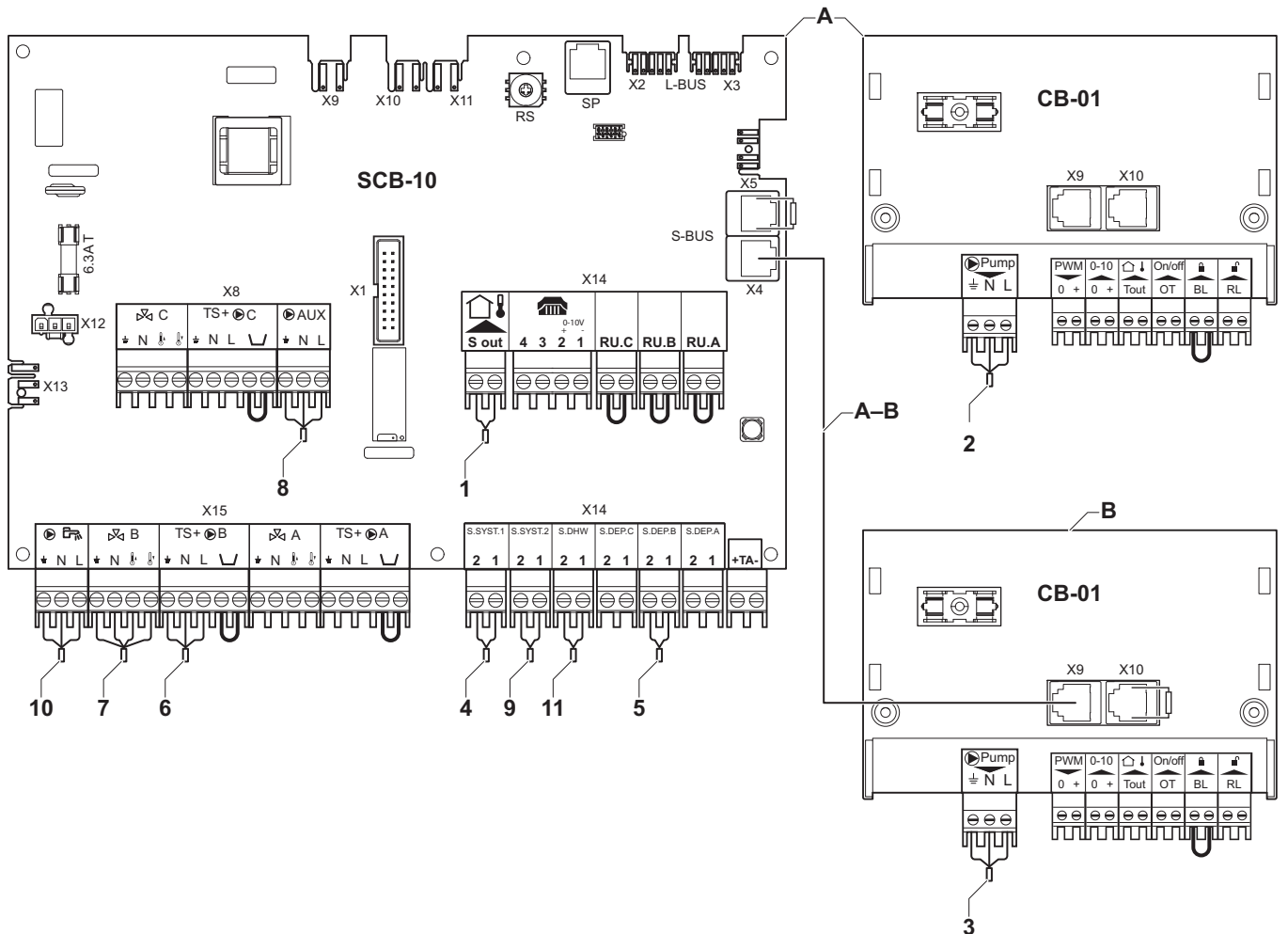
AD-4100055-01

A   Boiler (master)
B   Boiler (slave)
C   Low loss header
D   Mixing zone - CircC1

E   DHW zone - DHWA (layered calorifier-2 sensors)
A-B   S-BUS cable (comes with 2 resistors; one on connextor X5 on the SCB-10 board and one on connector X10 on the CB-01 board from boiler B)

Tab.26 Installer Menu > Installation Setup > SCB-10 > **DHWA** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP022	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	10

Tab.27 Installer Menu > Installation Setup > SCB-10 > **AUX** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	8

Tab.28 Installer Menu > Installation Setup > SCB-10 > **Cascade management B** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
AP083	Enable Master func	Enable the master functionality of this device on the S-Bus for system control	0 = No 1 = Yes	0	1

Tab.29   Installer Menu > Installation Setup > SCB-10 > **Analogue input** > Parameters, counters, signals > Adv. Parameters
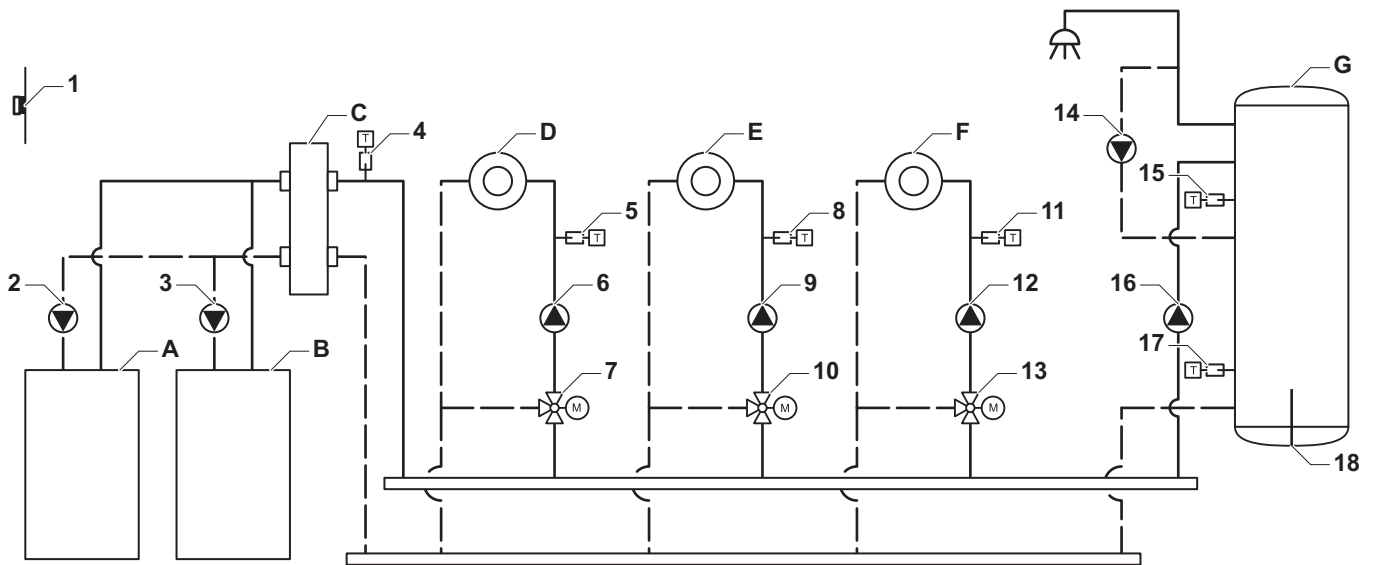
Code	Display text	Description	Range	SCB-10	Adjust-ment
EP036	Sensor input config	Sets the general configuration of the sensor input	0 = Disabled 1 = Domestic Hot Water tank sensor 2 = Domestic Hot Water tank top sensor 3 = Buffer tank sensor 4 = Buffer tank top sensor 5 = System sensor (cascade)	0	2
EP037	Sensor input config	Sets the general configuration of the sensor input	0 = Disabled 1 = Domestic Hot Water tank sensor 2 = Domestic Hot Water tank top sensor 3 = Buffer tank sensor 4 = Buffer tank top sensor 5 = System sensor (cascade)	0	3

6.1.13 Connection example 16

Fig.25 2 boilers cascade + low-loss header + 3 mixing zones + domestic hot water (DHW) zone

AD-4100044-01

AD-4100056-01

A	Boiler (master)	**F**	Mixing zone - CircC1
B	Boiler (slave)	**G**	DHW zone - DHWA (layered calorifier-2 sensors)
C	Low loss header	**A-B**	S-BUS cable (comes with 2 resistors; one on con-
D	Mixing zone - CircA1		nextor X5 on the SCB-10 board and one on connec-
E	Mixing zone - CircB1		tor X10 on the CB-01 board from boiler B)

Tab.30   Installer Menu > Installation Setup >SCB-10 > **CIRCA1**> Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP000	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	7 °C – 100 °C	90	50
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	7 °C – 100 °C	75	40
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	1	2
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 – 4	1.5	0,7

Tab.31   Installer Menu > Installation Setup > SCB-10 > **DHWA** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP022	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	10

Tab.32   Installer Menu > Installation Setup >SCB-10 > **AUX** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = Domestic Hot Water tank 7 = Electrical Domestic Hot Water 8 = Time Program 9 = ProcessHeat 10 = Domestic Hot Water Layered 11 = Domestic Hot Water Boiler Internal tank 31 = DHW_FWS_EXT	0	8

Tab.33   Installer Menu > Installation Setup > SCB-10 > **Cascade management B** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
AP083	Enable Master func	Enable the master functionality of this device on the S-Bus for system control	0 = No 1 = Yes	0	1

Tab.34   Installer Menu > Installation Setup > SCB-10 > **Analogue input** > Parameters, counters, signals > Adv. Parameters

Code	Display text	Description	Range	SCB-10	Adjust-ment
EP036	Sensor input config	Sets the general configuration of the sensor input	0 = Disabled 1 = Domestic Hot Water tank sensor 2 = Domestic Hot Water tank top sensor 3 = Buffer tank sensor 4 = Buffer tank top sensor 5 = System sensor (cascade)	0	2
EP037	Sensor input config	Sets the general configuration of the sensor input	0 = Disabled 1 = Domestic Hot Water tank sensor 2 = Domestic Hot Water tank top sensor 3 = Buffer tank sensor 4 = Buffer tank top sensor 5 = System sensor (cascade)	0	3

7 Installation

7.1 Electrical connections

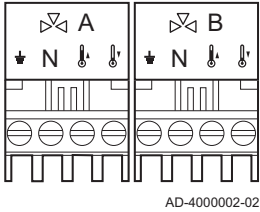### 7.1.1 Connecting a three-way valve

Fig.26 Three-way valve

Connecting a three-way valve (230 VAC) per zone (group).

The three-way valve is connected as follows:

- ⏚ = earth
- N = neutral
- ⬆ = open
- ⬇ = closed

AD-4000002-02

7.1.2 Connecting the pump with a protection thermostat

Fig.27 Pump with protection thermostat

Connecting a pump with a protection thermostat, e.g. for underfloor heating. The maximum pump power consumption is 300 VA.

Connect the pump and the protection thermostat as follows:

- ⏚ = earth
- N = neutral
- L = phase
- ⊔ = protection thermostat (remove bridge)

AD-4000001-02

7.1.3 Connecting a domestic hot water (DHW) pump

Fig.28 DHW pump

Connecting a domestic hot water (DHW) pump The maximum power consumption is 300 VA.

Connect the pump as follows:

- ⏚ = earth
- N = neutral
- L = phase

AD-0001132-02

7.1.4 Connecting an outside sensor

Fig.29 Outside sensor

An outside sensor can be connected to the **S out** terminals of the connector. In the case of an on/off thermostat, the boiler will control the temperature with the set point from the internal heating curve.

AD-4000006-01

7.1.5 Connecting a telephone connector

Fig.30 Telephone connector

The telephone connector can be used to connect a remote control, a 0-10 V analogue input or as a status output.

The 0–10 V signal controls the boiler flow temperature in a linear way. This control modulates on the basis of flow temperature. The output varies between the minimum and maximum value on the basis of the flow temperature set point calculated by the controller.

Connect the telephone connector as follows:

- 1 + 2 = 0–10 V input
- 3 + 4 = status output

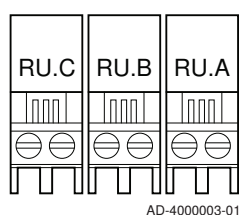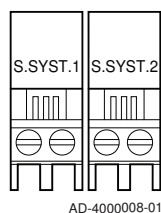AD-4000004-01

Fig.31   External room thermostats

AD-4000003-01

Fig.32   System sensors

AD-4000008-01

Fig.33   DHW sensor

AD-4000009-01
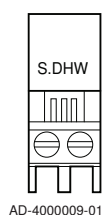
Fig.34   Contact temperature sensors
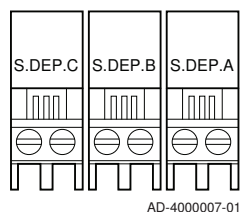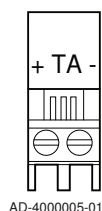

AD-4000007-01

Fig.35   Anode connection for calorifier tank

AD-4000005-01

7.1.6   Connecting external room thermostats

Connecting external room thermostats per group (zone).

The contacts work with an on/off thermostat, a room thermostat, an **Open-Therm** controller or an **OpenTherm Smart Power** controller.

- RU.A = room thermostat
- RU.B = room thermostat
- RU.B = room thermostat

7.1.7   Connecting system sensors

Connecting system sensors for circuits (zones).

- S.SYST.1 = system sensor (NTC 10k Ohm/25°C)
- S.SYST.2 = system sensor (NTC 10k Ohm/25°C)

7.1.8   Connecting the domestic hot water (DHW) sensor

Connecting the domestic hot water (DHW) sensor (NTC 10k Ohm/25°C).

7.1.9   Connecting contact temperature sensors

Connecting contact temperature sensors for system flow, DHW temperatures or zones (groups).

- S.DEP.A = temperature sensor (NTC 10k Ohm/25°C)
- S.DEP.B = temperature sensor (NTC 10k Ohm/25°C)
- S.DEP.C = temperature sensor (NTC 10k Ohm/25°C)

7.1.10   Connecting the calorifier tank anode

Connecting a TAS anode (Titan Active System) for a calorifier tank.

Connect the anode as follows:

- - = connection on the calorifier tank
- + = connection on the anode

> ⚠ **Caution**
> If the calorifier tank does not have a TAS anode, connect the simulation anode (= accessory)

8 Operation

8.1 Screed drying

The screed drying function is used to force a constant flow temperature or a series of successive temperature levels to accelerate screed drying on underfloor heating.

- The settings for these temperatures must follow the screed layer's recommendations.
- Activation of this function via the parameter $CP470$ (setting other than 0) forces the permanent display of the screed drying function and deactivates all other regulator functions.
- When the screed drying function is active on one circuit, all other circuits and the domestic hot water circuit continue to run.
- It is possible to use the screed drying function on circuits A and B. The parameter settings must be made on the PCB that controls the circuit concerned.

Screed drying is managed for each circuit by the following parameters:

Tab.35   Screed drying management parameter

Parameter	Description
$CP470$	Number of days of screed drying
$CP480$	Screed drying start temperature
$CP490$	Screed drying stop temperature

Fig.36   Screed drying curve
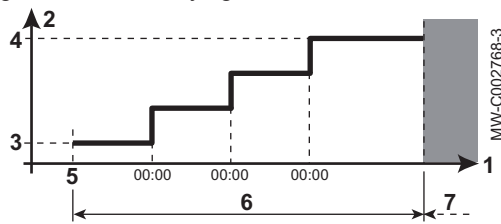
1   Number of days
2   Heating set point temperature (°C)
3   Screed drying start temperature
4   Screed drying stop temperature
5   Start of the screed drying function
6   Number of days on which the screed drying function is activated
7   End of the screed drying function, back to normal running

Fig.37   Example
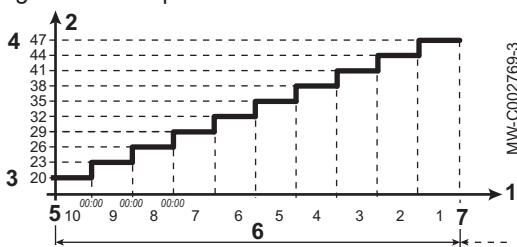
i Note
Every day at midnight, the screed drying start temperature set point is recalculated and the remaining number of days on which the screed drying function is running decreases.

8.2 Frost protection

⚠ Caution
- Drain the boiler and central heating system if you are not going to use your home or the building for a long time and there is a chance of frost.
- The frost protection does not work if the boiler is out of operation.
- The built-in boiler protection is only activated for the boiler and not for the system and radiators.
- Open the valves of all the radiators connected to the system.

Set the temperature control low, for example to 10°C.

If there is no heat demand, the boiler will only switch on to protect itself against frost.

If the temperature of the central heating water in the boiler drops too low, the built-in boiler protection system is activated. This system works as follows:

- At a water temperature lower than 7°C, the heating pump starts.
- If the water temperature is lower than 4°C, the boiler switches on.
- If the water temperature is higher than 10°C the boiler switches off and the circulation pump continues to run for a short time.

To prevent the system and radiators freezing in frost-sensitive areas (e.g. a garage), a frost thermostat or outside sensor can be connected to the boiler.

8.3 Heating curve function

An outside sensor determines the flow temperature. The gradient and the base point determine how fast the maximum flow temperature is reached.

Fig.38 Internal heating curve

AD-0000871-02
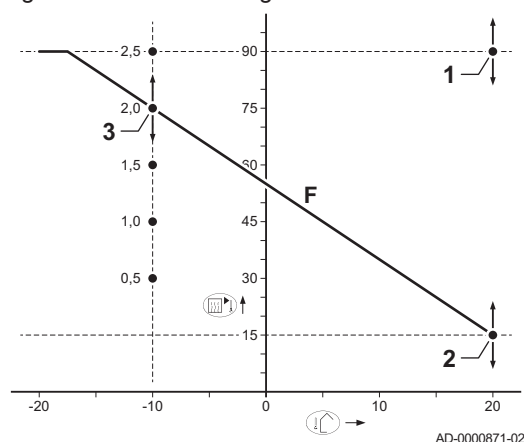
1 Setting point (parameter $\boxed{CP0\ 10}$)
2 Comfort base point (parameter $\boxed{CP2\ 10}$)
3 Gradient (parameter $\boxed{CP230}$)
F Heating curve
⌂ Outside temperature
▥ Flow temperature

8.4 Cascade control

With the Diematic Evolution mounted in the master boiler it is possible to manage up to 7 boilers equipped with the Inicontrol 2 in cascade. 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.39 Cascade numbering

AD-3000964-01
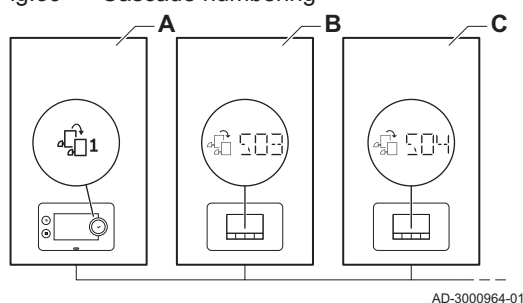
A The master boiler is number 1.
B The first slave boiler is number 3 (number 2 does not exist).
C The second slave boiler is number 4; and so on.

There are two options for cascade control management:

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

Tab.36 Installer Menu > Installation Setup > SCB-10 > **Cascade management B** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	SCB-10
NP006	Cascade Type	Cascading boilers by adding successively or in parallel, the boilers function simultaneously	0 = Traditional 1 = parallel	0
NP009	CascInterStageTime	Switch on and switch off timing for the producer of the cascade	1 Min - 60 Min	4

| Code	Display text	Description	Range	SCB-10
NP011	CascadeTypeAlgo	Choice of Cascade Algorithm type, power or temperature	0 = Temperature 1 = Power	0

Fig.40   Traditional cascade control management

AD-3000960-01
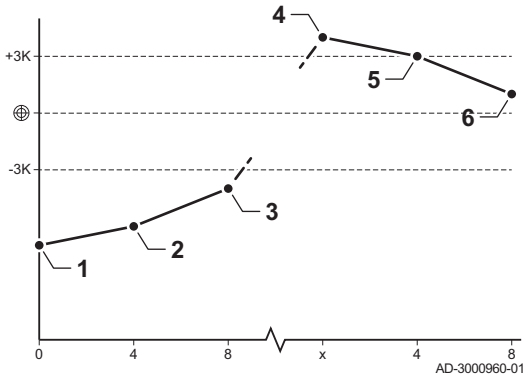
1   First boiler starts running when system temperature is 3°C below set point.
2   After 4 minutes the second boiler starts running if ΔT< 6K and the system temperature is still more than 3°C below set point.
3   After 8 minutes the third boiler starts running if ΔT< 6K and the system temperature is 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 ΔT< 6K and the system temperature is still more than 3°C above set point.
6   After 8 minutes the third boiler stops running if ΔT< 6K and the system temperature is still more than 3°C above set point.

Fig.41   Parallel cascade control management

AD-3000961-01
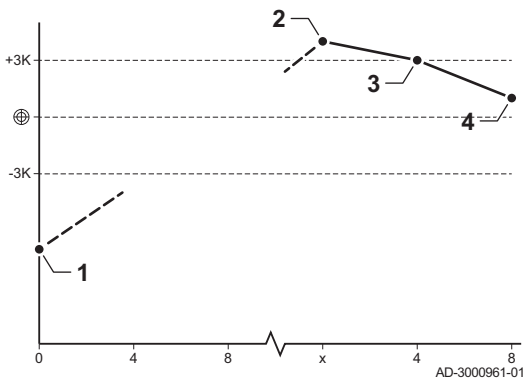
1   All boilers in cascade start running when system temperature is 3°C below set point.
2   First boiler stops running when system temperature is 3°C above set point.
3   After 4 minutes the second boiler stops running if ΔT< 6K and the system temperature is still more than 3°C above set point.
4   After 8 minutes the third boiler stops running if ΔT< 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 set point requested by the zones + error caculation.

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

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

8.5   0-10 Volt input function

There are three options for the 0-10 Volt input control:

• disable the input function.
• the input is temperature based.
• the input is heat output based

Tab.37   Installer Menu > Installation Setup >0-10 volt input > Parameters

Code	Display text	Description	Range	SCB-10
EP014	Scb func. 10V PWMin	Smart Control Board function 10 Volt PWM input	0 = Off 1 = Temperature control 2 = Power control	0
EP030	Min Setp Temp 0-10V	Sets the minimum set point temperature for 0 - 10 volts for the Smart Control Board	0 °C - 100 °C	0
EP031	Max Setp Temp 0-10V	Sets the maximum set point temperature for 0 - 10 volts for the Smart Control Board	0.5 °C - 100 °C	100
EP032	Min Setp Power 0-10V	Sets the minimum set point power for 0 - 10 volts for the Smart Control Board	0 % - 100 %	0

Code	Display text	Description	Range	SCB-10
EP033	Max Setp Power 0-10V	Sets the maximum set point power for 0 - 10 volts	5 % - 100 %	100

Fig.42   Temperature regulation

AD-0001156-02

8.5.1   Analogue temperature regulation (°C)
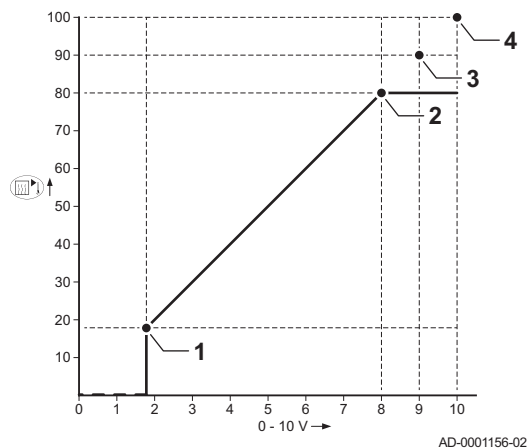
1 Boiler on
2 Parameter `CP010`
3 Maximum flow temperature
4 Calculated value

The 0–10 V signal controls the boiler supply temperature. This control modulates on the basis of flow temperature. The output varies between the minimum and maximum value on the basis of the flow temperature set point calculated by the controller.

Tab.38   Temperature regulation

Input signal (V)	Temperature °C	Description
0–1.5	0–15	Boiler off
1.5–1.8	15–18	Hysteresis
1.8–10	18–100	Desired temperature

8.5.2   Analogue output-based control

The 0 - 10 V signal controls the boiler output. This control modulates on the basis of the heat output. The minimum output is linked to the boiler's modulation depth. The output varies between the minimum and maximum value on the basis of the value defined by the controller.

Tab.39   Control based on heat output

Input signal (V)	Heat output (%)	Description
0–2.0	0	Boiler off
2.0–2.2	0	Heat demand
2.0–10	0–100	Desired heat output

9   Troubleshooting

9.1   Reading out and clearing the error memory

The error memory stores the most recent 32 errors and you can read the details of each error code. You can clear the error memory after service.

1. Select **Installer Menu > Error History**.
   ⇨ The following message appears briefly on the screen: **Loading error history**. Next a list of the most recent recorded error codes and the dates is displayed.
2. Select the error code you want to investigate.
   ⇨ An explanation of the error code and the status of the appliance when the error occurred is displayed.
3. Consult the Troubleshooting section of the product documentation of the appliance or connected devices to solve the error.
4. To clear the error memory, press and hold the ✔ rotary knob.

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