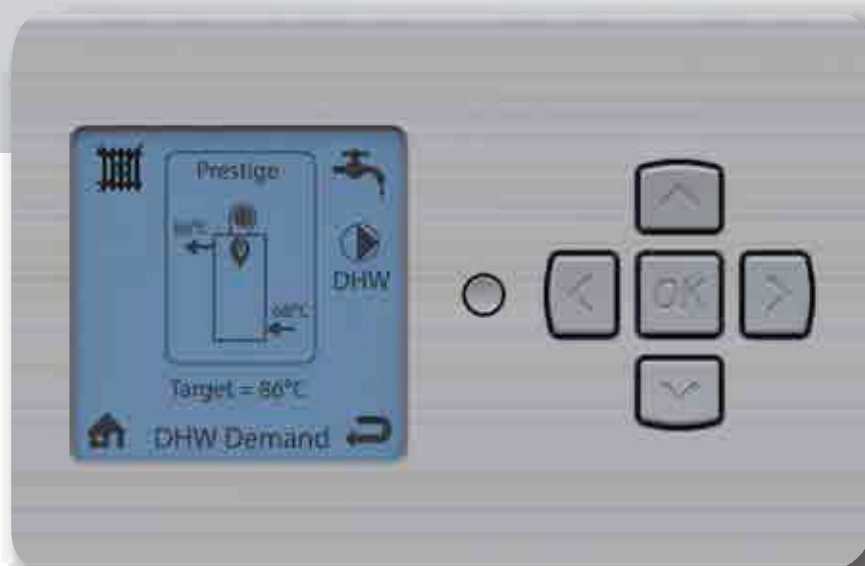


SYSTEM CONTROL - ACVMAX

Prestige 2014

42 - 50 - 75 - 100 - 120 Solo V14



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NOTE

This manual contains important information with respect to the installation and set-up of the boiler.

This manual must be provided to the installer, who will keep it in a safe place.

We accept no liability should any damage result from the failure to comply with the instructions contained in this technical manual.

**Essential recommendations for safety**

- It is prohibited to carry out any modifications to the appliance without the manufacturer's prior and written agreement.
- The appliance must be set up by a qualified installer, in accordance with applicable standards and regulations.
- The installation must comply with the instructions contained in the boiler's installation manual and with the standards and regulations applicable to installations.
- Failure to comply with the instructions in this manual could result in personal injury or a risk of environmental pollution.
- The manufacturer declines all liability for any damage caused as a result of incorrect installation or in the event of the use of appliances or accessories that are not specified by the manufacturer.

**Essential recommendations for the correct operation of the appliance**

- To guarantee the correct operation of the installation, it is essential to carry out the adjustments in accordance with the instructions in this manual.
- In order to ensure that the appliance operates correctly, it is essential to inspect and service the boiler every year.
- Faulty parts may only be replaced by genuine factory parts.

**General remark**

- The manufacturer reserves the right to change the technical characteristics and features of its products without prior notice.

IMPORTANT INSTRUCTIONS - READ BEFORE PROCEEDING**Essential recommendations for safety**

- This document is intended to be used by a factory trained and qualified heating contractor or service technician only. Read all instructions within this document and within the PRESTIGE Boiler Installation and Maintenance Manual before proceeding.
- It is recommended to follow the procedures in the steps given. Skipping or missing procedural steps could result in severe personal injury, death or substantial property damage.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless supervised or unless they have been given instruction concerning the use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.

If you smell gas:

- Immediately isolate the gas supply.
- Open windows and doors to ventilate the area.
- Do not use any electrical appliances and do not operate any switches.
- Immediately notify your gas supplier and/or your installer.

HOW TO USE THIS MANUAL

This manual is for the exclusive use of ACV-approved installers.

The first section of the manual contains a description of the ACVMAX controller and of the keys, screens and menus used to make the adjustments.

The next section presents various heating system diagrams and the list of the accessories required for each specific system. The electrical connection diagrams are also included as well as the specific settings of the ACVMAX to be made using the installer access code provided in this manual.

Finally, the last section contains the explanation of the status and information messages as well as the blockage and error codes displayed on the ACVMAX screen, which will allow the installer to troubleshoot the possible faults.

For any other heating system configuration than those in this manual, please contact your ACV representative.

BOILER EASY SETUP

The main parameters of the Prestige boilers can be set up using the EZ (easy) setup function of the controller. The EZ setup function allows the user/installer to quickly setup the appliance for immediate operation according to the system configuration. Refer to the appliance Installation, Operation and Maintenance Instructions.

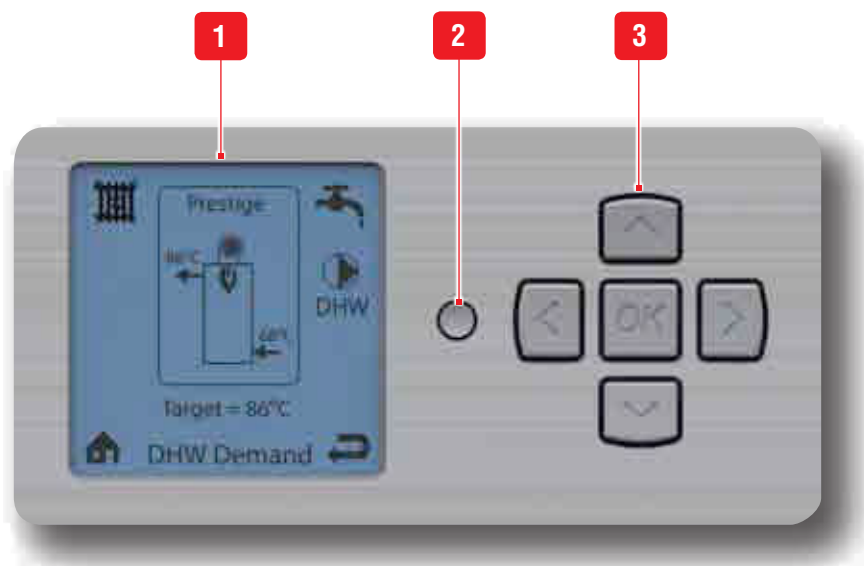
ACVMAX OPERATING INFORMATION

The ACVMAX system control is designed to be flexible yet easy to use. It monitors and controls the boiler to operate as efficiently as possible. ACVMAX monitors the boiler supply, return and flue gas temperatures and operates the igniter, gas valve and blower. It uses this information to modulate the boiler's firing rate to maintain the required setpoint. ACVMAX offers many advanced control options, which may be adjusted for various applications to achieve optimum boiler efficiency and operation.

- Two central / space heating (CH) call inputs with separate outdoor curves.
- A Domestic Hot Water (DHW) call input with optional priority.
- System temperature sensing and control with an optional system temperature sensor.
- A cascade function. It allows up to four Prestige boilers to operate together in a single heating system.
- A Modbus interface for integrating with building management systems.

These advanced features are adjustable in the Installer Menu after entering an access code. Refer to "Installer Code" on page 5 for more details

CONTROL PANEL DESCRIPTION



1. **ACVMAX LCD Display** - It is the setup interface of the boiler and indicates the parameter values, the error codes and the set-up status of the parameters. It displays a series of screens, each showing information and/or icons. The main icons are detailed hereafter.
2. **Installer button** - Allows the installer to access the menus of the ACVMAX controller to set up the system.
3. **Arrow keys and OK key** - To browse through the screens of the ACVMAX controller, set up the boiler, increase and decrease the displayed values and validate the selections and access the Easy set-up screens.

Main Icons of ACVMAX display

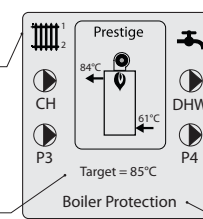
- Central Heating** - indicates information related to the CH circuit.
- DHW** - indicates information related to the Domestic Hot Water circuit.
- Home** - to go back to the main menu screen.
- Back** - to go back to the previous screen.
- Reset** - to reset the system to the factory settings.

For more information on how to use the ACVMax control panel, please refer to the appliance Installation, Operation and Maintenance Instructions provided with the appliance.

HOME PAGE DESCRIPTION

Radiator icon : indicates that a central heating call has been received. A small number 1 or 2 indicates which CH calls are active

Basic information. The user can toggle the items using the LEFT and RIGHT keys and view target, Supply, Return, Domestic, Outdoor and System temperatures.



Tap icon : indicates that a DHW call has been received.

Circulator icons : indicate which circulators are currently powered.

Status line : displays the current operating state of the boiler. See "List of Status Line Messages" on page 54.

INSTALLER CODE

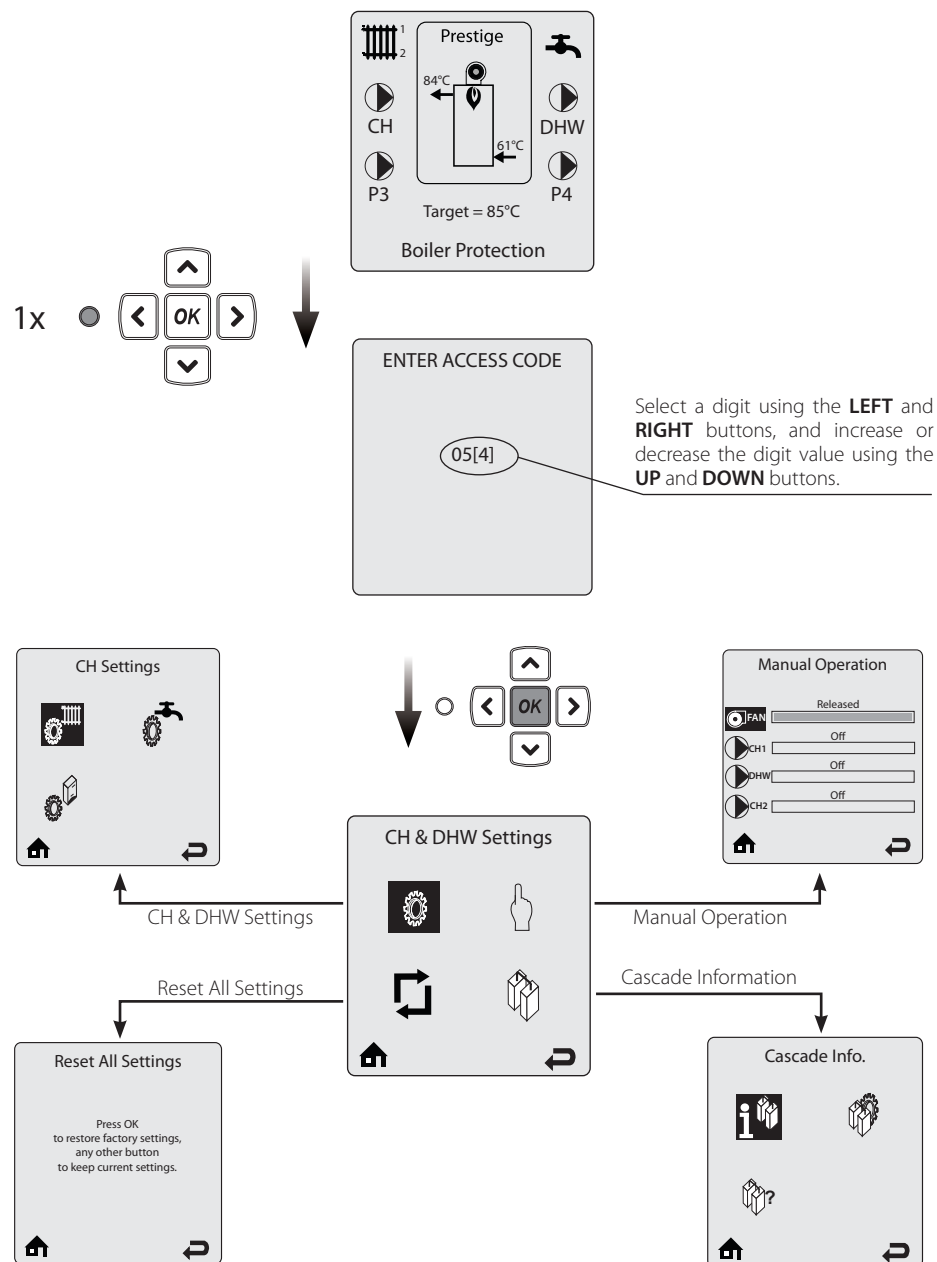
Through the use of the specific code «54», the installer can access various setup screens, in order to define a large set of parameters and adapt the operation of the ACVMAX to the system configuration.

To navigate on the screen, use the **UP**, **DOWN**, **LEFT** and **RIGHT** keys, then the **OK** key to validate a selection. To increase/decrease values, use the **UP** and **DOWN** keys. or **LEFT** and **RIGHT**, according to the situation

General remarks

- **Entering the installer access code allows the installer to make adjustments for 30 minutes. After 30 minutes, the access code will need to be entered again to make any adjustments.**
- **If the end user misuses the installer code to access installer-specific parameters and makes changes that cause a system failure, any warranty claim will be void.**

INSTALLER MENU STRUCTURE



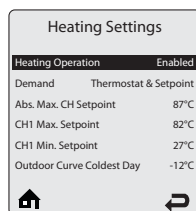
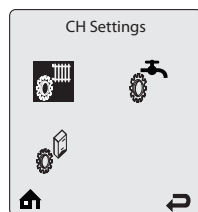
INSTALLER MENU DESCRIPTION

The installer Menu contains the following icons :

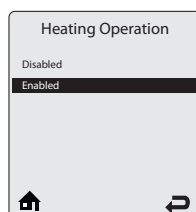
1. **CH & DHW Settings** – Allows the installer to adjust the boilers central / space heating and domestic hot water settings for the application. Refer to "CH & DHW Settings / Heating Settings" on page 7.
2. **Manual Operation** – The burner and circulators can be manually enabled for testing. Refer to "Manual Operation" on page 25 .
3. **Reset All Settings** – Resets all CH, DHW, and Cascade Settings back to the factory defaults. Refer to "Reset all settings" on page 24.
4. **Cascade Settings** – Allows the installer to setup, adjust and monitor the Cascade System. Refer to "Cascade Menu / Cascade Information" on page 26.
5. **Home** - to go back to the home page.
6. **Back** - to go back to the previous screen.



CH & DHW Settings / Heating Settings




The **Heating Settings** menu contains settings related to central heating operation. Each line contains a CH Setting followed by its current value. Six CH Settings are displayed on the screen at one time.



Heating Operation allows the central heating function to be enabled and disabled.

Press the **UP** or **DOWN** buttons to select Enabled or Disabled then press the **OK** button to store the setting.

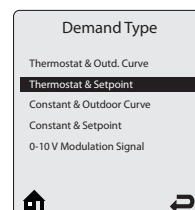
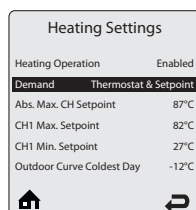
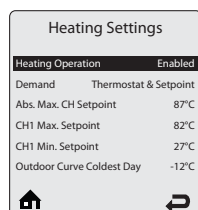
Enabled - The Prestige will respond to a central heating call.

Disabled - The Prestige will not respond to a central heating call. The heating operation disabled icon () is displayed on the home screen when central heating operation has been disabled.



When heating is disabled the frost protection will still be active.

Default: Enabled



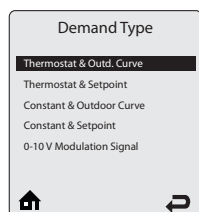
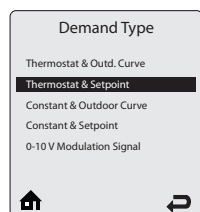
Demand Type allows the installer to select how a CH Demand is generated.

Press the **UP** or **DOWN** buttons to select the CH Demand Type then press the **OK** button to store the setting.

Thermostat & Setpoint - A central heating call from a dry contact switch will enable the Prestige and the setpoint will be fixed for central heating calls.

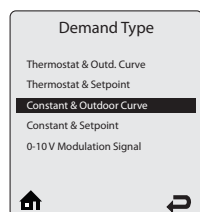


CH & DHW Settings / Heating settings (Cont'd)



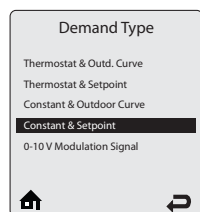
Thermostat & Outdoor Curve – A central heating call from a dry contact switch will enable the Prestige and the setpoint will vary with the outdoor temperature for central heating calls.

Press on **OK** to validate the selection.



Constant & Outd. Curve - The Prestige will maintain setpoint and the central heating circulators will be constantly enabled without an external call from a dry contact switch. The central heating circulators will be disabled when the outdoor temperature exceeds the Warm Weather Shutdown Temperature setting. The setpoint will vary with the outdoor temperature for central heating calls.

Press on **OK** to validate the selection.



Constant & Setpoint - The Prestige will maintain setpoint and the central heating circulators will be constantly enabled without an external call from a dry contact switch. The central heating circulators will be disabled when the outdoor temperature exceeds the Warm Weather Shutdown Temperature setting. The setpoint will be fixed for central heating calls.

Press on **OK** to validate the selection.

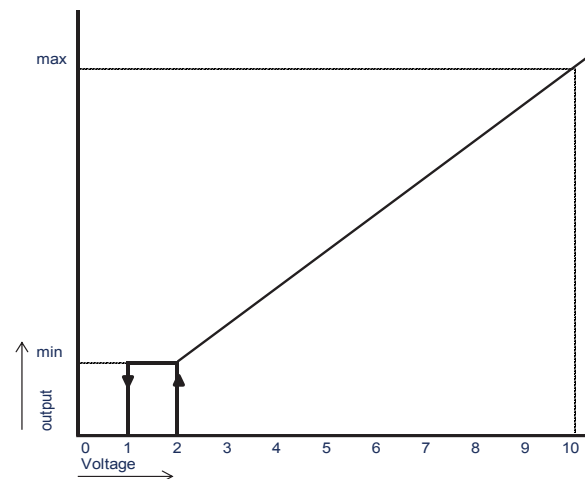
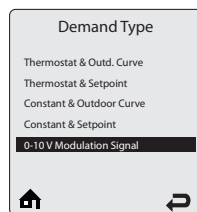
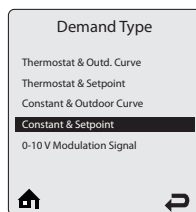


CH & DHW Settings / Heating Settings (Cont'd)

0 - 10V Modulation Signal - This option allows the Prestige firing rate to be controlled by an external control system.

Based on the control input voltage, the appliance will start to operate for heat demand. The CH temperature is limited by the Absolute maximum temperature (87°C).

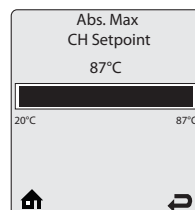
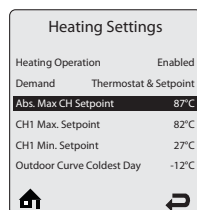
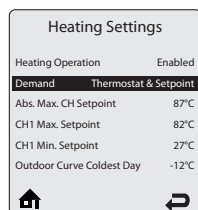
- 0 – 2V appliance is off.
- 2 – 10V linear power increase from minimum to maximum output.
- 10 – 2V linear power decrease from maximum to minimum output.
- 2 – 1 V appliance on minimum capacity.
- 1 - 0 V appliance off.



Press on **OK** to validate the selection.



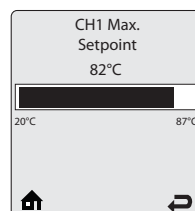
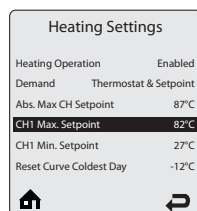
CH & DHW Settings / Heating settings (Cont'd)



Absolute Max CH Setpoint limits the setpoint during a central heating call. This setting can be used to prevent a user from adjusting the central heating setpoint or outdoor curve above a safe operating temperature in the EZ Setup Menu. A warning screen will be displayed in EZ Setup if the user attempts to raise the setpoint above the Absolute Max CH Setpoint. The Absolute Max CH Setpoint will be displayed on the outdoor curve in EZ Setup if the user selects an outdoor curve which goes above the Absolute Max CH Setpoint.

Press the **LEFT** or **RIGHT** buttons to adjust the Absolute Max CH Setpoint then press the **OK** button to store the setting.

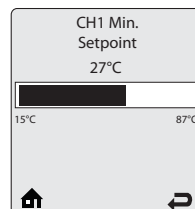
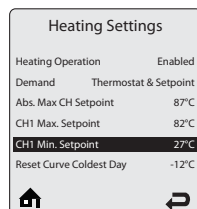
Default: 87°C



CH1 Maximum Setpoint is the maximum setpoint for a CH1 heating call when an Outdoor Curve option is chosen in Demand Type. CH1 Maximum Setpoint is the fixed setpoint for a CH1 heating call when a Setpoint option is chosen in Demand Type.

Press the **LEFT** or **RIGHT** buttons to adjust the CH1 Maximum Setpoint then press the **OK** button to store the setting.

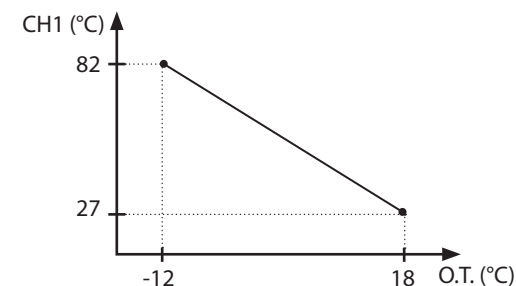
Default: 82°C



CH1 Minimum Setpoint is the minimum setpoint for a CH1 heating call when an Outdoor Curve option is chosen in Demand Type. This setting is not applicable when a Setpoint option is chosen in Demand Type.

Press the **LEFT** or **RIGHT** buttons to adjust the CH1 Minimum Setpoint then press the **OK** button to store the setting.

Default: 27°C





CH & DHW Settings / Heating settings (Cont'd)

Heating Settings	
Heating Operation	Enabled
Demand	Thermostat & Setpoint
Abs. Max CH Setpoint	87°C
CH1 Max. Setpoint	82°C
CH1 Min. Setpoint	27°C
Reset Curve Coldest Day	-12°C



Heating Settings	
Heating Operation	Enabled
Demand	Thermostat & Setpoint
Abs. Max CH Setpoint	87°C
CH1 Max. Setpoint	82°C
CH1 Min. Setpoint	27°C
Outdoor Curve Coldest Day	-12°C



Outdoor Curve Coldest Day	
-12°C	
-34°C 10°C	

Outdoor Curve Coldest Day is the coldest outdoor design temperature of the heating system when an Outdoor Curve option is chosen in Demand Type. This setting is not applicable when a Setpoint option is chosen in Demand Type.

Press the **LEFT** or **RIGHT** buttons to adjust the Outdoor Curve Coldest Day then press the **OK** button to store the setting.

Default: -12°C



Heating Settings	
Demand	Thermostat & Setpoint
Abs. Max. CH Setpoint	87°C
CH1 Max. Setpoint	82°C
CH1 Min. Setpoint	27°C
Outdoor Curve Coldest Day	-12°C
Outdoor Curve Warmest Day	18°C



Outdoor Curve Warmest Day	
18°C	
15°C 25°C	

Outdoor Curve Warmest Day is the warmest outdoor design temperature of the heating system when an Outdoor Curve option is chosen in Demand Type. This setting is not applicable when a Setpoint option is chosen in Demand Type.

Press the **LEFT** or **RIGHT** buttons to adjust the Outdoor Curve Warmest Day then press the **OK** button to store the setting.

Default: 18°C



The temperatures of **Outdoor Curve Coldest Day** and **Outdoor Curve Warmest Day** are identical to those of CH1.

Heating Settings	
Abs. Max CH Setpoint	87°C
CH1 Max. Setpoint	82°C
CH1 Min. Setpoint	27°C
Outdoor Curve Coldest Day	-12°C
Outdoor Curve Warmest Day	18°C
CH2/CV2 Circuit	Enabled



CH2 / CV2 Circuit	
Disabled	
Enabled	

CH2 Circuit allows the CH2 heating call to be enabled and disabled.

Press the **UP** or **DOWN** buttons to select Enabled or Disabled then press the **OK** button to store the setting.

Enabled – The Prestige will respond to a CH2 heating call
Disabled – The Prestige will not respond to a CH2 heating call

Default: Enabled



Heating Settings	
CH1 Max. Setpoint	82°C
CH1 Min. Setpoint	27°C
Outdoor Curve Coldest Day	-12°C
Outdoor Curve Warmest Day	18°C
CH2/CV2 Circuit	Enabled
CH2 Max. Setpoint	55°C



CH2 Max. Setpoint	
55°C	
20°C 90°C	

CH2 Maximum Setpoint is the maximum setpoint for a CH2 heating call when an Outdoor Curve option is chosen in Demand Type. CH2 Maximum Setpoint is the fixed setpoint for a CH2 heating call when a Setpoint option is chosen in Demand Type.

Press the **LEFT** or **RIGHT** buttons to adjust the CH2 Maximum Setpoint then press the **OK** button to store the setting.

Default: 55°C



CH & DHW Settings / Heating Settings (Cont'd)

Heating Settings	
CH1 Max. Setpoint	82°C
CH1 Min. Setpoint	27°C
Outdoor Curve Coldest Day	-12°C
Outdoor Curve Warmest Day	18°C
CH2/CV2 Circuit	Enabled
CH2 Max. Setpoint	55°C



Heating Settings	
CH1 Min. Setpoint	27°C
Outdoor Curve Coldest Day	-12°C
Outdoor Curve Warmest Day	18°C
CH2/CV2 Circuit	Enabled
CH2 Max. Setpoint	55°C
CH2 Min. Setpoint	27°C



CH2 Min. Setpoint	
27°C	

CH2 Minimum Setpoint is the minimum setpoint for a CH2 heating call when an Outdoor Curve option is chosen in Demand Type. This setting is not applicable when a Setpoint option is chosen in Demand Type.

Press the **LEFT** or **RIGHT** buttons to adjust the CH2 Minimum Setpoint then press the **OK** button to store the setting.

Default: 27°C



Heating Settings	
Outdoor Curve Coldest Day	-12°C
Outdoor Curve Warmest Day	18°C
CH2/CV2 Circuit	Enabled
CH2 Max. Setpoint	55°C
CH2 Min. Setpoint	27°C
Warm Weather Shutdown	Off



Warm Weather Shutdown	
Off	

Warm Weather Shutdown allows to enter an optional outdoor temperature at which to disable the central heating function. The Prestige will continue to respond to a domestic hot water call or a 0- 10V Modulation Signal when the outdoor temperature exceeds the Warm Weather Shutdown Temperature setting.

Press the **LEFT** or **RIGHT** buttons to adjust the Warm Weather Shutdown Temperature then press the **OK** button to store the setting and complete the Heating setting.

The Warm Weather Shutdown icon (🌞) is displayed on the home screen when the outdoor temperature reaches the Warm Weather Shutdown Temperature.

Default: OFF.



Heating Settings	
Outdoor Curve Warmest Day	18°C
CH2/CV2 Circuit	Enabled
CH2 Max. Setpoint	60°C
CH2 Min. Setpoint	27°C
Warm Weather Shutdown	Off
Circulation Pump Permanent	Disabled



Circulation Pump Permanent	
Disabled	

Circulation Pump Permanent allows the central heating circulators to be constantly enabled even without a central heating call. A domestic hot water call will cause the circulators to be disabled during the domestic call as long as DHW Priority is enabled.

Press the **UP** or **DOWN** buttons to select Enabled or Disabled then press the OK button to store the setting.

- **Enabled** – The central heating circulators will be enabled for constant circulation without a central heating call.
- **Disabled** – The central heating circulators will only be enabled during a central heating call.

Default: Disabled



CH & DHW Settings / Heating Settings (Cont'd)

Heating Settings	
Outdoor Curve Warmest Day	18°C
CH2/CV2 Circuit	Enabled
CH2 Max. Setpoint	60°C
CH2 Min. Setpoint	27°C
Warm Weather Shutdown	Off
Circulation Pump Permanent	Disabled



Heating Settings	
CH2/CV2 Circuit	Enabled
CH2 Max. Setpoint	55°C
CH2 Min. Setpoint	27°C
Warm Weather Shutdown	Off
Circulation Pump Permanent	Disabled
CH Post Pump Time	5 min



CH Post Pump Time	
5 min	
Off	30 min

CH Post Pump Time sets how long the central heating circulators will continue to operate at the completion of a heating call. Refer to "Pumps" on page 32 to know which pumps will continue to operate. Any call during the CH Post Pump Time will be ignored until the post pump has completed. The CH Post Pump Time feature allows the heat remaining in the boiler at the completion of a call to be sent to the heating system, which will improve the overall efficiency of the system.

Press the **LEFT** or **RIGHT** buttons to adjust the CH Post Pump Time then press the **OK** button to store the setting.

Default: 5 min



Heating Settings	
CH2 Max. Setpoint	55°C
CH2 Min. Setpoint	27°C
Warm Weather Shutdown	Off
Circulation Pump Permanent	Disabled
CH Post Pump Time	5 min
Freeze Protection	Enabled



Freeze Protection	
Enabled	
Disabled	

The **Frost Protection** menu allows the feature to be enabled and disabled. The built-in frost protection mechanism activates the system pumps as soon as the flow temperature [NTC1 probe] drops below 7°C. As soon as the flow temperature is at 5°C, the burner starts up until the flow temperature rises above 15°C. The pumps continue to run for around 10 minutes.

Press the **UP** or **DOWN** buttons to select Enabled or Disabled then press the **OK** button to store the setting.

- **Enabled** – The Frost Protection feature protects the installation from freezing at a predetermined system flow temperature.
- **Disabled** – The Frost Protection feature is disabled. Only the pumps operate.

Default: Enabled



Heating Settings	
CH2 Min. Setpoint	27°C
Warm Weather Shutdown	Off
Circulation Pump Permanent	Disabled
CH Post Pump Time	5 min
Freeze Protection	Enabled
Frost Protection Setpoint	-30°C



Frost Protection Setpoint	
-30°C	
-30°C	10°C

Freeze Protection Setpoint allows to define the outside air temperature at which the anti-freeze function is activated (only available if an outdoor temperature sensor is connected). The pumps are activated when the outside temperature drops below the threshold defined in this menu.

Press the **LEFT** or **RIGHT** buttons to adjust the Freeze temperature Setpoint then press the **OK** button to store the setting.

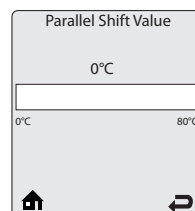
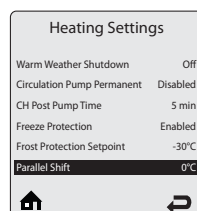
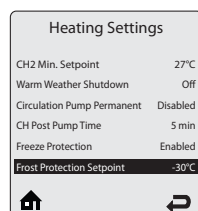


In order to enable the Prestige boiler to protect the whole system against freezing, all the valves of the radiators and the convectors should be completely open.

Default: -30°C



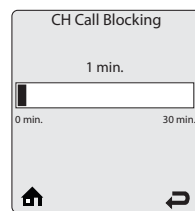
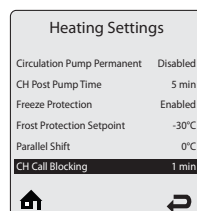
CH & DHW Settings / Heating Settings (Cont'd)



Parallel Shift allows the CH setpoint to be externally adjusted when a Constant option is chosen in Demand Type. When a Constant option is chosen in Demand Type, continuous CH1 and CH2 heating calls are generated. Simultaneous CH1 and CH2 calls will result in the Prestige operating at the highest CH1 or CH2 setpoint. The CH1 or CH2 Thermostat terminals with the highest setpoint will be used to adjust the setpoint. If the Thermostat terminals with the highest setpoint are open, the CH setpoint will decrease by the Parallel Shift Value. If the Thermostat terminals with the highest setpoint are closed, the CH setpoint will return to the highest CH1 or CH2 setpoint

Press the **LEFT** or **RIGHT** buttons to adjust the Parallel Shift Value then press the **OK** button to store the setting.

Default: 0°C



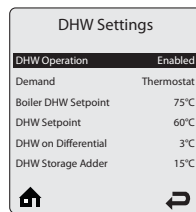
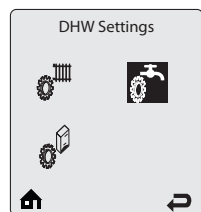
CH Call Blocking sets the minimum time between burner firings for central heating calls. At the completion of a burner firing, the CH Call Blocking time will begin. The burner will not fire again until after the CH Call Blocking time has elapsed. The CH Call Blocking time only prevents the burner from firing, the central heating circulators will respond to a central heating call. This blocking time has no affect on domestic hot water calls. The CH Call Blocking feature prevents short cycling of the burner and extends the life of the burner components.

Press the **LEFT** or **RIGHT** buttons to adjust the Parallel Shift Value then press the **OK** button to store the setting.

Default: 1 min.

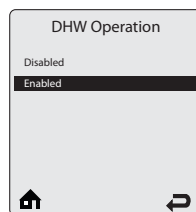
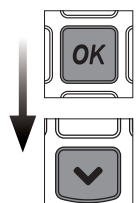


CH & DHW Settings / DHW settings



The **DHW Settings** menu contains settings related to domestic hot water operation. Each line contains a DHW Setting followed by its current value. Six DHW Settings are displayed on the screen at one time.

Press the **UP** or **DOWN** buttons to scroll through additional DHW Settings.

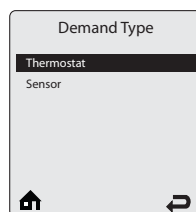
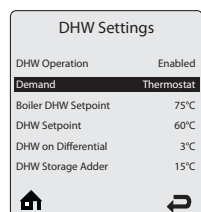


DHW Operation allows the domestic hot water function to be enabled and disabled.

Press the **UP** or **DOWN** buttons to select Enabled or Disabled then press the **OK** button to store the setting.

- **Enabled** - The Prestige will respond to a domestic hot water call.
- **Disabled** - The Prestige will not respond to a domestic hot water call. The domestic hot water operation disabled icon (🔌) is displayed on the home screen when domestic hot water operation has been disabled.

DHW Operation default: Enabled



Demand Type allows the installer to select the type of device which will generate a domestic hot water call.

Press the **UP** or **DOWN** buttons to select the DHW Demand Type then press the **OK** button to store the setting.

The DHW Demand options are:

- **Thermostat** - A domestic hot water call from an aquastat or dry contact switch will enable the Prestige with a fixed setpoint for a domestic hot water call.
- **Sensor** - This option requires the use of an Indirect Water Heater Sensor. The Prestige will monitor the DHW storage temperature and generate a domestic hot water call when the temperature drops below the DHW Storage Setpoint - DHW On Differential.

Default: Thermostat



CH & DHW Settings / DHW settings (Cont'd)

DHW Operation	Enabled
Demand	Thermostat
Boiler DHW Setpoint	75°C
DHW Setpoint	60°C
DHW on Differential	3°C
DHW Storage Adder	15°C



DHW Operation	Enabled
Demand	Thermostat
Boiler DHW Setpoint	75°C
DHW Setpoint	60°C
DHW on Differential	3°C
DHW Storage Adder	15°C



Boiler DHW Setpoint
75°C

35°C 87°C

Boiler DHW Setpoint is the fixed boiler setpoint temperature during a domestic hot water call when the Thermostat option is chosen in Demand Type.

Press the **LEFT** or **RIGHT** buttons to adjust the Boiler DHW Setpoint then press the **OK** button to store the setting.

Default: 75°C

DHW Operation	Enabled
Demand	Sensor
Boiler DHW Setpoint	75°C
DHW Setpoint	60°C
DHW on Differential	3°C
DHW Storage Adder	15°C



DHW Operation	Enabled
Demand	Sensor
Boiler DHW Setpoint	75°C
DHW Setpoint	60°C
DHW on Differential	3°C
DHW Storage Adder	15°C



DHW Setpoint
60°C

20°C 80°C

DHW Setpoint is the domestic hot water storage setpoint temperature when the Sensor option is chosen in Demand Type.

Press the **LEFT** or **RIGHT** buttons to adjust the DHW Storage Setpoint then press the **OK** button to store the setting.

Default: 60°C



The boiler setpoint is automatically set to the DHW Storage Setpoint + DHW Storage adder when the Sensor option is chosen in DHW demand

DHW Operation	Enabled
Demand	Sensor
Boiler DHW Setpoint	75°C
DHW Setpoint	60°C
DHW on Differential	3°C
DHW Storage Adder	15°C



DHW On Differential
3°C

2°C 10°C

DHW On Differential sets how far the DHW storage temperature must fall below the DHW Storage Setpoint to create a domestic hot water call when the Sensor option is chosen in Demand Type. The domestic hot water call will end when the DHW storage temperature rises above the DHW Storage Setpoint.

Press the **LEFT** or **RIGHT** buttons to adjust the DHW On Differential then press the **OK** button to store the setting.

Default: 3°C



The DHW on differential setting greatly affects the production of domestic hot water. A low setting could result in a rapid response to a domestic hot water call resulting in a potential scald hazard. It is strongly recommended that the installer use a thermostatic mixing valve on the hot water outlet of the Indirect Water Heater. Failure to comply could result in severe personal injury, death, or substantial property damage.



CH & DHW Settings / DHW settings (Cont'd)

DHW Settings	
DHW Operation	Enabled
Demand	Sensor
Boiler DHW Setpoint	75°C
DHW Setpoint	60°C
DHW on Differential	3°C
DHW Storage Adder	15°C



DHW Settings	
DHW Operation	Enabled
Demand	Sensor
Boiler DHW Setpoint	75°C
DHW Setpoint	60°C
DHW on Differential	3°C
DHW Storage Adder	15°C



DHW Storage Adder	
15°C	
5°C	30°C

DHW Storage Adder is used to compute the boiler setpoint when the Sensor option is chosen in Demand Type. The boiler setpoint will be DHW Storage Setpoint + DHW Storage Adder for a domestic hot water call.

Press the **LEFT** or **RIGHT** buttons to adjust the DHW Storage Adder then press the **OK** button to store the setting.

Default: 15°C



DHW Settings	
Demand	Sensor
Boiler DHW Setpoint	75°C
DHW Setpoint	60°C
DHW on Differential	3°C
DHW Storage Adder	15°C
DHW Post Pump Time	5 min



DHW Post Pump Time	
1 min	
Off	30 min

DHW Post Pump Time sets how long the domestic hot water circulator will continue to operate at the completion of a domestic hot water call. Any call during the DHW Post Pump Time will be ignored until the post pump has completed. The DHW Post Pump feature allows the heat remaining in the boiler at the completion of a call to be sent to the Indirect Water Heater, which will improve the overall efficiency of the system.

Press the **LEFT** or **RIGHT** buttons to adjust the DHW Post Pump Time then press the **OK** button to store the setting.

Default : 1 min.



DHW Settings	
Boiler DHW Setpoint	75°C
DHW Setpoint	60°C
DHW on Differential	3°C
DHW Storage Adder	15°C
DHW Post Pump Time	5 min
DHW Priority Timeout	Off



DHW Priority Timeout	
Off	
Off	120 min.

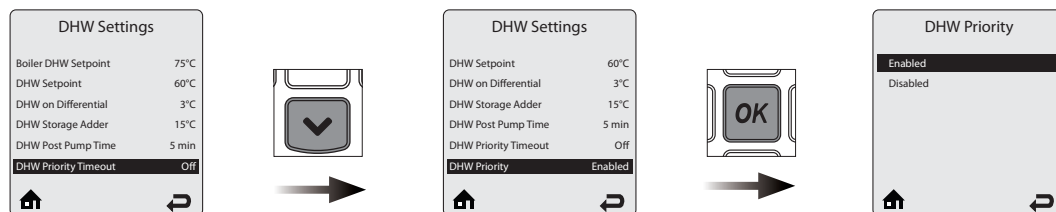
DHW Priority Timeout allows the installer to enter an optional time limit that a domestic hot water call has priority over a central heating call when DHW Priority is set to Enabled.

Press the **LEFT** or **RIGHT** buttons to adjust the DHW Priority Timeout then press the **OK** button to store the setting.

Default: Off



CH & DHW Settings / DHW settings (Cont'd)

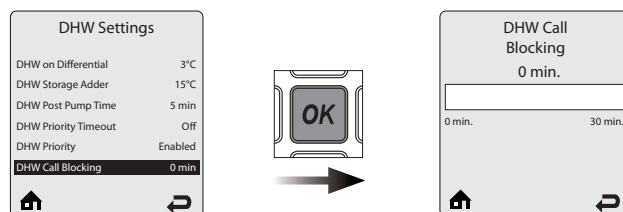


DHW Priority allows the domestic hot water priority function to be enabled and disabled.

Press the **UP** or **DOWN** buttons to select Enabled or Disabled then press the **OK** button to store the setting.

- **Enabled**- Domestic hot water calls will have priority over a central heating call. The boiler setpoint will be set to the domestic hot water setpoint during a domestic hot water call. The DHW circulator will be enabled and the heating circulators will be disabled during a domestic hot water call.
- **Disabled** - Domestic hot water calls will not have priority over a central heating call. The boiler setpoint will be set to the domestic hot water setpoint when only a domestic hot water call is present. The boiler setpoint will be set to the highest setpoint when simultaneous domestic hot water and central heating calls are present. The DHW circulator will be enabled during a domestic hot water call. The heating circulators will be enabled during a central heating call.

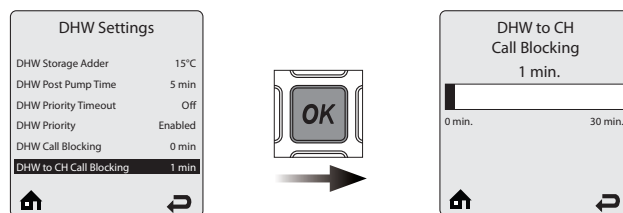
Default: Enabled



DHW Call Blocking sets the minimum time between burner firings for domestic hot water calls. At the completion of a burner firing, the DHW Call Blocking time will begin. The burner will not fire again until after the DHW Call Blocking time has elapsed. The DHW Call Blocking time only prevents the burner from firing, the domestic hot water circulator will respond to a domestic hot water call. This blocking time has no affect on central heating calls. The DHW Call Blocking feature prevents short cycling of the burner and extends the life of the burner components.

Press the **LEFT** or **RIGHT** button to adjust the DHW Call Blocking time then press the **OK** button to store the setting.

Default: 0 min.



i Simultaneous domestic hot water and central heating calls will result in the **PRESTIGE** operating at the highest target temperature when DHW Priority is set to disabled. The use of a mixing device on the lower temperature zones may be required to protect the lower temperature zones from damage

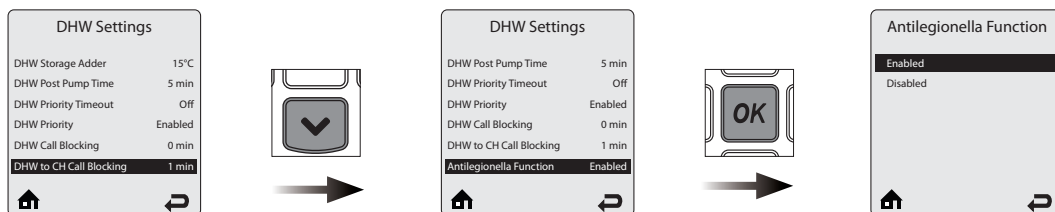
DHW To CH Call Blocking sets the minimum time between a DHW burner firing and a CH burner firing. At the completion of a DHW burner firing, the DHW to CH Call Blocking time will begin. The burner will not fire again for a central heating call until after the DHW To CH Call Blocking time has elapsed. This feature only prevents the burner from firing, the central heating circulators will respond to a central heating call. This blocking time has no affect on domestic hot water calls. The DHW To CH Call Blocking feature prevents the burner from firing when switching from a domestic hot water call to a central heating call. This allows the remaining heat in the heat exchanger to be dissipated and potentially satisfy the central heating call.

Press the **LEFT** or **RIGHT** buttons to adjust the DHW To CH Call Blocking time then press the **OK** button to store the setting.

Default: 1 min.



CH & DHW Settings / DHW settings (Cont'd)



The **Antilegionella Function** ensures that an Indirect Water Heater is heated at least once per week to prevent the growth of Legionella bacteria.

Press the **UP** or **DOWN** buttons to select Enabled or Disabled then press the **OK** button to store the setting.

- **Enabled**- When the **Thermostat** option is chosen in Demand Type, a domestic hot water call is generated for 15 minutes once per week to heat the Indirect Water Heater. When the **Sensor** option is chosen in Demand Type, a domestic hot water call is generated until the DHW storage temperature reaches 60°C once per week. When the Sensor option is chosen in Demand Type, the weekly timer is reset whenever the DHW storage temperature reaches 60°C to prevent unnecessary firings. This function will be active even if DHW Operation has been set to Disabled. The boiler setpoint is at 80°C during the antilegionella cycle.
- **Disabled** - The Prestige will only fire in DHW mode when a domestic hot water call is received.

Default: Enabled

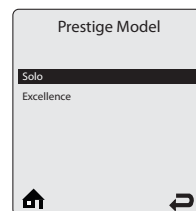
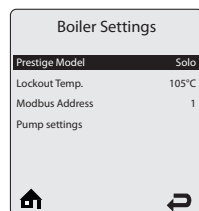
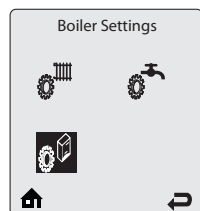
The antilegionella function should only be enabled when an Indirect Water Heater is installed. Enabling the antilegionella function without an Indirect Water Heater will result in the Prestige firing once per week in DHW mode. This could cause a Manual Reset Hard Lockout of the boiler.



The antilegionella function is most effective when the Sensor option is chosen in DHW demand. The use of an Indirect Water Heater Sensor ensures that the domestic hot water is heated to 60°C at least once per week.



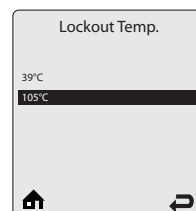
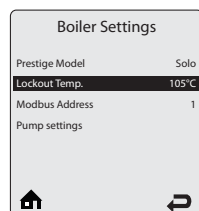
CH & DHW Settings / Boiler Settings



The **Boiler Settings** menu contains settings related to boiler operation. Each line contains a boiler setting followed by its current value. Four boiler settings are available.

Press the **UP** or **DOWN** buttons to scroll through the settings, then on **OK** to validate your selection.

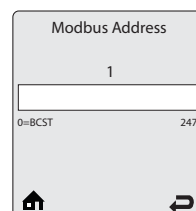
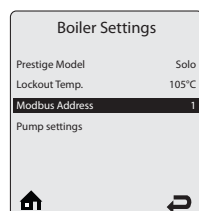
The **Prestige Model** menu allows to select the boiler type and access specific settings for that appliance in other menus.



This boiler setting allows testing of the **Overheat thermostat** function at a reduced temperature. It temporarily decreases the overheat temperature of the appliance to 39°C which allows a safe demonstration of the function.

Press the **UP** or **DOWN** buttons to scroll through the settings, then on **OK** to validate your selection.

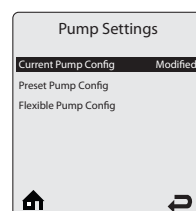
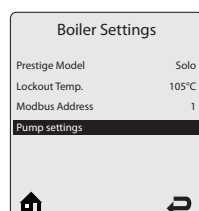
Default: 105°C



This parameter sets the Modbus address of the appliance in a Modbus based communication system.

Press the **LEFT** or **RIGHT** buttons to adjust the settings, then on **OK** to validate your selection.

Default: 1

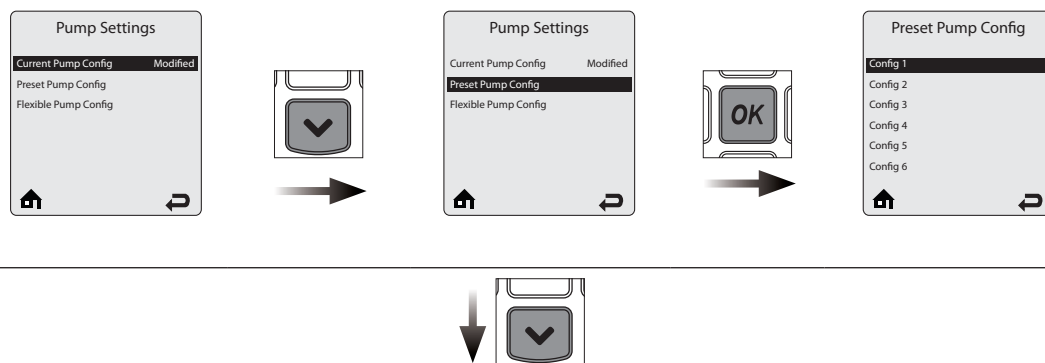


The **Pump Settings** menu allows to choose the right pump configuration to the chosen hydraulic configuration. There is a preset configuration mode and a flexible configuration mode.

Press the **UP** or **DOWN** buttons to scroll through the options, then on **OK** to validate your selection.



CH & DHW Settings / Boiler Settings (cont'd)

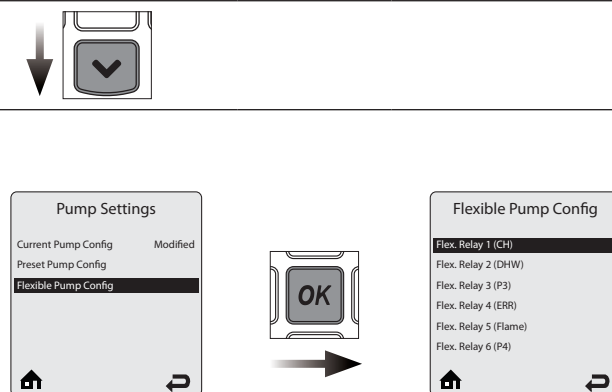


In the **Preset Pump Config.** (preferred selection) you can choose from a number of preset pump configurations (config 1 - config 13) that correspond to specific hydraulic schemes, refer to "System Configurations" on page 32.

The **Flexible Pump Config.** allows a full customization of the relay usage in the appliance.

When selecting the **Preset Pump Config.** the pump configuration corresponding to the chosen hydraulic configuration can be chosen.

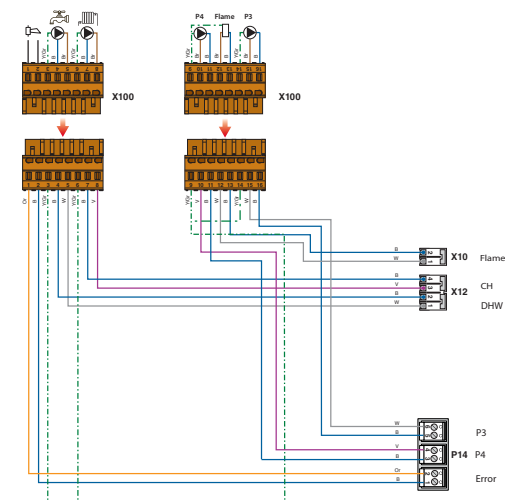
Press the **UP** or **DOWN** buttons to scroll through the settings, then on **OK** to validate your selection.



The **Flexible Pump Config.** menu allows to customize the pump configuration to the chosen hydraulic configuration. Only select this option when the preset configurations do not offer you a solution. In this menu you have to choose per relay for which heat demand / function it will be activated. The relays are allocated as follows by default (see picture below for physical location on the optional terminal blocks):

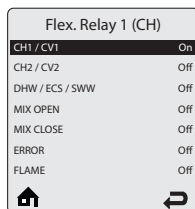
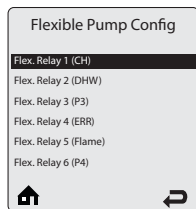
Flex. Relay 1 CH
Flex. Relay 2 DHW
Flex. Relay 3 P3
Flex. Relay 4 ERR
Flex. Relay 5 Flame
Flex. Relay 6 P4

Press the **UP** or **DOWN** buttons to scroll through the settings, then on **OK** to validate your selection





CH & DHW Settings / Boiler Settings (cont'd)



Each relay function has several options. Activation will happen when one of the following options has been chosen: CH1, CH2, DHW, MIX OPEN, MIX CLOSE, ERROR, FLAME.

More than one action can be chosen for one relay (one relay can become active for CH1, CH2 and DHW demand when needed).

When selecting **CH 1**, the relay is activated at CH 1 demand.

Press the **UP** or **DOWN** buttons to scroll through the settings, then on **OK** to toggle between the On/Off status of each relay. Then go to the next line.

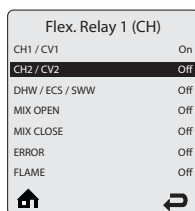


For pump functions only select flexible relays 1, 2, 3 and 6. Flexible relays 4 and 5 are not suitable to switch pumps. Please refer to "System Configurations" on page 32 for further explanation.



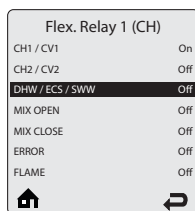
By pushing the **RIGHT** button then **OK**, you go back to the previous screen, but **THE CHANGED VALUES ARE NOT STORED** in the memory (Quick escape route).

To save your changes, make sure to scroll down to the last line of the screen and to select **Save & Exit**. Then press on **OK** to activate the function.



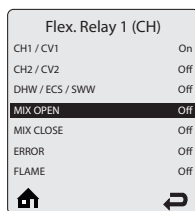
When selecting **CH 2**, the relay is activated at CH 2 demand.

Press the **UP** or **DOWN** buttons to scroll through the settings, then on **OK** to toggle between the On/Off status of each relay. Then go to the next line.



When selecting **DHW**, the relay is activated at DHW demand.

Press the **UP** or **DOWN** buttons to scroll through the settings, then on **OK** to toggle between the On/Off status of each relay. Then go to the next line.

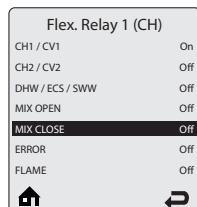


When selecting **Mix Open**, the Mixing valve open input is activated. Provided there is a mixing valve in the hydraulic circuit, runtime is assumed to be 120 sec.

Press the **UP** or **DOWN** buttons to scroll through the settings, then on **OK** to toggle between the On/Off status of each relay. Then go to the next line.

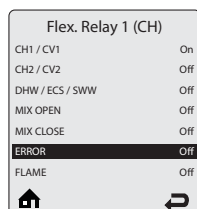


CH & DHW Settings / Boiler Settings (cont'd)



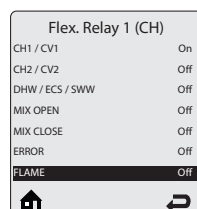
When selecting **Mix Close**, the Mixing valve close input is activated. Provided there is a mixing valve in the hydraulic circuit, runtime is assumed to be 120 sec.

Press the **UP** or **DOWN** buttons to scroll through the settings, then on **OK** to toggle between the On/Off status of each relay. Then go to the next line.



When selecting **ERROR**, the relay is activated on error.

Press the **UP** or **DOWN** buttons to scroll through the settings, then on **OK** to toggle between the On/Off status of each relay. Then go to the next line.



When selecting **FLAME**, the relay is activated when appliance is running and a flame signal has been detected.

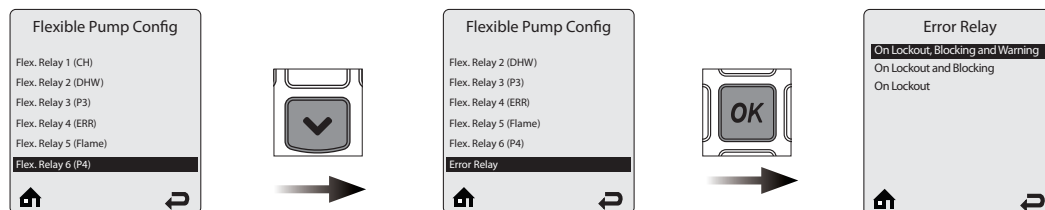
Press the **UP** or **DOWN** buttons to scroll through the settings, then on **OK** to toggle between the On/Off status of each relay. Then go to the next line.



Press on **OK** to activate **Save & Exit**. This will ensure that the changed data are stored in the appliance.



CH & DHW Settings / Boiler Settings (cont'd)



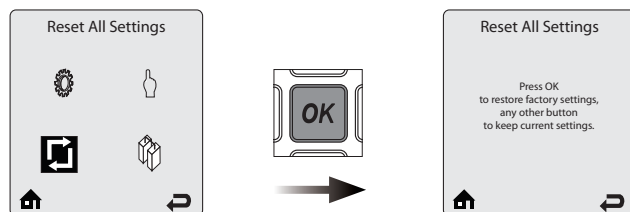
There are three possible selections to activate the **Error Relay** (alarm) contact:

- **On Lockout, Blocking and Warning**: the error relay is activated at a non-volatile lock-out (e.g. CH Flow NTC defect), at a blocking error (self-resetting errors) (e.g. Gas-pressure switch not closed), or at a warning (e.g. low water pressure warning).
- **On Lock-out and blocking**: the error relay is activated at a non-volatile lock-out or a blocking error.
- **On Lockout**: the error relay is activated at a non-volatile lock-out only.

The selection depends on the alarm feedback requirement from the customer.



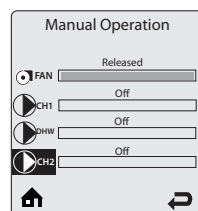
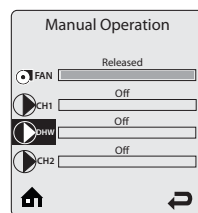
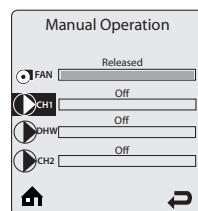
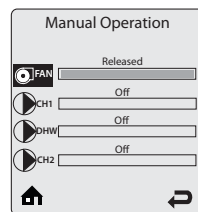
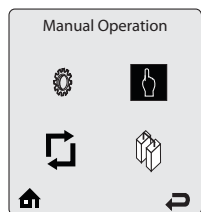
Reset all settings



Reset All Settings allows the installer to reset all CH, DHW, and Cascade settings back to the original factory defaults. Follow the onscreen instructions to reset all settings back to the original factory defaults.



Manual Operation



FAN - Press the **OK** button while the FAN icon is highlighted to manually fire the burner and power the CH (1) circulator. Press the **LEFT** and **RIGHT** buttons to adjust the firing rate from 0% (Low Fire) to 100% (High Fire). Hold down the **LEFT** or **RIGHT** buttons to rapidly increase or decrease the firing rate. Press the **OK** button again while the FAN icon is highlighted to shutdown the burner when finished.

i An adequate CH load must be present to dissipate the heat generated while the burner is manually fired. If an adequate CH load is not available, an indirect water heater can be used to dissipate the heat by creating a domestic hot water call which will enable the DHW circulator.

CH1 - Press the **OK** button while the CH1 icon is highlighted to manually power the CH 1 circulator(s) as in CH demand. Press the **OK** button again while the CH1 icon is highlighted to shutdown the CH 1 circulator(s).

i The auxiliary Boiler circulator is also powered when the CH 1 circulator is manually enabled.

DHW - Press the **OK** button while the DHW icon is highlighted to manually power the DHW circulator(s) as in DHW demand. Press the **OK** button again while the DHW icon is highlighted to shutdown the DHW circulator(s).

i The auxiliary Boiler circulator is also powered when the DHW circulator is manually enabled.

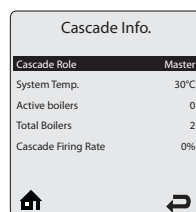
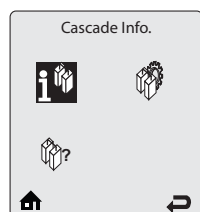
CH2 - Press the **OK** button while the CH2 icon is highlighted to manually power the CH2 circulator(s) as in CH demand. Press the **OK** button again while the CH2 icon is highlighted to shutdown the CH2 circulator(s).

i General remark

To ensure the operation of the heating system, make sure to switch on one of the pumps.



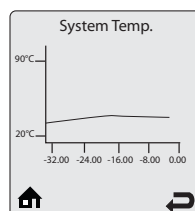
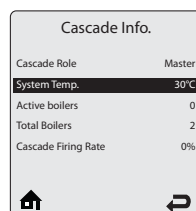
Cascade Menu / Cascade Information



Cascade Information provides real time operating information of the Cascade System. Each line contains an information item followed by its current value.

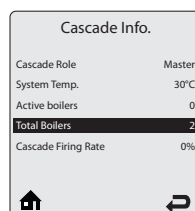
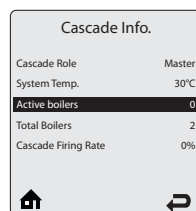
Cascade Role - Displays the current role of the Prestige in the Cascade System. Cascade Role will be one of the following:

- Master – Indicates this Prestige is the Master boiler in the Cascade System.
- Slave – Indicates this Prestige is a Slave boiler in the Cascade System.
- Standalone – Indicates this Prestige is not part of a Cascade System.



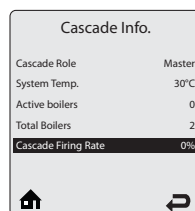
System Temperature - Displays the current system temperature reading on the Master boiler. If the system sensor is not wired in to the Master boiler, the Master boiler supply temperature is displayed.

System Temperature has a logging function which records one sample every 12 minutes to produce a graph of the last 24 hours. Select System Temperature in Cascade Information then press the **OK** button to view the graph.



Active boilers - Displays the current number of boilers fired in the Cascade System

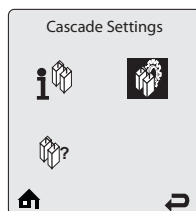
Total Boilers - Displays the total number of boilers in the Cascade System.



Cascade Firing Rate - Displays the current firing rate of the entire Cascade System.



Cascade Menu / Cascade Settings (also refer to “Cascade set-up process” on page 31)

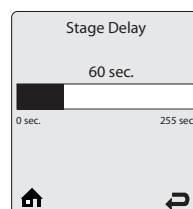
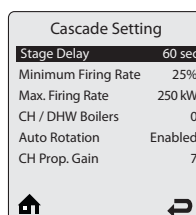


The **Cascade Settings** menu contains settings related to cascade operation. Each line contains a Cascade Setting followed by its current value. Six Cascade Settings are displayed on the screen at one time.

Press the **UP** or **DOWN** buttons to scroll through additional Cascade Settings.



Cascade Setting changes must be made on the cascade Master. Cascade autodection must be performed after making any changes to a cascade Setting before the change will take effect.



Stage Delay sets the time delay before enabling or disabling a boiler in the Cascade System. The Stage Delay begins once the Master boiler determines that a boiler must be enabled to reach the setpoint or when the Master boiler determines a boiler should be disabled because of a decreasing load.

Press the **LEFT** or **RIGHT** buttons to adjust the time then press the **OK** button to store the setting.

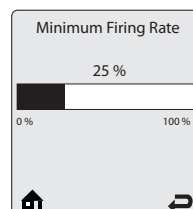
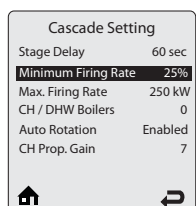
Adjusting the Stage Delay will have the following effects:

• Increasing Stage delay

- Reaching the setpoint could take longer due to a longer delay between enabling boilers.
- Overshooting the setpoint could occur due to boilers staying on longer before being disabled.

• Decrease Stage delay

- Overshooting the setpoint could occur due to boilers being enabled quicker.
- Boilers will be disabled quicker, possibly increasing boiler cycling and decreasing runtimes.



Minimum Firing Rate is the minimum firing rate of a single boiler in the Cascade System. The Master boiler uses this setting to determine when boilers can be enabled and disabled.

Setting the Minimum Firing Rate below the recommended minimum will result in boilers being enabled too quickly which may cause sharp increases in temperature from the Cascade System.

Setting the Minimum Firing Rate above the recommended minimum will delay the enabling of boilers which may lower the system efficiency.

Press the **LEFT** or **RIGHT** buttons to adjust the Minimum Firing Rate then press the **OK** button to store the setting.

Default : 25%



Only make changes after being instructed to do so by ACV as changing of this value may cause instability in the appliance cascade control.



Cascade Menu / Cascade Settings (Cont'd)

Cascade Setting	
Stage Delay	60 sec
Minimum Firing Rate	25%
Max. Firing Rate	250 kW
CH / DHW Boilers	0
Auto Rotation	Enabled
CH Prop. Gain	7



Cascade Setting	
Stage Delay	60 sec
Minimum Firing Rate	25%
Max. Firing Rate	250 kW
CH / DHW Boilers	0
Auto Rotation	Enabled
CH Prop. Gain	7



Maximum Firing Rate	
250 kW	
0 kW	255 kW

Maximum Firing Rate is the maximum capacity of a single boiler in the Cascade System. Press the **LEFT** or **RIGHT** buttons to adjust the Maximum Firing Rate then press the **OK** button to store the setting.

This value will be 42, 50, 75 100 or 120 kW for the actual appliance range.

Default: 250 kW



Cascade Setting	
Stage Delay	60 sec
Minimum Firing Rate	25%
Max. Firing Rate	250 kW
CH / DHW Boilers	0
Auto Rotation	Enabled
CH Prop. Gain	7



CH / DHW Boilers	
0	
0	6

Stable cascade operation requires that all boilers in a cascade System be the same size. Mixing boiler sizes in a cascade System could lead to temperature fluctuations and erratic cascade operation.

The **CH or DHW Boilers** setting specifies how many boilers in a Split Cascade System will respond to a domestic hot water call. The CH or DHW Boilers always include the Master boiler. The remaining boilers will only respond to central heating calls. This allows the Cascade System to satisfy both central heating and domestic hot water calls at the same time. At the completion of a domestic hot water call, the CH or DHW Boilers will again be available to respond to central heating calls.

Press the **LEFT** or **RIGHT** buttons to adjust the CH or DHW Boilers setting then press the **OK** button to store the setting



Cascade Setting	
Stage Delay	60 sec
Minimum Firing Rate	25%
Maximum Firing Rate	250 kW
CH / DHW Boilers	0
Auto Rotation	Enabled
CH Prop. Gain	7



Auto Rotation	
Enabled	
Disabled	

The maximum number of boilers in a cascade is 4. Therefore, do not select a higher number than 3 in this menu as one should never adjust to the same number as he has appliances in the cascade. This would override the Split of the system. Failure to comply may result in faults in the cascade operation.

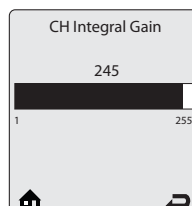
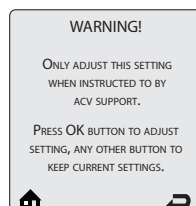
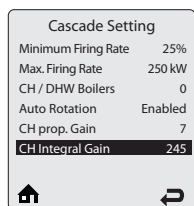
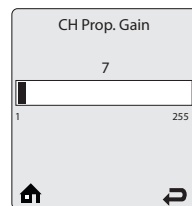
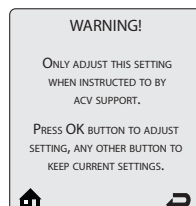
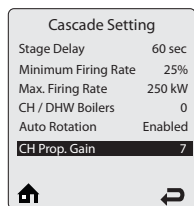
Through the **Auto Rotation** function, the number of burning hours is equalized over all appliances.

When the function is **Enabled**, the appliances will all run an equal amount of time. This helps balancing wear over the appliances.

When the function is **Disabled**, there is no levelling of burning hours and the first appliances in the sequence will run more than the last one in the sequence.



Cascade Menu / Cascade Settings (Cont'd)



CH Proportional Gain allows the cascade response to be adjusted for a central heating call. CH Proportional Gain has the greatest influence when the system temperature is far away from the setpoint.

Press the **LEFT** or **RIGHT** buttons to adjust the CH Proportional Gain then press the **OK** button to store the setting.

• Increase CH Proportional Gain

- The Cascade System will reach setpoint faster, but overshooting the setpoint may occur.
- To reach the setpoint faster, increase the CH Proportional Gain value by 2. Perform Cascade Autodetection and initiate a central heating call. Observe the cascade response and make further adjustments if necessary..

• Decrease CH Proportional Gain

- The Cascade System will take longer to reach the setpoint, but setpoint overshooting is minimized.
- If the setpoint is reached too quickly, decrease the CH Proportional Gain value by 2. Perform Cascade Autodetection and initiate a central heating call. Observe the cascade response and make further adjustments if necessary

Default: 7

Please consult ACV's technical Support before making any adjustments. Improper adjustment of CH Proportional Gain could lead to temperature fluctuations and erratic cascade operation.

CH Integral Gain allows the cascade response to be adjusted for a central heating call. CH Integral Gain has the greatest influence when the system temperature is close to the setpoint.

Press the **LEFT** or **RIGHT** buttons to adjust the CH Integral Gain then press the **OK** button to store the setting.

• Increase CH Integral Gain

- The Cascade System will take longer to reach the setpoint, but setpoint overshooting is minimized.
- If the setpoint is reached too quickly, increase the CH Integral Gain value by 2. Perform Cascade Autodetection and initiate a central heating call. Observe the cascade response and make further adjustments if necessary.

• Decrease CH Integral Gain

- The Cascade System will reach setpoint faster, but overshooting the setpoint may occur.
- To reach the setpoint faster, decrease the CH Integral Gain value by 2. Perform Cascade Autodetection and initiate a central heating call. Observe the cascade response and make further adjustments if necessary

Default: 245

Please consult ACV's technical Support before making any adjustments. Improper adjustment of CH Integral Gain could lead to temperature fluctuations and erratic cascade operation.



Cascade / Cascade Settings (Cont'd)



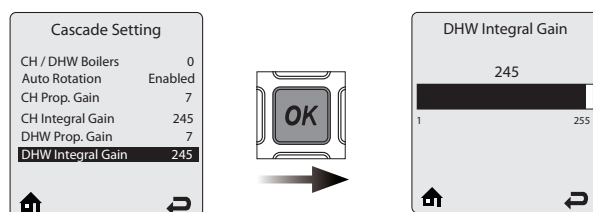
DHW Proportional Gain allows the cascade response to be adjusted for a domestic hot water call. DHW Proportional Gain has the greatest influence when the system temperature is far away from the setpoint.

Press the **LEFT** or **RIGHT** buttons to adjust the DHW Proportional Gain then press the **OK** button to store the setting.

- **Increase DHW Proportional Gain**
 - The Cascade System will reach setpoint faster, but overshooting the setpoint may occur.
 - To reach the setpoint faster, increase the DHW Proportional Gain value by 2. Perform Cascade Autodetection and initiate a domestic hot water call. Observe the cascade response and make further adjustments if necessary.
- **Decrease DHW Proportional Gain**
 - The Cascade System will take longer to reach the setpoint, but setpoint overshooting is minimized.
 - If the setpoint is reached too quickly, decrease the DHW Proportional Gain value by 2. Perform Cascade Autodetection and initiate a domestic hot water call. Observe the cascade response and make further adjustments if necessary.

Default: 7

Please consult ACV's technical Support before making any adjustments. Improper adjustment of DHW Proportional Gain could lead to temperature fluctuations and erratic cascade operation.



DHW Integral Gain allows the cascade response to be adjusted for a domestic hot water call. DHW Integral Gain has the greatest influence when the system temperature is close to the setpoint.

Press the **LEFT** or **RIGHT** buttons to adjust the DHW Integral Gain then press the **OK** button to store the setting.

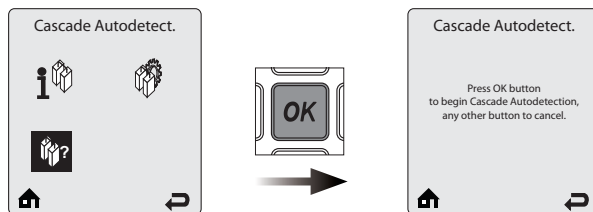
- **Increase DHW Integral Gain**
 - The Cascade System will take longer to reach the setpoint, but setpoint overshooting is minimized.
 - If the setpoint is reached too quickly, increase the DHW Integral Gain value by 2. Perform Cascade Autodetection and initiate a domestic hot water call. Observe the cascade response and make further adjustments if necessary.
- **Decrease DHW Integral Gain**
 - The Cascade System will reach setpoint faster, but overshooting the setpoint may occur.
 - To reach the setpoint faster, decrease the DHW Integral Gain value by 2. Perform Cascade Autodetection and initiate a domestic hot water call. Observe the cascade response and make further adjustments if necessary.

Default: 245

Please consult ACV's technical Support before making any adjustments. Improper adjustment of DHW Integral Gain could lead to temperature fluctuations and erratic cascade operation.



Cascade / Cascade Autodetection



The Cascade System must be configured after wiring is completed and any required adjustments are made in Cascade Settings.

The **Cascade Autodetection** function automatically finds and configures all boilers in the Cascade System. This eliminates the need to manually configure each boiler of the Cascade System. Select Cascade Autodetection on the Master boiler then follow the onscreen instructions to perform Cascade Autodetection.

Once **Cascade Autodetection** is finished, a message will be displayed indicating how many boilers have been found. If the number of boilers found is correct, press **OK** to finish Cascade Autodetection.

If the number of boilers found is not correct, check the cascade communication cables between the boilers and repeat **Cascade Autodetection** process.

CASCADE SET-UP PROCESS

1. Before doing the electrical connections, define which appliance will be the Cascade Master. The selected appliance will execute all the system control related functions.
2. Make all the heat demand connections and connect all the system pumps and sensors.
3. Power up all appliances.
4. Start Cascade autodetection from the Master appliance (refer to Cascade Autodetection menu above). The Master appliance will then become the electronic master of the system. It will automatically recognize the number of appliances in the cascade and calculate the average appliance capacity based on the Max defined appliance capacity.
5. Set the maximum installation capacity.
6. Set the installation parameters on the Master appliance:
 - CH1 curve
 - CH2 curve
 - DHW setpoint

GENERAL

This section contains information on the electrical connections, hydraulic connections and ACVMAX controller set-up required to operate the system configuration you have selected.

For simple configurations, the EZ setup function of the ACVMAX can be used (refer to the Installation, Operation and Maintenance manual provided with the appliance).

For more complex systems, with additional pumps, several configurations have already been preset in the ACVMAX controller to help you. Please refer to the following pages to see the predetermined configurations as well as the relevant information for the cascade systems.

For any system that is not mentioned in this manual, please contact your ACV representative.


PUMPS

The pump configurator system is based on the demands of the hydraulic system that you design. In the table below, you will find the 13 configurations that have been preset in the ACVMAX controller, based on different hydraulic schemes that can be used.

The table shows which relays are activated under which condition.

The names in the table refer to the demand done by CH1 by CH2 or DHW respectively, the demand to open close the Motor of a mixing valve or reflect the activation of the alarm (error) or Flame output relay. In the following pages, you will find these diagrams with a configuration number that corresponds to the setting in the display.






Config. No	Flex 4 ERR	Flex 6 P4	Flex 3 P3	Flex 2 DHW	Flex 1 CH	Flex 5 Flame
1	Error	CH2	CH1/CH2/DHW	DHW	CH1	Flame
2	Error	CH1	CH1/CH2/DHW	DHW	CH1/CH2/DHW	Flame
3	Error		CH1/CH2	DHW	CH1/CH2	Flame
4	Error	CH2	CH1/CH2	DHW	CH1	Flame
5	Error	CH2	CH1	DHW	CH1/CH2/DHW	Flame
6	Error		CH1	DHW	CH1	Flame
7	Error	CH1/CH2	Motor open	DHW	CH1 low	Motor close
8	Error	CH2	CH1/CH2	CH1/CH2/DHW	CH1	Flame
9	Error	CH/DHW	Motor open	DHW	CH1 low	Motor close
10	Motor open	CH1/CH2	CH1/CH2	DHW	CH1 low	Motor close
11	Motor open	CH1/CH2	CH2	DHW	CH1 low	Motor close
12	Motor open	CH1/CH2/DHW	CH2	DHW	CH1 low	Motor close
13	Error	CH1/CH2	CH2	Motor open	CH1 low	Motor close

 **DO NOT generate a DHW demand in preset configuration 13 !!**

ELECTRICAL CHARACTERISTICS PRESTIGE SOLO 42 - 50 - 75

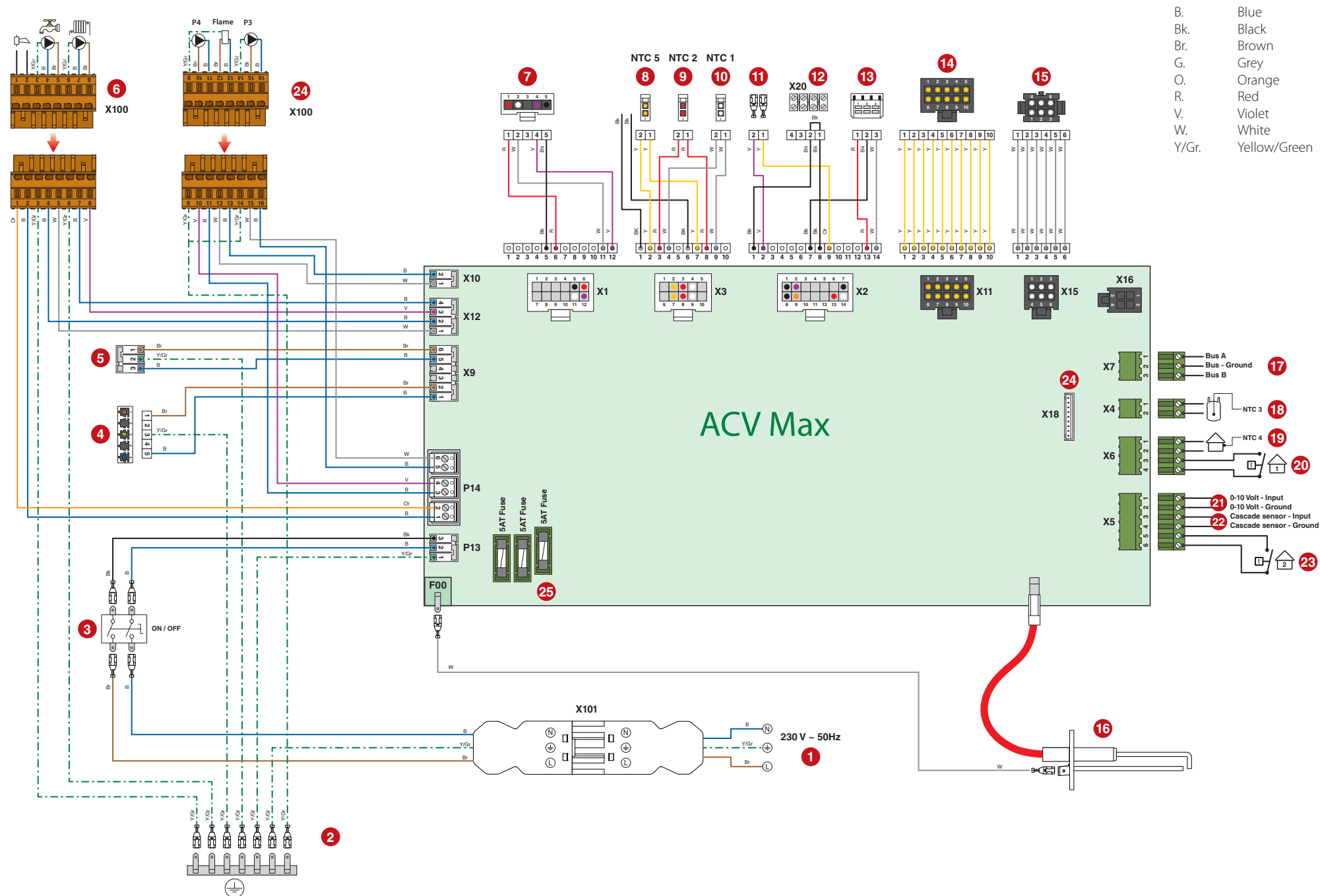
		PRESTIGE SOLO		
Main Characteristics		42	50	75
Rated voltage	V~	230	230	230
Rated frequency	Hz	50	50	50
Electrical consumption	W	78	78	126
Class	IP	X4D	X4D	X4D

Key

- 230 V power supply plug
- Ground
- ON/OFF master switch
- Gas valve rectifier
- Burner power supply
- Terminal block for optional items
 -  : Alarm (ERR terminal)
 -  : CH circuit circulator pump (CH terminal)
 -  : DHW circuit circulator pump (DHW terminal)
- Burner PWM plug
- NTC5 flue gas temperature sensor
- NTC2 return sensor
- NTC1 supply sensor
- Gas pressure switch
- High limit switch
- Low water pressure switch
- PCB (Display)
- ACVMAX programming plug
- Ignition and ionization cable
- A & B Modbus (option)
- NTC3 DHW sensor (option)
- NTC4 outdoor temperature sensor (option)
- Room thermostat 1 (option)
- 0-10 Volt (option)
- Cascade temp. sensor (option)
- Room thermostat (option)
- Optional terminal block for optional items:
 -  : Pump (P3 and P4 terminals)
 -  : Flame terminal (versatile connection according to configuration)
- 5AT slow-blow fuse (3x) for internal and optional circuits*

* 5AT slow-blow fuse (2x) for internal circuits and connection of CH, DHW and Flame output + 5AT slow-blow fuse (1x) for connection of Alarm, P3 and P4 (connector P14).

 2 spare 5AT slow-blow fuses are located on the back side of the electrical box, for fuse replacement, if required.



ELECTRICAL CHARACTERISTICS PRESTIGE SOLO 100-120

		PRESTIGE SOLO	
Main Characteristics		100	120
Rated voltage	V~	230	230
Rated frequency	Hz	50	50
Electrical consumption	W	150	180
Class	IP	X4D	X4D

Key

1. 230 V power supply plug
2. Ground
3. ON/OFF master switch
4. Gas valve rectifier
5. Burner power supply
6. Terminal block for optional items



: Alarm (ERR terminal)



: CH circuit circulator pump (CH terminal)



: DHW circuit circulator pump (DHW terminal)

7. Burner PWM plug
8. NTC5 flue gas temperature sensor
9. NTC2 return sensor
10. NTC1 supply sensor
11. Gas pressure switch
12. High limit switch
13. Low water pressure switch
14. PCB (Display)
15. ACVMAX programming plug
16. Ignition and ionization cable
17. A & B Modbus (option)
18. NTC3 DHW sensor (option)
19. NTC4 outdoor temperature sensor (option)
20. Room thermostat 1 (option)
21. 0-10 Volt (option)
22. Cascade temp. sensor (option)
23. Room thermostat (option)
24. Optional terminal block for optional items:



: Pump (P3 and P4 terminals)



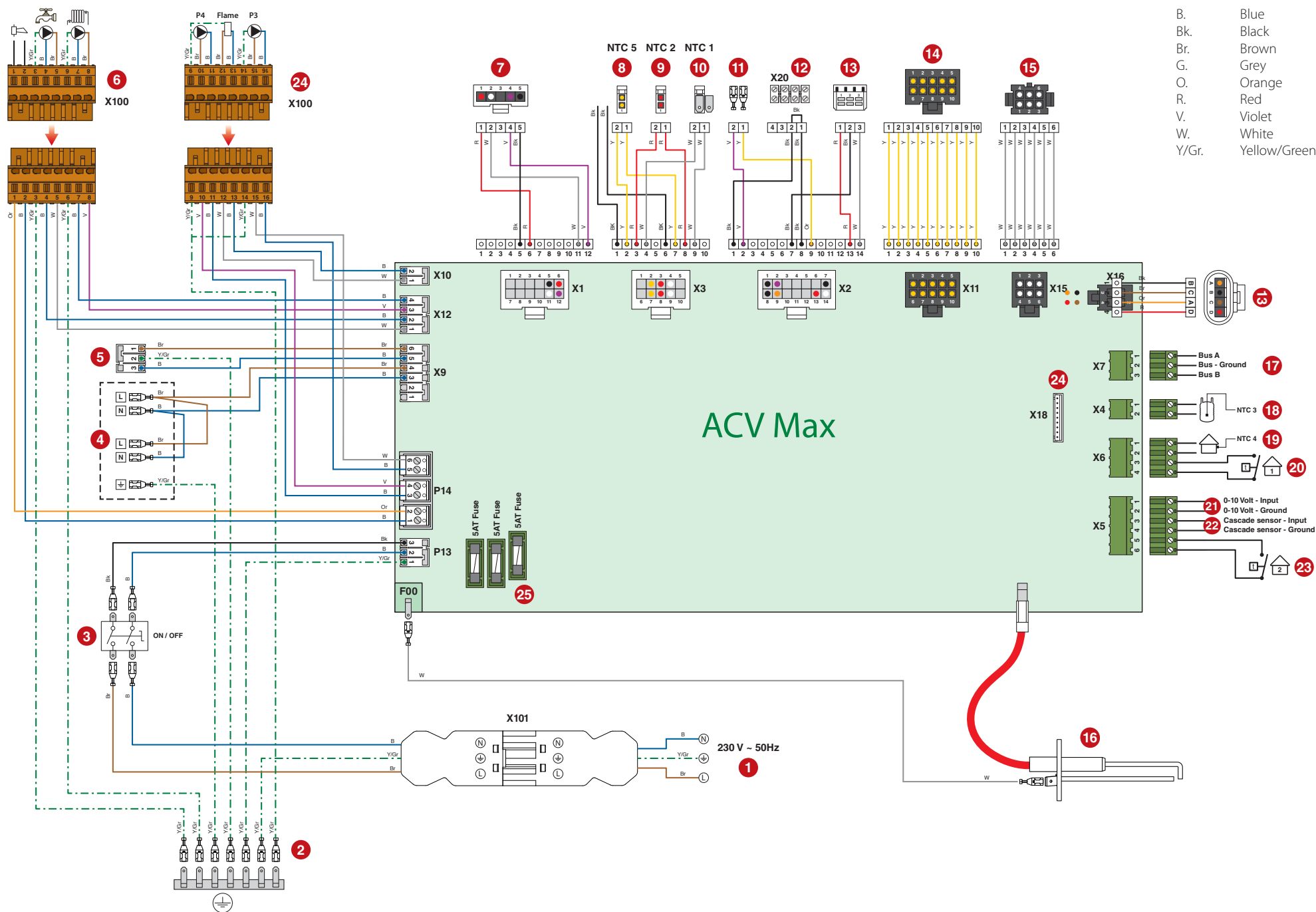
: Flame terminal (versatile connection according to configuration)

25. 5AT slow-blow fuse (3x) for internal and optional circuits*

* 5AT slow-blow fuse (2x) for internal circuits and connection of CH, DHW and Flame output + 5AT slow-blow fuse (1x) for connection of Alarm, P3 and P4 (connector P14).

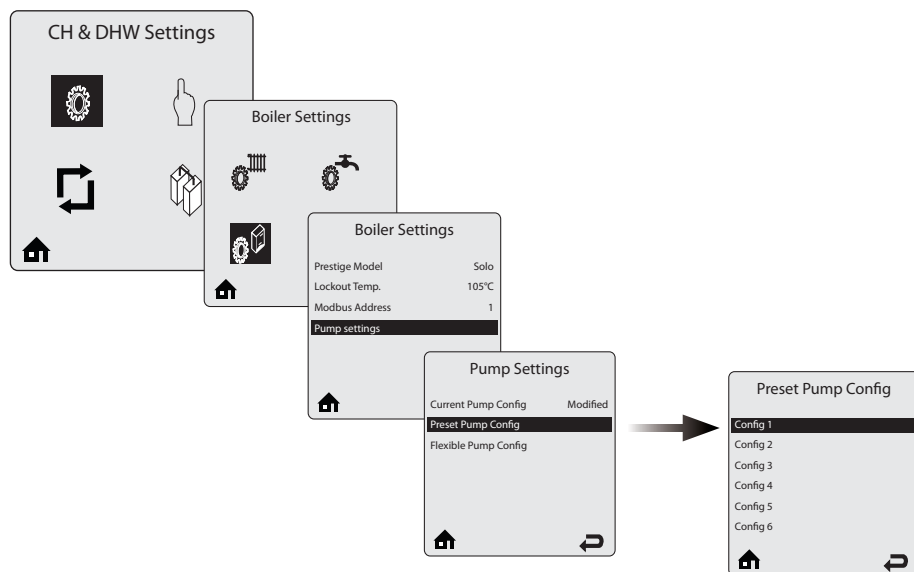


2 spare 5AT slow-blow fuses are located on the back side of the electrical box, for fuse replacement, if required.



ACCESSING THE PRESET CONFIGURATION PAGE

To access the preset configuration page, follow the selections shown on the screens below (Installer menu)



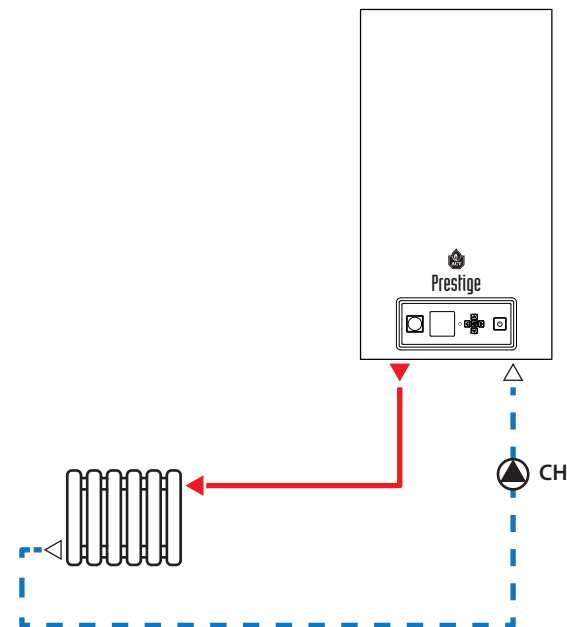
Pump Configuration 1

Flex 4 ERR	Flex 6 P4	Flex 3 P3	Flex 2 DHW	Flex 1 CH	Flex 5 Flame
Error	CH2	CH1/CH2/ DHW	DHW	CH1	Flame



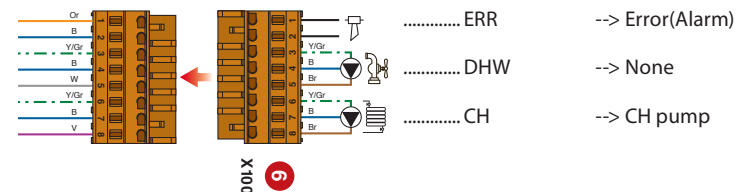
In the following hydraulic diagrams, this representation is used : — Warm water --- Cold water

High temperature heating circuit, possibly with optional outdoor temperature sensor and room thermostat, without DHW circuit.



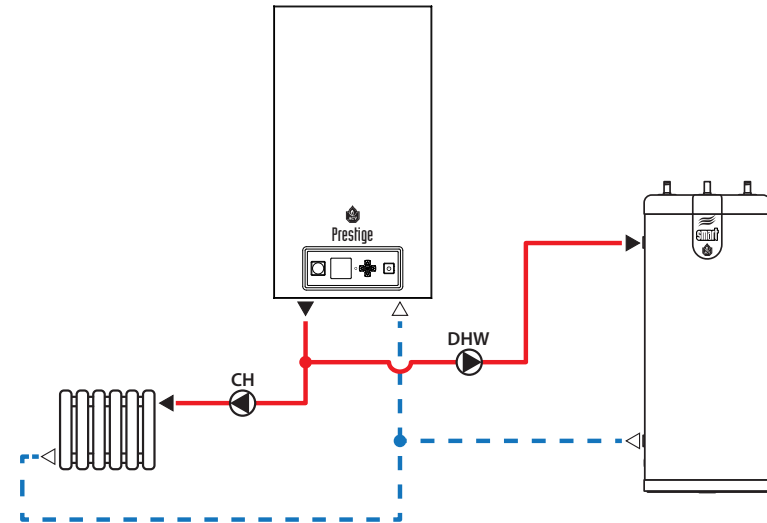
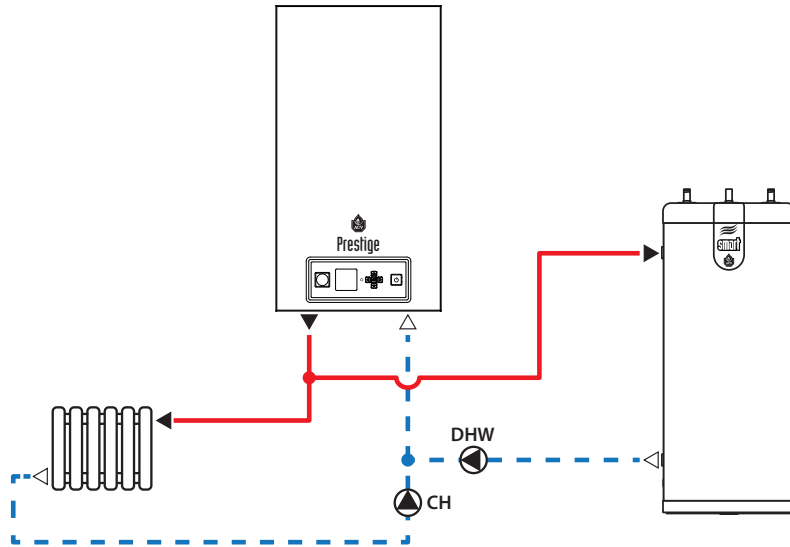
Electrical board terminals

Terminal name --> Connected to



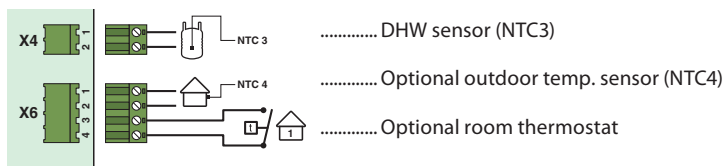
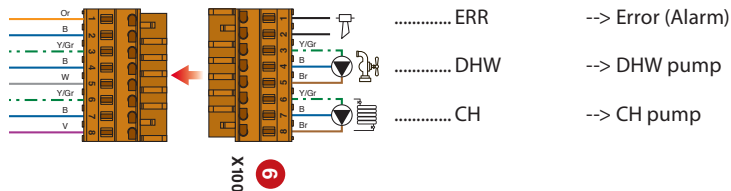
High temperature heating circuit, circulator pumps on return lines, possibly with optional outdoor temperature sensor and room thermostat, and with DHW circuit.

High temperature heating circuit, circulator pumps on supply lines, possibly with optional outdoor temperature sensor and room thermostat, and with DHW circuit.



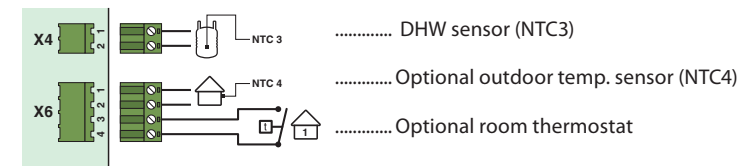
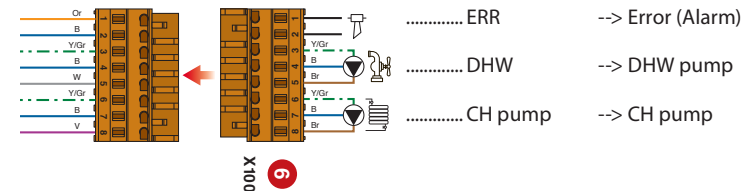
Electrical board terminals

Terminal name --> Connected to



Electrical board terminals

Terminal name --> Connected to



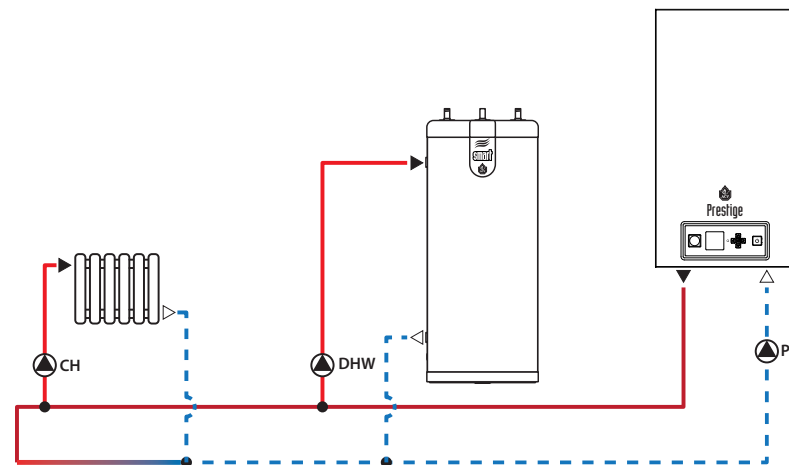


Refer to "Accessing the preset configuration page" on page 36, to know how to get to the relevant page of the ACVMAX controller.

Pump Configuration 1

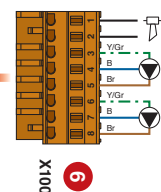
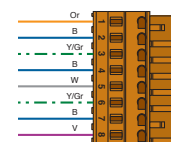
Flex 4 ERR	Flex 6 P4	Flex 3 P3	Flex 2 DHW	Flex 1 CH	Flex 5 Flame
Error	CH2	CH1/CH2/ DHW	DHW	CH1	Flame

High temperature heating circuit, with additional load pump, possibly with optional outdoor temperature sensor and room thermostat, and with DHW circuit.

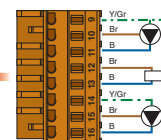
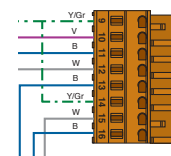


Electrical board terminals

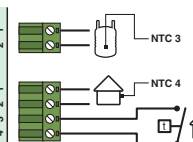
Terminal name --> Connected to



..... ERR --> Error (Alarm)
 DHW --> DHW pump
 CH --> CH pump

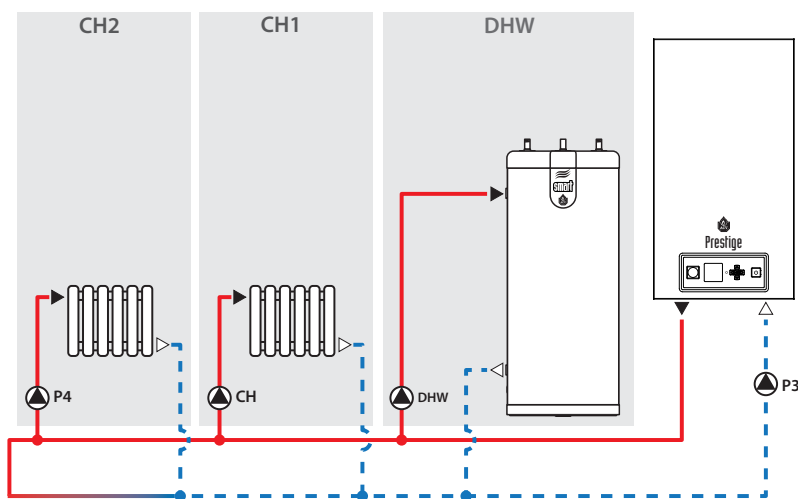


..... P4 --> None
 Flame --> Flame sensor
 P3 --> P3 Pump

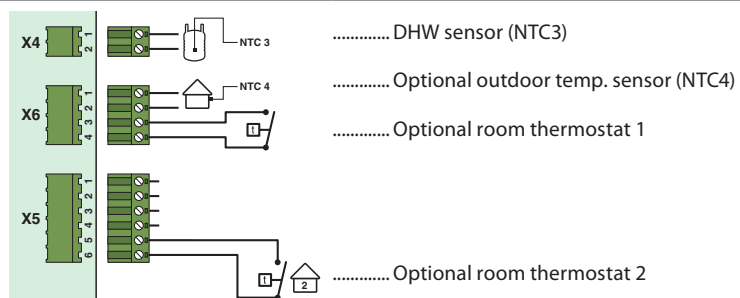
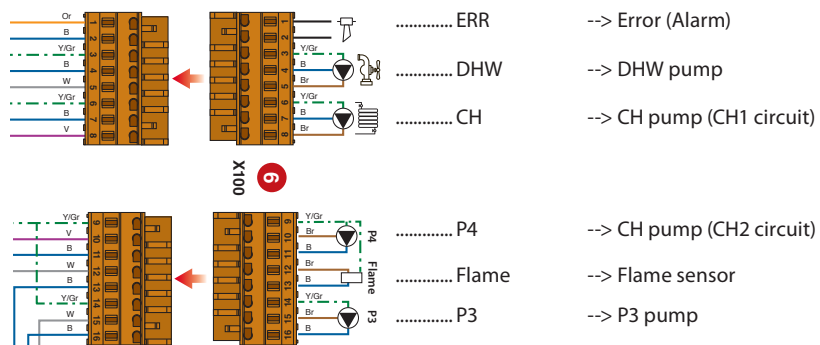


..... DHW sensor (NTC3)
 Optional outdoor temp. sensor (NTC4)
 Optional room thermostat

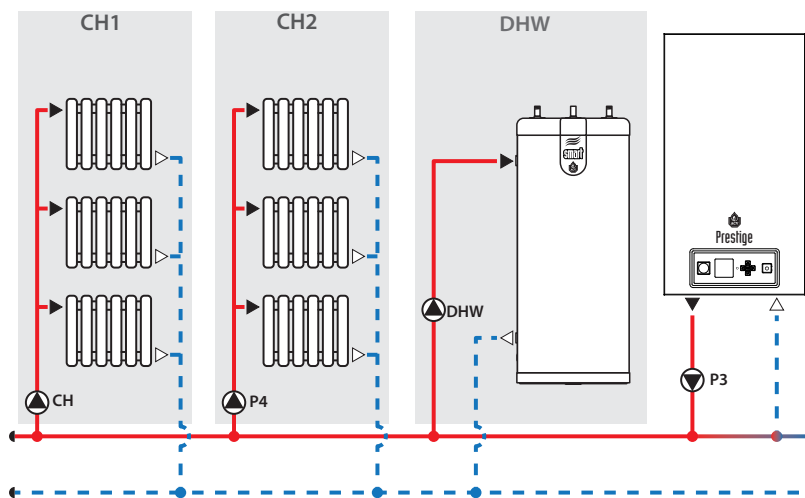
High temperature heating circuits, with additional load pump, possibly with optional outdoor temperature sensor and room thermostats, and with DHW circuit.



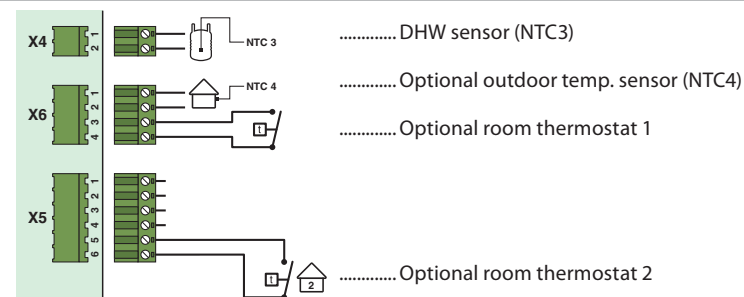
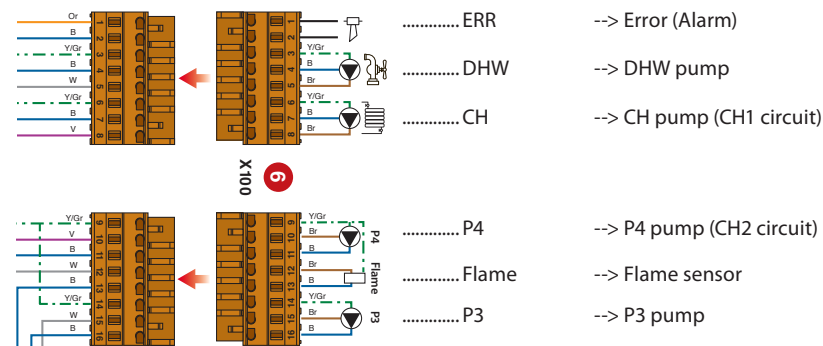
Electrical board terminals Terminal name --> Connected to



High temperature heating circuits, with additional load pump, possibly with optional outdoor temperature sensor and room thermostats, and with DHW circuit.



Electrical board terminals Terminal name --> Connected to



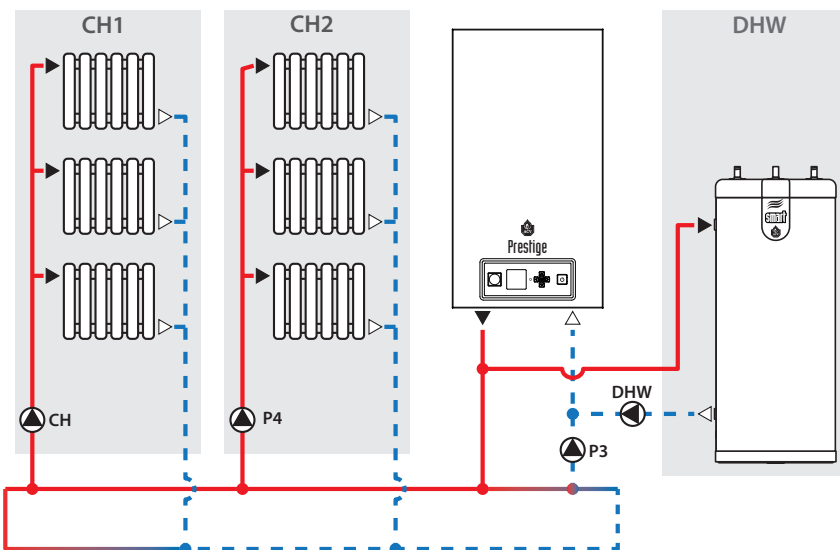
High temperature heating circuits, with additional load pump, possibly with optional outdoor temperature sensor and room thermostats, and with DHW circuit.



Refer to "Accessing the preset configuration page" on page 36, to know how to get to the relevant page of the ACVMAX controller.

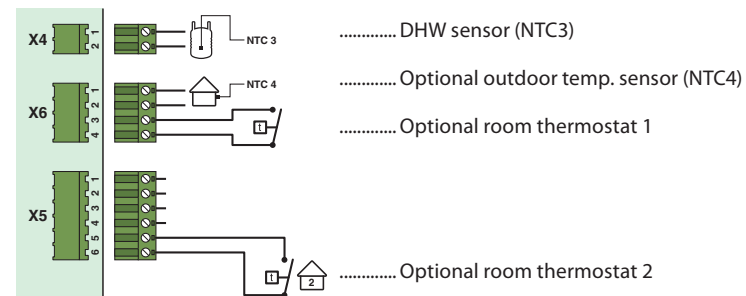
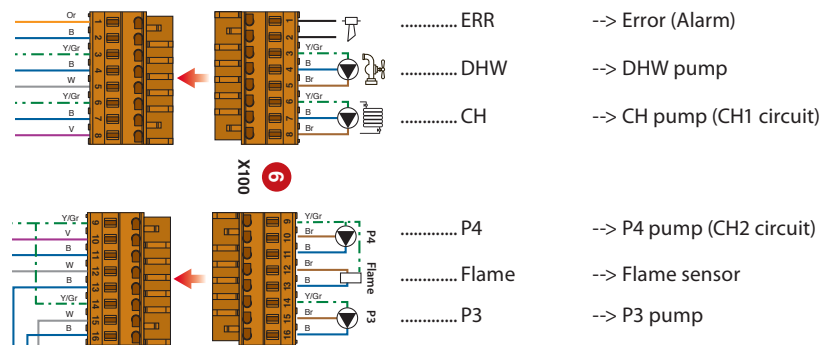
Pump Configuration 4

Flex 4 ERR	Flex 6 P4	Flex 3 P3	Flex 2 DHW	Flex 1 CH	Flex 5 Flame
Error	CH2	CH1/CH2	DHW	CH1	Flame

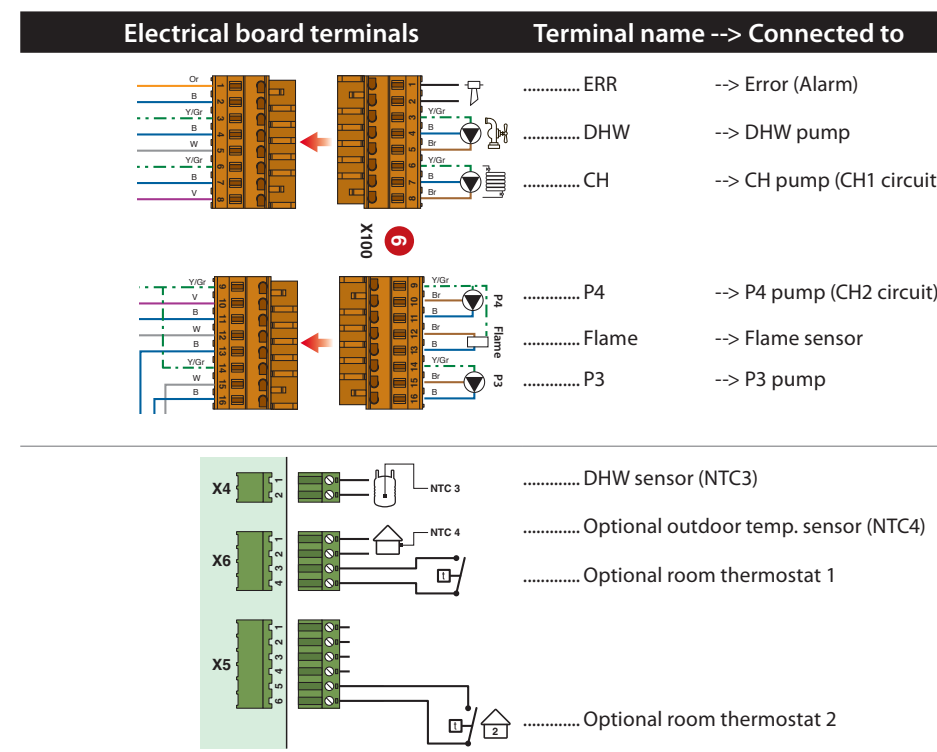
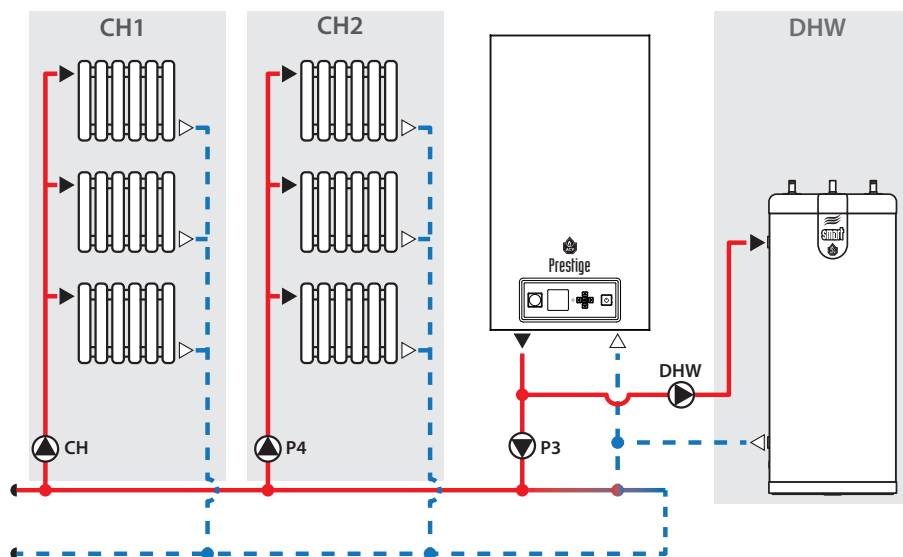


Electrical board terminals

Terminal name --> Connected to



High temperature heating circuits, with additional load pump, possibly with optional outdoor temperature sensor and room thermostats, and with DHW circuit.



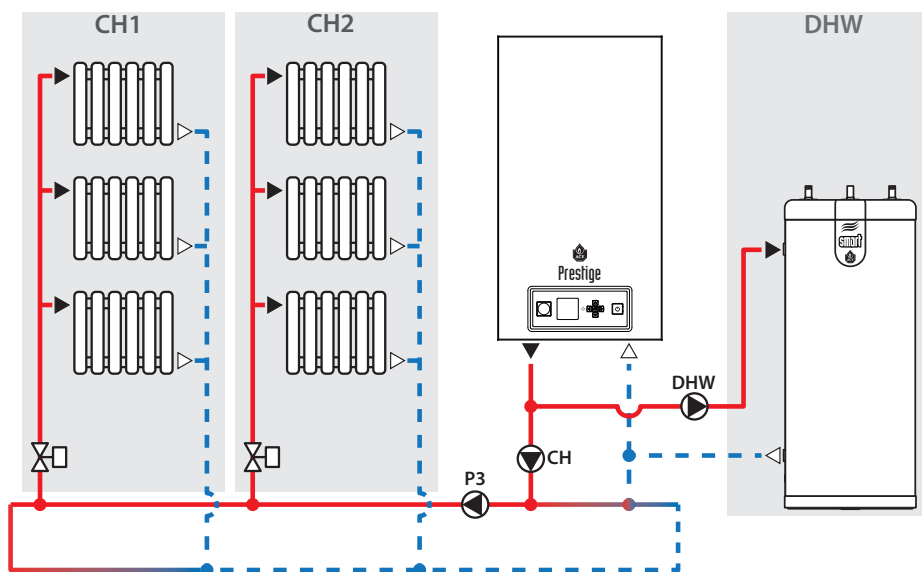
High temperature heating circuits controlled through solenoid valves, with additional load pump, possibly with optional outdoor temperature sensor and room thermostats, and with DHW circuit and DHW sensor.



Refer to "Accessing the preset configuration page" on page 36, to know how to get to the relevant page of the ACVMAX controller.

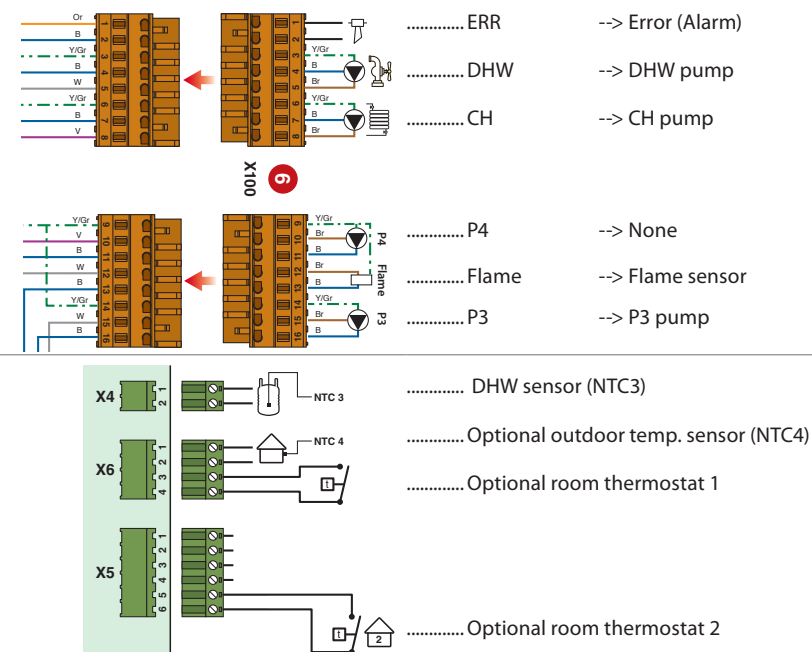
Pump Configuration 3

Flex 4 ERR	Flex 6 P4	Flex 3 P3	Flex 2 DHW	Flex 1 CH	Flex 5 Flame
Error		CH1/CH2	DHW	CH1/CH2	Flame

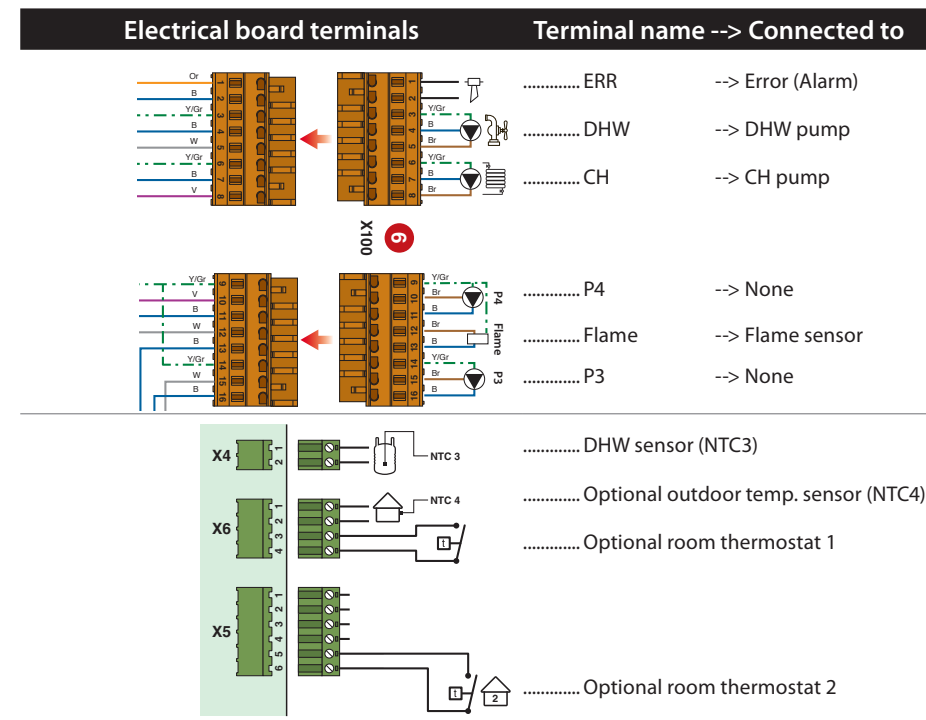
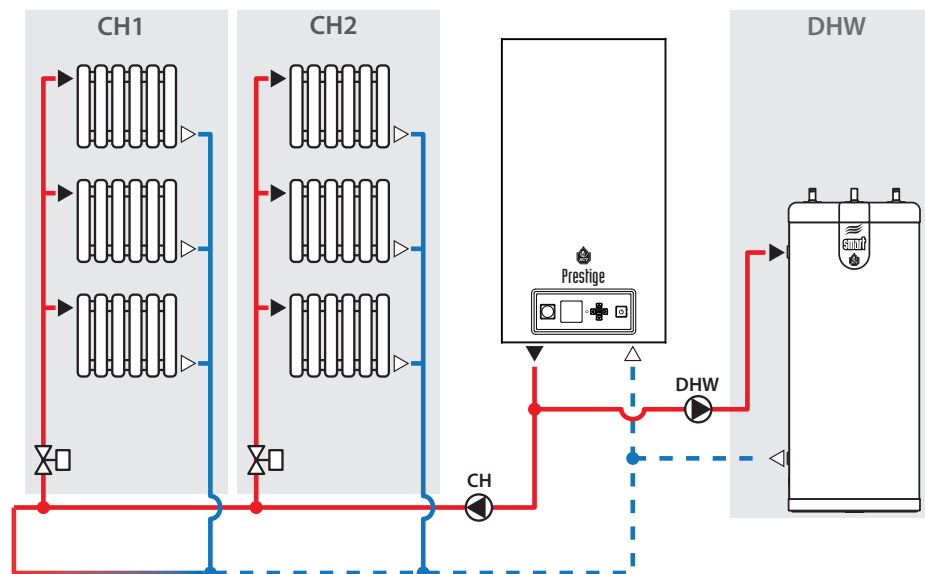


Electrical board terminals

Terminal name --> Connected to



High temperature heating circuits controlled through solenoid valves, possibly with optional outdoor temperature sensor and room thermostats, and with DHW circuit and DHW sensor.

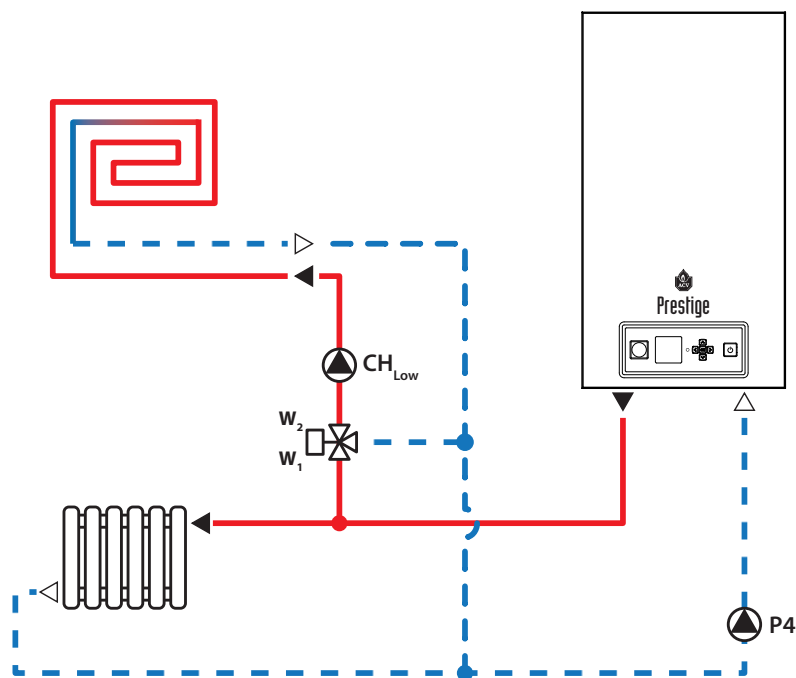


High and Low temperature heating circuits, with room control on Heating Circuit 1 (CH1) and possible second room control, possibly with optional outdoor temperature sensor and room thermostat.

Pump Configuration 7

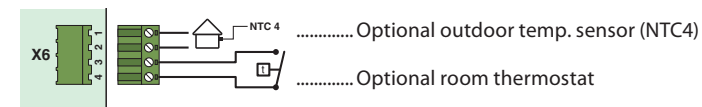
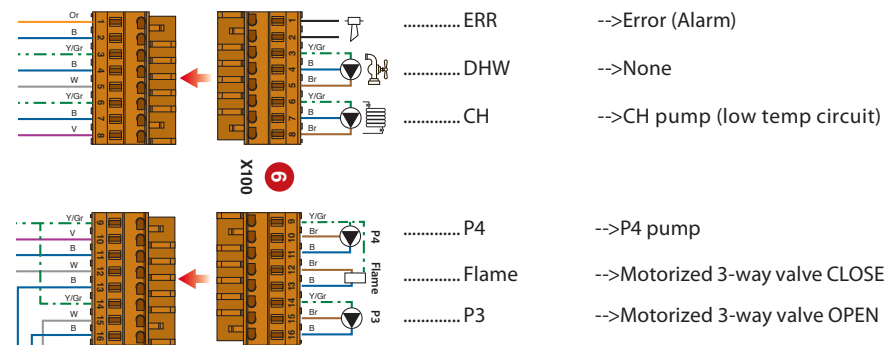
Flex 4 ERR	Flex 6 P4	Flex 3 P3	Flex 2 DHW	Flex 1 CH	Flex 5 Flame
Error	CH1/CH2	Motor open	DHW	CH1 low	Motor close

i Refer to "Accessing the preset configuration page" on page 36, to know how to get to the relevant page of the ACVMAX controller.

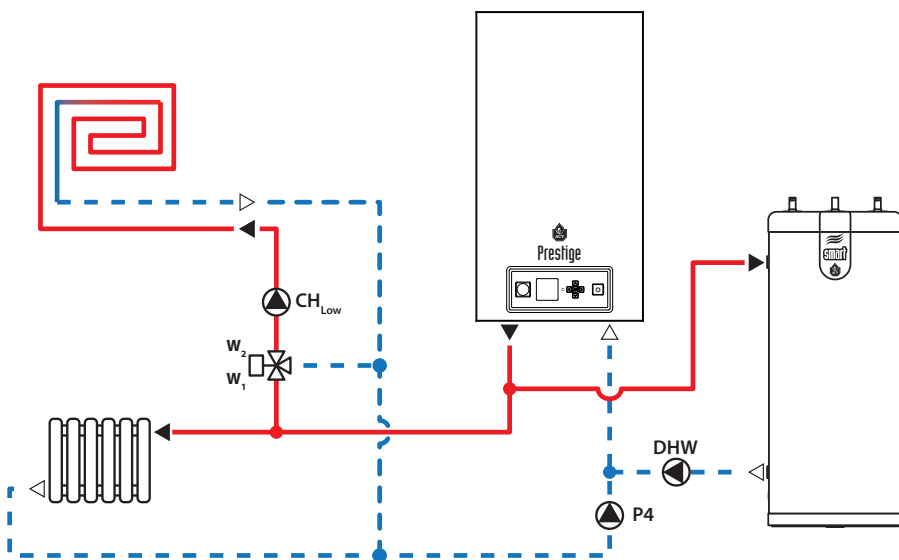


i Low temperature sensor is not shown here, but make sure to install one to protect the circuit (using the additional wiring made available in the optional wiring kit).

Electrical board terminals Terminal name --> Connected to



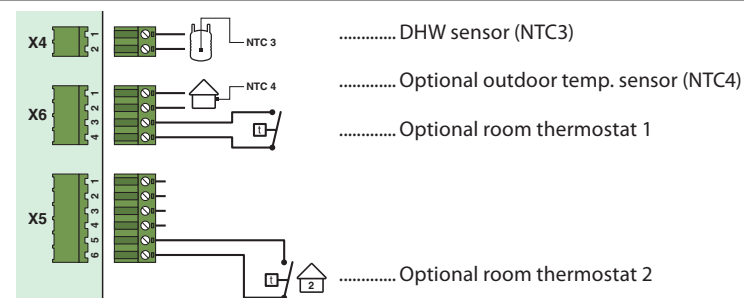
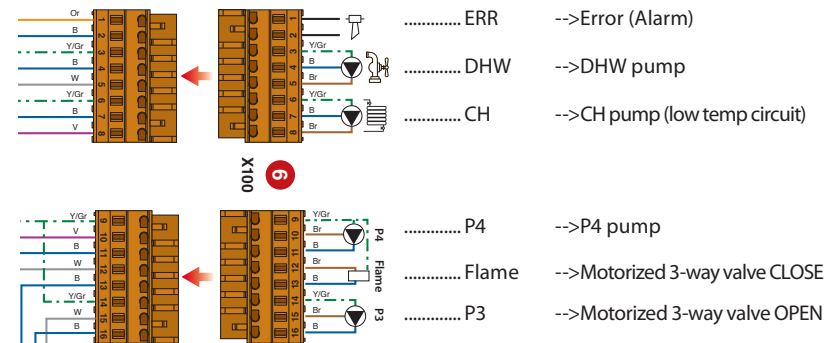
High and Low temperature heating circuits, with room control on Heating Circuit 1 (CH1) and possible second room control, possibly with optional outdoor temperature sensor and room thermostat, and with DHW circuit.



Low temperature sensor is not shown here, but make sure to install one to protect the circuit (using the additional wiring made available in the optional wiring kit).

Electrical board terminals

Terminal name --> Connected to



High and low temperature heating circuits, possibly with optional outdoor temperature sensor and room thermostat, and with DHW circuit.



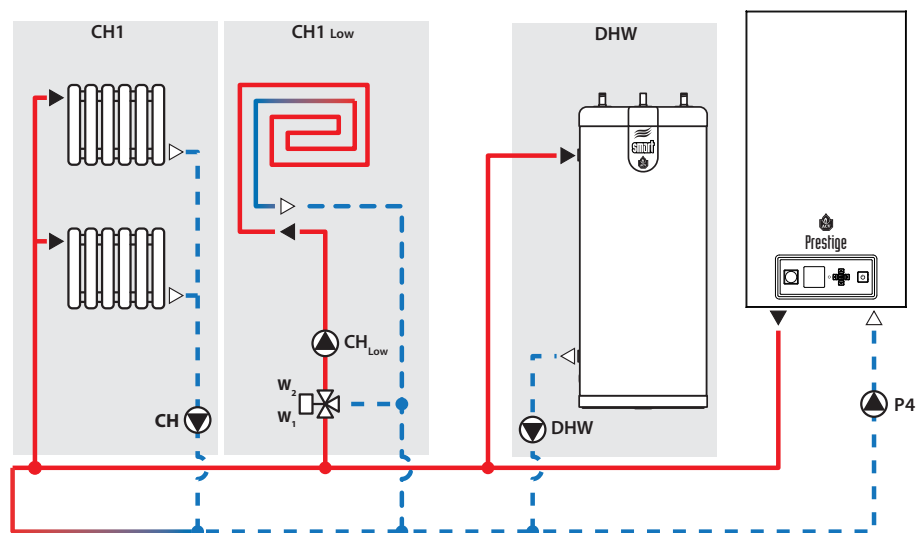
This configuration is not yet activated

Pump Configuration 9

Flex 4 ERR	Flex 6 P4	Flex 3 P3	Flex 2 DHW	Flex 1 CH	Flex 5 Flame
Error	CH/DHW	Motor open	DHW	CH1 low	Motor close



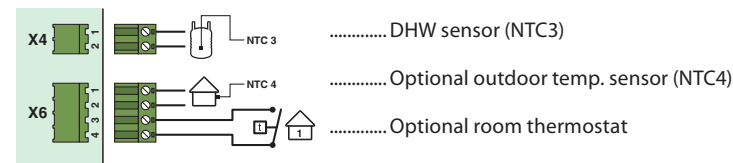
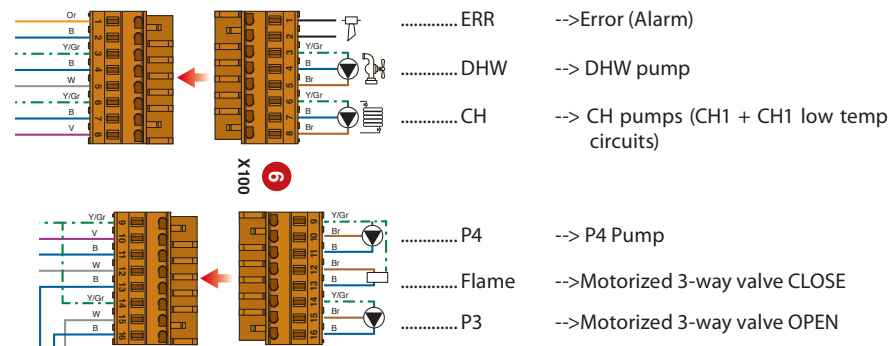
Refer to "Accessing the preset configuration page" on page 36, to know how to get to the relevant page of the ACVMAX controller.



Pump power is limited in this system configuration, as both pumps (CH1 and CH1Low need to be connected in parallel. Additionally, a second relay can be used.

Electrical board terminals

Terminal name --> Connected to



Low temperature sensor is not shown here, but make sure to install one to protect the circuit (using the additional wiring made available in the optional wiring kit).

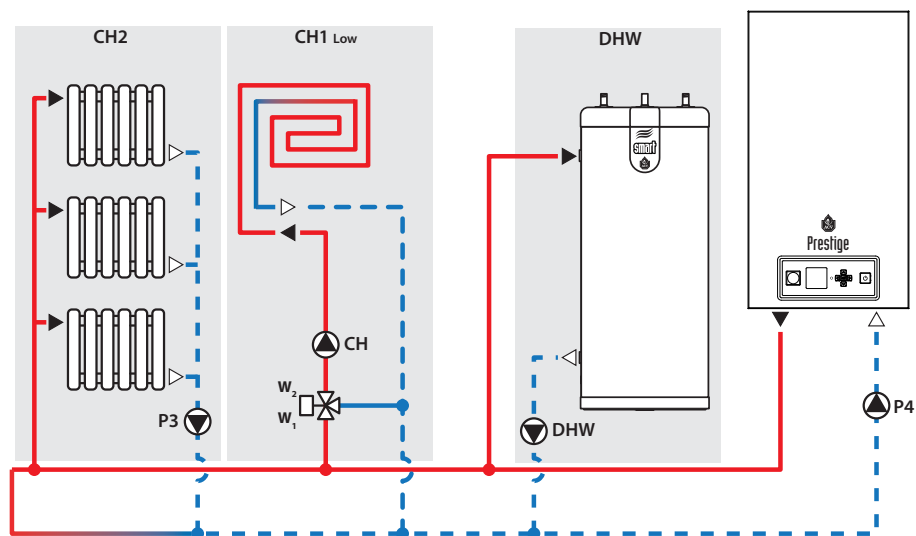
High and Low temperature heating circuit, possibly with optional outdoor temperature sensor and room thermostat, and with DHW circuit.

Pump Configuration 12

Flex 4 ERR	Flex 6 P4	Flex 3 P3	Flex 2 DHW	Flex 1 CH	Flex 5 Flame
Motor open	CH1/CH2/ DHW	CH2	DHW	CH1 low	Motor close



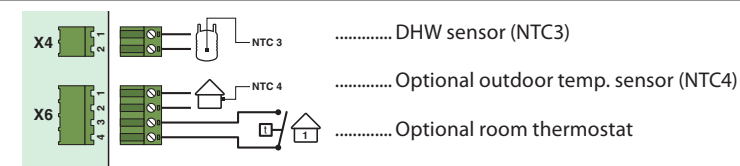
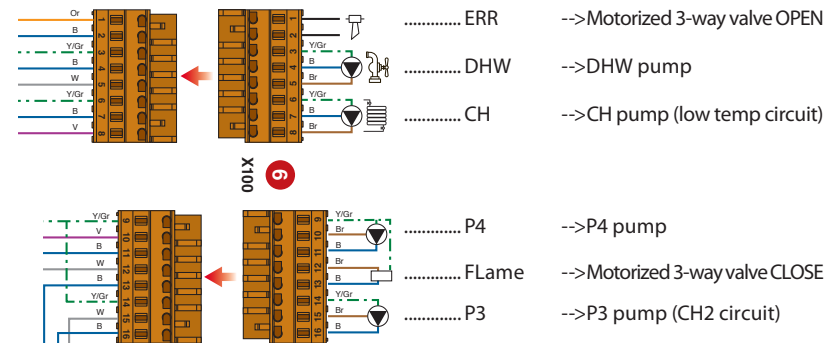
Refer to "Accessing the preset configuration page" on page 36, to know how to get to the relevant page of the ACVMAX controller.



Low temperature sensor is not shown here, but make sure to install one to protect the circuit (using the additional wiring made available in the optional wiring kit).

Electrical board terminals

Terminal name --> Connected to



3-boiler cascade configuration, high temperature, with DHW circuit

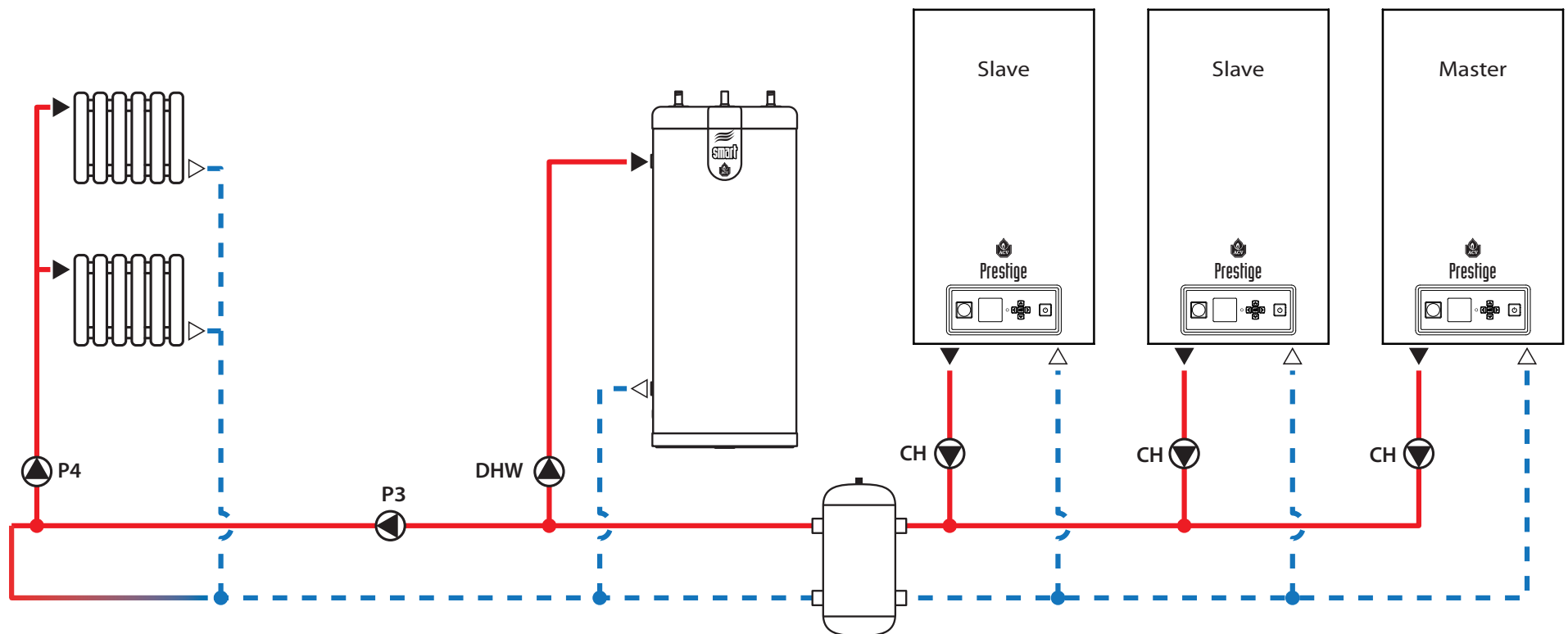
Pump Configuration 2

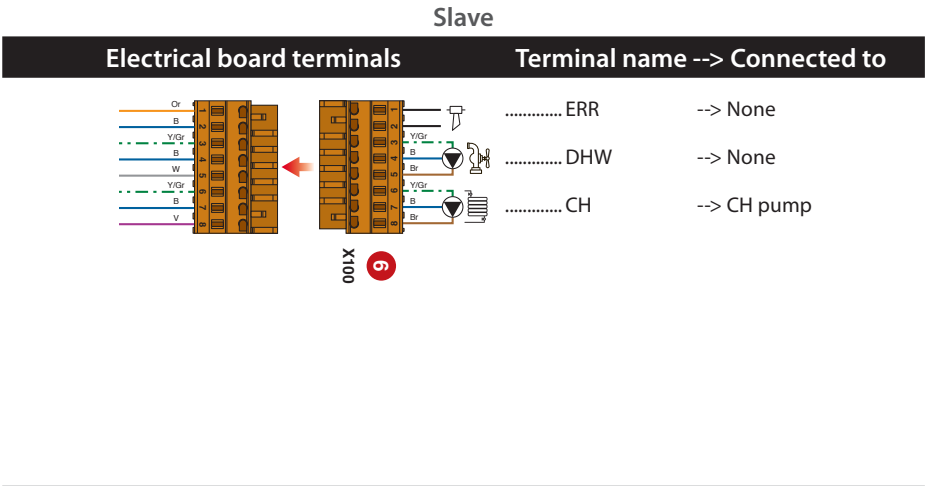
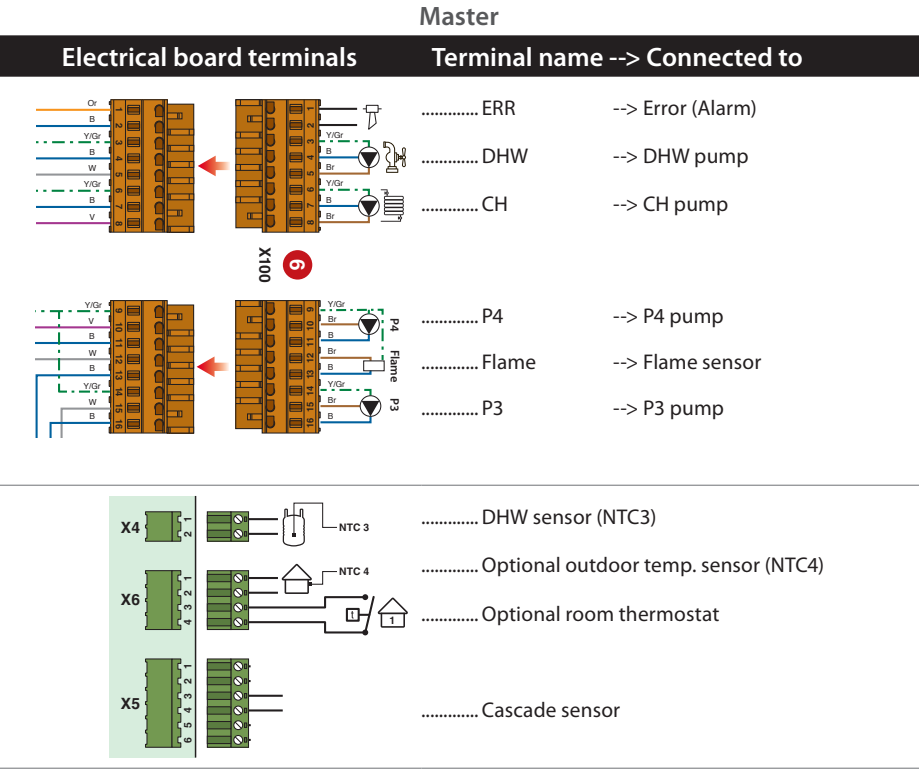
Flex 4 ERR	Flex 6 P4	Flex 3 P3	Flex 2 DHW	Flex 1 CH	Flex 5 Flame
Error	CH1	CH1/CH2/ DHW	DHW	CH1/CH2/ DHW	Flame



General remarks

- Refer to "Accessing the preset configuration page" on page 36, to know how to get to the relevant page of the ACVMAX controller.
- For cascade system setup, refer to "Cascade set-up process" on page 31





3-boiler cascade configuration, high temperature, with DHW circuit

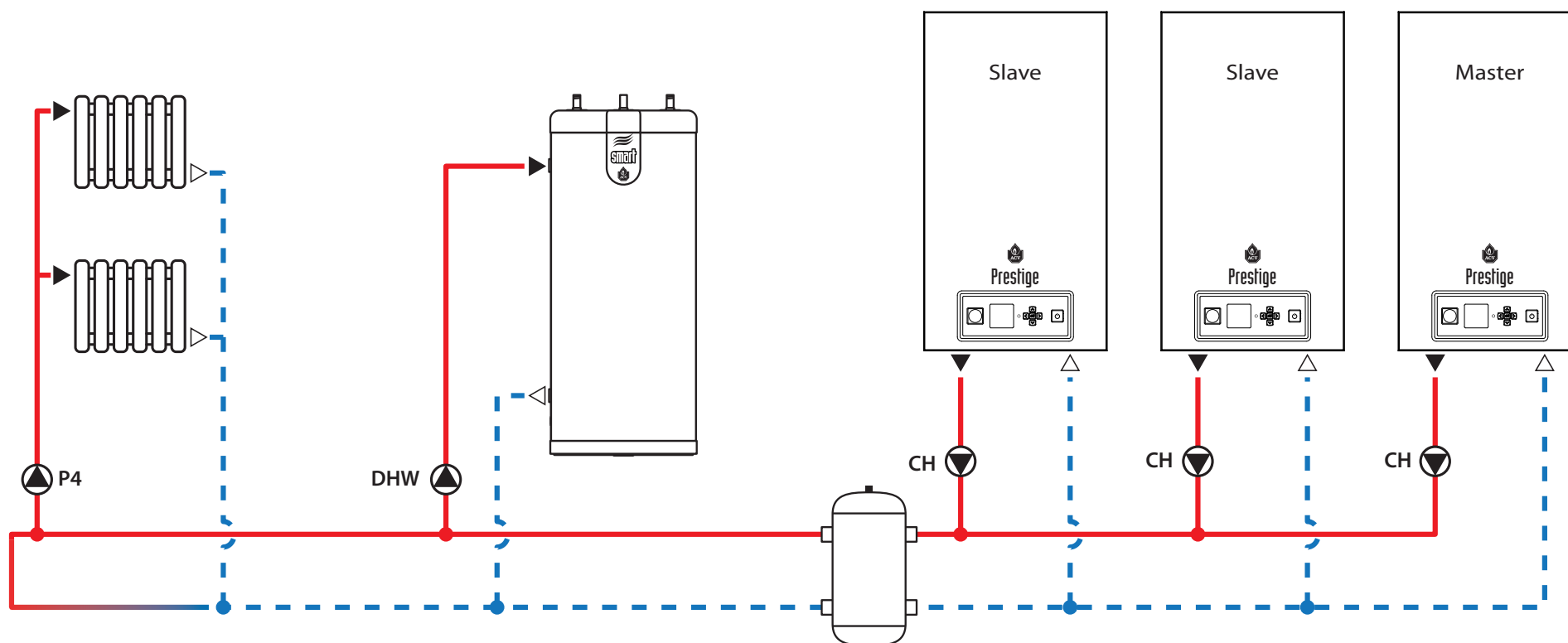
Pump Configuration 2

Flex 4 ERR	Flex 6 P4	Flex 3 P3	Flex 2 DHW	Flex 1 CH	Flex 5 Flame
Error	CH1	CH1/CH2/ DHW	DHW	CH1/CH2/ DHW	Flame

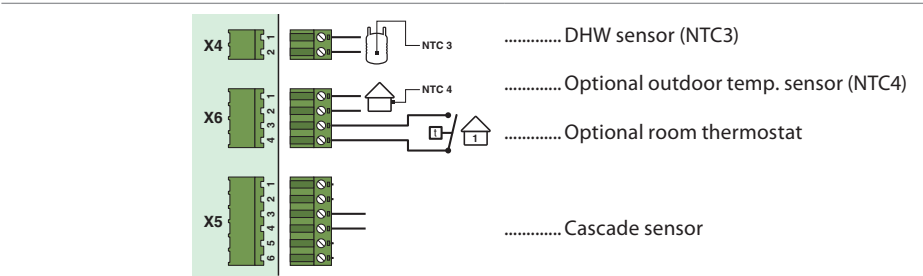
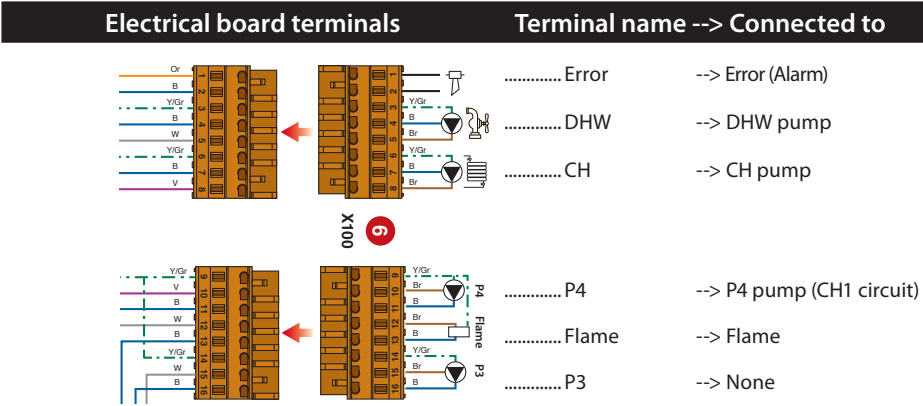


General remarks

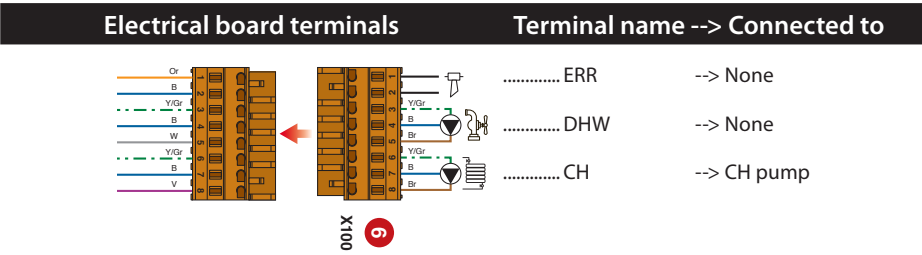
- Refer to "Accessing the preset configuration page" on page 36, to know how to get to the relevant page of the ACVMAX controller.
- For cascade system setup, refer to "Cascade set-up process" on page 31



Master



Slave



3-boiler cascade configuration, with two high temperature heating circuits and DHW circuit

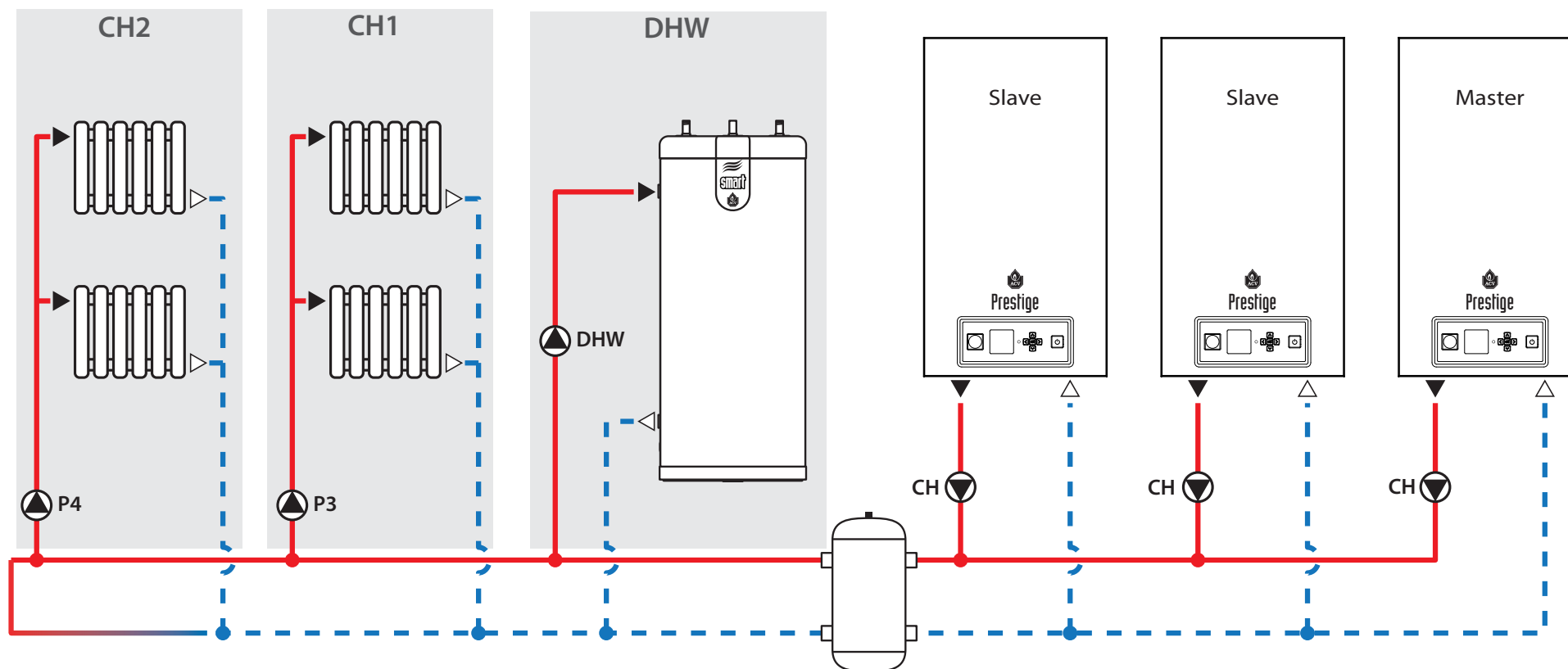
Pump Configuration 5

Flex 4 ERR	Flex 6 P4	Flex 3 P3	Flex 2 DHW	Flex 1 CH	Flex 5 Flame
Error	CH2	CH1	DHW	CH1/CH2/ DHW	Flame

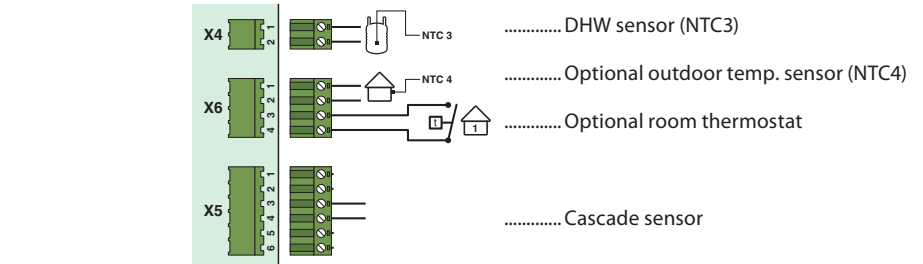
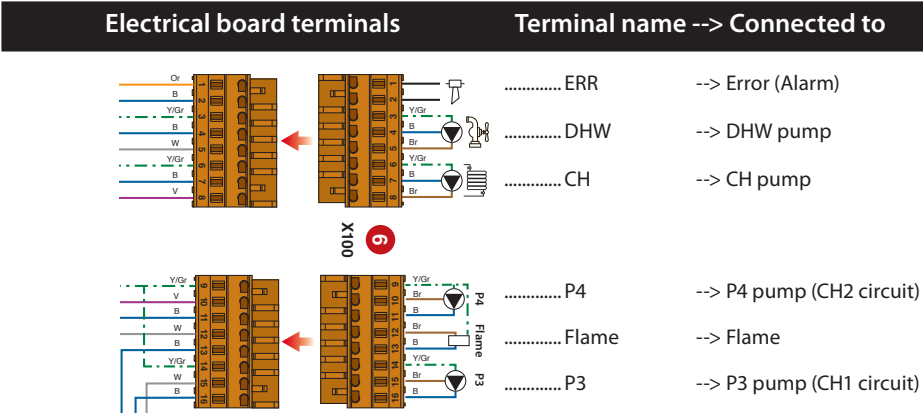


General remarks

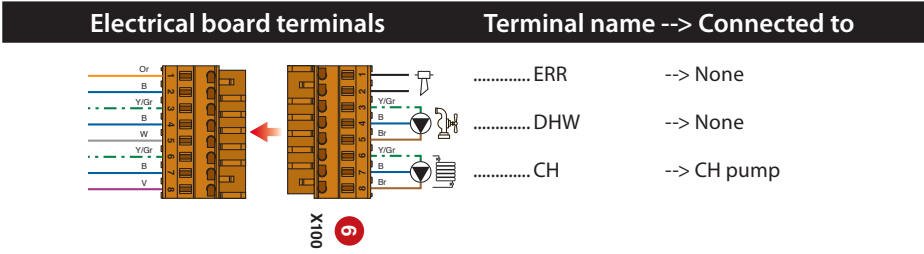
- Refer to "Accessing the preset configuration page" on page 36, to know how to get to the relevant page of the ACVMAX controller.
- For cascade system setup, refer to "Cascade set-up process" on page 31



Master



Slave



LIST OF STATUS LINE MESSAGES

Status Line Message	Description
Standby	Indicates that the Prestige is ready to respond when a demand is received.
CH Demand	A central heating call has been received.
DHW Demand	A domestic hot water call has been received.
CH / DHW Demand	Central heating and domestic hot water calls are being received simultaneously. Both calls are being satisfied simultaneously because domestic hot water priority has been disabled.
DHW Priority	Central heating and domestic hot water calls are being received simultaneously. Domestic hot water call is being satisfied first because it has priority over central heating calls.
Priority Timeout	Central heating and domestic hot water calls are being received simultaneously. The domestic hot water priority time limit has been exceeded. Priority will now switch back and forth between central heating and domestic hot water calls until one call is satisfied.
External Demand	An external modulation call has been received.
Slave Operation	The Prestige is a slave in a cascade system.
Manual Operation	The burner or circulators have manually been enabled in the Installer Menu.
CH Burner Delay	The burner will not fire until the call blocking time has elapsed.
DHW Burner Delay	The burner will not fire until the call blocking time has elapsed.
CH Setpoint Reached	The burner is not fired because the supply/system water temperature exceeds the setpoint. The central heating circulator continues to operate and the burner will fire again once the supply/system water temperature drops below the setpoint.
DHW Setpoint Reached	The burner is not fired because the supply/system water temperature exceeds the setpoint. The domestic circulator continues to operate and the burner will fire again once the supply/system water temperature drops below the setpoint.
CH Post Pump	The central heating circulator is running to remove heat from the Prestige at the completion of a call.
DHW Post Pump	The domestic hot water circulator is running to remove heat from the Prestige at the completion of a call.
Freeze Protection	Freeze protection will end once the supply/system water temperature is raised to 60°F [16°C].
Boiler Protection	The burner firing rate is being reduced because of an excessive difference between the boiler supply and return temperatures. The firing rate will begin increasing once the temperature difference is less than 45°F [25°C].
Lockout Description	The lockout which currently has the Prestige shut down is displayed.

LIST OF INFORMATION ITEMS

Information Items	Description
Boiler Status	Displays the current operating state of the Prestige. This is the same as the status line on the home screen.
Heating Call	Displays if a central heating call is present.
DHW Call	Displays if a domestic hot water call is present
Boiler Firing Rate	Displays the current firing rate of the Prestige
Ionization Current	Displays the current flame ionization current from the ignitor
Boiler Setpoint	Displays the current setpoint of the Prestige.
Supply Temp.	Displays the current supply temperature of the Prestige.
Return Temp.	Displays the current return temperature of the Prestige.
Boiler Flue Temp.	Displays the current flue temperature of the Prestige.
Outdoor Temp.	Displays the current outdoor temperature
DHW Storage Temp.	Displays the current DHW storage temperature when Indirect Water Heater Sensor PSRKIT22 is installed
External Modulation Signal	Displays the current external modulation signal being received from an external controller.
Pressure	Displays the system pressure.
CH Ignitions	Displays the number of central heating ignitions since the unit was installed. This counter increases in increments of twenty.
CH Runtime	Displays the number of hours the Prestige has run for a central heating call since the unit was installed.
DHW Ignitions	Displays the number of domestic hot water ignitions since the unit was installed. This counter increases in increments of twenty.
DHW Runtime	Displays the number of hours the Prestige has run for a domestic hot water call since the unit was installed.
Mix Zone Temperature	Displays the temperature of the low temperature mixed circuit

Codes	Description of the fault	Solution for the fault
E 01	Failed ignition: The burner failed to light after 5 ignition attempts.	<ol style="list-style-type: none"> 1. Check gas supply to boiler. 2. Check Ignition cable connection in control box. 3. Check electrode for defects, and distance between the pins. 4. Check gas valve and electrical connections to gas valve.
E 02	False flame: Flame detected prior to ignition.	<ol style="list-style-type: none"> 1. Check good electrical ground connection to unit. 2. Check electrode for pollution and deposition of dirt.
E 03	High Boiler temp.: The boiler temperature exceeds 105°C	<p>Correct condition which caused high temperature or limit to open.</p> <ol style="list-style-type: none"> 1. Check water flow in the system (radiator valves). 2. Check Pump and pump electrical connections.
E 05	Blower speed: Blower speed not correct or speed signal is not received by ACVMAX.	<ol style="list-style-type: none"> 1. Check blower and wiring harness. 2. Under normal condition if actual fan speed is 1000 rpm different from set fan speed an error is displayed (after 60sec in running and after 30 sec. at startup). 3. Only exception when actual fan speed > 3000 rpm at max. PWM.
E 07	High Flue temp.: Flue temperature exceeds high limit.	<ol style="list-style-type: none"> 1. Heat exchanger may require cleaning. 2. Boiler will automatically reset once flue temperature returns to normal range.
E 08	Flame Circuit Error: Flame circuit test failed	<ol style="list-style-type: none"> 1. Turn boiler off. 2. Check and clean the electrode. 3. Check ignition and grounding cables are firmly connected.
E 09	Gas valve circuit error: Gas valve circuit test failed.	<ol style="list-style-type: none"> 1. Check the gas valve and wiring harness. 2. If the problem persists replace the "ACVMAX" circuit board.
E 12	Internal Fault: EEPROM misconfiguration	<ol style="list-style-type: none"> 1. Turn unit off and on to resume normal operation. 2. If the problem persists replace the "ACVMAX" circuit board.
E 13	Reset limit reached: Resets are limited to 5 every 15 minutes.	<ol style="list-style-type: none"> 1. Turn unit off and on to resume normal operation. 2. If the problem persists replace the "ACVMAX" circuit board.
E 15	Sensor Drift: Supply or return sensor reading has drifted.	Check supply and return temperature sensors and wiring harness.
E 16	Supply Sensor Stuck: Supply sensor reading is not changing.	<ol style="list-style-type: none"> 1. Check supply temperature sensor and wiring harness for shortcuts or other defects. 2. Check waterflow and the temperature balance in the system, because CH supply temperature does not change.
E 17	Return Sensor Stuck: Return sensor reading is not changing.	<ol style="list-style-type: none"> 1. Check return temperature sensor and its position, check wiring harness for shortcuts or other defects. 2. Check waterflow and the temperature balance in the system, because CH return temperature does not change. 3. Failure may happen at low output capacity when supplying from a big tank !
E 18	Sensor Failure: Supply or return sensor reading changed very rapidly.	Check supply and return temperature sensors and wiring harness.
E 21	Internal Control Fault: A / D conversion error.	Turn unit off and on then press OK to resume normal operation.
E 25	Internal Control Fault: CRC check error.	Turn unit off and on to resume normal operation.

Codes	Description of the fault	Solution for the fault
E 30	Supply Sensor Shorted: A short circuit has been detected in the boiler supply temperature sensor circuit	<ol style="list-style-type: none"> 1. Check supply temperature sensor and wiring harness for a short circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem, reset the appliance and resume normal operation.
E 31	Supply Sensor Open: An open circuit has been detected in the boiler supply temperature sensor circuit	<ol style="list-style-type: none"> 1. Check supply temperature sensor, connectors and wiring harness for an open circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E 32	DHW Sensor Shorted: A short circuit has been detected in the DHW temperature sensor circuit	<ol style="list-style-type: none"> 1. Check DHW temperature sensor and wiring harness for a short circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E 33	DHW Sensor Open: An open circuit has been detected in the DHW temperature sensor circuit	<ol style="list-style-type: none"> 1. Check DHW temperature sensor, connectors and wiring harness for an open circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E 34	Low Voltage: Line voltage has fallen below an acceptable operating level.	The boiler will automatically reset once line voltage returns to normal.
E 37	Low Water: Water level has fallen below 0.7 bar.	<ol style="list-style-type: none"> 1. Increase pressure to normal range. 2. The boiler will automatically reset once water level returns to normal.
E 43	Return Sensor Shorted: A short circuit has been detected in the boiler return temperature sensor circuit.	<ol style="list-style-type: none"> 1. Check return temperature sensor and wiring harness for a short circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem, reset the appliance and resume normal operation.
E 44	Return Sensor Open: An open circuit has been detected in the boiler return temperature sensor circuit.	<ol style="list-style-type: none"> 1. Check return temperature sensor, connectors and wiring harness for an open circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem, reset the appliance and resume normal operation.
E 45	Flue Sensor Shorted: A short circuit has been detected in the boiler flue temperature sensor circuit	<ol style="list-style-type: none"> 1. Check flue temperature sensor and wiring harness for a short circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E 46	Flue Sensor Open: An open circuit has been detected in the boiler flue temperature sensor circuit.	<ol style="list-style-type: none"> 1. Check flue temperature sensor, connectors and wiring harness for an open circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E47	Water pressure sensor error: Water pressure sensor is disconnected or broken	<ol style="list-style-type: none"> 1. Check water pressure sensor, connectors and wiring harness. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E 76	Gas pressure switch open	<ol style="list-style-type: none"> 1. Check both the static and the dynamic gas pressures. 2. Correct condition which caused the pressure switch to open 3. Boiler will automatically reset once the pressure switch is closed.
	External Limit Open: An external automatic reset boiler limit has opened.	<ol style="list-style-type: none"> 1. Correct condition which caused limit to open. 2. Boiler will automatically reset once external limit closes
E 77	High temperature mixing circuit	Check if the mixing valve functions correctly.
E 78	Mix circuit sensor shorted	<ol style="list-style-type: none"> 1. Check Mix circuit temp. sensor and wiring harness for a short circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.

Codes	Description of the fault	Solution for the fault
E 79	Mix-circuit sensor Open	<ol style="list-style-type: none"> 1. Check Mix circuit temp. sensor and wiring harness for an open circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E 80	Return > Supply: Return temperature is higher than supply temperature.	Confirm water flows in boiler return and out boiler supply.
E 81	Sensor Drift: Supply and return temperatures are not equal.	<ol style="list-style-type: none"> 1. Check water is flowing through boiler. 2. Wait a few minutes for the water to equalise the temperature, the boiler will automatically reset once temperatures become equal. 3. If boiler doesn't reset, check the NTC's and check the wire harness, replace if necessary.
E 87	External Limit Open: An external boiler limit has opened.	<ol style="list-style-type: none"> 1. Correct condition which caused limit to open, then reset boiler. 2. The boiler needs to be reset once external limit closes.
E 89	Incorrect Setting: A parameter setting is outside the settings range.	<ol style="list-style-type: none"> 1. Review CH & DHW settings and correct as necessary. 2. The boiler will automatically reset once corrected.
E 90	Firmware Mismatch: Control module and display firmware versions are incompatible.	One or several components are not compatible with the system. Replace mismatched component(s).
E 91	System Sensor Shorted: A short circuit has been detected in the system temperature sensor circuit	<ol style="list-style-type: none"> 1. Check system temperature sensor and wiring for a short circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E 92	System Sensor Open: An open circuit has been detected in the system temperature sensor circuit.	<ol style="list-style-type: none"> 1. Check system temperature sensor and wiring for an open circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E 93	Outdoor Sensor Shorted: A short circuit has been detected in the outdoor temperature sensor circuit.	<ol style="list-style-type: none"> 1. Check outdoor temperature sensor and wiring for a short circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E 94	Internal Display Fault: Display memory error	Turn unit off and on to resume normal operation.
E 95	Supply Sensor Error: Supply sensor reading is invalid	<ol style="list-style-type: none"> 1. Check wiring between display and control module. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E 96	Outdoor Sensor Open: An open circuit has been detected in the outdoor temperature sensor circuit.	<ol style="list-style-type: none"> 1. Check outdoor temperature sensor and wiring for an open circuit. 2. If necessary replace the sensor, or the wire harness. 3. After fixing the problem reset the appliance and resume normal operation.
E 97	Cascade Mismatch: Cascade configuration has changed.	<ol style="list-style-type: none"> 1. Run autodetection if change was intentional, or else check wiring between boilers. 2. Boiler will automatically reset once repaired.
E 98	Cascade Bus Error: Communication with other boilers has been lost.	<ol style="list-style-type: none"> 1. Check wiring between boilers. 2. Boiler will automatically reset once repaired.
E 99	Controller Bus Error: Communication between boiler display and control module has been lost.	<ol style="list-style-type: none"> 1. Check wiring between components. 2. Boiler will automatically reset once repaired.