

User Manual



Low NOx certified to SCAQMD 1146.2

NSF/ANSI/CAN 372



GAS-FIRED



LISTED
ANSI/CSA Standard
Designation
MH65710

IONIC

FCB and FWH

CB / WH 1250F, 2000F, 3000F, 4000F

WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

— Do not store or use gasoline or other flammable vapours and liquids in the vicinity of this or any other appliance.

— WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbour's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

— Installation and service must be performed by a qualified installer, service agency or the gas supplier.

AVERTISSEMENT. Assurez-vous de bien suivre les instructions données dans cette notice pour réduire au minimum le risque d'incendie ou d'explosion ou pour éviter tout dommage matériel, toute blessure ou la mort.

— Ne pas entreposer ni utiliser d'essence ou ni d'autres vapeurs ou liquides inflammables à proximité de cet appareil ou de tout autre appareil.

— QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ :

- Ne pas tenter d'allumer d'appareils.
- Ne touchez à aucun interrupteur. Ne pas vous servir des téléphones dans le bâtiment où vous vous trouvez.
- Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
- Si vous ne pouvez rejoindre le fournisseur de gaz, appelez le service des incendies.

L'installation et l'entretien doivent être assurés par un installateur ou un service d'entretien qualifié ou par le fournisseur de gaz.

California Proposition 65 Warning: This product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

TABLE OF CONTENTS

1	SAFETY GUIDELINES	5
2	INTRODUCTION	8
2.1	EXPLANATIONS	8
2.2	MAINTENANCE AND INSPECTION	8
2.2.1	<i>On a Continuous basis</i>	8
2.2.2	<i>On a Monthly basis</i>	9
2.2.3	<i>On an Annual basis (every 12 months)</i>	9
2.3	FOR INSTALLATIONS IN THE COMMONWEALTH OF MASSACHUSETTS.	10
3	TOUCH SCREEN	11
3.1	MENU BUTTONS	11
3.2	START SCREEN	11
3.3	MODULE SCREEN	12
4	DISPLAY AND BUTTONS	13
4.1	EXPLANATION OF THE BUTTONS	13
4.2	DISPLAY CONFIGURATION	14
5	STARTING THE BOILER / WATER HEATER	15
5.1	CHANGING THE SETPOINT AND/OR ENABLING CH/DHW.	16
5.1.1	<i>Changing the Central Heating setpoint directly.</i>	16
5.1.2	<i>Changing the DHW setpoint directly.</i>	16
5.1.3	<i>Enable / Disable CH or DHW control.</i>	16
5.2	CHANGING THE SETPOINT BY THE MENU (BUTTON).	17
5.2.1	<i>CH with outdoor temperature sensor</i>	17
6	OTHER MENU ITEMS	18
6.1	PROTECTED MENU ITEMS	18
6.2	LANGUAGE SETTINGS	18
6.2.1	<i>Change the language via the menu</i>	18
6.2.2	<i>Change the language via the menu icons</i>	19
6.3	AVAILABLE MENU ITEMS	20
6.3.1	<i>Central Heating (CH)</i>	20
6.3.2	<i>Domestic Hot Water (DHW)</i>	20
6.3.3	<i>Information</i>	20
6.3.4	<i>Software Versions</i>	20
6.3.5	<i>Boiler Status</i>	20
6.3.6	<i>Boiler History</i>	21
6.3.7	<i>Error log</i>	21
6.3.8	<i>Service</i>	21
6.3.9	<i>Settings</i>	22
6.3.10	<i>General Settings</i>	22
6.3.11	<i>Language</i>	22
6.3.12	<i>Unit Type</i>	22
6.3.13	<i>Date & Time</i>	22
6.3.14	<i>Time zone settings</i>	22
6.3.15	<i>Display settings</i>	22
6.3.16	<i>Cascade mode</i>	23
6.3.17	<i>Other Settings</i>	23
6.3.18	<i>Status overview settings</i>	23
6.3.19	<i>Boiler settings</i>	23

IMPORTANT

READ ALL OF THE FOLLOWING WARNINGS AND STATEMENTS BEFORE READING THE INSTALLATION INSTRUCTIONS



DANGER

Danger Sign: indicates the presence of an imminently hazardous situation that will cause death, serious personal injury or substantial property damage.



WARNING

Warning Sign: indicates the presence of a hazardous situation which can cause death, serious personal injury or substantial property damage.



CAUTION

Caution Sign plus Safety Alert Symbol: indicates a hazardous situation which will or can cause minor or moderate personal injury or property damage.



CAUTION

Caution Sign plus a lightning bolt: indicates the risk of electric shock and the potential of hazards due to electric shock.



NOTICE

Notice Sign: indicates special instructions on installation, operation or maintenance that are important but not related to personal injury or property damage.



WARNING

This Boiler must be installed by a licensed and trained Heating Technician or the Warranty is void. Failure to properly install this unit may result in property damage, serious injury to occupants, or possibly death.



1 SAFETY GUIDELINES

FOR YOUR SAFETY READ BEFORE OPERATING

WARNING: If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

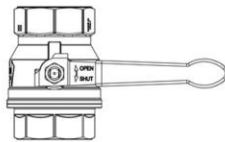
- A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
- B. BEFORE OPERATING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.
- WHAT TO DO IF YOU SMELL GAS
- Do not try to light any appliance
 - Do not touch any electric switch; do not use any phone in your building
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
- C. Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.
- D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

OPERATING INSTRUCTIONS

1. STOP! Read the safety information above (to the left) on this label.
2. Turn off all electric power to the appliance.
3. Set the thermostat to the lowest setting.
4. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
5. The manual gas shut off is located at the back of the appliance cabinet, in the gas piping.
6. The manual gas shut off valve is located at the back of the appliance cabinet; turn the handle  to the full OFF position (perpendicular to the gas piping).
7. Wait five (5) minutes to clear out any gas. If you then smell gas, STOP! Follow "B" in the safety information above on this label. If you don't smell gas, go to the next step.
8. Turn manual gas control valve  to ON position (parallel to gas piping).
9. Turn on all electric power to the appliance.
10. Set the thermostat to the desired setting.
11. If the appliance will not operate, follow the instructions "To Turn Off Gas To Appliance" and call your service technician or gas supplier.




GAS VALVE
ON



GAS VALVE
OFF

TO TURN OFF GAS TO APPLIANCE

1. Turn off all electric power to the appliance if service is to be performed.
2. Set the thermostat to lowest setting.
3. The manual gas shut off valve is located at the back of the appliance cabinet; turn the handle  to the full OFF position (perpendicular to the gas piping).



CONSIGNES DE SÉCURITÉ

POUR VOTRE SÉCURITÉ LISEZ AVANT DE METTRE EN MARCHÉ

AVERTISSEMENT: Quiconque ne respecte pas à la lettre les instructions dans la présente notice risque de déclencher un incendie ou une explosion entraînant des dommages, des blessures ou la mort.

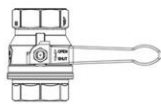
- A. Cet appareil ne comporte pas de veilleuse. Il est muni d'un dispositif d'allumage qui allume automatiquement le brûleur. Ne tentez pas d'allumer le brûleur manuellement.
- B. **AVANT DE FAIRE FONCTIONNER**, reniflez tout autour de l'appareil pour déceler une odeur de gaz. Reniflez près du plancher, car certains gaz sont plus lourds que l'air et peuvent s'accumuler au niveau du sol.
- QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ**
- Ne pas tenter d'allumer d'appareil.
 - Ne touchez à aucun interrupteur ; ne pas vous servir des téléphones se trouvant dans le bâtiment.
 - Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
- Si vous ne pouvez rejoindre le fournisseur, appelez le service des incendies.
- C. Ne poussez ou tournez la manette d'admission du gaz qu'à la main ; ne jamais utiliser d'outil. Si la manette reste coincée, ne pas tenter de la réparer; appelez un technicien qualifié. Le fait de forcer la manette ou de la réparer peut déclencher une explosion ou un incendie.
- D. N'utilisez pas cet appareil s'il a été plongé dans l'eau, même partiellement. Faites inspecter l'appareil par un technicien qualifié et remplacez toute partie du système de contrôle et toute commande qui ont été plongés dans l'eau.

INSTRUCTIONS DE MISE EN MARCHÉ

1. **ARRÊTEZ!** Lisez les instructions de sécurité sur la portion supérieure (à gauche) de cette étiquette.
2. Coupez l'alimentation électrique de l'appareil.
3. Réglez le thermostat à la température la plus basse.
4. Cette appareil ne comporte pas de veilleuse. Il intègre un dispositif d'allumage automatique du brûleur. N'essayez pas d'allumer manuellement le brûleur.
5. L'interrupteur de gaz principal se trouve directement à l'arrière de la chaudière, sur la conduit d'alimentation en gaz.
6. L'interrupteur de gaz principal se trouve directement à l'arrière de la chaudière. Tournez l'interrupteur de gaz principal  dans le sens horaire pour couper l'alimentation en gaz.
7. Attendre cinq (5) minutes pour laisser échapper tout le gaz. Reniflez tout autour de l'appareil, y compris près du plancher, pour déceler une odeur de gaz. Si vous sentez une odeur de gaz, **ARRÊTEZ!** Passez à l'étape B des instructions de sécurité sur la portion supérieure (à gauche) de cette étiquette. S'il n'y a pas d'odeur de gaz, passez à l'étape suivante.
8. Tournez la vanne manuelle de contrôle du gaz  en position ON (parallèle à la tuyauterie de gaz).
9. Mettez l'appareil sous tension.
10. Réglez le thermostat à la température désirée.
11. Si l'appareil ne se met pas en marche, suivez les instructions intitulées "Comment couper l'admission de gaz de l'appareil" et appelez un technicien qualifié ou le fournisseur de gaz.




GAZ ON



GAZ OFF

Comment couper l'admission de gaz de l'appareil.

1. Coupez l'alimentation électrique de l'appareil s'il faut procéder à l'entretien.
2. Réglez le thermostat à la température la plus basse.
3. L'interrupteur de gaz principal se trouve directement à l'arrière de la chaudière. Tournez l'interrupteur de gaz principal  dans le sens horaire pour couper l'alimentation en gaz.



This boiler is equipped with a pressure switch. In the event of a blocked vent the boiler will lockout. No attempt by the user/owner shall be made to put the boiler back into operation. A qualified service technician must be notified of the issue. The boiler shall only be reset by a qualified service technician after they have diagnosed and corrected the issue that caused the safety lockout of the boiler.



“Should overheating occur or the gas supply fail to shut off, do not turn off or disconnect the electrical supply to the circulator. Instead, shut off the gas supply at a location external to the appliance.”



NOTICE

Triangle Tube recommends the installation of a carbon monoxide detector in the boiler room for all installations.



WARNING: There are no user serviceable parts on this boiler. Warranty does not cover defects caused by attempts to service this boiler by someone other than a qualified gas service technician. These attempts could cause property damage, personal injury or loss of life.



WARNING

WARNING: Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury (exposure to hazardous materials) * or loss of life. Installation and service must be performed by a qualified installer, service agency or the gas supplier (who must read and follow the supplied instructions before installing, servicing, or removing this boiler. This boiler contains materials that have been identified as carcinogenic, or possibly carcinogenic, to humans)



Avertissement

AVERTISSEMENT: Une installation, un réglage, une modification, une réparation ou un entretien non conforme aux normes peut entraîner des dommages matériels, des blessures (exposition à des matières dangereuses) ou la mort. L'installation et l'entretien doivent être effectués par un installateur ou un service d'entretien qualifié ou le fournisseur de gaz (qui doivent avoir lu les instructions fournies avant de faire l'installation, l'entretien ou l'enlèvement de la chaudière et les respecter. Cette chaudière contient des matériaux qui ont été identifiés comme étant cancérigènes ou pouvant l'être).



Do not use this boiler if any part has been under water. Immediately call a qualified service technician to inspect the boiler and to replace any part of the control system and any gas control which has been under water



WARNING: Crystalline Silica - Certain components in the combustion chamber may contain this potential carcinogen. Improper installation, adjustment, alteration, service or maintenance can cause property damage, serious injury (exposure to hazardous materials) or death. Refer to Section 19 for information on handling instructions and recommended personal protective equipment. Installation and service must be performed by a qualified installer, service agency or the gas supplier (who must read and follow the supplied instructions before installing, servicing, or removing this boiler. This boiler contains materials that have been identified as carcinogenic, or possibly carcinogenic, to humans).

2 INTRODUCTION

This manual is written for the user.

Triangle Tube is not accountable for any damage caused by failure to correctly follow these instructions.

All documentation produced by the manufacturer is subject to copyright law.

This manual is subject to change without notice.

2.1 Explanations.

WH = Domestic Hot Water

B = Central Heating (for central heating purposes and/or indirect hot water)

BCU = burner control unit

PB = display board / control panel (Pixel Button)

TS = touch screen

1250/2000/3000/4000 = Model number of the boiler.

2.2 Maintenance and inspection

Visually inspect the venting system for proper size and horizontal pitch and determine there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition.

Maintenance and inspection of the boiler should be carried out at the following occasions:

- When a number of similar error codes and/or lock-outs appear.
- At least every 12 months maintenance must be done to ensure safe and efficient operation.

Damage caused by lack of maintenance will not be covered under warranty

Ce manuel est écrit pour l'utilisateur

Triangle Tube n'est pas responsable de tout dommage causé par ne pas suivre correctement de ces instructions.

Tout documentation produit par le fabricant est sous réserve de la loi sur le droit d'auteur. Ce manuel est sujet à changement sans préavis.

Explications

WH = Eau Chaude Sanitaire (ECS)

B = Chauffage central (pour objectif chauffage et/ ou eau chaude indirect)

BCU = commande (burner control unit)

PB = écran (Pixel Button)

TS = écran tactile

1250/2000/3000/4000 = Modèle numéro de chaudière.

Entretien et inspection

Inspecter de façon visuelle le système d'évacuation pour déterminer la grosseur et l'inclinaison horizontale qui conviennent et s'assurer que le système est exempt d'obstruction, d'étranglement, de fuite, de corrosion et autres défaillances qui pourraient présenter des risques.

L'entretien et l'inspection de la chaudière doivent être effectués aux occasions suivantes :

- Lorsqu'un certain nombre de codes d'erreur et/ou de verrouillage semblables apparaissent.
- Au moins tous les 12 mois, l'entretien doit être fait pour assurer un fonctionnement sûr et efficace.

Les dommages causés par le manque d'entretien ne seront pas couverts par la garantie

2.2.1 ON A CONTINUOUS BASIS



- Do not store or use flammable vapors or liquids, such as gasoline, in the vicinity of the boiler.
- Do not store or use in the boiler room and keep the boiler area free from the following items:
 - Spray cans containing chloro-/fluorocarbons
 - Ammonium and/or ammonium solutions
 - Permanent wave solutions (hair product)
 - Chlorinated waxes and/or cleaners
 - Swimming pool chemicals based on chlorine
 - Calcium chloride used for thawing
 - Sodium chloride used for water softening
 - Refrigerant leaks
 - Paint or varnish removers
 - Hydrochloric acid/muriatic acid
 - Cements and glues
 - Antistatic fabric softeners used in clothes dryers
 - Chlorine-type bleaches, detergents, and cleaning solvents
 - Detergents as found in household laundry rooms
 - Adhesives used to fasten building products and other similar products
- Do not expose the boiler to dust from construction or woodworking

2.2.2 ON A MONTHLY BASIS

- Visually inspect the venting system for proper size and horizontal pitch and determine there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition.
- Inspect around the exhaust vent and air inlet terminations outside the home for obstructions. Keep area clear of snow and debris. Inspect also for any gaps at the wall penetration(s) which could allow vented gasses to reenter the home.
- Visually inspect water and gas pipes for leaks.
- Visually inspect to see that the condensate trap is not blocked and is filled with water.
- If there is a condensate neutralizer installed check to see if it has neutralizing media in it.
- Inspect the pressure relief valve for signs of leakage
- If any problems are found during inspection notify a qualified service technician

2.2.3 ON AN ANNUAL BASIS (EVERY 12 MONTHS)

- Have a qualified service technician perform a complete service and maintenance of the boiler in accordance with the Installation, Operation, and Service manual.

 WARNING	<p>WARNING: Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury (exposure to hazardous materials) * or loss of life. Installation and service must be performed by a qualified installer, service agency or the gas supplier (who must read and follow the supplied instructions before installing, servicing, or removing this boiler. This boiler contains materials that have been identified as carcinogenic, or possibly carcinogenic, to humans)</p>
 WARNING	<p>WARNING: Crystalline Silica - Certain components in the combustion chamber may contain this potential carcinogen. Improper installation, adjustment, alteration, service or maintenance can cause property damage, serious injury (exposure to hazardous materials) or death. Refer to Section 19 for information on handling instructions and recommended personal protective equipment. Installation and service must be performed by a qualified installer, service agency or the gas supplier (who must read and follow the supplied instructions before installing, servicing, or removing this boiler. This boiler contains materials that have been identified as carcinogenic, or possibly carcinogenic, to humans).</p>

2.3 For installations in the Commonwealth of Massachusetts.

The following local requirements apply in addition to all other applicable NFPA requirements:

For direct-vent boilers, mechanical-vent heating appliances or domestic hot water equipment, where the bottom of the vent terminal and the intake is installed below four feet above grade the following requirements must comply:

- 1) If not present on each floor level where there are bedrooms, a carbon monoxide detector and alarm must be placed in a living area outside the bedrooms. The carbon monoxide detector and alarm must comply with NFPA 720 (2005 Edition).
- 2) **A carbon monoxide detector and alarm shall be located in the room that houses the boiler and/or equipment and shall:**
 - a) Be powered by the same electrical circuit as the boiler and/or equipment such that only one service switch services both the boiler and the carbon monoxide detector;
 - b) Have battery back-up power;
 - c) Meet ANSI/UL 2034 Standards and comply with NFPA 720 (2005 Edition); and
 - d) Have been approved and listed by a Nationally Recognized Testing Lab as recognized under 527 CMR.
- 3) A product-approved vent terminal must be used, and if applicable, a product approved air intake must be used. Installation shall be performed in strict compliance with the manufacturer's instructions. A copy of the installation instructions shall remain with the boiler and/or equipment at the completion of the installation.
- 4) A metal or plastic identification plate shall be mounted at the exterior of the building, four feet directly above the location of vent terminal. The plate shall be of sufficient size to be easily read from a distance of eight feet away, and read "Gas Vent Directly Below".

For direct-vent boilers mechanical-vent heating boilers or domestic hot water equipment where the bottom of the vent terminal and the intake is installed higher than four feet above grade the following requirements must comply:

- 1) If not present on each floor level where there are bedrooms, a carbon monoxide detector and alarm must be placed in a living area outside the bedrooms. The carbon monoxide detector and alarm must comply with NFPA 720 (2005 Edition).
- 2) **A carbon monoxide detector shall:**
 - a) Be located in the room where the boiler and/or equipment is located;
 - b) Be either hard-wired or battery powered or both; and:
 - c) Shall comply with NFPA 720 (2005 Edition).
- 3) A product-approved vent terminal must be used, and if applicable, a product- approved air intake must be used. Installation shall be in strict compliance with the manufacturer's instructions. A copy of the installation instructions shall remain with the boiler and/or equipment at the completion of the installation.

3 TOUCH SCREEN

The IB boiler / water heater has a touch screen attached, with which you can see the state of the boiler / water heater, control the main parameters and view errors.

3.1 Menu buttons

In the touchscreen user interface the following basic menu buttons are available:



Home

Return to the module screen



Graph

Access the performance graph of the module



Graph

Access the performance graph of the module



Service

Access the service history screen



Settings

Access the Settings screen



Return

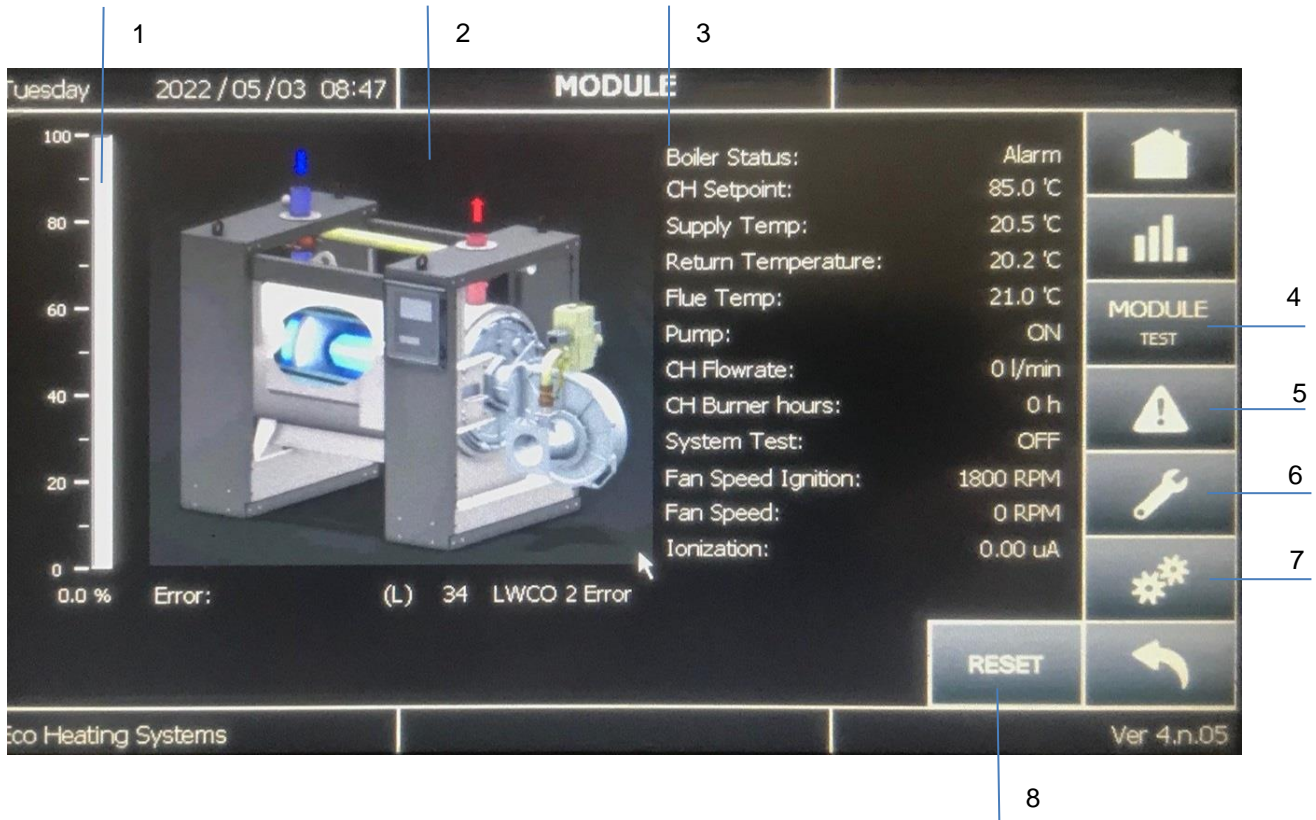
Return to the previous screen

3.2 Start screen

The start screen appears at every power-up

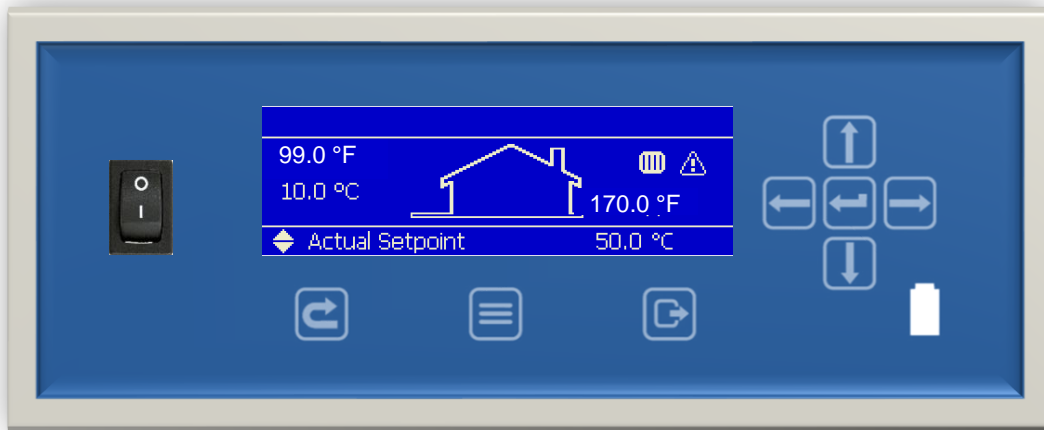
3.3 Module screen

The module screen shows the status information of the boiler / water heater. From this screen all available settings, graphs and tests can be accessed.













No.	Description
1	Power bar, displays the power level of the selected module. Power level is displayed in [%] when metric units are selected. If imperial units are selected the power level is displayed [KBtu] but without power bar.
2	Default module image.
3	Shows status information of the selected module.
4	Module test button, opens the Module test screen.
5	Error button, shows current and past errors (lockout / blocking)
6	Service button, shows burning hours and due service moments.
7	Settings button, shows available settings like language, date and time, and setpoints.
8	Reset button

4 DISPLAY AND BUTTONS

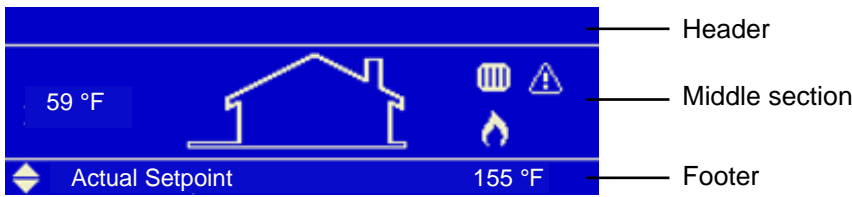


4.1 Explanation of the buttons

	On / off switch. Switches electrical power to the boiler
	Connector for computer cable
	Reset lockout error
	Main Menu
	Escape / Return to the status overview
	Right Enter a menu item or confirm selection in Status overview (when directly setting Actual setpoint or DHW setpoint)
	Left Return to previous menu item or Status overview
	Up Directly select Actual setpoint of DHW setpoint in the Status overview, push RIGHT to confirm and use UP or DOWN to adjust value.
	Down Directly select Actual setpoint of DHW setpoint in the Status overview, push RIGHT to confirm and use UP or DOWN to adjust value.
	Enter Confirm a setting or enter a menu item

4.2 Display configuration.

The Status overview has three different sections that show specific information:



Header

- Left: For cascade systems the cascade icon is shown, with the cascade manager indication (M) or the dependent number.
- Center: Shows the CH and/or DHW disabled icons when CH and/or DHW is disabled
- Right: Shows the time (only if the real-time clock is available).

Icon	Description
	Cascade icon
	CH Disabled
	DHW Disabled

Middle section

- Left: Shows user-configured information (by default only the outside temperature):

Line	Info
Top	Burner state (when enabled)
Middle	Configured/selected temperature (one of the following): <ul style="list-style-type: none"> ▪ Outside temperature ▪ Demand based (Flow or DHW temperature based on active demand) ▪ Flow temperature ▪ DHW temperature ▪ System temperature (module cascade flow/supply temperature)
Bottom	CH water pressure (when enabled)

- Center: The house icon is always displayed.
- Right side: Shows several status icons:

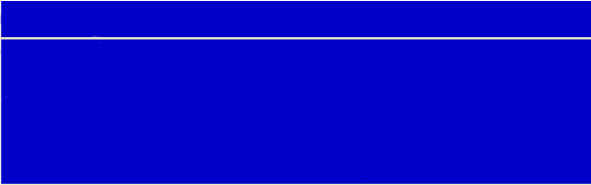
Icon	Description
	CH demand
	DHW demand
	Emergency mode is active (for cascade systems only)
	Burner is on (and flame is detected)
	Frost protection is active
	Anti-legionella program is active.
	Error is set in the Main Control (see footer for error description)

Footer

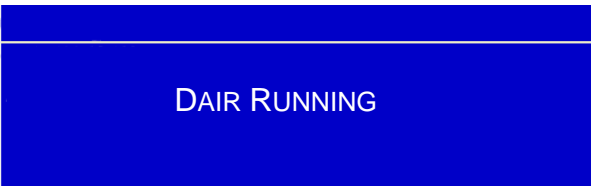
Shows Error/Warning messages when an Error or Warning is set in the Main Control, otherwise a quick menu is displayed where the user can quickly edit setpoints and enable/disable CH or DHW.

5 STARTING THE BOILER / WATER HEATER

If the boiler is not on make sure the gas valve beneath the boiler is open and the power to the boiler has been connected and is turned on, use the on/off button to switch the boiler on. The following screen will occur:

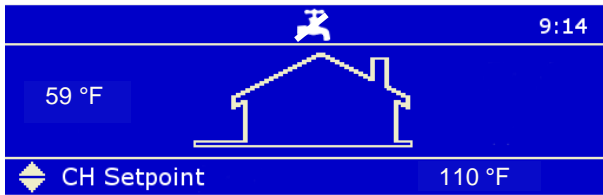


This screen is active during power up until communication with the main Control has been established. After communication has been established the Dair mode starts and the following screen appears:



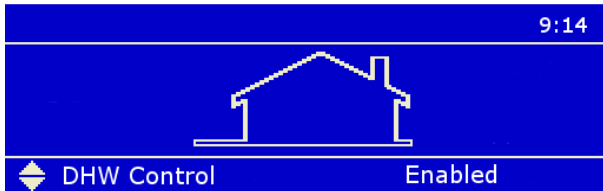
The “De-Air” sequence is a safety function that starts at every power-up and is used to remove the air from the heat exchanger. The De-Air sequence takes around 14 minutes to complete.

After completion or manual ending the “De-Air” sequence one of the following Status overview screens appears:



Central Heating only

OR



Central Heating
AND
Domestic Hot Water

5.1 Changing the Setpoint and/or Enabling CH/DHW.

This can be done directly via the Status overview (as shown above) or via the MENU.

When CH is active, you can adjust the Actual setpoint directly on the bottom of the Status overview. When DHW is active, you can adjust the DHW setpoint directly on the bottom of the Status overview.

This means that when CH is active, you cannot set the DHW setpoint directly via the Status overview. When DHW is active, you also cannot set the Actual setpoint (CH setpoint) directly via the Status overview.

5.1.1 CHANGING THE CENTRAL HEATING SETPOINT DIRECTLY.

Press the UP or DOWN button to select the mode:

◆ CH Setpoint	70.0 °F
---------------	---------

70.0 °F is just an example of a possible temperature value.

Use the left/right buttons to move the ◆ sign to the front of the temperature digits.

CH Setpoint	◆ 70.0 °F
-------------	-----------

Use UP/DOWN buttons to increase/decrease the setpoint.

Press the ENTER or RIGHT button to confirm your alteration or press the BACK or LEFT button to cancel

A setpoint is only visible on the main screen when no error or alert is active. In case of an active error or alert, the bottom right part of the PB screen is used to display the error or alert

5.1.2 CHANGING THE DHW SETPOINT DIRECTLY.

Only applicable if this function is available.

Press the UP or DOWN button to select the mode:

◆ DHW Store Setpoint	57.0 °F
----------------------	---------

57.0 °F is just an example of a possible temperature value.

Use the left/right buttons to move the ◆ sign to the front of the temperature digits.

DHW Store Setpoint	◆ 57.0 °F
--------------------	-----------

Use UP/DOWN buttons to increase/decrease the setpoint.

Press the ENTER or RIGHT button to confirm your alteration or press the BACK or LEFT button to cancel.

A setpoint is only visible on the main screen when no error or alert is active. In case of an active error or alert, the bottom right part of the PB screen is used to display the error or alert

5.1.3 ENABLE / DISABLE CH OR DHW CONTROL.

The CH or DHW Enable/Disable option is available when its set-up in the software (by the installer) only.

Press the UP or DOWN button to select the mode:

◆ CH Control	*****
--------------	-------

OR

◆ DHW Control	*****
---------------	-------


Use the left/right buttons to move the ◆ sign to the front of Enable/Disable text.

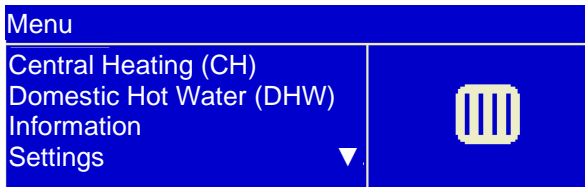
CH Setpoint	◆ Enabled
-------------	-----------



Use UP/DOWN buttons to change from Enabled to Disabled or vice versa

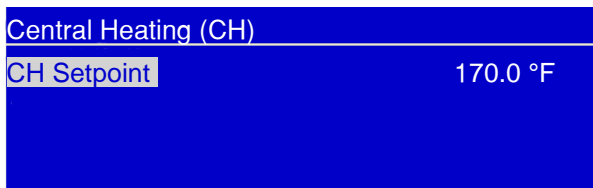
Press the ENTER or RIGHT button to confirm your alteration or press the BACK or LEFT button to cancel





5.2 Changing the setpoint by the menu (Button).

Enter the menu by pressing the MENU  button once. The header in the display shows you are inside the main menu. While scrolling through the menu you will see that the selected menu item is shown in a white rectangle.



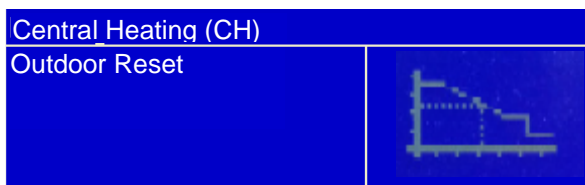
Enter a menu item by pressing CONFIRM  or RIGHT . The header shows your location inside the menu, as seen in the following image:





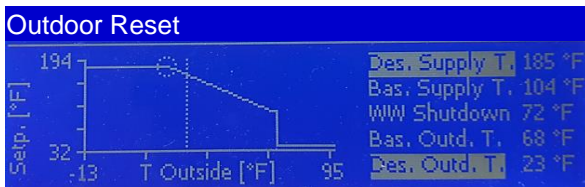
If you are inside the menu (or a menu item) and want to return directly to the Status overview press MENU  / ESC . If you want to go back one step in the menu press BACK/LEFT . Going to the Start-up screen directly is achieved by pressing the MENU  button once. It's also possible to set the setpoint at this stage by performing the same steps as described at § 4.1.1 and § 4.1.2.

5.2.1 CH WITH OUTDOOR TEMPERATURE SENSOR




If CH-mode is set to:
 CH mode 1 – CH with an outdoor temperature reset and thermostat control
 Or
 CH mode 2 – Central Heating with full outdoor temperature reset
 The following display will appear:



Enter a menu item by pressing CONFIRM  or RIGHT . The header shows your location inside the menu, as seen in the following image:



It's now possible to set the Outdoor reset curve by changing the parameters on the righthand of the screen.

If you are inside the menu (or a menu item) and want to return directly to the Status overview press MENU  or ESC . If you want to go back one step in the menu press BACK/LEFT .

6 OTHER MENU ITEMS

6.1 Protected menu items

The display supports 3 different access levels; each with its own set of available menu items/parameters:

Level	Description
0: User	Basic info and settings only that are accessible for everyone.
1: Installer	Advanced information and settings; only to be accessed by an experienced installer/person.
2: Factory	Highest level information and settings, only available/relevant for factory engineers.

Access the Installer level by entering the correct access code (password) for the desired user level. If a certain menu item has been selected, the following password screen will appear where a specific password has to be entered:



Changing protected/safety parameters should only be conducted by experienced, licensed boiler operators and mechanics. Hazardous burner conditions can happen. Improper operations could result in PROPERTY LOSS, PHYSICAL INJURY, or DEATH.

6.2 Language settings






The display supports the following languages:

- Chinese
- Croatian
- Czech
- Dutch
- English
- French
- German
- Greek
- Hungarian
- Italian
- Polish
- Portuguese
- Romanian
- Russian
- Slovak
- Slovene
- Spanish
- Turkish

The following paragraph describes how to change the display language. No matter which language you have set, the menu icons will always remain universal

6.2.1 CHANGE THE LANGUAGE VIA THE MENU

Please follow the next steps, which describe how to set the display to a specific language:

1. From the Status Overview, press the MENU  button once
2. Select "Settings" (press UP/DOWN ↑↓ to highlight/select) and press the CONFIRM  button
3. Select "General Settings" (press UP/DOWN ↑↓ to highlight/select) and press the CONFIRM  button
4. Select "Language" (press UP/DOWN ↑↓ to highlight/select) and press the CONFIRM  button
5. Select the desired language (press UP/DOWN ↑↓ to highlight/select) and press the CONFIRM  button



- For Chinese select '中文'.
- For Croatian select 'Hrvatski'.
- For Czech select 'Česky'.
- For Dutch select 'Nederlands'.
- For English select 'English'.
- For French select 'Français'.
- For German select 'Deutsch'.
- For Greek select 'Ελληνικά'.
- For Hungarian select 'Magyar'.
- For Italian select 'Italiano'.
- For Polish select 'Polski'.
- For Portuguese select 'Português'.
- For Romanian select 'Românesc'.
- For Russian select 'Русский'.
- For Slovak select 'Slovenský'.
- For Slovene select 'Slovenščina'.
- For Spanish select 'Español'.
- For Turkish select 'Türkçe'.





Press ESC  to go back in the menu and return to the Status overview.

6.2.2 CHANGE THE LANGUAGE VIA THE MENU ICONS

The next steps describe how to change the display language via the icons displayed inside the menu, which can be useful if a foreign language is set, causing the user not able to understand the menu.

1. From the Status overview, press the MENU  button once.
Scroll down until the SETTINGS  icon appears on the right-side of the display (and press ENTER ):

In the following menu, press the SETTINGS icon  again (and press ENTER ):

2. In the following menu screen, select the LANGUAGE icon  (and press ENTER  to access the Language menu):
3. Select the desired language by scrolling through the list of available languages.
Press ENTER  to set the desired language, after you will automatically return to the General settings menu. Press ESC  a few times until you have reached the Status Overview again.

6.3 Available Menu items

Depending on the installed/programmed options by the installer following menu items could be visible.

Menu / Parameter	Description	Value / Unit
Central Heating (CH)	Enter the Central Heating (CH) menu	
Domestic Hot Water (DHW)	Enter the Domestic Hot Water (DHW) menu	
Information	Enter the Information menu	
Settings	Enter the Settings menu	
System Test	Enter the System Test menu	

6.3.1 CENTRAL HEATING (CH)

Menu / Parameter	Description	Value / Unit
CH Setpoint	Set the CH setpoint	°C/°F
Outdoor reset	Enter the Outdoor Reset menu	

6.3.2 DOMESTIC HOT WATER (DHW)

Menu / Parameter	Description	Value / Unit
DHW Setpoint	Set the DHW setpoint	°C/°F
DHW Store Setpoint	Set the DHW store setpoint for DHW mode 1 and 2	°C/°F

6.3.3 INFORMATION

Menu / Parameter	Description	Value / Unit
Software versions	Enter the Software Versions menu	
Boiler Status	Enter the Boiler Status menu	
Boiler History	Enter the Boiler History menu	
Error Log	Enter the Error Log menu	
Service	Enter the Service menu	

6.3.4 SOFTWARE VERSIONS

Menu / Parameter	Description	Value / Unit
Display	Display the software checksum	[xxxx xxxx]
Boiler	Display the boiler software checksum	[xxxx xxxx]
Device Group	Display the boiler group ID	xxxMN

6.3.5 BOILER STATUS

Menu / Parameter	Description	Value / Unit
Flow Temperature	Actual supply flow temperature	°C/°F
Flow 2 Temperature	Actual supply 2 flow temperature	°C/°F
Return Temperature	Actual return temperature	°C/°F
DHW Temperature	Actual DHW temperature	°C/°F
DCW Temperature	Actual DCW temperature	°C/°F
Outside Temperature	Actual outside temperature	°C/°F
Flue Temp	Actual flue gas temperature	°C/°F
Flue 2 Temp	Actual flue gas 2 temperature	°C/°F
System Temperature	Actual system temperature	°C/°F
0-10 V Input	Actual 0-10 V input value	V
Flowrate	Actual DHW flowrate	l/min
RT Input	Actual RT input status	open/closed
Water Pressure	Actual CH water pressure	bar/psi
Fan Speed	Actual fan speed	RPM
Ionization	Actual ionization current	µA
State	Actual burner state	
Error	Actual internal error code	#
Calculated Setpoint	Actual CH setpoint	°C/°F

6.3.6 BOILER HISTORY

Menu / Parameter	Description	Value / Unit
Successful Ignitions	Display the number of successful ignitions	#
Failed Ignitions	Display the number of failed ignitions	#
Flame Failures	Display the number of flame losses	#
Operation Days	Display the total time in operation	days
CH Burner Hours	Display the amount of burn hours for CH	hrs.
DHW Burner Hours	Display the amount of burn hours for DHW	hrs.

6.3.7 ERROR LOG

Errors will be logged for a stand-alone system or for a complete cascade system (based on the cascade settings). The display will monitor the error number(s) it receives from the boiler(s): new errors will be stored in the error log.

Note: the error log is a completely different error logging mechanism than the one used by the burner control itself. Therefore, the error log is different from the (internal) error history of the burner control.

The error log can be seen from the error log menu, which is located in the Information menu. In the Error log menu the following options can be selected:

(Sub) Menu item	Description
Error Log	Show the error log (based on the selected filter options)
Filter Error Type	Filter errors based on the Error type (lockout/blocking)
Filter Boiler ID (Cascade System only)	Filter errors based on Boiler ID (Managing, Dep 1, Dep2, etc.)
Clear Error Log	Clear the error log (protected by password)

When no filtering option is selected (disabled) the error log will show all errors for that category. So, if both filters are disabled, the error log will show all the errors in the log.

The following table describes what is displayed inside the Error log:

Error Log content	Description
First line	- Boiler ID (for which boiler the error was detected – cascade system only) - Error code (internal) - Error number - Error type (lockout/blocking)
Second line	- Error description
Bottom line	- Time Stamp (date and time) when the error was detected (in the format configured in the Date & Time settings menu) - The selected error index from the total numbers of errors in the (filtered) error log

6.3.8 SERVICE

The Service reminder will remind the owner/user of the appliance to service the appliance every 2000 burn hours. When service is not done within this time, a message will be shown on the screen: "Service is required!", alternating with the normal status display.

NOTE: with the message "Service is required" the boiler keeps running, but maintenance must be done before resetting this message.

When the Service reminder has become active, the time it takes before service is actually done is being logged (in hours). This time is called the Service Overdue Time.

The Service reminder can be reset by the installer who services the appliance.

Service status information can be viewed: Menu/ Information/ Service

Menu / Parameter	Description	Value / Unit
Service history	Display the service history	
Burn hours since last service	Display the burn hours since last service	hrs.
Burn hours till service	Display the hours remaining until next service	hrs.
Reset Service Reminder	Reset the service reminder	

6.3.9 SETTINGS

Menu / Parameter	Description	Value / Unit
General Settings	Enter the General Settings menu	
Boiler Settings	Enter the Boiler Settings menu	

6.3.10 GENERAL SETTINGS

Menu / Parameter	Description	Value / Unit
Language	Enter the Language menu	
Unit Type	Enter the Unit Type menu	
Date & Time	Enter the Date & Time menu	
Cascade mode	Enter the Cascade Mode menu	
Other Settings	Enter the Other Settings menu	

6.3.11 LANGUAGE

Menu / Parameter	Description	Value / Unit
English	Select the English language	English
Français	Select the French language	Français
中文	Select the Chinese language	中文
Italiano	Select the Italian language	Italiano

6.3.12 UNIT TYPE

Menu / Parameter	Description	Value / Unit
Metric (°C, bar)	Select Metric units	°C, bar
Imperial (°F, psi)	Select Imperial units	°F, psi

6.3.13 DATE & TIME

Menu / Parameter	Description	Value / Unit
Date	Set the current date	dd-mm-yyyy
Time	Set the current time	hh:mm
Time Zone Settings	Enter the time zone settings menu	
Display Settings	Enter the display settings menu	

6.3.14 TIME ZONE SETTINGS

Menu / Parameter	Description	Value / Unit
Time Zone Correction	Set the Time Zone Correction	
Daylight Savings Time	Select the daylight savings time mode	

6.3.15 DISPLAY SETTINGS

Menu / Parameter	Description	Value / Unit
Time Notation	Select 24h or 12h time notation	24h/12h
Date Order	Select the date-format	
Day of Month	Select how the day of month is displayed	1 or 2 digits
Month	Select how the month is displayed	
Year	Select how the year is displayed	2 or 4 digits
Date Separation Character	Select the date separation character	
Day of Week	Select how the day of week is displayed	
Seconds	Select if seconds are displayed	yes/no

6.3.16 CASCADE MODE

Menu / Parameter	Description	Value / Unit
Full	Select full cascade mode	
Basic	Select basic cascade mode	

Note: for proper functioning of the cascade system, some settings have to be changed, see § 15.4.2 "Emergency mode" in the installation manual.

6.3.17 OTHER SETTINGS

Menu / Parameter	Description	Value / Unit
Status overview settings	Enter the status overview settings menu	
Modbus Address	Select the Modbus communication address	0...255
Modbus Stopbits	Select the number of Modbus communication stopbits	1 – 2
Startup Settings	Select the start-up logo (if enabled)	

6.3.18 STATUS OVERVIEW SETTINGS

Menu / Parameter	Description	Value / Unit
Water pressure	Enable/Disable the CH water pressure	On / Off
State	Enable/Disable the burner state	On / Off
Temperature Selection ID	Enable/Disable the temperature selection ID(Tx) where x is the number of the selection	On / Off
Temperature selection	Outside temperature (T0) Demand based (T1) (Flow or DHW temperature based on active demand) Flow temperature (T2) DHW temperature (T3) System temperature (T4) (cascade supply temperature)	

6.3.19 BOILER SETTINGS

Menu / Parameter	Description	Value / Unit
Boiler Parameters	Enter the Boiler Parameters menu	
Module Cascade Settings	Enter the Module Cascade Settings menu	
Boiler Cascade Settings	Enter the Boiler Cascade Settings menu	
Service	Enter the Service menu	

End of user's manual

Your distributor:

Triangle Tube
1240 Forest Parkway, Suite 100
West Deptford, NJ 08066
T: (856) 228 8881
E: info@triangletube.com

