TRX FTVN COMPASS SERIES II FLOOR MOUNT

Residential Condensing Gas Boiler

CASCADE SYSTEM INSTALLATION INSTRUCTIONS

NOTICE

The manufacturer reserves the right to make product changes or updates without notice and will not be held liable for typographical errors in literature.

System Sensor (6000084010) must be purchased separately.

⚠ DANGER

This document is provided in addition to other documentation and does not replace the installation manual. This document must only be used by a qualified installer / service technician. Read all instructions in the installation manual before installing.
Then, if installing a Cascade System, read these instructions. Only then proceed with installation. Perform steps in the given order. Failure to do so could result in substantial property damage, severe personal injury, or death.

⚠ WARNING

Improper installation, adjustment, alteration, service, or maintenance could void product warranty and cause property damage, severe personal injury, or death.

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⚠ WARNING

WARNING: If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or death.

- Do not store or use gasoline or other flammable vapors 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 neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.
- Installation and service must be provided by a qualified installer, service agency or the gas supplier.

Improper installation, adjustment, alteration, service, or maintenance can cause injury, property damage, or death. Refer to this manual. Installation and service must be performed by a qualified installer, service agency, or gas supplier.

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 suppliers' instructions.**
- **If you cannot reach your gas supplier, call the fire department.**

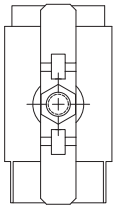
C. Use only your hand to turn the gas control knob. Never use tools. If the handle will not turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.

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.

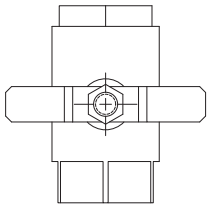
OPERATING INSTRUCTIONS

1. **STOP! Read the safety information above.**
2. **Set the thermostat to lowest setting.**
3. **Turn off all electric power to the appliance.**
4. **This appliance is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.**

GAS VALVE ON



GAS VALVE OFF



5. **Remove front cover.**
6. **Turn gas shutoff valve to "off". Handle will be across the piping, do not force.**
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 next step.**
8. **Turn gas shutoff valve to "on". Handle will be in line with piping.**
9. **Install Front Cover.**
10. **Turn on all electric power to appliance.**
11. **Set thermostat to desired setting.**
12. **If the appliance will not operate, follow the instructions "To Turn Off Gas To Appliance" and call your service technician or gas supplier.**

TO TURN OFF GAS TO APPLIANCE

1. **Set the thermostat to lowest setting.**
2. **Turn off all electric power to the appliance if service is to be performed.**
3. **Remove Front Cover.**
4. **Turn gas shutoff valve to "off". Handle will be across the piping. Do not force.**
5. **Install Front Cover.**

LP-175 Rev 4 3-11-08

SPECIAL ATTENTION BOXES

The following defined terms are used throughout this manual to bring attention to the presence of hazards of various risk levels or to important product information.

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in serious personal injury or death.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in personal injury or death.

⚠ CAUTION

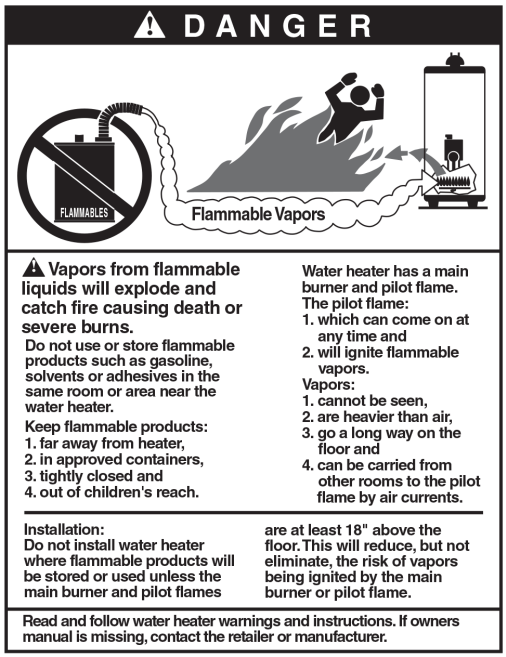
CAUTION indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor personal injury.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE

NOTICE is used to address practices not related to personal injury.



⚠ WARNING

CARBON MONOXIDE DETECTORS

The installer must verify that at least one carbon monoxide alarm has been installed within a residential living space or home following the alarm manufacturer's instructions and applicable local codes before putting the appliance into operation.

For each floor containing bedroom(s), a carbon monoxide detector and alarm shall be placed in the living area outside the bedrooms, as well as in the room that houses the heater. Detectors and alarms shall comply with NFPA 720 (latest edition). Failure to comply with these requirements could result in product damage, severe personal injury, or death.

Part 0 - Introduction

Part 0 - Introduction

The **TRX/FTVN/NC** controller has the internal capacity to stage/lead-lag up to eight **(8)** boilers connected in cascade, without the need for external controls.
Each boiler in cascade is connected to the BUS circuit, which allows the **"Manager boiler"** to communicate with and control the **"Follower Boilers"**.

USE THE INSTRUCTIONS DETAILED IN THE SECTION TO COMPLETE THE INSTALLATION AND SETUP OF THE CASCADE, TAKING CARE TO FOLLOW THE INSTRUCTIONS IN THE ORDER PRESENTED.

Part 1 - Cascade Water Piping

! WARNING

Failure to follow the piping instructions in the installation manual WILL VOID the warranty and may result in property damage, severe personal injury, or death.

Model Size (MBH)	Number of Units Cascaded						
	2	3	4	5	6	7	8
085	1.25"	1.5"	2"	2"	2"	2.5"	2.5"
110 / 110C	1.25"	1.5"	2"	2"	2"	2.5"	2.5"
120	1.25"	1.5"	2"	2"	2"	2.5"	2.5"
150 / 150C	1.5"	2"	2"	2.5"	2.5"	3"	3"
199 / 199C	1.5"	2"	2"	2.5"	2.5"	3"	3"

Table 1 - Manifold Pipe Sizes in Inches – NOTE: The above pipe sizes are based on 20°F Delta and maximum water velocity between 5 - 6 ft/s

NOTICE

Figures illustrate the basic plumbing concept of a cascade installation. Primary / Secondary is required to provide adequate flow for the secondary circuits.

CAUTION

A maximum of eight (8) models may be installed in a cascade system. Installing more than the maximum amount of boilers in a cascade system will result in system problems, property damage, and premature boiler failure. Such problems ARE NOT covered by product warranty.

SYSTEM (NON-COMBI) BOILERS
If the boiler's DHW connection is not used, cap it and set CH forced diverter position = ON to lock the 3-way valve in the central heating position. Access the CH forced diverter position setting from the Advanced Settings menu of the DHW Setup menu under the Tech Menu. It is recommended to adjust the setting while the unit is in standby without the internal circulator running. Failure to lock the valve in the central heating position may prevent the boiler from delivering heat, which could result in property damage.

In mixed temperature applications, a mixing valve is required for the protection of low temperature loops.

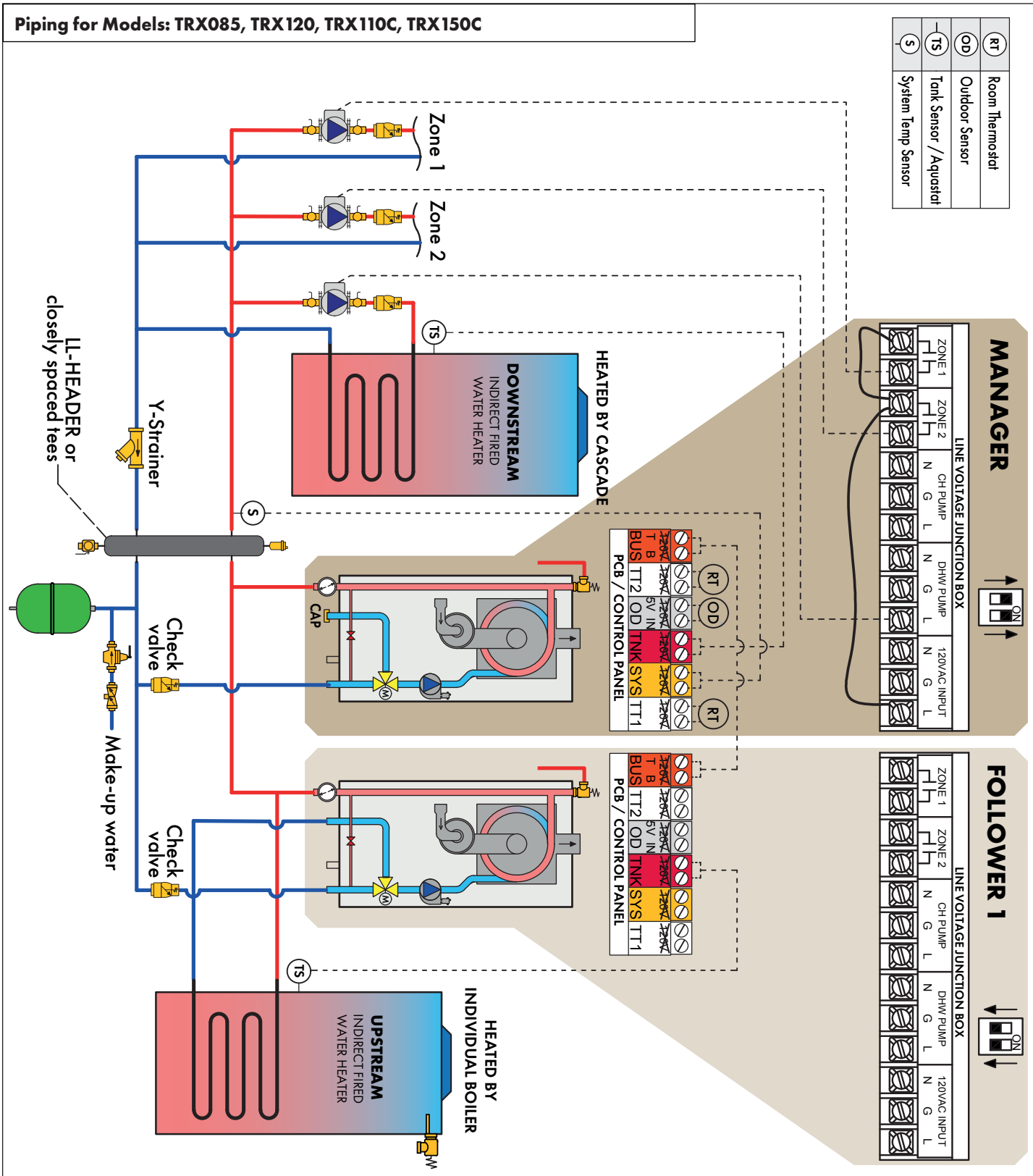
! WARNING

The piping will not support the weight of the circulators. Refer to the circulator manufacturer's instructions to properly support the circulator. Failure to comply with these instructions could result in property damage, severe personal injury, or death.

NOTES:

1. These drawings are meant to show system details piping concept only. Installer is responsible for all equipment and details required by local codes.
2. Primary / Secondary Loop: All closely spaced tees shall be within 4 pipe diameters center to center spacing.
3. A minimum of 6 pipe diameters of straight pipe shall be installed upstream and downstream of all closely spaced tees.
4. The minimum individual boiler pipe size of DHW piping should be ¾" diameter and CH piping should be 1" in diameter.
5. Circulators are shown with isolation flanges. The alternative is standard flanges with full port ball valves. Purge valves can be used with circulator flanges as an alternative.
6. Piping shown is Primary/Secondary.
7. Install a minimum of 12 diameters of straight pipe upstream of all circulators.
8. **Unit is equipped with built-in primary pump.** This pump is sized to ensure proper flow rate through the boiler heat exchanger and related piping provided the piping is done correctly.
9. IWH Applications - a mixing valve is recommended if the DHW temperature is set above 119°F.

Piping for Models: TRX085, TRX120, TRX110C, TRX150C

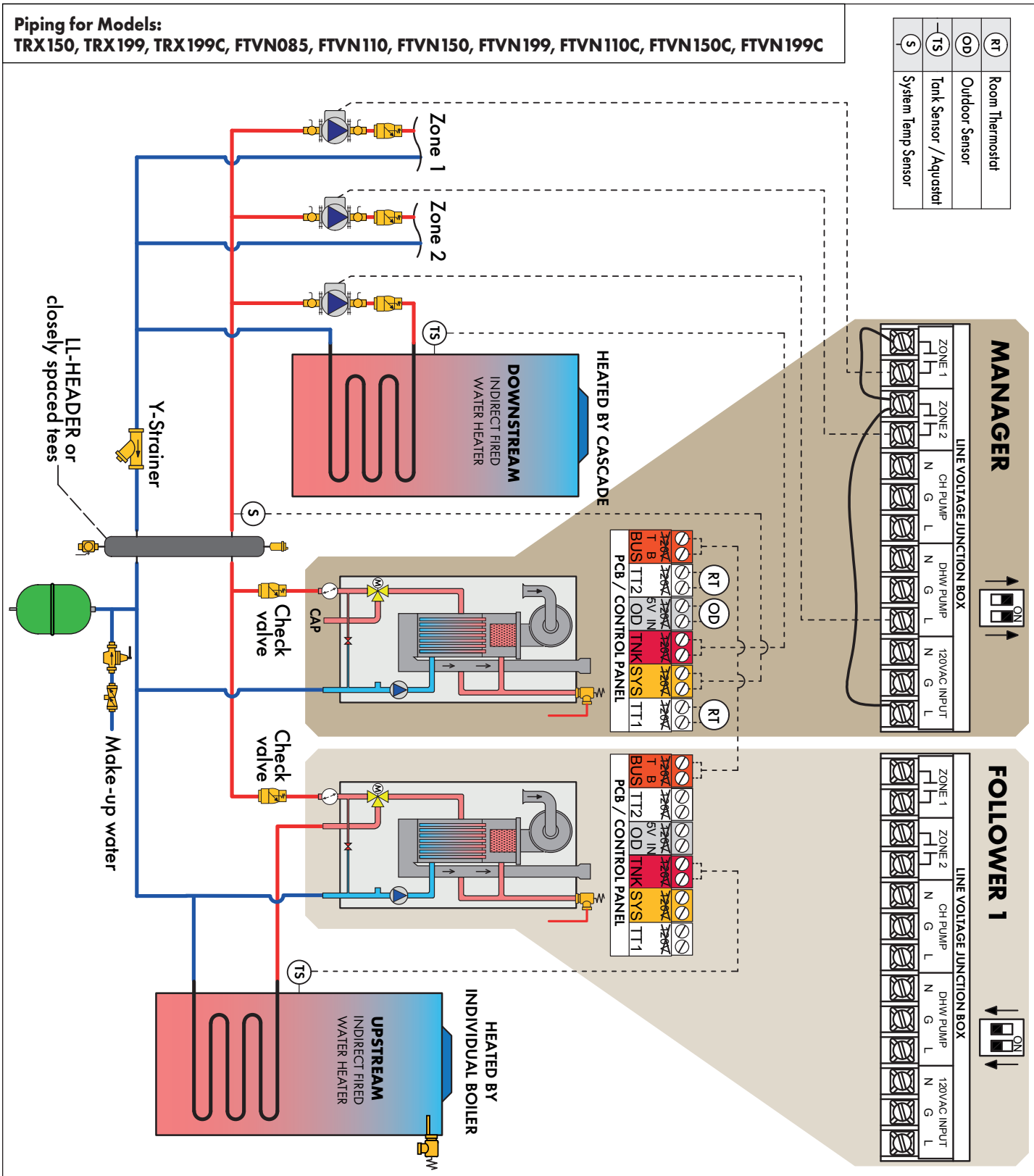


NOTICE

Before connecting BUS terminals, follow the instructions in Part 2 - General installation instructions, and Part 3 - Setup Procedure. Connecting to the BUS terminals without following these instructions could damage the main PCB.

Figure 1 - Two (2) Cascaded Boilers with Upstream or Downstream Indirect Water Heater - Piping and Wiring for TRX085, TRX120, TRX110C, TRX150C Models ONLY

Piping for Models:
TRX150, TRX199, TRX199C, FTVN085, FTVN110, FTVN150, FTVN199, FTVN110C, FTVN150C, FTVN199C

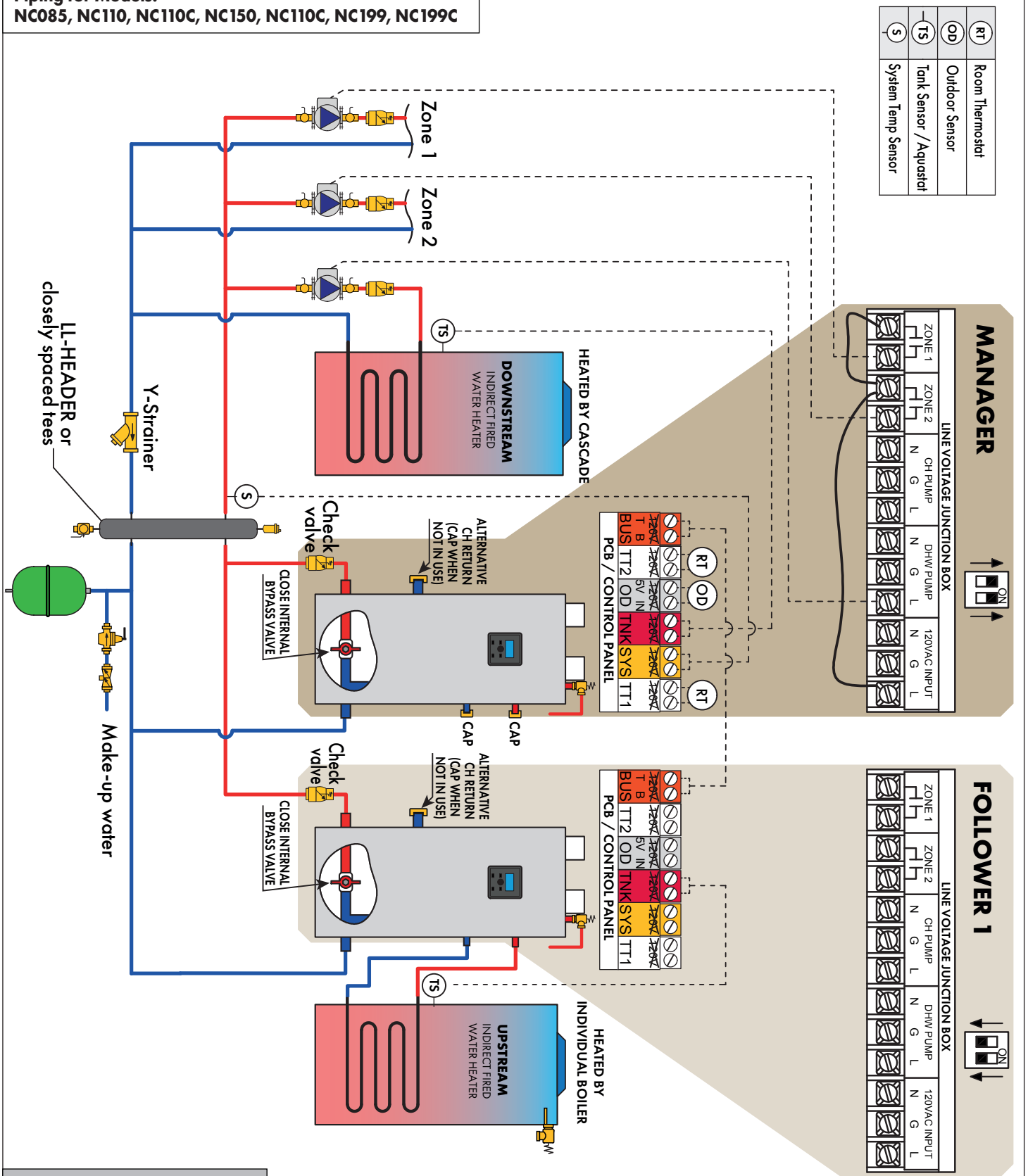


NOTICE

Before connecting BUS terminals, follow the instructions in Part 2 - General installation instructions, and Part 3 - Setup Procedure. Connecting to the BUS terminals without following these instructions could damage the main PCB.

Figure 2 - Two (2) Cascaded Boilers with Upstream or Downstream Indirect Water Heater - Piping and Wiring for TRX150, TRX199, TRX199C, and all FTVN models ONLY.

Piping for Models:
NC085, NC110, NC110C, NC150, NC110C, NC199, NC199C



NOTICE

Before connecting BUS terminals, follow the instructions in Part 2 - General installation instructions, and Part 3 - Setup Procedure. Connecting to the BUS terminals without following these instructions could damage the main PCB.

Figure 3 - Two (2) Cascaded Boilers with Upstream or Downstream Indirect Water Heater - Piping and Wiring for NC085, NC110, NC110C, NC150, NC110C, NC199 and NC199C models ONLY.

Part 2 - General Installation Instructions

Before performing the Setup Procedure, and before turning the power on or connecting the BUS terminals to each boiler, proceed with the following General Installation Instructions:

1. **Plumbing** – install as many as 8 boilers in parallel in a primary/secondary plumbing configuration as illustrated in Figures 1-3. Size common piping as per Table 1.
2. **CH/Zone Pump(s)** (if applicable) – connect to the CH PUMP or ZONE outputs at the junction box of the boiler to be set as Manager; see Figures 1-3. See IOM if using zone valves.
3. **DHW Pump – Downstream IWH** (if applicable) – connect to the DHW PUMP output at the junction box of the boiler to be set as Manager; see Figures 1-3.
4. **System Sensor (mandatory)** – install a system sensor (NTI P/N: 6000084010) on the common outlet (supply) pipe feeding the heating system and wire it to the SYS input of the boiler to be set as Manager; see Figures 1-3.
   NOTE: A system sensor is needed for the cascade system to function properly. Failure to connect the system sensor will result in "Blocking Error 115" (Common flow sensor error), and the cascade will function using an average of the outlet temperature from each boiler in cascade.
5. **Outdoor Sensor** (optional) – wire the outdoor sensor to the OD input of the boiler to be set as Manager; see Figures 1-3.
6. **Downstream IWH DHW Tank Sensor or Aquastat** (if applicable) – wire to the TANK input of the boiler to be set as Manager; see Figures 1-3.
7. **Upstream IWH DHW Tank Sensor or Aquastat** (if applicable) – wire to the TANK input of the boiler that the Upstream IWH is piped to; see Figures 1-3.
   NOTE: The Manager boiler cannot be configured to heat an Upstream IWH if the cascade system includes a Downstream IWH. When a Downstream IWH is present, Upstream IWHs may only be connected to the Follower Boilers.
8. **CH Thermostat Inputs and Zone Outputs** – connect up-to two (2) thermostat inputs to the TT1 and TT2 inputs of the boiler to be set as Manager. Connect the respective zone loads (pumps or valves) to the same boiler's ZONE 1 and ZONE 2 outputs.
   NOTE: Each boiler is equipped with a zone controller capable of operating 2 zones, but only the zone controller of the Manager boiler is active in a cascade configuration. The zone controller of the Follower boilers must be deactivated by disconnecting the communication cable, or by moving the dip switches to the OFF position; see Figures 1-3.

Part 3 - Setup Procedure

After completing the General Installation above, and before turning the power on or connecting the BUS terminals to each boiler, proceed with the following Setup Procedure in the order listed:

1. **Disconnect WiFi Cable from Follower Boilers** – Permanently disconnect and remove the WiFi Cable from each Follower boiler; only the Manager boiler can be connected to WiFi – see Figure 4. Connecting more than one WiFi module will result in a BUS network communication error.
2. **Configure Junction Box Dip Switches** – move the dip switches to the OFF position at the junction box (**2** - Figure 4) of each Follower boiler. Dip switches at the Manager boiler must remain in the factory ON position. See Figures 1-3.

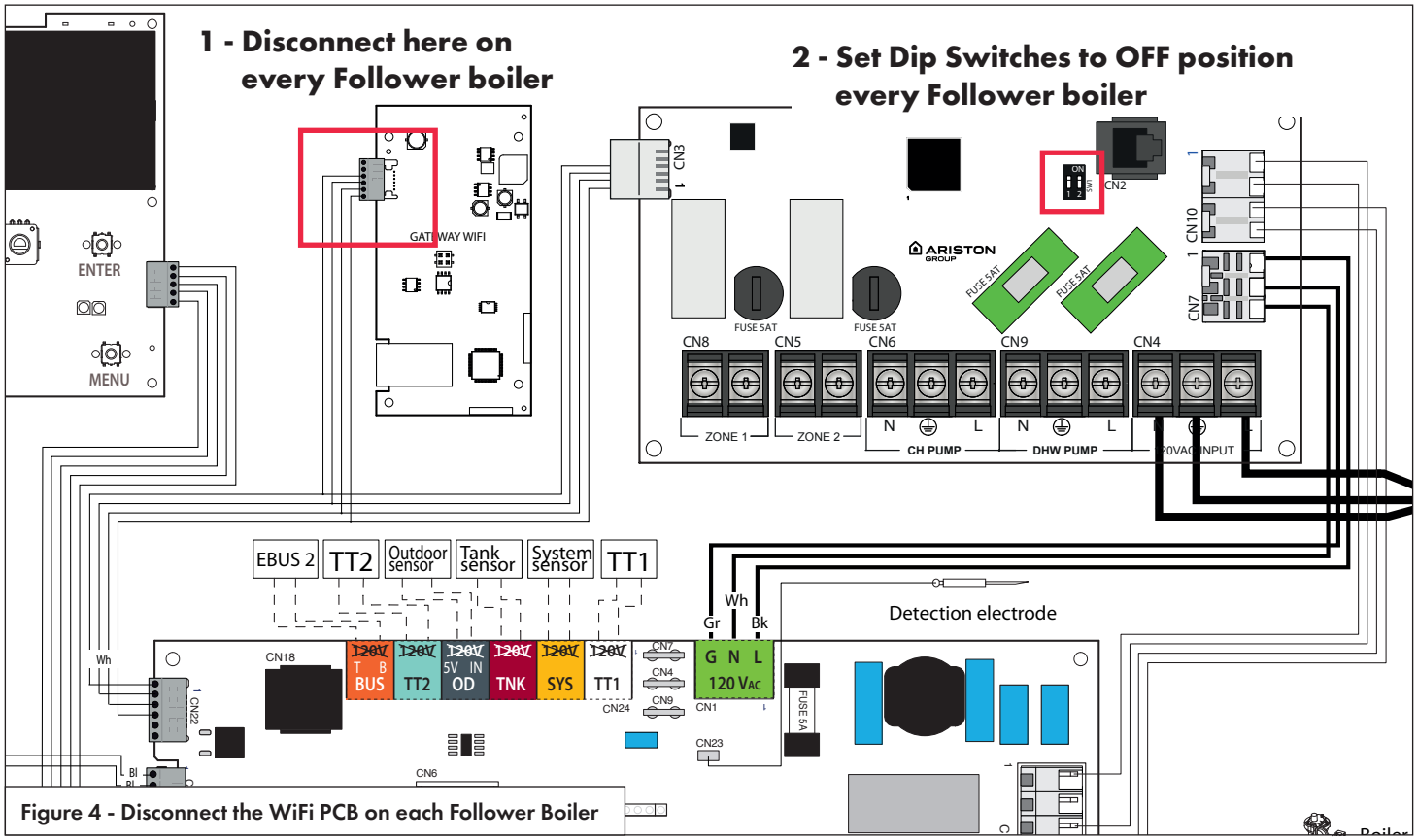


Figure 4 - Disconnect the WiFi PCB on each Follower Boiler

3. **Set Boiler Address** – turn the power on to each boiler and set the Boiler Address from the **Cascade Setup** menu. Set one boiler as Manager and the others as Follower 1, 2, etc.
   Note: Each Follower must have a unique address.
   Giving boilers the same address will result in a Configuration Conflict (CONFL) error code.

4. **BUS Connection** – with the power turned OFF to all boilers, wire the BUS connections of each boiler together in parallel (i.e., daisy-chained). Make sure to maintain correct polarity of B and T terminals. See Figures 1-3.

5. **Configure Settings**
   A. **CH Setup and WiFi Connectivity** – are managed by the Cascade Manager and need to be set from the display of the Manager boiler via the typical menus; see the applicable sections in the boiler Installation and Operation Manual.
      Use the **Setup Wizard** to have the display walk you through the setup procedure.
   B. **DHW Setup**
      NOTE: The DHW Setpoint is shared for Upstream and Downstream IWHs and are adjusted from the Manager boiler via the **Setup Wizard** or the **DHW Setup** menu.
      - **Downstream IWH** – if the cascade system is heating a Downstream IWH, configure the DHW Mode from the **DHW Setup** menu of the Manager boiler to **4-Tank Sensor (Cascade)** or **5-Aquastat (Cascade)**, in accordance with the device used.
        NOTE: In applications with a Downstream IWH, the Manager cannot be a Combi boiler.
      - **Upstream IWH** – if connecting an Upstream IWH to an individual boiler configure the respective boiler's DHW Mode accordingly.
        NOTE: An Upstream IWH cannot be connected to a Combi boiler.
        NOTE: An Upstream IWH cannot be connected to the Manager boiler if the system includes a Downstream IWH.

      WARNING: If the boiler's DHW connection is not used, cap it and set CH forced diverter position = ON to lock the 3-way valve in the central heating position. Access the CH forced diverter position setting from the **Advanced Settings** menu of the **DHW Setup** menu under the **Tech Menu**. It is recommended to adjust the setting while the unit is in standby without the internal circulator running. Failure to lock the valve in the central heating position may prevent the boiler from delivering heat, which could result in property damage.
   C. **Emergency Setpoint** – at each Follower boiler, set the Emergency Setpoint to the temperature the respective boiler should maintain in the event communication with the Manager boiler is lost. When communication with the Manager is lost, each boiler will (after a delay of up to 30-minutes) operate at its respective Emergency Setpoint temperature.
   D. **BMS Control –** if using a Building Management Clip-in for 0-10V/4-20mA external control of the cascade, install the Clip-in accessory (3319457) in the Manager boiler, and configure the Control Mode setting accordingly from the **BMS Control** menu of the Manager boiler.

Part 4 - Cascade Setup Menu

The **Cascade Setup** menu must be accessed to set the Boiler Address of each boiler that will be configured as part of a cascade system; see Setup Procedure above.
Once the cascade system is configured, the **Cascade Setup** menu of the Manager boiler can be accessed to modify the operation of the cascade system.
For Follower boilers in cascade, the **Cascade Setup** menu can be accessed to modify the Emergency Setpoint or Burner Run Hours Harmonization settings.

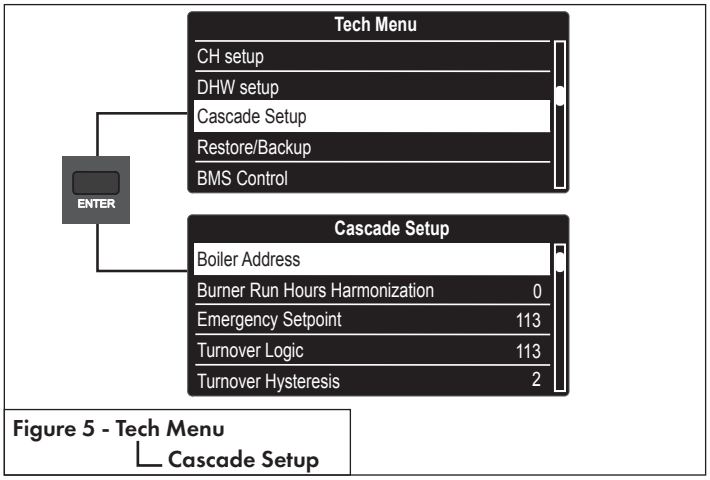


Figure 5 - Tech Menu
└ Cascade Setup

Setting [1]	Parameter [2]	Range/Description	Factory setting
Boiler Address		Establishes the configuration and role of the given boiler on the communication BUS: **Unconfigured** – boiler will only operate in Emergency mode. Boilers connected on the communication BUS, without one configured as Manager, will eventually default to Unconfigured. **Single Boiler** – for "stand alone" boilers, that are not connected to other boilers via the communication BUS. **Manager** – for the managing boiler in a cascade of multiple boilers. Only one boiler in a cascade can be configured as Manager. **Follower 1...7** – for non-managing boilers in a cascade of multiple boilers. Each Follower in the cascade must have a unique address, i.e., 1...7. **Note:** for boilers already configured as a Follower boiler, setting options Single Boiler and Manager will not be available. To make them available, first set the Follower as Unconfigured and disconnect it from other boilers on the BUS.	Single Boiler
Emergency Setpoint	2.10.3/ 34…40.10.3	Sets the boiler operating temperature when there is a malfunction of the BUS circuit. Applicable for Unconfigured and Follower boilers when the cascade Manager is not connected on the BUS.	113 °F
Burner Run Hours Harmonization	2.7.7/ 34…40.7.7	Sets the burner run hours statistics to equal the average of the other boilers in the cascade. Perform this function ONLY on the boiler where the PCB has just been replaced. Settings is not applicable for Single boilers.	
Turnover Logic*	25.0.2	Sets the power division algorithm for the cascade. **Min Off-On Switches** – when more than one boiler is servicing the demand, one is subtracted (switched off) when the required power is less than the sum of the active boilers operating at the Min Turnover Level. Generally, results in a greater number of boilers operating at a lower power level. **Max Power Division** – when more than one boiler is servicing the demand, one is subtracted (switched off) when the required power could be achieved with one fewer boiler operating at or below the Max Turnover Level. Generally, results in a fewer number of boilers operating at a higher power level. In each scenario a new boiler is added (switched on) when the required power is greater than the sum of the active boilers operating at the Max Turnover Level.	
Turnover Hysteresis*	25.0.3	Sets the amount the required power level must drop below Min Turnover Level before a boiler is switched off. See Min Turnover Level. (Range = 0-20%)	2%
Min Turnover Level*	25.0.4	Sets the minimum power level for multiple boilers operating together in a cascade. If the required power is less than the sum of the active boilers operating at the Min Turnover Level (less the Turnover Hysteresis) a boiler is switched off. To avoid short cycling, ensure the Min Turnover Level is set to less than half of the Max Turnover Level setting. Only applicable when Turnover Logic = Min Off/On Switches. (Range = 20-MaxTurnoverLevel)	20%
Max Turnover Level*	25.0.5	Sets the maximum power level for operable boilers when not all boilers in cascade are switched on. If the required power is greater than the sum of the active boilers operating at the Max Turnover Level, then the next boiler is switched on. (Range = MinTurnoverLevel-100%)	70%

Notes:
1. Settings marked with an asterisk (*) are only applicable for the Manager boiler, and depending on the software version of the display, may only be available from the Complete Menu.
2. The parameter number for Manager boilers begin with 2 or 25, while Follower boilers begin with 34-40 (34 for Follower 1, 35 for Follower 2 and so on). Follower boiler settings are also available from the "NTI net" webapp, and from the Complete Menu of the Manager.

From the Home Page of the manager boiler, you can toggle between a Boiler Home Page and a Cascade Home Page using the rotary dial. Turn the dial right (clockwise) to view the **Cascade Home Page**; turn the dial left (counterclockwise) to view the **Boiler Home Page**. See details of the respective home pages in Figure 7 below.

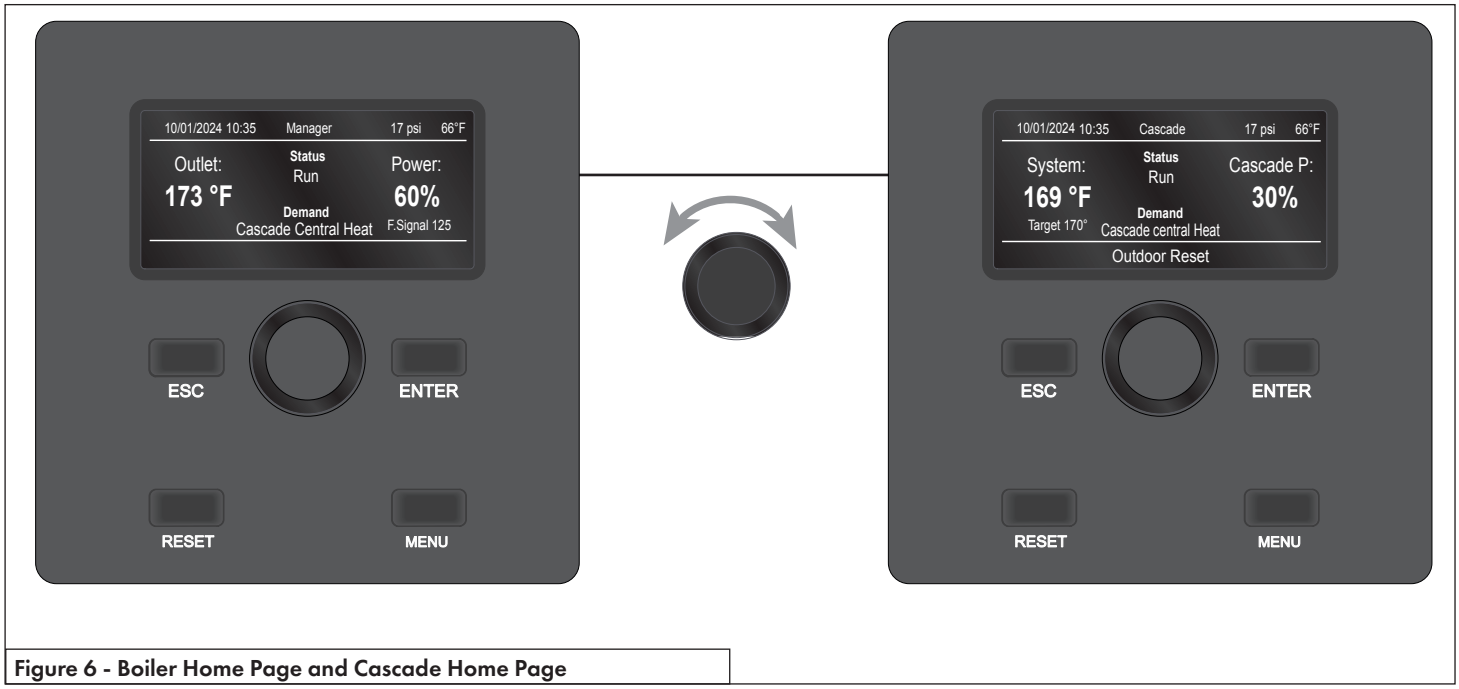


Figure 6 - Boiler Home Page and Cascade Home Page

NOTICE

Detail of the information provided by the display on the next page.

Part 5 - Cascade Home Page

Display Overview

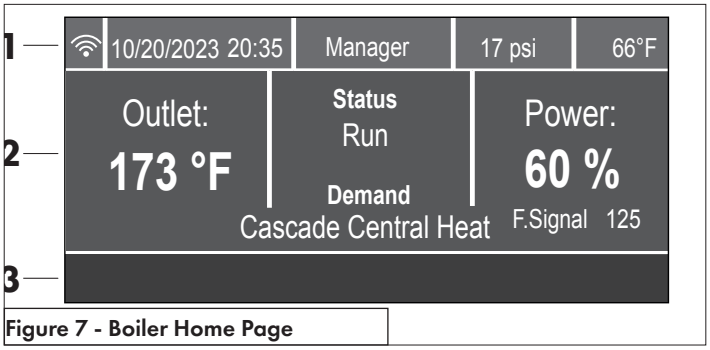


Figure 7 - Boiler Home Page

Description			
1	**General Information**		
	10/20/2023 20:35 | Manager | 17 psi | 66°F		
	a.	**WiFi Status (not applicable for Follower boiler)**	
		WIFI Upgrade	
		WiFi Active	
		WIFI connected to the local network, but without access to the server	
		WIFI not configured	
	b.	**10/20/2023 20:35**	Date and Time
	c.	**Manager**	Boiler configuration (Manager or Follower #)
	d.	**17 psi**	Boiler water pressure
	e.	**66 °F**	Outdoor temperature (a flashing house with thermometer icon will appear if AUTO Function (Outdoor Reset) - is enabled while no outdoor temperature reading is available). Not displayed on Follower boiler
2	**Boiler working mode**		
	2a	Outlet: 173 °F	Boiler **Outlet** temperature, or **DHW** temperature and **Target** for Combi or Tank Sensor demand
	2b	Status Run / Demand Cascade Central Heat	Boiler Burner Status Boiler Demand type
	2c	Power: 60 % F.Signal 125	Boiler Burner power (%) and flame signal
3	**Additional details**		
	3a		Boiler working mode, functional, or error details

Table 2 - Manager Boiler Display Descriptions

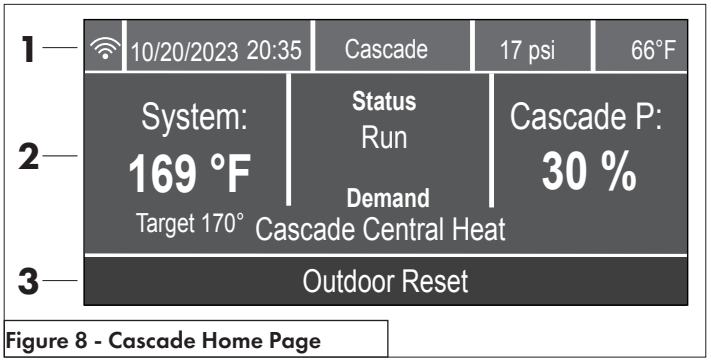


Figure 8 - Cascade Home Page

Description			
1	**General Information**		
	10/20/2023 20:35 | Cascade | 17 psi | 66°F		
	a.	**WiFi Status**	
		WIFI Upgrade	
		WiFi Active	
		WIFI connected to the local network, but without access to the server	
		WIFI not configured	
	b.	**10/20/2023 20:35**	Date and Time
	c.	**Cascade**	Cascade home page
	d.	**17 psi**	Manager Boiler water pressure
	e.	**66 °F**	Outdoor temperature (a flashing house with thermometer icon will appear if AUTO Function (Outdoor Reset) - is enabled while no outdoor temperature reading is available)
2	**Boiler working mode**		
	2a	System: 169 °F Target 170°	**System** temperature and **Target**, or **DHW** temperature and **Target** for Tank Sensor (Cascade) demand
	2b	Status Run / Demand Cascade Central Heat	Cascade Status Cascade Demand type
	2c	Cascade P: 30 %	Cascade Power (%)
3	**Additional details**		
	3a	Outdoor Reset	Cascade working mode, functional, or error details

Table 3 - Cascade Display Descriptions

NOTICE

Refer to the "Troubleshooting" section in the boiler Installation Manual.

Part 7 - Complete Menu

To navigate the Complete Menu proceed as follows:

1. From the Tech Menu, turn the dial to highlight "Complete Menu" and press ENTER.
2. Turn the dial to select the menu level and press ENTER.
3. Turn the dial to select the sub menu level and press ENTER.
4. Turn the dial to select the parameter and press ENTER.
5. Modify the setting by turning the dial, press ENTER to save the value.
   Note: pressing ESC exits the screen without saving the new value.
6. Press ESC to return to the previous screen.

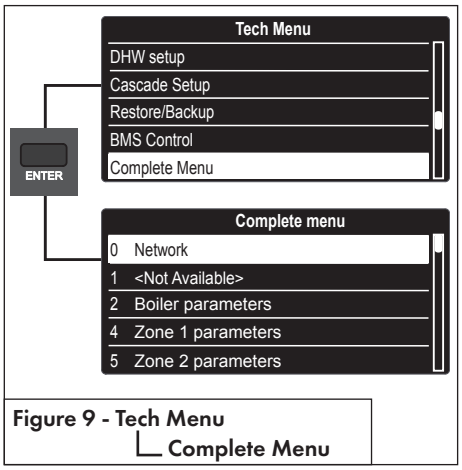


Figure 9 - Tech Menu
└ Complete Menu

COMPLETE MENU

0	**NETWORK**	
0.	2	Bus Network
0.	4	User interface
2	**Boiler parameters**	
2.	0	General
2.	1	Free parameters
2.	2	Settings
2.	3	Boiler CH parameters - 1
2.	4	Boiler CH parameters - 2
2.	5	DHW parameters
2.	6	Boiler Manual Control
2.	7	Test & Utilities
2.	8	Reset Factory Settings
2.	9	Other parameters 1
2.	10	Other parameters 2
4	**Zone 1 parameters**	
4.	0	Temperature Settings
4.	1	Automatic Winter Mode
4.	2	Zone 1 settings
4.	3	Diagnostics
4.	7	Zone 1 regulation parameters
5	**Parametri Zona 2**	
5.	0	Temperature Settings
5.	1	Automatic Winter Mode
5.	2	Zone 2 settings
5.	3	Diagnostics
5.	7	Zone 2 regulation parameters
6	**Parametri Zona 3**	
6.	0	Temperature Settings
6.	1	Automatic Winter Mode
6.	2	Zone 3 settings
6.	3	Diagnostics
6.	7	Zone 3 regulation parameters

7	**External 3 zone control module**	
7.	0	
7.	1	Manual Mode
7.	2	General Zone Module
7.	3	Cooling
7.	8	Error History
7.	9	Reset Menu
8	**Service Paramters**	
8.	0	Statistics - 1
8.	1	Statistics - 2
8.	2	Boiler Current Status
8.	3	Boiler Current Temperatures
8.	4	Storage Current Status
8.	5	Service
8.	6	Error History
8.	7	Free parameters
19	**Connectivity**	
19.	0	WiFi Configuration
19.	1	Connectivity Info
19.	2	Reset Menu
21	**2-Zone Control Module**	
21.	1	2-Zone Control Module Test
21.	4	2-Zone Control Module Diagnostics
21.	8	2-Zone Control Module Configuration

25	**Cascade Manager**	
25.	0	General
25.	1	System Settings
25.	2	Domestic Hot Water
25.	3	System Diagnostics
25.	4	Cascade Diagnostics
25.	5	Error History
25.	6	Reset Menu
34...40	**Cascade Follower 1 - 7**	
34...40	0	General
34...40	1	Free Parameters
34...40	2	Settings
34...40	3	Central Heating-1
34...40	4	Central Heating-2
34...40	5	Domestic Hot Water
34...40	6	Boiler Manual Settings
34...40	7	Test & Utilities
34...40	8	Reset Factory Settings
34...40	9	Other-1
34...40	10	Other-2
34...40	11	Boiler Statistics-1
34...40	12	Boiler Statistics-2
34...40	13	Boiler
34...40	14	Boiler Temperature
34...40	15	Storage
34...40	16	Service
34...40	17	Error History
34...40	18	Free Parameters
42	**BMS Control**	
42.	0	General
42.	1	Analog level settings
42.	2	Diagnostics

Table 4 - Complete Menu structure

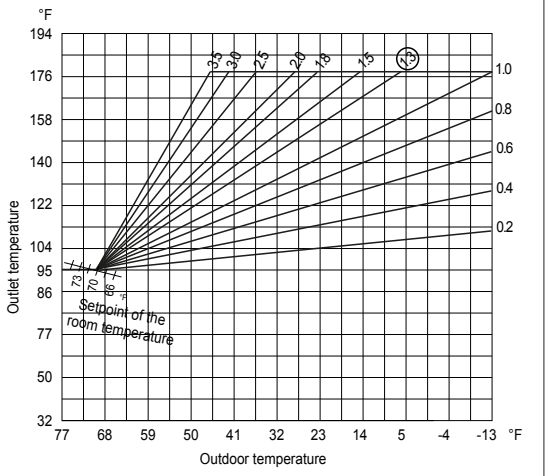
Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
0	**NETWORK**				
0.	**2**	**BUS NETWORK**			
0.	**2.**	**0**	Network presence	Boiler Remote Modem Multifunction clip	
0	**4**	**USER INTERFACE**			
0.	**4.**	**1**	Backlight timing	1 - 10 minutes or 24 hours	10
0.	**4.**	**6**	Cascade Boiler Configuration	UNDEF = undefined b-SIN = single boiler b-MAS = master boiler b-FL1 = follower #1 boiler b-FL2 = Follower #2 b-FL3 = Follower #3 b-FL4 = Follower #4 b-FL5 = Follower #5 b-FL6 = Follower #6, b-FL7 = Follower #7	b-SIN
			RESERVED FOR CASCADE APPLICATIONS. *See Cascade Instruction Manual for details.*		
2	**BOILER PARAMETERS**				
2.	**0**	**GENERAL**			
2.	**0.**	**0**	DHW Setpoint Temperature **COMBI models**	97 - 140°F	125
			Tank Setpoint (Comfort) **non-COMBI models**	104 - 149°F	125
2.	**0.**	**1**	DHW Preheating	0 = Disabled 1 = Enabled	1
			Enables/disables comfort on/off setting via COMFORT button and parameter 2.5.0.		
2.	**1**	**FREE PARAMETERS (DO NOT USE)**			
2.	**1.**	**1**	DO NOT USE nnonn se vede		
2.	**1.**	**2**	3-way Valve Anti-Noise Function	0-10	0
			Function can be utilized to reduce the stroke of the 3-way valve when transitioning between the CH and DHW positions. Consult NTI Technical Support before utilizing.		
2.	**1.**	**3**	DO NOT USE		
2.	**1.**	**5**	DO NOT USE		
2.	**1.**	**6**	DO NOT USE		
2.	**1.**	**9**	Flow Sensor Type	0 = Flow Switch 1 = Flow Meter	0
			Combi models models use a flowswitch. Not applicable for non-COMBI models.		
2.	**2**	**SETTINGS**			
2.	**2.**	**0**	Ignition Power	25 - 65	
			See the correct value on the Installation manual of the boiler.		
			RESERVED FOR TECHNICAL ASSISTANCE Only if the PCB is replaced.		
2.	**2.**	**3**	Floor or 2nd Room Thermostat	0 = Floor 1 = Room	1

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
2.	**2.**	**4**	AUTO Function (Outdoor Reset)	0 = Disabled 1 = Enabled	0
2.	**2.**	**5**	CH Start Delay Heating ignition delay (for new demand)	0 = ALWAYS OFF , 1 = 10 seconds 2 = 90 seconds, 3 = 210 seconds	0
2.	**2.**	**8**	Boiler version - **TRX C** CANNOT BE MODIFIED	0 = Combi	0
			Boiler Version - **TRX** Type of DHW control for Indirect Hot Water Heater (Tank Sensor or Aquastat)	0 = NOT USED 1 = Storage with Tank Sensor 2 = Storage with Aquastat	2
2.	**2.**	**9**	Set boiler heating power	0 - 682 kBtu/h	
			Only if the PCB is changed		
2.	**3**	**BOILER CH PARAMETERS - 1**			
2.	**3.**	**1**	Max CH Power percentage	0 - 100	100
			See the correct value on the Installation manual of the boiler.		
			Limited by the absolute values defined by parameters 2.3.3 and 2.3.4, i.e., 0 = min power and 100 = max power.		
2.	**3.**	**2**	Max DHW percentage CANNOT BE MODIFIED	55 - 100	
			See the correct value on the Installation manual of the boiler.		
			RESERVED FOR TECHNICAL ASSISTANCE Only if the gas or PCB is changed.		
2.	**3.**	**3**	Min percentage CANNOT BE MODIFIED	0 - 100	
			See the correct value on the Installation manual of the boiler.		
			RESERVED FOR TECHNICAL ASSISTANCE Only if the gas or PCB is changed.		
2.	**3.**	**4**	Max CH percentage CANNOT BE MODIFIED	55 - 100	
			See the correct value on the Installation manual of the boiler.		
			RESERVED FOR TECHNICAL ASSISTANCE Only if the gas or PCB is changed.		
2.	**3.**	**5**	CH Anti-cycle Time Mode	0 = Manual 1 = Automatic	1
2.	**3.**	**6**	CH Anti-cycle Time (when 2.3.5 = 0)	0 - 7 (minutes)	3
2.	**3.**	**7**	Boiler Pump Overrun (CH)	0 - 15 minutes or OC (On Continuously)	3
2.	**4**	**BOILER CH PARAMETERS - 2**			
2.	**4.**	**1**	Warning pressure 1P4	da 5.8 a 11.6 psi	8.7
2.	**4.**	**3**	CH Fan Post-Purge	0 = OFF 2 minutes, 1 = ON5 minutes	1

Part 7 - Complete Menu

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
2.	4.	4	CH Boost Delay Interval	0 - 60 (minutes)	16
			Only applicable when the type of temperature control is set to Basic Temp. Control (Parameter 4.2.1 - 5.2.1 - 6.2.1 = 1).		
			Sets the time delay between the automatic adjustments of the boiler target temperature in increments of +/- 7°F.		
2.	4.	7	CH Pressure Safety	1 = Pressure Switch 2 =Pressure Sensor	2
			RESERVED FOR TECHNICAL ASSISTANCE Only if the PCB is changed		
2.	4.	9	Outdoor Temp Correction	-5 - +5 (°F)	0
			Only active with outdoor sensor connected		
2.	5	**DHW PARAMETERS**			
2.	5.	0	DHW comfort function	0 = Disabled 1 = Time Program 2 = Always Active	Combi: 0 (TRX) 2 (FTVN/NC) System: 2
			Non-COMBI models set to 2 = Always Active This is not changeable. **COMBI models set to 0 = Disabled** COMFORT function is not active. **COMBI models set to 1 or 2 = Time Program/Always Active** *(activates conditionally once per Comfort Anti-cycling Time)*: Activating the COMFORT function keeps the DHW heat exchanger temperature warm when a DHW demand is not active. This reduces the amount of time it takes for the boiler to meet a hot water demand. COMFORT will display when this function is active. **NOTE:** *Parameter 251 "Comfort Anti-cycling Time", is defaulted to 60 min, and has a range [0 -120] min.*		
2.	5.	1	DHW Comfort Anti-cycling Time	0 - 120 (minutes)	60
2.	5.	2	DHW Start Delay	5 - 200 (0.5 to 20 seconds)	5
			Anti "water hammering"		
2.	5.	3	DHW switch off logic	0 = anti-scale (stop at > 144°F) 1 = + 7 °F /setting	0
2.	5.	4	DHW Post Purge and Pump Cycle	0 = OFF 1 = ON	1
			OFF = 3 minutes post-circulation and post-ventilation after DHW draw-off if the boiler temperature requires it. ON = Always on for 3 minutes post-circulation and post-ventilation after DHW draw-off.		
2.	5.	5	CH Start Delay Following DHW	0 - 30 (minutes)	0
2.	5.	7	Thermal Cleanse Function	0 = OFF 1 = ON	0
			Non-COMBI = Activated when the boiler is connected to a tank by an NTC sensor (Parameter 228 = 1).		
			This function prevents the formation of Legionnaire's disease bacteria which may develop in piping and indirect water heaters (IWH) at temperatures between 68°F and 104°F. When activated, if the IWH temperature stays below 138°F for over 100 hours, the boiler will heat the water in the IWH until it reaches 149°F for 30 minutes.		
2.	5.	8	Thermal Cleanse Cycle frequency	24 - 720 (Hours), or 30 days	30 days
			TRX Non-Combi = Activated when the boiler is connected to a tank by an NTC sensor (Parameter 228 = 1).		
2.	6	**BOILER MANUAL CONTROL**			
			Only to test components		
2.	6.	0	Manual Mode Activation	0 = OFF 1 = ON	0
2.	6.	1	Boiler pump control	0 = OFF, 1 = ON	0
			Set Parameter 260=1		
2.	6.	2	Fan control	0 = OFF, 1 = ON	0
			Set Parameter 260=1		
2.	6.	3	3 way valve control	0 = DHW, 1 = Heating	0
			Set Parameter 260=1		
2.	7	**TEST & UTILITIES**			
2.	7.	0	Test Mode	0 = OFF 1 = ON	
			Test Mode deactivates after 30 minutes or by pressing **Reset.**		
2.	7.	1	Air-purge cycle	0 = OFF 1 = ON	
			See First Ignition section.		
2.	7.	4	Floor drying cycle	0 = OFF 1 = Functional Heating 2 = Curing Heating 3 = Functional Heat. + Curing Heat. 4 = Curing Heat. + Functional Heat. 5 = Manual	0
2.	7.	5	Floor drying Flow Set. Temp.	77 - 140°F	131
2.	8	**RESET FACTORY SETTINGS**			
2.	8.	0	Reset PCB to Factory Default Settings	Do you really want to perform the RESET? If you pressOK button, the reset command will be executed otherwise, by way of ESC, the orevious page is shown.	
			To Reset all parameter settings, press the OK button.		
			WARNING: Always check PCB settings if restoring factory default settings on a replacement controller. Replacement controllers have generic settings that may not be specific to the boiler model.		

Menu	Sub-Menu	Parameter	Description / Note	Value	Default Setting
2.	9	**OTHER PARAMETERS 1**			
2.	9.	3	Flue gas sensor type	1 = NTC	1
2.	10	**OTHER PARAMETERS 2**			
2.	10.	0	CH On Differential Temperature	0 - 36°F	11
			Determines how much the boiler outlet temperature can drop below target before turning the boiler back on.		
2.	10.	1	DHW Modulation Setpoint	68 - 179°F	179
			Boiler target temperature duringa DHW demand. Not applicable for Combi models.		
2.	10.	2	Tank on Differential	0 - 36°F	0
			Determines how much the DHW storage tank temperature can drop below target before initiating a DHW demand. Only applicable when 2.2.8 = 1.		
2.	10.	3	Emergency Setpoint	68 - 179°F	113
			Sets Follower boileroperating temperature when communication with the Master is lost, or when the System Sensor is disconnected. See Cascade Instruction Manual.		
2.	10.	4	DHW/CH Shifting priority time	0 - 1440 minutes	45
			Determines how long a CH or DHW demand can last before the priority is switched. First priority is with DHW. A value of 0 keeps the priority with DHW indefinitely.		
2.	10.	5	CH switch-off offset	4 - 36°F	11
			Determines how much the boiler outlet temperature can go over target before turning the burner off.		
2.	10.	6	CH/DHW anti-water-hammer func.	0 = OFF, 1 = ON	0
2.	10.	7	Antifreeze Function	0 = OFF 1 = ON	1
			To disable antifreeze function, set 2.10.7 = 1		
2.	10.	8	CH forced diverter position	0 = OFF, 1 = ON	
2.	13	**BOILER SETTINGS 2**			
2.	13.	0	Flue temperature where power is limited	130 - 199°F	190
2.	13.	1	Flue temperature limit	130 - 199°F	199
4	**ZONE 1 PARAMETERS**				
4.	0	**TEMPERATURE SETTINGS**			
4.	0.	0	Room Setpoint (Comfort)	50 - 86 °F	66
			Only applicable when using an NTI room sensor		
4.	0.	1	Room Setpoint (Reduced)	32 - 86 °F	61
			Only applicable when using an NTI room sensor		
4.	0.	2	Zone 1 Fixed Water Temp	68 - 179 °F	179
4.	0.	3	Room Setpoint (Holiday/Anti-frost)	35 - 75 °F	41
			Only applicable when using an NTI room sensor. Changes all zones		

Menu	Sub-Menu	Parameter	Description / Note	Value	Default Setting
4.	0.	5	CH Target temperature logic	0 = Max active zone target 1= Z1,Z2,Z3....etc. 2= Min active zone taget	1
4.	1	**AUTOMATIC WINTER MODE**			
4.	1.	0	Warm weather shutdown	0 = OFF 1 = ON	0
4.	1.	1	WWSD threshold	50 - 86 °F	68
4.	1.	2	WWSD Switchoff delay	0 - 300 minutes	2
4.	2	**ZONE 1 SETTINGS**			
4.	2.	1	AUTO Temperature Control Mode	0 = Fixed Outlet 1 =Basic On/Off 2 =Room Temp 3 =Outdoor Temp 4 =Room&Outdoor	3
4.	2.	2	Heating Curve Slope	0.2 - 3.5	1.3
			The greater the slope, the quicker the target temperature rises as the outdoor temperature decreases. Applicable when 4.2.1 = 3 or 4. See J. Slope of Outdoor Reset Curve.		
					
4.	2.	3	Heating Curve Offset	-25 - +25	0
			When the Reset Curve results in a boiler target temperature that is too high or too low (i.e., heats the building too quickly or slowly), Parallel Shift can be used to offset the curve up or down to increase or decrease the boiler target temperature. **NOTE:** Adjusting Parallel Shift is only possible when Auto Boost is OFF (4.7.5 = 0).		
4.	2.	4	Room Sensor Influence	0 - 20	4
			Adjusts the influence of room temperature on target boiler temperature - a higher setting causes a greater increase to the boiler target temperature as the indoor temperature drops below room setpoint. **Only applicable when using an optional NTI Room Sensor and when 4.2.1 = 2 or 4.**		
4.	2.	5	Max Temperature	68 - 179 °F	179
			4.2.5 sets the allowable boiler operating temperature range for Zone 1 heating, limiting Automatic Temperature Control and manual adjustments from the User Menu.		

Part 7 - Complete Menu

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
4.	2.	6	Min Temperature	68 - 1179 °F	95
			4.2.6 sets the allowable boiler operating temperature range for Zone 1 heating, limiting Automatic Temperature Control and manual adjustments from the User Menu.		
4	2.	8	Quick night setback	0 = OFF 1 = ON	0
4	2.	9	Heat request mode	0 = Standard 1 = RT time Programs Exclusion 2 = Heat demands forcing	1
4.	3	**DIAGNOSTICS**			
4.	3.	0	Room Temperature	Read only	
			Only applicable when using an NTI room sensor		
4.	3.	1	Room Temperature Setpoint	Read only	
			Only applicable when using an NTI room sensor		
4.	3.	4	Zone 1 Heat Call	0 = OFF 1 = ON (Read only)	
4.	3.	8	Zone flow temperature setpoint	Read only	
4.	7	**ZONE REGULATION PARAMETERS**			
4.	7.	5	Auto Slope Boost	0 = OFF 1 = ON	0
			See L. Auto Boost.		
5	**ZONE 2 PARAMETERS**				
5.	0	**TEMPERATURE SETTINGS**			
5.	0.	0	Room Setpoint (Comfort)	50 - 86 °F	66
			Only applicable when using an NTI room sensor		
5.	0.	1	Room Setpoint (Reduced)	32 - 86 °F	61
			Only applicable when using an NTI room sensor		
5.	0.	2	Zone 2 Fixed Water Temp	68 - 179 °F	179
5.	0.	3	Room Setpoint (Holiday/ Anti-frost)	36 - 75 °F	41
			Only applicable when using an NTI room sensor Changes all zones		
5.	0.	5	CH Target temperature logic	0 = Max active zone target 1= Z1,Z2,Z3....etc. 2= Min active zone taget	**1**
5.	1	**AUTOMATIC WINTER MODE**			
5.	1.	0	Warm weather shutdown	0 = OFF 1 = ON	0
5.	1.	1	WWSD threshold	50 - 86 °F	68
5.	1.	2	WWSD Switchoff delay	0 - 300 minutes	2
5.	2	**ZONE 2 SETTINGS**			
5.	2.	1	Auto Temperature control mode	0 = Fixed Outlet 1 =Basic On/Off 2 =Room Temp 3 =Outdoor Temp 4 =Room&Outdoor	3
5.	2.	2	Heating Curve Slope	0.2 - 3.5	1.3
			See graph and description of Parameter 422.		
5.	2.	3	Heating Curve Offset	-25 - +25	0
			See description of Parameter 4.2.3		
5.	2.	4	Room Sensor Influence	0 - 20	4
			Adjusts the influence of room temperature on target boiler temperature - a higher setting causes a greater increase to the boiler target temperature as the indoor temperature drops below room setpoint. **Only applicable when using an optional NTI Room Sensor and when 5.2.1 = 2 or 4.**		
5.	2.	5	Max Temperature	68 - 179 °F	179
			5.2.5 sets the allowable boiler operating temperature range for Zone 2 heating, limiting Automatic Temperature Control and manual adjustments from the User Menu.		
5.	2.	6	Min Temperature	68 - 179 °F	95
			5.2.6 sets the allowable boiler operating temperature range for Zone 2 heating, limiting Automatic Temperature Control and manual adjustments from the User Menu.		
5.	2.	8	Quick night setback	0 = OFF 1 = ON	0
5.	2.	9	Heat request mode	0 = Standard 1 = RT time Programs Exclusion 2 = Heat demands forcing	1
5.	3	**DIAGNOSTICS**			
5.	3.	0	Room Temperature	Read only	
			Only applicable when using an NTI room sensor		
5.	3.	1	Room Temperature setpoint	Read only	
			Only applicable when using an NTI room sensor		
5.	3.	4	Zone 2 Heat Call	0 = OFF 1 = ON (Read only)	
5.	3.	8	Zone flow temperature setpoint	Read only	
5.	7	**ZONE 2 REGULATION PARAMETERS**			
5.	7.	5	Auto Slope Boost	0 = OFF, 1 = ON	0
			See description of Parameter 475.		
6	**ZONE 3 PARAMETERS**				
6.	0	**TEMPERATURE SETTINGS**			
6.	0.	0	Room Setpoint (Comfort)	50 - 86 °F	66
			Only applicable when using an NTI room sensor		
6.	0.	1	Room Setpoint (Reduced)	32 - 86 °F	61
			Only applicable when using an NTI room sensor		
6.	0.	2	Zone 3 Fixed Water Temp	68 - 179 °F	179
6.	0	3	Room Setpoint (Holiday/ Anti-frost)	36 - 75 °F	41
			Only applicable when using an NTI room sensor - Changes all zones		

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
6.	**0.**	**5**	CH Target temperature logic	0 = Max active zone target 1= Z1,Z2,Z3....etc. 2= Min active zone taget	**1**
6.	**1**	**AUTOMATIC WINTER MODE**			
6.	**1.**	**0**	Warm weather shutdown	0 = OFF 1 = ON	0
6.	**1.**	**1**	WWSD threshold	50 - 86 °F	68
6.	**1.**	**2**	WWSD Switchoff delay	0 - 300 minutes	2
6.	**2**	**ZONE 3 SETTINGS**			
6.	**2.**	**1**	AUTO Temperature control MODE	0 = Fixed Outlet 1 =Basic On/Off 2 =Room Temp 3 =Outdoor Temp 4 =Room&Outdoor	3
6.	**2.**	**2**	Heating Curve Slope	0.2 - 3.5	1.3
			See graph and description of Parameter 422.		
6.	**2.**	**3**	Heating Curve Offset	-25 - +25	0
			See description of Parameter 423.		
6.	**2.**	**4**	Room Sensor Influence	0 - 20	4
			Adjusts the influence of room temperature on target boiler temperature - a higher setting causes a greater increase to the boiler target temperature as the indoor temperature drops below room setpoint. **Only applicable when using an optional NTI Room Sensor and when 6.2.1 = 2 or 4.**		
6.	**2.**	**5**	Max Temperature	68 95 - 179 °F	179
			6.2.5 sets the allowable boiler operating temperature range for Zone 3 heating, limiting Automatic Temperature Control and manual adjustments from the User Menu.		
6.	**2.**	**6**	Min Temperature	68 - 179 °F	95
			6.2.6 sets the allowable boiler operating temperature range for Zone 3 heating, limiting Automatic Temperature Control and manual adjustments from the User Menu.		
6.	**2.**	**8**	Quick night setback	0 = OFF 1 = ON	0
6.	**2.**	**9**	Heat request mode	0 = Standard 1 = RT time Programs Exclusion 2 = Heat demands forcing	1
6.	**3**	**DIAGNOSTICS**			
6.	**3.**	**0**	Room Temperature	Read only	
			Only applicable when using an NTI room sensor		
6.	**3.**	**1**	Room Temperature setpoint	50 - 86 °F Read only	
			Only applicable when using an NTI room sensor		
6.	**3.**	**4**	Zone 3 Heat Call	0 = OFF 1 = ON (Read only)	
5	**3**	**8**	Zone flow temperature setpoint	Read only	
6.	**7**	**ZONE 3 REGULATION PARAMETERS**			
6.	**7.**	**5**	Auto Slope Boost	0 = OFF, 1 = ON	0
			See description of Parameter 475.		

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
7	**EXTERNAL 3-ZONE CONTROL MODULE** **ONLY APPLICABLE WHEN USING THE NTI N-LINK 3-ZONE CONTROL MODULE (3260184)**				
7.	**0**				
7.	**0.**	**0**	Heating setpoint offset logics		
7.	**0.**	**1**	Cooling setpoint offset logics		
7.	**0.**	**2**	Zone pumps in DHW cycle		
7.	**1**	**MANUAL MODE**			
7.	**1.**	**0**	ZM Manual mode activation		
7.	**1.**	**1**	Zone 1 Output		
7.	**1.**	**2**	Zone 2 Output		
7.	**1.**	**3**	Zone 3 Output		
7.	**1.**	**4**	Z2 Mix Valve Control		
7.	**1.**	**5**	Z3 Mix Valve Control		
7.	**1.**	**6**	Z1 Mix Valve Control		
7.	**2**	**GENERAL ZONE MODULE**			
7.	**2.**	**0**	Hydraulic scheme definition	MCD MGM II MGM III MGZ I MGZ II MGZ III mix 2 direct direct + mix 2 mix 3 direct zones 2 direct + mix direct + 2 mix 3 mix	
7.	**2.**	**1**	FlowT Offset		
7.	**2.**	**2**	Auxiliary output setting	Heat/Cool request (local zones) External pump (local zones) Alarm Only heat request (local zones) Only cool request (local zones) Heat/Cool request (any zones) External pump (any zones) Only heat request (any zones) Only cool request (any zones) Cooling mode active	
7.	**2.**	**3**	External temperature correction		
7.	**2.**	**4**	Valves overrun time		
7.	**2.**	**5**	Valve Control T Delta		
7.	**2.**	**6**	Valves Kp Heating		
7.	**2.**	**7**	Mixing zones switch mode		
7.	**2.**	**8**	Zone Outputs Overrun		
7.	**2.**	**9**	Zone Outputs Overrun w/DHW		
7.	**3**	**COOLING**			
7.	**3.**	**0**	FlowT Offset Cooling		
7.	**3.**	**1**	Free parameter		
7.	**3.**	**2**	Free parameter		
7.	**3.**	**3**	Valves Kp Cooling		

Part 7 - Complete Menu

Menu	Sub-Menu	Parameter	Description / Note	Value	Default Setting
7.	8		**ERROR HISTORY**		
7.	8.	0	Last 10 errors		
7.	8.	1	Reset error list	Reset ? OK=Yes,esc=No	
7.	8.	2	Last 10 errors 2		
7.	8.	3	Reset error list 2	Reset ? OK=Yes,esc=No	
7.	9		**RESET MENU**		
7.	9.	0	Reset PCB to Factory Default Settings	Reset ? OK=Yes,esc=No	
7.	9.	1	Reset factory settings 2	Reset ? OK=Yes,esc=No	
8			**SERVICE PARAMETERS**		
8.	0		**BOILER STATISTICS-1 - Read Only**		
8.	0.	0	DHW pump cycles (n/10)		
8.	0.	1	Boiler pump on time (h/10)		
8.	0.	2	Boiler pump cycles (n/10)		
8.	0.	3	Boiler power on time (h/10)		
8.	0.	4	Fan on time (h/10)		
8.	0.	5	Fan cycles (n/10)		
8.	0.	6	CH flame detection No. (n /10)		
8.	0.	7	DHW flame detection No. (n /10)		
8.	1		**BOILER STATISTICS-2 - Read Only**		
8.	1.	0	CH burner on time (h/10)		
8.	1.	1	DHW burner on time (h/10)		
8.	1.	2	Flame faults (n/10)		
8.	1.	3	Ignition cycles (n/10)		
8.	1.	4	Average CH cycle time		
8.	1.	6	CH/DHW priority switches Number of times the Priority Timer (2.10.4) has elapsed, switching priority from DHW to CH (or vice versa).		
8.	2		**BOILER CURRENT STATUS - Read Only**		
8.	2.	1	Fan Status	0 = OFF 1 = ON	
8.	2.	2	Fan speed RPM		
8.	2.	3	Pump speed	0 = Low Speed 1 = High Speed	
8.	2.	4	3 Way Valve Position	0 = Hot water 1 = Central Heating	
8.	2.	5	DHW Flow Rate Applicable for Combi models		
8.	2.	6	APS Status	0 = Open 1 = Closed	
8.	2.	8	Gas Power (kW)		
8.	2.	9	Heating circuit pressure		
8.	3		**BOILER CURRENT TEMPERATURES- Read Only**		
8.	3.	0	CH Supply Setpoint (in °F)		
8.	3.	1	CH Supply Temperature (in °F)		
8.	3.	2	CH Return Temperature (in °F)		
8.	3.	3	DHW Outlet Temperature (in °F) Applicable for Combi models.		
8.	3.	4	Exhaust Flue Temperature (in °F)		
8.	3.	5	Outdoor Temperature (in °F) Only with outdoor sensor connected		

Menu	Sub-Menu	Parameter	Description / Note	Value	Default Setting
8.	4		**STORAGE CURRENT STATUS (ONLY ACTIVE WITH CONNECTED NTC TANK SENSOR) - Read Only**		
8.	4.	0	STORAGE TANK TEMPERATURE (in °F) Only with NTC tank sensor connected		
8.	5		**SERVICE**		
8.	5.	0	Months to Next Maintenance If enabled (8.5.1 = 1), a notification is made on the display (and via the Tele-diagnostic Service, if applicable), warning that it is time for maintenance	0 - 60 (months)	12
8.	5.	1	Enable Maintenance Warning	0 = OFF, 1 = ON	0
8.	5.	2	Maintenance Warning Reset Resets Maintenance Advice and clears the Warning.	Do you really want to perform the RESET? If you pressOK button, the reset command will be executed otherwise, by way of ESC, the orevious page is shown.	
8.	5.	4	Software Version- Display Interface		
8.	5.	5	Software Version - Main Controller		
8.	5.	7	Floor Drying total rem days		
8.	6		**ERROR HISTORY**		
8.	6.	0	Last 10 Errors This parameter displays the last 10 boiler errors, indicating the error code, day, month and year of occurence. When the parameter is accessed, the errors are listed from FAULT 0 to FAULT 9. Description, code, date	from Fault 0 to Fault 9	
8.	6.	1	Error list reset - Clears Error History	Do you really want to perform the RESET? If you pressOK button, the reset command will be executed otherwise, by way of ESC, the ore-vious page is shown.	
8.	7		**FREE PARAMETERS - Read Only**		
8.	7.	0	NOT USED		
8.	7.	1	NOT USED		
8.	7.	2	NOT USED		
8.	7.	3	NOT USED		
8.	7.	4	Boiler flow switch	0= Open 1=	
8.	7.	6	Safety flame sensor	0= OFF 1= ON	
8.	7.	8	Boiler Power Level(%)	0 - 100 (0 = minimum power, 100 = maximum power)	
8.	7.	9	Ionization current The flame signal must exceed 18 to initially detect the presence of flame. Flame loss is detected if the signal drops below 15.		

Menu	Sub-Menu	Parameter	Description / Note	Value	Default Setting
19	**WI - FI (only for ALTEAS ONE+ NET)**				
19.	**0**	**WI-FI CONFIGURATION**			
19.	**0.**	**0**	Wi-Fi activation	0 = OFF 1 = ON	
19.	**0.**	**1**	Network configuration	0 = OFF 1 = ON	
19.	**0.**	**2**	<Not Available>		
19.	**0.**	**3**	Internet time	0 = OFF 1 = ON	
19.	**0.**	**4**	Internet heather	0 = OFF 1 = ON	
19.	**0.**	**5**	On line outdoor temperature corr.		
19.	**1**	**CONNECTIVITY INFO**			
19.	**1.**	**0**	Connectivity status	OFF Initialization Idle Acess Point initializing Acess Point mode on Station Mode - Connecting Station Mode - Connected Station Mode - Provisioning Station Mode - Server Connected Wifi error	
19.	**1.**	**1**	Signal level		
19.	**1.**	**2**	Active Status	Not provisioned Provisioned - Not active Active	
19.	**1.**	**3**	Serial Number		
19.	**1.**	**4**	SW Upgrade Status	Initialization Waiting for Update Updating Micro 1 Updating Micro 2	
19.	**1.**	**5**	On line outdoor temperature		
19.	**1.**	**6**	On line weather data		
19.	**2**	**RESET MENU**			
19.	**2.**	**0**	Factory Reset (soft reset)	Do you really want to perform the reset? if you press OK button, the reset command will be executed otherwise, by way of ESC, the previous page is shown.	
21	**2-ZONE CONTROL MODULE**				
21.	**1**	**2-ZONE CONTROL MODULE - TEST**			
21.	**1.**	**0**	Manual mode activation	0 = OFF 1 = ON	
21.	**1.**	**1**	OUT1 Control	0 = OFF 1 = ON	
21.	**1.**	**2**	OUT2Control	0 = OFF 1 = ON	
21.	**4**	**2-ZONE CONTROL MODULE DIAGNOSTICS**			
21.	**4.**	**0**	Output 1 Status	0 = OFF 1 = ON	
21.	**4.**	**1**	Output 2 Status	0 = OFF 1 = ON	
21.	**9**	**2-ZONE CONTROL MODULE - CONFIGURATION**			
21.	**9.**	**0**	Zone outputs overrun	60 - 600 seconds	
21.	**9.**	**1**	Zone outputs overrun DHW		
25	**CASCADE MANAGER PARAMETERS**				
25.	**0**	**2-ZONE CONTROL MODULE - TEST**			
25.	**0.**	**0**	Max CH Adjustable Power Percentage	0 - 100	100
			Maximum Total Cascade CH Power		
25.	**0.**	**1**	Max DHW Adjustable Power Percentage	0 - 100	100
			Maximum Total Cascade DHW Power		
25.	**0.**	**2**	Turnover Logic	0 = Minimum Switches Off - On 1 = Maximum Power Division	0
25.	**0.**	**3**	Turnover Hysteresis	0 - 20%	2
			Sets the difference in power level between switching on and switching off the next boiler. See 25.0.4 and 25.0.5.		
25.	**0.**	**4**	Min Turnover Level	0 - 100	100
			Sets the power level threshold where the next boiler is switched off. Switches off if required power is < 25.0.4 - 25.0.3. To avoid short-cycling, ensure 25.0.4 is set to less than half of 25.0.5 setting. Applicable only when parameter 25.0.2 = 0.		
25.	**0.**	**5**	Max Turnover Level	0 - 100	100
			Sets the power level threshold where the next boiler is switched on. Switches on if required power is > 25.0.5. Switches off if required power is < 25.0.5 - 25.0.3. Off logic only applicable if parameter 25.0.2 = 1.		
25.	**0.**	**7**	CH On-Differential Temperature	0 - 36°F	11
			Determines how much the System temperature can drop below target before turning the cascade back on.		
25.	**0.**	**8**	DHW/CH Shifting Priority Time	0 - 1440 minutes	45
			NOTE: See 25.2.6 - System DHW Charging Priority		
25.	**1**	**SYSTEM SETTINGS**			
25.	**1.**	**0**	Automatic Temperature Control	0 = OFF 1 = ON	1
			Normally managed via par. 2.2.4 for a standalone boiler.		
25.	**1.**	**1**	Outdoor Temp Correction	-5 - +5 (°F)	0
			Normally managed via par. 2.4.9 for a standalone boiler.		
25.	**1.**	**2**	CH Boost Delay Interval	0 - 60 (minutes)	16
			Sets the time delay between the automatic adjustments of the boiler target temperature in increments of +/- 7°F (normally managed via par 2.4.4 for a standalone boiler). Only applicable when the type of temperature control is set to Basic Temp. Control (Parameter 4.2.1 - 5.2.1 - 6.2.1 = 1)		

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
25.	1.	3	Plant Frost Protection	0 = OFF 1 = ON	0
			CH system pump operates 10 minutes every 6 hours when outdoor temp = < 25oF; operates continuously when outdoor temp < 23oF.		
25.	1.	5	System Pump Overrun	0 - 15 minutes or OC (On Continuously)	5
25.	1.	6	System Pump Activation Logic	0 = Always Active 1 = Only CH	1
			0 = Always Active – System pump runs for CH and DHW demands 1 = Only CH – System pump only runs during CH demands		
25.	2	**DOMESTIC HOT WATER Applicable for Downstream / System IWH**			
25.	2.	0	DHW Setpoint Temp. **Combi Models**	97 - 140°F	125
			DHW Setpoint Temp. **Non-Combi Models**	104 - 140°F	125
			Establishes DHW temperature for the entire cascade system, including Combi boilers and Upstream IWH connected to individual boilers. Not applicable to Downstream IWH when Master parameter 25.2.2 = 2, or to Upstream IWH connected to Follower when parameter 34-40.2.8 = 2, or Master when parameter 2.2.8 = 2 (and 25.2.2 = 0). Also settable by pressing the DHW +/- buttons from the home screen.		
25.	2.	1	DHW Comfort Function **(only applicable to Combi Models)**	2 = Always On	2
			Comfort function keeps the DHW heat exchanger of a Combi boiler warm when a DHW demand is not active, thereby reducing the amount of time needed to heat the hot water when a demand occurs. Function activates conditionally once perComfort Anti-Cycling Time, par 2.5.1 on the Master boiler, par. 34-40.5.1 on Follower boilers. To deactivate DHW Comfort Function of a Master boiler set par 2.0.1 = 0. To deactivate DHW Comfort Function at a Follower boiler set par 34-40.0.1 = 0.		
25.	2.	2	DHW Mode (Cascade)	0 = CH Only 1 = DHW Tank NTC 2 = DHW Tank Thermostat	0
25.	2.	3	Thermal disinfection function	0 = OFF 1 = ON	0
25.	2.	6	DHW/CH Charging Priority	0 = Alternating 1 = Timed Concurrent / Alternating 2 = Concurrent	0
			0 = Alternating – DHW and CH will not operate simultaneously. Priority switches between DHW and CH at an interval defined by the CH/DHW Shifting Priority Time (parameter 25.0.8); first priority is DHW. If 25.0.8 = 0, then DHW has priority indefinitely. 1 = Timed Concurrent / Alternating – DHW and CH operate simultaneously for the period defined by the CH/DHW Shifting Priority Time (parameter 25.0.8). After the time elapses operation returns to Alternating until the end of the DHW request. 2 = Concurrent – DHW and CH can operate simultaneously indefinitely.		

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
25.	2.	7	Modulation Setpoint	68 - 179°F	179
			System target temperature during a DHW demand. Not applicable for Combi models.		
25.	2.	8	Tank On Differential	0 - 36°F	0
			Determines how much the DHW storage tank temperature can drop below target before initiating a DHW demand. Only applicable when 25.2.2 = 1.		
25.	3	**SYSTEM DIAGNOSTICS - READ ONLY**			
25.	3.	0	System CH Supply Setpoint (°F)		
			Actual calculated System CH Target temperature		
25.	3.	1	System Supply Temperature (in °F)		
			Actual temperature read by System sensor		
25.	3.	2	Outdoor Temperature (in °F)		
			Only with outdoor sensor connected		
25.	3.	3	DHW Storage Temperature (in °F)		
			Only with NTC tank sensor connected and 25.2.2 = 1		
25.	3.	5	System Pump Status	0 = OFF 1 = ON	
25.	3.	6	DHW Pump Status	0 = OFF 1 = ON	
25.	4	**CASCADE DIAGNOSTICS - READ ONLY**			
25.	4.	0	Cascade power level		
25.	4.	1	Total boilers		
25.	4.	2	Available boilers		
			Does not count operating or locked out boilers		
25.	4.	3	Active boilers		
			Boilers currently operating		
25.	4.	4	Cascade status	1 = Stand-by, 2 = Meeting CH Demand, 5 = CH Temperature Reached, 8 = System Storage Loading, 9 = System Storage Loading Temp Reached, 20 = Pump Antifreeze, 21 = Burn Antifreeze, 27 = Plant Frost Protection with Burner Blocked, 28 = System Tank Frost Protection, 29 = System Antilegionella Function, 30 = Chimney, 31 = Air Purge, 51 = Lockout Volatile, 72 = External Control CH Serving, 74 = External Control DHW Serving, 75 = External Control CH Temp Reached, 77 = External Control DHW Temp Reached, 101 = Initialization	
25.	4.	5	Leading boiler		

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
25.	**5**	**ERROR HISTORY - READ ONLY**			
25.	**5.**	**0**	Last 10 Errors	Displays the Last 10 Errors	
25.	**5.**	**1**	Reset Error List	Do you really want to perform the RESET? If you pressOK button, the reset command will be executed otherwise, by way of ESC, the orevious page is shown.	
25.	**6**	**RESET MENU**			
25.	**6.**	**0**	Reset PCB to Factory Default Settings	Do you really want to perform the RESET? If you pressOK button, the reset command will be executed otherwise, by way of ESC, the orevious page is shown.	
			WARNING: Always check PCB settings if restoring factory default settings on a replacement controller. Replacement controllers have generic settings that may not be specific to the boiler model.		
			Only applicable to parameters in menu levels 2 and 25 of the Master boiler.		

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
34...40	**FOLLOWER BOILER 1.....7**				
34...40	**0**	**GENERAL**			
34...40.	**0.**	**1**	DHW Preheating	0 = Disabled, 1 = Enabled	1
			Enables/disables DHW Comfort Function on Combi models (not applicable to non-Combi models). See par 25.2.1.		
34...40	**1**	**FREE PARAMETER**			
34...40.	**1.**	**0**	DHW Flow Detection Device Type	0 = Flow Switch, 1 = Flow Meter	
			Default: 0 for TRX085, 120, 110C, 150C Default: 1 for TRX150, 199, 199C, FTVN085, 110, 150, 199, 110C, 150C, 199C		
			Combi models use a flow meter. Not applicable for non-Combi models.		
34...40	**2**	**SETTINGS**			
34...40.	**2.**	**0**	Ignition Power %	0-100	
			Must be set in accordance with parameter 2.2.0 - see boiler Installation Manual.		
34...40.	**2.**	**3**	TT2 Input Configuration	0 = Auxiliary Limit Switch, 1 = Room thermostat zone 2	1
			NOTE: TT2 cannot work as a room thermostat input on a follower boiler.		
34...40.	**2.**	**5**	NOT USED		
34...40.	**2.**	**8**	Combi Models CANNOT BE MODIFIED	0 = Combi	0
			Non-Combi Models Type of DHW control for Indirect Hot Water Heater (Tank Sensor or Aquastat)	0 = NOT USED 1 = Storage with Tank Sensor 2 = Storage with Aquastat	2
34...40.	**2.**	**9**	Boiler Heating Capacity (MBH)	0 - 200	
			RESERVED FOR TECHNICAL ASSISTANCE Only if the PCB is changed		
34...40	**3**	**CENTRAL HEATING - 1**			
34...40.	**3.**	**1**	NOT USED		
34...40.	**3.**	**2**	Absolute Max DHW power percentage CANNOT BE MODIFIED	0-100	
			Must be set in accordance with parameter 2.3.2 - see boiler Installation Manual.		
34...40.	**3.**	**3**	Absolute Min boiler power percentage CANNOT BE MODIFIED	0-100	
			Must be set in accordance with parameter 2.3.3 - see boiler Installation Manual.		
34...40.	**3.**	**4**	Absolute Max CH percentage CANNOT BE MODIFIED	0-100	
			Must be set in accordance with parameter 2.3.4 - see boiler Installation Manual.		
34...40.	**3.**	**5**	NOT USED		
34...40.	**3.**	**6**	NOT USED		
34...40.	**3.**	**7**	Boiler Pump Post Circulation Time (After CH)	0 - 15 minutes or OC (On Continuously)	3
34...40	**4**	**CENTRAL HEATING - 2**			
34...40.	**4.**	**3**	CH Fan Post-Purge	0 = 2 minutes, 1 = 5 minutes	1
			Default: 0 for TRX085, 120, 150, 199, 110C, 150C, 199C Default: 1 for FTVN085, 110, 150, 199, 110C, 150C, 199C		
34...40.	**4.**	**7**	Pressure Detection Device	1 = Pressure Switch	1
34...40	**5**	**DOMESTIC HOT WATER (Applicable for Upstream / Local [Individual Boiler] IWH) NOTE: Parameters 34 - 40.10.1 and 34 - 40.10.2 are also for Upstream / Local (Individual Boiler) IWH Management**			
34...40.	**5.**	**1**	DHW Comfort Anti-cycling Time	0 - 120 (minutes)	60
34...40.	**5.**	**2**	DHW Start Delay	5 - 200 (0.5 to 20 seconds)	5
			Anti "water hammering"		
34...40.	**5.**	**3**	DHW Switch Off Logic	0 = anti-scale (stop at > 144°F) 1 = + 7 °F /setting	0

Part 7 - Complete Menu

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
34...40.	**5.**	**4**	DHW Post Purge and Pump Cycle	0 = OFF 1 = ON	1
			OFF = 30 second post-circulation and 2 minute post-ventilation (or 3 minute post-circulation and 5 minute post-ventilation if the boiler temperature requires it) ON = When setting is ON, time for post-circulation is 3 minutes, while the time for post-ventilation is 5 minutes.		
			Default: 0 for TRX085, 120, 150, 199, 110C, 150C, 199C Default: 1 for FTVN085, 110, 150, 199, 110C, 150C, 199C		
34...40.	**5.**	**5**	CH Start Delay Following DHW	0 - 30 (minutes)	0
			Setting is only applicable following a DHW demand from an Upstream IWH connected to the individual follower.		
34...40	**6**	**BOILER MANUAL SETTINGS**			
34...40.	**6.**	**0**	Manual mode activation	0 = OFF 1 = ON	0
34...40.	**6.**	**1**	Boiler pump control	0 = OFF 1 = ON	0
			Set Parameter 260=1		
34...40.	**6.**	**2**	Fan control	0 = OFF 1 = ON	0
			Set Parameter 260=1		
34...40.	**6.**	**3**	3 way valve control	0 = OFF 1 = ON	0
			Set Parameter 260=1		
34...40.	**6.**	**4**	DHW Pump Control	0 = OFF 1 = ON	0
34...40	**7**	**TEST AND UTILITIES**			
34...40.	**7.**	**0**	Test Mode	0 = OFF 1 = ON	0
			TEST Mode can also be activated by pressing the **Reset** button for 10 seconds. Test Mode deactivates after 30 minutes or by pressing Reset.		
34...40.	**7.**	**1**	Air-purge cycle	0 = OFF 1 = ON	0
			See First Ignition section.		
34...40.	**7.**	**4**	Floor drying cycle	0 = OFF 1 = Functional Heating 2 = Curing Heating 3 = Functional Heating + Curing Heating 4 = Curing Heating + Functional Heating 5 = Manual	0
34...40.	**7.**	**5**	Floor dry Supply setpoint temperature	77 - 140°F	131

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
34...40.	**7.**	**7**	Burning Hours Harmonization	0 - 120 (minutes)	60
			Sets the burner run hours statistics to equal the average of the other boilers in the cascade. Used when replacing the PCB on a Follower boiler. Perform this function ONLY on the boiler where the PCB has just been replaced.		
34...40.	**8**	**RESET MENU**			
34...40.	**8.**	**0**	Reset PCB to Factory Default Settings	Do you really want to perform the RESET? If you pressOK button, the reset command will be executed otherwise, by way of ESC, the orevious page is shown.	
			WARNING: Always check PCB settings if restoring factory default settings on a replacement controller. Replacement controllers have generic settings that may not be specific to the boiler model.		
			Only applicable to parameters in menu level 34-40 of respective Follower boiler.		
34...40.	**10**	**OTHERS 2**			
34...40.	**10.**	**0**	NOT USED		
34...40.	**10.**	**1**	DHW Modulation Setpoint	68 - 179°F	179
			Boiler target temperature during a DHW demand. Not applicable for Combi models.		
34...40.	**10.**	**2**	DHW On Differential Temperature	0 - 36°F	0
			Determines how much the DHW storage tank temperature can drop below target before initiating a DHW demand. Only applicable when 2.2.8 = 1.		
34...40.	**10.**	**3**	Emergency Setpoint	68 - 179°F	113
			Sets Follower boiler operating temperature when communication with the Master is lost, or when the System Sensor is disconnected. See Cascade Instruction Manual.		
34...40.	**10.**	**4**	NOT USED		
34...40.	**10.**	**5**	NOT USED		
34...40.	**10.**	**6**	NOT USED		
34...40.	**50**	**BOILER STATISTICS - 1 - READ ONLY**			
34...40.	**50.**	**0**	3 way valve cycles No. (n x10)		
34...40.	**50.**	**1**	Boiler Pump On Hours (h x10)		
34...40.	**50.**	**2**	Boiler pump cycles No. (n x10)		
34...40.	**50.**	**3**	Boiler Power On Time (h x10)		
34...40.	**50.**	**4**	Fan On Hours (h x10)		
34...40.	**50.**	**5**	Number of fan cycles (n x10)		
34...40.	**50.**	**6**	CH number of flame detections (n x10)		
34...40.	**50.**	**7**	DHW number of flame detections (n x10)		
34...40.	**51**	**BOILER STATISTICS - 2 - READ ONLY**			
34...40.	**51.**	**0**	CH Burner On Hours (h x10)		
34...40.	**51.**	**1**	DHW Burner On Hours (h x10)		
34...40.	**51.**	**2**	Number Of Flame Faults (n x10)		
34...40.	**51.**	**3**	Number Of Ignition Cycles (n x10)		
34...40.	**51.**	**4**	Average CH Cycle Length (min)		

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
34...40.	51.	6	Number of times the Priority Timer (2.10.4) has elapsed, switching priority from DHW to CH (or vice versa).		
34...40.	52		**BOILER STATISTICS - 3 - READ ONLY**		
34...40.	52.	1	Fan Status	0 = OFF 1 = ON	
34...40.	52.	2	Fan Speed RPM		
34...40.	52.	3	Boiler Pump Status	0 = OFF 1 = ON	
34...40.	52.	4	3 Way Valve Position	0 = DHW 1 = CH	
34...40.	52.	5	DHW Flow Rate (in US gpm)		
			Not applicable to Non-Combi models		
34...40.	52.	6	APS Status	0 = Open 1 = Closed	
34...40.	52.	7	Gas Power (kW)		
34...40.	53		**BOILER STATISTICS - 3 - READ ONLY**		
34...40.	53.	1	CH Supply Temperature (in °F)		
34...40.	53.	2	CH Return Temperature (in °F)		
34...40.	53.	3	DHW Outlet Temperature (in °F)		
			Not applicable to Non-Combi models		
34...40.	53.	4	Exhaust Flue Temperature (in °F)		
34...40.	54		**STORAGE - READ ONLY**		
34...40.	54.	30	Displays current tank temperature (in °F)		
			Only with NTC tank sensor connected		
34...40.	55		**BOILER**		
34...40.	55.	0	Months to next maintenance	0 - 60 (months)	12
			If enabled (8.5.1 = 1), a notification is made on the display (and via the Tele-diagnostic Service, if applicable), warning that it is time for maintenance		
34...40.	55.	1	Enable Maintenance Warning	0 = OFF 1 = ON	
34...40.	55.	2	Maintenance Warning Reset	Do you really want to perform the RESET? If you pressOK button, the reset command will be executed otherwise, by way of ESC, the orevious page is shown.	
			Resets Maintenance Advice and clears the Warning.		
34...40.	55.	4	SW Version - Display Interface		
34...40.	55.	5	SW Version - Main Controller		
34...40.	55.	7	Floor Drying Total Remaining Days	0 - 26 Days	
34...40.	56		**ERROR HISTORY - READ ONLY**		
34...40.	56.	0	10 last errors	ERROR 0 - ERROR 9	
			This parameter displays the last 10 boiler errors, indicating the error code, day, month and year of occurence. When the parameter is accessed, the errors are listed from ERROR 0 to ERROR 9.		

Menu	Sub-Menu	Parameter	Description	Value	Default Setting
			Note		
34...40.	56.	1	Error list reset - Clears Error History	Do you really want to perform the RESET? If you pressOK button, the reset command will be executed otherwise, by way of ESC, the orevious page is shown.	
34...40.	56		**ERROR HISTORY - READ ONLY**		
34...40.	56.	2	NOT USED		
34...40.	56.	4	Boiler flow switch	0 = OFF 1 = ON	
34...40.	56.	6	Safety flame sensor	0 = OFF 1 = ON	
34...40.	56.	8	Boiler power level (%)	0 - 100	
			(0 = minimum power, 100 = maximum power)		
34...40.	56.	9	Boiler Flame Signal Measured by the Control		
			The flame signal must exceed 18 to initially detect the presence of flame. Flame loss is detected if the signal drops below 15.		
42.	1		**ANALOG LEVEL SETTINGS**		
42.	1.	0	BMS Analog Control Voltage to Start Heat Demand		
42.	1.	1	BMS Analog Control Voltage to Stop Heat Demand		
42.	1.	2	BMS Analog Control Voltage for Maximum Heat Demand		
42.	1.	3	BMS Analog Control Voltage for Minimum Heat Demand		
42.	1.	4	BMS Analog Control Current to Start Heat Demand		
42.	1.	5	BMS Analog Control Current to Stop Heat Demand		
42.	1.	6	BMS Analog Control Current for Maximum Heat Demand		
42.	1.	7	BMS Analog Control Current for Minimum Heat Demand		
42.	2		**DIAGNOSTICS**		
42.	2.	0	Status	Absent Disabled OFF Standby Heat Request Config Error Voltage input configuration error Current input configuration error External input configuration error	
42.	2.	1	BMS Level		
42.	2.	2	BMS SetPoint		
42.	2.	3	BMS Input Voltage		
42.	2.	4	BMS Input Current		

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