Exalt
LP Update Kit

Kit Part Number	Description	Model
EXRKIT124	LP Update Kit	Exalt 110 models
EXRKIT125	LP Update Kit	Exalt 155 models
EXRKIT126	LP Update Kit	Exalt 199 models

Each Kit Includes:

- Control Module
- Display Module
- Venturi
- Venturi interface gasket
- Venturi/Blower Gasket
- Venturi screws
- Gas pipe gaskets

Recommended Tools:

- Phillips Head Screwdriver
- Combustion Analyzer

⚠ WARNING

Indicates a potentially hazardous situation which, if ignored, can result in serious injury or substantial property damage.

NOTICE

Indicates special instructions on installation, operation or maintenance, which are important to equipment but not related to personal injury hazards.

⚠ WARNING

For your safety, turn off electrical power supply at service panel and allow unit to cool before proceeding to avoid possible electrical shock and scald hazard. Failure to do so can cause severe personal injury or death.

⚠ WARNING

Failure to follow instructions below can result in severe personal injury or damage if ignored.

- **Instructions are for a qualified installer/ service technician only.**
- **Read all instructions before proceeding.**
- **Follow instructions in proper order.**

1. Preliminary Instructions

1. Verify that the replacement kit is correct for the model of boiler. See table on page 1.
2. Carefully open and unpack the PARTS BOX from its shipping carton.
3. Carefully remove and check for any damage.

NOTICE

Installing a damaged equipment will cause malfunction of the boiler. Contact IdealUSA right *away if the ontrol module is damaged in any way.*

⚠ WARNING

ELECTRICAL SHOCK HAZARD
Ensure power to the boiler has been disconnected prior to servicing the unit.

4. Close the manual gas shut off valve to the unit.

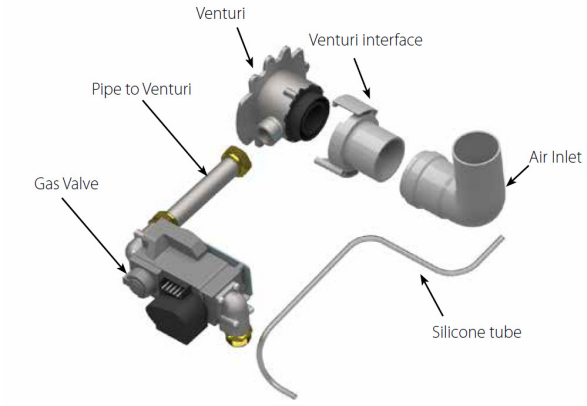


Fig. 1: Exalt 110 Gas Train

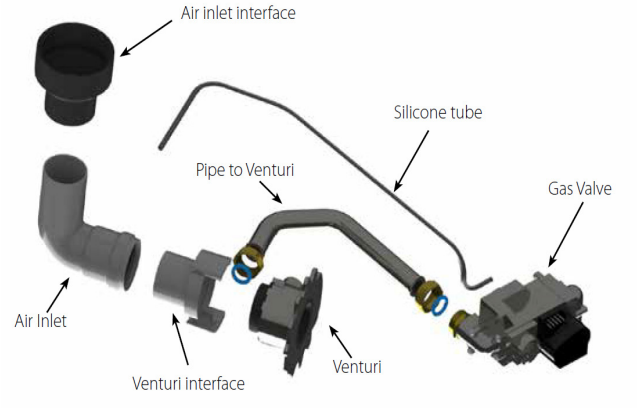


Fig. 2: Exalt 155 Gas Train

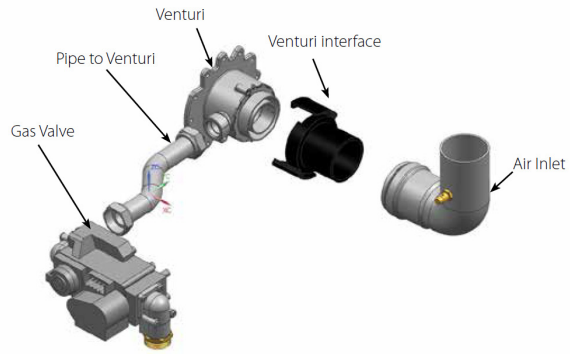


Fig. 3: Exalt 199 Gas Train

2. Removal of old Venturi

1. Remove the silicone tube from the air inlet elbow, then remove the air inlet elbow.
2. Rotate the venturi interface approximately 60° clockwise to release the clamping mechanism and remove the venturi interface. Discard the gasket between the venturi and venturi interface.
3. Remove the gas valve to venturi pipe by loosening the nuts at both ends of the pipe with an adjustable wrench.
4. Remove and dispose of the gasket installed at both ends of the gas valve to venturi pipe. These gaskets must be removed and replaced with new gaskets.
5. Using a 10 mm wrench, remove the three (3) bolts securing the venturi to the fan assembly and remove the venturi from the unit.

6. Remove and dispose of Blower/Venturi O-ring

3. Installation venturi

1. Verify the threaded connection for the gas piping is in the correct orientation for re-fitting the gas pipe.

2. Install the new Blower/Venturi O-ring into the blower.

⚠ WARNING

Failure to install the new O-ring gasket between the venturi and the blower will cause an improper seal resulting in a potential risk of a gas leak. A gas leak can result in substantial property damage, serious injury, or death.

⚠ WARNING

Ensure the proper venturi for the model is installed. Failure to comply will affect input rate and combustion of the boiler which can result in substantial property damage, serious injury, or death.

NOTICE

Do not use adhesive on any gaskets or O-rings during the reassembly process.

3. Using a 10 mm socket and ratchet, reinstall the three (3) bolts securing the venturi to the fan assembly

4. Reassemble the gas valve to venturi pipe to the gas valve and venturi taking care to ensure that the new gaskets are seated properly before tightening the nut.

⚠ WARNING

Failure to install the new gas pipe gasket between the venturi and the gas valve will cause an improper seal resulting in a potential risk of a gas leak. A gas leak can result in substantial property damage, serious injury, or death

5. Install the new gasket and install the venturi interface on the venturi and rotate counterclockwise until locked into place.

6. Install the air inlet elbow then attach the silicone tube.

⚠ WARNING

Failure to properly install the air inlet elbow and attach the silicone tube will affect combustion of the boiler which can result in substantial property damage, serious injury, or death.

7. Open the manual gas shut off valve to the unit. Before placing the boiler back into operation, test all gas connections for leaks and repair if leaks are found.

⚠ WARNING

Do not check for gas leaks with an open flame. Use a bubble test. Failure to test for gas leaks can result in substantial property damage, serious injury, or death.

4. Save Settings

NOTICE

Prior to replacing the control module and/or display module, it is important to access and document the boiler's settings. This will ensure any settings revised from factory defaults are transferred to the new module(s). Use Table 1 to record the existing settings. Do not revise any settings when recording settings.

1. To access the Installer screen, touching simultaneously the up and down soft keys for 3 seconds as shown in Fig. 1.

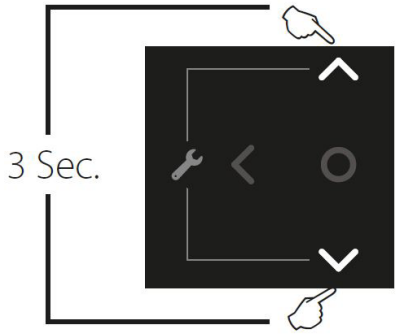


Fig. 4: Installer Button

2. Enter the installer access code "054" by using the **LEFT** and **RIGHT** buttons to select a digit and the **UP** and **DOWN** buttons to change the digit. Press the OK button to enter the access code.

Fig. 5: Installer Access Code

3. Press the OK button while the CH & DHW Settings icon is highlighted.

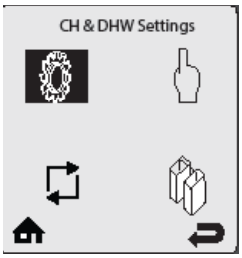


Fig. 6: CH & DHW Settings

4. Press the OK button while the CH Settings icon is highlighted.

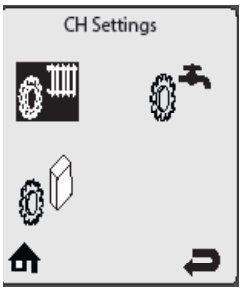


Fig. 7: CH Settings

5. Press the **UP** and **DOWN** buttons to scroll thru the various settings.

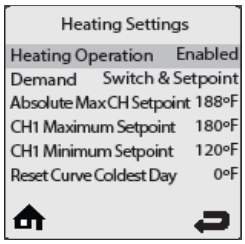


Fig. 8: Heating Settings

6. Record all CH Settings in Table 1. Once completed, press the **RIGHT** button to highlight the Previous Screen icon, then press the OK button.

7. Press the **RIGHT** button to highlight the DHW Settings icon then press the OK button.

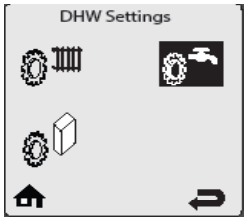


Fig. 9: DHW Settings

8. Press the **UP** and **DOWN** buttons to scroll thru the various settings and record all DHW Settings in Table 1. Once completed, press the **RIGHT** button to highlight the Previous Screen icon, then press the OK button.

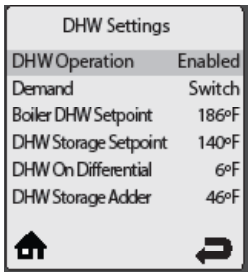


Fig. 10: DHW Settings

9. Press the **DOWN** button to highlight the Boiler Settings icon if present icon, then press the OK button.

10. Press the **UP** and **DOWN** buttons to scroll through the various settings and record all Boiler Settings in Table 1. Once completed, press the **RIGHT** button to highlight the Previous Screen icon, then press the OK button.

NOTICE

Perform the following steps if the Exalt is part of a Cascade System or the System Temperature Sensor is being used on a single Exalt.

11. Press the **RIGHT** then **DOWN** buttons to highlight the Previous Screen icon, then press the OK button.

12. Press the **RIGHT** then **DOWN** buttons to highlight the Cascade icon, then press the OK button.

13. Press the **RIGHT** button to highlight the Cascade Settings icon, then press the OK button.

14. Press the **UP** and **DOWN** buttons to scroll thru the various settings, and record all Cascade Settings in Table 1.

5. Remove Control Module

1. Remove the screw holding the metal shipping bracket in place as shown in Fig. 8

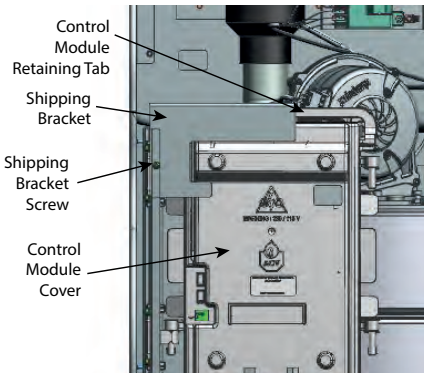


Fig. 11: Control Module

2. Pull the retaining tab on top of the control module case to remove the cover.

3. Record the current location of all plugs.

4. Remove all Molex wiring connectors from the Control Module. Some plugs are equipped with a locking clip. Squeeze the clip to unlock the plug. Support Control Module with one hand while removing individual Molex connectors. Press tabs on Molex plugs for quick release.

5. Unclip the 1 clip on the side of the control module and pull the module out.

6. Installation of Control Module

1. Mount the control module into the case by secureing it behind the mounting clips on both sides of the case.

2. Reconnect the Molex connectors to proper position. Each connector is designed to fit only in its respective mating connector. If the plug is equipped with a locking clip, ensure the clip is engaged.

3. Place the cover in place and lock in the top retaining tab.

4. Remount the front jacket panel to the boiler.

5. Turn power to the unit "ON" and return the boiler to service.

7. Replace Display Module

NOTICE

The display module comes preinstalled in the front red display enclosure as shown in Fig. 8.

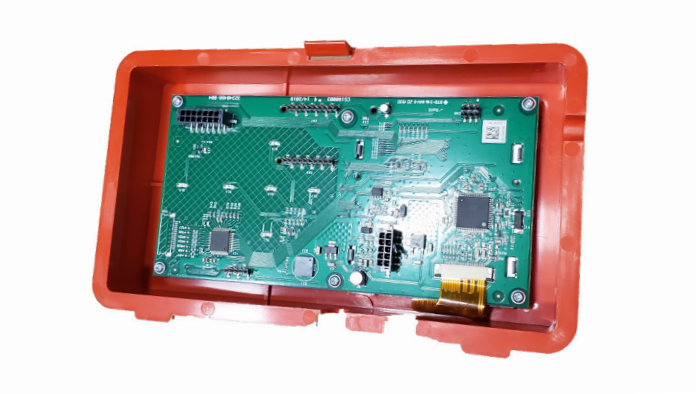


Fig. 12: Display Module

1. Remove the front jacket by removing the screw on the bottom. Lift and remove the front cover. Do not discard this screws as they will be reused.

2. Pull the retaining clip on top of the enclosure and pull the front cover off.

3. Disconnect the yellow cables by squeezing the clip on the back of the plug in and pulling firmly out from the back of the display module. Use care not to damage the plug.

4. Remove the rubber grommet holdind the yellow cables from the old display ensloure.

5. Install the rubber grommet with the yellow cables onto one of the tabs in the bottom of the new display ensloure.

6. Reconnect the yellow cables by pushing the plug into the terminal. The clip on the back of the plug will lock the plug into place. Use care not to damage the cable or display module.

7. Close the front cover onto the back cover by inserting the two tabs on the bottom of the front cover into the appriopriate holes in the back cover and close, engaging the tab in the top. Give the cover a light tug to make sure the top retaining clip is tight.

8. Programming new Control Board

1. Follow the instructions in step 4 to gain access to the installer menu.

2. Go to boiler settings and click appliance setting, as seen in Fig. 9 and Fig. 10.

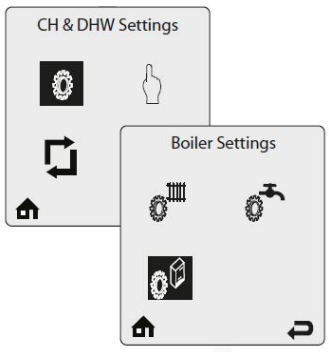


Fig. 13: Installer Menu

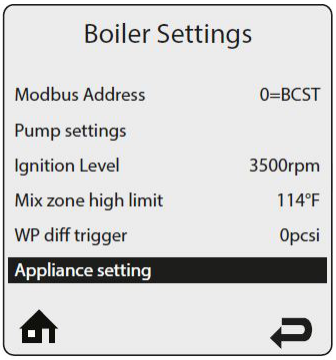


Fig. 14: Appliance setting

3. The required code is written on the data plate located at the side of the boiler. Use the code for the gas type, either Natural Gas or Propane.

4. Increase/decrease the value (from 0 to 9, then A to Z) using the UP or DOWN keys to, then change position with the LEFT or RIGHT keys.

5. Follow the instructions on the screen to enter the appliance code for your boiler.

6. The boiler will now be factory set for that particular model. Return to step 2 and enter settings recorded in Table 1 back into the controls to return the boiler to the customized settings of the old control.

7. Return to step 2 and enter settings recorded in Table 1 back into the controls. Combustion Test and Adjustments

NOTICE

The installer MUST perform a complete combustion check to ensure the following combustion levels are met at high and low input firing rates and the burner is operating at optimum conditions.

⚠ WARNING

The combustion testing and adjustments must be performed by a qualified installer, service agency or the gas supplier. All combustion measurements must be performed with calibrated equipment to ensure proper readings and accuracy.

⚠ WARNING

Failure to perform a complete combustion test at both high and low input rates may result in incomplete combustion and the production of carbon monoxide, which can cause severe personal injury, death or substantial property damage.

8. Touch simultaneously on the up and down soft keys for 3 seconds to access the functions for the installer. See Fig. 4.

9. Enter the installer access code "054" by using the LEFT and RIGHT buttons to select a digit and the UP and DOWN buttons to change the digit. Press the CENTER button to enter the access code.

10. Press the RIGHT button to highlight the Manual Operation icon then press the CENTER button.

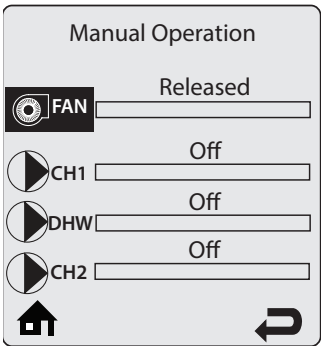


Fig. 15: CTRLMax Manual Operation

11. Press the CENTER button while the FAN icon is highlighted to manually fire the burner and power the CH circulator. See Fig. 5

NOTICE

An adequate CH load must be present to dissipate the heat generated during the combustion test. If an adequate CH load is not available, an indirect water heater can be used to dissipate the heat by creating a DHW call which will enable the DHW circulator.

12. Press the RIGHT button to adjust the firing rate to 100% (high fire). Hold down the RIGHT button to rapidly increase the firing rate.

13. If the combustion levels during high fire are outside the recommended combustion settings (see Table 1), adjust the THROTTLE SCREW (see Fig. 6) using a flat-blade screwdriver as follows:

Counter-clockwise adjustment of the THROTTLE SCREW at High Fire (100% firing rate):

O_2 decreases and CO_2 increases

Clockwise adjustment of the THROTTLE SCREW at High Fire (100% firing rate):

O_2 increases and CO_2 decreases

14. Once the combustion level is set at high fire, manually place the boiler into low fire mode by pressing the LEFT button to adjust firing rate down to 1% (low fire).

15. If the combustion level (O_2 or CO_2) during low fire is not are outside the recommended combustion settings in Table 1 contact Triangle Tube Technical Support.

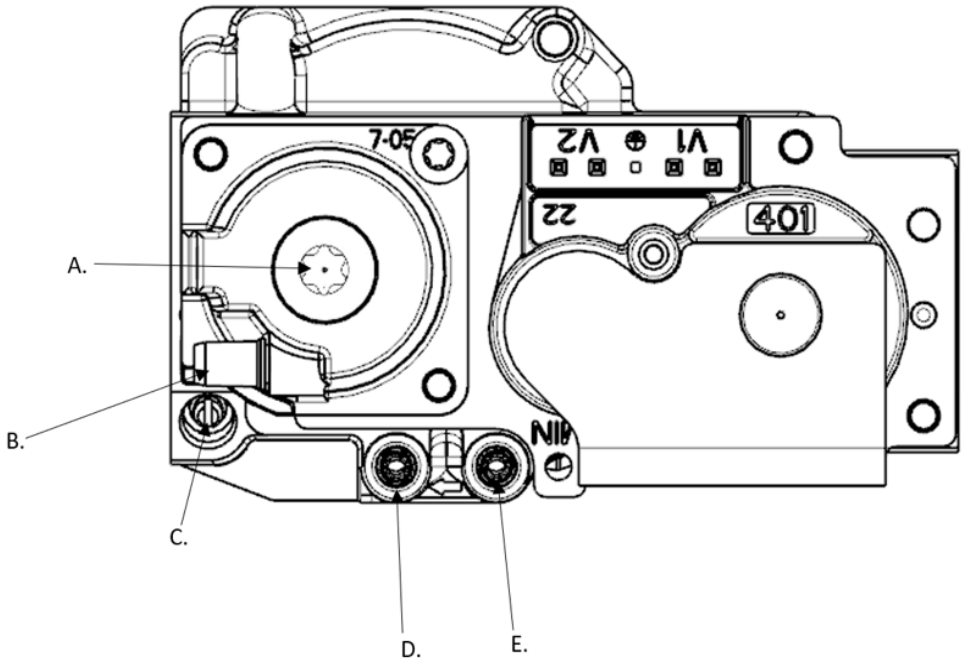
16. Press the CENTER button while the fan icon is highlighted to shutdown the burner.

17. Press the LEFT or RIGHT button to highlight the home screen icon to exit the service mode.

18. Replace the front panel and put the boiler back into operation.

Table 1: Combustion Settings

		Natural Gas 110, 155	Natural Gas 199	Propane 110, 155	Propane 199
HIGH FIRE	CO2 Range	9.0 to 10.5%	8.5 to 10.5%	10.0 to 11.0%	
	CO2 Target	9.50%		10.80%	
	O2 Range	4.85 to 2.15 %	5.75 to 2.15 %	5.7 to 4.2 %	
	O2 Target	3.95%		4.50%	
	CO Max	<150 ppm @ 9.5% CO2		<200 ppm @ 10.8% CO2	
LOW FIRE	CO2 Range	9.0 to 10.0 %	8.5 to 10.0 %	10.0 to 11.0 %	
	CO2 Target	9.5%	9%	10.8%	10.4%
		Target values are equivalent to High Fire values, ensure CO_2 values measured are less than or equal to High Fire CO_2 measurements		Target values are equivalent to High Fire values, ensure CO_2 values measured are less than or equal to High Fire CO_2 measurements	
	O2 Range	4.85 to 3.0 %	5.75 to 3.0 %	5.7 to 4.2 %	
	O2 Target	3.95%	4.85%	4.5%	5.1%
		Target values are equivalent to High Fire values, ensure O_2 values measured are higher than or equal to High Fire O_2 measurements		Target values are equivalent to High Fire values, ensure O_2 values measured are higher than or equal to High Fire O_2 measurements	
	CO Max	10 ppm		10 ppm	



A. Low Fire (Offset) Cap & Adjustment Screw
B. Reference Pressure Connection
C. High Fire Adjuster (Throttle)
D. Low Fire Pressure (Offset Pressure)
E. Gas Inlet Pressure

Fig. 16: Throttle Screw Location

Table 2: Controls Settings

HEATING SETTING	FACTORY DEFAULT	MINIMUM SETTING	MAXIMUM SETTING	EXISTING SETTING
Heating Operation	Enabled			
Demand Type	Thermostat & Outd. Curve			
Absolute Max CH Setpoint	185°F [85°C]	68°F [20°C]	188°F [87°C]	
CH1 Maximum Setpoint	180°F [82°C]	68°F [20°C]	188°F [87°C]	
CH1 Minimum Setpoint	80°F [27°C]	60°F [15°C]	188°F [87°C]	
Outdoor Curve Coldest Day	10°F [-12°C]	-30°F [-34°C]	50°F [10°C]	
Outdoor Curve Warmest Day	64°F [18°C]	60°F [15°C]	78°F [25°C]	
CH2 Circuit	Enabled			
CH2 Maximum Setpoint	140°F [60°C]	68°F [20°C]	194°F [90°C]	
CH2 Minimum Setpoint	80°F [27°C]	60°F [15°C]	190°F [88°C]	
Warm Weather Shutdown	Off	Off	78°F [25°C]	
Circulation Pump Permanent	Disabled			
CH Post Pump Time	5 Minutes	Off	20 Minutes	
Freeze Protection	Enabled			
Frost Protection Setpoint	-22°F [-30°C]	-22°F [-30°C]	50°F [10°C]	
Parallel Shift Value	0°F [0°C]	0°F [0°C]	144°F [80°C]	
CH Call Blocking	2 Minutes	0 Minutes	30 Minutes	

DOMESTIC SETTING	SOLO FACTORY DEFAULT	COMBI FACTORY DEFAULT	MINIMUM SETTING	MAXIMUM SETTING	EXISTING SETTING
DHW Operation	Enabled	Enabled			
Demand Type	Thermostat	N/A			
DHW Boiler Setpoint	168°F [76°C]	168°F [76°C]	96°F [35°C]	188°F [87°C]	
DHW Setpoint	140°F [60°C]	140°F [60°C]	68°F [20°C]	168F [75°C]	
DHW Warmstart Setpoint	N/A	125°F [52°C]	86°F [30°C]	140°F [60°C]	
DHW Warmstart Hysteresis	N/A	30°F [17K]	9K	36K	
DHW On Differential	6°F [3°C]	N/A	4°F [2°C]	18°F [10°C]	
DHW Storage Adder	27°F [15°C]	18°F [10°C]	10°F [5°C]	54°F [30°C]	
DHW Post Pump Time	2 Minutes	2 Minutes	Off	30 Minutes	
DHW Priority Timeout	Off	Off	Off	120 Minutes	
DHW Priority	Enabled	Enabled			
DHW Call Blocking	1 Minute	1 Minute	0 Minute	30 Minutes	
DHW to CH Call Blocking	1 Minute	1 Minute	0 Minute	30 Minutes	
Antilegionella Function	Disabled	Enabled			

Table 1 Cont:

BOILER SETTING	FACTORY DEFAULT	MINIMUM SETTING	MAXIMUM SETTING	EXISTING SETTING
Lockout Temp.	210°F [99°C]			
Modbus Address	0=BCST	0=BCST	247	
Flex. Relay 1(CH)	CH1			
Flex. Relay 2(DHW)	DHW			
Flex. Relay 3(P3)	CH1/CH2/DHW			
Flex. Relay 4(ERR)	ERROR			
Flex. Relay 5(Flame)	FLAME			
Flex. Relay 6(P4)	CH2			
Error Relay	On Lockout, Blocking and Warning			
Pump PWM Minimum	30%	1%	100%	
Ignition Level	Varies by model			
Mix Zone High Limit	114°F [45°C]	68°F [20°C]	176°F [80°C]	
Appliance Setting	Varies by model			
Altitude Setting	0 ft	0 ft	20,000 ft	