

# Application Guide



## instinct

SOLO 110-155-199 & COMBI 155-199

### NOTICE

- This manual is applicable to all Instinct boilers with AA or no letter in the serial number after the S or C (e.g. IN110SAA000001).
- If this guide does not apply to your boiler, Please visit [triangletube.com](http://triangletube.com) to obtain the correct application guide.



### WARNING

This document is intended to be used by a factory trained and qualified heating contractor or service technician only. Read all Instructions within this document and within the relevant Boiler Installation and Maintenance Manual before proceeding. It is recommended to follow

the procedures in the steps given. Skipping or missing procedural steps could result in substantial property damage, serious injury, or death.

### NOTICE

- When receiving the Instinct unit, any claims for damage or shortage in shipment must be filed immediately against the transportation company by the consignee.
- Customer must register unit within sixty (60) days of installation in order to gain warranty coverage. See Warranty Card for details.
- Leave all documentation received with appliance with the owner for future reference.
- Installation and service should only be performed by a qualified installer or service technician.
- Installations and service should be performed by a licensed plumber or gas fitter in the Commonwealth of Massachusetts.



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# Instinct Application Guide



## 1. Flexible Pump Configuration

This allows the installer to customize the flexible Pump Output (relays) to a specific installation arrangement that is not addressed in the Preset Pump Configuration options. There is a total of six Pump Output(relays) that must be set.

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

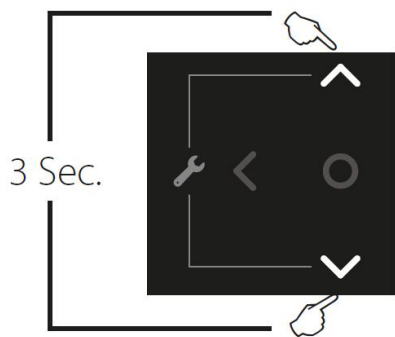


Fig. 1: Installer Button

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.

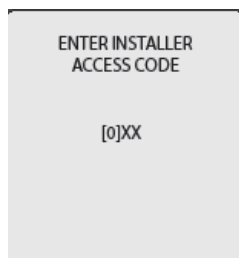


Fig. 2: Installer Access Code

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

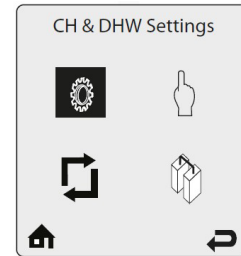


Fig. 3: CH & DHW Settings

4. Press the OK button while the **Boiler Settings** icon is highlighted.

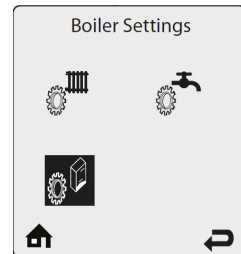


Fig. 4: Boiler Settings

5. Press the OK button while the **Pump Settings** option is highlighted.

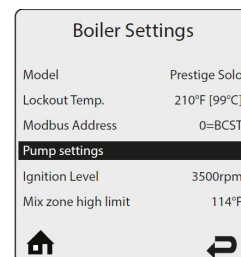


Fig. 5: Pump Settings

6. Press the OK button while **Flexible Pump Config** option is highlighted.

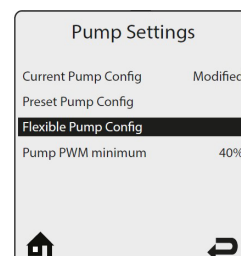


Fig. 6: Flexible Pump Config



- A list of 6 Flex Relays are clickable. These are the Boiler actions to be edited.

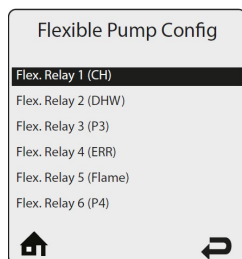


Fig. 7: Flex. Relays

## NOTICE

*Flex. Relay 3 (P3), Flex. Relay 4 (ERR), Flex. Relay 6 (P4) are not functional in the Instinct Boilers.*

- Select the relay to be changed. Choose whether the relay will be on or off for any of the following calls: *CH1*, *CH2*, *DHW*, *MIX OPEN*, *MIX CLOSE*, *ERROR*, *FLAME*.

- When selecting CH1, the relay is activated at CH1 demand.
- When selecting CH2, the relay is activated at CH2 demand.
- When selecting DHW, the relay is activated at DHW demand.
- Mix Open is not functional in the Instinct Boilers.
- Mix Close is not functional in the Instinct Boilers.
- When selecting ERROR, the relay is activated on error.
- When selecting FLAME, the relay is activated when appliance is running and a flame signal has been detected.

- Once the Relay's actions have been selected, scroll down and hit enter on the **Save and Exit** option at the bottom. This relay shown in Fig. 8 is set to turn on the pump wired to the CH1 terminal only for CH1 calls.



Fig. 8: Flex. Relay 1 Settings



Fig. 9: Flex. Relay 1 Save Option

## NOTICE

*The options will not be saved when quick exiting (hitting the house or back arrow at the bottom of the menu).*



# Instinct Application Guide



## 2. Pump Selection

Refer to Table 1 for the Boiler pump recommendations when using primary secondary piping.

Table 1: Instinct Solo Pump Requirements

Model	Heating Capacity	Temperature Rise	Required Boiler Flow	Minimum Boiler Pipe Size	Minimum Boiler Pump Size		
					Grundfos	Taco	Wilo
Instinct Solo 110	102 MBH	20°F	10.2 GPM	1"	UPS 15-58FC	0015-MSF3	Star S 21 F
		25°F	8.2 GPM	1"	UPS 15-58FC	007-F5	Star S 21 F
		30°F	6.8 GPM	1"	UPS 15-58FC	007-F5	Star S 21 F
		35°F	5.8 GPM	1"	UPS 15-58FC	007-F5	Star S 21 F
Instinct Solo 155	143 MBH	20°F	14.3 GPM	1.25"	UPS 26-99FC	0013-MSF1	Star S 33 FC
		25°F	11.4 GPM	1.25"	UPS 26-99FC	0013-MSF1	Star S 33 FC
		30°F	9.5 GPM	1"	UPS 15-58FC	0015-MSF3	Star S 21 F
		35°F	8.2 GPM	1"	UPS 15-58FC	007-F5	Star S 21 F
Instinct Solo 199	185 MBH	20°F	18.5 GPM	1.5"	UPS 43-100 F	2400-30-3P	Top S 1.25 x 35
		25°F	14.8 GPM	1.25"	UPS 26-99FC	0013-MSF1	Star S 33 FC
		30°F	12.3 GPM	1.25"	UPS 26-99FC	0013-MSF1	Star S 33 FC
		35°F	10.6 GPM	1"	UPS 15-58FC	0015-MSF3	Star S 21 F

Table 2: Instinct Preset Pump Configurations

### Instinct Solo Preset Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	OFF	ON

### Instinct Combi Preset Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	ON	ON



## 3. Instinct Solo Piping Diagrams

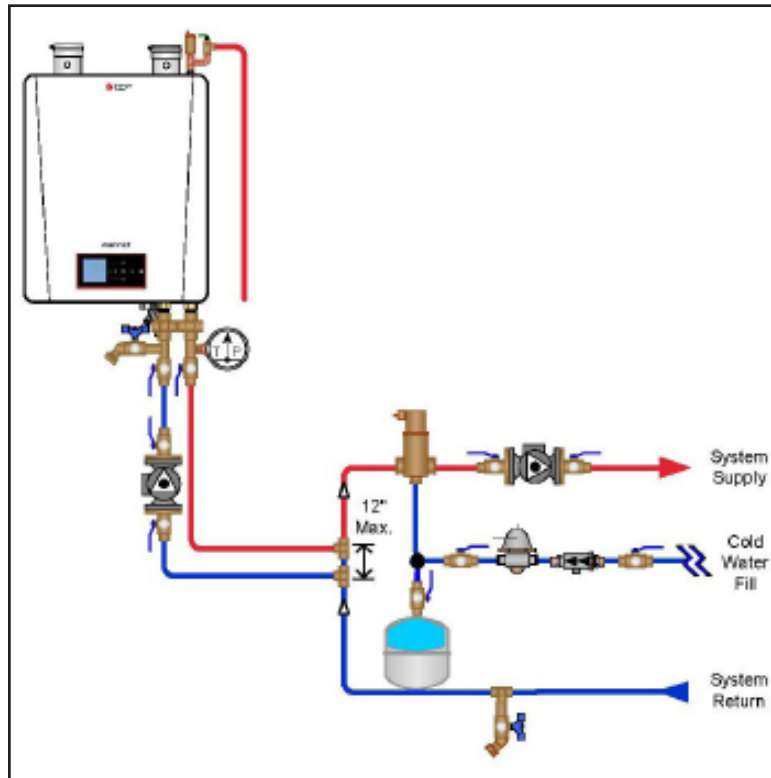


Fig. 10: Instinct Solo Near Boiler Piping with Closely Spaced Tees

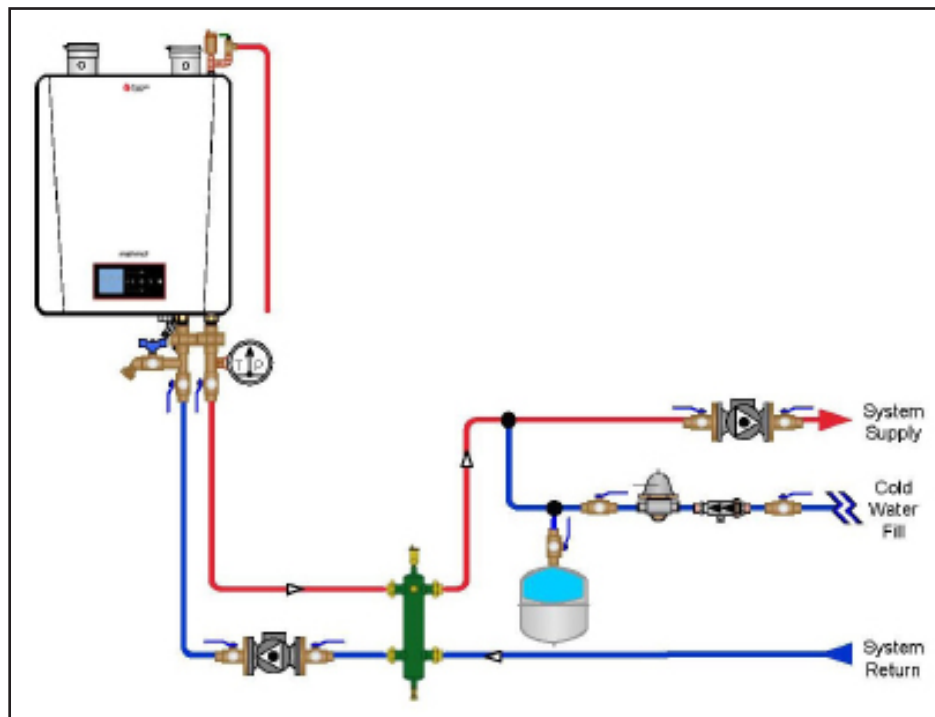


Fig. 11: Instinct Solo Near Boiler Piping with Hydraulic Separator



# Instinct Application Guide



## Instinct Solo Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	OFF → ON*	ON

\* A custom pump setting is required via flexible pump configuration

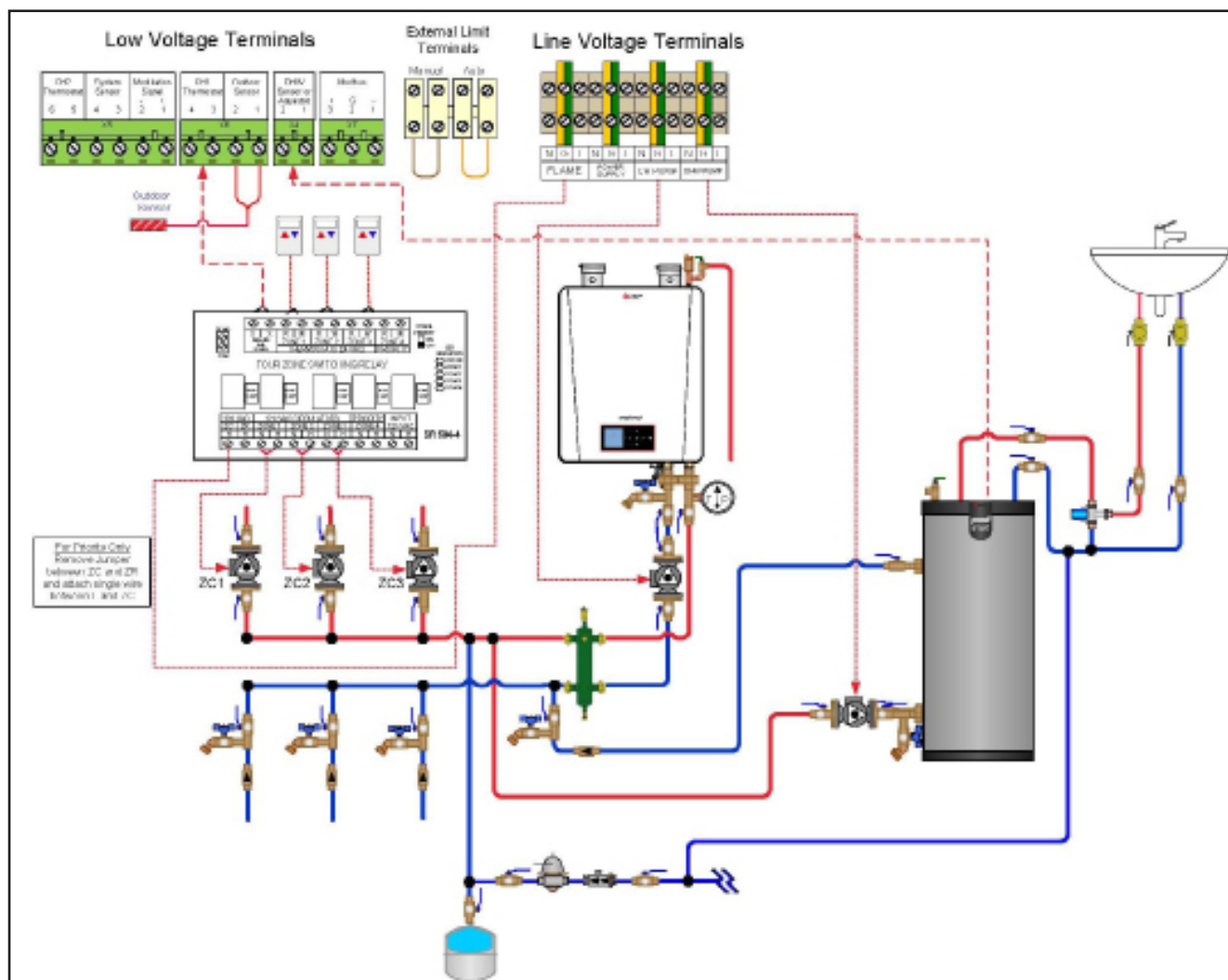


Fig. 12: Instinct Solo - Multiple Zones with Circulators

### NOTICE

Piping layout is shown with a Hydraulic Separator. Closely spaced tees and an air separator can be used as shown in Fig. 10 on page 6.

Layout is shown with separate Circulator and check valve. If using a circulator with internal check valve, the corresponding check valve is unnecessary.



## Instinct Solo Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	OFF	ON

*Note. Instinct Solo is pre-configured for this installation*

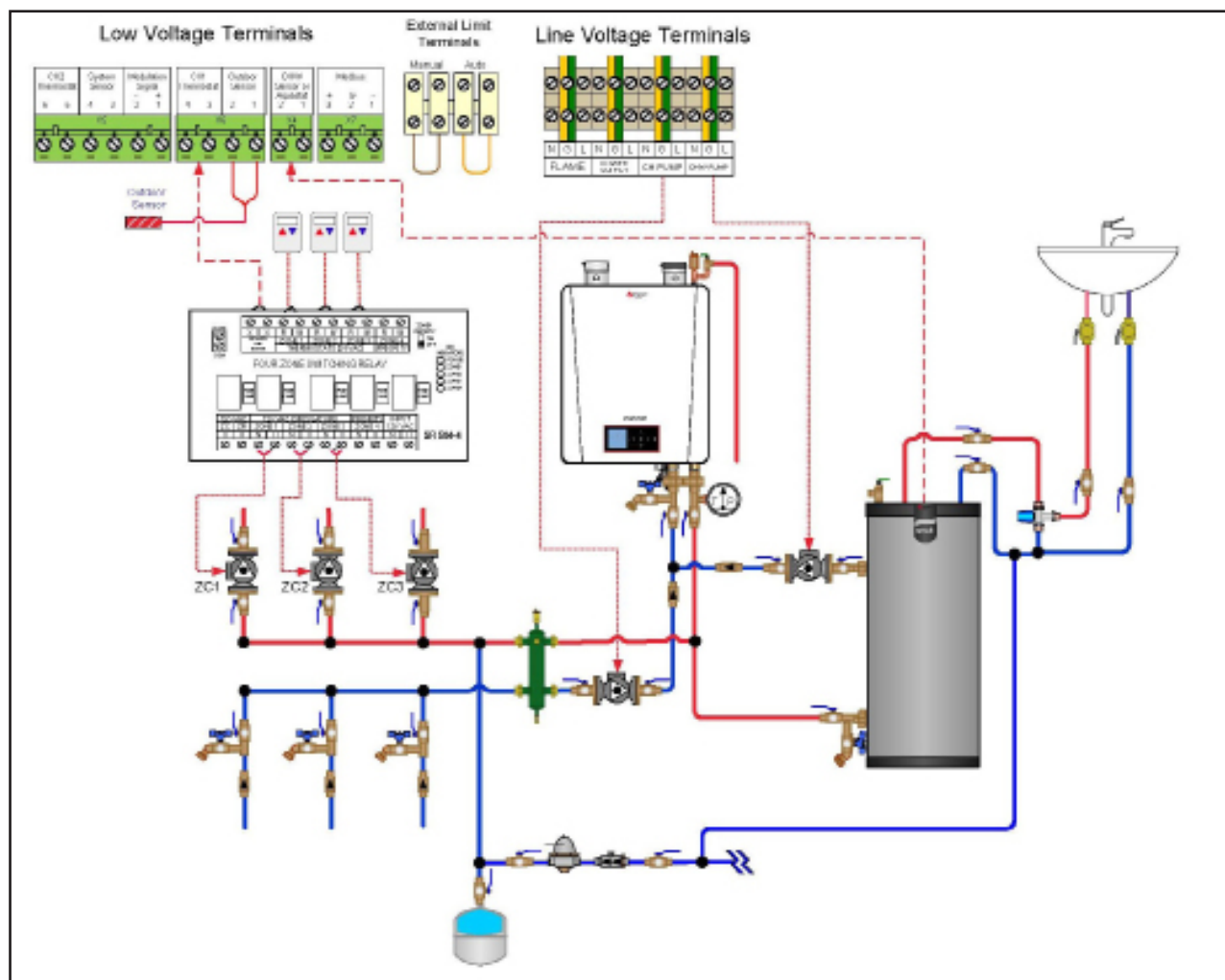


Fig. 13: Instinct Solo - Multiple Zones with Circulators - Domestic Piping Alternate

### NOTICE

Piping layout is shown with a Hydraulic Separator. Closely spaced tees and an air separator can be used as shown in Fig. 10 on page 6.

Layout is shown with separate Circulator and check valve. If using a circulator with internal check valve, the corresponding check valve is unnecessary.



## Instinct Solo Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	OFF → ON*	ON

\* A custom pump setting is required via flexible pump configuration

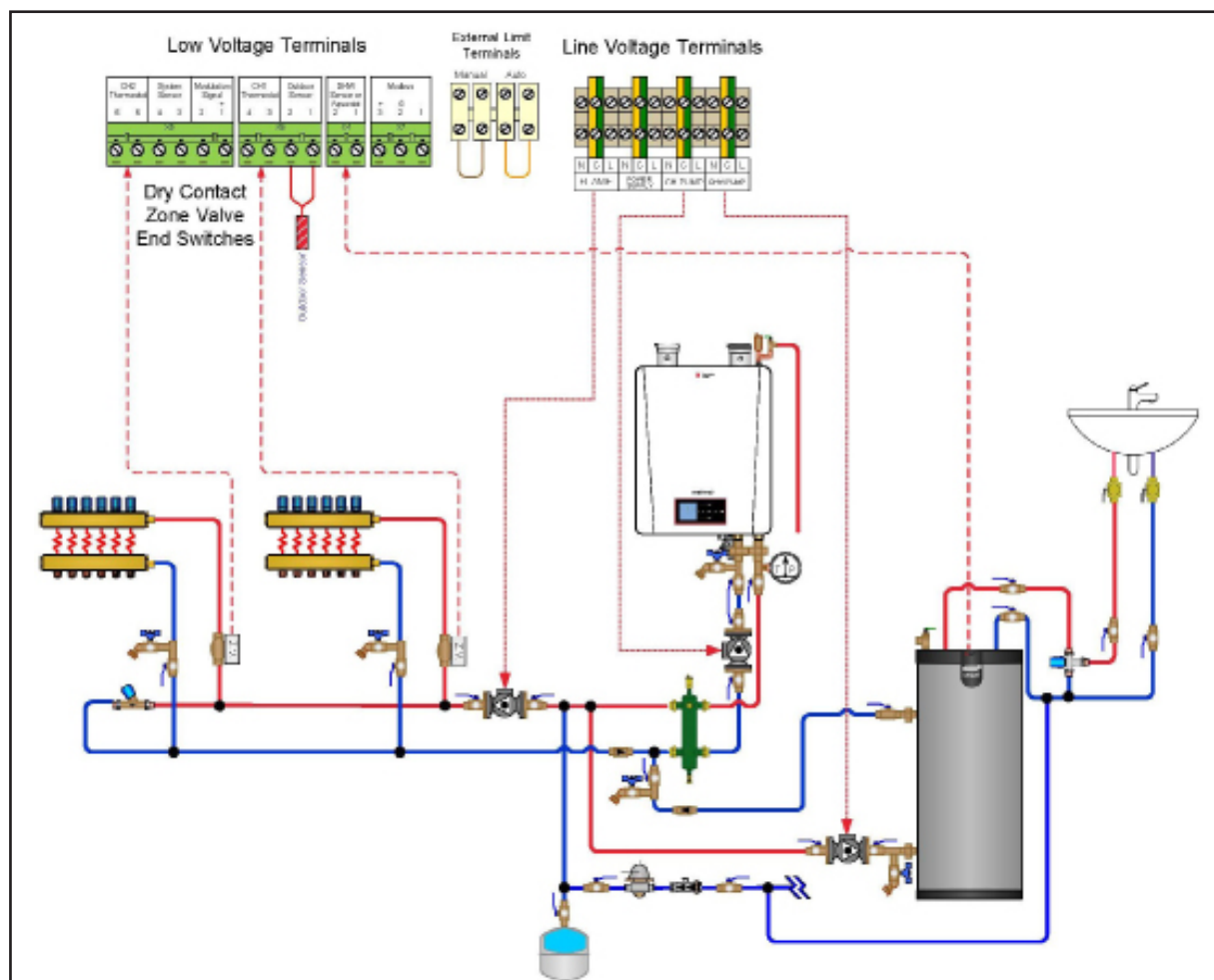


Fig. 14: Instinct Solo - Piping with Zone Valves

### NOTICE

Piping layout is shown with a Hydraulic Separator. Closely spaced tees and an air separator can be used as shown in Fig. 10 on page 6.



## Instinct Solo Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	OFF	ON

*Note. Instinct Solo is pre-configured for this installation*

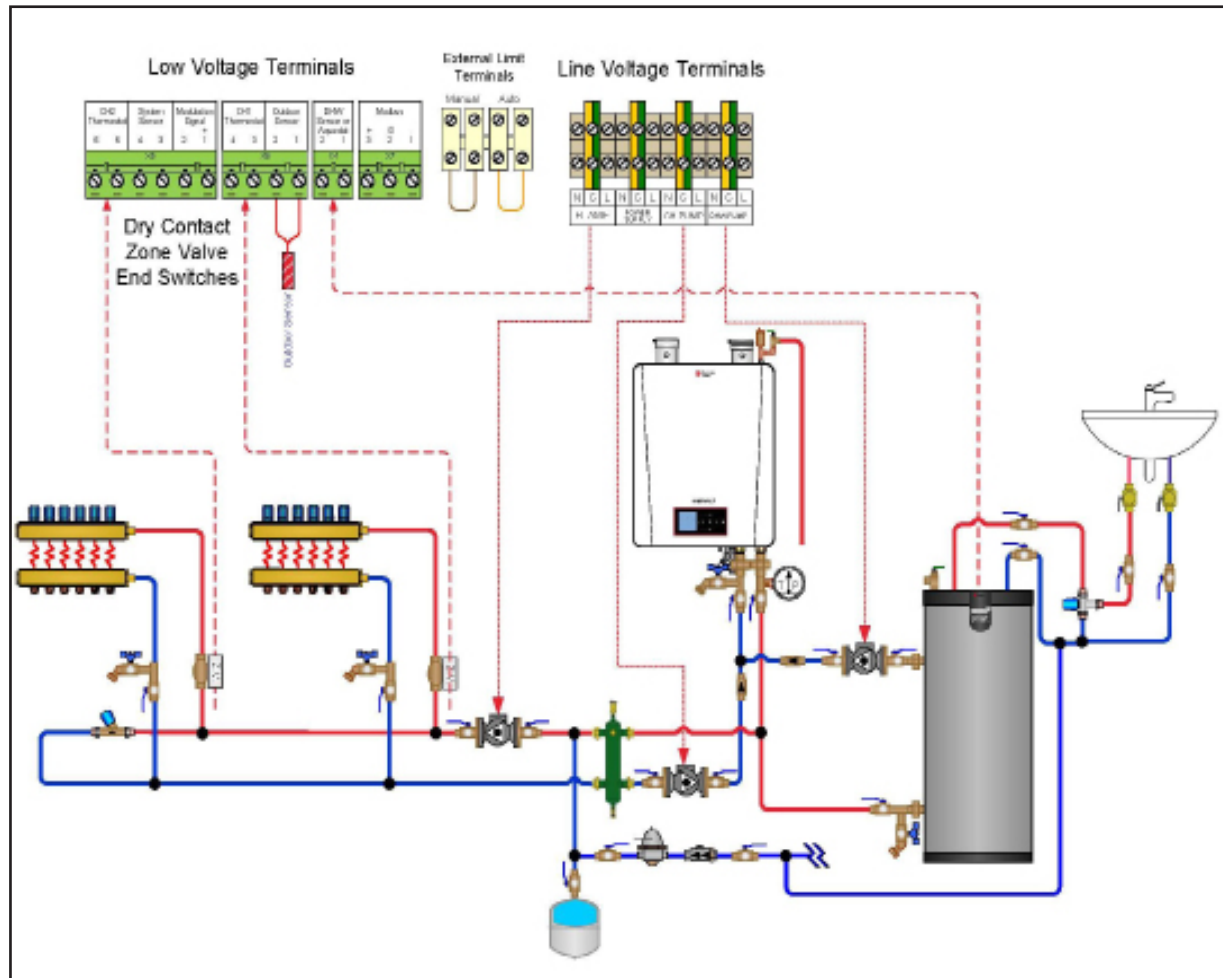


Fig. 15: Instinct Solo - Piping with Zone Valves - Domestic Piping Alternate

### NOTICE

Piping layout is shown with a Hydraulic Separator. Closely spaced tees and an air separator can be used as shown in Fig. 10 on page 6.



## Instinct Solo Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	OFF → ON*	ON

\* A custom pump setting is required via flexible pump configuration

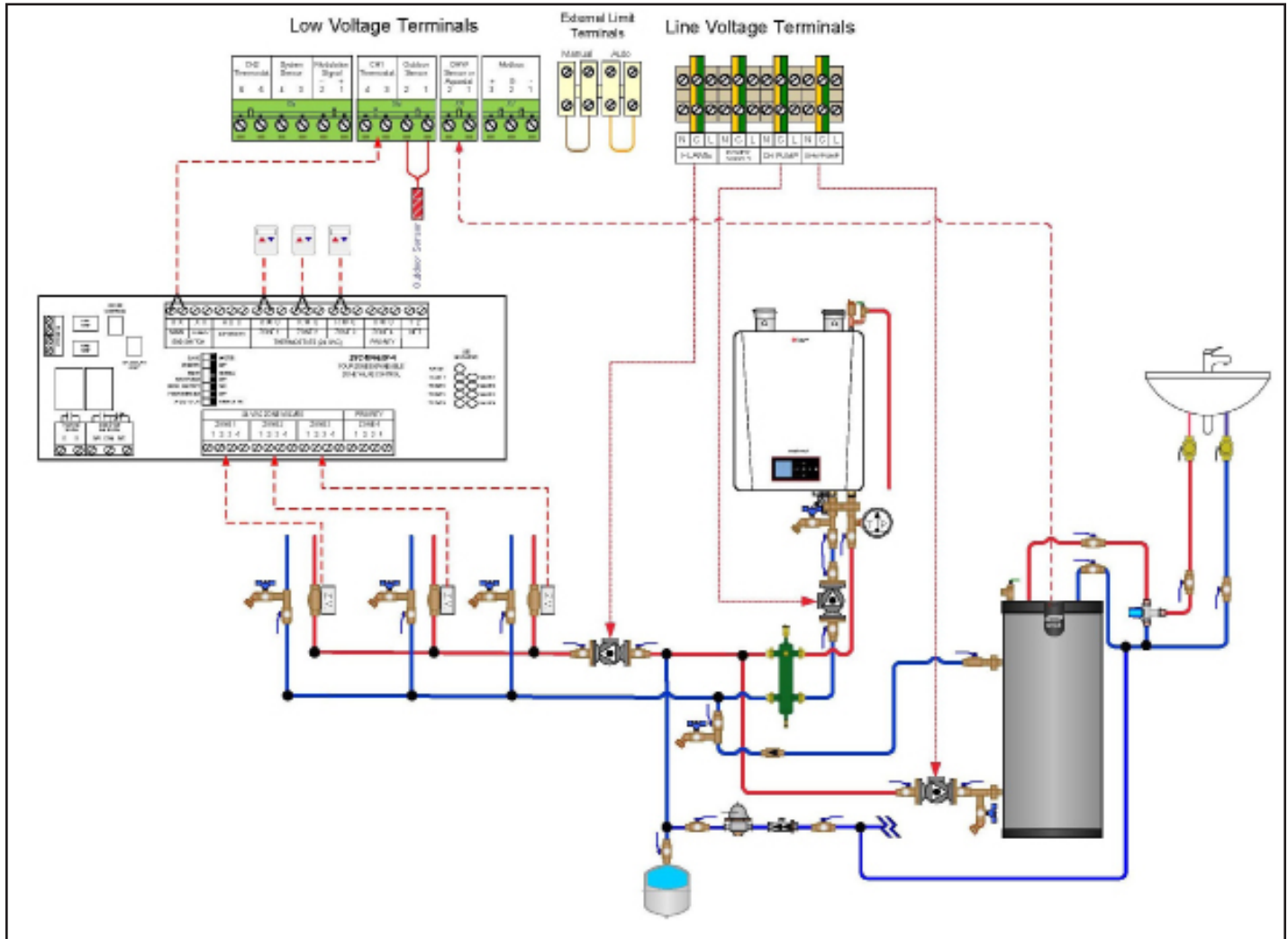


Fig. 16: Instinct Solo - Piping with Zone Valves and Zone Valve Control Panel

### NOTICE

Piping layout is shown with a Hydraulic Separator. Closely spaced tees and an air separator can be used as shown in Fig. 10 on page 6.



## Instinct Solo Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	OFF	ON

*Note. Instinct Solo is pre-configured for this installation*

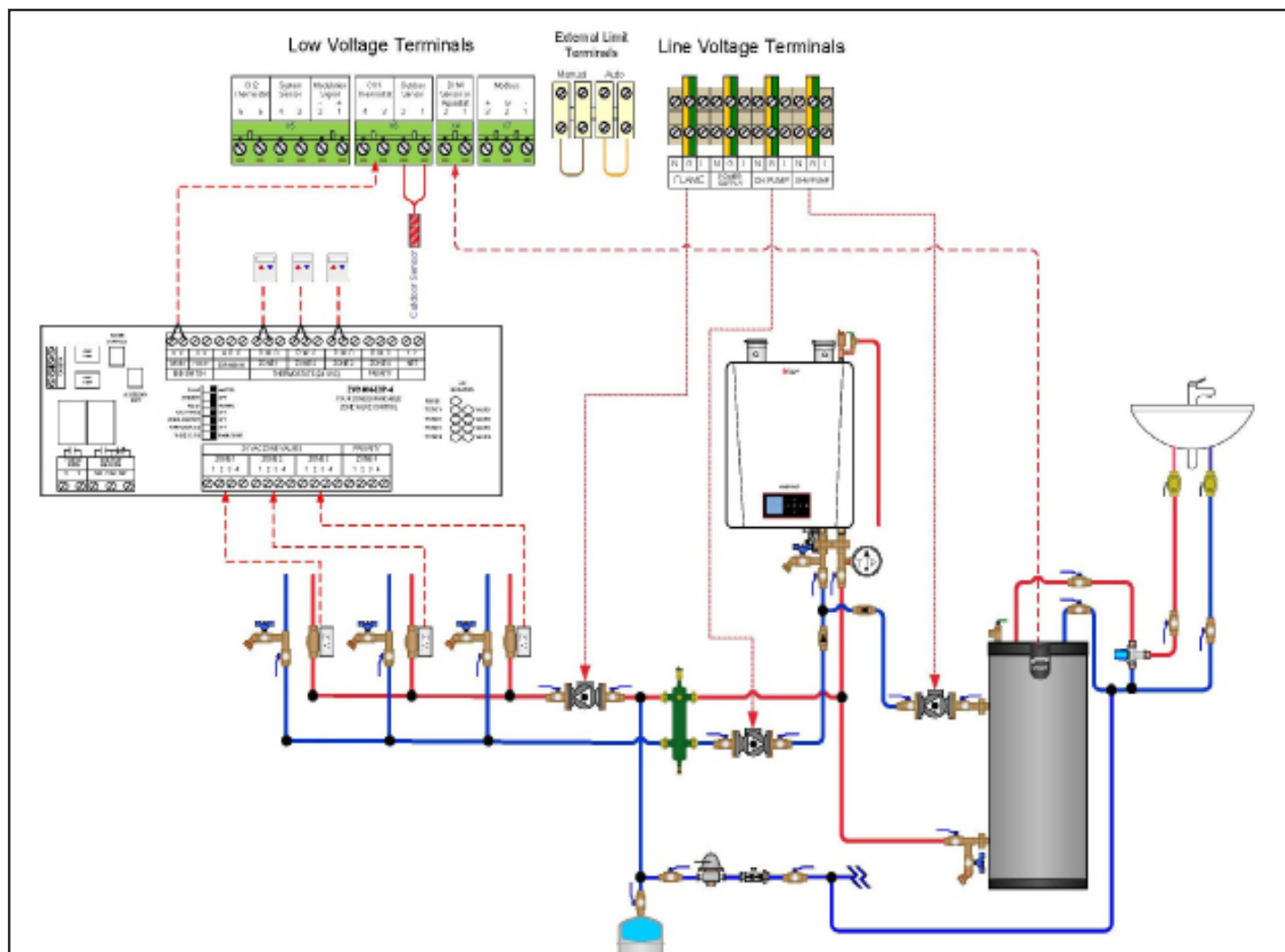


Fig. 17: Instinct Solo - Piping with Zone Valves and Zone Valve Control Panel - Domestic Piping Alternate

### NOTICE

Piping layout is shown with a Hydraulic Separator. Closely spaced tees and an air separator can be used as shown in Fig. 10 on page 6.



## Instinct Solo Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	OFF → ON*	ON

\* A custom pump setting is required via flexible pump configuration

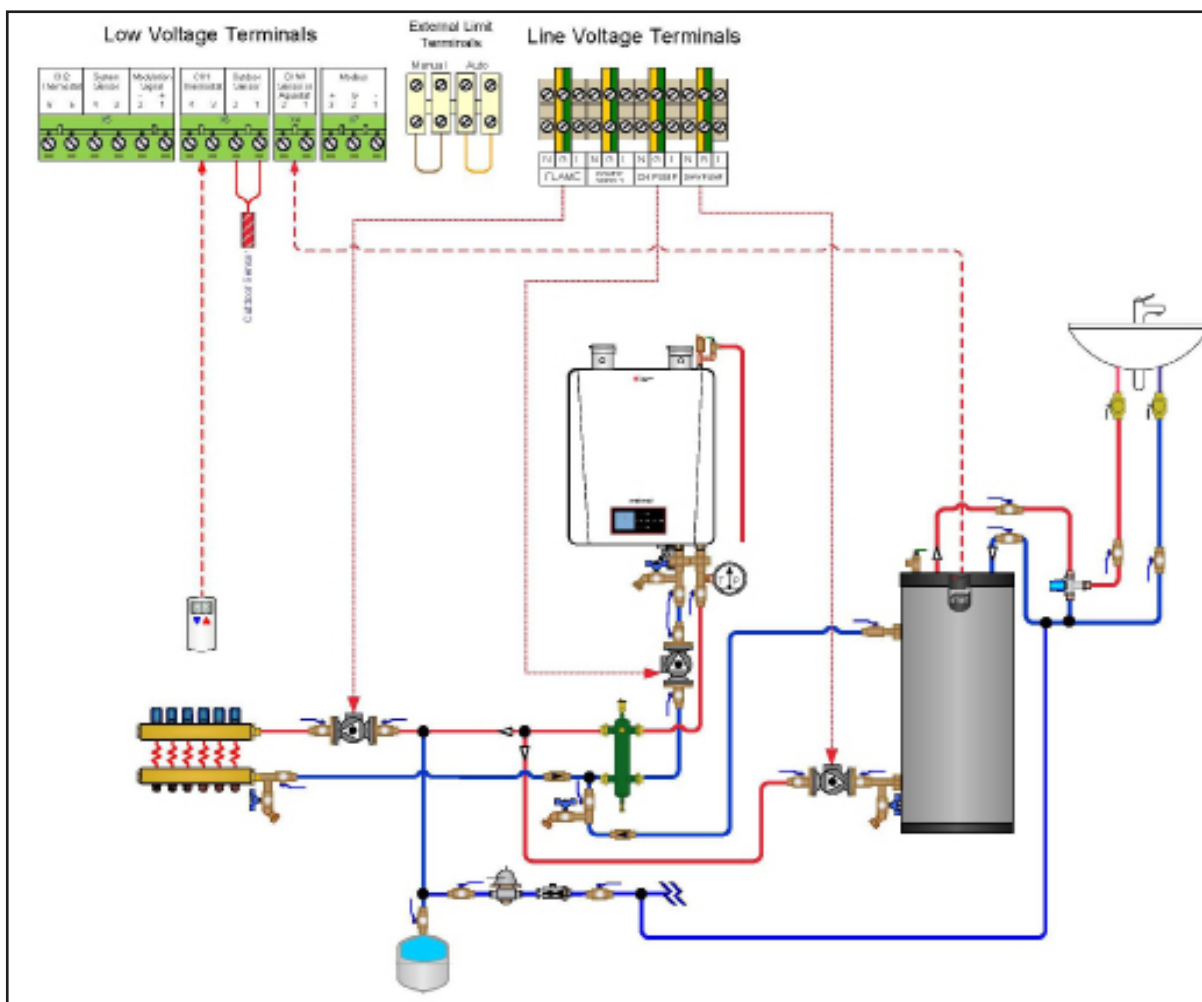


Fig. 18: Instinct Solo - Single Zone with Circulator

### NOTICE

Piping layout is shown with a Hydraulic Separator. Closely spaced tees and an air separator can be used as shown in Fig. 10 on page 6.

Layout is shown with separate Circulator and check valve. If using a circulator with internal check valve, the corresponding check valve is unnecessary.



## Instinct Solo Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	OFF	ON

*Note. Instinct Solo is pre-configured for this installation*

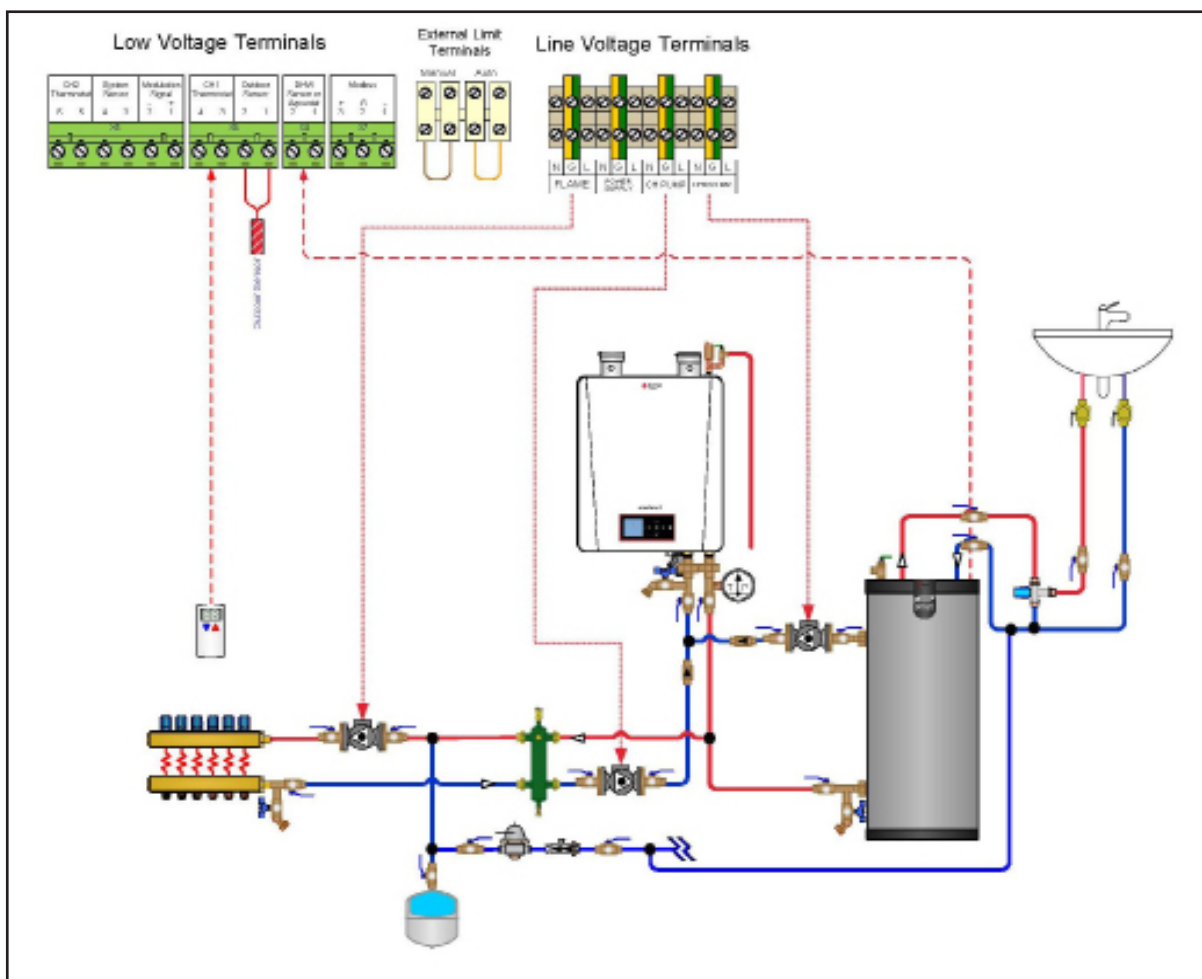


Fig. 19: Instinct Solo - Single Zone with Circulator - Domestic Piping Alternate

### NOTICE

Piping layout is shown with a Hydraulic Separator. Closely spaced tees and an air separator can be used as shown in Fig. 10 on page 6.

Layout is shown with separate Circulator and check valve. If using a circulator with internal check valve, the corresponding check valve is unnecessary.



## Instinct Solo Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON → OFF*	ON	OFF
DHW	OFF	OFF → ON*	ON

\* A custom pump setting is required via flexible pump configuration

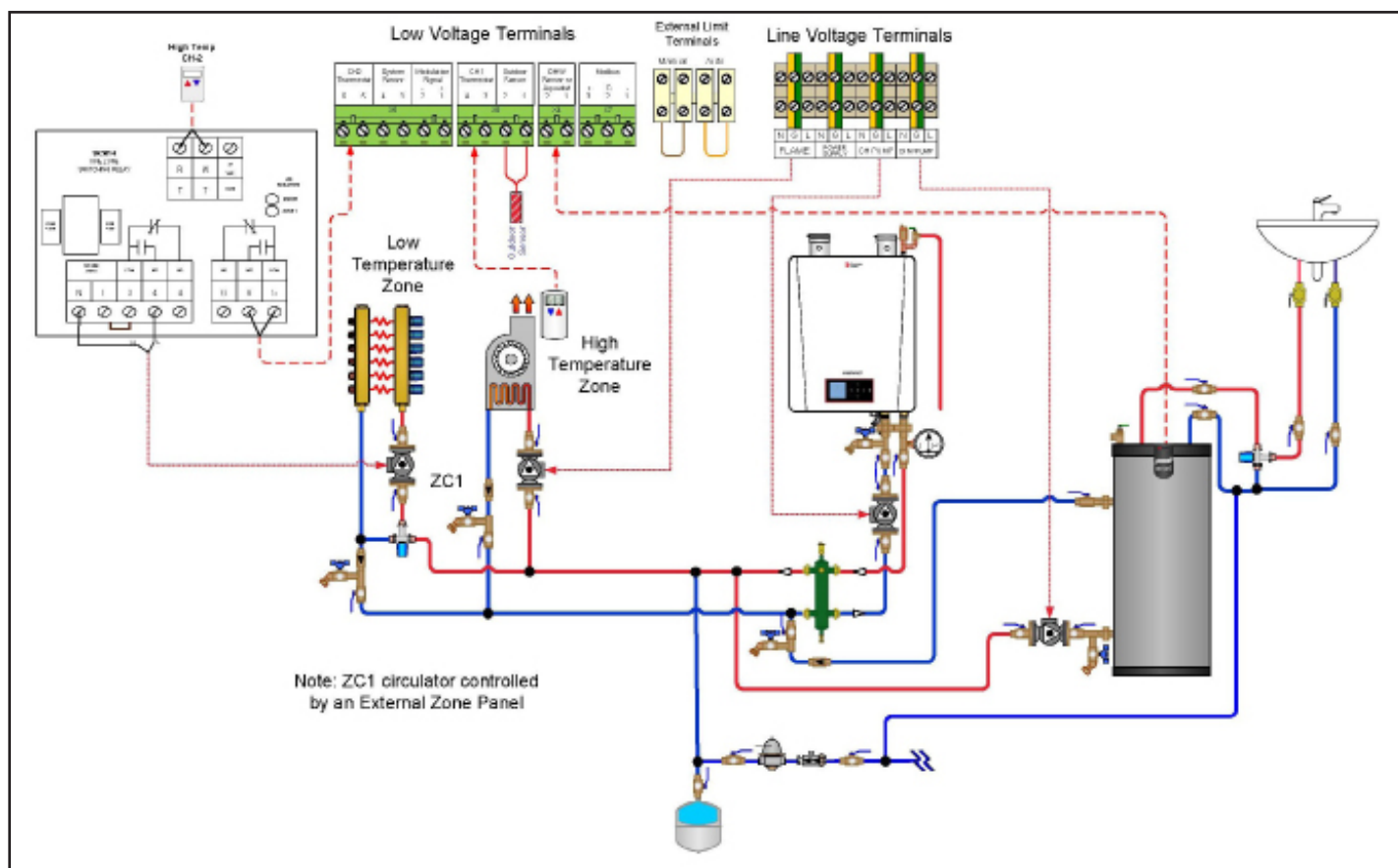


Fig. 20: Instinct Solo - Multiple Temperature Zones with Circulators

### NOTICE

Piping layout is shown with a Hydraulic Separator. Closely spaced tees and an air separator can be used as shown in Fig. 10 on page 6.

Layout is shown with separate Circulator and check valve. If using a circulator with internal check valve, the corresponding check valve is unnecessary.



## Instinct Solo Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON → OFF*	ON	OFF
DHW	OFF	OFF	ON

\* A custom pump setting is required via flexible pump configuration

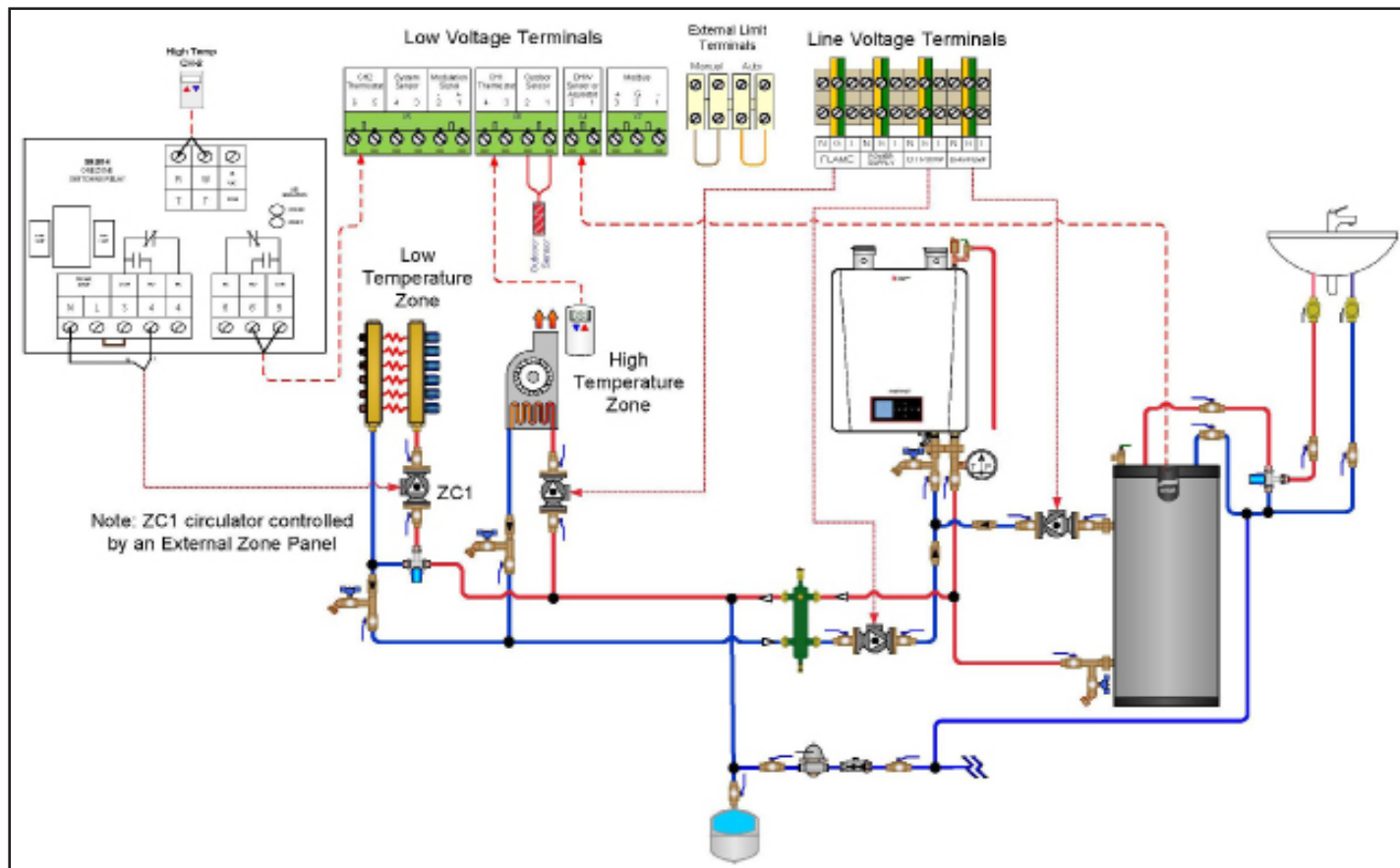


Fig. 21: Instinct Solo - Multiple Temperature Zones with Circulators - Domestic Piping Alternate

### NOTICE

Piping layout is shown with a Hydraulic Separator. Closely spaced tees and an air separator can be used as shown in Fig. 10 on page 6.

Layout is shown with separate Circulator and check valve. If using a circulator with internal check valve, the corresponding check valve is unnecessary.



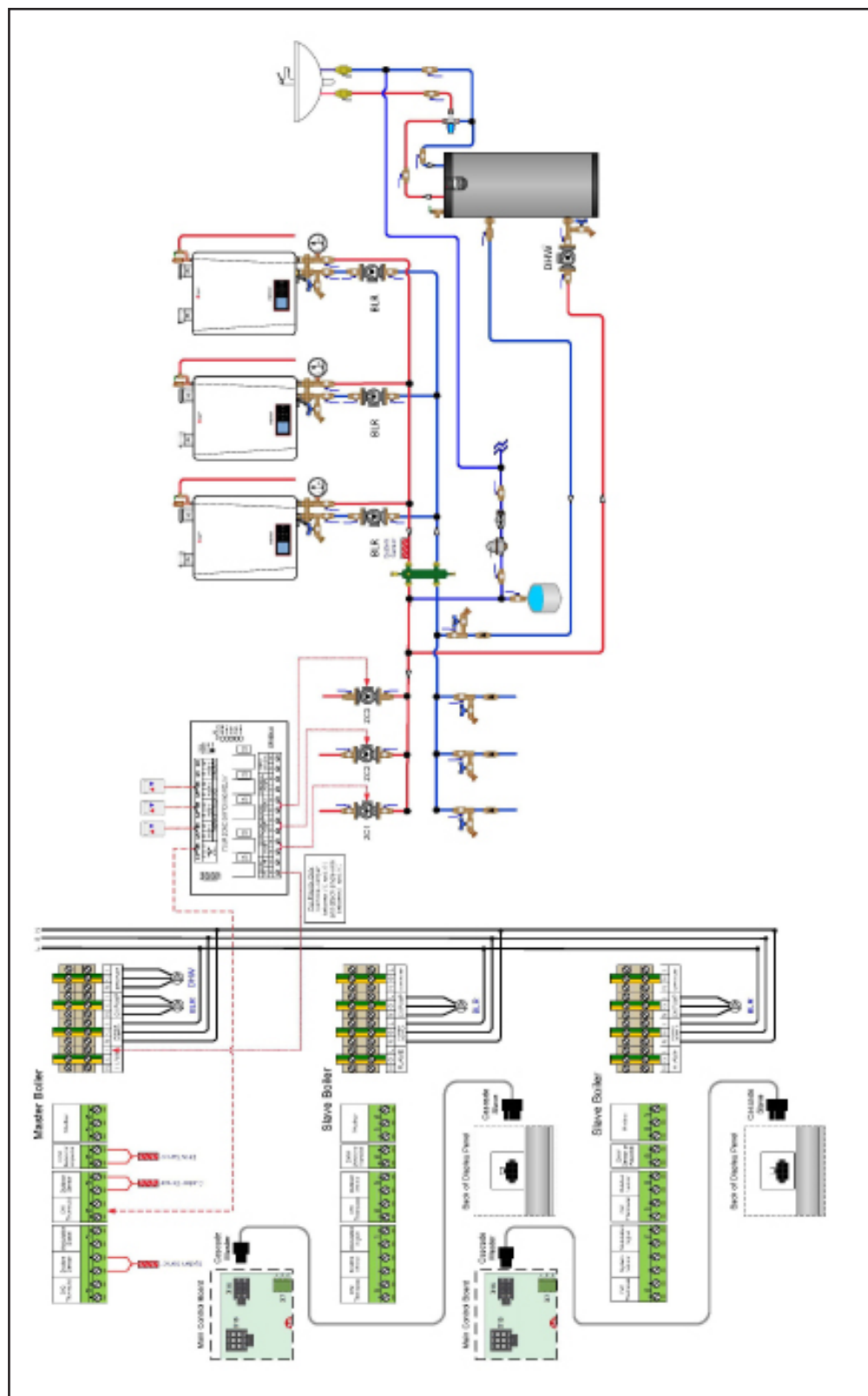


Fig. 22: Instinct Solo - Cascade Layout



## 4. Instinct Combi Piping Diagrams

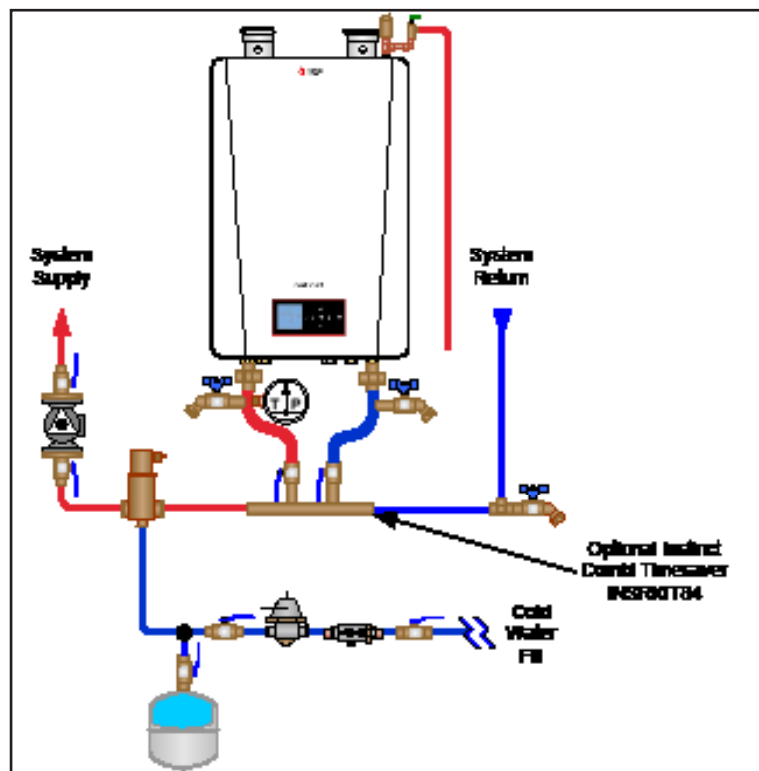


Fig. 23: Instinct Combi Near Boiler Piping with Timesaver Manifold

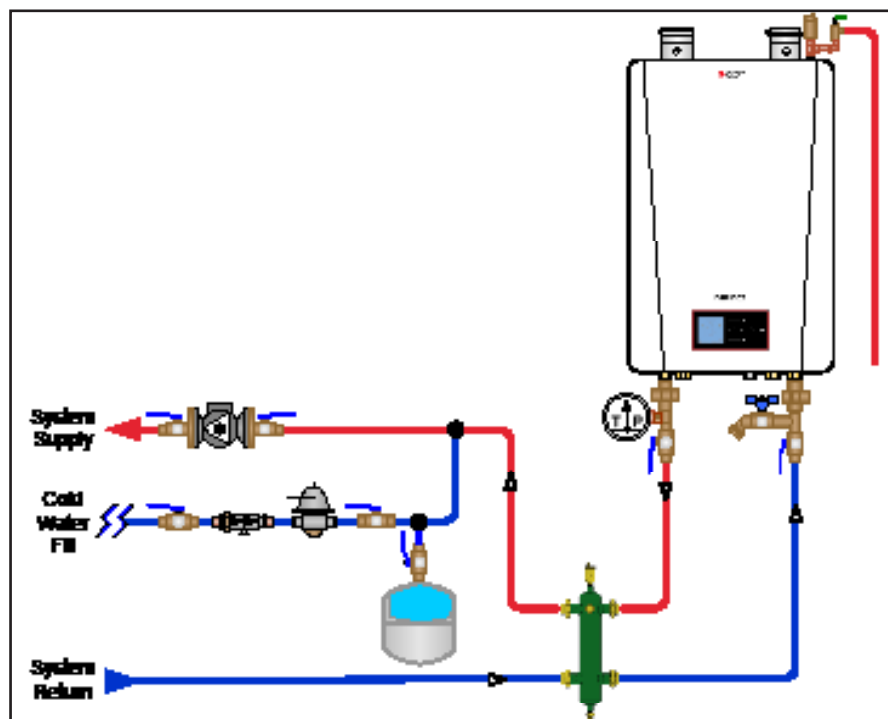


Fig. 24: Instinct Combi Near Boiler Piping with Hydraulic Separator



## Instinct Combi Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	ON	ON

*Note. Instinct Combi is pre-configured for this installation*

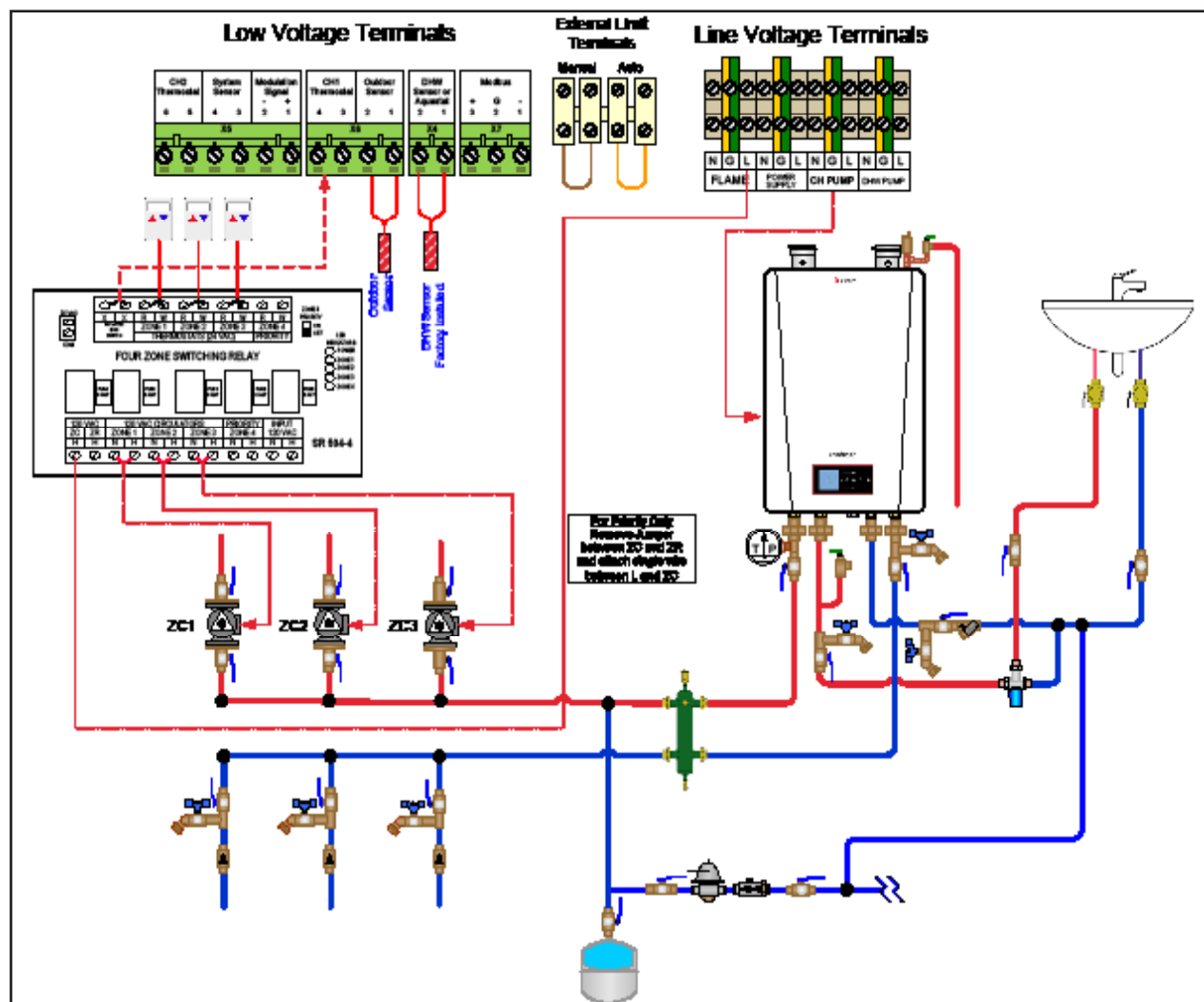


Fig. 25: Instinct Combi - Multiple Zones with Circulators

### NOTICE

Piping layout is shown with a Hydraulic Separator. The Timesaver manifold (INSRKIT84) and air separator can be used as shown in Fig. 23 on page 18.

Layout is shown with separate Circulator and check valve. If using a circulator with internal check valve, the corresponding check valve is unnecessary.



## Instinct Combi Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	ON	ON

*Note. Instinct Combi is pre-configured for this installation*

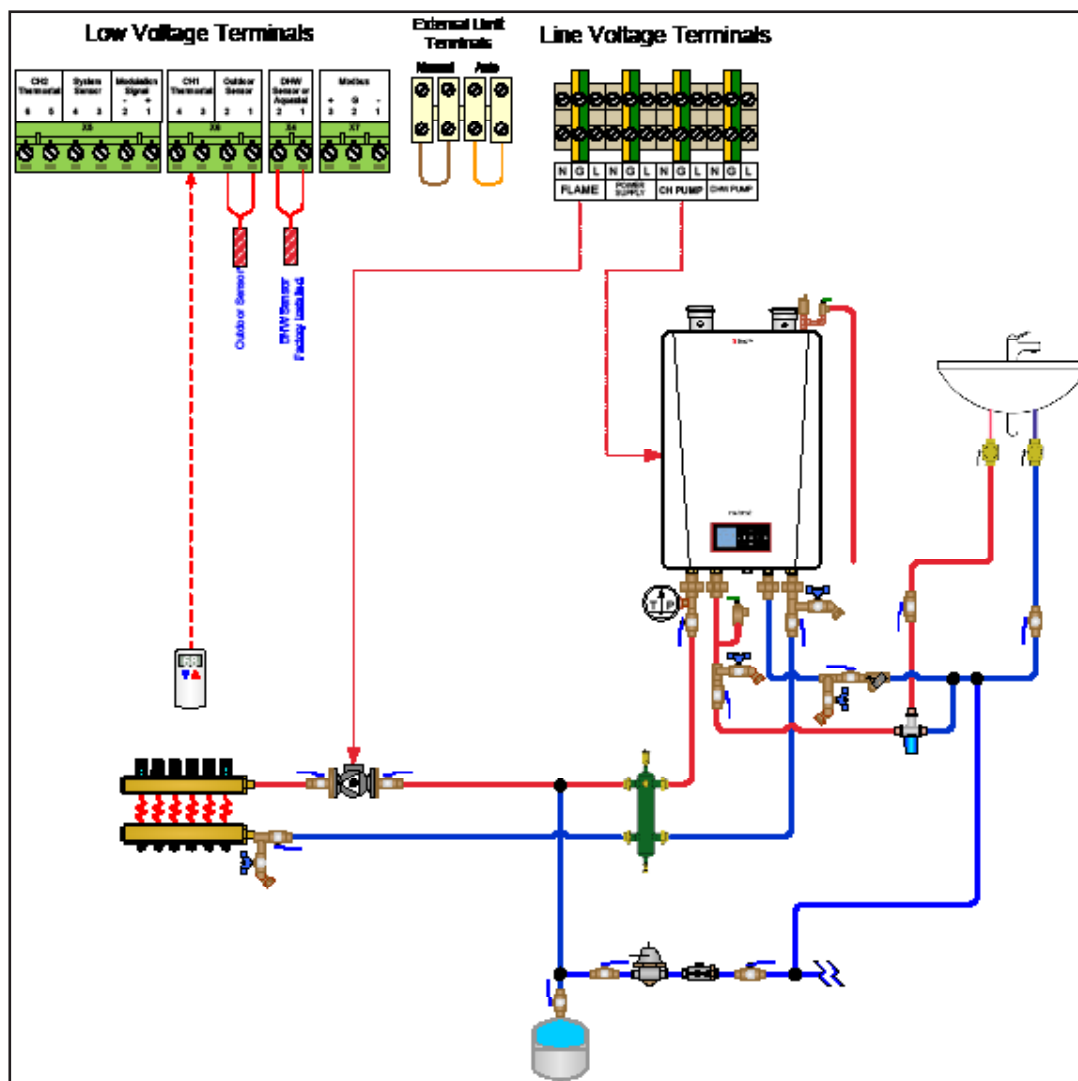


Fig. 26: Instinct Combi - Single Zones with Circulator

### NOTICE

Piping layout is shown with a Hydraulic Separator. The Timesaver manifold (INSRKIT84) and air separator can be used as shown in Fig. 23 on page 18.

Layout is shown with separate Circulator and check valve. If using a circulator with internal check valve, the corresponding check valve is unnecessary.



## Instinct Combi Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON → OFF *	ON	OFF → ON*
DHW	OFF	ON	ON → OFF *

\* Custom pump settings are required via flexible pump configuration

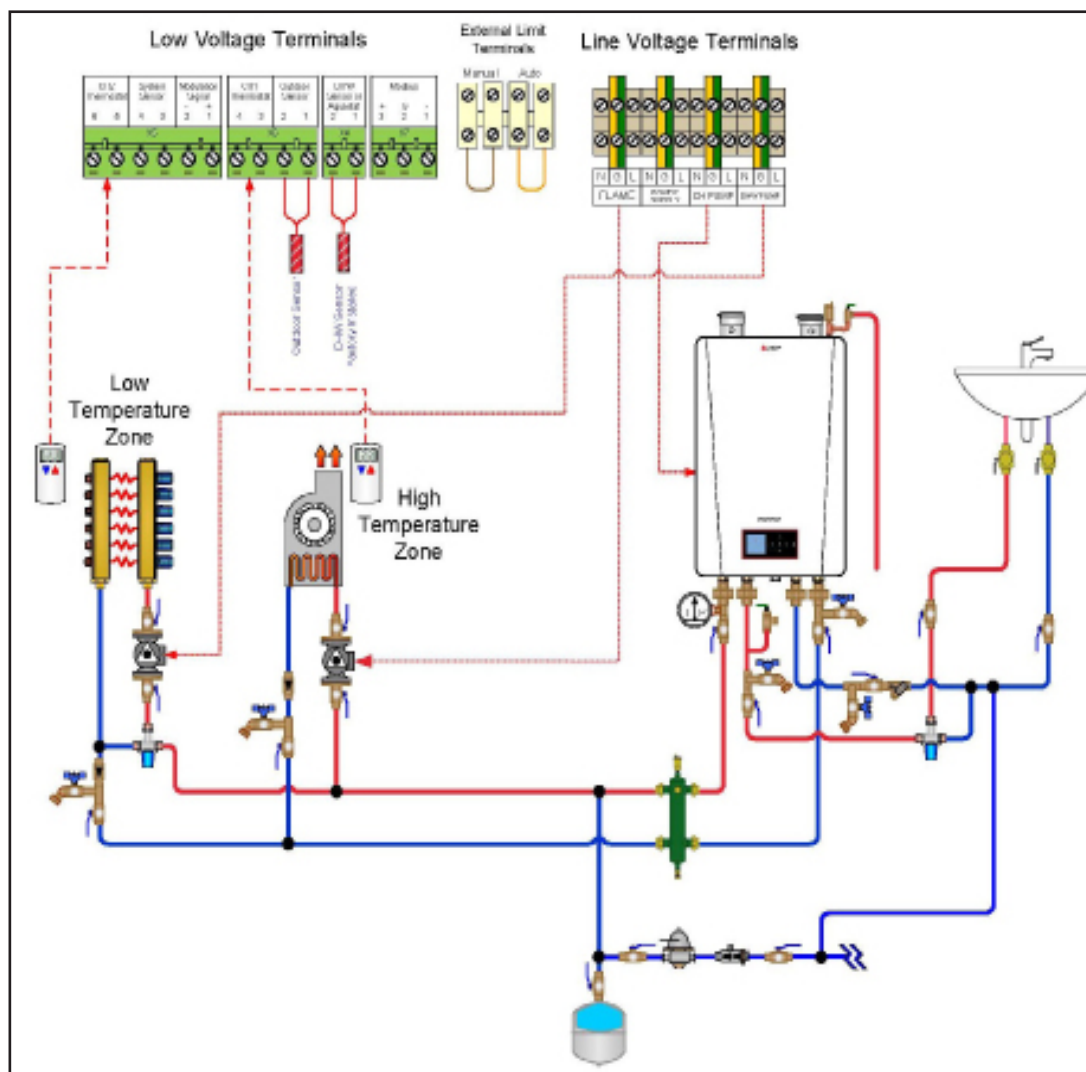


Fig. 27: Instinct Combi - Multiple Temperature Zones with Circulators

### NOTICE

Piping layout is shown with a Hydraulic Separator. The Timesaver manifold (INSRKIT84) and air separator can be used as shown in Fig. 23 on page 18.

Layout is shown with separate Circulator and check valve. If using a circulator with internal check valve, the corresponding check valve is unnecessary.



## Instinct Combi Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	ON	ON

*Note. Instinct Combi is pre-configured for this installation*

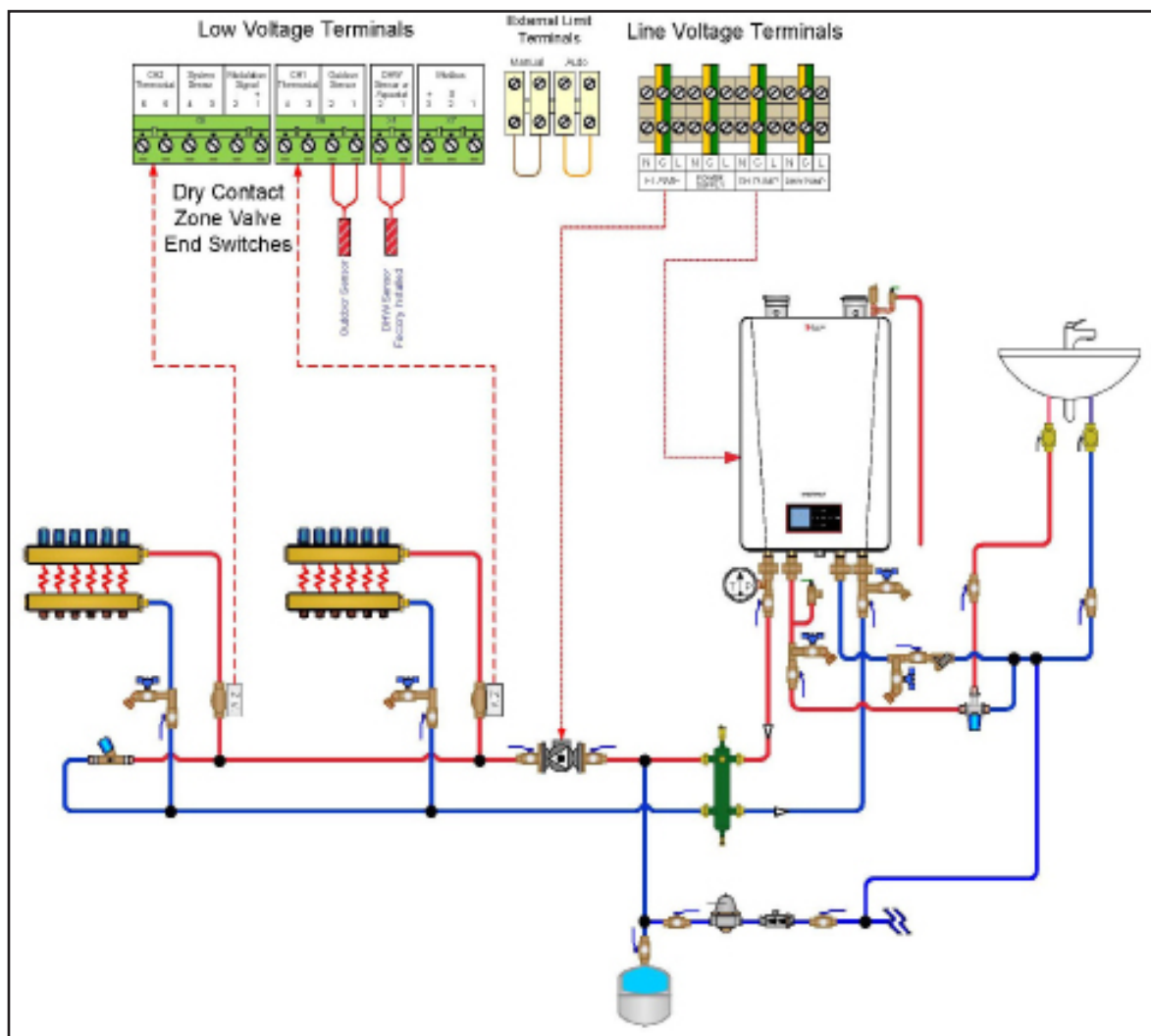


Fig. 28: Instinct Combi - Multiple Zones with Zone Valves

### NOTICE

Piping layout is shown with a Hydraulic Separator. The Timesaver manifold (INSRKIT84) and air separator can be used as shown in Fig. 23 on page 18.



## Instinct Combi Pump Configuration

Heat Call	Flame	CH Pump	DHW Pump
CH1	ON	ON	OFF
CH2	ON	ON	OFF
DHW	OFF	ON	ON

*Note. Instinct Combi is pre-configured for this installation*

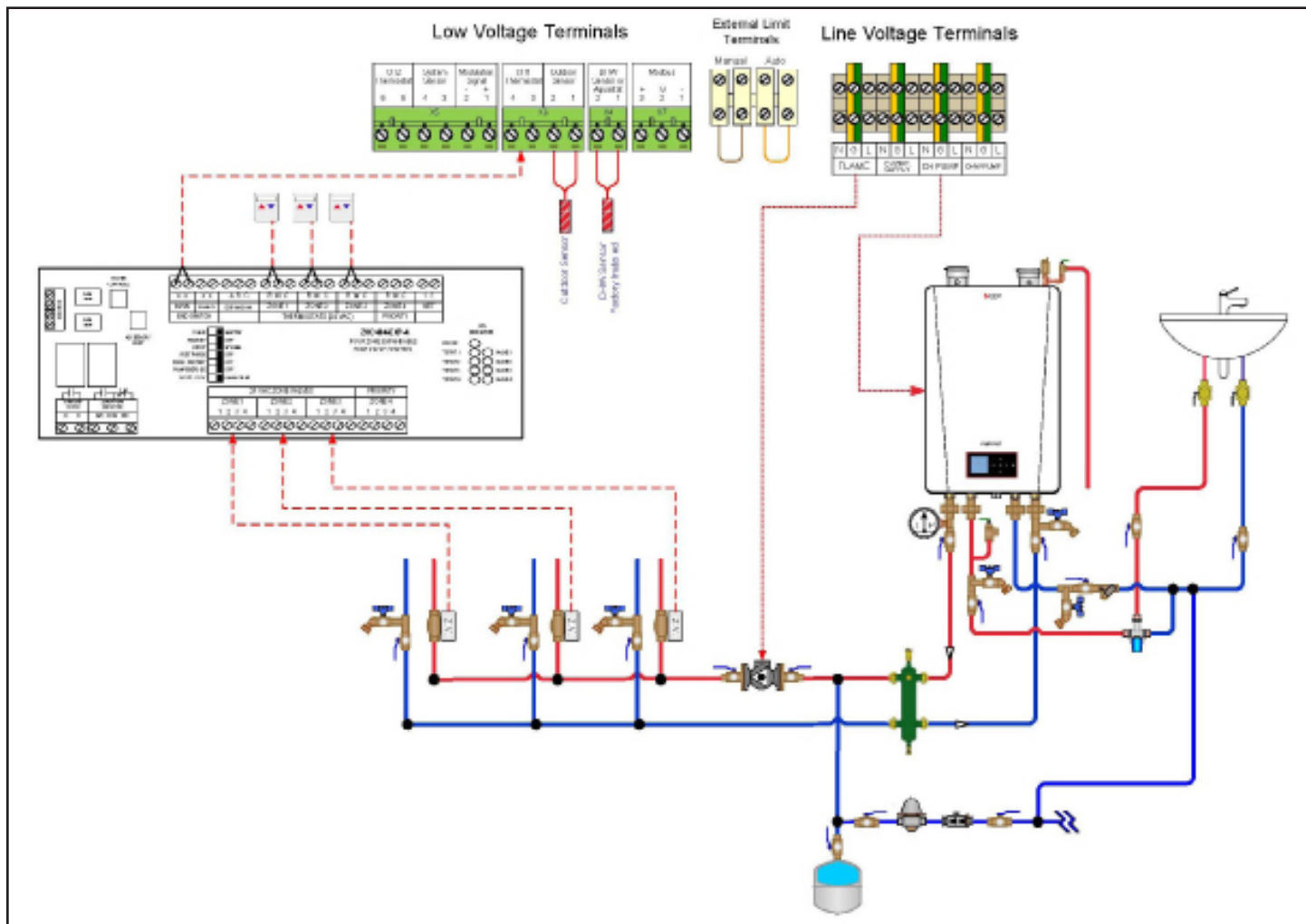


Fig. 29: Instinct Combi - Multiple Zones with Zone Valves and Zone Valve Control Panel

### NOTICE

Piping layout is shown with a Hydraulic Separator. The Timesaver manifold (INSRKIT84) and air separator can be used as shown in Fig. 23 on page 18.