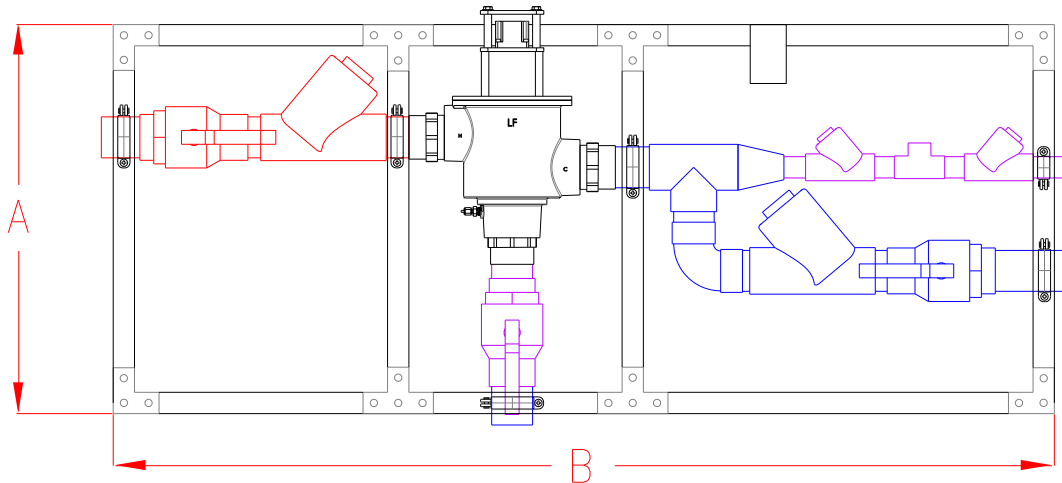


MODEL PNV-300-LF-R DIGITAL TEMPERATURE RECIRCULATION MANIFOLD



APPROXIMATE DIMENSIONS

A = 2' 6" B = 6'

Image not to scale

STANDARD CONTROL BOX



- Digital Mixing Valve with 3" inlet ball and check valves, 3" Outlet with ball valve and integral RTD Sensor
- 3" inlets, 3" outlet (76.2mm X 76.2mm)
- 0.25 GPM** (.95 L/min) minimum flow capacity
- Controls water temperature to $\pm 2^{\circ}\text{F}$ in accordance with ASSE 1017
- Controls water temperature to $\pm 2^{\circ}\text{F}$ at the PNV-300-LF during times of low/no system demand
- Maximum operating pressure: 125 PSIG (860KPA)
- Automatic Hot/ Cold Water shutoff upon cold/ hot water inlet supply failure
- User adjustable settings at the controller
- User programmable set point range between 65°F and 180°F
- Displays outlet temperature
- UL Listed 120V plug in power supply with 6' cord
 - Option for Backup Uninterruptable Power Supply in the event of primary power loss w/ approx. two hours run time
- Factory assembled and tested

Valve assembly is compliant with Low-Lead requirements of wetted surface area containing less than 0.25% lead by weight. All other fittings and components, the sum total of which comprise the wetted surface of this product contains less than one quarter of one percent of lead by weight.

**NOTE: The valve will maintain temperature with 0.25 GPM flow from the domestic hot water loop when properly installed near the hot water source with a continuously operating recirculation pump.

See Page 3 for Specification Detail, Page 5 for Piping Method Detail & Flow Capacity Chart, Pages 6 and 7 for Options



WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.Ca.gov

NEW "ENHANCED FEATURE SET" CONTROL BOX SEE SELECTABLE OPTIONS PAGE 2



Valves are Pending ASSE 1017 Certified



Valves are Pending CSA Certified



Valve electronics are UL Certified



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Web Site: <http://www.leonardvalve.com>

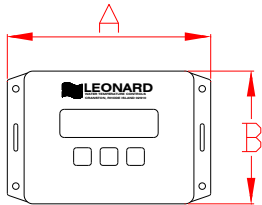
Product is non-cancellable and non-returnable from date from order with factory. Signed submittal required with purchase order.

PNV-CONTROLLER OPTIONS

Standard Controller 1.0 Version



A = 6" B = 4"
Depth = 1-3/4"



STANDARD CONTROLLER:

_____ **1.0** – See PAGE 1 for info

ENHANCED CONTROLLER OPTIONS:

_____ **2.0** – Enhanced Proton Controller with Programmable Disinfection Mode

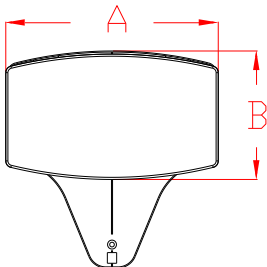
Options:

- _____ **3T**– Three Additional Temperature Sensors for Monitoring of Inlet Hot, Inlet Cold, and Return Temperatures
- _____ **REL** – 5 Relay Contacts that Switch during Alarm State
 - Helpful for Remote Alerts Within Building to Assist Maintenance and Service Personnel
 - 5 Unique States:
 - Loss of Power
 - Broken Temperature Probe
 - “Out of Range” Temperature ($\pm 10^{\circ}\text{F}$)
 - Motor Connectivity and Operation
 - Maintenance (Service Required) @ <90% Full travel

Enhanced Controller 2.0, 2.5, 3.0 Versions



A = 8" B = 4-3/4"
Depth = 1-1/4"



_____ **2.5** – Enhanced Proton Controller including all of 2.0 as well as BACnet MS/TP Connection which provides ability to serve up all data to BMS system

Options:

- _____ **3T** – Three Additional Temperature Sensors for Monitoring of Inlet Hot, Inlet Cold, and Return Temperatures
- _____ **REL** – 5 Relay Contacts that Switch during Alarm State (as shown above)

_____ **3.0** – Enhanced Proton Controller including all of 2.5 as well as all items below as standard,

- WiFi – Wifi enabled
- 3T - 3 Additional Temperature Sensors for Monitoring of Inlet Hot, Inlet Cold and Return Temperatures
- REL - 5 Relay Contacts that Switch during Alarm State



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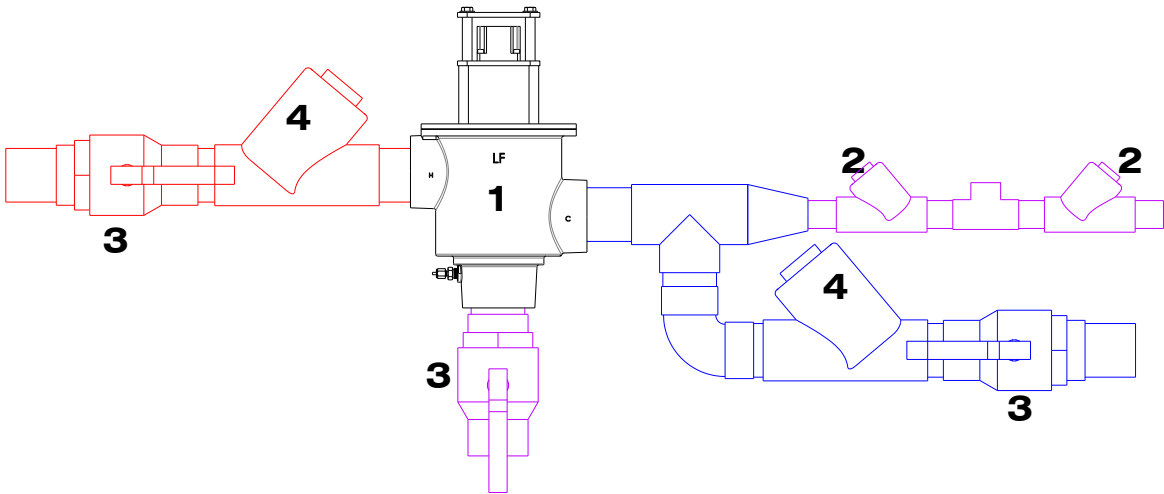
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Leonard Valve Company reserves the right of product, or design modifications without notice or obligation.

LEONARD MODEL PNV-300-LF-R DIGITAL TEMPERATURE RECIRCULATION MANIFOLD

Image not to scale



1. PROTON VALVE AND CONTROLS
2. 1-1/2" CHECK VALVE
3. 3" FULL PORT BALL VALVE
4. 3" CHECK VALVE



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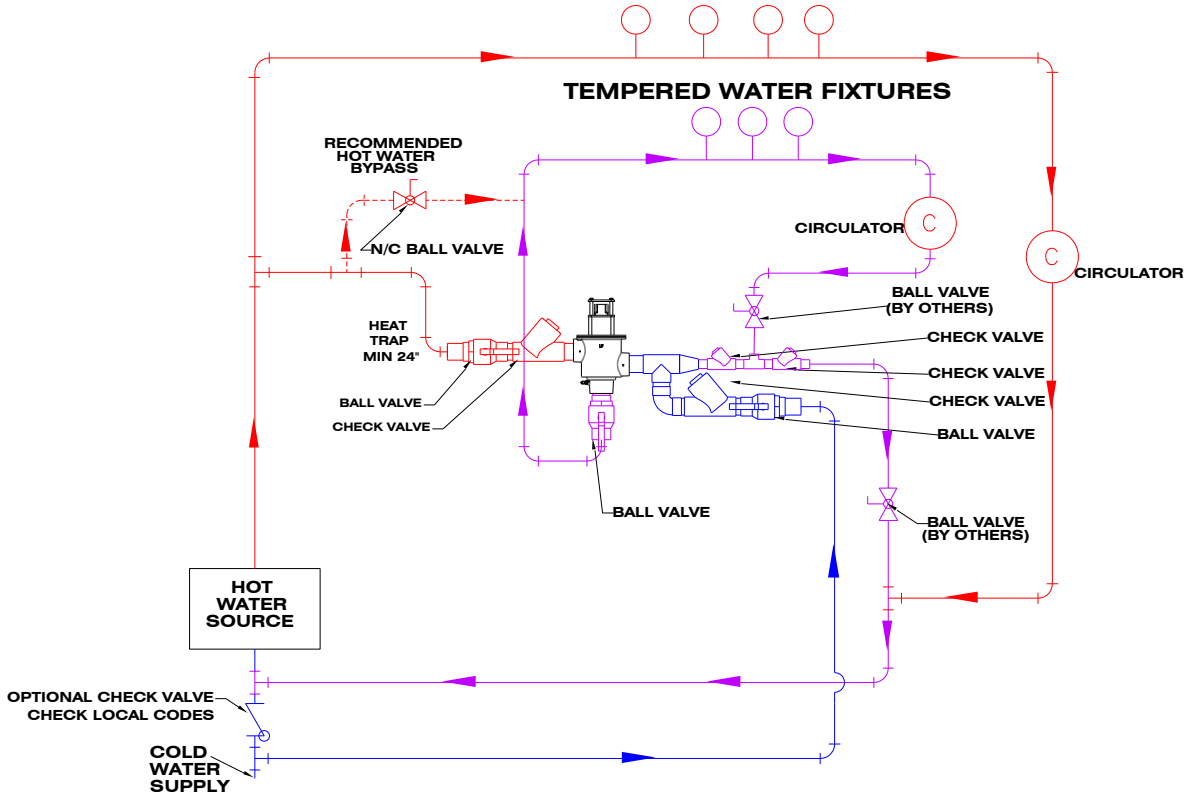
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MODEL PNV-300-LF-R

1-1/2" RETURN PIPING METHOD W

Image not to scale

HIGH TEMPERATURE FIXTURES (IF APPLICABLE)



MODEL PNV-300-LF

Flow Capacity

MINIMUM FLOW (GPM) (l/min)	PRESSURE DROP										PSI BAR
	5	10	15	20	25	30	35	40	45	50	
0.25** (.95)	97	135	163	191	213	235	262	288	296	303	GPM
	366	510	616	722	805	888	990	1089	1119	1145	l/min

NOTE: Flowrates will vary depending on existing field conditions. Leonard Valve Company always recommends using CASPAK® sizing software for proper valve sizing and model number applications.



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OPTIONS AND ACCESSORIES

ANY OPTION CHOSEN WILL ALTER PRICING – CONTACT LEONARD VALVE COMPANY FACTORY

- ___ **BPS** Backup Power Supply Unit
- ___ **R200** 2” Recirculation Return Line
- ___ **CUPC** Certified Valve Assembly



___ **BPS – Backup Power Supply**

- Uninterruptable Power Supply with up to 2 hours run time in case of primary power loss

___ **R200– 2” Recirculation Return Line**

- 2” Copper Piping with with Check Valves

___ **CUPC – Certified Valve Assembly**

- Special wafer check valves included
- For use where cUPC certification is necessary

Engineer's Approval

Job # _____

Arch/Eng. _____

Contractor _____

Note: The models shown represent Leonard Products which are believed to be equivalent in type and function to items specified. Leonard Valve Company is not responsible for errors or omissions due to differences in interpretations of information provided.

NOTE: Flow rates will vary depending on existing field conditions. Leonard Valve Company always recommends using CASPAK® sizing software for proper valve sizing and model number applications.

CAUTION! All thermostatic water mixing valves have limitations. They will NOT provide the desired accuracy outside of their flow capacity range. Consult the Flow Capacity Chart and DO NOT OVERSIZE. Minimum flow must be no less than as indicated.

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