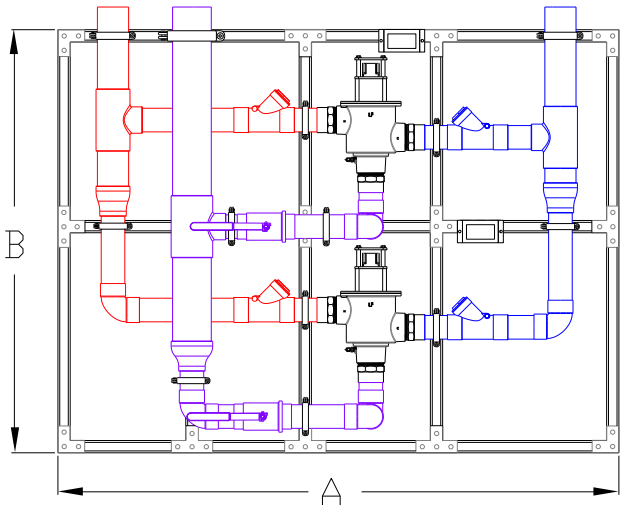
NUCLEUS PROTON
DIGITALLY CONTROLLED MIXING VALVE

MODEL PNV-300-LF-2PS DIGITAL TEMPERATURE CONTROL STATION

Submittal S-PNV-300-LF-2PS
June, 2023



APPROXIMATE DIMENSIONS
A = 6'-2" B = 4'-8"
***Image not to scale*, Dimensions +/-6"**

STANDARD CONTROL BOX

- Dual Digital Mixing Valves with 3" inlet check valves, 3" outlet with ball valve and integral RTD Sensor per valve
- Manifold System with 4" inlets, 5" outlet
- 0.25 GPM** (.95 L/min) minimum flow capacity (per valve)
- Controls water temperature to ± 2°F in accordance with ASSE 1017
- Controls water temperature to ± 2°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
- Self-Balancing - No need to manually adjust or balance recirculation
- Self-Cleaning - Daily shuttle sweep keeps shuttle free of debris
- Alerts user when unit requires maintenance
- Displays outlet temperature
- Simple user programmable set point, range between 65°F and 180°F
- UL Listed Control Box
- User programmable set point range between 65°F and 180°F
- UL Listed 120V plug in power supply with 6' cord (1 per valve)
  - Option for Backup Uninterruptable Power Supply in the event of primary power loss w/ approx. two hours run time
- Factory assembled and tested

This product meets Low Lead requirements of wetted surface area containing less than 0.25% lead by weight

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

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

Valves are ASSE 1017 Certified

Valves are CSA Certified

Valve electronics are UL Certified

NEW "ENHANCED FEATURE SET" CONTROL BOX

SEE SELECTABLE OPTIONS PAGE 2

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

LEONARD®
WATER TEMPERATURE CONTROLS

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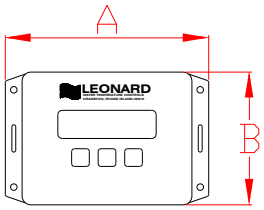
PNV-CONTROLLER OPTIONS

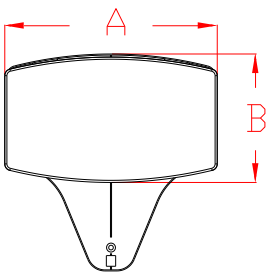
Standard Controller 1.0 Version

A = 6” **B** = 4”
Depth = 1-3/4”



Enhanced Controller 2.0, 2.5, 3.0 Versions

A = 8” **B** = 4-3/4”
Depth = 1-1/4”



STANDARD CONTROLLER:

_____ **1.0 –** See PAGE 1 for info

ENHANCED CONTROLLER OPTIONS:

_____ **2.0 –** Enhanced Proton Controller with Programable 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 (±10°F)
  - Motor Connectivity and Operation
  - Maintenance (Service Required) @ <90%Full travel

_____ **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

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

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LEONARD MODEL PNV-300-LF-2PS
DIGITAL TEMPERATURE CONTROL STATION

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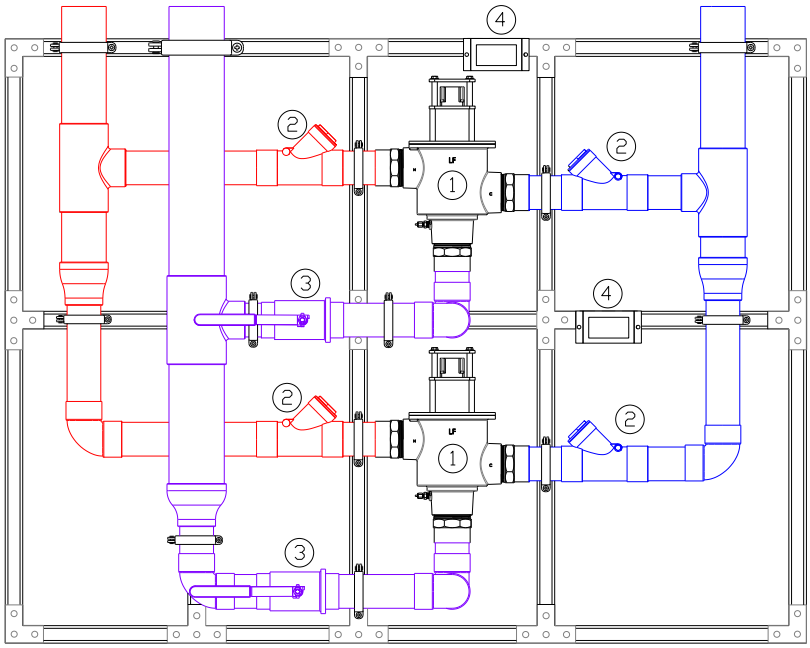

1. **PROTON VALVE**
2. **3'' CHECK VALVE**
3. **3'' FULL PORT BALL VALVE**
4. **PROTON CONTROLS**

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MODEL PNV-300-LF-2PS
METHOD W

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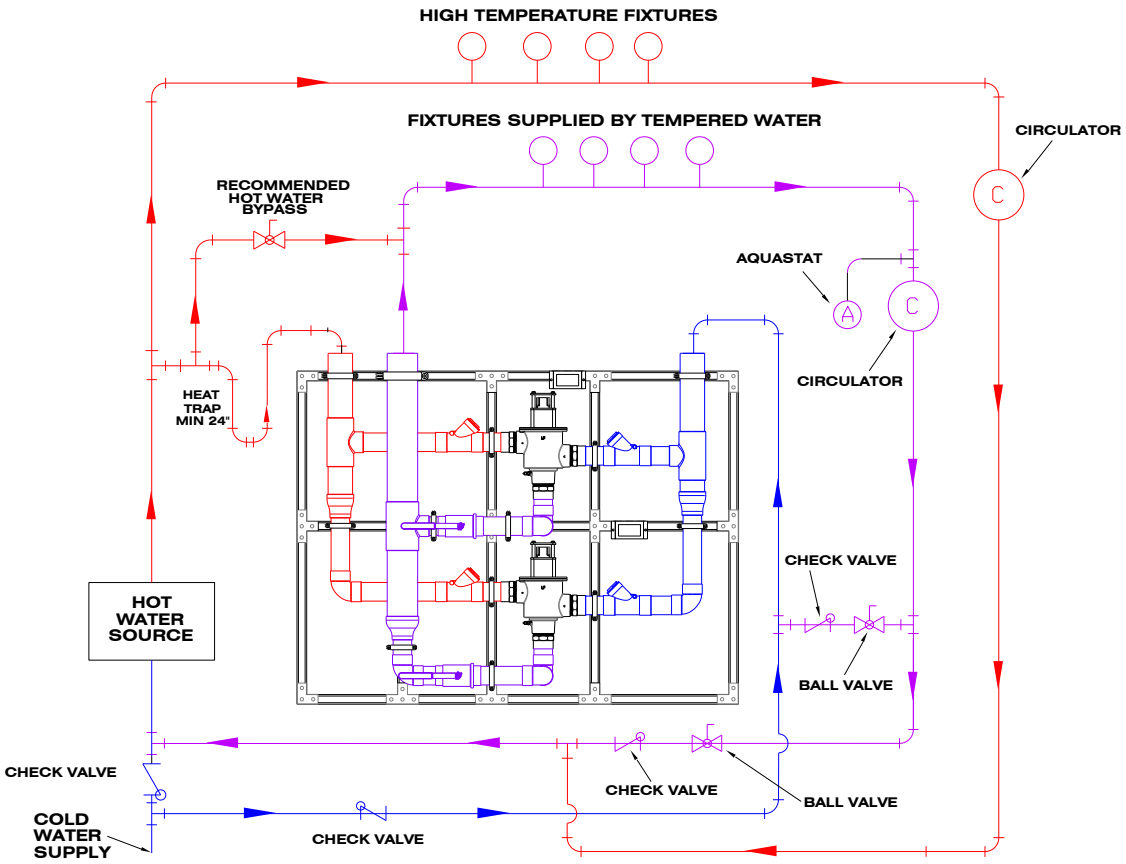

MODEL PNV-300-LF

NOTE: Single Valve Flow Capacity, double flowrate when both valves are operating

MINIMUM FLOW (GPM)	PRESSURE DROP										
	5	10	15	20	25	30	35	40	45	50	PSI
(l/min)	.3	.7	.97	1.4	1.7	2.1	2.4	2.8	3.1	3.4	BAR
0.25**	97	135	163	191	213	235	262	288	296	303	GPM
(.95)	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.
Flow Chart MUST BE DOUBLED for 2 valve parallel assemblies

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OPTIONS AND ACCESSORIES

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

___**BPS** Backup Power Supply Unit
___**CUPC** Certified Valve Assembly

____BPS – Backup Power Supply

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

____CUPC – Certified Valve Assembly

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

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.

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.

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Engineer's Approval	**Job #** _____ **Arch/Eng.** _____ **Contractor** _____
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