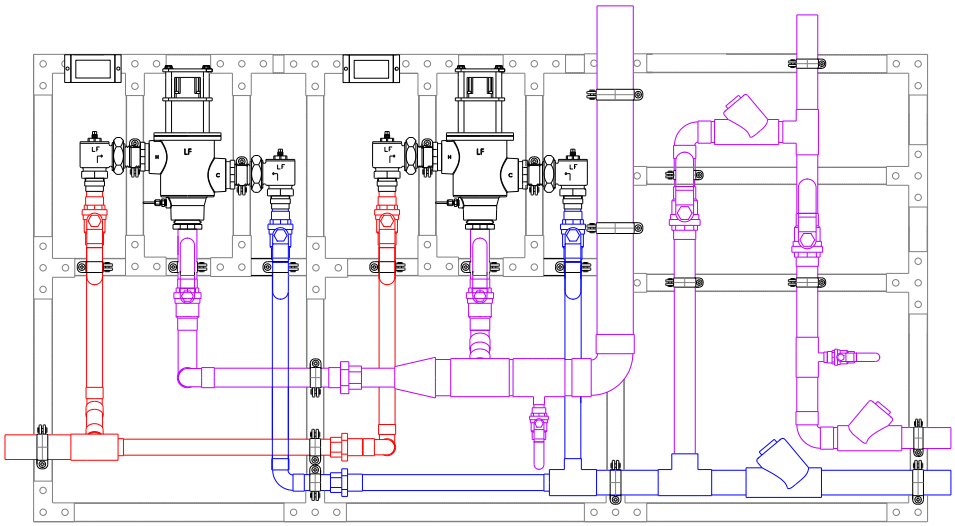
NUCLEUS® PROTON®
DIGITALLY CONTROLLED MIXING VALVE

Submittal Data Sheet S-PNV-150-LF-2PS-LC-M
June, 2023

MEGATRON® MODEL M-PNV-150-LF-2PS-LC DIGITAL TEMPERATURE CONTROL STATION



- Dual Digital Mixing Valves with 1-1/4” inlet angled check stops, 1-1/2” Outlet and integral RTD Sensor
- 2" NPT inlets, 3" NPT outlet (51mm X 76mm), 1-1/2” return 38mm
- 0.25 GPM** (0.95 L/min) minimum flow capacity
- Maximum operating pressure: 125 PSIG (869 KPA)
- Controls water temperature to ± 2°F in accordance with ASSE 1017
- Controls water temperature to ± 2°F during times of low / no system demand
- 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

STANDARD CONTROL BOX

NEW “ENHANCED FEATURE SET” CONTROL BOX

SEE SELECTABLE OPTIONS PAGE 2

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

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

- 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
- 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

****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.

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

Valves are ASSE 1017 Certified

Valves are CSA Certified

Valve electronics are UL Certified

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

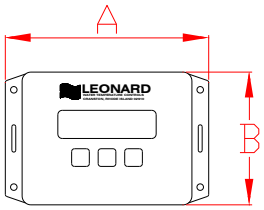
LEONARD
WATER TEMPERATURE CONTROLS

1360 Elmwood Avenue, Cranston, RI 02910 USA
Phone: 401.461.1200 Fax: 401.941.5310
Email: info@leonardvalve.com
Web Site: http://www.leonardvalve.com

PNV-CONTROLLER OPTIONS

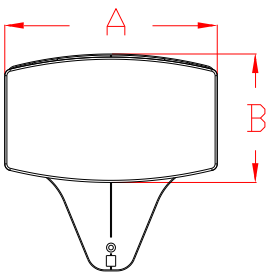
Standard Controller 1.0 Version

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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MEGATRON® MODEL M-PNV-150-LF-2PS-LC

Complete Digital Water Temperature Control Station to include:

- 2” inlet connections (copper tube)
- 3” outlet connection (copper tube)
- 1-1/2” return connections (copper tube)
- Dual Leonard Proton Digitally Controlled Mixing Valves with simple two line LED display
- Leonard Factory check valves and full port ball valves on inlet piping
- Outlet Test Connection with ball valve and ¾” connection
- Test connection on mixed water outlet of the system
- Subassembly with 1-1/2” return piping, full port ball valves and check valves
- System mounted on struts, galvanized. Struts shall be assembled with three hole flat angle plate on corners, four hole tee plates or two hole flat plate connectors on all other support pieces using 3/8” grip lock nuts and 3/8” x 1” hex head cap screws, washers and lock washers
- All electrical connections to be completed by Electrical Contractor

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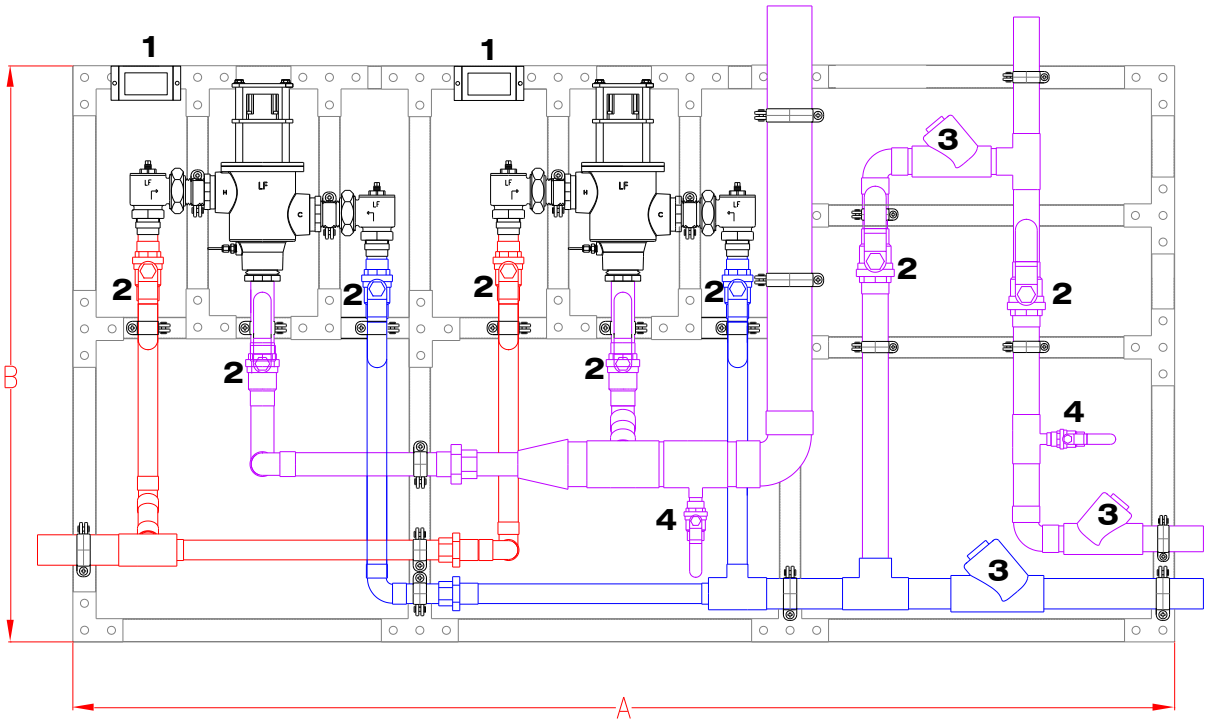
***Image not to scale*, Dimensions will vary with any options**



1. **PROTON VALVES AND CONTROLS**
2. **FULL PORT BALL VALVE**
3. **CHECK VALVE**
4. **¾" TEST CONNECTION**

A. 77" +/- 6"
B. 41" +/- 6"

PROTON VALVE CONTROL BOX

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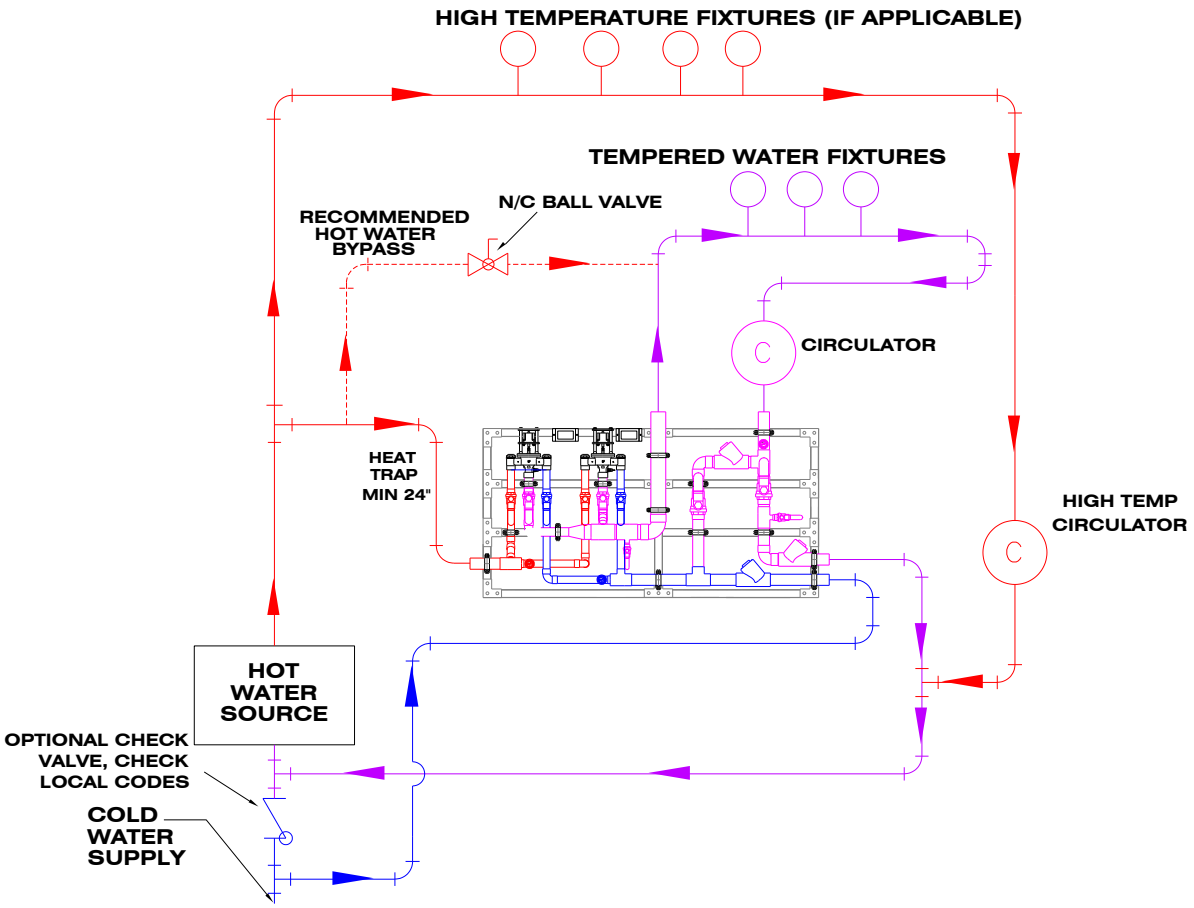
MEGATRON® MODEL M-PNV-150-LF-2PS-LC
1-1/2” RETURN PIPING METHOD W

Image not to scale



MODEL PNV-150-LF

Single Valve Flow Capacity – Double flow when both valves running

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**	50	72	86	100	115	122	136	140	158	165	GPM
(0.95)**	189	273	326	379	435	462	515	530	598	625	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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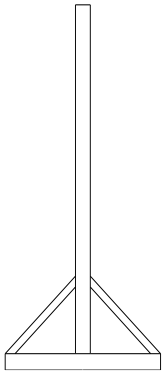
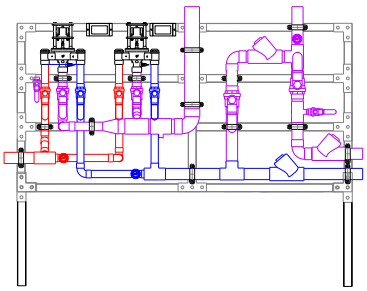
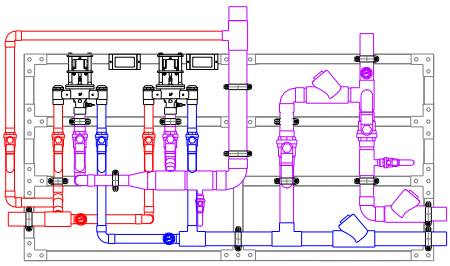
OPTIONS



FM
Megatron® with 3 legs, 3 ½" feet and 45 degree braces front and back for mounting to floor in center of room.



FS
Megatron® with separate legs to floor to support the unit without hangers.



HBP
High temperature by-pass flush with locking ball valve

OPTIONS *

___**FM** Floor mount
___**FS** Free standing
___**HBP** High temperature by-pass flush

OPTIONS (shown on next page) *

___**AL** Audio Visual Alarm
___**RDU** Remote Display Unit
___**SCO** Solenoid Control Option
___**BPS** Back up Power Supply
___**DG** Digital Gauges

PIPING OPTIONS *

___**RP 2** 2" Return line size

*** Any option chosen will alter pricing**

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OPTION AL: Leonard Single Probe Digital Temperature Alarm

- Single Point Temperature Probe - Range: -148ºF to 212ºF Resolution: 1ºF
- User adjustable high & low set points and initial alarm delay period
- Audible & visual alarms
- Remote alarm contacts (SPDT) with adjustable relay delay period
- AL option replaces analog outlet dial thermometer with a single digital display

OPTION RDU: Leonard Remote Display Unit

- Activation by Primary Alarm's (pictured above) remote alarm contacts
- Alarm Delay Module with yellow, red, green LED indicators
- Recommended maximum distance from controller to RDU is 500'

SCO: Solenoid Control Option

- For use with Alarm relay switch
- Galvanized box with dimensions 6" Wide x 6" High x 4" Deep
- Solid state relay and terminal strip mounted and wired
- UL listed 100-240VAC power supply with 10' cord
- For either normally open or normally closed operation
- For use with 24-240 VAC solenoids only

BPS: Backup Power Supply

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

OPTION DG: Digital Gauges

- Replaces all analog gauges with digital gauges, inlet hot, inlet cold, outlet and return temperature

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