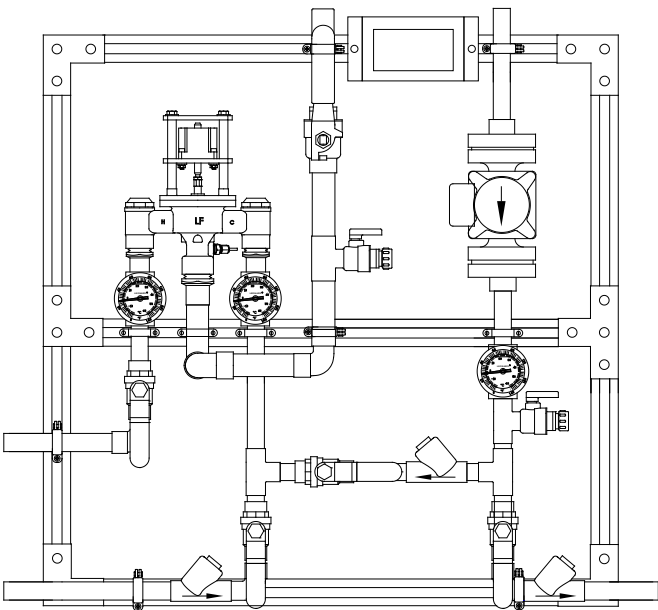


## MEGATRON<sup>®</sup> MODEL M-PNV-100-LF DIGITAL TEMPERATURE CONTROL STATION



**STANDARD CONTROL BOX**



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



**\*\*NOTE:** The valve will maintain temperature with 0.0 GPM flow from the domestic hot water loop when properly installed near the hot water source with a continuously operating recirculation pump. Factory supplied circulator standard with TACO 0034E PLUS.

- Digital Mixing Valve with 3/4" inlet angled check stops, 1" Outlet and integral RTD Sensor
- 3/4" inlets, 1" outlet (19mm X 25mm), 3/4" return, copper tubing
- Valve controls at times of no use, 0.0 GPM\*\*
- Maximum operating pressure: 200 PSIG (1379 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
- Self-Balancing, do not need to adjust or balance recirculation
- Self-Cleaning, daily shuttle sweep keeps shuttle free of debris
- Automatic Hot/ Cold Water shutoff upon cold/ hot water inlet supply failure
- Alerts user when unit requires maintenance
- User programmable set point range between 65°F and 180°F
- Simple/intuitive user commissioning and setup
- Displays outlet temperature
- UL Listed control box and 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
- Not for use in process applications nor intended to deliver final temperature control
- Primary use as an ASSE 1017 Distribution Valve/Master Mixer in a Domestic Hot Water System when combined with proper downstream protection devices approved to ASSE 1016, 1069, 1070 or 1071

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

**Valve is ASSE 1017 Certified**



**Valve is CSA Certified**



**Valve electronics are UL Certified**



See page 2 for Control Box options  
See page 3 for specification details  
See page 4-5 or piping method details & flow capacity chart  
See page 6-7 for additional options

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

**LEONARD<sup>®</sup>**  
WATER TEMPERATURE CONTROLS

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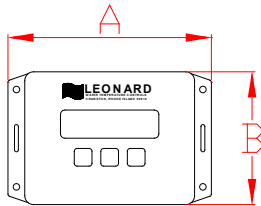
Web Site: <http://www.leonardvalve.com>

# 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

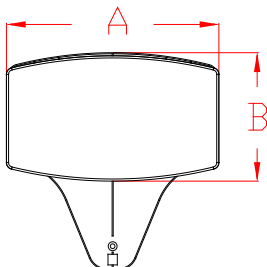
### Options:

- \_\_\_\_\_ **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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# LEONARD MEGATRON® MODEL M-PNV-100-LF

Complete Digital Water Temperature Control Station to include:

- 3/4" inlet connections (copper tube)
- 1" outlet connection (copper tube)
- 3/4" return connections (copper tube)
- Leonard Proton Digitally Controlled Mixing Valve 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 3/4" connection
- Full port ball valve mounted downstream of test connection on mixed water outlet of the system
- Subassembly with 3/4" return piping, Taco 0034E PLUS circulator, 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
- Taco 0034E PLUS standard pump included and installed

High-performance, variable speed, wet-rotor circulator with high-efficiency ECM permanent magnet technology, Simple 3-button control

An intuitive digital user interface lets you choose between a variety of operating modes; activeADAPT™, five Constant Pressure curves, five Proportional Pressure curves, Min/Max fixed speed or speed control through 0-10V DC or PWM external input

Digital LED screen displays; Watts, GPM, Head, RPM and diagnostic error codes  
Maximums of 34 feet of head and 50 GPM



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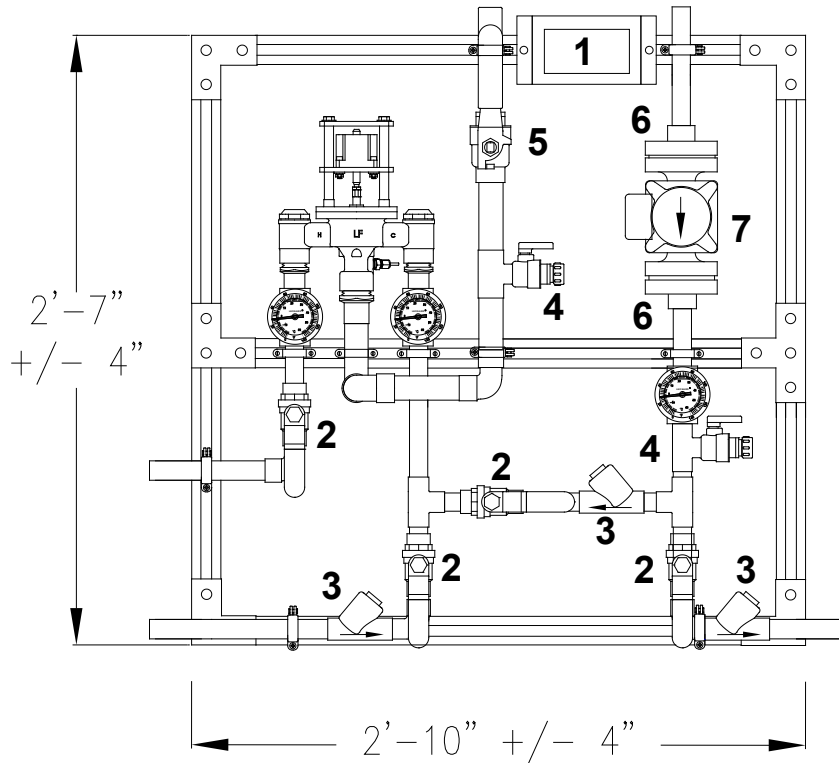
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# LEONARD MEGATRON® MODEL M-PNV-100-LF DIGITAL TEMPERATURE CONTROL STATION

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



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

5. 1" FULL PORT BALL VALVE
6. PUMP SHUT-OFFS
7. CIRCULATOR

## PROTON VALVE CONTROL BOX



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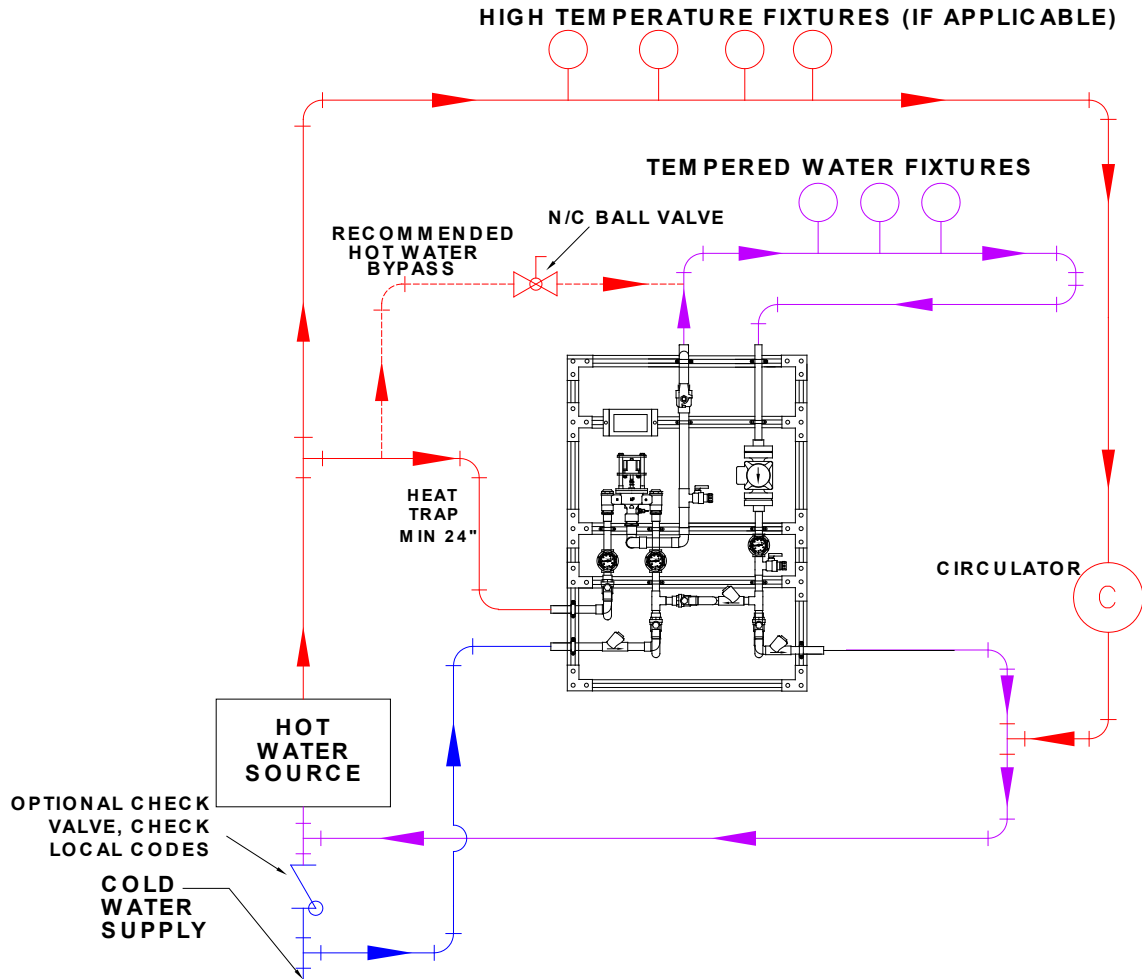
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# MEGATRON® MODEL M-PNV-100-LF

## 3/4" RETURN PIPING METHOD W

\*Image not to scale\*



### PRESSURE DROP

| 5  | 10 | 15  | 20  | 25  | 30  | 35  | 40  | 45  | 50  | PSI   |
|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| .3 | .7 | .97 | 1.4 | 1.7 | 2.1 | 2.4 | 2.8 | 3.1 | 3.4 | BAR   |
| 17 | 25 | 28  | 32  | 36  | 39  | 43  | 45  | 48  | 51  | GPM   |
| 64 | 95 | 106 | 121 | 136 | 148 | 163 | 170 | 182 | 193 | 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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WATER TEMPERATURE CONTROLS

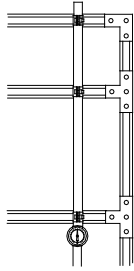
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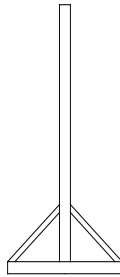
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# OPTIONS



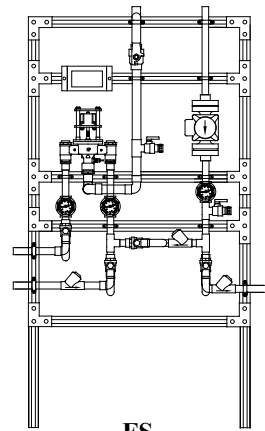
**LC**

Megatron® furnished without a circulator.



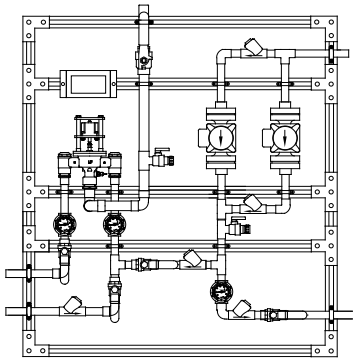
**FM**

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



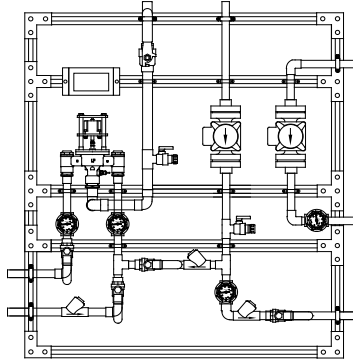
**FS**

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



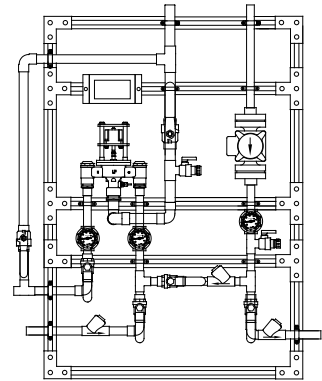
**2 PUMP R**

Redundant recirculation pump



**2 PUMP H**

High temperature loop recirculation pump



**HBP**

High temperature by-pass flush with locking ball valve

## OPTIONS \*

- ☐ **LC** Less circulator
- ☐ **FM** Floor mount
- ☐ **FS** Free standing
- ☐ **2 PUMP R** Redundant recirculator pump
- ☐ **2 PUMP H** High temperature loop recirculator pump
- ☐ **HBP** High temperature by-pass flush
- ☐ **265-1** Timer, Analog, 24 hour
- ☐ **265-3** Timer, Digital, 7 day
- ☐ **HOA** HOA switch

## OPTIONS (shown on next page) \*

- ☐ **AL** Audio Visual Alarm
- ☐ **RDU** Remote Display Unit
- ☐ **SCO** Solenoid Control Option
- ☐ **BPS** Back up Power Supply
- ☐ **DA** Digital Aquastat
- ☐ **DG** Digital Gauges
- ☐ **User chosen pump** (specify on next page)

## PIPING OPTIONS \*

- ☐ **RP 1** 1" 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: -148°F to 212°F Resolution: 1°F
- 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 DA: Digital Aquastat

- Electronic digital aquastat with Nema 1 case and SPDT Relay Output

## OPTION DG: Digital Gauges

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

## OPTION USER CHOSEN PUMP

Standard pump is TACO 0034E PLUS, if another manufacturer is preferred please specify, but note that ANY change from standard pump will result in a **PRICE INCREASE**

**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:** 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.

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



**WARNING:** Risk of cancer and reproductive harm from exposure to lead – See [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



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