



Job or Customer :	
Location :	
Engineer :	
<input type="checkbox"/> Complies with Spec <input type="checkbox"/> Alternate	Notes :
Contractor :	
Tamas Rep :	
Submitted By :	Date :
Approved By :	Date :
P.O. Number :	Date :

Description

The Tamas Zone Manifold System provides a 3 way mixing valve, System pump and a manifold for the distribution of mixed water for each of the zones.

Nominal Panel Output

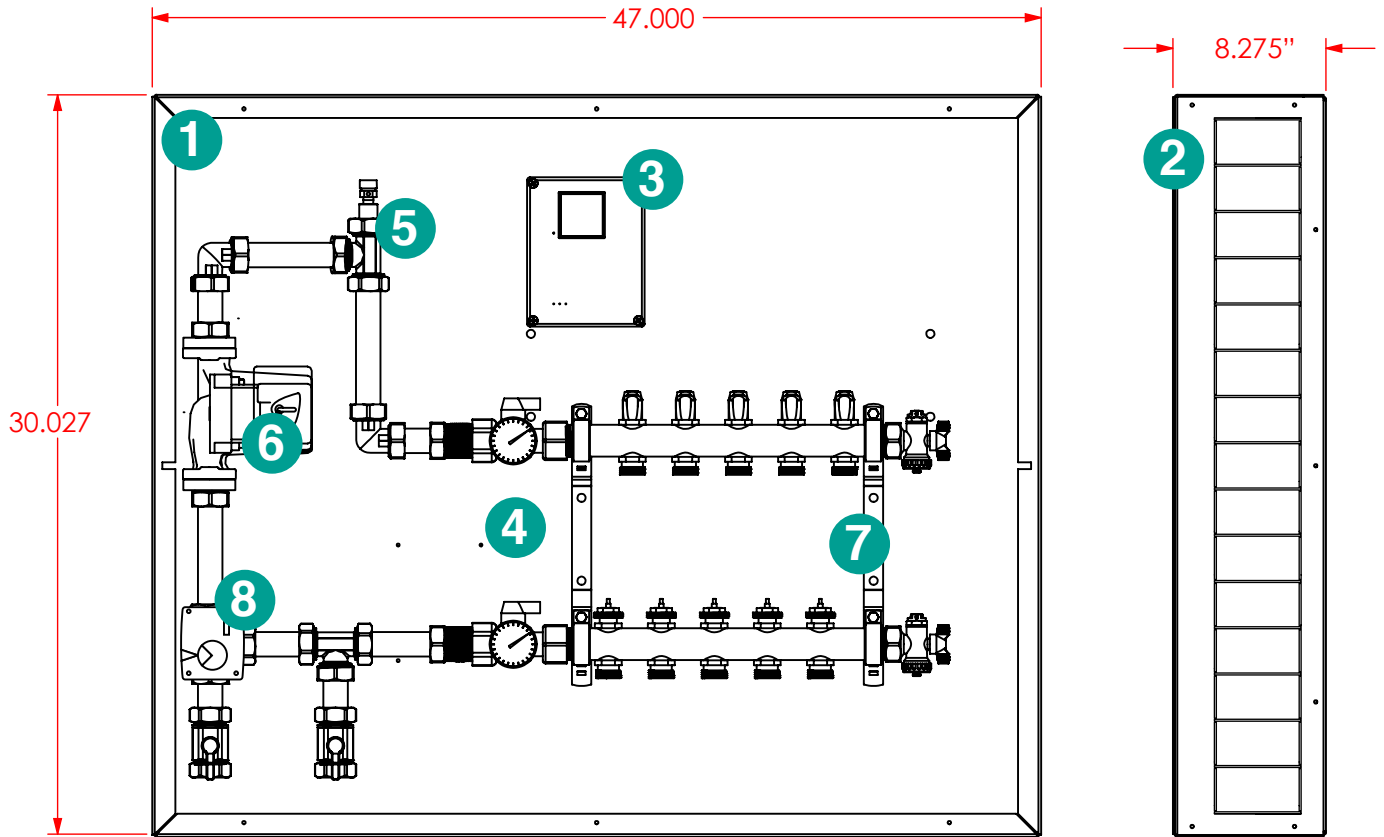
Qty	Model #	Options	Description
	T-ZM-3V-0033-XL (HT)	<input type="checkbox"/> Stainless Steel Enclosure	Snow Melt Manifold XL Panel with (3) Loops, (1) 3 Way Mixing Valve, (1) System Pump UPS 26-150 and Heat Timer Control
	T-ZM-3V-0043-XL (HT)	<input type="checkbox"/> Stainless Steel Enclosure	Snow Melt Manifold XL Panel with (4) Loops, (1) 3 Way Mixing Valve, (1) System Pump UPS 26-150 and Heat Timer Control
	T-ZM-3V-0053-XL (HT)	<input type="checkbox"/> Stainless Steel Enclosure	Snow Melt Manifold XL Panel with (5) Loops, (1) 3 Way Mixing Valve, (1) System Pump UPS 26-150 and Heat Timer Control
	T-ZM-3V-0063-XL (HT)	<input type="checkbox"/> Stainless Steel Enclosure	Snow Melt Manifold XL Panel with (6) Loops, (1) 3 Way Mixing Valve, (1) System Pump UPS 26-150 and Heat Timer Control

Technical Data

Material:	
Backpan.....	Galvanized Steel (Stainless Steel Optional)
Lockable Enclosure.....	Powder Coated Steel (Stainless Steel Optional)
Piping.....	Copper/Stainless Steel
Mixing Device.....	3 Way Mixing Valve
Max Ambient Temperature.....	120°F (49°C)
Max Water Temperature.....	200°F (93°C)
Power Supply.....	110V (AC) Max Current 6amp

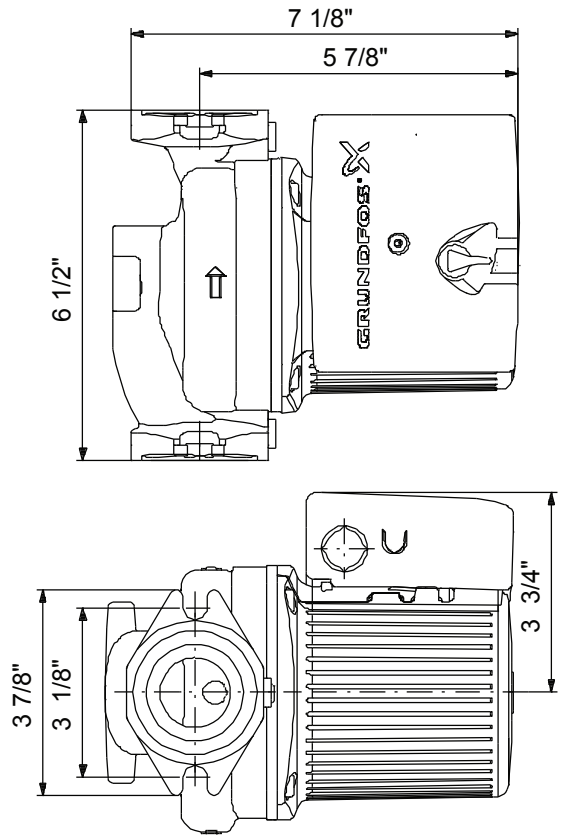
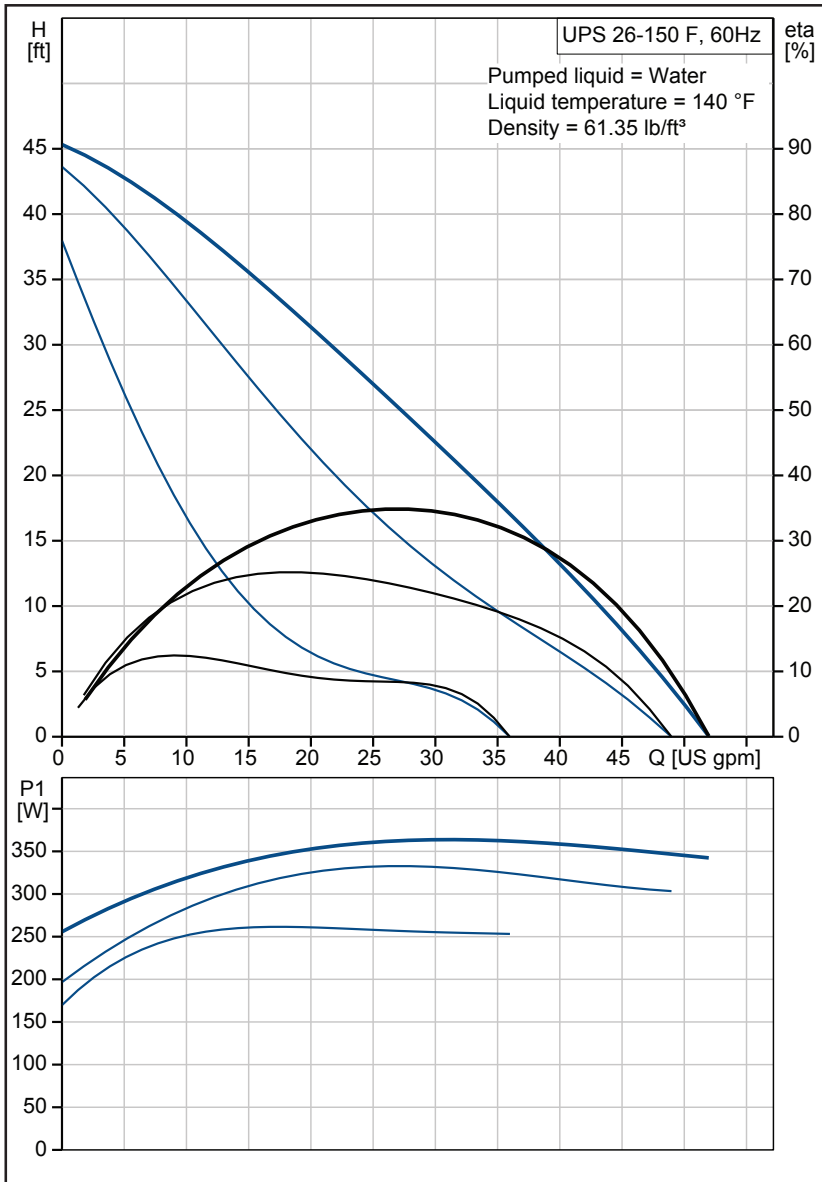
Standards/Listings

- CSA C22.2 No. 14-95
- UL 598A
- ETL No. 3032227



Part List			
1	<i>Stainless Steel Back Plate</i>	5	<i>Air Vent</i>
2	<i>Lockable Stainless Steel Cover</i>	6	<i>System Pump</i>
3	<i>Tamas Control Box</i>	7	<i>Stainless Steel Heating Manifold</i>
4	<i>Temperature Gauges</i>	8	<i>3 Way Mixing Valve</i>

UPS 26-150 Pump Specifications



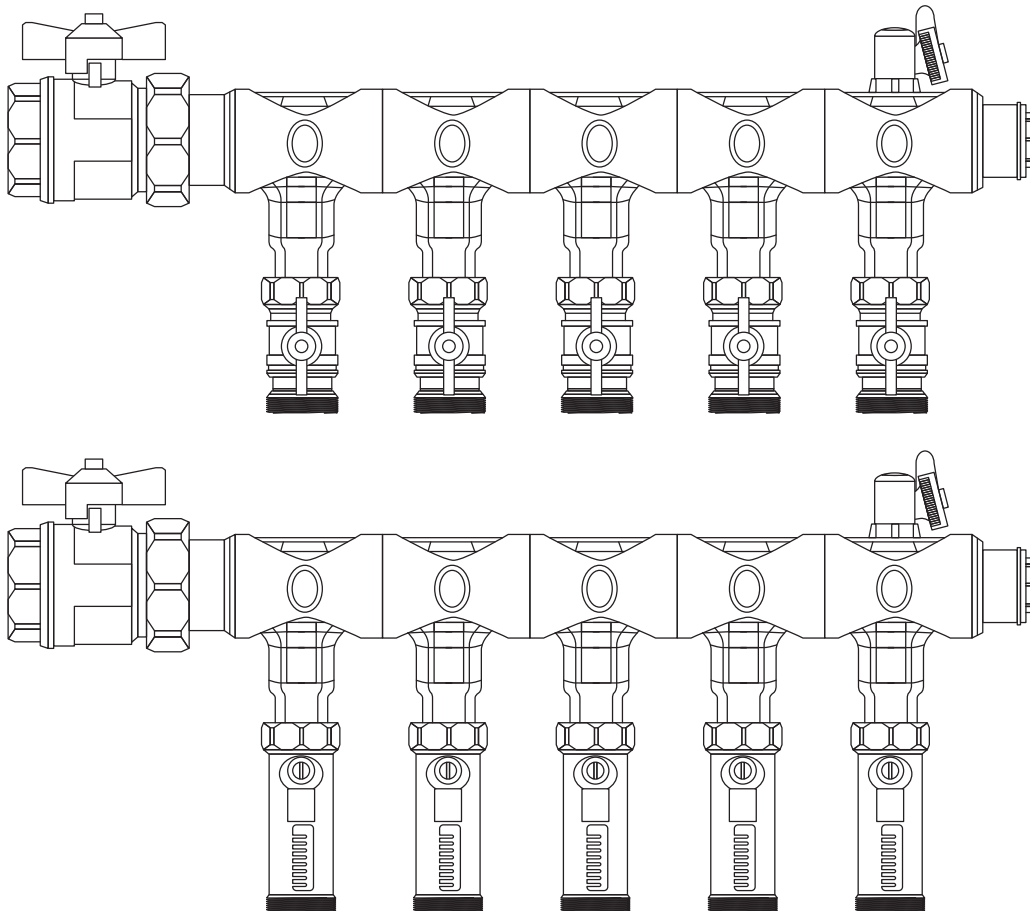
Description	Value
Technical:	
Speed Number:	3
Max flow:	52 US gpm
Head max:	45.3 ft
Approvals on nameplate:	ETL, CSA

Stainless Steel Manifold Specifications

The Uponor Commercial Stainless-steel Manifold is used for distribution and loop isolation in hydronic hot-water heating, chilled water, radiant heating and cooling, snow and ice melting, and permafrost prevention (cold storage) applications. The manifold features 1 ½” distribution ball valves with 1” isolation ball valves on the supply manifold for easy loop isolation along with flow meters on the return manifold to balance the loops from 0-4 gpm.

Technical Data

Cv:	4.85
Material:	Stainless Steel
Manifold size:	2 inch
End type 1:	FNPT 1-1/2”
End type 2:	ISO 228-G 1”
Temp/pressure ratings:	68 °F (20 °C) at 145 psi (10 bar)
	158 °F (70 °C) at 87 psi (6 bar)
	194 °F (90 °C) at 44 psi (3 bar)
Max. fluid flow rate:	48 gpm



3 Way Valve

The 3 way valve is designed to mix water to the appropriate temperature to meet the zone or system requirements within heating and cooling systems.

Technical Specifications

CV ¹	2.9
Size	1/2"
Max. operating pressure	145psi (10 bar)
Max. operating temperature	230°F (110°C)
Min. operating temperature	-15°F (-10°C)
Max. differential pressure	Mixing: 14.5 psi (1bar) Diverting: 20psi (2bar)
Leakage in % of flow (based on diff. pressure of 14.5psi (1 bar)	Mixing: <0.05% Diverting: <0.02%
Max. torque	<44lbf-in (<5Nm)
Allowable fluid	1) Water, 2) Glycol mixture, max. 50%



Motor Actuator

Technical Specifications

Supply Voltage:	24VAC/DC +/- 10% 50/60Hz
Power Consumption:	AC 11VA, DC 6VA
Rotation:	90°
Torque:	53.1 lbf.in (6 Nm)
Mountable Valve size:	1/2" to 2" ESBE rotary mixing valves, Series MG, G and VRG (for 638 mountable on sizes 1/2" to 1-1/4")
Enclosure:	NEMA 1, IP 41
Ambient Temp. Range:	23 to 131°F (-5 to 55°C)
Weight:	1lb (0.4kg)
Run Time (sec):	15/30/60/120
Control Signal:	0-10V, 2-10V, 0-20mA, 4-20mA/ 60, 60 or 120 sec.
Output Signal:	Proportional analogue signal (only for ARA369)
Auxiliary Switch:	Optional



Heat Timer Control Specifications



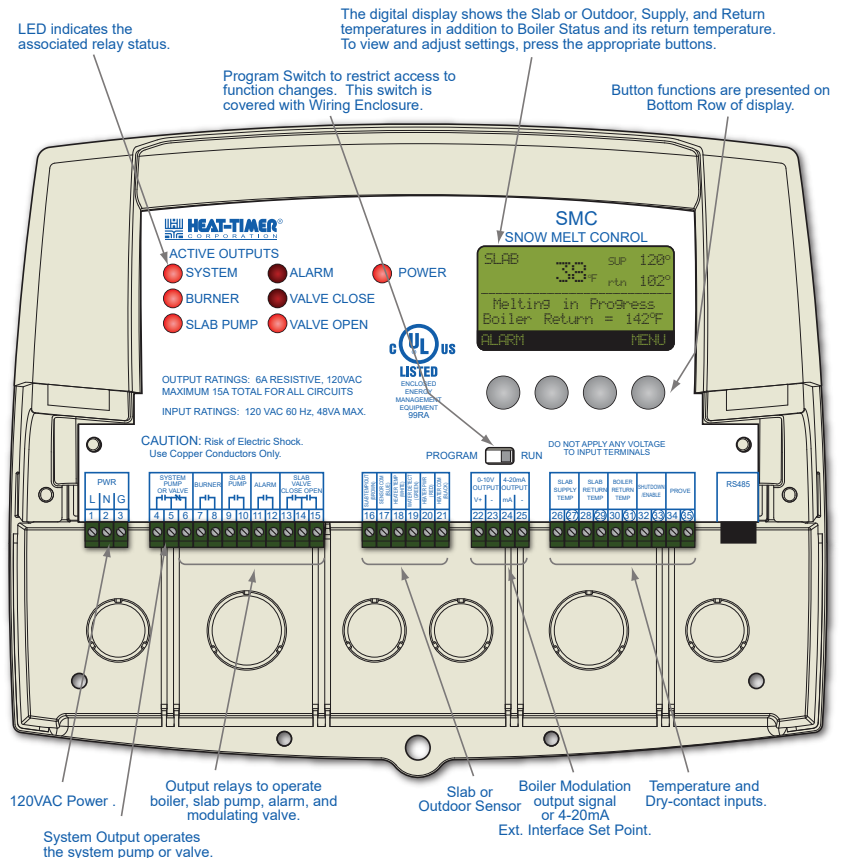
NOTE: for field wiring, please refer to Heat Timer control manual

SMC Specifications

Operating Temperature:	20°F/-6°C to 120°F/49°C
Voltage Input:	120 VAC 60 Hz
Maximum Input Rating:	48 VA Max
Output Built-in Relay Ratings:	2 Amp inductive (Maximum of 1/4 HP) at 120 VAC 60 Hz
Output Built-in Relays:	1 System, 1 Boiler, 1 Slab Pump, 1 Alarm, 2 Motorized Valve
Output LEDs:	1 System, 1 Boiler, 1 Slab Pump, 1 Alarm, 2 Motorized Valve, and 1 Power
Inputs:	Shutdown/Enable, Prove, 1 Slab Sensor (Composite), Outdoor, Slab Supply and Slab Return Temps, Boiler Return Temp
Modulating Outputs:	0-10V, 4-20mA, or Floating (3-Point)
Seasons:	Winter and Summer
Operating Modes:	Slab Sensor or Outdoor Sensor
Control Mode:	Mixing Valve, Boiler, or External Interface (sends a 4-20mA set point to an external control)
Warm Weather Cutoff:	34°F/1°C to 44°F/7°C
Cold Weather Cutoff:	On, Off, and 0°F/18°C to 20°F/-7°C
Idle Set Point:	Off, and 20°F/-
	7°C to 44°F/7°C
Minimum Runtime:	0 to 4 hours
Maximum Delay T:	10F°/6C° to
	50F°/28C°
Minimum Boiler Return:	Off, and
	40°F/4°C to 140°F/60°C
Heating Curve:	from -10 to +10
Modulating Boiler Ignition %:	from 1% to 50%
Buttons:	4 buttons each
	with multiple functions
Dimensions:	7 1/8" W x 9 5/8" H
	x 3 1/2" D
Weight:	2 pounds
Operating Temperature Range:	-30°F/-34°C to
	250°F/121°C

Slab Sensor Specifications

Sensor Case:	Brass
Cable length Provided:	100 Feet
Weight:	5 pounds



Limited Warranty

Tamas Hydronic Systems Inc. warrants each of its products to be free from defects in workmanship and materials under normal use and service for a period of 24 months from date of purchase from a Tamas Hydronic Systems inc. authorized Dealer.

If the product proves to be defective within the applicable warranty period, Tamas Hydronic Systems Inc. on its sole discretion will repair or replace said product. Replacement product may be new or refurbished of equivalent or better specifications, relative to the defective product. Replacement product need not be of identical design or model. Any repair or replacement product pursuant to this warranty shall be warranted for not less than 90 days from date of such repair, irrespective of any earlier expiration of original warranty period. When Tamas Hydronic Systems Inc. Provides replacement, the defective product becomes the property of Tamas Hydronic Systems Inc.

Warranty Service, within the applicable warranty period, may be obtained by contacting your nearest Tamas Hydronic Systems Inc. office via the original Authorized Agent and requesting a Return Material Authorization Number (RMA #). Proof of purchase in the form a dated invoice/ receipt must be provided to expedite the issuance of a Factory RMA.

After an RMA number has been issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit. The RMA number must be visible on the outside of the package and a copy included inside the package. The package must be mailed or otherwise shipped back to Tamas Hydronic Systems Inc. with all costs of mailing/shipping/insurance prepaid by the warranty claimant.

Any package(s) returned to Tamas Hydronic Systems Inc. without an approved and visible RMA number will be rejected and shipped back to purchaser at purchaser's expense. Tamas Hydronic Systems Inc. reserves the right, if deemed necessary, to charge a reasonable levy for costs incurred, additional to mailing or shipping costs.

Limitation of Warranties

If the Tamas Hydronic Systems Inc. product does not operate as warranted above the purchasers sole remedy shall be, at Tamas Hydronic Systems Inc.' s option, repair or replacement. The foregoing warranties and remedies are exclusive and in lieu of all other warranties, expressed or implied, either in fact or by operation of law, statutory or otherwise, including warranties of merchantability and fitness for a particular purpose/application. Tamas Hydronic Systems Inc. neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale, installation maintenance or use of Tamas Hydronic Systems Inc. products.

Tamas Hydronic Systems Inc. shall not be liable under this warranty; if its testing and examination discloses that the alleged defect in the product does not exist or was caused by the purchasers or third persons misuse, neglect, improper installation or testing, unauthorized attempts to repair or any other cause beyond the range of intended use, or by accident, fire, lightning or other hazard.

Limitation of Liability

In no event will Tamas Hydronic Systems Inc. be liable for any damages, including loss of data, loss of profits, costs of cover or other incidental, consequential or indirect damages arising out of the installation, maintenance, commissioning, performance, failure or interruption of a Tamas Hydronic Systems Inc. product, however caused and on any theory of liability. This limitation will apply even if Tamas Hydronic Systems Inc. has been advised of the possibility of such damage.

Local Law

This limited warranty statement gives the purchaser specific legal rights. The purchaser may also have other rights which vary from state to state in the United States, from Province to Province in Canada and from Country to Country elsewhere in the world.

To the extent this Limited Warranty Statement is inconsistent with local law, this statement shall be deemed modified to be consistent with such local law. Under such local law, certain disclaimers and limitations of this statement may not apply to the purchaser. For example, some states in the United States, as well as some governments outside the United States (including Canadian Provinces), may:

1. Preclude the disclaimers and limitations in this statement from limiting the statutory rights of a consumer (e.g. United Kingdom);
2. Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations; or
3. Grant the purchaser additional warranty rights which the manufacturer cannot disclaim, or not allow limitations on the duration of implied warranties.