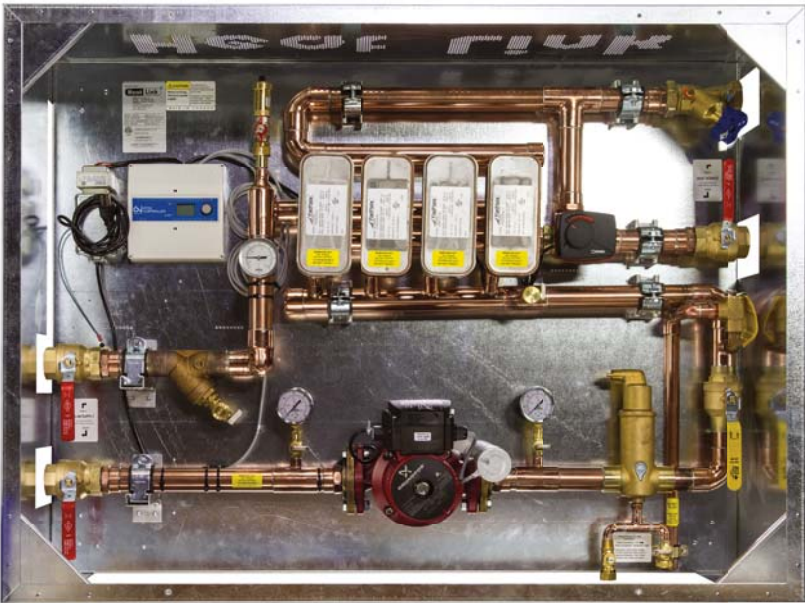


SMP Series

Snow Melt Panels

Installation, Operation, and Maintenance Manual



MECHANICAL ROOM IN A BOX[™]



Table Of Contents

Warnings.....	3
Tools Needed	3
Function.....	4
Unpacking.....	5
Panel Components	6-7
Specifications.....	8
Panel Component Specifications	9-13
Mounting.....	14
Fill and Purge	15
Precipitation Sensor Installation.....	16-17
Panel Wiring	18
Panel Control Sequence	19
Controller Instructions.....	20-24
Troubleshooting	25
Testing the Sensors.....	26
Maintenance	26
Schematics	
Mechanical	27-28
Electrical Rough-in	29
Electrical Detail	30

Warnings

The zone control panel is for indoor use only and must be installed by a qualified installer/service technician. This product must be installed and operated in strict accordance with the terms set out in this manual and in accordance with the relevant requirements of the Local Authority Having Jurisdiction. Failure to comply will result in a void of warranty, and may also result in property damage, serious injury, or death.

Servicing

Prior to commencing installation of this panel it is necessary to read and understand all sections of this manual. The symbols below are used throughout this document to ensure proper operation of the panel, and your safety. Please pay attention to these symbols.



Warning
Possible Hazard



Warning
Live Power



Warning
Hot Pipes



Warning
Treated Water



In order to avoid injury or death, switch off the power to the panel prior to inspecting or making connections to the terminal strip.

Disclaimer

HeatLink Group Inc. shall not be responsible for errors in its brochures or printed materials. HeatLink Group Inc. reserves the right to alter its products at any time without notice, provided that alterations to products already on order shall not require material changes in specifications previously agreed upon by HeatLink Group Inc. and the Purchaser. All trademarks in this material are property of the respective companies. HeatLink and the HeatLink logotype are trademarks of HeatLink Group Inc. All rights reserved.

Tools For Installation

- Level
- Screwdriver or power drill
- Flat head bit or Robertson Square Drive, #2
- Phillips head bit

Function

This snow melt panel provides mixing and distribution for outdoor snow and ice melting applications.

The effectiveness of the system is dependant on the system being designed and installed correctly. Proper consideration of factors such as BTU Loads, Outdoor Design Temperature, Differential Fluid Temperatures, Glycol Percentage, Head Loss, Flow Rates and transfer capacities of the heat emitters is critical. Once these factors have been considered and the system requirements determined, these can then be evaluated and compared to the panel capabilities (listed under Specifications on page 8 of this manual).

Note: This panel does not regulate or monitor the operating safety limit temperatures of the fluid leaving the heat source.

Unpacking

Step 1 Examine the panel for signs of visible damage that may have occurred during shipping. If damage is visible notify your courier and supplier immediately.

Verify the following items:

- Installation, Operation and Maintenance Manual

Step 2 Remove the 4 cover screws and lift the cover away.

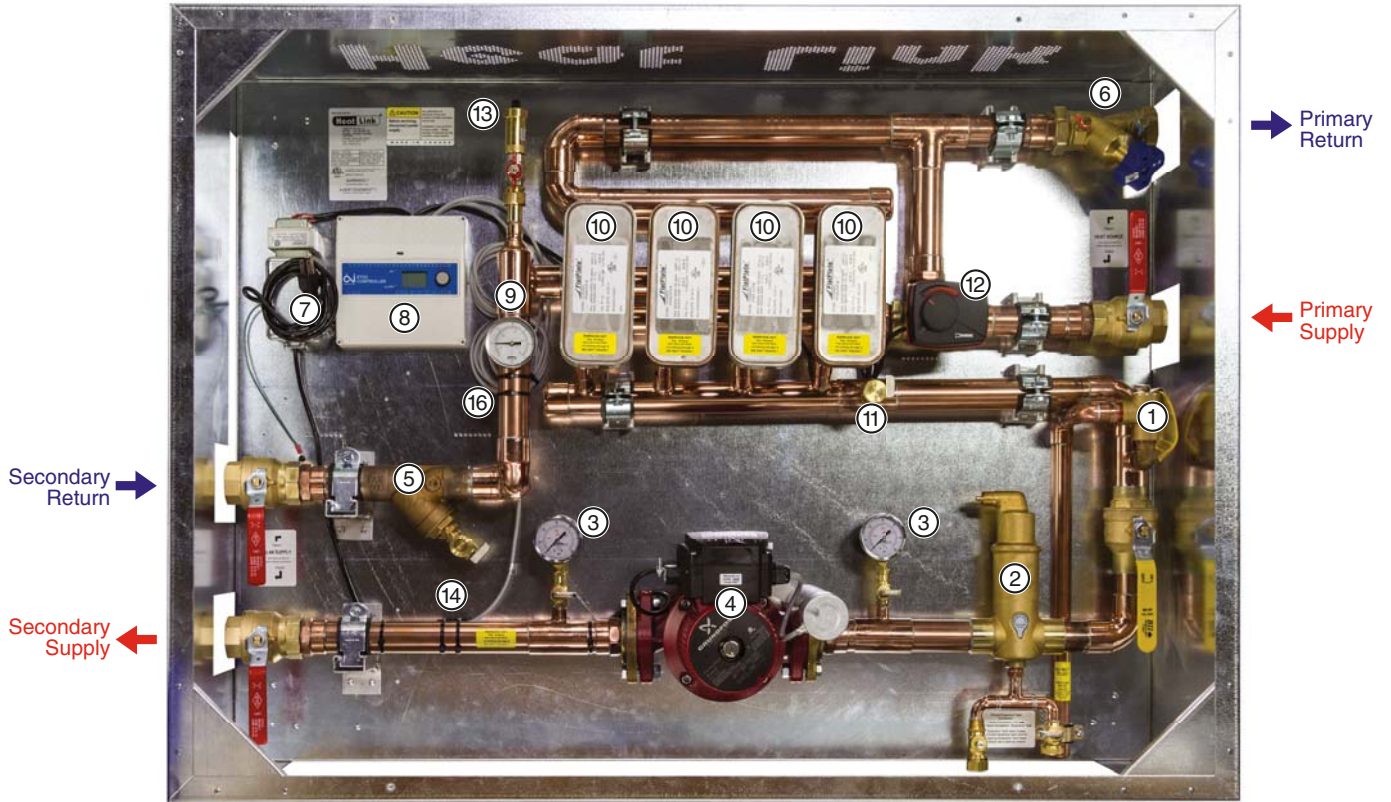


Panel Components

#	Component	Part Number		
		SMP335	SMP425	SMP400D
①	Pressure Relief Valve	-	-	n/a
②	Air Eliminator	-	-	-
③	Pressure Gauge	PG14NPT25160	PG14NPT25160	PG14NPT25160
④	Circulator	-	-	-
⑤	Strainer / Drain Valve	-	-	n/a
⑥	Balancing Valve	-	-	-
⑦	115V Power Plug	-	-	-
⑧	System Controller	ETO2SMCNTR	ETO2SMCNTR	ETO2SMCNTR
⑨	Temperature Gauge	76940	76940	76940
⑩	Heat Exchanger	HTEX3820	HTEX3830	n/a
⑪	Drain Valve	-	-	-
⑫	3-way Valve	63539	63539	63539
	Motorized Actuator	58132	58132	58132
⑬	Air Vent w/Cap	79932	79932	n/a
⑭	Supply Sensor	ETF1899ASNS	ETF1899ASNS	ETF1899ASNS
⑮	Return Sensor	ETF1899ASNS	ETF1899ASNS	ETF1899ASNS
⑯	Precipitation Sensor (sold separately)	DRVWSNS-SS	DRVWSNS-SS	DRVWSNS-SS
	Panel Enclosure & Cover	-	-	-

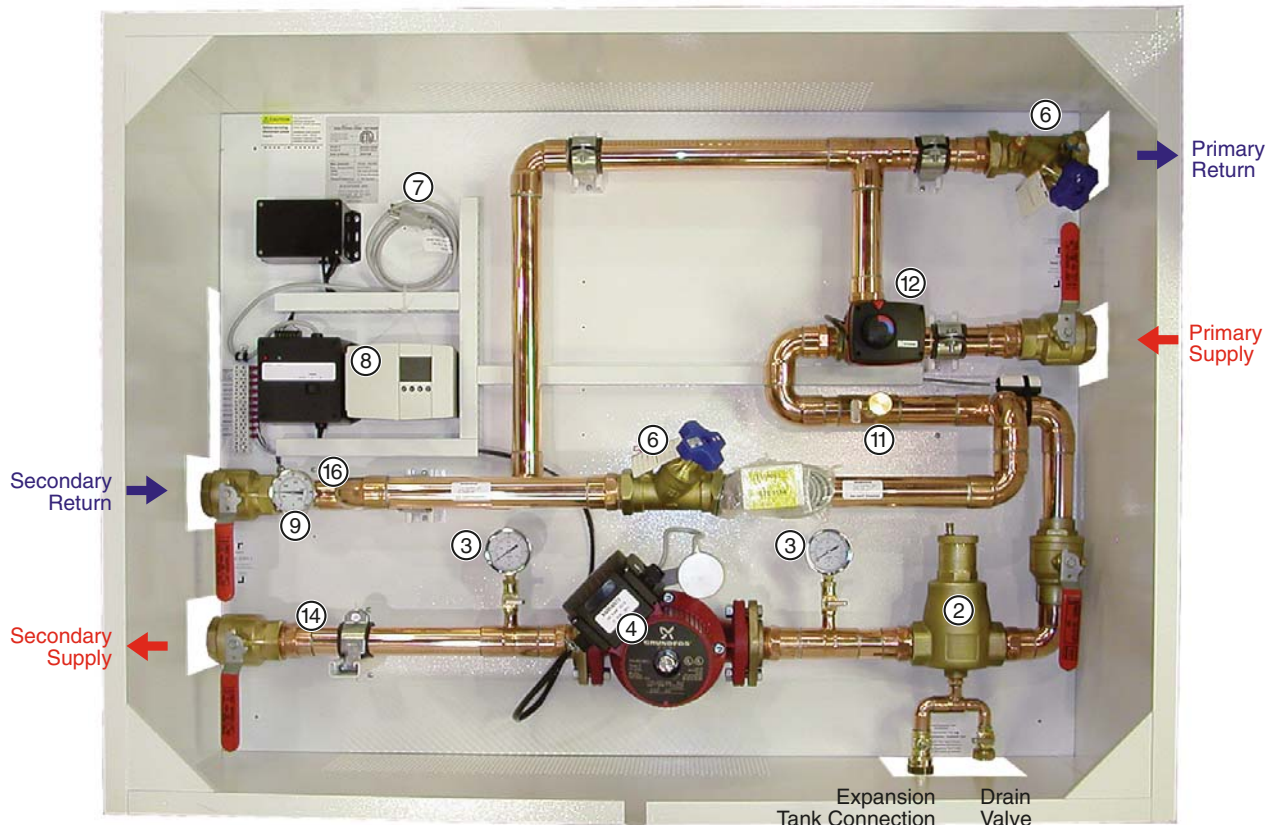


SMP335



Expansion Tank Connection Drain Valve

SMP400D (controls not exactly as shown)



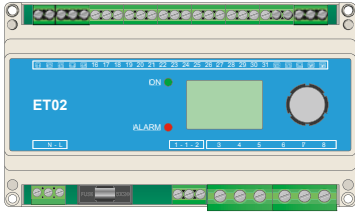
Expansion Tank Connection Drain Valve

Specifications

	SMP335	SMP425
Listing	cETLus	
Conforms to	CAN/CSA-C22 No.14, UL508	
Dimensions	36"H x 48"W x 16"D	
Weight	500 lbs.	
Nominal panel output* - <i>see conditions below</i>	335,000 btu/hr	425,000 btu/hr
Max ambient temperature	120°F	
Max water temperature	200°F	
Settable fluid temp range	50°F to 180°F	
Max allowable operating pressure on secondary side	100 psi	
Power supply: pre-wired on system controller	Module with 120v plug & 6' cord. Requires dedicated receptacle, 15 Amp, 120V, 60Hz, single phase.	
Circulator	Grundfos UP43-110	
Temperature control method	1-1/4" 3-Way diverting valve and motorized actuator, controlled by snow melt control.	
Mix valve Cv	18.6	
Heat exchanger size	4x 3x8-20	4x 3x8-30
Auxiliary terminal	Yes, max 16A	
Piping	1-1/2" Copper	
Piping connections	1-1/2" FNPT	
Expansion tank fitting	1/2" FNPT	
Cold water fill	3/4" hose bib	
Backplate and sides	Galvanized steel	
Cover	Powder coated steel	

Panel Output Conditions	SMP335		SMP425	
	Primary	Secondary	Primary	Secondary
Fluid type	Water	50% glycol	Water	50% glycol
Entering fluid temp (°F)	180	100	180	100
Exiting fluid temp (°F)	150	130	140	130
Flow rate (US gpm)	17	22	21	28
Headloss	14.3	-	16.8	-
Pressure drop (ft head)	-	22	-	21

	SMP400D
Listing	cETLus
Conforms to	CAN/CSA-C22 No.14, UL508
Dimensions	36"H x 48"W x 16"D
Weight	480 lbs.
Nominal panel output	400,000 btu/hr
Nominal flow	32 US gpm @ 25°F ΔT
Nominal pressure drop outside of panel	25 ft
Max ambient temperature	120°F
Max water temperature	200°F
Settable fluid temp range	50°F to 180°F
Max allowable operating pressure on secondary side	100 psi
Power supply: pre-wired on system controller	Module with 120v plug & 6' cord. Requires dedicated receptacle, 15 Amp, 120V, 60Hz, single phase.
Circulator	Grundfos UP43-110
Temperature control method	1-1/4" 3-Way diverting valve and motorized actuator, controlled by snow melt control.
Mix Valve Cv	18.6
Auxiliary terminal	Yes, max 16A
Piping	1-1/2" Copper
Piping connections	1-1/2" FNPT
Expansion tank fitting	1/2" FNPT
Cold water fill	3/4" hose bib
Backplate and sides	Galvanized steel
Cover	Powder coated steel

Panel Component Specifications**System Controller**

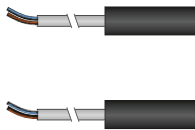
Based upon the feedback from the sensors for the system the controller will regulate the necessary supply fluid temperature that is required for the snow melt system by adjusting the control valve via motor actuator.

Refer to page 20 for instructions.

**Precipitation Sensor (sold separately)**

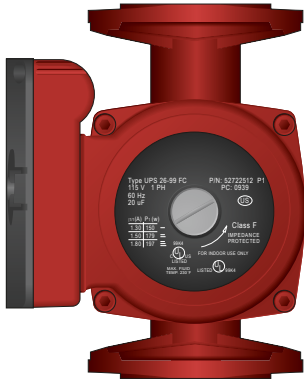
The SMP panel uses a precipitation sensor that is placed in the concrete to detect outdoor temperature and precipitation. Upon detection of either drop in temperature or precipitation, the snow melt system is started. The sensor should be installed as per installation instructions.

Detection:	Moisture and temperature
Mounting:	Outdoor surface
Cable length:	85 ft / 25 m
Enclosure rating:	IP 68
Ambient temperature:	-57 to 158°F / -50 to 70°C

**Supply and Return Sensors**

The supply and return fluid temperatures of the snow/ice melting system are monitored by the system supply and return sensors. The sensed temperature is fed back to the system controller which in turn aids in the regulation of the control valve.

Material:	Polycarbonate
Type:	NTC 12k
Range:	-20°C to 70°C
Typical accuracy (amb. = 25°C / 77°F):	
At 65°C =	3-4°C lower than the water temperature
At 40°C =	1-2°C lower than the water temperature
Response time (T _{0.5}):	150 sec.
Typical settling time:	15-20 min.



Circulator

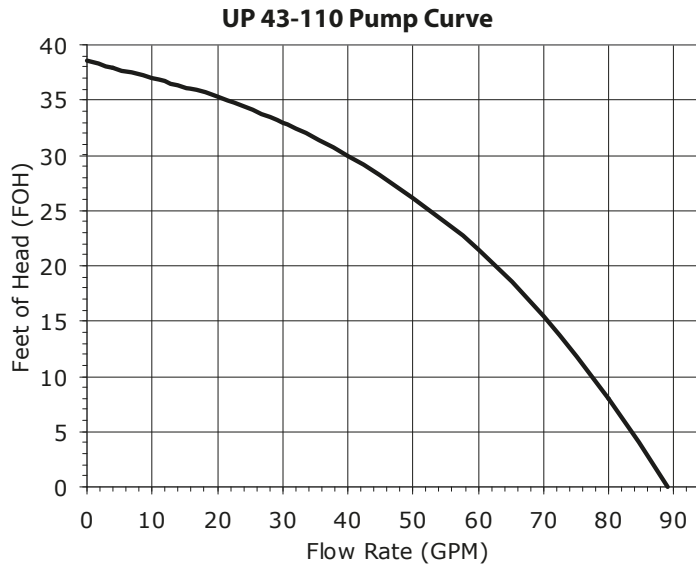
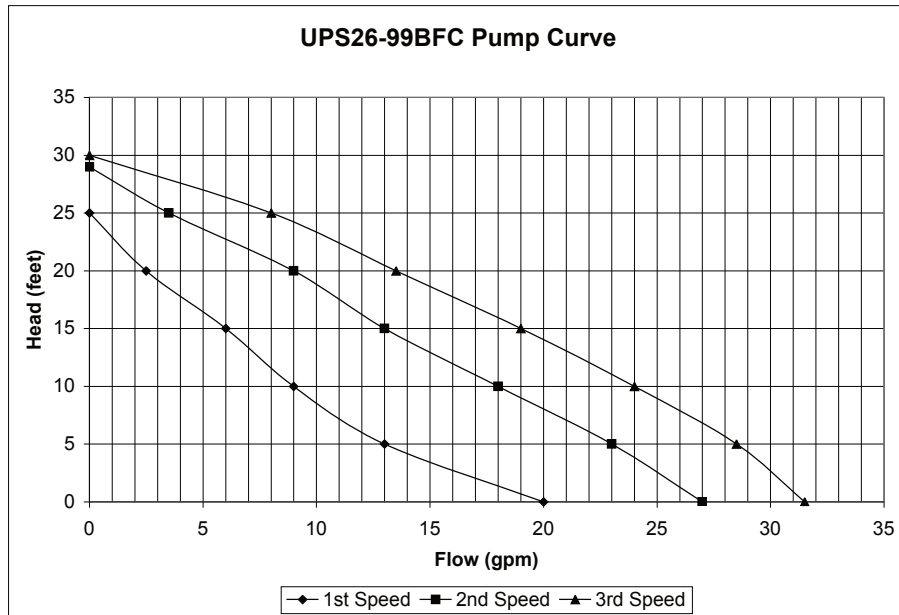
The circulator moves the heated fluid through the system when there is a call for heat from the system controller.

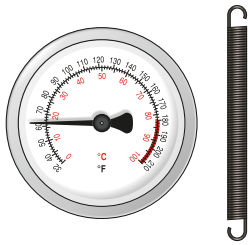
Pump Curve for Panel Circulator

Depending on the panel, the following pump curves apply.



The addition of glycol to the system will result in higher demand from the circulator due to the change in viscosity of the fluid.

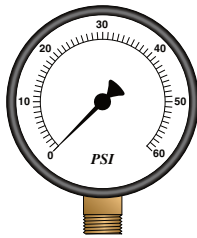


**Thermometer (76940)**

The pipe mounted thermometer reads the supply fluid temperature.

Specifications:

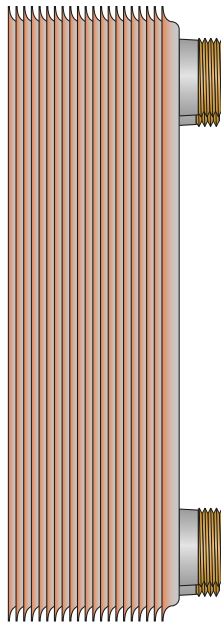
- Temperature range of 32-210°F (0-100°C).

**Pressure Gauge**

The two pressure gauges are mounted on the inlet and outlet ports of the circulator providing a reading of the system pressure drop.

Specifications:

- Pressure range, 0-60psi

**Heat Exchanger**

The brazed plate heat exchanger allows the transfer of heat from fluid on one side to fluid on the other side of the heat exchanger. This component also provides a separation between the two fluids so mixing does not occur.

Specification:

- Stainless steel plates copper brazed together
- Single-wall brazed plate

Fluid pH should be maintained within a range of 6.8-8.0



Balancing Valve

Located on the primary return (and secondary supply for SMP400D) is 1-1/2" balancing valve that provides flow regulation based on load requirements.

Setting of Return Balancing Valve

Certain system information is required to properly set the balancing valve:

- 1) Total pressure drop across the supply and return for both the primary and secondary systems.
- 2) Flow requirements for both the primary and secondary sides of the system.

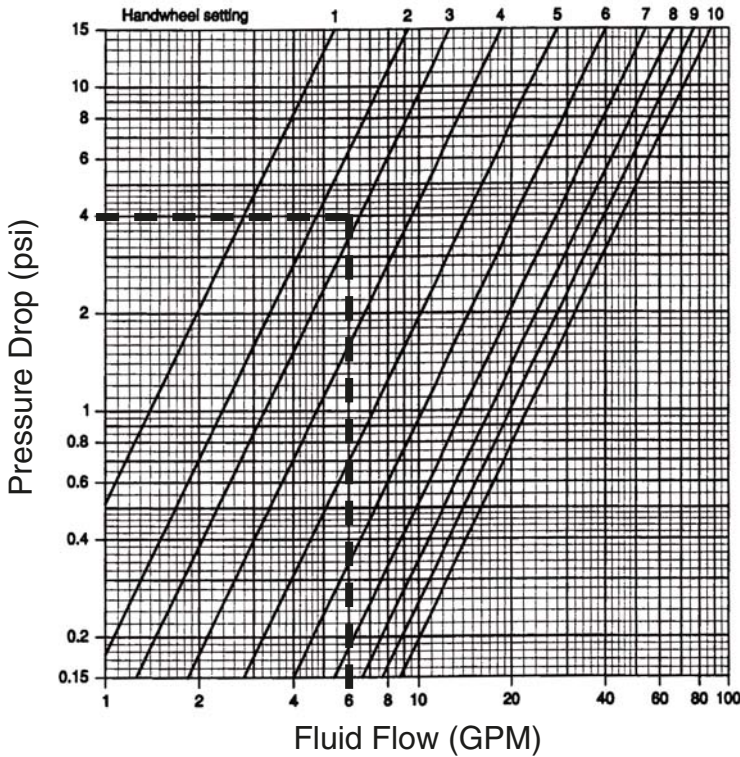
Taking this information and the graph to the left, the appropriate valve setting would then be set and read on the valve handle.

For example:

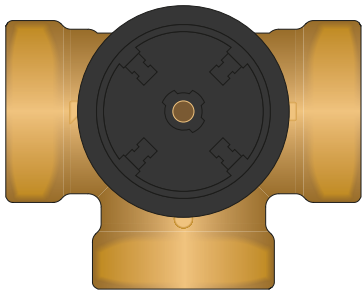
Pressure drop across the panel is 4 psi and the flow requirement is 6 GPM.

Following the dashed lines, seen on the graph to the left, the valve setting would be approximately 2.8. The blue knob would be turned clockwise until digits 2.8 appear (8 being red).

Available on the valve are two test ports. Appropriate test equipment can be utilized for verification of the required load requirements.



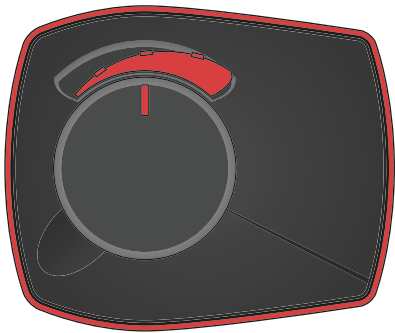
Note: Diagram above based upon 100% water.

**Control Valve**

3-way brass mixing valve regulates the temperature in the hydronic system with the help of the electric motor actuator and system controller.

Specifications:

- Cv=18.6
- 1-1/4" Female NPT

**Motorized Actuator**

The motor actuator is mounted to the control valve and moves the valve appropriately to allow the heated fluid to enter. This actuator works in conjunction with the system controller.

Specifications:

- 0-10V/0-20mA, 45-120s
- 24Vac/dc, 6Nm

Manual Operation of Motorized Actuator

NOTE: Motorized actuator should not be placed in manual mode for an extended period of time.

- Pull knob out on motorized actuator.
- Rotate knob clockwise or counter-clockwise.
- To return to automatic mode, push the knob in.

**Air Eliminator**

The air eliminator removes entrapped air from the hydronic system by screening the fluid as it flows through the valve. The air is then released out of the system via the incorporated air vent.

Specifications:

- Stainless steel lattice
- Removable internal air vent assembly for ease of maintenance

Mounting

Prior to mounting the panel, ensure the wall is capable of supporting the weight of the panel.

Ensure that a 115V receptacle is within reach of the 6-foot cord and plug.

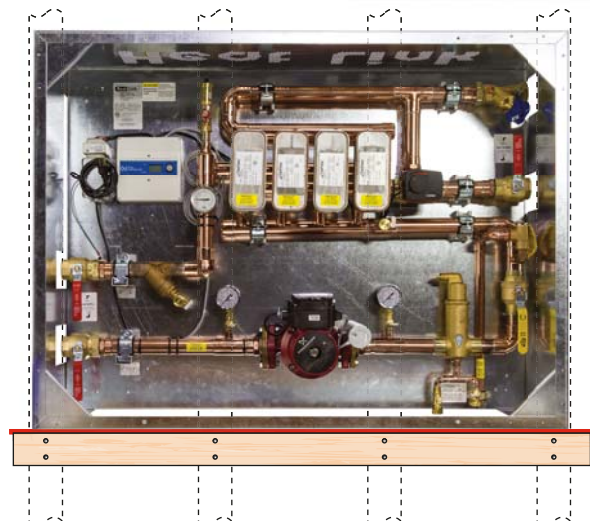
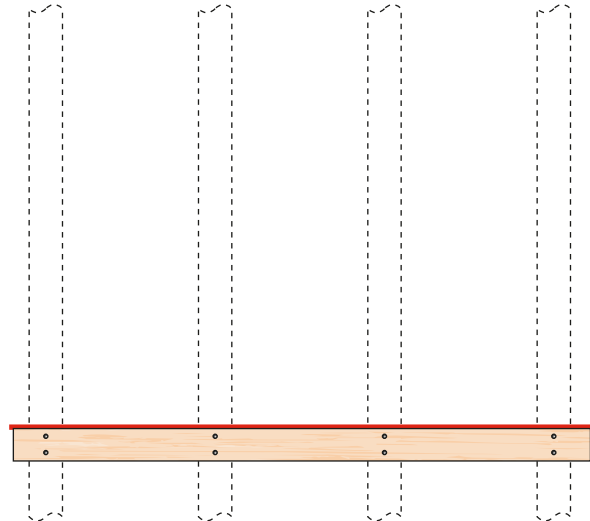
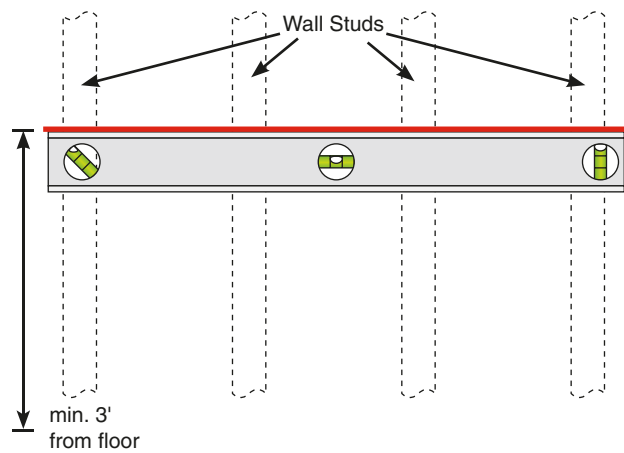
Step 1 Determine the locations and distance of the studs within the walls. A 2x4 is recommended to be installed to assist in securely setting the panel to the wall. With a level draw a straight line on the wall.

Step 2 Align the 2x4 to the line and secure this to the wall studs. Lift and place the panel onto the 2x4, and secure the panel to the wall. To ensure the panel is properly secured, it may be necessary to screw through the back plate.



This panel is heavy; 2-3 person lift required.

Step 3 Before replacing the cover, refer to pages 17-20, to connect the piping and the wires appropriately to the panel.



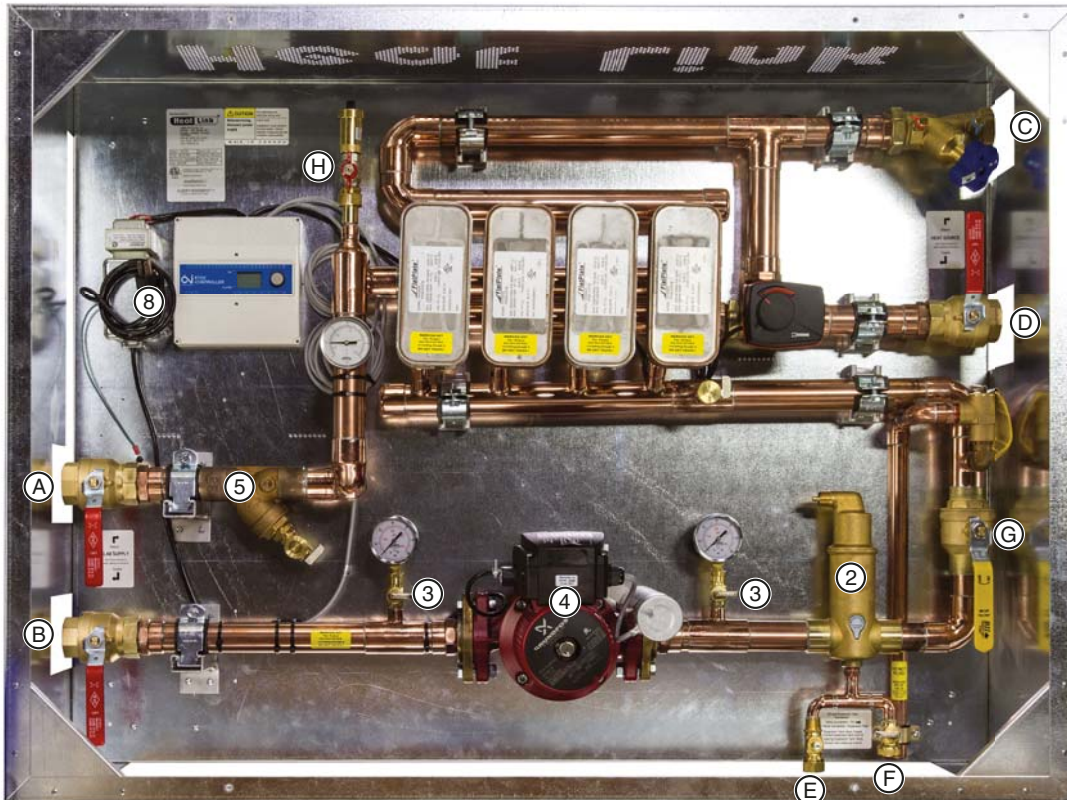
Fill And Purge

The following steps are recommended in order to fill the system side of the snow-melting panel prior to commissioning of the panel.

Note: Additional purging steps may be required for the rest of the hydronic system.



The discharged system fluid from the fill and purge process is not for consumption or washing.

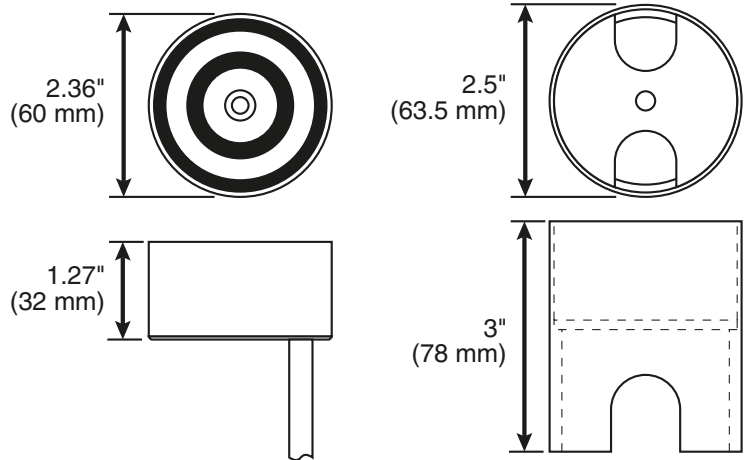


- Step 1** Unplug the panel (8).
- Step 2** Fully close valves (B) (clockwise rotation), (A), (F), (G), (5), and (3).
- Step 3** With an appropriate expansion tank connected, fully open (E), loosen the large silver flat head screw on (4) and the air vent knob on (2).
- Step 4** Connect the antifreeze solution charger to (F) and slowly open the valve. Reduce the flow if solution sprays out from (2).
- Step 5** After a minute or when water comes out of the circulator, tighten the screw on (4).
- Step 6** Remove air vent assembly from (H) and attach the purge hose to the valve. Tighten the air vent on the air eliminator, (2).
- Step 7** Fully open valve (G) and allow the water to fill through the heat exchangers and purge through (H).
- Step 8** When the water exiting from (H) is free of bubbles, close valves (H) and (F).
- Step 9** Remove the purge hose from valve (H) and reattach the air vent assembly. Loosen the air vent knob on (2).
- Step 10** Prior to fully opening valves (A) and (B), the rest of the snow melt system should be properly filled and purged.

Precipitation Sensor Installation

Technical data

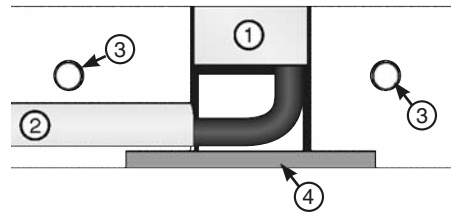
Detection:	Moisture and temperature
Mounting:	Outdoor surface
Cable length:	85 ft / 25 m
Enclosure rating:	IP 68
Ambient temperature:	-57 to 158°F / -50 to 70°C



Installation in a level outdoor surface

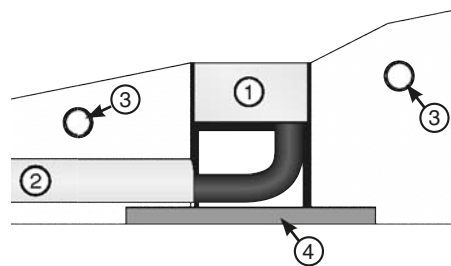
The ice sensor must be installed within the area to be heated. The sensor surface must form a horizontal plane with the surfacing. The sensor surface must remain exposed, not covered.

The ice sensor must not project out of the surfacing. It may be recessed a few millimetres deeper into the surfacing so that draining melt water can collect on the sensor surface.



Installation in a sloping outdoor surface

For inclined outdoor areas, the ice sensor must be installed horizontally. If the ice sensor is horizontal, it ensures that snow or melt water can collect on sensor surface.



- ① DRWVSNS-SS sensor
- ② Conduit for sensor cable
- ③ PEX Tubing
- ④ Paving slab in case of soft substrate

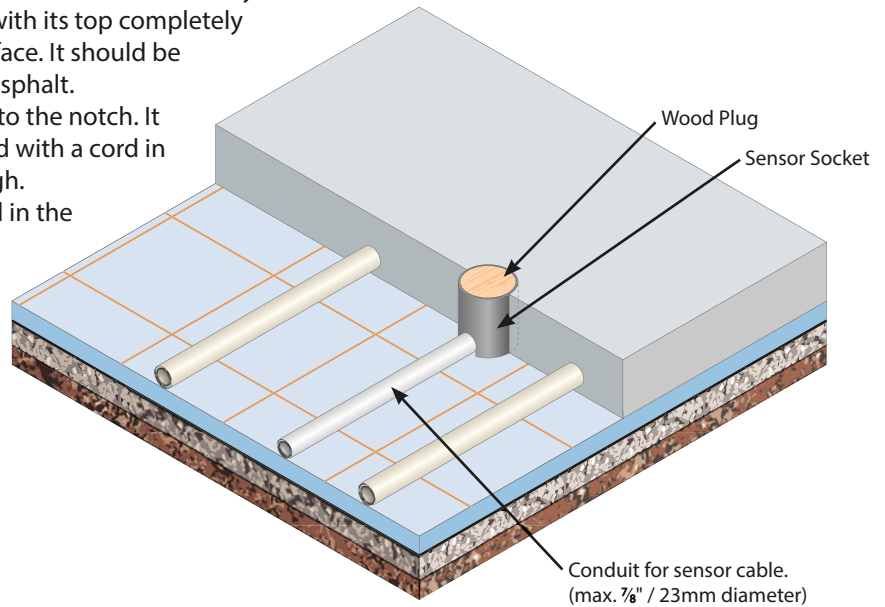
Mounting of Sensor Socket

The sensor should be mounted in an open unsheltered location away from walls, etc. The tube must be embedded with its top completely horizontal and flush with the surrounding surface. It should be embedded in a hard surface, e.g. concrete or asphalt.

A conduit, up to \varnothing 23 mm, must be inserted into the notch. It is recommended that the conduit be equipped with a cord in order to make it easier to pull the cable through.

The accompanying wood plug must be placed in the hole before the concrete or asphalt is applied.

Ensure that it is securely embedded in relation to the expected surface load.



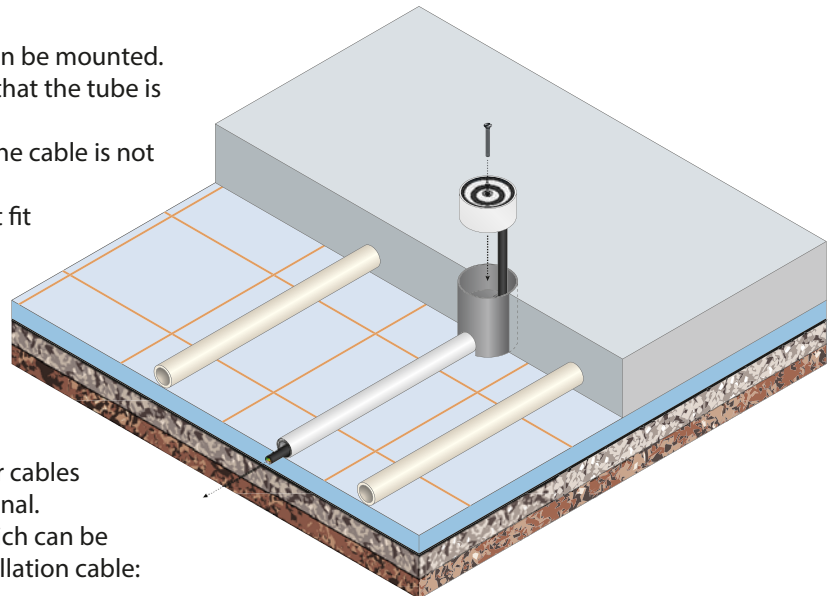
Mounting of Sensor

After the concrete/asphalt has cured, the sensor can be mounted. Remove the wood plug from the tube and ensure that the tube is clean.

Pull the cable through the conduit, ensuring that the cable is not damaged on any sharp edges.

Place the sensor in the tube. The sensor cable must fit easily through the hole in the bottom.

The accompanying screw must be fitted in the middle of the sensor and securely tightened.



Mounting of Sensor Cable

The cable must be mounted in accordance with applicable local regulations.

The cable must never be installed parallel to power cables as electrical interference may distort the sensor signal.

The sensor is supplied with 82.5 ft (25 m) cable which can be extended up to 660 ft (200 m) using standard installation cable: $6 \times 1.5 \text{ mm}^2$.

The total resistance of the cable must be less than 10 ohm.

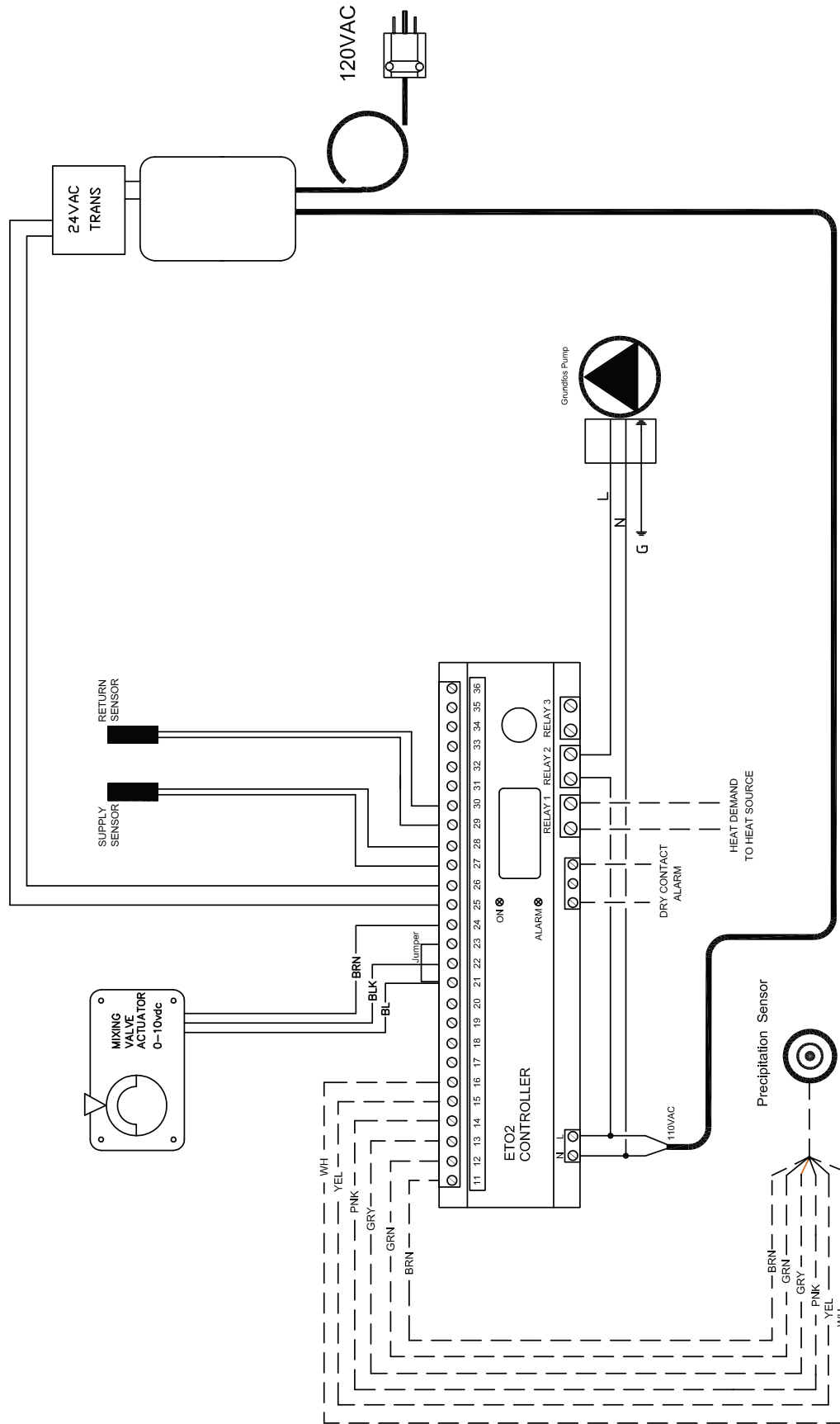
Panel Wiring



- Wiring should be done by qualified electrician and should meet local codes and jurisdictions. Wiring to the terminal strip requires 18 gauge 4 wire.

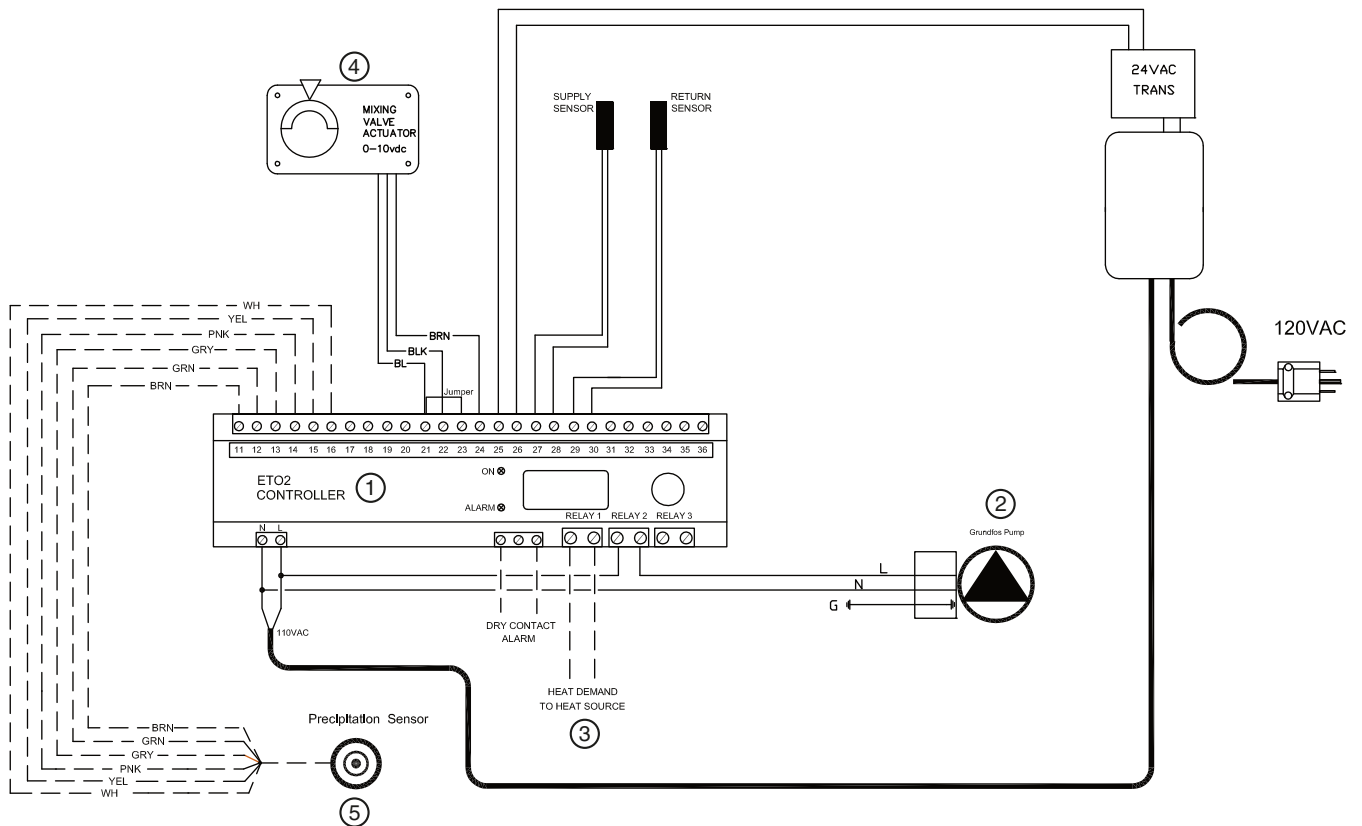
Auxiliary Contacts

The auxiliary contact set is dry, meaning no supply of power is present at the terminal. The maximum allowable load is 15A. The auxiliary dry contact located on the terminal is to switch another device (ie. the heat source) when there is a call for heat from any zone.



Panel Control Sequence

1. When the Precipitation Sensor ⑤ detects temperature below SET TEMP 1 (warm weather shutdown), the System Controller ① will activate. It will start the Secondary ② Circulators, close the Auxiliary Terminals ③ for 1 minute every 15 minutes to check the return water temperature. If the return water temperature is below the minimum return water temperature (MIN WATER) the System Controller will start the Secondary ② Circulators, close the Auxiliary Terminals ③, and open the mixing valve ④ to increase the return water temperature to the required level (MIN WATER).
2. When the Precipitation Sensor ⑤ detects snow fall, the System Controller ① will start the Secondary ② Circulators, close the Auxiliary Terminals ③, and open the mixing valve ④ to increase the flow temperature to the maximum supply water temperature (MAX WATER). When no more snow is detected by the Precipitation Sensor ⑤, the System Controller ① continues to operate the system for an additional user adjustable period of time (default 2 h; AFTERRUN 1).
3. When the Precipitation Sensor ⑤ detects temperature below OFF TEMP 1 (cold weather cutoff), the System Controller ① will be in standby mode.

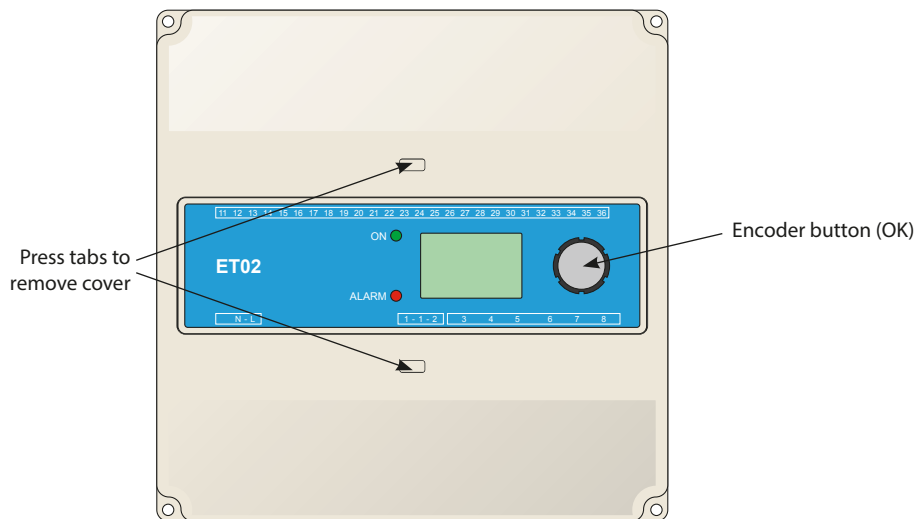


System Controller Instructions

The system controller has been setup at the factory. Minimal or no adjustments should be required for operation.

Glossary:

Zone 1, 2:	Independent heating zones in which ice and snow can be melted. SMP panel only uses Zone 1.
Encoder button:	Button which can be turned or pressed to easily configure the settings.
ETOG:	DRVWSNS-SS embedded sensor for detecting moisture and temperature.
ETOR:	Not used (Gutter sensor for detecting moisture.)
ETF:	Not used (Outdoor sensor for detecting temperature.)
Y/Δ:	Not used (2-stage control of electric heating systems.)
Afterrun:	The heat provided by the system for a specified length of time after the moisture/temperature signal has been eliminated by a heating cycle.



Operation

ET02 system controller is equipped with an easily operated encoder button (press and turn) and a display which describes the current situation. The display is backlit and is illuminated by pressing the encoder button (OK). The illumination is automatically switched off after 30 seconds.

Press the encoder button and the main menu will be shown on the display. Turn the button to scroll through the options. Not all the options are shown on the display at once, but they can be accessed by turning the encoder button.

Press encoder button to select a highlighted option.

Startup (this has already been done at the factory)

SELECT SCALE:	
CELSIUS	
FAHRENHEIT	

When the ETO2 system controller is switched on for the first time, Celsius or Fahrenheit must be selected. Turn the encoder button until the desired temperature scale is highlighted. Press encoder button to set selection.

SENSOR 1:	
ETOG	
ETOR	

SENSOR 1 is shown on the display, allowing the type of sensor connected for input 1 to be selected:

ETOG: DRVWSNS-SS embedded sensor
 ETOR: Not applicable (Gutter sensor + outdoor sensor)
 Press encoder button to set selection.

SENSOR 2:	
OFF	
ETOG	

SENSOR 2 is then shown on the display, allowing the type of sensor connected for input 2 to be selected. If no sensor is connected for input 2, OFF must be selected.

Press encoder button to set selection.

OUTDOOR SENSOR	
OFF	
ETF	

Select if outdoor sensor ETF is connected terminals 31-32. If none sensor ETF is connected, OFF must be selected. Press encoder button to set selection.

APPLICATION:	
ELECTRIC 1-ZONE	
ELECTRIC 2-ZONE	
ELECTRIC 2-STEP	
WATER BASED	

Select the application type by turning the encoder button and pressing OK.
 ELECTRIC 1-ZONE : 1 zone electric/heating control/simple water based
 ELECTRIC 2-ZONE: 2 zones individual electrical heating control/simple waterbased
 ELECTRIC 2-STEP : 2 stage electric heating control (Y/Δ) for 1 zone.
 WATERBASED: 1 zone waterbed heating control with supply water control.

Select the appropriate option and press OK. The system is now set up and will begin operating fully automatically in accordance with the pre-configured standard program, see **FACTORY SETTINGS**. Alternative settings can also be made, see **SETTINGS**.

ZONE 1 HEAT	OFF
ZONE 2 HEAT	OFF
AFTERRUN 1	0.00
AFTERRUN 2	0.00
STANDBY	OFF

Status and afterrun data for zones 1 and 2 are now shown on the display.

Main Menu

ZONE 1	OFF
ZONE 2	OFF
SENSOR 1	##.##°C
SENSOR 2	##.##°C
MOIST 1	NO
MOIST 2	NO
OUT. TEMP	##.##°C
SUPPLY W.	##.##°C
RETURN W.	##.##°C
ALARM	NO
SHOW INFO	
SETUP	
RESTART	
EXIT	

Display Texts

ZONE 1	OFF	Heating zone 1 active (ON) or inactive (OFF)
ZONE 2	OFF	Not used. Heating zone 2 active (ON) or inactive (OFF)
SENSOR 1	##.##°C	Sensor 1 temperature, only with ETOG sensor
SENSOR 2	##.##°C	Not used. Sensor 2 temperature, only with ETOG sensor
MOIST 1	NO	Sensor 1 moisture
MOIST 2	NO	Not used. Sensor 2 moisture
OUT. TEMP	##.##°C	Not used. Outdoor temperature, ETF
SUPPLY W.	##.##°C	Supply water temperature, only water-based application
RETURN W.	##.##°C	Return water temperature, only water-based application
ALARM	NO	Fault message, fault type will be displayed. Red LED on front of unit will flash.
SHOW INFO		Application Info
APP:	WATER	Application type: electric or water-based heating
SW VERSION	1.00	Software version
SENSOR 1	ETOG	Sensor type, sensor 1
SENSOR 2	OFF	Not used. Sensor type, sensor 2
SENSOR ETF	OFF	Not used. ETF sensor connected
EXIT		Return to main menu

SETUP

Settings

Please note that incorrect sensor setup may lead to insufficient ice and snow melting.

FORCE HEAT OFF

Manual start of forced heat. Press OK and select ON to start Forced heat. ETO2 controller will heat in the pre-programmed afterrun time, see AFTERRUN 1 and 2.

SELECT SCALE C

Whether temperature is to be displayed in Celsius (C) or Fahrenheit (F) can be selected here. Select the required scale and press OK. Press OK to return to the SETUP menu.

SET TEMP 1 3.0C

Set temperature to Zone 1: The maximum temperature at which ice and snow should be melted can be set here (Warm Weather Shut Down). Set the required temperature and press OK.

SET TEMP 2 3.0C

Not used. Set temperature to Zone 2: The maximum temperature at which ice and snow should be melted can be set here. Set the required temperature and press OK.

OFF TEMP 1 -10.0C

Lowest operating limit Zone 1 : From set temperature to lowest operating limit, the ETO2 will operate in normal mode (Cold Weather Cut Off). Below this temperature it will be in stand by mode. To change the OFF temperature, press OK and turn the encoder button to the desired value, confirm with OK.

OFF TEMP 2 -10.0C

Not used. Lowest operating limit zone 2 can be set here. To change the OFF temperature press OK and turn the encoder button to the desired value, confirm with OK.

AFTERRUN 1 2:0

Afterrun time Zone 1: An afterrun duration of between 0 and 18 hours can be set here. The system will continue to provide heat for the specified time after the moisture/temperature signal has been eliminated by a heating cycle. Use the encoder button to set the required afterrun time and press OK.

AFTERRUN 2 2:0

Not used. Afterrun time Zone 2: An afterrun duration of between 0 and 18 hours can be set here. Use the encoder button to set the required afterrun time and press OK.

OFFSET T1 0.0C

Zone 1 temperature can be calibrated here. The temperature recorded by the ETOG sensor can be adjusted so that the exact temperature is displayed on ETO2. Measure the temperature beside the sensor using a thermometer. Adjust the necessary offset using the encoder button. Press OK.

OFFSET T2 0.0C

Not used. Zone 2 temperature can be calibrated in the same way here. Adjust the necessary offset using the encoder button. Press OK.

OFFSET OUT. 0.0C

Not used. Outdoor temperature can be calibrated here. The temperature recorded by the ETF outdoor sensor can be adjusted so that the exact temperature is displayed on ETO2. Measure the temperature beside the sensor using a thermometer. Adjust the necessary offset using the encoder button. Press OK.

MIN WATER 5.0C

The minimum return water temperature can be set here. Set the required minimum temperature and press OK. This menu option is only available when water-based heating is used.

MAX WATER 55.0C

The maximum supply water temperature can be set here. Set the required maximum temperature and press OK. This menu option is only available when water-based heating is used.

SENSOR HEAT OFF

In special options or extreme cold weather the sensor heat can be selected on continuously. Select ON and press OK.

MOIST CTRL ON

The moist control on sensor can switches off here. The thermostat will only control by the set temperature, see SET TEMP. Select OFF for switch off the moist control and press OK.

FACTORY RESET

All ETO2 factory settings can be restored here. Selecting this option deletes all customized settings.

REINSTALL

Whether setup failure in startup menu, or new hardware connection has been done, the primary setup must be changed in STARTUP menu. Select PASSWORD and turn the encoder button to the factor code (1202) The controller will then return to the startup menu, see STARTUP.

**REINSTALL
PASSWORD XXXX**

EXIT

Select this option and press OK to return to the main menu.

RESTART

Restart
When changing the settings or require a new process start, the ETO2 can be restarted in this menu. Keeping your current settings. The ETO2 will go to the initial status display.

Factory Settings

Setup	Factory Settings	SMP Panel Settings	Own Settings
Application	Electric	Water Based	
Zone 1	ETOG	ETOG	
Zone 2	OFF	OFF	
Select scale	Celsius	Celsius	
Afterheat time Zone 1	2.00 hours	2.00 hours	
Afterheat time Zone 2	2.00 hours	2.00 hours	
Temp. offset Zone 1	0.0°C / 0.0°F	0.0°C / 0.0°F	
Temp. offset Zone 2	0.0°C / 0.0°F	0.0°C / 0.0°F	
Temp. offset ETF	0.0°C / 0.0°F	0.0°C / 0.0°F	
Set temperature	3.0°C / 37.4°F	3.0°C / 37.4°F	
OFF temperature	-10.0°C / 14°F	-10.0°C / 14°F	
Min. water temperature	5°C / 41°F	5°C / 41°F	
Max. water temperature	55°C / 131°F	55°C / 131°F	

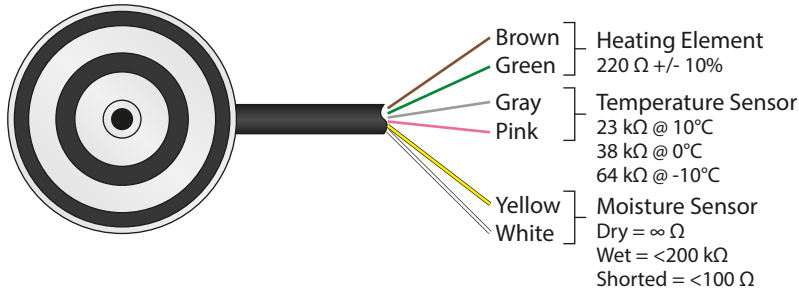
Troubleshooting

Problem	Check / Verify	Possible Cause
Low Temperature Within Snow Melt System (Snow and ice not melting)	Water on the snow/ice detector.	If the snow/ice detector is dry, it may need to be relocated.
	Outdoor temperature is above SET TEMP 1.	System may be in Warm Weather Shut Down. Increase SET TEMP 1.
	Outdoor temperature is below OFF TEMP 1.	System may be in Cold Weather Cut Off. Decrease OFF TEMP 1.
	The panel fails to turn on.	The panel may not be powered. Check if the power module is in the ON position and there is power to the panel.
	The motor actuator fails to open during a call for heat.	The motor actuator may have been left in a manual position, see page 13.
	Without power to the panel take an Ohm reading across each of the sensors. See Testing the Sensors on the next page.	A sensor may be defective. Replace sensor.
	Low supply mixed fluid temperature.	Adjust the MIN WATER setting on the system controller appropriately.
	Wiring from heat source to snow melt panel.	Check that the wiring is done properly. Consult qualified electrician prior to alteration of wiring between heat source and snow melt panel.
	Output of heat source is unable to meet demand of the required system.	Compare output of heat source to the requirements of the snow melting system.
	Circulator is not on during a call for heat. (Use a stethoscope or similar device to verify)	The system controller or circulator may be defective or the cut off temperature is not set properly.
Excessive High Temperature Within Snow Melt System	Check current settings of the system controller.	Adjust the settings on the system controller appropriately.
	High supply mixed fluid temperature.	Adjust the MAX WATER setting on the system controller appropriately.
	The motor actuator remains open after the thermostat is satisfied.	An obstruction inside the valve is not allowing the actuator to fully close or the system controller is still calling for heat.

Testing the Sensors

Precipitation Sensor

Measure resistance between the Precipitation Sensor wires.



Supply and Return Sensors

Measure resistance between the sensor wires and compare to the NTC 12k resistance table below.

Celsius	Fahrenheit	Resistance
-20°C	-4°F	112246Ω
-10°C	14°F	63929Ω
0°C	32°F	37942Ω
5°C	41°F	29645Ω
10°C	50°F	23364Ω
11°C	51.8°F	22300Ω
12°C	53.6°F	21292Ω
13°C	55.4°F	20335Ω
14°C	57.2°F	19428Ω
15°C	59°F	18567Ω
16°C	60.8°F	17750Ω
17°C	62.6°F	16974Ω
18°C	64.4°F	16237Ω
19°C	66.2°F	15537Ω
20°C	68°F	14871Ω
21°C	69.8°F	14238Ω
22°C	71.6°F	13636Ω
23°C	73.4°F	13064Ω

Celsius	Fahrenheit	Resistance
24°C	75.2°F	12519Ω
25°C	77°F	12000Ω
26°C	78.8°F	11506Ω
27°C	80.6°F	11035Ω
28°C	82.4°F	10587Ω
29°C	84.2°F	10159Ω
30°C	86°F	9752Ω
35°C	95°F	7978Ω
40°C	104°F	6569Ω
45°C	113°F	5442Ω
50°C	122°F	4535Ω
55°C	131°F	3800Ω
60°C	140°F	3201Ω
70°C	158°F	2306Ω
80°C	176°F	1692Ω
90°C	194°F	1263Ω
100°C	212°F	958Ω

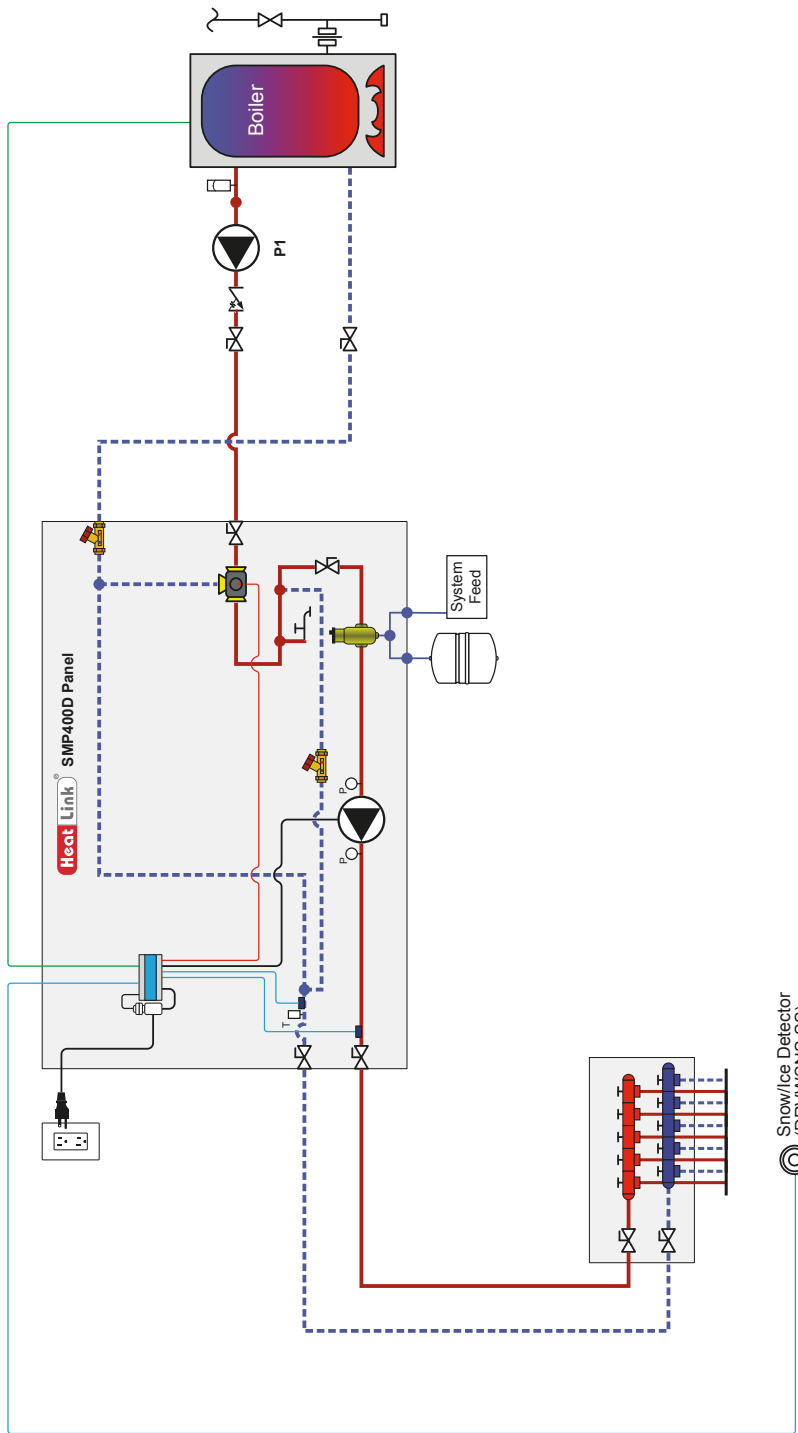
Maintenance

Yearly maintenance should be done on the panel prior to each heating season to ensure the efficient and accurate operation of the panel.

Complete the following check list:

- Check and/or replenish the appropriate amount of system antifreeze solution required for the snow/ice melting system.
- Manually override the system controller to turn on the circulator to verify if it starts, via stethoscope or similar device.

You are now ready for another heating season with HeatLink.



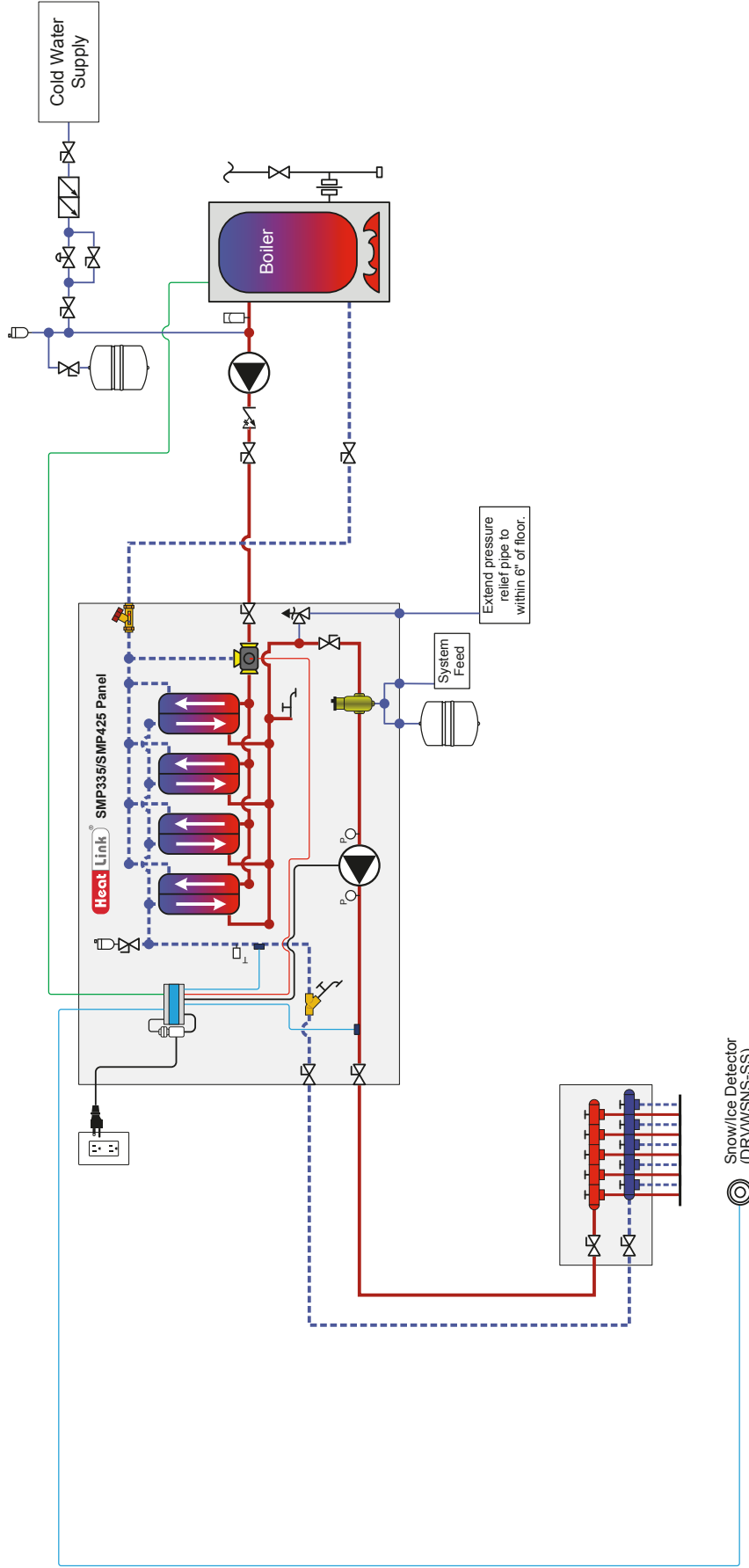
Notes:

- Drawings are for HeatLink suggested system layout only! User must determine if system layout will work for their particular application.
- Air vents, expansion tanks, pressure relief valves, etc. for heat source as per local codes.
- Use isolation ball valves for all circuits and components.
- Local codes, regulations, and authorities have final jurisdiction.

Heat Link
 www.heatlink.com
 1-866-661-5332

Heat Source: Boiler
 Panel(s): SMP400D
 Heat Load(s): Snow Melt
 Date: 2014-05-08

Schematic #: SCH-SMP-M001
 Rough-in wiring see: SCH-SMP-R002
 Wiring detail see: SCH-SMP-E001

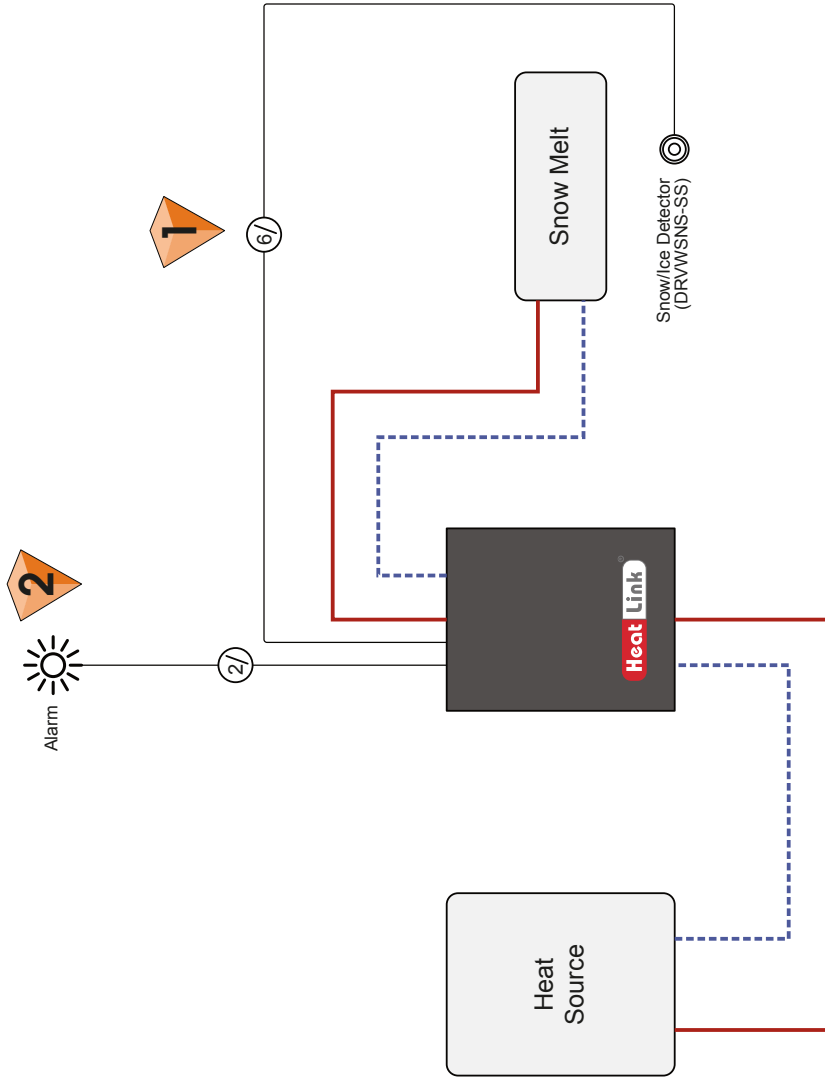


Notes:

- Drawings are for HeatLink suggested system layout only! User must determine if system layout will work for their particular application.
- Air vents, expansion tanks, pressure relief valves, etc. for heat source as per local codes.
- Use isolation ball valves for all circuits and components.
- Local codes, regulations, and authorities have final jurisdiction.

Heat Source: Boiler
Panel(s): SMP335/SMP425
Heat Load(s): Snow Melt
Date: 2014-05-08

Schematic #: SCH-SMP-M003
Rough-in wiring see: SCH-SMP-R002
Wiring detail see: SCH-SMP-E001



Snow/Ice Detector
Standard 6-wire to be run from heated slab at least three feet from edge of the heating area back to the mechanical room. Run wires within a conduit for future access if necessary.



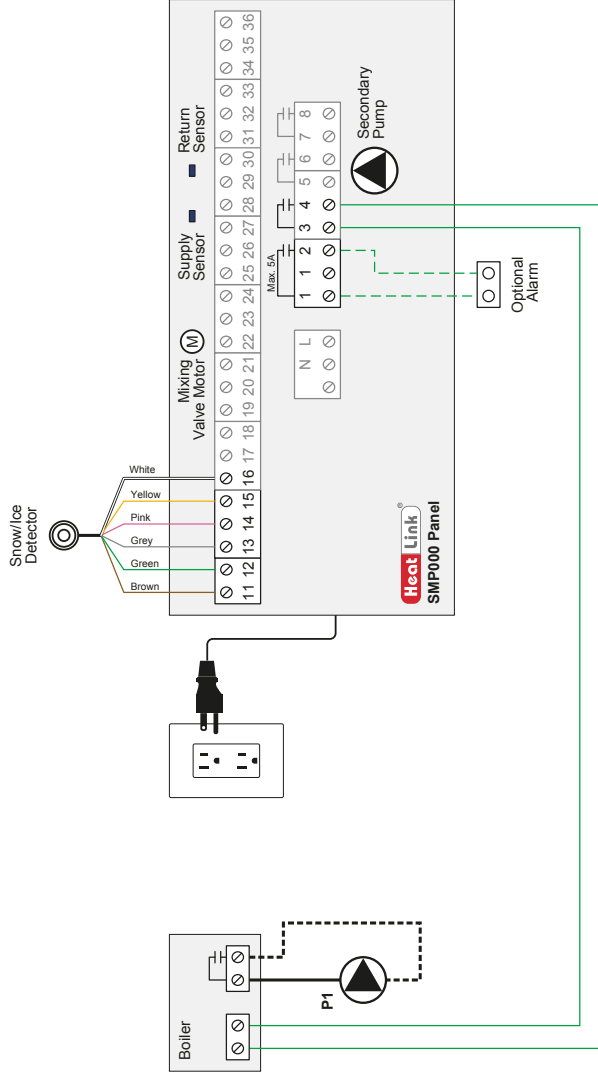
Alarm (optional)
Standard 2-wire to be run from remote location back to the mechanical room.

Notes:

- Drawings are for HeatLink suggested electrical schematics only! User must determine if electrical schematic will work for their particular application. User must also confirm all HeatLink schematics with manufacturer schematics of each particular control chosen.
- In all cases manufacturer equipment schematics will take precedence over HeatLink electrical schematics.
- Local codes, regulations, and authorities have final jurisdiction.

Application: Rough-in Wiring for SS SMP Panels

Date: 2013-05-24



Notes:

- Drawings are for HeatLink suggested electrical schematics only! User must determine if electrical schematic will work for their particular application. User must also confirm all HeatLink schematics with manufacturer schematics of each particular control chosen.
- HeatLink manufacturer equipment schematics will take precedence over HeatLink electrical schematics.
- Local codes, regulations, and authorities have final jurisdiction.

Application: Single Snow Melt Pad with Single Snow/Ice Detector

Schematic #: SCH-SMP-E001

Rough-in wiring see: SCH-SMP-R002

Date: 2014-05-08



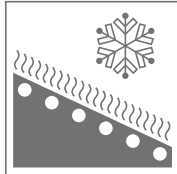
Heat Link® Canada

Manufactured & distributed by HeatLink Group Inc.

Head Office:

4603E - 13th Street N.E.
Calgary, Alberta, T2E 6M3

Toll Free: 1-800-661-5332
International Phone: +1 (403) 250-3432
Fax: 1-866-450-1155

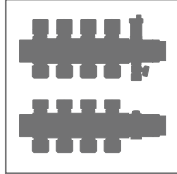


Heat Link® China

Distributed by Cathay-Links International

Phone: 852-25693213

Fax: 852-25359271



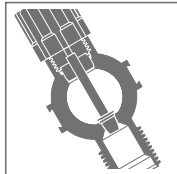
Heat Link® Ireland

Distributed by Jamoni Ltd.

Phone: 057 - 932 4062

Fax: 057 - 932 4063

Freephone: 1800-311338

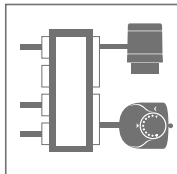


Heat Link® México

Distributed by Distribuidora Caisa S.A. de C.V.

Phone: (52-55) 3300-4400

Fax: (52-55) 3300-4406



Heat Link® United States

Distributed by HeatLink Group Inc.

USA Distribution Center:

1000 - 100th Street SW, Suite B
Byron Center, MI, 49315

Toll Free: 1-800-661-5332

Fax: 1-800-869-6098



info@heatlink.com
www.heatlink.com

HeatLink, the HeatLink logo, and "Mechanical Room in a Box" logo are either registered trademarks or trademarks of HeatLink Group Inc.