

Instructions for Installing PM-224

Remote Snow/Ice Sensor

The PM-224 is a 24 volt, self contained temperature, snow and ice sensing control. Each PM-224 can operate with a supply voltage in the range of 22-28VAC. The integrated snow sensor is heated to allow for snow, ice, or freezing rain to melt, allowing proper detection of environmental conditions.

⚠ WARNING: General Safety Instructions

- THIS UNIT SHOULD BE INSTALLED ONLY BY QUALIFIED PERSONNEL!**
- Disconnect all power from the control, or any associated equipment, before opening the front cover plate.
- Limit input voltage to 22-28 VAC
- To avoid fire hazard, replace fuse **only** with 2 Amp 32 V or 250 V 3AG fast acting fuse.
- Do not drill holes through the electrical enclosure for mounting. Mount the control to a free-standing conduit or via the pre-determined mounting holes.
- Ensure front cover gasket is properly installed when replacing cover.

Installation

The PM-224 must be installed in a location that exposes the moisture grid to a clear view of the sky and any precipitation. **Note: the unit should not be mounted directly under eaves, overhangs, or other obstructions that can block precipitation from reaching the moisture grid.**

Do not install the sensor close to the ground, or any other location, that can cause the sensor to be buried in snow.

Mount the PM-224 outdoors, away from furnace vents, dryer vents, and other sources of heat. The PM-224 can be mounted to a free-standing conduit or by using the mounting holes in each corner of the enclosure. Do not drill holes in the enclosure.

The PM-224 control requires the use of a Contactor Pro Relay Panel to deliver power to the ProMelt system. Refer to the Contactor Pro Relay Panel installation manual for further details.

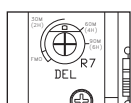
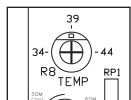
Use of a shielded, outdoor rated 18-24AWG, 4-conductor cable is required to connect the Contactor Pro Relay Panel to the sensor. The total length of shielded this supply wire cable should not exceed 100 feet (30.5 m) for 22 or 24 AWG and 200 feet (61 m) for 18 or 20 AWG. All connections must be made in an outdoor rated, water-tight electrical enclosure.

Wire the controller in accordance with the diagrams on the following page.

Operation

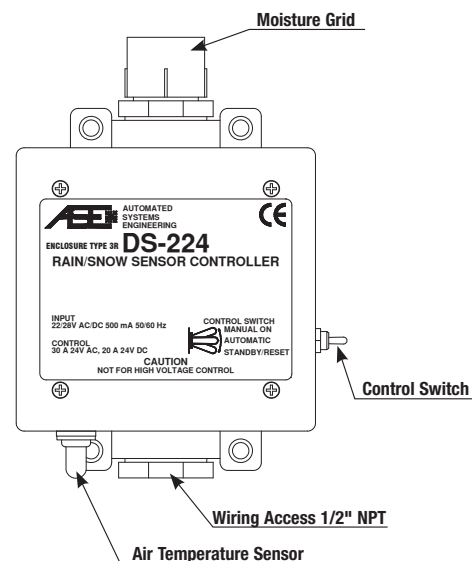
Before installing and wiring the PM-224 control, it is important to set all power and control settings prior to wiring or mounting.

- Set the Temp Adjust control for desired melting conditions. Precipitation below this temperature is assumed to be snow, above rain. Control comes with the Temp Adjust dial set to 39°F (4°C).
- Set the Delay (DEL) time for 30–90 minutes when the LD (Long Delay - see #3) switch is set to OFF, or 2 – 6 hours when LD is ON.



The Delay function will allow the snow melt system to run for the set time frame after moisture is no longer detected (once snowfall has stopped). This is to help prevent "black ice" from forming.

- Determine how the sensor operates by setting the toggles located at S1.



PM-224 provides integrated air and moisture detection within a rainproof and ice-resistant enclosure.

Snow: The control will operate when precipitation is detected below the Temp Adjust setting
Recommended: ON

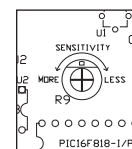
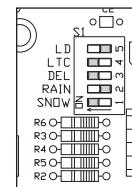
Rain: The control will operate when precipitation is detected above the Temp Adjust setting.
Required: OFF

DEL: The control will operate with a Delay time. If this function is set to Off, the control will operate with a 2 minute delay to prevent short-cycling of external components. **Recommended: ON**

LTC: The control will operate in Low Temperature Cutoff mode, preventing operation when Ambient Temperatures (AT) fall below 15°F (9.5°C).
Recommended: ON (for systems with limited heat output)

LD: The control will operate with a Delay (DEL) time (see Operation step 2 and DEL above) of 2 - 6 hours if this function is On (may be necessary in areas of heavy snowfall). If this function is Off, the control will operate with a 30 - 90 minute Delay Time.
Recommended: OFF

- The control monitors the moisture sensor once every second for the presence of moisture. Setting the sensor sensitivity dial to "Less" requires a full four (4) minutes of detection before the unit activates the snow melt system. Set to "More" requires only three (3) seconds of detection. Adjust this setting to avoid nuisance triggering due to condensation, blowing snow, high winds, or flurry conditions.

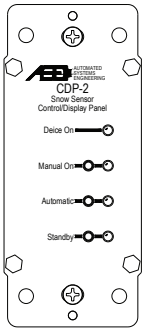


Power must be cycled for switch changes to take effect.

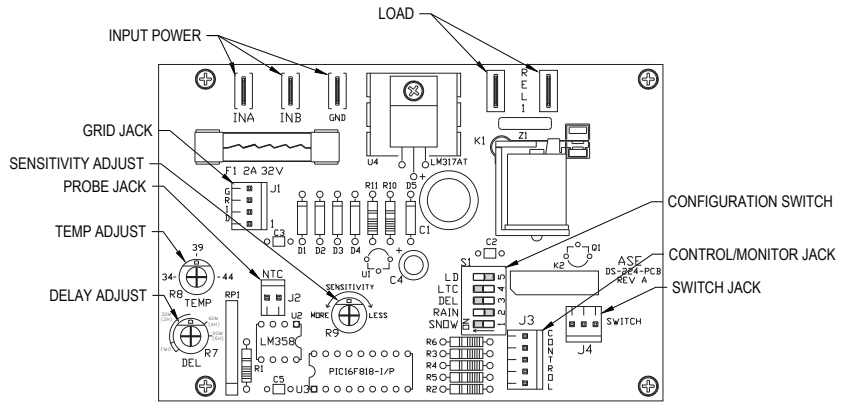
Manual Override Switch

An override switch is mounted on the side for testing and special operational requirements. Placing the switch in the "Automatic" position will allow the sensor to operate normally. "Manual On" will activate the control and will stay activated for a maximum of 40 hours before returning to "Automatic" mode. The "Stand-by/Reset" position will clear any current snow melt call or delay activity.

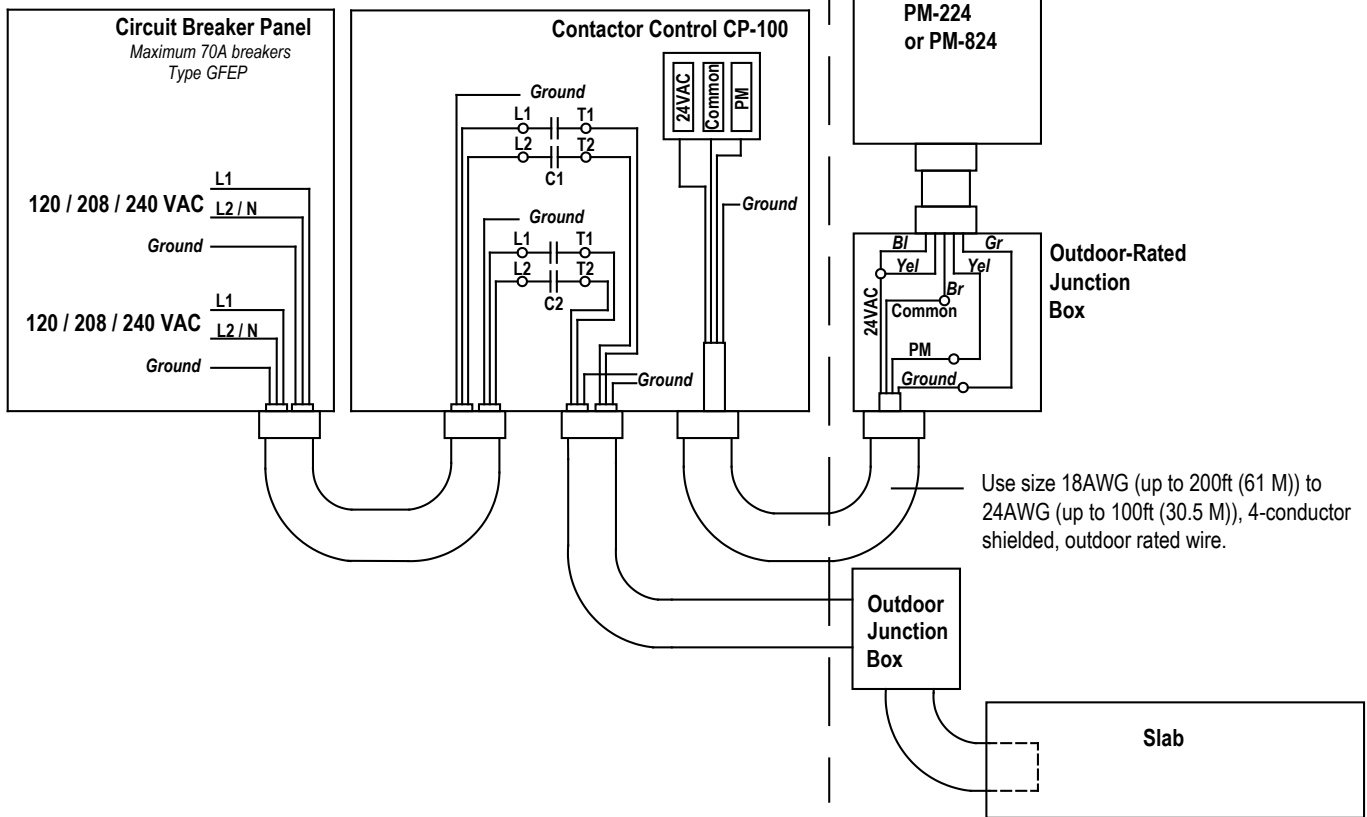
If the Manual Override Switch is moved to Manual On for less than 2 seconds and then back to Automatic the sensor will execute one delay drying cycle. This can be used to clear frost, hail, drifting snow, or other conditions. Stand-by/Reset will clear this setting.



Indoor monitoring and control of the PM 224 is available with the optional PM DP snow melt sensor remote control. For more information see the PM DP submittal or installation instructions.



Maximum 100A Heating Load with CP-100
120/208/240VAC
2 circuits
Pole-mount sense



Use size 18AWG (up to 200ft (61 M)) to 24AWG (up to 100ft (30.5 M)), 4-conductor shielded, outdoor rated wire.

Specifications	
Supply Voltage	22 - 28 VAC
Power	12 VA nominal
Maximum Amperage	Determined by Contactor Panel
Supply Wire	18-24AWG, 4-conductor Shielded Cable
Trigger Temperature Range (TT)	34°F to 44°F (1°C to 6.5°C)
Configuration Modes	Snow Only (Recommended) Rain Only Snow or Rain
Delay Settings (post melting)	30 to 90 minutes 2 to 6 hours
Low Temperature Cutoff (LTC)	Prevents system operation when Ambient Temperature (AT) is below 15°F (9.5°C)
Operation Modes	Automatic Standby/Reset Manual

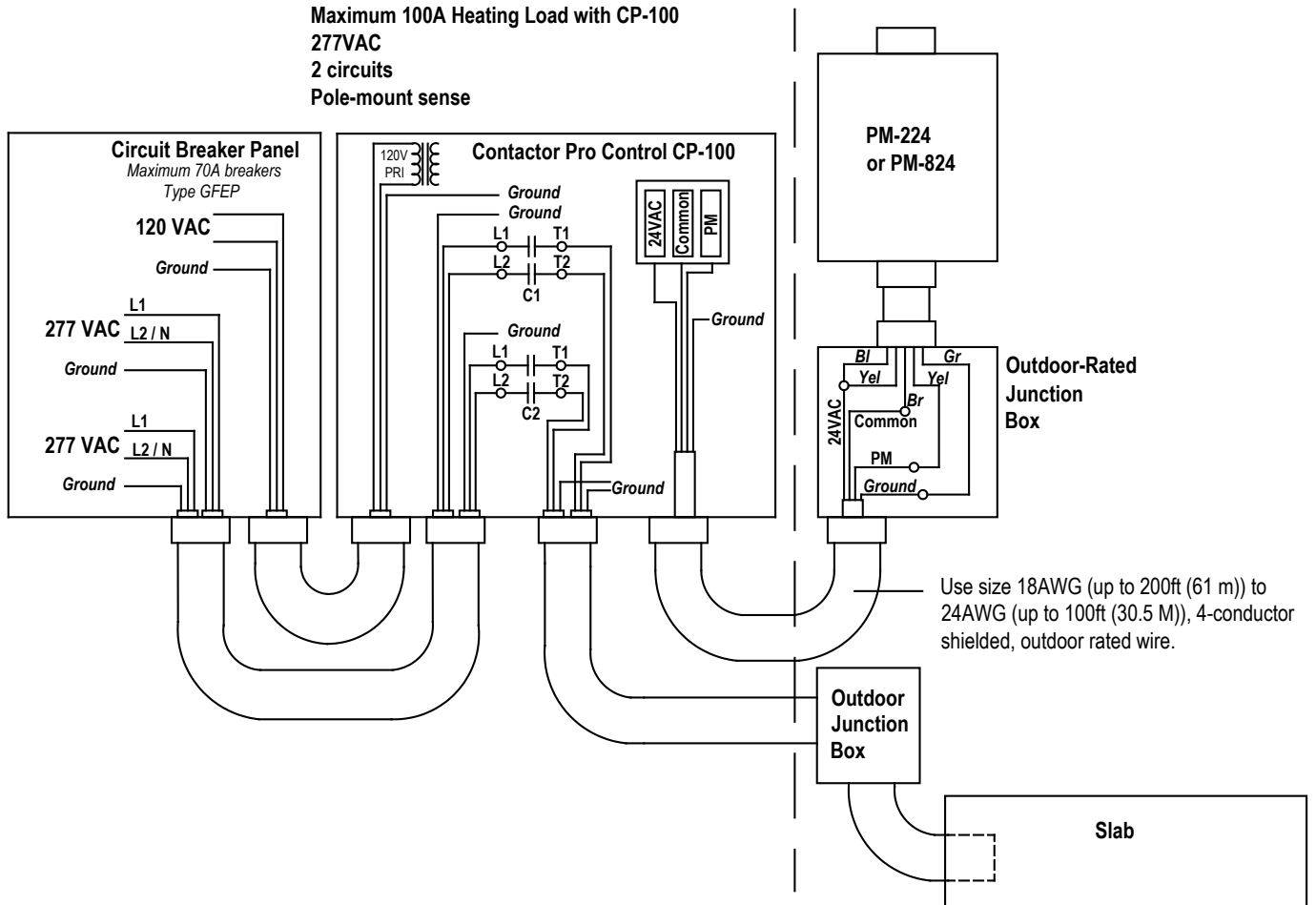
Recommended Switch Settings							
Function	Trigger	LD Off	LD on	LTC	DEL	RAIN	SNOW
Snow controller w/o LTC	TT>AT	30-90 min	2-6 hr	OFF	ON	OFF	ON
Snow controller w/ LTC	TT>AT>15°F (9.5°C)	30-90 min	2-6 hr	ON	ON	OFF	ON

DO NOT set the Rain switch to "ON". Possible overheating of the snow melt cables may result.

Sensor Maintenance

At least once every four months the PM 224 should be powered down and the sensor grid be wiped clean with clear water. Heavy deposits left behind by evaporated water may be removed by gently scrubbing with a non-metallic scouring pad.

Maximum 100A Heating Load with CP-100
 277VAC
 2 circuits
 Pole-mount sense



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 Floor Heating & Snow Melting

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