Snow Melting

RADIANT SNOWMELT SYSTEMS

ProLine
RADIANT HEAT SOLUTIONS
Heated Driveways and Snow Melting Systems

Fully automated, maintenance-free ProLine snow melting systems have proven to be the optimum solution for heating commercial parking ramps, driveways, sidewalks, loading docks and more. Versatile and durable, ProLine heat cable is designed to withstand the stress of heavy concrete pours and brick and stone paver applications as well as the extreme temperatures of hot asphalt installations. The snow melting cable is available on the spool or pre-spaced in mats for easy "roll-out" installation. The performance and reliability of electric snowmelt systems have made ProLine Radiant a favorite among wholesalers and professional builders alike.

Features Include:

- Available on the spool or pre-spaced in mats.
- Single-point connection simplifies installation.
- Twin-conductor cable.
- Flexible installation; easy to customize.
- Durable and versatile - Designed for use in concrete, under pavers, and hot asphalt applications.
- Silent, efficient and safe.
- Maintenance-free operation.
- All mats heat 2-feet wide. Power leads are 16.4 feet in length.
- 10-year limited warranty against manufacturing defects.

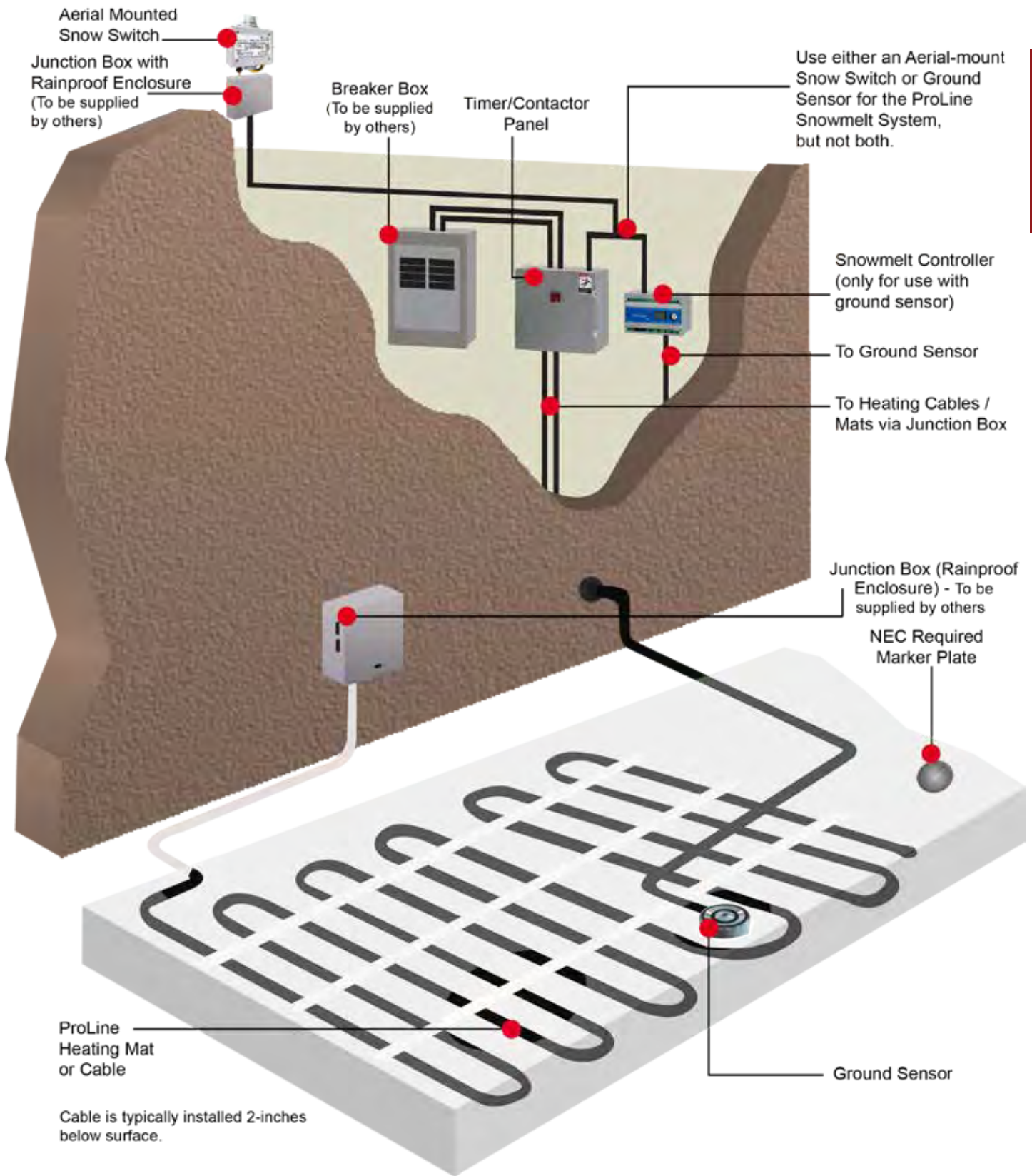## ProLine Mats and Cables Specifications

Cable construction	Twin conductor
Rated voltage	120-600 V (For 120, 208, 277, 600 V, please call.)
Output (mats)	37W/ft.^{2} and 50W/ft.^{2}
Output (cables)	12W/ft. (40W/m) with cable, 24-70W/ft.^{2}
Cold lead	16.4 feet (5.0 m) Longer cold leads available on request.
Bending radius	Minimum 2 inches, (51 mm)
Cable diameter	¼ inches (7 mm)
Conductor insulation	Fluoropolymer
Metal sheath	Copper
Outer sheath	Polyolefin
Max. external jacket asphalt temperature *	220°F (105°C) *[460°F (240°C) for up to 10 minutes]
Max. external jacket temp.	158°F (70°C)
Max. conductor insulation temperature	302°F (150°C) Concrete and pavers
Min. installation temp.	5°F (-15°C)

ProLine Snow Melting System Overview

Aerial Mounted Snow Switch

Junction Box with Rainproof Enclosure (To be supplied by others)

Breaker Box (To be supplied by others)

Timer/Contactor Panel

Use either an Aerial-mount Snow Switch or Ground Sensor for the ProLine Snowmelt System, but not both.

Snowmelt Controller (only for use with ground sensor)

To Ground Sensor

To Heating Cables / Mats via Junction Box

Junction Box (Rainproof Enclosure) - To be supplied by others

NEC Required Marker Plate

ProLine Heating Mat or Cable

Cable is typically installed 2-inches below surface.

Ground Sensor

Exterior Radiant Heat Controls

ProLine Offers Contactor Panels with GFEP

In keeping with its commitment to provide professional builders with the best products, service and convenience, ProLine Radiant offers GFEP (ground fault equipment protection) breaker panels with its snowmelt systems, which can save installers time and money.

Designed for radiant snow and ice melting applications, the ProLine Radiant contactor panel with GFEP simplifies your installation and minimizes costs. The UL listed panels feature a NEMA 4 enclosure, terminal connection block, two or four 3-pole contactors, and wiring diagram.

The panel should be used in conjunction with the in-ground snow sensor/controller or the aerial-mount snow switch (see pages 13-15).
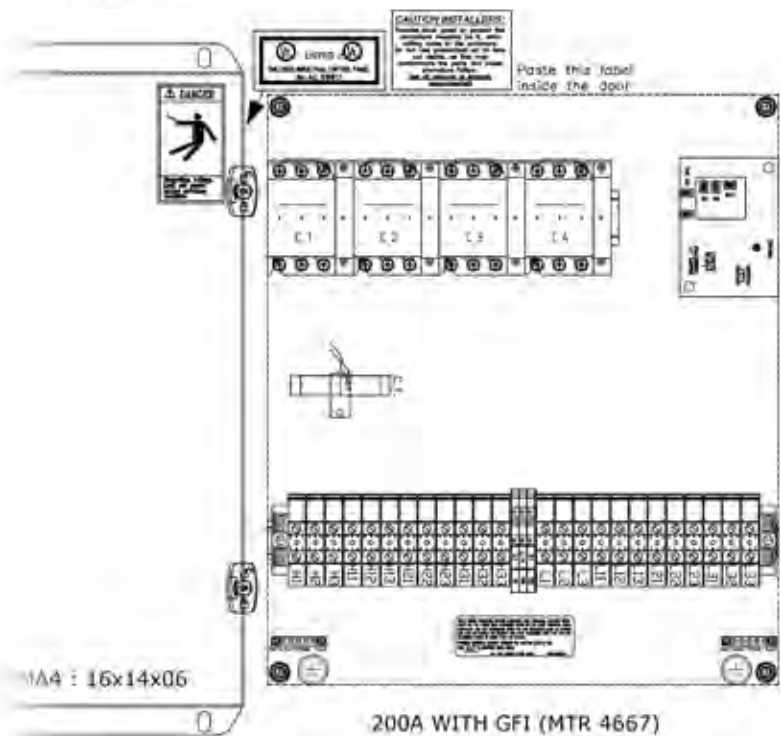
NEMA 4X contactor panel available upon request.

Features and Benefits

- NEMA 4, UL listed panel box
- Low cost
- Easy to install
- Integrated 30mA GFEP (optional)
- LED trip indicator (internal)
- LED "heat on" indicator light
- Pre-wired terminal connections
- 120 V on/off remote heat indicator
- 2-year warranty

Contactor panel front.

NEMA4 : 16x14x06

200A WITH GFI (MTR 4667)

Exterior Radiant Heat Controls

Snowmelt System Controller

The ProLine Radiant snowmelt control units are NEMA 1, wall-mounted control panels. The approximate size of the control unit is only 6 x 3½ inches. It is even possible to control the unit from an external signal (day/week timer, GSM-module or other signal source). The controller also features manual override capability, allowing you to activate the system to melt snow drifts or ice that has formed due to wind or shade.

ProLine Control Unit

The ProLine Radiant controller is designed for ice and snow melting in gutters and ground areas. Using readings from temperature and moisture sensors, the controller ensures economical control of power consumptions when keeping outdoor areas and roofs free of ice and snow.

Despite the compact control unit's advanced technology, superior performance and ease of use, it also represents a breakthrough in that it is significantly more affordable than most other industry controllers. The unit provides maintenance-free, energy-efficient, UL listed snow melting for all types of residential and commercial applications.

ProLine Snowmelt Controller Technical Data

Supply voltage	120/230 V ±10%, 50-60 Hz
Temperature range	32°F to 122°F (0 to 5°C)
Working range	-4°F to 41°F (-20 to 5°C)
Built-in timer for manual snow melting / after run	1-6 hours
Output relay	3 x 16A potential free relay
Two zone application	Output is 2 x 16A potential free relay
Water-based system	Controlling a 3 or 4 way valve, primary pump, secondary pump.
Display	Graphic and with back light
Ambient temperature	32°F to 122°F (0°-50°C)
Housing (including cover)	IP20
Weight	1.09 lbs. (495 g)
Dimensions (excluding cover)	H: 3.5" W: 6.1" D: 1.7" (90 mm x 156 mm x 45 mm)
Dimensions (including cover)	H: 6.7" W: 6.4" D: 1.7" (170 mm x 162 mm 45 mm)
LEDs indicate the functions: ON/green; ERROR/red	Supply voltage to the thermostat; fault indication

Technical Data for ProLine In-Ground Sensors

Detecting	Moisture and temperature
Mounting	Any outdoor area
Housing	IP68
Ambient temperature	-4°F to 158°F (-20 to 70°C)
Cable length	33 feet (10 meters)
Dimensions	H: 1¼-2.4 inches (32 mm-60.9 mm)

Ground Sensor for Temperature and Moisture

Designed for embedding into the surface of concrete, asphalt, pavers or other outdoor surfaces, ProLine Radiant's in-ground snow sensor detects ground temperature and moisture for automated snow melting systems. The activation device only signals the controller to activate the system when the outdoor temperature is below the selected setting (usually 39°F) and snow or ice occurs on the sensor head.

The snow sensor is usable for all applications within hydronic as well as electrical radiant heating. Optimal operation is ensured because of the output control, which makes the system both effective and economical.

In-ground snow sensor (and sensor cup) for automated snow melting system.

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ProLine System Activation Devices (Snow Sensors)

ProLine Radiant snowmelt systems come standard with an aerial or ground-mounted snow sensor switch. The advanced device automatically activates the ProLine snow melting system when it detects precipitation and temperatures are below a set point. The temperature is typically set at 39°F, but is adjustable from 34°F (1.1°C) to 44°F (6.6°C). Smart system compatible, the aerial sensors have several other notable features, including adjustable delay off cycle and upgradeable remote activation.

The WS-2C Aerial Snow Sensor - Designed for snow and freezing rain detection, the WS-2C aerial snow sensor sets the standard for automated radiant snowmelt systems. The snow sensor activates the snow melting system when moisture is present and the temperature reaches the set point (usually 39°F), providing fully automated, efficient snow and ice melting.

The unit is easy to install and all the electronics can be accessed by simply removing the four front cover screws.

Reliable Rain and Snow Detection	Full 30A @ 240 VAC Control
Adjustable Delay Off Cycle	Field Strap for 100-120 / 200-240 VAC Operation
Easy Installation & Full Access to Electronics	Selectable Low-Temperature Cutoff
Adjustable Temp. Trigger Point (34°-44°F)	Replaceable Remote Precipitation Sensor
Smart "Manual On" Operates for one Delay	Housed in a two-gang PVC enclosure

The WS-5C Aerial Snow Sensor - The WS-5C is essentially a WS-2C fitted with a dual 30A @ 240 VAC load control contact set. It is primarily designed for larger satellite antenna/broadcast tower deicing and pavement snow melting applications. Specifically, any job that a WS-2C can perform, a WS-5C can perform with double the load handling capability. The unit is housed in a two-gang PVC enclosure. The overall dimensions of the WS-5C are 4¾" x 7" x 2¾" (120 mm x 178 mm x 70 mm). The unit weighs 2 pounds. The user may access all electronics by removing the four front cover screws.

Reliable Rain and Snow Detection	Dual 30A @ 240 VAC Control
Adjustable Delay Off Cycle	Field Strap for 100-120 / 200-240 VAC Operation
Easy Installation & Full Access to Electronics	Selectable Low-Temperature Cutoff
Adjustable Temperature Trigger Point	Replaceable Remote Precipitation Sensor
Smart "Manual On" Operates for one Delay	Housed in a two-gang PVC enclosure

The WS-8C Aerial Snow Sensor - The WS-8C is primarily designed for gutter, downspout, and roof ice melting and small satellite antenna deicing. The totally sealed, low voltage, remote mount precipitation sensor allows the user to install the small sensor head in a downspout, the bottom of a gutter, or at the end of an antenna boom, up to 10 feet away, while keeping the main controller in a more convenient or protected location.

Reliable Rain and Snow Detection	Full 30A @ 240 VAC Control
Adjustable Delay Off Cycle	Field Strap for 100-120 / 200-240 VAC Operation
Easy Installation & Full Access to Electronics	Safe Low-Voltage Sensor Head
Adjustable Temperature Trigger Point	Replaceable Remote Precipitation Sensor
Bright Off/On/Triggered LED Status Indicator	Smart "Manual On" Operates for one Delay Cycle

The WS-AUX Control Panel - The WS-AUX control display panel is used in conjunction with a WS snow sensor controller. The sensor is typically mounted on a roof, near a gutter, or in a similarly difficult location to reach. The WS-AUX provides a method of remotely monitoring and controlling the attached sensor. The user may monitor both the operating mode and the activation state of the sensor. The user may also set the sensor to prohibit automatic operation, to automatically operate, or to manually operate one snow melting cycle, then return to automatic operation. The WS-AUX derives its power from the snow sensor and requires no batteries or AC power. With an operating temperature range of -40°F to 185°F (-40°C to +85°C) the WS-AUX is designed for use either indoors or outdoors with proper protection from the elements. The overall dimensions of the WS-AUX are 4.1"x 1.8" x 0.9" (104 mm x 45 mm x 23 mm).

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ProLine Snowmelt System Activation Devices
Technical Data and Specifications

WS-2C Specifications

Dimensions	4¾"x7"x2¾" (120 mm x 178 mm x 70 mm)
Weight	2 lbs. (0.9 Kg)
Operating temperature	-40° to 185°F (-40° to 85°C)
Enclosure rating	NEMA 3R
Supply power	100-120 VAC / 200-240 VAC Field selectable 15 W maximum
Trigger temperature	34° to 44°F (1.1° to 6.6°C) Field selectable
Delay off (sensor)	2 Minutes
Delay off (controller)	30-90 Minutes field selectable
Load contact capacity	30A @ 240 VAC / 100,000 Operations at full load
Monitor contact capacity	24 VDC/VAC 400mA 10 W Total

WS-5C Specifications

Dimensions	4¾"x7"x2¾" (120 mm x 178 mm x 70 mm)
Weight	2 lbs. (0.9 Kg)
Operating temperature	-40° to 185°F (-40° to 85°C)
Enclosure rating	NEMA 3R
Supply power	100-120 VAC / 200-240 VAC Field selectable 15 W maximum
Trigger temperature	34° to 44°F (1.1° to 6.6°C) Field selectable
Delay off (sensor)	2 Minutes
Delay off (controller)	30-90 Minutes field selectable
Load contact capacity	2x30A @ 240 VAC / 100,000 Operations minimum at full load
Monitor contact capacity	24 VDC/VAC 400mA 10 W Total

Example of a ProLine aerial-mount snow sensor and junction box.

WS-8C Specifications

Dimensions	4¾"x7"x2¾" (120 mm x 178 mm x 70 mm)
Weight	2 lbs. (0.9 Kg)
Operating temperature	-40° to 185°F (-40° to 85°C)
Enclosure rating	NEMA 3R
Supply power	100-120 VAC / 200-240 VAC Field selectable 15 W maximum
Trigger temperature	34° to 44°F (1.1° to 6.6°C) Field selectable
Delay off	30-90 Minutes field selectable
Load contact capacity	30A @ 240 VAC / 100,000 Operations minimum at full load

ProLine WS-AUX Snow Sensor Control/Display Panel

The WS-AUX control display panel brings control and monitoring of your snowmelt system indoors. No need to hope that the system has successfully triggered. One glance at the WS-AUX confirms it.

The WS-AUX is compatible with the WS-2C, WS-5C, and WS-8C rain/snow sensor controllers. The unit consists of an electronic printed circuit board mounted securely to a steel mounting plate. The WS-AUX weighs 2.5 ounces and fits into a standard single-gang or multi-gang electrical enclosure. Compatible self-threading mounting screws that fit both metal and plastic enclosures are included. The plate also has mounting holes for a rectangular "modular" cover plate. This allows the user to select a cover plate color and material that blends with the decor of the room.

The WS-AUX provides three push-button switches; STANDBY, AUTOMATIC, and MANUAL ON. The respective LED indicators for each control reflect the current operating mode of the snow sensor. To save energy, the LED indicators blink periodically rather than remaining steadily illuminated. Pressing STANDBY will set the connected snow sensor to ignore snowfall and prohibit automatic operation of an attached snowmelt system. This function can be used to save energy if snow melting is not critical (i.e., driveway, sidewalk) and is not required for an extended period of time (vacation home, remote location). Pressing AUTOMATIC will set the connected snow sensor to automatically activate and control an attached snowmelt system when snow is detected.

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PROLINE SNOW MELTING MATS AND CABLE ORDERING INFORMATION *

The ProLine snow melting system includes heating cable or a mat that is pre-spaced and taped into a 3- or 4-inch on-center-mat that allows for simple roll-out installation. All mats heat 2-feet wide. Power leads are 16.4 feet in length. (* *The most commonly ordered snow melting cable sizes are listed below. To order 120, 208, 277, 600 V, and other size mats and cables, please contact your ProLine representative.*)

Snow Melting Mats

240 Volt Mat (50 W per square foot)

Item Number	Heated Area (Sq. ft.)	Mat Length (Feet)	Watts	Amps	Ohms
SM25052500	10	5	500	2.1	115.2
SM2501121000	20	11	1,000	4.2	57.6
SM2502722500	50	27	2,500	10.4	23.1
SM2504424000	80	44	4,000	16.7	14.4
SM2506025500	110	60	5,500	22.9	10.5

240 Volt Mat (37 W per square foot)

Item Number	Heated Area (Sq. ft.)	Mat Length (Feet)	Watts	Amps	Ohms
SM237112750	20	11	750	3.1	76.8
SM2373022000	55	30	2,000	8.3	28.8
SM2375123500	95	51	3,500	14.6	16.5
SM2376524500	120	65	4,500	18.8	12.8
SM2378025500	150	80	5,500	22.9	10.5

480 Volt Mat (50 W per square foot)

Item Number	Heated Area (Sq. ft.)	Mat Length (Feet)	Watts	Amps	Ohms
SM45052500	10	5	500	1.0	460.8
SM4501121000	20	11	1,000	2.1	230.4
SM4502722500	50	27	2,500	5.2	92.2
SM4504424000	80	44	4,000	8.3	57.6
SM4506025500	110	60	5,500	11.5	41.9

480 Volt Mat (37 W per square foot)

Item Number	Heated Area (Sq. ft.)	Mat Length (Feet)	Watts	Amps	Ohms
SM437112750	20	11	750	1.6	307.2
SM4373022000	55	30	2,000	4.2	115.2
SM4375123500	95	51	3,500	7.3	65.8
SM4376524500	120	65	4,000	9.4	51.2
SM4378025500	150	80	5,500	11.5	41.9
SM4378026000	160	87	6,000	12.5	38.4

Snow Melting Cable

240 Volt Cable (37 & 50 W per square foot)

Item Number	Cable Length (Feet)	Approximate Heat Coverage (Square feet)		Watts	Amps	Ohms
		3-inch spacing (50 Watts Sq. ft.)	4-inch spacing (37 Watts Sq. ft.)			
SC262750	62	15	20	750	3.1	76.8
SC2841000	84	20	27	1,000	4.2	57.6
SC21682000	168	40	55	2,000	8.3	28.8
SC22092500	209	50	70	2,500	10.4	23.1
SC23754500	375	90	125	4,500	18.8	12.8
SC24585500	458	110	150	5,500	22.9	10.5

480 Volt Cable (37 & 50 W per square foot)

Item Number	Cable Length (Feet)	Approximate Heat Coverage (Square feet)		Watts	Amps	Ohms
		3-inch spacing (50 Watts Sq. ft.)	4-inch spacing (37 Watts Sq. ft.)			
SC443500	43	10	14	500	1.0	460.8
SC41271500	127	30	42	1,500	3.1	153.6
SC41702000	170	40	57	2,000	4.2	115.2
SC42563000	256	60	85	3,000	6.3	76.8
SC43404000	340	80	113	4,000	8.3	57.6
SC44265000	426	100	142	5,000	10.4	46.8
SC44695500	469	110	156	5,500	11.5	41.9

Snow Melting Mats for Asphalt

240 Volt (37 W per square foot)

Item Number	Heated Area (Sq. ft.)	Mat Length (Feet)	Watts	Amps	Ohms
SMA237112750	20	11	750	3.1	76.8
SMA2373022000	55	30	2,000	8.3	28.8
SMA2375123500	95	51	3,500	14.6	16.5
SMA2376524500	120	65	4,500	18.8	12.8
SMA2378025500	150	80	5,500	22.9	10.5

PROLINE SNOW MELTING ORDERING INFORMATION

Snow Melting Contactors/Timers

Item Code	Description	Coil Voltage	Max Amps
SCP1	Single contactor, 2P, 600V	120, 208-240	50
WS100CP	Dual contactor panel (100A)	120	100
WS200CP	Quad contactor panel (200A)	120	200
WSGFEP100	Dual contactor panel with GFEP (100A)	120	100
WSGFEP200	Quad contactor panel with GFEP (200A)	120	200

Snow Melting Controls

Item Code	Description	Voltage
WS-2C	Aerial mounted snow switch (30 Amps)	120-277
WS-5C	Aerial mounted snow switch (60 Amps)	120, 208-240
WS-8C	Aerial mounted snow switch w/remote moisture sensor (30 Amps)	120-277
WS-AUX	Auxiliary control for aerial switch	
WS-50	50 feet of interconnect cable	
WS-100	100 feet of interconnect cable	
WS-200	200 feet of interconnect cable	
WS-56	Pavement mounted snow sensor	
WS-02	Controller for pavement mounted sensor	120-277

Snow Melting Accessories

Item Code	Description
PL-RKSM	Repair kit (crimp connectors, wire, heat shrink tubes)
Warmplate	Embedded marker plate (per NEC)

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