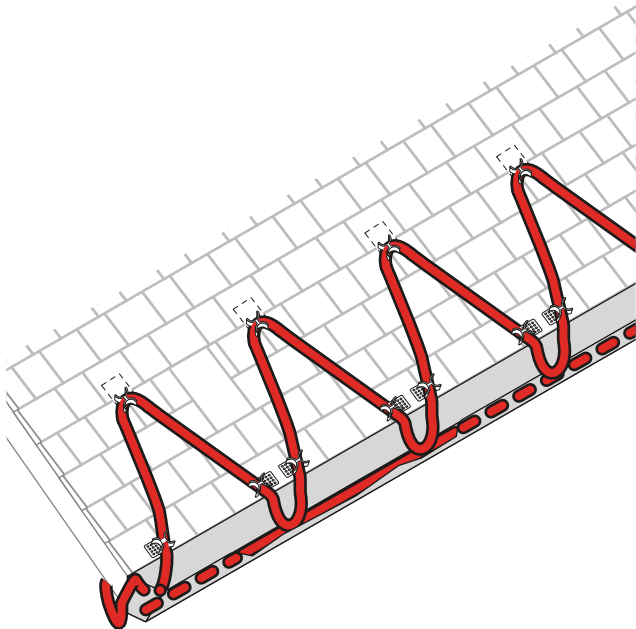
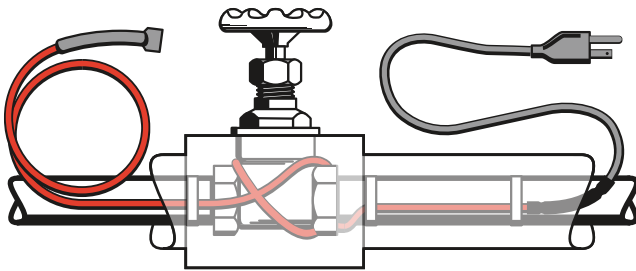


Raychem GARDIAN

PREASSEMBLED HEATING CABLE



PRODUCT OVERVIEW

Raychem Guardian pre-assembled self-regulating heating cables are designed for residential and commercial metal and plastic pipe freeze protection and roof and gutter de-icing applications. 120 V Guardian cables are available in 6, 12, 18, 24, 50, 75 and 100 foot lengths, and each comes assembled with a 30-inch power cord and plug. 120 V Guardian cables are ideal for smaller jobs such as roof and gutter de-icing on porches and overhangs, as well as for pipe freeze protection on pipes up to 2-½ inches in diameter.

240 V Guardian cables are available in 6, 12, 18, and 24 foot lengths and each come assembled with a 30-inch power cord for terminating in a junction box. Due to their short lengths, 240 V Guardian cables are designed only for pipe freeze protection applications on pipes up to 2-½ inches in diameter.

GARDIAN PREASSEMBLED HEATING CABLE SPECIFICATIONS

Catalog number	W51-6P	W52-6L
	W51-12P	W52-12L
	W51-18P	W52-18L
	W51-24P	W52-24L
	W51-50P	
	W51-75P	
	W51-100P	
Service voltage	120 V	208-240 V
Application	Pipe freeze protection and roof and gutter de-icing	Pipe freeze protection
Nominal power output on pipes at 40°F (W/ft)	6	6

GARDIAN PREASSEMBLED HEATING CABLE SPECIFICATIONS

Nominal power output in ice or snow at 32°F (W/ft)	8	N/A
Maximum cable width (in)	0.45	0.45
Maximum cable thickness (in)	0.24	0.24
Maximum exposure temperature (°F)	150	150
Maximum bend radius	5/8 in [16 mm]	5/8 in [16 mm]

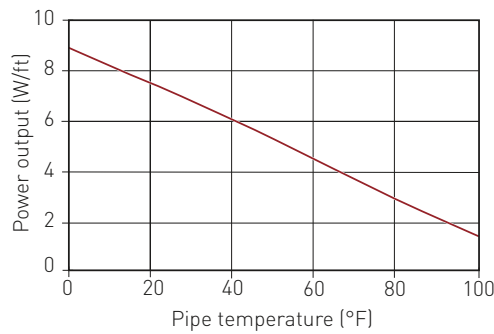
APPROVALS



GROUND-FAULT PROTECTION

To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with the requirements of Pentair Thermal Management, agency certifications, and national electrical codes, 30-mA equipment or 5-mA personnel ground-fault protection must be used on each Gardian heating cable branch circuit. Arcing may not be stopped by conventional circuit protection.

NOMINAL POWER TEMPERATURE CURVE FOR PIPES



PRODUCT SELECTION

Pipe freeze protection

Use the tables to the right to select the correct heating cable length. Add 1 foot to the pipe length for each valve or spigot in the pipe system.

Table 1 Metal Pipes

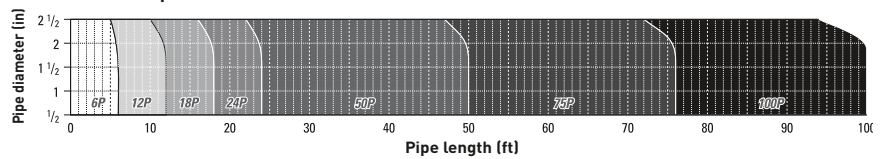
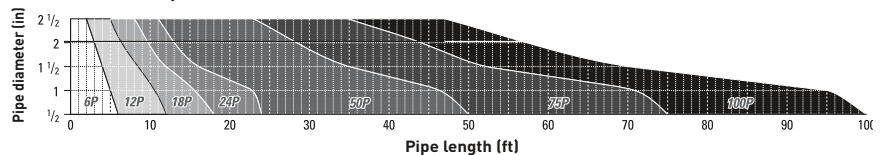


Table 2 Plastic Pipes



Add 1 foot to the pipe length for each valve or spigot in the pipe system.

ROOF AND GUTTER DE-ICING

Find the number of feet of heating cable needed per foot of roof edge in table to the right. Then, calculate the amount of total heating cable length you need using the following formula:

$$\text{Length} = \mathbf{A + B + C + D}$$

A Roof edge length (ft) x Feet of heating cable per foot of roof edge

B Roof edge (ft) x 0.5*

C Total gutter length (ft)

D Total downspout length (ft) + 1 (ft)

= Total heating cable length (ft)

*Roof extension: This length allows the heating cable to extend into the gutter to provide a continuous drain path, or where no gutters are present, extends beyond the roof edge to form a drip loop.

Length of Cable Per Foot of Roof Edge (ft)

Overhang (in)	Standard Roof	Standing Seam Metal Roof	
		18 inch Seam	24 inch Seam
None*	2	2.5	2
12 in	2.8	2.8	2.4
24 in	3.8	3.6	2.9
36 in	4.8	4.3	3.6

* Gutter required

Note: Pentair Thermal Management recommends a gutter and downspouts to provide a continuous path for melted water.

- If downspout is in the middle of the run, loop the Gardian down and back up. Double the length of the downspout for determining the length of Gardian to install.
- For valleys, run the heating cable two thirds of the way up and down the valley.
- For gutters 5-6 inches wide use 2 runs of heating cable.
- For gutters wider than 6 inches contact Pentair Thermal Management, (800) 545-6258.



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