

SELF-REGULATING PIPE HEATING & ROOF/GUTTER DEICING CABLE

Plug-In / For Dry and Wet Conditions

| |
|---------|
| 21-6102 |
| 21-6106 |
| 21-6110 |
| 21-6114 |
| 21-6126 |
| 21-6136 |
| 21-6150 |

Product Introduction

These heating cables provide pipes, roofs, and gutter systems protection from damage due to freezing, it can be used in residential and commercial applications. The cables can automatically adjust heat output according to the ambient temperature conditions. Under cooler conditions, the heat output increases, and as the temperature rises, the output decreases to save on energy. The cables operate on 120 V and are available in various pre-assembled lengths.

Features

- Pre-assembled cable include a 3-foot power cord and plug
- Suitable for plastic or metal pipes, gutters and downspouts
- Easy installation, as the cable can be overlapped without the risk of becoming overheated or burnt.

General Safety Information

Read and understand all instructions in this manual and the following installation instructions and Safety Warnings. Electrical cables, if not installed correctly or are damaged, can present a fire, shock, and arcing hazard.

1. Installation must be in compliance with National Electrical Codes (NEC).
2. Use 30-mA ground fault protection on each heating cable branch circuit for maximum protection.
3. Use only fire-resistant insulation, such as fiberglass or preformed foam. Do not embed heating cable in the insulation.
4. Use 1/2" to 1" fiberglass tape or plastic cable ties when attaching cable to pipe. Do not use wire or metal clamps.
5. Before installing or servicing, ensure that all power to circuits is OFF.
6. Do not twist cable during installation.

⚠ WARNING Do not use damaged heating cables, power cord or plug. Remove and replace immediately to prevent a fire, shock, or arcing hazard.

7. Do not install heating cable under roofing material.
8. Do not expose cable to temperatures above 185°F, as this will damage the cable.
9. Do not use extension cords.
10. Save all instructions for future reference.

Specifications

| Model | Reference No. | Voltage | Length | Power Output on Pipe @40°F (5°C) | Power Output on Pipe @50°F (10°C) | Power Output in Ice & Snow @32°F (0°C) | Max. Exposure Temperature |
|---------|---------------|----------|---------|----------------------------------|-----------------------------------|--|---------------------------|
| 21-6102 | A | 110-120V | 6 ft. | 36 Watts | 30 Watts | 60 Watts | 185°F (85°C) |
| 21-6106 | B | 110-120V | 12 ft. | 72 Watts | 60 Watts | 120 Watts | 185°F (85°C) |
| 21-6110 | C | 110-120V | 18 ft. | 108 Watts | 90 Watts | 180 Watts | 185°F (85°C) |
| 21-6114 | D | 110-120V | 24 ft. | 144 Watts | 120 Watts | 240 Watts | 185°F (85°C) |
| 21-6126 | E | 110-120V | 50 ft. | 300 Watts | 250 Watts | 500 Watts | 185°F (85°C) |
| 21-6136 | F | 110-120V | 75 ft. | 450 Watts | 375 Watts | 750 Watts | 185°F (85°C) |
| 21-6150 | G | 110-120V | 100 ft. | 600 Watts | 500 Watts | 1000 Watts | 185°F (85°C) |

Accessories:

- 21-6278 – Application tape - 66ft. and 10 warning labels
- 21-6280 – Downspout hanger
- 21-6282 – Roof clips, 10 pieces
- 21-6284 – Roof clips, 50 pieces

NOTE: Accessories are sold separately.

Self-Regulating Heating Cables for Pipes

CHOOSING A CABLE

(For all models) – Letters A-G in chart represent models 21-6102 to 21-6150, consecutively.

| Pipe Dia. | Type | — Pipe Length (in Feet) — | | | | | | | | | | | | | | | | | | | |
|-----------|---------|---------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| | | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| 1/2" | Metal | A | B | C | D | E | E | E | E | E | E | F | F | F | F | F | G | G | G | G | G |
| | Plastic | A | B | C | D | E | E | E | E | E | F | F | F | F | F | G | G | G | G | G | G |
| 1" | Metal | A | B | C | D | E | E | E | E | E | F | F | F | F | F | G | G | G | G | G | G |
| | Plastic | B | B | C | D | E | E | E | E | E | F | F | F | F | F | G | G | G | G | G | — |
| 1 1/2" | Metal | A | B | C | D | E | E | E | E | E | F | F | F | F | F | G | G | G | G | G | G |
| | Plastic | B | C | D | E | E | E | E | F | F | G | G | G | G | G | — | — | — | — | — | — |
| 2" | Metal | A | B | C | D | E | E | E | E | E | F | F | F | F | F | F | G | G | G | G | — |
| | Plastic | B | B | E | E | E | F | F | G | G | G | G | — | — | — | — | — | — | — | — | — |
| 2 1/2" | Metal | A | C | C | D | E | E | E | E | E | F | F | F | F | F | G | G | G | G | — | — |
| | Plastic | B | D | E | E | F | F | F | G | G | — | — | — | — | — | — | — | — | — | — | — |

NOTE: For each valve or spigot on pipe an additional foot of cable is needed. When the cable is longer than the pipe, spiral the excess cable around the pipe length evenly.

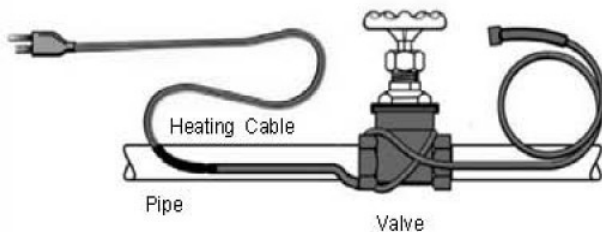


Figure 2

ATTACHING CABLE TO PIPE

1. Prior to installing the cable, be sure all piping is dry, and any sharp surfaces are removed.
2. Attach heating cable to pipe with straight, spiraling or multiple tracing.
3. If the heating cable is the same length as the pipe, run it straight along the bottom of the pipe. If two cables are required, position them in the 4 and 8 o'clock positions. If three cables are required, position them in the 11 o'clock or 1 o'clock positions and 4 o'clock and 8 o'clock positions.

4. If the cable is less than double the pipe length, spiral the cable over the length of pipe.
5. Any excess cable remaining at the end of the pipe can be doubled back along the pipe.
6. Be sure to include any additional heating cable required for valves, spigots, etc.
7. Secure the cable to the pipe with 21-6278 fiberglass application tape or nylon cable ties. Do not use vinyl tape, metallic products or wire.

INSTALLING THERMAL INSULATION

1. Before insulating, inspect the cable to ensure that it is free of mechanical damage, such as gouges or cuts, etc.
2. Cover the pipe, cables, connections, valves with at least 1/2" (12.7 mm) thick fiberglass insulation or equivalent. DO NOT leave the cables exposed.
3. Use fire-resistant materials such as fiberglass wrap. Make sure the insulation is waterproofed (with polyethylene or other vapor barriers) in areas where water may come in contact with the insulation.
4. Place the ten warning labels (21-6278) on the outer surface of the pipe insulation where clearly visible and at suitable locations to indicate the presence of electric heating cable.
5. After installation is complete, turn the circuit breaker on to give power to the cable. Standing water in the pipe should feel warm within one hour.

Heating Cables for Pipes (Continued)

MAINTENANCE CHECKS

1. Only qualified persons should service or install the system.
2. Check yearly for any damage to the heating cable and check any ground fault protection device for proper operation. If any damage to cable is found, DO NOT operate until it is replaced.

Heating Cables for Roofs, Gutters and Downspouts

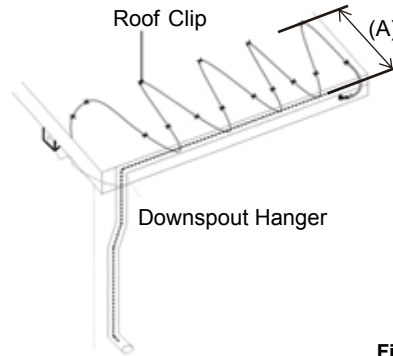
Total length of cable = roof cable length + gutter cable length + downspout cable length

1. Determine the **total length of cable** needed by adding the total roof edge length (ft.) x feet of heating cable per foot of roof edge, see Table 1 below, the total gutter length (ft.), and the total downspout length (ft. plus 1).

NOTE: The roof edge length (ft.) x feet of heating cable required per foot of roof edge equals the Total roof edge cable length required.

2. For shingle roofs, add 1 foot of heating cable for each foot of gutter.
3. When the downspout is between the gutter ends, double the length of the downspout to determine the length of cable needed.

Shingle Roof



Metal Roof

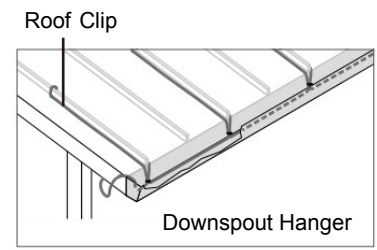


Figure 3

4. For roof valleys, measure the distance two thirds of the way up and double it. Add this additional length to the overall cable length.

Example (shingle roof):

Roof Edge length 15 ft.

(with Roof overhang of 1 ft.)

Gutter length 13 ft.

Downspout length 12 ft.

Length of heating cable required:

Roof Edge length 15 ft. (x2)
(see table below)

Gutter length 13 ft.

Downspout length 12 (+1) ft.

Total 56 ft.

INSTALLING CABLES FOR ROOFS, GUTTERS AND DOWNSPOUTS

1. Determine the best route for the heating cable on roofs and gutters.
2. Route the heating cable to avoid mechanical damage from ladders, etc.
3. Before installing the heating cable, make sure the roof, gutter and downspouts are free from debris, leaves, pine needles or any combustibles.
4. Check the maximum exposure temperature rating of all roof, gutter and downspouts, and select a heating cable that will not exceed their temperature ratings.

Table 1 – Determining Length of Cable Required on Metal and Shingle Roofs

| Roof Overhang | — Length of Heating Cable Used for Every Foot of Roof Edge — | | — Cable Width on Roof (A) — | |
|---------------|--|------------|-----------------------------|------------|
| | Shingle Roof | Metal Roof | Shingle Roof | Metal Roof |
| None | 1.9' | 2.5' | 18" | 18" |
| 12" | 2.0' | 2.5' | 18" | 24" |
| 24" | 2.7' | 3.5' | 30" | 36" |
| 36" | 3.6' | 4.5' | 42" | 48" |
| 48" | 4.5' | 5.5' | 54" | 60" |

Heating Cables for Roofs, Gutters and Downspouts (Continued)

5. Use downspout hanger to support the heating cable where it enters a downspout to prevent cable from being damaged by gutter edge. It also can be used as spacers in wider gutters.
6. Run heating cable over top of hanger and secure to hanger using UV resistant cable ties.
7. Use roof clips for attaching the heating cable to the roof.
8. For roof valleys, measure the distance two thirds of the way up and double it. Add this additional length to the overall cable length.
9. Field assembled end terminations should not be located in an area where moisture is present or, at the lowest point of downspouts.

NOTE: *Downspout hanger and roof clips are sold separately.*

Limited Warranty

All products sold are warranted against defective workmanship or materials under normal use for two years after date of purchase.