

General Roof and Gutter De-icing Instructions EC-150 for EverClear™ EC 812 (120Vac) and EC 822 (208-277Vac) Self-Regulating Heater Cable



CSA Certified for ordinary areas, fire suppression system piping and grease waste flow maintenance. Approved only when used with Summit Ice Melt Systems' power connection kits and accessories.

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WARNING!

All electrical wiring, including GFCI (Ground Fault Circuit Interrupters) must be installed in accordance with the National Electrical Code and local codes by a qualified installer.



WARNING!

ELECTRIC SHOCK HAZARD. Disconnect all power before installing or servicing heating cable. Failure to do so could result in personal injury, death, or property damage. Heater cable must be installed by a qualified person in accordance with the National Electrical Code, NFPA 70.



INSPECTION



WARNING!

ELECTRIC SHOCK HAZARD. Verify insulation resistance is 20 megohms or greater at receipt of materials and after installation prior to commissioning. Make corrections before proceeding.

1. Open package and visually check for breaks or nicks in the cable jacket. File claim with carrier if any damage is found.

2. Never energize the cable when it's coiled or on a reel. Test only when it is laid out straight.

3. After removing the cable from the carton or wrapping, check and record the insulation resistance of the unit from bus wires to braid with a 2500VDC megger to assure the cables have not been damaged during shipping and handling. (See Installation Section Part 5 below)

4. The heating cables should be stored in their shipping cartons or on reels in a dry atmosphere until they are ready to be installed.

GENERAL INFORMATION



WARNING!

FIRE HAZARD. Do not use roof and gutter cable for pipe freeze protection in or around mobile homes. Do not exceed the maximum circuit length described in these installation instructions. Failure to comply could result in fire or personal injury.

Before installation, make certain roof, gutters and downspouts are free of leaves and other debris. Electrical connections must be made in accordance with national and local codes by a qualified person. (Ground fault protection is required. Verify with codes whether personnel protection, GFCI or equipment protection, EPD is required).

DESIGN

1. Walk the system to plan the layout of the heating cable.

2. Obtain the following roof information: roof edge length, roof overhang, total gutter length, total downspout length and breaker rating.

3. Calculate the amount of cable required.

A. Multiply the roof edge length by the spacing factor found in Table 1. The Spacing Factor includes an 8" loop into the gutter.

B. Add the total gutter length plus the total downspout length to the result obtained in

B. (Cont'd.) Figure A to determine the total length of cable required. Experience tell us to add a 5-10% safety buffer factor to that total.

4. Calculate the number of circuits required. Divide the total length of cable required by the maximum heater length allowed for the breaker rating. Table 2 indicates maximum heater lengths depending upon the product selected.

5. Branch-Circuit Sizing: The ampacity of the branch circuit conductor and the rating or setting of overcurrent devices shall not be less than 125% of the ampere load of the cable or units.

Required Cable			
Roof Overhang	A	B	Spacing Factor
	Heating Height	Heating Width	
12"	18"	24"	2.4
24"	30"	24"	3.4
36"	42"	24"	4.2

Table 1

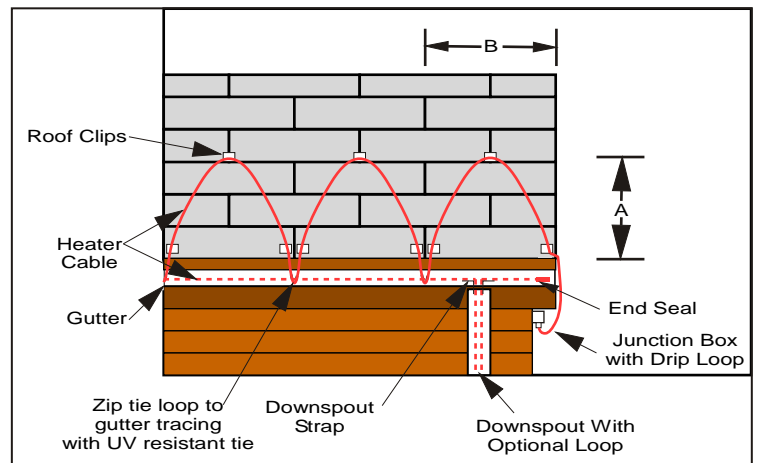


Figure A

Model #	Operating Voltage	Startup Temp	Lengths/Circuit Breaker Size			
			15A	20A	30A	40A
EC-812	120Vac	0° F.	110'	145'	215'	215'
		40° F.	135'	180'	215'	215'
EC-822	208-277Vac	0° F.	200'	265'	395'	420'
		40° F.	270'	330'	420'	420'

Table 2

INSTALLATION

1. The minimum installation temperature is 40°F.

2. Locating the heating cable on the roof.

A. Loop the heating cable on the overhang area of the roof. The overhang area is the portion of the roof which extends beyond the building's outside wall. The heating cable loop should extend into the gutter to maintain a drainage path. It should also extend to a point 6-12 inches above the line where the wall joins the roof. The spacing of the loops should be at maximum 2 foot intervals. The minimum bending radius is 1-1/8".

B. For flat roofs, the heating cable can be spaced as appropriate for creating drainage paths.

C. Secure the heating cable to the roof using Summit's EC-RCM (mill finish/bare aluminum) or EC-RCB (black anodized) Roof Clips kits for specified roof and gutter product. Summit recommends using two clips to form the loop that extends over the gutter edge and one clip to form the loop at the top of the overhang. For flat roofs, secure the heating cable to the roof with a clip at 2 foot intervals. See clip instruction sheet for details.

D. It is recommended that snow retention be mounted on the roof above the heating cable. This prevents damage to the heating cable system due to ice slides.

3. Locating the heating cable in gutters and downspouts.

A. Run the heating cable in and along the gutter. Summit Recommends using zip ties to connect the heating cable loop to the gutter cable.

B. When running the heating cable in or out of the gutter and down the downspout, use a Summit Downspout Strap to prevent abrasion of the cable. In downspouts, the heating cable must extend below the freezing level.

D. The heating cable can be looped in the downspout if it is convenient to do so, such as when a downspout is not at the end of a run.

E. Use Summit's (DSS) Downspout Strap to protect the heating cable from damage caused by sharp gutter edges and to provide strain relief. See instruction sheet DSS for details.

F. Protect any heating cable which protrudes past the lower opening of the downspout.

4. Installing the installation accessories.

A. Install all end seals and splices prior to making power connections.

B. Use only Summit Ice Melt Systems' Installation Accessories. Refer to the appropriate product literature for the correct accessory catalog numbers for EC-120 Power Connection Kit, Roof Clip Kit, EC-135 Splice & "T" kit, and DSS Downspout Hangers.

C. If these products are not used, or if their instructions are not followed, then the installation will not comply with approval agencies.

D. Use only agency listed weatherproof junction boxes for power connection.

5. Start-up requirements, testing:

A. The power connection kit contains two caution labels that must be visibly located. One must be at the circuit breaker panel, the other on or next to the ON/OFF control for the cable unit.

B. Prior to energizing the system, make sure the heating cable is free of mechanical damage (nicks, cuts, etc.) and thermal damage (solder, overheating, etc.). Visually check all power connections, splices and end seals. Perform and record 2500 VDC megger check. The megger check is performed at the power connection end of the cable between bus wire and the grounding braid. The minimum acceptable reading is 20 megohms. If the installation fails the megger test, check end seals, splice connections and cable sheath for physical damage or areas where the grounding braid has come in contact with the bus wires or conductive core. If physical damage can not be found and end seals or splices are not the cause, then the complete circuit should be removed and replaced with new roof and gutter heating cable.

The EverClear System

Ice dams form along eave edges, valley, and sidewall areas. EverClear economy self-regulating heater cables create a melt path through ice formations to prevent ice damming and subsequent water ingress into buildings.

A properly designed EverClear system will also provide continuous heat in gutters and downspouts. Using these components will help ensure the melt water is disposed to a safe location.

