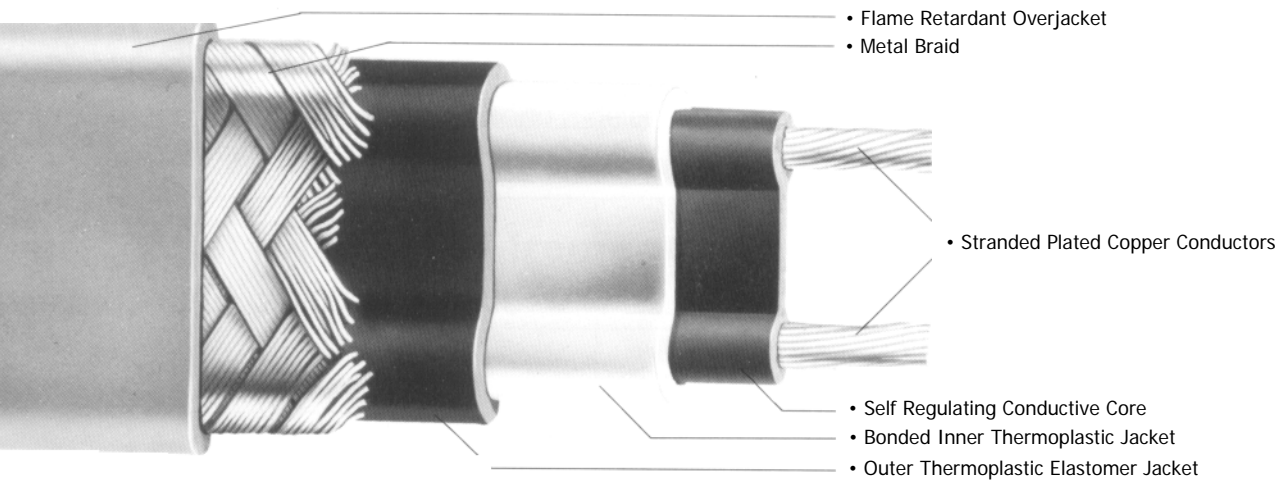


# NELSON™ TYPE SLT ROOF AND GUTTER DEICER

## SPECIFICATION APPLICATION MANUAL



SLT-1

SLT-2

### Description:

Nelson Type SLT heating cable is a parallel circuit, self-regulating electric heater. An irradiated crosslinked conductive polymer core is extruded over two multi-stranded, tin-plated, 16-gauge copper buswires. The conductive core material increases or decreases its heat output in response

to temperature changes. Three jackets provide extra dielectric strength, moisture resistance, protection from impact or abrasion damage, and flame retardancy. The inner thermoplastic jacket is extruded over and bonded to the core material to prevent moisture penetration and wicking along the core. A waterproof

thermoplastic elastomer outer jacket is then extruded over the inner jacket for dielectric protection and additional moisture resistance. A tinned copper braid is installed over the second jacket providing a continuous ground path. A flame retardant, UV stabilized polyolefin overjacket is then extruded over the braid.

### Application:

Nelson's SLT heating cable provides a solution for ice dams that can build up and damage building roofs, gutters and downspouts.

During winter months, snow and ice accumulation on roofs can prevent proper drainage of water when normal melting occurs. Water stands on the roof and can be refrozen during cold nights resulting in expansion and

potential roof damage.

Nelson's SLT ice melting heaters are designed for installation on roofs and gutters to melt a pathway for the drainage of water. The heating cable's self-regulating feature provides additional benefits as well.

- **Lower Energy Consumption**

The heater automatically

reduces its power output as drainage tunnels are formed in the ice and snow.

- **High Temperature Protection**

Because the heater self regulates its power output as a function of temperature, it cannot overheat and melt or damage temperature sensitive roof coatings.

**Performance And Rating Data:**

Catalog No.	SLT 1		SLT 2	
Voltage (VAC)	120	208	240	277
Power Output in Ice (W/ft.)	11.1	9.8	11.1	12.3
Maximum Segment Length (ft.)	137	408	416	420
Minimum Installation Temp (°F)	-35°F	-35°F	-35°F	-35°F
Minimum Installation Temp (°C)	-37°C	-37°C	-37°C	-37°C
Current Load (A/ft.):				
At 20°F (-7°C) Start-up	.145	.064	.073	.081
At 0°F (-18°C) Start-up	.164	.072	.082	.091
At -20°F (-29°C) Start-up	.181	.080	.091	.101
At -40°F (-40°C) Start-up	.200	.088	.100	.111

**Maximum Heater Length/Circuit Breaker Size:**

Start-Up Temp.	Maximum Length (feet) Vs Circuit Breaker Size						
	SLT-1 @ 120VAC			SLT-2 @ 240VAC			
	15A	20A	30A	15A	20A	30A	40A
20°F (-7°C)	103	138	207	205	274	411	548
0°F (-18°C)	91	122	183	183	244	366	488
-20°F (-29°C)	83	110	166	165	220	330	440
-40°F (-40°C)	75	100	150	150	200	300	400

**Notes:**

1. Maximum segment length is the maximum continuous heater run with minimal voltage drop. For breaker loading, multiple heater segments can be installed in parallel providing no individual length is longer than the maximum published segment length. For voltages other than 240VAC, divide full breaker amperage rating by amps/foot @ start-up temperature to determine maximum total footage allowed.
2. Circuit breakers are sized per national electrical code.
3. National Electrical Codes require ground-fault equipment protection for fixed outdoor electrical deicing equipment. Electrical connections should be made by a licensed electrician.

**Performance And Rating Data:**

The total cable length for deicing is determined by including all elements of the roof system that need protection. Use the following tables to determine the total length of cable required.

**Total Cable Requirements:**

The total cable length for deicing is determined by including all elements of the roof system that need protection. Use the following tables to determine the total length of cable required.

TABLE 1		
Item	Feet of Cable/Ft. Item	Comments
Gutter	1'	1 Trace/6" gutter width
Downspout	2'	Unless downspout is on end of circuit, the cable is looped down and back
Roof Valley	6'	Per valley
Dormer	1'	1 ft. of cable/foot of dormer perimeter

**Cable Footage Required for Roof Overhangs:  
(Feet of Cable per Foot of Roof)**

TABLE 2			
Eave Overhang	Feet of Cable Loop Height	Shingle Roof	Metal Roof
12"	18"	1' -10"	2'-6"
24"	30"	2' -8"	3'-6"
36"	42"	3' -8"	4'-6"
48"	54"	4' -8"	5'-6"

### COMPONENTS

**SLT-LPS Power Connection Kit-** includes moisture seals for both ends of the heater cable as well as a watertight entry seal into a junction box (not included in this kit). It is recommended that a NEMA 3R, 4 or 4X box be used and mounted under an eave or other protected area. Each kit will terminate one heater cable.

**SLT-ES Entry Seal Kit-** provides a watertight entry seal into a junction box (not included in this kit). It is recommended that a NEMA 3R, 4 or 4X box be used and mounted under an eave or other protected area. One entry per kit.

**SLT-C Universal Roof Mounting Clips-** are used for all types of installations. Clips come 25 to a box; order one box per eight feet of eave or one box for every 100 feet of cable installed on flat roofs.

**SLT-D Downspout Hangars** are used to support the heater cable where it enters or exits a downspout. Hangars come in kits of 5; one is required for each downspout. If downspout is in the middle of a circuit, the cable is looped down to the bottom of drain and back up, clamping it into downspout hanger to prevent the cable from being pulled tight against drain/gutter edge. Each kit contains 5 hangars.

**SLT-S Splice Kit-** is used to splice two pieces of cable together. This could occur when additional cable is needed or a damaged spot must be cut out and repaired. Each kit contains 5 splices.

**SLT-E End Seal Kit-** provides a moisture seal at the end of each heater cable circuit. Each kit contains 5 seals.

**SLT-P Power End Seal Kit-** provides a moisture seal at the power connection end of the heating cable to prevent electrical arcing if condensation occurs in the connection box. Each kit contains 5 seals.

**AT-50 Aluminum Foil Tape-** may be used to secure the heater cable to the bottom of the gutter. Each roll of tape will accommodate 46M (150') of gutter. Gutter must be clean for foil tape to adhere properly. As an alternate, the cable may be laid loose in the bottom of the gutter without being secured with foil tape.

### Ordering Information:

Catalog No.	Description	U/M
SLT-1	Heater, 120 Volts	Ft.
SLT-2	Heater, 240 Volts	Ft.
SLT-LPS	Connection Kit with End Seals	Ea.
SLT-ES	Power Entry Seal	Ea.
SLT-P	Power End Termination	5/Box
SLT-E	End Seal Kit	5/Box
SLT-S	Splice Kit	5/Box
SLT-C	Installation Cup	25/Box
SLT-D	Downspout Hanger	5/Box

### Approvals:

UL  
Ordinary Locations-



CSA  
Ordinary Locations-



Nelson Heat Tracing Systems products are supplied with a limited warranty. Complete Terms and Conditions may be found on Nelson's website at [www.nelsonheaters.com](http://www.nelsonheaters.com).

