

Roof/Gutter De-Icing



Roof/Gutter De-icing Systems

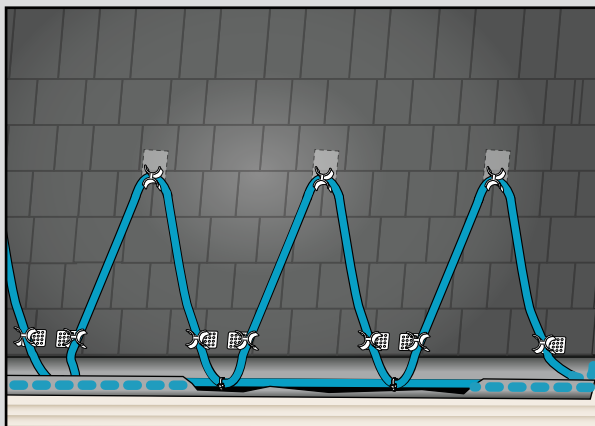
King's Roof/Gutter De-icing systems helps prevent snow and ice build-up on roofs and gutters. Whether installed on a shake, shingle or metal roof, the SRP & SR will give you the desired results you are looking for. The system is reliable and will not overheat or burn out if overlapped.

SR Series Self-Regulating Heating Cable is designed for commercial and industrial pipe trace applications. The cable is constructed so that it will not burn out or overheat when overlapped, and can be used on metal and plastic pipes. The cable is available in 100 and 250 ft coils and also 500 and 1,000 ft reels.

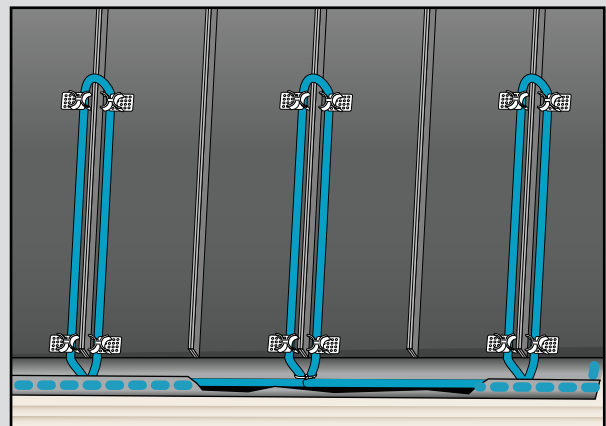
King's Roof/Gutter

SRP Series Self-Regulating Pre-Assembled Heating Cable is designed for a variety of gutter and roof de-icing applications. The cable is constructed so that it will not burn out or overheat when overlapped, and can be used on metallic and nonmetallic downspouts and gutters. The cable is pre-terminated with a 30 inch cold lead and grounded plug

Shake/Shingle Roof Installation



Metal Seam Roof Installation



Self-Regulating Roof/Gutter De-Icing Cable



Model Code:

SR 12 3 -250
A B C D

A: Self Regulating Cable

B: 12 - 120V

24 - 240V

C: Watts per foot

D: Linear Length in feet

SR Series Self-Regulating Heating Cable is designed for a variety of industrial and commercial de-icing applications.

SR Self-Regulating Heating Cable Features

- Cable will not overheat or burn out when overlapped
- 2 year warranty

- Suitable for metallic and nonmetallic gutters and downspouts
- Wattage rating is determined at 32°F (0°C).



AVAILABLE LENGTHS

	DE-ICING RATING**		100 FT. LENGTH				250 FT. LENGTH				500 FT. LENGTH				1000 FT. LENGTH				WEIGHT/FT.
	VOLTS	WATTS/FT.	MODEL / UPC		MODEL / UPC		MODEL / UPC		MODEL / UPC		MODEL / UPC		MODEL / UPC		MODEL / UPC				
120V	120	5	SR123-100 / 40513		SR123-250 / 40414		SR123-500 / 48735		SR123-1000 / 40416								0.080 LBS./FT.		
	120	8	SR125-100 / 40514		SR125-250 / 40418		SR125-500 / 48736		SR125-1000 / 40420								0.080 LBS./FT.		
	120	12.1	SR128-100 / 40515		SR128-250 / 40422		SR128-500 / 48737		SR128-1000 / 40424								0.080 LBS./FT.		
	120	14.8	SR1210-100 / 40516		SR1210-250 / 40426		SR1210-500 / 48733		SR1210-1000 / 40428								0.080 LBS./FT.		
240V	240	5	SR243-100 / 40517		SR243-250 / 40430		SR243-500 / 48739		SR243-1000 / 40432								0.080 LBS./FT.		
	240	8	SR245-100 / 40518		SR245-250 / 40434		SR245-500 / 48740		SR245-1000 / 40436								0.080 LBS./FT.		
	240	12.1	SR248-100 / 40519		SR248-250 / 40438		SR248-500 / 48741		SR248-1000 / 40440								0.080 LBS./FT.		
	240	14.8	SR2410-100 / 40520		SR2410-250 / 40442		SR2410-500 / 48738		SR2410-1000 / 40444								0.080 LBS./FT.		

**Wattage rating for roof and gutter de-icing application is determined at 32°F (0°C).

*Approved for 208, 220, 277 volt operation, refer to wattage adjustment tables for output rating. (See Page 191, Table 4)

Controls and thermostats should always be used with King heating cable systems.

SR ACCESSORIES Refer to page ?? for Roof & Gutter De-Icing Accessories

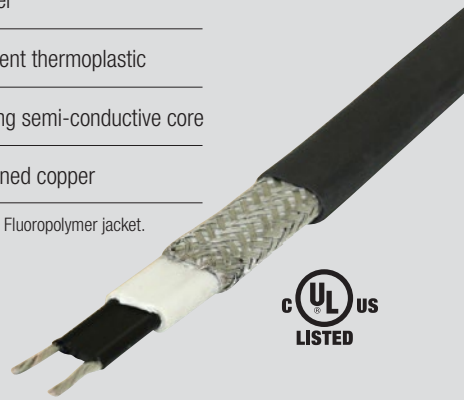
MODEL	UPC	DESCRIPTION	WEIGHT
SRK02	40461	Connection kit, includes end seal	0.3 lbs.
SRK04	61713	2.5" x 50 yards 2 Mil Foil tape	1.0 lbs.
SRK08	40466	Plug in 120V connection kit with GFEP device, includes end seal	1.0 lbs.
SRK10	40468	Weatherproof splice/tee kit, includes end seal	0.2 lbs.
SRK12	40470	End seal kit (2 per package)	0.1 lbs.
SRK13	40472	Roof Clip (25 per package)	0.1 lbs.
SRK14	40473	3M VHB double sided acrylic foam pads (25 per package)	0.1 lbs.
SRK15	40476	Downspout haner and cable ties	0.1 lbs.
SRK17	40477	11 & 13mm Gel end seal	0.1 lbs.
SRK18	40512	Lighted end seal, 85-277V	0.3 lbs.
IFC12	40490	Plug in fixed thermostat, 120V, 15 amp, on at 35°F off at 45°F (12/case)	0.3 lbs.
TRF-115-005	40477	Freeze protection thermostat, weatherproof with 5ft. remote bulb & capillary, 25 amp at 120/208/240V, 22 amp at 277V, adjustable temp 0°F, suitable for 24 VAC operation (w/Power-On indicator light)	0.3 lbs.

Charts & Tables SR Roof/Gutter De-Icing Cable

Cable Construction Table

Outer Jacket	Rugged polyolefin UV jacket
Outer Jacket (-CT)*	Fluoropolymer jacket
Ground Braid	Tinned copper
Inner Jacket	Flame retardent thermoplastic
Core	Self-regulating semi-conductive core
Bus Wire	16 gauge tinned copper

*Add -CT to the end of the model number for Fluoropolymer jacket.



Technical Data Table

Maximum operating temperature	150°F (65°C)
Maximum exposure temperature	185°F (85°C)
Minimum installation temperature	-40°F (-40°C)
Minimum bending radius	1" (24mm)
Dimensions	0.496" x 0.236" (12.6mm x 6mm)
Service Voltage	110V-120V, 208V-277V
Wattage rating temperature	50°F (10°C)
Hazardous Location Rating (-CT Outer Jacket only)	Class I, Div. 2 Class II, Div. 2 Class III

Selecting the Required Heating Cable Length for Roof and Gutter De-icing

How to Calculate the proper Heating Cable Length:

Use the formula below to determine the amount of heating cable required.

Total heating cable length = A+B+C+D

A (Roof edge) x (heating cable multiplier)

B (Roof edge x 0.5)

C (Total gutter length)

D (Total downspout length + 1 ft.)

=Total heating cable length required.

Example: Standard Roof

1. Roof edge = 14 ft.
2. Eave overhang = 1 ft. (Refer to cable multiplier table)
3. Gutter = 14 ft.
4. Downspout = 12 ft.

Heating Cable Required:

Roof edge:	14 ft. x 2.8 (Multiplier from table)	= 39.2 ft.
Roof extension*:	14 ft. x 0.5	= 7.0 ft.
Roof gutter:	14 ft.	= 14.0 ft.
Downspout:	12 ft. + 1 ft.	= 13.0 ft.
Total heating cable length required:		= 73.2 ft.

Solution for Example = SRP126-75

*Roof extension is the length of cable required to prevent ice dams between the roof edge and the gutter. When there are no gutters present it forms a drip loop to prevent ice dams at the roof edge.

Heating Cable Multiplier Table

Eave Overhang	Standard Roof	Metal Roof (18" Seam)	Metal Roof (24" Seam)
None	2.0	2.5	2.0
12"	2.8	2.8	2.4
24"	3.8	3.6	2.9
36"	4.8	4.3	3.6

Use the number in the table and multiply it by the length of the roof edge.

Calculations for Gutters, Downspouts and Valleys:

1. For standard non-metal roofs, add 1 foot of heating cable for each foot of gutter.
2. Add 1 foot of heating cable per foot of downspout.
3. If the downspout is in the middle of the run, loop the cable down and back up. Double the length of the downspout for determining the length of cable to install.
4. For valleys, run the heating cable two thirds of the way up and down the valley. Add this additional length to the overall cable.
5. For gutters 6 inches wide use two cable runs.

Heating Cable Selection for Roof/Gutter De-Icing

Calculation For Heating Cable Length

Total heating cable length = A+B+C+D+E+F+G

A (Roof edge) x (heating cable multiplier)

B (Roof edge x 0.5)

C (Total gutter length)

D (Total downspout length + 1 ft.)

E (1 ft. for each power connection)

F (2 ft. for each splice)

G (3 ft. for each tee connection)

=Total heating cable length required.

Example:

1. Roof edge = 48 ft.
2. Eave overhang = 1 ft. (Refer to cable table 6)
3. Gutter = 48 ft.
4. Downspout = 22 ft.
5. Power connection = 2 each
6. Splice = 3 each

Heating Cable Required:

A Roof edge:	48 ft. x 2.8 (From table 6)	= 134.4 ft.
B Roof extension*:	48 ft. x 0.5	= 24.0 ft.
C Roof gutter:	48 ft.	= 48.0 ft.
D Downspout:	22 ft. + 1 ft.	= 23.0 ft.
E Power Connection:	2 x 1 ft.	= 2.0 ft.
F Splice Connection:	3 x 2 ft.	= 6.0 ft.
G Tee Connection:	0 x 3 ft.	= 0 ft.
Total heating cable length required:		= 237.4 ft.

*Roof extension is the length of cable required to prevent ice dams between the roof edge and the gutter. When there are no gutters present it forms a drip loop to prevent ice dams at the roof edge.

Table 6 - Heating Cable Multiplier

Eave Overhang	Standard Roof	Metal Roof 18" Seam	Metal Roof 24" Seam
None	2.0	2.5	2.0
12"	2.8	2.8	2.4
24"	3.8	3.6	2.4
36"	4.8	4.3	3.6

Use the number in the table and multiply it by the length of the roof

Calculations for Gutters, Downspout and Valley

1. For standard non-metal roofs, add 1 foot of heating cable for each foot of gutter.
2. Add 1 foot of heating cable per foot of downspout.
3. If the downspout is in the middle of the run, loop the cable down and back up. Double the length of the downspout for determining the length of the cable to install.
4. For valleys, run the heating cable two thirds of the way up and down the valley. Add this additional length to the overall cable.
5. For gutters 6 inches wide use two cable runs.

Design Notes

1. In-line splices and tee splices should be avoided where possible.
2. Heating cable in downspouts should be looped and extend below the frost line if tied into a drainage system.
3. End terminations should not be located in an area where moisture is present. End terminations should not be located at the lowest point of downspouts.
4. For roof drains leading into a heated area, a loop of heating cable should be installed to a depth of 3 ft.

Self-Regulating Roof/Gutter De-Icing Cable

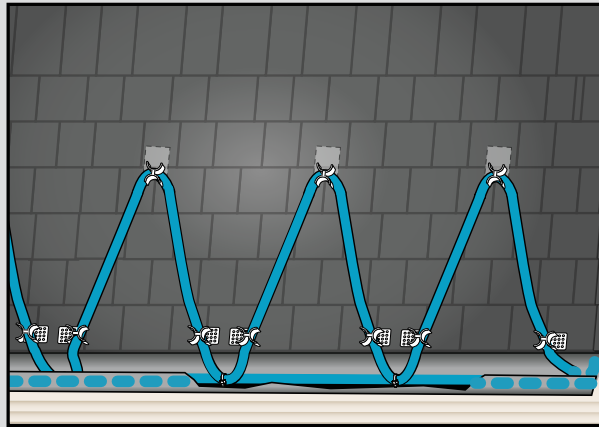


Table 7 - Tracing Heights for Shake/Shingle Roof

Eave Overhang	Tracing Width	Tracing Height	Cable/Roof Edge
None	24"	18"	2.0 ft.
12"	24"	18"	2.8 ft.
24"	24"	30"	3.8 ft.
36"	24"	42"	4.8 ft.

The last column gives the amount of cable required per foot of roof edge for standard shake and shingle roof (table 7) or a metal seam roof (table 8).



Table 8 - Tracing Heights for Metal Seam Roof

Eave Overhang	Tracing Width	Tracing Height	Cable/Roof Edge
None	18"	18"	2.5 ft.
12"	18"	24"	2.8 ft.
24"	18"	36"	3.6 ft.
36"	18"	48"	4.3 ft.
None	24"	18"	2.0 ft.
12"	24"	24"	2.4 ft.
24"	24"	36"	2.9 ft.
36"	24"	48"	3.6 ft.

Table 9 - Circuit Breaker Protection for De-icing

Cable	Volts	Start up Temp.	15 Amp (ft.)	20 Amp (ft.)	30 Amp (ft.)	40 Amp (ft.)
SR123	120V	32°F (0°C)	298	298	298	298
		20°F (-7°C)	287	287	287	287
		0°F (-18°C)	274	274	274	274
		-20°F (-29°C)	258	258	258	258
SR243	208V	32°F (0°C)	586	586	586	586
		20°F (-7°C)	558	558	558	558
		0°F (-18°C)	532	532	532	532
		-20°F (-29°C)	500	500	500	500
SR243	240V	32°F (0°C)	604	604	604	604
		20°F (-7°C)	575	575	575	575
		0°F (-18°C)	548	548	548	548
		-20°F (-29°C)	515	515	515	515
SR243	277V	32°F (0°C)	652	652	652	652
		20°F (-7°C)	621	621	621	621
		0°F (-18°C)	592	592	592	592
		-20°F (-29°C)	556	556	556	556
SR125	120V	32°F (0°C)	231	233	233	233
		20°F (-7°C)	216	225	225	225
		0°F (-18°C)	199	218	218	218
		-20°F (-29°C)	175	205	205	205
SR245	208V	32°F (0°C)	425	429	429	429
		20°F (-7°C)	397	414	414	414
		0°F (-18°C)	366	402	402	402
		-20°F (-29°C)	323	377	377	377
SR245	240V	32°F (0°C)	462	466	466	466
		20°F (-7°C)	431	450	450	450
		0°F (-18°C)	398	437	437	437
		-20°F (-29°C)	351	410	410	410
SR245	277V	32°F (0°C)	499	503	503	503
		20°F (-7°C)	465	486	486	486
		0°F (-18°C)	430	472	472	472
		-20°F (-29°C)	379	443	443	443
SR128	120V	32°F (0°C)	146	187	187	187
		20°F (-7°C)	136	179	179	179
		0°F (-18°C)	126	167	167	167
		-20°F (-29°C)	112	148	162	162

Self-Regulating Roof/Gutter De-Icing Cable

Table 9 - Continued

Cable	Volts	Start up Temp.	15 Amp (ft.)	20 Amp (ft.)	30 Amp (ft.)	40 Amp (ft.)
SR248	208V	32°F (0°C)	263	337	337	337
		20°F (-7°C)	245	322	322	322
		0°F (-18°C)	227	301	311	311
		-20°F (-29°C)	203	266	293	293
SR248	240V	32°F (0°C)	292	374	374	374
		20°F (-7°C)	272	358	358	358
		0°F (-18°C)	252	334	345	345
		-20°F (-29°C)	225	296	325	325
SR248	277V	32°F (0°C)	324	415	415	415
		20°F (-7°C)	302	397	397	397
		0°F (-18°C)	280	371	383	383
		-20°F (-29°C)	250	329	361	361
SR1210	120V	32°F (0°C)	107	142	164	164
		20°F (-7°C)	100	132	159	159
		0°F (-18°C)	92	122	153	153
		-20°F (-29°C)	83	109	146	146
SR2410	208V	32°F (0°C)	187	251	289	289
		20°F (-7°C)	175	232	281	281
		0°F (-18°C)	162	215	269	269
		-20°F (-29°C)	146	193	257	257
SR2410	240V	32°F (0°C)	213	285	328	328
		20°F (-7°C)	199	264	319	319
		0°F (-18°C)	184	244	306	306
		-20°F (-29°C)	166	219	292	292
SR2410	277V	32°F (0°C)	236	316	364	364
		20°F (-7°C)	221	293	354	354
		0°F (-18°C)	204	271	340	340
		-20°F (-29°C)	184	243	324	324

Table 10 - Technical Data Ratings

Technical Data Table	
Maximum operating temp.	150°F (65°C)
Maximum exposure temp.	185°F (85°C)
Minimum installation temp.	0°F (-18°C)
Minimum bending radius	1" (24mm)
Dimensions	0.496" x 0.236" (12.6mm x 6mm)
Service voltage	110-120V, 208V-277V

Table 11 - Maximum Single Run Length

Model	Volts	Output at 32°F (0°C)	Maximum Single Run Length
SR123	120V	3.3 w/ft.	298 ft. (90M)
SR243	208V	2.7 w/ft.	585 ft. (178M)
	240V	3.3 w/ft.	604 ft. (184M)
	277V	3.8 w/ft.	652 ft. (198M)
SR125	120V	5.6 w/ft.	233 ft. (71M)
SR245	208V	4.8 w/ft.	428 ft. (130M)
	240V	5.6 w/ft.	466 ft. (142M)
	277V	6.2 w/ft.	503 ft. (153M)
SR128	120V	8.9 w/ft.	187 ft. (57M)
SR248	208V	7.9 w/ft.	336 ft. (102M)
	240V	9 w/ft.	374 ft. (114M)
	277V	9.6 w/ft.	415 ft. (126M)
SR1210	120V	11.3 w/ft.	164 ft. (50M)
SR2410	208V	10.1 w/ft.	288 ft. (88M)
	240V	11.2 w/ft.	328 ft. (100M)
	277V	11.8 w/ft.	364 ft. (111M)

Table 12 - Circuit Length Adjustments

Model	208V	277V
SR243	0.97	1.08
SR245	0.92	1.08
SR248	0.90	1.11
SR2410	0.88	1.11

Technical Data Notes:

1. The maximum single cable run is the longest length of heating cable before there is a significant voltage drop which will lower the wattage rating of the cable.
2. The circuit breaker sizes in Table 9 are per the National Electric Code (NEC). Circuit length adjustments for 240V cables operated 208V and 277V are noted in Table 12
3. The NEC requires ground-fault equipment protection (GFEP) for fixed outdoor de-icing equipment. All electrical connections should be made by a licensed electrician.

SR/SRP Roof & Gutter Accessories



SRK02 Connection Kit

Contains heat shrink tubing and woven braid.
Also includes one end seal.



SRK10 Splice and Tee Kit

Contains heat shrink tubing and other materials to make one splice or one tee connection.
Also includes one end seal.



SRK12 End Seal Kit

Contains heat shrink tubing and other materials to make two end seals.



SRK08 Plug in 120V Connection Kit with GFEP Device

Contains labels, GFEP protection device with 120V plug, cable ties, crimp type connectors, heat shrink tubing and labels.
Includes one end seal.



SRK15 Downspout

Downspout hanger and cable ties



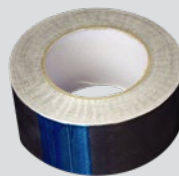
SRK13 Clip

Roof clip for mounting cable



SRK14

3M VHB double sided acrylic foam pads
For use with SRK13 clips in metal gutter



SRK04

2.5" x 50 yards 2 mil Foil tape



SRK17

11 & 13mm Gel end seal

MODEL	UPC	DESCRIPTION	WEIGHT
SRK02	40461	Connection kit, includes end seal	0.3 lbs.
SRK04	61713	2.5" x 50 yards 2 mil foil tape	1.6 lbs.
SRK08	40466	Plug in 120V connection kit with GFEP device, includes end seal	1.0 lbs.
SRK10	40468	Weatherproof splice/tee kit, includes end seal	0.2 lbs.
SRK12	40470	End seal kit (2 per package)	0.1 lbs.
SRK13	40472	Roof clip (25 per package)	0.2 lbs.
SRK14	40473	3M VHB double sided acrylic foam pads (25 per package)	0.1 lbs.
SRK15	40476	Downspout hanger and cable ties	0.3 lbs.
SRK17	40477	11 & 13mm Gel end seal	0.1 lbs.

SR/SRP Roof & Gutter Controls & Sensors



DS-8C
Gutter ice melting controller
NEMA 3R / 30A



DS-9C
Gutter ice melting controller
NEMA 3R / (2) 30A



DS-824C
Gutter ice melting controller
NEMA 3R / 24V



GIT-1
GIT-1 Gutter De-icing sensor



CDP-2
Indoor sensor
control display



MG-3
Gutter De-icing sensor



CS-1/CS-50
Control cable for CD-2 control panel
18"/50 ft leads

MODEL	UPC	DESCRIPTION
DS-2C	42331	Rain/Snow controller w/built-in sensor, 100-277V - 30amp w/adjustable temperature trigger points, Used for Snow Melt Cable Projects
DS-5C	42332	Rain/Snow controller w/built-in sensor, 100-277V - 2-30amp w/adjustable temperature trigger points, used for snow melt cable projects
DS-8C	42335	Gutter ice melting controller, NEMA 3R, 120/208/240/277V, 30Amp, adjustable temperature range 34°F to 44°F, 1/2" Hub
EX5050	40475	DS extension cord 50 ft for DS-8C
DS-824C	40479	Gutter ice melting controller, NEMA 3R, 24V, 30amp, adjustable temperature range 34°F to 44°F, 1/2" Hub
DS-9C	42426	Gutter ice melting controller, NEMA 3R, 120/208/240/277V, 2-30amp, adjustable temperature range 34°F to 44°F, 1/2" Hub
CDP-2	40482	Indoor sensor control display, manual/auto/standby modes, includes 18" lead
CS-1	40483	Control cable for CDP-2 control panel, 18" lead
CS-50	40484	Control cable for CDP-2 control panel, 50 ft lead
MG-3	40485	GIT-1 gutter de-icing sensor

Call for availability on additional ETI controls not shown above.