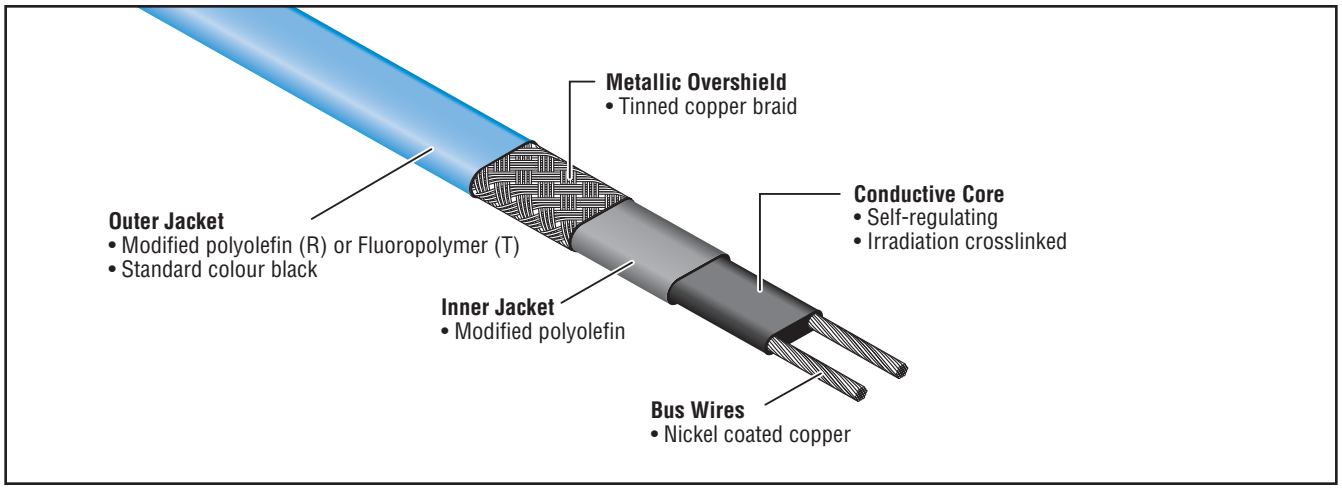
heat-line®
Freeze Protection Systems

2705 Series

SR Cut-to-Length Self-Regulating Heating Cable for Roof and Gutter

Feature Sheet



DESCRIPTION

Heat-Line 2705 series self-regulating, cut-to-length heating cables deliver complete roof and gutter de-icing for gutters, downspouts, and drainage pipes, providing dependable protection along roof edges. They can be installed in a traditional serpentine layout using Heat-Line roof clips or paired with the Heat-Line EDGE-CUTTER roof edge heating system for enhanced performance. Engineered for maximum on-site flexibility, the 2705 Series cut-to-length self-regulating heating cables automatically adjusts its heat output at any point along its length, responding directly to localized temperature conditions to meet the demands of challenging applications.

The 2705 Series is rated at 5W/ft @ 50°F under standard CSA/UL pipe test conditions, but due to its self-regulating design, the output increases significantly in ice or snow at 32°F, delivering high performance with a rated 12 W/ft in ice or snow.

FEATURES

- Various approvals in Canada and USA including CSA, FM, and UL
- Most models are in stock and ready to ship same day or next
- Available at competive pricing by the foot or in full reels up to 1,000 ft. (305m)
- Can be used with a variety of snow ice/snow melt control devices
- Self-regulating/conductive polymer (no overheating, even when crossed)
- Simple to install, cut-to-length for on-site flexibility
- Power output of 5W/ft @50F, 12W/ft in ice/snow
- Manufactured in North America
- Covered by 10-Year Original Manufacturer warranty

ACCESSORIES

Heat-Line offers a full line of approved accessories, including power connection kits, terminations, splices, end seals, roof clips, downspout hanger kits, snow/ice melt controls, gutter and aerial sensors and contactor panels. Many other specialized accessories are available by special request.

PERFORMANCE RATINGS

Output wattage	5 W/ft @ 50°F (10°C)
Supply voltages	110 – 120 Vac or 208 – 277 Vac
Continuous maintenance temp.	150°F (65°C) max
Intermittent exposure temp.	185°F (85°C) max
T Rating*	T-6

*T-Rating per the 1999 NEC, Tables 500-5(d) and verified by FM and CSA.

APPROVALS / CERTIFICATIONS

Ordinary locations
STD. 130-03 G, W, S
Hazardous locations
Class I, Div 1*/2, Groups A, B, C, D
Class II, Div 1*/2, Groups E, F, G
Class III, Div 1* and 2

Ordinary locations
Hazardous locations
Class I, Div 1*/2, Groups B, C, D
Class II, Div 2, Groups F, G
Class III, Div 1* and 2

Roof and Gutter

*Contact Heat-Line representative for information on Division 1 hazardous location systems.

PRODUCT ORDERING INFORMATION

Example: **2705 – 1 1 R 00**

Series
27 2700

Nominal Power Output
05 5 W/ft @ 50°F (16 W/m @ 10°C)

Voltage
1 120 Vac (110 - 120)
2 240 Vac (208 - 277)

Class
1 Ordinary/Div. 2
3 Ordinary/Div. 2 w/monitor wires
4 Class I, Div. 1

Braid Option
R Modified Polyolefin heater jacket
T Flouropolymer heater jacket

Reserved

MEASURING ROOF AND GUTTER CABLE LENGTH

Only the Heat-Line 2705 models of heating cables are certified for use in roof and gutter de-icing applications.

Length = A + B + C + D + E + F

A Roof edge length (ft) x feet of heating cable per foot of roof edge (from Table 1, 2, or 3)

B Roof edge length (ft) x 0.5*

C Valley length (ft)**

D Total gutter length (ft)

E Total length of all downspouts (ft) + 1 (ft) x number of downspouts***

F 1 ft for each power connection

= 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 extend beyond the roof edge to form a drip loop where no gutters are present.

**For valleys, run the heating cable two thirds of the way up and down the valley. For roof/wall intersections, run the heating cable two thirds of the way up and down the intersection point.

***Depending on the location of the downspout the heating cable may have to run down and back up. Consider this factor when determining the total length of downspouts.

Note: Heat-Line recommends heat traced gutters and downspouts to provide a continuous path for melt water. For standing seam spacing greater than 24 inches heat trace every seam. For metal roofs consider a snow retention system to prevent sliding ice or snow from damaging the heating cable.

Important: This guide covers roof and gutter de-icing for typical winter conditions, installed using "standard" methods.

Table 1. Cable Length - Shingles/Shakes

Eave Overhang	Tracing Width	Tracing Heights	Heating Cable per Foot of Roof
0	24 inch	12 inch	2.5 feet
12 inch	24 inch	24 inch	3.1 feet
24 inch	24 inch	36 inch	4.2 feet
36 inch	24 inch	48 inch	5.2 feet

Table 2. Cable Length - Standing Seam Metal

		Heating Cable per Foot of Roof	
Eave Overhang	**Tracing Heights**	**18 inch standing seam spacing***	**24 inch standing seam spacing***
0	18 inch	2.5 feet	2.0 feet
12 inch	24 inch	2.8 feet	2.4 feet
24 inch	36 inch	3.6 feet	2.9 feet
36 inch	48 inch	4.3 feet	3.6 feet

* Trace every other seam

Table 3. Cable Length - EDGE-CUTTER

Feet of Heating Cable per Foot of Roof
1 foot

CIRCUIT MAX LENGTHS

	15A	20A	30A	40A
2705-1 (120 Volt Breaker Sizing)	130 feet	175 feet	260 feet	270 feet
2705-2 (240 Volt Breaker Sizing)	260 feet	345 feet	520 feet	540 feet

Note: Values based on a start-up temperature of –20°F (–29°C). Recommended circuit breakers to minimize the effect of transit start-up currents. Westinghouse: Types BA, EB, EHB, FB, HFB. General Electric: E100 Type TEB, E150, Types TED, THED. Square D: Types EH, FAIF. **The Canadian Electrical Code and National Electric Code requires ground fault protection of equipment for each branch circuit supplying electrical heating cables or devices.** Max circuit lengths allowed may be less than those posted depending on the selection of specific connection kits. Always review the specifications of each connection kit to ensure you adhere to requirements.

MINIMUM BEND RADIUS

½" (12.7 mm)

ELECTRICAL CONNECTION / END SEAL KITS

1548-40RGP	Power and end seal kit, CSA, UL
SRHC-ES	End seal kit, CSA hazardous and non-hazardous, pipe trace and roof and gutter
HTLN-GFC-KIT-120	Plug-in power connection kit with GFC protection and end seal kit for 120 V
HTLN-GFC-KIT-240	Plug-in power connection kit with GFC protection and end seal kit for 240 V

Note: Heat-Line offers additional connection kits beyond those listed above. These connection kits must be used to ensure compliance with applicable approvals, codes, and warranty. For proper design and installation refer to the specifications of each connection kit to ensure you adhere to requirements. Questions regarding the correct heating cable or connection kit for your application should be directed to Heat-Line at 1-800-584-4944.

CONTROLS AND SENSORS

DS-8C-CONTROLLER	Rain/snow sensor controller c/w remote 10' sensor
CDP-2-RC-DP	Snow sensor control/display panel, indoor only, for DS-8C-CONTROLLER
DS-8C-EX-50	Rain/snow sensor extension 50' kit for DS-8C-CONTROLLER
LCD-8	Configurable snow switch controller
GIT-1	Gutter ice sensor (requires controller, PD-PRO or GF-PRO)
PD-PRO-CONTROLLER	Snow/ice controller
GF-PRO-CONTROLLER	Snow/ice controller with GFEP
SNOW-OWL	Aerial snow sensor (requires controller, PD-PRO or GF-PRO)
1660-18911	Ambient sensing thermostat, Ordinary Location
HL-TIMER-CS	20/240 V 20 Amps percentage cycle timer, general purpose
PYROBOX-1-CONTROL	240V 30A indoor/outdoor automatic snow/ice melt controller with GFEP (30mA)
PYRO-SENSE-GUTTER	Gutter ice sensor (requires controller, PYROBOX-1-CONTROL)
PYRO-SENSE-AERIAL	Aerial snow sensor (requires controller, PYROBOX-1-CONTROL)
PYRO-SENSE-SB	Snow sensor wall mounted adjustable metal arm (requires sensor, PYROSENSE-AERIAL)

Note: Heat-Line offers additional control and sensor options beyond those listed above. For further inquiries, please contact Heat-Line at 1-800-584-4944.

CONTACTOR AND CONTROL PANELS

HL-SMC-2C3P-GFEP	120/240V indoor GFEP heat trace contactor panel 2 3-pole contactors
HL-SMC-4C3P-GFEP	120/240V indoor GFEP heat trace contactor panel 4 3-pole contactors
HL-SMC-2C3P	120/240V indoor heat trace contactor panel 2 3-pole contactors
HL-SMC-4C3P	120/240V indoor heat trace contactor panel 4 3-pole contactors

ACCESSORIES

MA-10	120/240V GFCI/ELCI, indoor only
FOIL-TAPE	Nashua 330X extreme weather foil tape 150 ft per roll
ETERNA-TAPE	ETERNABOND Tape 4'' x 50' Black
PLD-CG	6" cable guard, 4 per pack
PLD-RDK	Downspout hanger kit
PLD-RC	Roof clips (package of 10)
PLD-RC-GC	Roof grip clip for roof shingle material up to 3/8" thick
PLD-RC-S5-SR	Roof clip S-5-5 only (package of 10)
PLD-RC-S5-SRU	Roof clip S5 universal (package of 10)
PLD-CLAMP-S5-S	Roof mounting clamp S-5-S c/w machine bolt
PLD-EC	EDGE-CUTTER angled
PLD-ECF	EDGE-CUTTER flat

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