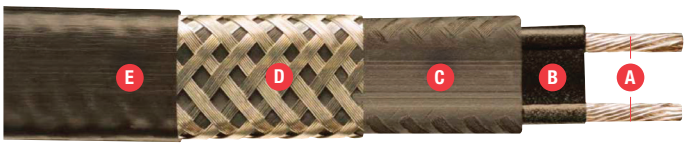
CHROMALOX
Advanced Thermal Technologies

HSRL SELF-REGULATING LOW-TEMPERATURE HEATING CABLE

PRODUCT OVERVIEW



- **A** Twin 16 AWG Nickel-Plated Copper Bus Wires
- **B** Semiconductive Polymer Core Matrix
- **C** Water Resistant Polyolefin Jacket
- **D** Tin-Plated Copper Braid
- **E** High-Temperature Fluoropolymer Overjacket

Chromalox® HSRL self-regulating low-temperature heating cable provides the most versatility in industrial process heat trace designs and applications, delivering safe, reliable heat for freeze protection and temperature maintenance of pipes, valves, tanks, and similar applications in Division 1 hazardous locations. HSRL self-regulating cables are flexible, can be cut-to-length and spliced in the field, and can be single-overlapped without fear of burnout in areas where complex piping and equipment require additional heat trace cable. The self-regulating cable adjusts its output to independently respond to temperatures along its length. It is for use on 120 and 208 to 277 V. Chromalox self-regulating cables are third-party tested and approved for use in ordinary, harsh corrosive, and hazardous area applications.

DESCRIPTION

The heating cable consists of two (2) 16 AWG nickel-plated copper bus wires embedded in a self-regulating semiconductive polymeric core matrix that controls power output so that the cable can be used directly on metal or plastic pipes and tanks. A water-resistant polyolefin jacket electrically insulates the matrix and bus wires and provides resistance to water and some inorganic chemical solutions. A tinned copper braid covering serves added mechanical protection and positive ground path. A high-temperature, flame-retardant, corrosion-resistant fluoropolymer outer jacket protects the braid from chemical attack and mechanical abuse.

WARNING — A ground fault protection device is required by Chromalox, agency certifications, and NEC to minimize the danger of fire if the heating cable is dam-aged or improperly installed. A minimum trip level of 30 mA is recommended to minimize nuisance tripping.

APPLICATION

Trace Surface Type ..... Metal and Plastic

Chemical Resistance ..... Exposure to aqueous solutions of inorganic compounds

Exposure to liquids, organic chemicals, acids, or bases

VOLTAGE SUPPLY

120 Vac

208 to 277 Vac (240 Vac nominal)

TEMPERATURE RATING

Maximum Maintenance Temperature ..... 150°F (65°C)

Maximum Exposure Temperature, Power Off ..... 185°F (85°C)

Minimum Installation Temperature ..... -40°F (-40°C)

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APPROVALS

- Ordinary Areas
- Class I, Division 1, Groups B, C, D
- Class II, Division 1 Groups E, F, G
- Class III, Division 1*
- T-Rating**

* FM only
** T6: 185F (85C), HSRL 3
T5: 212F (100C), HSRL 5, 8
T4A: 248F (120C), HSRL 10

DESIGN AND INSTALLATION

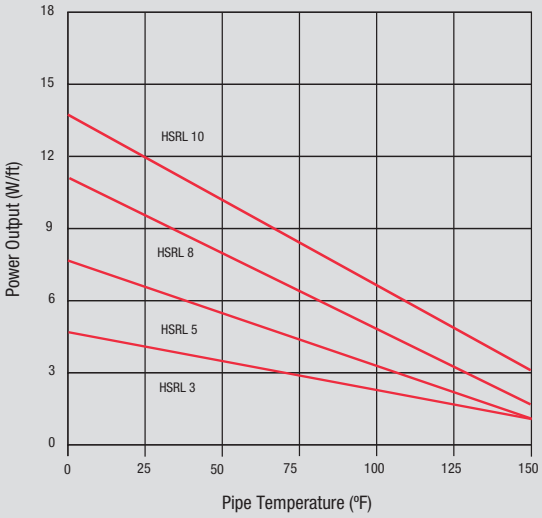
For proper design and installation, use ChromaTrace Heat Trace Project Design Software. Additional resources include the Chromalox Heat Trace Design Guide (PJ130), Pipe Heat Tracing Design Worksheet (PJ305), and Chromalox Industrial Heating Cable Products Installation Instructions (PJ438). These resources are available on the Chromalox website, www.chromalox.com.

NOMINAL POWER OUTPUT RATINGS

Output Wattage at Alternate Voltages, 50°F (10°C), W/ft (W/m)

Model	208 V	% Change in Output	220 V	% Change in Output	277 V	% Change in Output
HSRL 3-2	2.4 (7.87)	-20	2.6 (8.53)	-13	3.4 (11.15)	+15
HSRL 5-2	4.1 (13.45)	-18	4.5 (14.76)	-10	5.6 (18.37)	+13
HSRL 8-2	6.88 (22.57)	-14	7.28 (23.88)	-9	8.96 (29.39)	+12
HSRL 10-2	8.7 (28.54)	-13	9.2 (30.18)	-8	11.1 (36.41)	+10

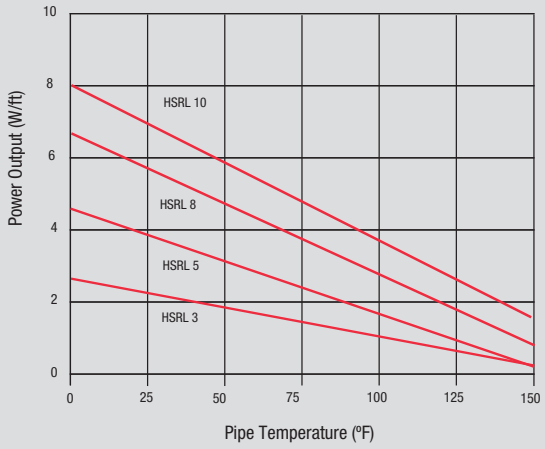
Thermal Output Ratings on Insulated Metal Pipe*



*Thermal output is determined per IEC / IEEE 62395-1 Electrical Resistance Trace Heating Systems for Industrial and Commercial Applications

NOMINAL POWER OUTPUT RATINGS, *con't.*

Thermal Output Ratings on Plastic Pipe with Aluminum Tape



MAXIMUM CIRCUIT LENGTHS

Model	Ambient Temperature at Startup	Maximum Circuit Length in Feet (Meters) per Circuit Breaker											
		120 Vac						208 to 277 Vac					
		10 A	15 A	20 A	25 A	30 A	40 A	10 A	15 A	20 A	25 A	30A	40A
HSRL 5	50°F (10°C)	205 62	305 (93)	360 (110)	NR	NR	NR	400 (122)	600 (183)	660 (201)	NR	NR	NR
	0°F (-18°C)	135 (410)	200 (61)	270 (81)	330 (101)	360 (110)	NR	275 (84)	415 (126)	555 169)	660 (201)	NR	NR
	-20°F (-29°C)	120 (37)	185 (56)	245 (75)	300 (91)	360 (110)	NR	245 (75)	370 (113)	495 (151)	660 201)	NR	NR
HSRL 5	50°F (10°C)	125 (38)	185 (56)	250 (76)	270 (82)	NR	NR	250 (76)	375 (114)	505 (154)	540 (165)	NR	NR
	0°F (-18°C)	90 (27)	135 (41)	180 (56)	225 (69)	270 (82)	NR	180 (55)	270 (75)	360 (110)	450 (137)	540 (165)	NR
	-20°F (-29°C)	80 (24)	120 (37)	160 (49)	205 (62)	245 (75)	270 (82)	160 (49)	245 (87)	325 (99)	405 (123)	490 (149)	540 (165)
HSRL 8	50°F (10°C)	100 (31)	150 (46)	200 (61)	215 (66)	NR	NR	185 (56)	285 (87)	375 (114)	420 (128)	NR	NR
	0°F (-18°C)	70 (21)	110 (34)	145 (44)	180 (55)	215 (66)	NR	135 (41)	200 (61)	265 (81)	335 (102)	395 (120)	420 (128)
	-20°F (-29°C)	65 (20)	100 (31)	130 (40)	165 (50)	200 (61)	210 (64)	120 (37)	175 (53)	235 (72)	300 (91)	350 (107)	420 (128)
HSRL 10	50°F (10°C)	60 (18)	95 (29)	130 (40)	160 (49)	180 (55)	NR	100 (30)	160 (49)	210 (64)	260 (79)	315 (96)	360 (110)
	0°F (-18°C)	50 (15)	80 (24)	105 (32)	130 (40)	155 (47)	180 (55)	80 (24)	125 (38)	170 (52)	210 (64)	255 (78)	340 (104)
	-20°F (-29°C)	45 (14)	70 (21)	95 (29)	120 (37)	140 (43)	180 (55)	75 (23)	120 (37)	160 (49)	195 (59)	240 (73)	320 (98)

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PRODUCT CHARACTERISTICS

Minimum Bend Radius, in. (mm) 1.125 (28.5)

Bus Wire Size ..... 16 AWG

Heating Cable Dimensions WxH, in. (mm) ..... 0.48 x 0.21 (12.1 x 5.3)

Weight, lb per 1,000 ft (kg per 300 m) 66 (30)

CONNECTION KITS

Chromalox has a complete line of accessories specifically designed for use with HSRL cable. Use only Chromalox accessories to ensure the performance of the heat trace system, compliance with warranty, codes, and approval requirements.

Connection Kits and Thermostats		HL Series
Power Connection	Heat trace to electrical service connection	HL-PC
Splice & Tee	Electrical connection for 3 cables	HL-T
In-Line Splice	Electrical connection for 2 cables	HL-S
End Seal	For terminating cable	HL-ES
Thermostat	Ambient air sensing thermostat	TXL
	Line sensing mechanical thermostat	TXR

Note: If cable connections / terminations are made in a Div. 2 area, HSRL cable can be used with select U and DL Series Connection Kits. See cable schedule.

ORDERING INFORMATION

Model	Volts	Output (W/ft.)	PCN
HSRL 3-1CT	120	5 @ 50F	382070
HSRL 3-2CT	208-277	5 @ 50F	382061
HSRL 5-1CT	120	8 @ 50F	382053
HSRL 5-2CT	208-277	8 @ 50F	382045
HSRL 8-1CT	120	10 @ 50F	382037
HSRL 8-2CT	208-277	10 @ 50F	382029
HSRL 10-1CT	120	15 @ 50F	382010
HSRL 10-2CT	208-277	15 @ 50F	382022

CHROMALOX

1347 Heil Quaker Blvd
LaVergne, TN 37086

TECHNICAL SUPPORT
412-967-3940

*press 1 to be directed to heat trace support

email: sales@chromalox.com
www.chromalox.com