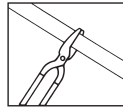
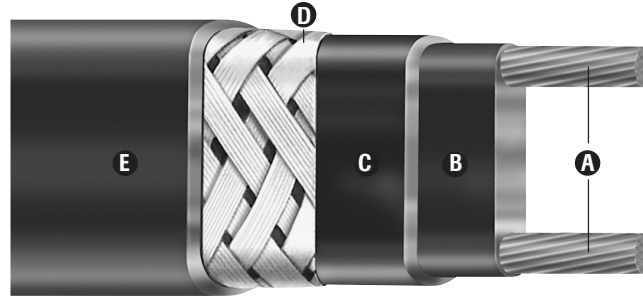


# Heating Cable

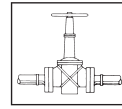
## SRF

### Self-Regulating Freeze Protection

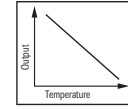
- Self-Regulating, Energy Efficient
- Designed for Freeze Protection
- Max. Exposure Temp. 185°F
- Cost Effective for Commercial Construction Freeze Protection Applications
- Freeze Protection of Fire Protection System Piping
- Industrial Grade, 16 AWG Buss Wire
- Standard Braid and Optional Overjacket
- Continuous Exposure Temperature, Power Off, 185°F (85°C)
- Circuit Lengths, Up to 660 Ft.
- 3, 5 and 8 W/Ft.
- 120, 208 - 277 Volt From Stock
- Approximate Size 3/8"W x 1/8"H
- Minimum Bend Radius 1-1/8"
- For Use on Metal and Plastic Pipes



Cut to Length  
in Field



Can be Single  
Overlapped



Self Regulating  
Output

#### Description

Chromalox SRF cable is ideal for keeping metal and plastic pipes warm in commercial construction, institutional buildings and some industrial freeze protection applications. SRF cable is constructed of a self-regulating polymer core that varies its output along its entire length, saving energy and eliminating hot spots along the pipe. Parallel construction makes it easier to install than zone or series types of cable since it can be cut-to-length at any point on the pipe. It can be single overlapped without overheating the cable.

#### Features

- Energy efficient, self-regulating SRF uses less energy when less heat is required.
- Easy to install, SRF can be cut to any length (up to max. circuit length) in the field.
- Field splices can be performed easily in minutes with no scrap or wasted cold sections.
- SRF can be single overlapped without burnout, which simplifies heat tracing of in-line process equipment such as valves, elbows and pumps.
- Because SRF is self-regulating, over-temperature conditions are minimized.
- Chromalox termination, splice, tee and end seal kits reduce installation time.

#### Construction

- A Twin 16 AWG Copper Buss Wires** — Provide high electrical current capability.
- B Semiconductive Polymer Core Matrix** — its electrical resistance varies with temperature. As process temperature drops, the core's heat output increases; conversely, as process temperature rises, the heat output decreases.
- C Polyolefin Jacket** — Flame retardant, electrically insulates the matrix and buss wires. Also provides resistance to water and some inorganic chemical solutions.
- D Tinned Copper Braid** — The braid covering the jacket provides additional mechanical protection in any environment and a positive ground path.
- E High Temperature TPR Overjacket (optional)** — The TPR overcoat protects the braid and provides resistance to certain inorganic chemical solutions.

#### Approvals

UL Listed for ordinary areas.

UL Listed for fire protection system piping

CSA Certified for ordinary areas.

FM Approved for ordinary areas.

FREEZE  
PROTECTION

# Heating Cable

## SRF

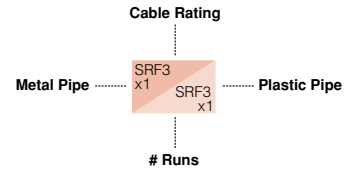
### Application & Selection Guidelines

#### Commercial Freeze Protection SRF Cable Selection Charts

These charts are designed to speed selection of the appropriate wattage of cable when used for freeze protection. Find the diameter of pipe below and cross reference with the expected minimum ambient temperature for the recommended cable.

• Selections suitable for 120 and 208 to 277V applications.

- Design based on straight runs of cable or pipe. Spiralling is not required.
- Heat loss is based on 40°F maintenance temperature and Fiberglas® insulation  $k = 0.25$  at 50°F.
- Non-metallic pipe heat losses are based on using Chromalox AT-1 aluminum tape for improving heat transfer.
- Only 3 W/Ft. rating is UL Listed for non-metallic pipe applications.



Each block specifies cable rating and # of runs for metal pipe (dark) and plastic pipe (light).

For larger pipe sizes, refer to the Technical section in the back of this catalog or contact your Local Chromalox Sales office.

#### 0.50" Pipe

Insulation Thickness (In.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
0.5	SRF3 x1	SRF3 x1	SRF3 x1	SRF5 x1	SRF5 x1
1.0	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1
1.5	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1
2.0	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1
3.0	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1

#### 3.00" Pipe

Insulation Thickness (In.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
0.5	SRF8 x1	SRF5 x2	SRF5 x2	SRF8 x2	SRF8 x2
1.0	SRF5 x1	SRF5 x1	SRF5 x1	SRF8 x1	SRF8 x1
1.5	SRF3 x1	SRF3 x1	SRF5 x1	SRF5 x1	SRF5 x1
2.0	SRF3 x1	SRF3 x1	SRF3 x1	SRF5 x1	SRF5 x1
3.0	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1	SRF5 x1

#### 1.00" Pipe

Insulation Thickness (In.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
0.5	SRF3 x1	SRF5 x1	SRF5 x1	SRF5 x1	SRF8 x1
1.0	SRF3 x1	SRF3 x1	SRF3 x1	SRF5 x1	SRF5 x1
1.5	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1	SRF5 x1
2.0	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1
3.0	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1

#### 4.00" Pipe

Insulation Thickness (In.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
0.5	SRF8 x1	SRF5 x2	SRF8 x2	SRF8 x2	SRF5 x3
1.0	SRF5 x1	SRF8 x1	SRF8 x1	SRF8 x1	SRF5 x2
1.5	SRF3 x1	SRF3 x1	SRF5 x1	SRF8 x1	SRF8 x1
2.0	SRF3 x1	SRF3 x1	SRF5 x1	SRF5 x1	SRF5 x1
3.0	SRF3 x1	SRF3 x1	SRF3 x1	SRF5 x1	SRF5 x1

#### 2.00" Pipe

Insulation Thickness (In.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
0.5	SRF5 x1	SRF8 x1	SRF8 x1	SRF8 x2	SRF8 x2
1.0	SRF3 x1	SRF5 x1	SRF3 x1	SRF5 x1	SRF8 x1
1.5	SRF3 x1	SRF3 x1	SRF3 x1	SRF5 x1	SRF5 x1
2.0	SRF3 x1	SRF5 x1	SRF3 x1	SRF3 x1	SRF5 x1
3.0	SRF3 x1	SRF3 x1	SRF3 x1	SRF3 x1	SRF5 x1

#### 5.00" Pipe

Insulation Thickness (In.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
0.5	SRF5 x2	SRF8 x2	SRF8 x3	SRF8 x3	SRF8 x3
1.0	SRF8 x1	SRF8 x1	SRF8 x1	SRF5 x2	SRF5 x2
1.5	SRF5 x1	SRF5 x1	SRF8 x1	SRF8 x1	SRF8 x1
2.0	SRF3 x1	SRF3 x1	SRF5 x1	SRF8 x1	SRF8 x1
3.0	SRF3 x1	SRF3 x1	SRF5 x1	SRF5 x1	SRF5 x1

# Heating Cable

## SRF

### Application & Selection Guidelines *(cont'd.)*

#### 6.00" Pipe

Insulation Thickness (in.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
0.5	SRF8 x2	SRF8 x2	SRF8 x3	SRF8 x3	SRF8 x4
1.0	SRF8 x1	SRF8 x1	SRF5 x2	SRF5 x2	SRF8 x2
1.5	SRF5 x1	SRF5 x1	SRF8 x1	SRF8 x1	SRF5 x2
2.0	SRF5 x1	SRF5 x1	SRF5 x1	SRF8 x1	SRF8 x1
3.0	SRF3 x1	SRF3 x1	SRF5 x1	SRF5 x1	SRF8 x1

#### 8.00" Pipe

Insulation Thickness (in.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
1.0	SRF8 x1	SRF5 x2	SRF8 x2	SRF8 x2	SRF8 x3
1.5	SRF5 x1	SRF8 x1	SRF8 x1	SRF5 x2	SRF5 x2
2.0	SRF5 x1	SRF5 x1	SRF8 x1	SRF8 x1	SRF8 x2
3.0	SRF5 x1	SRF5 x1	SRF5 x1	SRF5 x1	SRF8 x1

#### 10.00" Pipe

Insulation Thickness (in.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
1.0	SRF5 x2	SRF8 x2	SRF8 x2	SRF8 x3	SRF8 x3
1.5	SRF8 x1	SRF8 x1	SRF5 x2	SRF8 x2	SRF8 x2
2.0	SRF5 x1	SRF8 x1	SRF8 x1	SRF5 x2	SRF8 x2
3.0	SRF5 x1	SRF5 x1	SRF5 x1	SRF8 x1	SRF5 x2

#### 12.00" Pipe

Insulation Thickness (in.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
1.0	SRF8 x2	SRF8 x2	SRF8 x2	SRF8 x3	SRF8 x4
1.5	SRF8 x1	SRF5 x2	SRF5 x2	SRF8 x2	SRF8 x3
2.0	SRF8 x1	SRF8 x1	SRF5 x2	SRF5 x2	SRF8 x2
3.0	SRF5 x1	SRF5 x1	SRF8 x1	SRF8 x1	SRF8 x2

#### 14.00" Pipe

Insulation Thickness (in.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
1.0	SRF8 x2	SRF8 x2	SRF8 x3	SRF8 x3	SRF8 x4
1.5	SRF8 x1	SRF5 x2	SRF5 x2	SRF8 x2	SRF8 x3
2.0	SRF8 x1	SRF8 x1	SRF5 x2	SRF8 x2	SRF8 x2
3.0	SRF5 x1	SRF8 x1	SRF8 x1	SRF5 x2	SRF8 x2

#### 16.00" Pipe

Insulation Thickness (in.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
1.0	SRF8 x2	SRF8 x3	SRF8 x3	SRF8 x4	SRF8 x4
1.5	SRF5 x2	SRF8 x2	SRF8 x2	SRF8 x3	SRF8 x3
2.0	SRF8 x2	SRF5 x2	SRF5 x2	SRF8 x2	SRF8 x3
3.0	SRF5 x1	SRF8 x1	SRF8 x1	SRF5 x2	SRF8 x2

#### 18.00" Pipe

Insulation Thickness (in.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
1.0	SRF8 x2	SRF8 x3	SRF8 x3	SRF8 x4	SRF8 x4
1.5	SRF5 x2	SRF8 x2	SRF8 x2	SRF8 x3	SRF8 x4
2.0	SRF8 x1	SRF5 x2	SRF8 x2	SRF8 x3	SRF8 x3
3.0	SRF8 x1	SRF8 x2	SRF5 x2	SRF8 x2	SRF8 x2

#### 20.00" Pipe

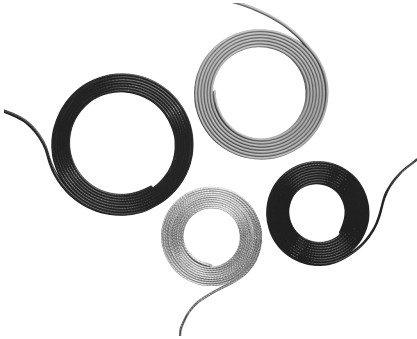
Insulation Thickness (in.)	Min. Ambient Temp.				
	0°	-10°	-20°	-30°	-40°
1.0	SRF8 x3	SRF8 x4	SRF8 x4		
1.5	SRF8 x2	SRF8 x2	SRF8 x3	SRF8 x3	SRF8 x4
2.0	SRF5 x2	SRF5 x2	SRF8 x2	SRF8 x3	SRF8 x3
3.0	SRF8 x1	SRF8 x1	SRF5 x2	SRF8 x2	SRF8 x2

FREEZE PROTECTION

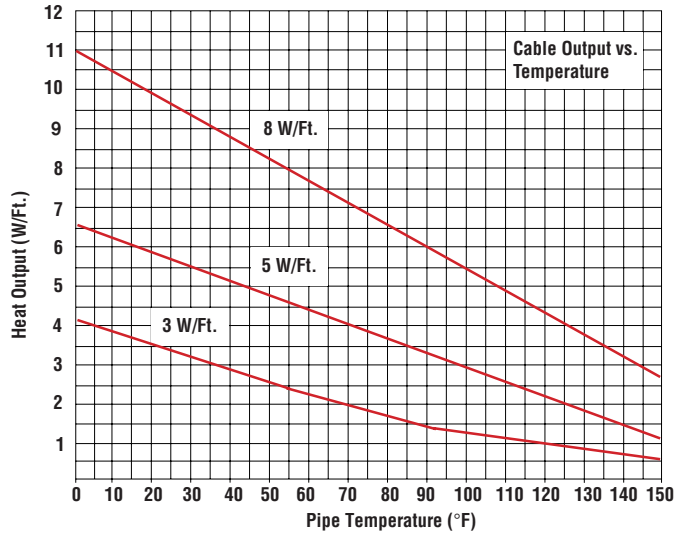
# Heating Cable

## SRF

### Self-Regulating Freeze Protection (cont'd.)



#### Thermal Output Ratings on Uninsulated Metal Pipes<sup>1</sup>



**Note 1** — Thermal output is determined per IEEE 515-1997 Standard for testing, design installation, and maintenance of electrical resistance heat tracing section 4.1.11 Method C.

#### Output Wattage at Alternate Voltages (W/Ft.)

Model	208V	% Change In Output	220V	% Change In Output	277V	% Change In Output
SRF 3	2.4	-20	2.6	-13	3.4	+15
SRF 5	4.1	-18	4.5	-10	5.6	+13
SRF 8	6.88	-14	7.28	-9	8.96	+12

#### Circuit Breaker Selection (Max. Circuit Lengths in Ft.)

Cable Rating	40°F Start-Up (Ft.)			0°F Start-Up (Ft.)		
	20A	30A	40A	20A	30A	40A
SRF 3-1C	350	360	NR	270	360	NR
SRF 3-2C	660	NR	NR	555	660	NR
SRF 5-1C	230	270	NR	180	270	NR
SRF 5-2C	450	540	NR	360	540	NR
SRF 8-1C	180	215	NR	145	215	NR
SRF 8-2C	330	420	420	265	395	420

**NR** = Not Required. Maximum circuit length has been reached in a smaller breaker size.

**Note** — Thermal magnetic circuit breakers are recommended since magnetic circuit breakers could "nuisance trip" at low temperature.

# Heating Cable

## SRF

### Self-Regulating Freeze Protection *(cont'd.)*

#### Ordering Information

Output (W/Ft.)	Volts	Model	Stock	PCN	Wt./1000' (Lbs.)
<b>Output at Rated Voltage</b>					
3 @ 50°F	120	<b>SRF 3-1C</b>	<b>S</b>	<b>386943</b>	53
	208 - 277	<b>SRF 3-2C</b>	<b>S</b>	<b>386951</b>	53
5 @ 50°F	120	<b>SRF 5-1C</b>	<b>S</b>	<b>386960</b>	53
	208 - 277	<b>SRF 5-2C</b>	<b>S</b>	<b>386978</b>	53
8 @ 50°F	120	<b>SRF 8-1C</b>	<b>S</b>	<b>386986</b>	53
	208 - 277	<b>SRF 8-2C</b>	<b>S</b>	<b>386994</b>	53
<b>With Optional Overcoat (CR)</b>					
3 @ 50°F	120	<b>SRF 3-1CR</b>	<b>S</b>	<b>386100</b>	64
	208 - 277	<b>SRF 3-2CR</b>	<b>S</b>	<b>386118</b>	64
5 @ 50°F	120	<b>SRF 5-1CR</b>	<b>S</b>	<b>386142</b>	64
	208 - 277	<b>SRF 5-2CR</b>	<b>S</b>	<b>386150</b>	64
8 @ 50°F	120	<b>SRF 8-1CR</b>	<b>S</b>	<b>386062</b>	64
	208 - 277	<b>SRF 8-2CR</b>	<b>S</b>	<b>386070</b>	64

#### Accessories

Accessories		DL	EL
Power Connection	Heat trace to electrical service connection	RTPC	RT-JBC-1
Splice & Tee		RTST	RT-RST
End Seal	For terminating cable	RTES	RT-RES
Thermostat	Ambient air sensing thermostat	RTAS	B-100/B-121
	Line sensing mechanical thermostat	RTBC	E-100/E-121
	Line sensing electronic thermostat	RTSS	N/A

**To Order** — General Application & Installation Accessories such as tape, pipe straps, warning labels, etc., refer to the DL & EL General Application Accessories page at the end of this section.

#### Ordering Information

**To Order** — Complete the Model Number using the Matrix provided.

Model	Self-Regulating Medium Temperature		
<b>SRF</b>	Self-Regulating, Freeze Protection Heating Cable		
	<b>Code</b>	<b>Output (W/Ft.)</b>	
	<b>3</b>	Three	
	<b>5</b>	Five	
	<b>8</b>	Eight	
	<b>Code</b>	<b>Voltage</b>	
	<b>1</b>	120	
	<b>2</b>	208 - 277	
	<b>Code</b>	<b>Braid and Overcoat Options</b>	
	<b>C</b>	Standard tinned-copper metallic braid for additional protection and ground path	
	<b>CR</b>	TPR overjacket over braid for protection against certain inorganic chemical solutions	
<b>SRF</b>	<b>5</b>	<b>1</b>	<b>C</b>
			<b>Typical Model Number</b>

FREEZE PROTECTION