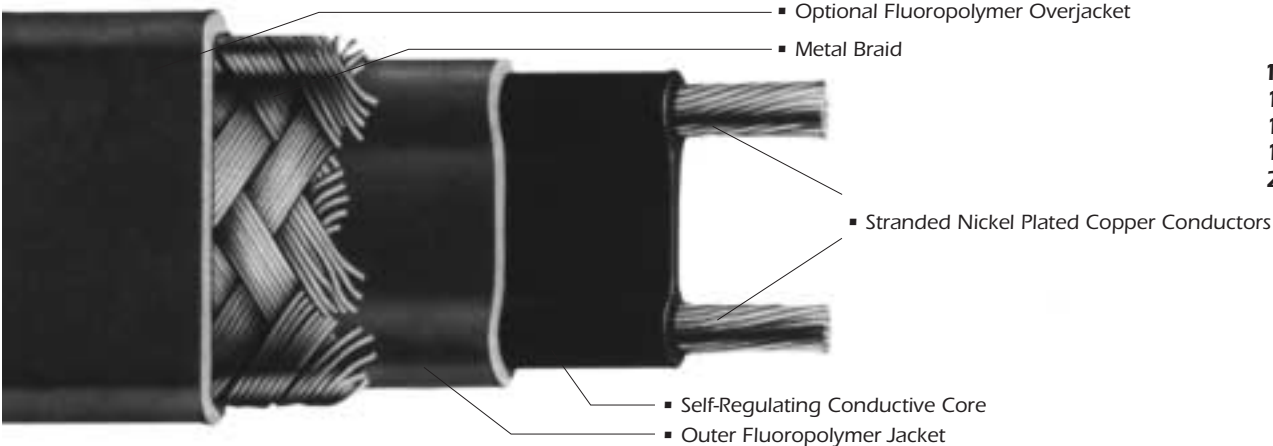


SERGE BARIL SCS

SELF-REGULATING HEATER CABLE

SPECIFICATION/APPLICATION INFORMATION



3 SCS-1B	3 SCS-2B
5 SCS-1B	5 SCS-2B
8 SCS-1B	8 SCS-2B
10 SCS-1B	10 SCS-2B
12 SCS-1B	12 SCS-2B
15 SCS-1B	15 SCS-2B
18 SCS-1B	18 SCS-2B
20 SCS-1B	20 SCS-2B



Description:

Serge Baril Type SCS self-regulating heater cable is a parallel circuit electric heater strip. A conductive fluoropolymer core material is extruded over the multi-stranded,

nickel-plated, 16-gauge copper bus wires. A fluoropolymer jacket provides excellent dielectric strength, moisture resistance, protection from impact and abrasion damage, and a wide range of chemical resistance.

A metal braid is required on all

heaters (tinned copper for ordinary or hazardous areas and Stainless steel for mechanical abuse situations). An optional fluoropolymer overjacket can be specified when the heater cable is to be installed in wet or corrosive environments.

Principle of Operation:

The parallel bus wires apply voltage along the entire length of the heater cable. The conductive core provides a continuous parallel heating element permitting the cable to be cut to any length in the field with no dead or cold zones developing. The heater cable derives its self-regulating characteristic from the inherent properties of the

conductive core material. As the core material temperature increases, the number of conductive paths in the core material decreases, automatically decreasing the heat output. As the temperature decreases, the number of conductive paths increases, causing the heat output to increase. This occurs at every point along the length of

the cable, adjusting the power output to the varying conditions along the pipe.

The self-regulating effect allows the cable to be overlapped without creating hot spots or burnout. As the cable self-regulates its heat output, it limits the maximum sheath temperature, while also providing useful power for process temperature maintenance.

Application:

Serge Baril type SCS self-regulating heater cable is ideal for maintaining fluid flow over a wide range of operating temperatures. The product is used for freeze protection of periodically steam (200 psig) cleaned pipes and temperature maintenance for 250°F or lower processes. Typical applications include hydrocarbon and chemical product piping.

The tinned copper metal braid allows use in dry non-corrosive, hazardous (classified) areas, or in ordinary areas.

Options: (replace -B by:)

-SS A stainless steel metal braid is available for use in dry, corrosive areas where mechanical abuse is a problem. Stainless steel metal braid is not recommended for use as a conductive ground path.

-BT A tinned copper metal braid with a fluoropolymer overjacket is available for use when the heater cable is exposed to excessive moisture, organic chemicals, solvents, etc. in hazardous (classified) areas and ordinary areas.



Performance and Rating Data:

T-Rating: Electrical equipment T-Rating codes define the maximum surface temperature that equipment will reach. It is used in hazardous (classified) area applications. All the SCS family of heaters has a T3 rating.

Maximum maintain temperature: 250°F (121°C)

Maximum exposure temperature:

- Energized 250°F (121°C)
- Intermittent power off 375°F (190°C)

Circuit breaker selection: The circuit breaker is sized based on the maximum length (feet or meters) of cable that may be connected. The maximum heater segment is the longest length of heater allowable between the power connection point and the end seal. More than one segment may be connected to a single breaker as long as the maximum heater length per breaker size is not exceeded.

SCS	Max. Length Vs. Circuit Breaker Size																			
	120 Volt				Max. segment length	240 Volt				Max. segment length										
	15 AMP		20 AMP			30 AMP		40 AMP												
ft	m	ft	m	ft	m	ft	m	ft	m	ft	m									
3	295	89.9	395	120.4	590*	179.9*	790*	240.9*	395	120.4	585	178.4	785	239.3	1170*	356.7*	1570*	478.7*	785	239.3
5	185	56.4	245	74.7	370*	112.8*	490*	149.4*	310	94.5	385	117.4	500	152.4	770*	234.8*	1000*	304.9*	620	189.0
8	145	44.2	195	59.5	290*	88.4*	390*	118.9*	225	68.6	290	88.4	390	118.9	580*	176.8*	780*	237.8*	460	140.2
10	115	35.1	150	45.7	230*	70.1*	300*	91.5*	190	57.9	225	68.6	300	91.5	450*	137.2*	600*	182.9*	375	114.3
12	100	30.5	135	41.2	200*	61.0*	270*	82.3*	170	51.8	200	61.0	265	80.8	400*	122.0*	530*	161.6*	335	102.1
15	80	24.4	110	33.5	160*	48.8*	220*	67.1*	135	41.2	160	48.8	215	65.5	320*	97.6*	430*	131.1*	270	82.3
18	75	22.9	100	30.5	150*	45.7*	200*	61.0*	125	38.1	145	44.2	195	59.5	290*	88.4*	390*	118.9*	245	74.7
20	65	19.8	85	25.9	130*	39.6*	170*	51.8*	105	32.0	125	38.1	170	51.8	250*	76.2*	340*	103.7*	210	64.0

*These lengths exceed the maximum segment length and require more than one segment per breaker. For longer maximum circuit lengths under specific applications, consult the factory.

- Notes:**
1. Circuit Breakers are sized per article 427-4 of N.E.C. and are based on start-up temperatures between -40°F and 50°F (-40°C and 10°C).
 2. When using 240 volt product at 208, 220, or 277 volts, use the circuit adjustment factors shown in the voltage adjustment table.
 3. When using 2 or more heater cables of different wattage ratings in parallel on a single circuit breaker, use the 15A column amperage, divide it by the maximum length to arrive at an amps/foot (amps/meter) figure for each cable. You can then calculate the circuit breaker sizes for these combination loads. These include the N.E.C. sizing factor in Article 427-4.

CAUTION: To minimize the danger of a wet wire fire (arcing fault) if the heating cable is damaged or improperly installed, both the Canadian and the National Electrical Code (NEC 1996) require the use of a ground fault protection device (GFPD) at all times in conjunction with the installation of heat tracers.

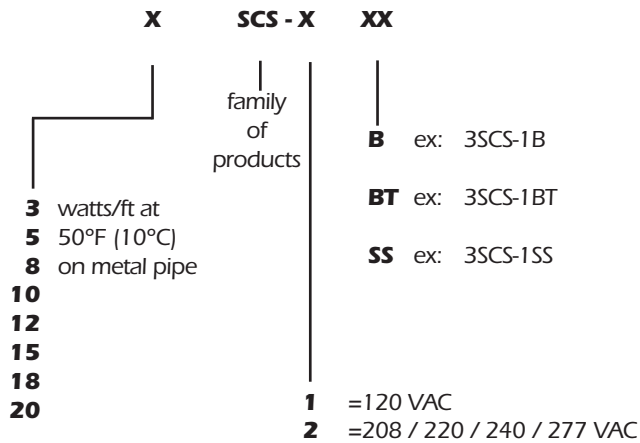


SERGE BARIL SCS

SELF-REGULATING HEATER CABLE

SPECIFICATION/APPLICATION INFORMATION

HEATER SELECTION CATALOG NUMBER



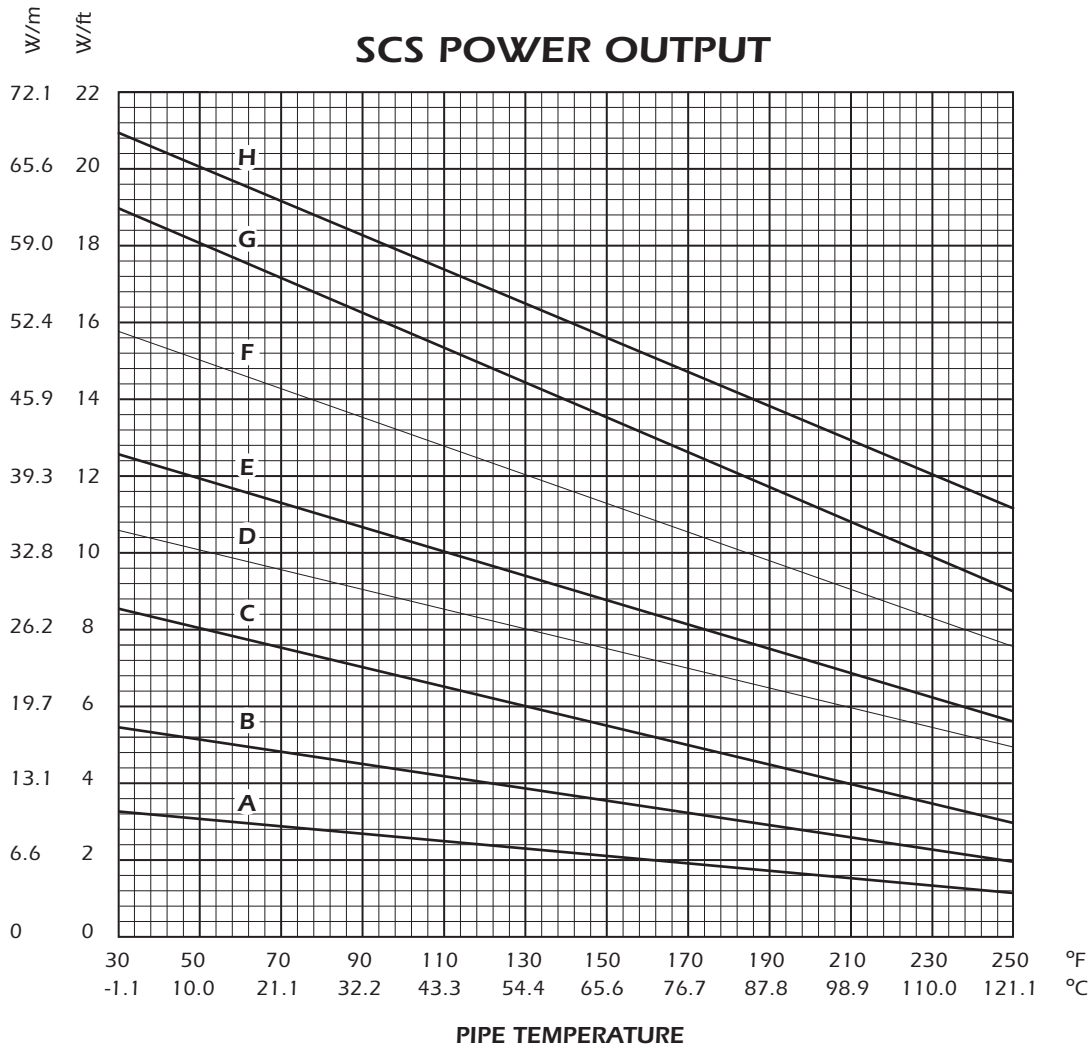
Typical applications

Heater with copper braid (non corrosive areas)

- Pipe freeze protection
- Tank freeze protection
- Maintain temperature on product pipelines

Heater with copper braid and fluoropolymer overjacket (corrosive areas)

- Same as with copper braid



Voltage Adjustment:

Use of these products at other than rated voltages require minor adjustments in power and maximum circuit lengths.


Product	ADJUSTMENT MULTIPLIER						Absolute max. segment length*	
	208 VAC		220 VAC		277 VAC		ft	m
	Power	Length	Power	Length	Power	Length		
3SCS-2	.74	.93	.84	.96	1.30	1.07	785	239.3
5SCS-2	.76	.93	.85	.96	1.29	1.07	620	189.0
8SCS-2	.78	.93	.86	.96	1.25	1.07	460	140.2
10SCS-2	.80	.93	.88	.96	1.23	1.07	375	114.3
12SCS-2	.81	.93	.88	.96	1.21	1.07	335	102.1
15SCS-2	.83	.93	.89	.96	1.19	1.02	270	82.3
18SCS-2	.85	1.01	.91	1.00	1.18	1.00	245	74.7
20SCS-2	.88	1.00	.93	1.00	1.15	1.00	210	64.0

*For longer maximum circuit lengths under specific applications, consult the factory.

Approvals:


FM

Ordinary Locations
(with -B, -SS, or -BT options)
Hazardous (Classified) Locations
(with -B or -BT options)
Class I; Division 2; Groups B, C, D
Class II; Division 1; Zone I;
Group IIC;
Class II; Division 2; Group G;
Class III; Division 2
(D1 - option)
Class I;
Division 1;
Groups B, C, D




CSA

Ordinary Locations
(with -B, or -BT options)
Hazardous (Classified) Locations
(with -B or -BT options)
Class I; Division 2;
Groups B, C, D
Class II; Division 2;
Groups E, F, G Class III;
Division 2
(-BT option)
Class I;
Division 1
Groups B, C, D



UL

Ordinary Locations
(with -B or -BT options)
Hazardous (Classified) Locations
(with -B or -BT options)
Class I; Division 2;
Groups A, B, C, D
Class II; Division 2;
Groups F, G Class I; Zone 2
Group IIC
(D1 option)
Class I;
Division 1
Groups B, C, D



Accessories

- Connection Kits for Power Connection, Tee Splice, Splice and End Seal (PST, AL-PST, SS-PST, HA Series)
- Thermostatic Controls (Ambient, or Line Sensing)
- Junction Boxes, Tapes and Warning Signs
- Custom Control Monitoring and Power Panels

We are pleased to offer suggestions on the use of our various products, nevertheless, there are no warranties given except such expressed warranties offered in connection with the sale of a particular product. There are no implied warranties of merchantability or of fitness for a particular purpose given in connection with the sale of any goods. In no event shall Serge Baril be liable for consequential, incidental or special damages. The Buyer's sole and exclusive remedy and the limit of Serge Baril's liability for any loss whatsoever shall not exceed the purchase price paid by the Purchaser for the product or products to which a claim is made.

SERGE BARIL HEAT TRACING

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