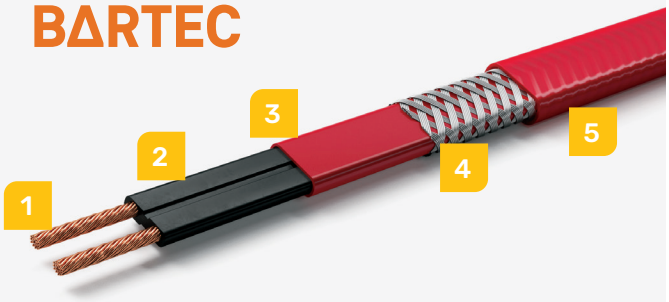
MSB
MEDIUM-TEMPERATURE SELF-REGULATING HEATING CABLE



Construction

1. Bus wire/conductor: nickel-plated copper, 16AWG
2. Self-regulating polymer heating element
3. Insulation jacket, fluoropolymer
4. Nickel-plated copper braid
5. Fluoropolymer (CT) outer jacket

CT: A fluoropolymer protective outer jacket is recommended for harsh environments involving organic chemicals or corrosives.

Product Overview

The MSB is an industrial grade, self-regulating heating cable that can be used for freeze protection or temperature maintenance up to 110°C (230°F). It can be cut to length on site, and exact piping lengths can be matched without any complicated design considerations. The MSB is approved for use in non-hazardous, hazardous and corrosive environments to worldwide standards. Installation is quick and simple and requires no special skills or tools. Termination, splicing and power connection components are all provided in convenient kits.

Application

- Freeze protection, heat tracing instrumentation, pipes, vessel and tanks
- Chemical and petrochemical industry
- For hazardous and non-hazardous locations
- Wet rated for outdoor use
- UV rated

Features

Nominal voltage

- HSB1: 120V (110V-120V)
- HSB2: 240V (208-254V)

Power output

- +10°C (+50°F): 3-20W/ft.

Max. continuous exposure temp. (power off)

- Continuous: 110°C (230°F)
- Power off for 1000hr cumulative: 130°C (266°F)

Max. operating temp. (power on)

- 110°C (230°F)

Min. start-up temp.

- -60°C (-76°F)

Min. installation temp.

- -60°C (-76°F)

Min. bending radius

- 1in. (25mm)

Ratings

Classification

- CSA Class I, Division 2, Groups A, B, C, D
- CSA Class II, Division 2, Groups E, F, G
- CSA Class III, T4 3MSB, 5MSB
- Class III, T3 10MSB, 15MSB, 20MSB
- Ex 60079-30-1 IIC T3, T4 Gb
- Ex 60079-30-1 IIIC T170 °C, T130 °C Db

Certification

- CSA C US 1862457
- IECEx DEK 17.0004U

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Models

Nominal output W/ft.	Cable dimension approx. (in.)	Cable dimension approx. (mm)	Product #	
			240V [1, 2, 3]	120V [1, 3]
3	0.4 × 0.19	10.2 × 4.8	3MSB2-CT	3MSB1-CT
5	0.4 × 0.19	10.2 × 4.8	5MSB2-CT	5MSB1-CT
10	0.4 × 0.19	10.2 × 4.8	10MSB2-CT	10MSB1-CT
15	0.4 × 0.19	10.2 × 4.8	15MSB2-CT	15MSB1-CT
20	0.4 × 0.19	10.2 × 4.8	20MSB2-CT	20MSB1-CT

[1] *CT Protective braid and a fluoropolymer outer jacket*
[2] *For operation at 208V, please refer to the Bartec correction factors/multipliers.*
[3] *When ordering, the quantity on the purchase order is equal to the length in feet of the cable required of the cable required. E.g., to order a 500ft. cable, write 500 for quantity with product code.*

Accessories

See Accessories section.

Heating circuit length

The following table shows the maximum circuit length in feet for the different MSB trace heater types with standard circuit breaker amperages. Breaker sizes should be based on the National Electrical Code, Canadian Electrical Code or any other local or applicable code. Use only circuit breakers with type C tripping characteristics.

Start-up temperature	Circuit breaker capacity[1] (A)	Maximum heating circuit (ft.) for									
		240V					120V				
		3MSB2	5MSB2	10MSB2	15MSB2	20MSB2	3MSB1	5MSB1	10MSB1	15MSB1	20MSB1
10°C (50°F)	20	755	538	302	220	171	394	279	157	115	89
	30	761	627	443	276	253	394	322	226	138	128
	40	761	627	443	276	253	394	322	226	138	128
-18°C (0°F)	20	646	469	259	190	148	338	243	135	98	79
	30	761	627	390	276	223	394	322	203	138	118
	40	761	627	443	276	253	394	322	226	138	128
-29°C (-20°F)	20	614	446	246	180	141	322	233	128	95	75
	30	761	627	371	272	210	394	322	194	138	112
	40	761	627	443	276	253	394	322	226	138	128
-40°C (-40°F)	20	584	427	236	174	135	305	322	121	92	72
	30	761	627	354	259	200	394	322	184	135	105
	40	761	627	443	276	253	394	322	226	138	128

[1] *Breaker sizes should be based on the National Electrical Code, Canadian Electrical Code or any other applicable code. The NEC and CEC require ground-fault protection of equipment for each branch circuit supplying electric heating equipment. Check local codes for ground-fault protection requirements.*

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Bartec correction factors/multipliers for operation of heating cables at 208V and 277V

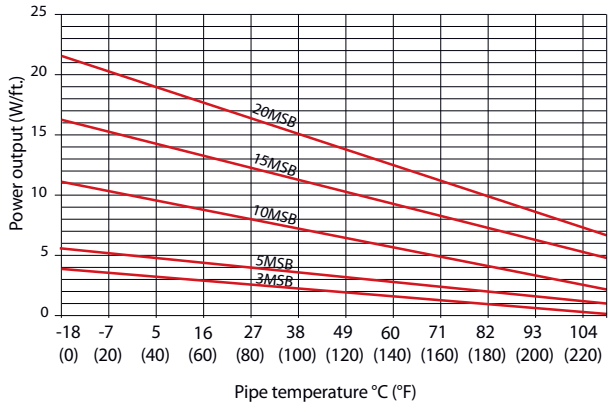
To calculate the corrected power output for operation at 208V or 277V, multiply the published output at 240V (in W/ft.) by the nominal output factor provided for the applicable heating cable type.

To calculate maximum heating circuit lengths for operation at 208V or 277V (tables provided in product data sheets), multiply the published max. heating circuit length at 240V provided for the applicable heating cable type

Adjustment factors	Heating cable correction factors/ Multipliers	Nominal output	Heating circuit length
208V	3MSB2	0.83	0.99
	5MSB2	0.85	0.98
	10MSB2	0.92	0.94
	15MSB2	0.95	0.93
	20MSB2	0.97	0.91
277V	3MSB2	1.37	1.03
	5MSB2	1.31	1.05
	10MSB2	1.19	1.02
	15MSB2	1.15	1.12
	20MSB2	1.09	1.13

Power output 120V/240V under nominal conditions

(on insulated steel pipes)



Maximum heating circuit in the following conditions:

- 120/240V
- Voltage drop max. 10%
- Single cable fed 1 end