

# BSX™ Self-Regulating Heating Cable

## Product Specifications

### Application . . .

#### Freeze Protection or Process Temperature Maintenance

BSX self-regulating heating cables are designed to provide freeze protection or process temperature maintenance to metallic and nonmetallic piping, tanks and equipment.

The heat output of BSX cable varies in response to the surrounding conditions along the entire length of a circuit. Whenever the heat loss of the insulated pipe, tank or equipment increases (as ambient temperature drops), the heat output of the cable increases. Conversely, when the heat loss decreases (as the ambient temperature rises or product flows), the cable reacts by reducing its heat output. This self-regulating feature allows BSX to be overlapped without temperature upset damage to the cable.

BSX cables are approved for use in ordinary (nonclassified) areas and are certified to the ATEX directive for use in Category 2 and 3 (Zone 1 and 2) classified areas.

### Ratings . . .

Available Watt densities .....	9, 15, 25, 32 W/m at 10°C
Nominal supply voltage <sup>1</sup> .....	230 Vac
Maximum maintenance temperature .....	65°C
Maximum continuous exposure temperature	
Power-off .....	85°C
Minimum installation temperature .....	-60°C
Minimum bend radius .....	32 mm
T-rating <sup>2</sup>	
9, 15, 25 W/m .....	T6 85°C
32 W/m .....	T5 100°C
Based on stabilised design <sup>3</sup> .....	T6 85°C

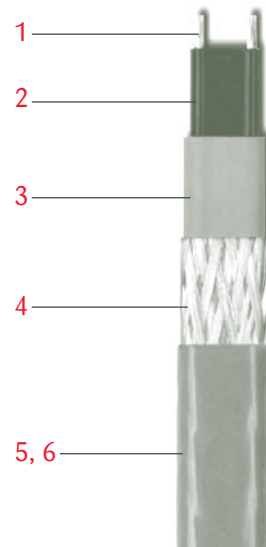
### Basic Accessories<sup>4</sup> . . .

**Power Connection:** All BSX cables require a TBX-4L power boot for terminating the circuit before connecting to power.

**End-of-Circuit Termination:** All BSX cables require the use of the ET-6 end cap for terminating at the end of the circuit.

### Notes . . .

1. Cable may be energised at other voltages; contact Thermon for design assistance.
2. T-rating per internationally recognised testing agency guidelines.
3. Thermon heating cables are approved for the listed T-ratings using the stabilised design method. This enables the cable to operate in hazardous areas without limiting thermostats. The T-rating may be determined using CompuTrace® Electric Heat Tracing Design Software or contact Thermon for design assistance.
4. Information on additional accessories to complete a heater circuit installation and to comply with approval requirements can be found in the "Self-Regulating Cables Systems Accessories" product specification sheet (Form TEP0010U).



### Construction . . .

- 1 Nickel-Plated Copper Bus Wires (1.3 mm<sup>2</sup>)
- 2 Radiation Cross-Linked Semiconductive Heating Matrix
- 3 Radiation Cross-Linked Dielectric Insulation
- 4 Tinned Copper Braid
- 5 Polyolefin overjacket provides additional protection where exposure to aqueous inorganic chemicals is expected.

### Options . . .

- 6 FOJ Fluoropolymer overjacket provides additional protection where exposure to organic chemicals or corrosives is expected.

### Product Features . . .

- Withstands continuous flammability testing according to IEC 60332-1: 1993 (only FOJ version)
- Allows cable to be installed at temperatures to -60°C
- Termination for system tested for ozone stability, UV stability and flammability testing according to ISO/IEC requirements



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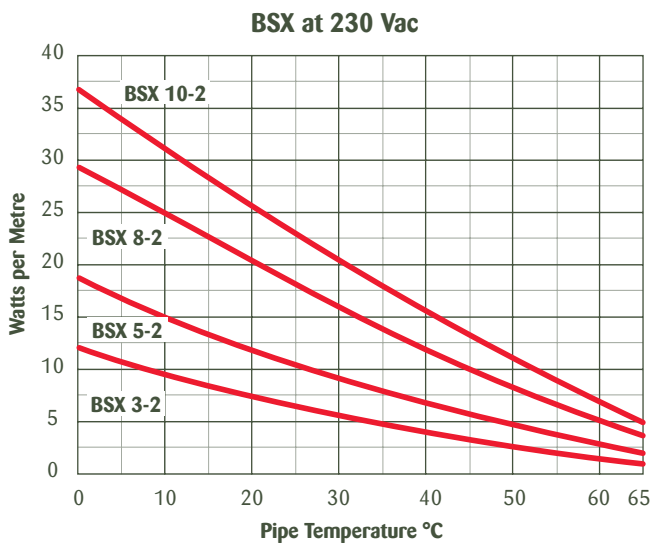
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**Power Output Curves . . .**

The power outputs shown apply to overjacketed cable installed on insulated metallic pipe at the service voltage stated below.

Product Type 230 Vac Nominal	Power Output at 10°C W/m
BSX 3-2	9
BSX 5-2	15
BSX 8-2	25
BSX 10-2	32



**Certifications/Approvals . . .**

**CENELEC** European Organisation for Electrotechnical Standardisation  
Hazardous (Classified) Locations

**CE Ex** II 2 G/D Ex e II T5 or T6 DEMKO 02 ATEX 0132424

**IEC Ex** International Electrotechnical Commission  
IEC Certification Scheme for Explosive Atmospheres  
UL 06.0013

**FM Approved** Factory Mutual Research  
Hazardous (Classified) Locations

**UL LISTED** Underwriters Laboratories Inc.  
Hazardous (Classified) Locations

BSX has additional hazardous area approvals including:

- DNV • Lloyd's • JIS • CCE/CMRS • GGTN

Contact Thermon for additional approvals and specific information.



**Circuit Breaker Sizing and Type¹ . . .**

Maximum circuit lengths for various circuit breaker amperages are shown below. Circuit breaker sizing and earth-fault protection should be based on applicable local codes. For information on design and performance on other voltages, contact Thermon.

Earth-fault protection of equipment should be provided for each branch circuit supplying electric heating equipment.

**Type B Circuit Breakers**

Product Type	230 Vac Service Voltage	Start-Up Temperature² °C	Max. Circuit Length³ vs. Breaker Size Metres		
			16 A	25 A	32 A
BSX 3-2		10	191	226	226
		0	191	226	226
		-20	156	226	226
		-40	127	199	226
BSX 5-2		10	117	184	184
		0	117	184	184
		-20	98	153	184
		-40	80	125	160
BSX 8-2		10	93	146	146
		0	93	146	146
		-20	74	116	146
		-40	61	95	122
BSX 10-2		10	67	105	120
		0	58	91	117
		-20	45	71	91
		-40	37	58	75

**Type C Circuit Breakers**

Product Type	230 Vac Service Voltage	Start-Up Temperature² °C	Max. Circuit Length³ vs. Breaker Size Metres		
			16 A	25 A	32 A
BSX 3-2		10	191	226	226
		0	191	226	226
		-20	156	226	226
		-40	127	199	226
BSX 5-2		10	117	184	184
		0	117	184	184
		-20	98	153	184
		-40	80	125	160
BSX 8-2		10	93	146	146
		0	93	146	146
		-20	78	122	146
		-40	64	100	128
BSX 10-2		10	77	120	120
		0	75	117	120
		-20	59	92	118
		-40	48	75	96

**Note . . .**

1. Maximum circuit lengths shown are based on an instantaneous trip current characteristic per IEC 60898 at the referenced start-up temperature and a 10°C maintenance temperature. For maximum circuit lengths with other trip current characteristics contact Thermon.
2. While a heat tracing system is generally designed to keep the contents of a pipe at the desired maintain temperature, the cable may be energized at lower temperatures. For design data with lower start-up temperatures than represented above contact Thermon for design assistance.
3. The maximum circuit length is for one continuous length of cable, not the sum of segments of cable. Refer to CompuTrace® design software or contact Thermon for current loading of segments.