

# KSX™ Self-Regulating Heating Cable

## Product Specifications

### Application . . .

#### Process Temperature Maintenance or Freeze Protection

High performance KSX self-regulating heating cables are designed specifically for high heat loss freeze protection applications or process temperature maintenance where steam cleaning is not required.

The heat output of KSX cable varies in response to the surrounding temperature by reducing its thermal output with increasing temperature.

KSX cables are certified for use in ordinary (nonclassified) areas and in potentially explosive atmospheres in accordance with the ATEX Directive and the IEC Ex Scheme.

### Ratings . . .

Available watt densities .....	15, 31, 48, 64 W/m @ 10°C
Nominal supply voltages <sup>1</sup> .....	230 Vac
Max. maintenance or exposure temperature	
Continuous power-on .....	121°C
Minimum installation temperature .....	-60°C
Minimum bend radius	
@ -15°C .....	10mm
@ -60°C .....	32 mm
T-rating based on stabilized design <sup>2</sup> .....	T3 to T6

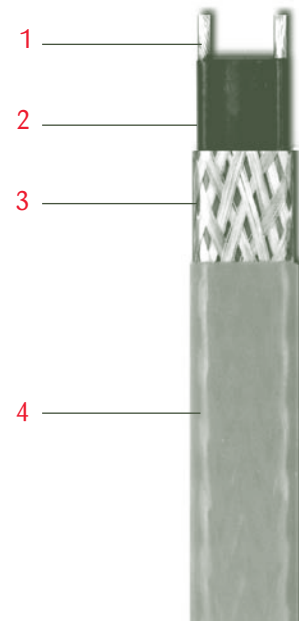
### Basic Accessories<sup>3</sup> . . .

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

**End-of-Circuit Termination:** KSX cables require the ET-8 end cap and ET-80 overcap for terminating at the end of the circuit.

### Notes . . .

1. Cable may be energised at other voltages; contact Thermon for design assistance.
2. 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.
3. 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 Semiconductive Heating Matrix and Fluoropolymer Dielectric Insulation
- 3 Tinned Copper Braid
- 4 Fluoropolymer overjacket provides additional protection to cable and braid where exposure to chemicals or corrosives is expected.

### Product Features . . .

- Withstands continuous flammability testing according to IEC 60332-1: 1993
- Can be installed at temperatures to -60°C



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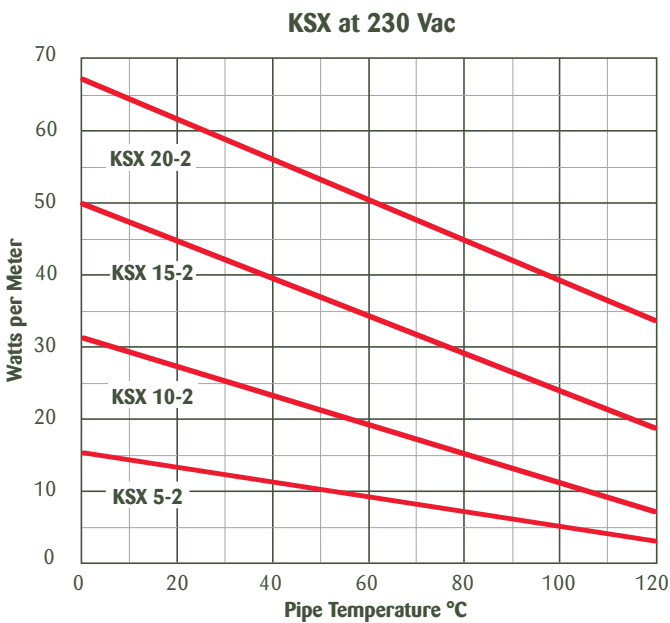
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### Power Output Curves . . .

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
KSX 5-2	15
KSX 10-2	31
KSX 15-2	48
KSX 20-2	64



### Certifications/Approvals . . .

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

**CE** **Ex** II 2 G Ex e II T3 to T6, II 2 D Ex tD A21 IP66/IP67  
T200°C to T85°C FM 07ATEX0027

**IEC Ex** International Electrotechnical Commission  
IEC Certification Scheme for Explosive Atmospheres  
FMG 06.0009

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

KSX has additional hazardous area approvals including:

• DNV • Lloyd's • CCE • ABS • FSTN • GOST

Contact Thermon for additional approvals and specific information.

### Circuit Breaker Sizing and Type<sup>1</sup> . . .

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

230 Vac Service Voltage Product Type	Start-Up Temperature <sup>3</sup> °C	Max. Circuit Length <sup>4</sup> vs. Breaker Size Meters		
		16A	25A	32A
KSX 5-2	10	114	167	167
	0	114	167	167
	-20	112	167	167
	-40	94	160	167
KSX 10-2	10	76	117	117
	0	76	117	117
	-20	73	117	117
	-40	64	106	117
KSX 15-2	10	47	77	94
	0	45	74	94
	-20	41	67	89
	-40	37	60	79
KSX 20-2	10	34	55	73
	0	33	52	69
	-20	30	48	62
	-40	27	43	57

#### Type C Circuit Breakers

230 Vac Service Voltage Product Type	Start-Up Temperature <sup>3</sup> °C	Max. Circuit Length <sup>4</sup> vs. Breaker Size Meters		
		16A	25A	32A
KSX 5-2	10	114	167	167
	0	114	167	167
	-20	113	167	167
	-40	95	163	167
KSX 10-2	10	76	117	117
	0	76	117	117
	-20	75	117	117
	-40	66	109	117
KSX 15-2	10	47	77	94
	0	47	77	94
	-20	47	76	94
	-40	42	69	91
KSX 20-2	10	39	64	81
	0	39	64	81
	-20	36	59	78
	-40	33	53	70

#### 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.

