



# PRODUCT DATASHEET

## KSX™

### SELF-REGULATING HEAT TRACING

#### APPLICATION

High performance KSX self-regulating trace heaters 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 varies in response to the surrounding temperature by reducing its thermal output with increasing temperature.

KSX is certified for use in ordinary (nonclassified) areas and in potentially explosive atmospheres in accordance with the ATEX Directive and the IECEx Scheme.

#### RATINGS

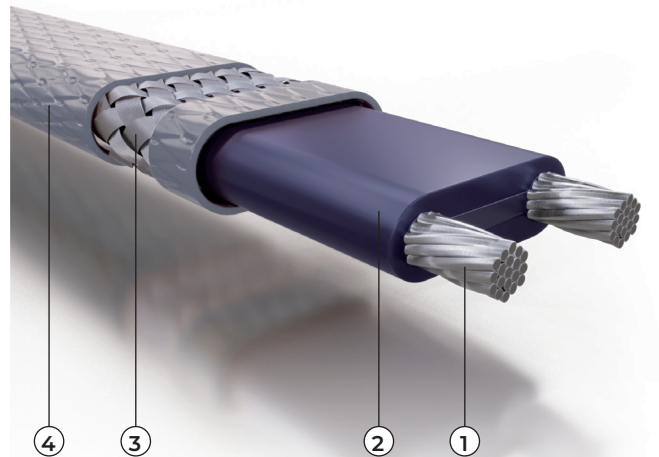
Available watt densities ..... 15, 32, 48, 64 W/m @ 10°C  
 Nominal supply voltages <sup>1</sup> ..... 230 Vac  
 Max. maintenance or exposure temperature  
 Continuous power-on ..... 121°C  
 Minimum installation temperature ..... -60°C  
 Minimum bend radius  
 @ -15°C ..... 10 mm  
 @ -60°C .....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

#### Notes

1. May be energised at other voltages; contact Thermon for design assistance.
2. Thermon trace heaters are approved for the listed T-ratings using the stabilised design method. This enables the trace heater 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.

#### Specific Conditions of Use:

1. Heat tracing systems must be installed using the manufacturer's suitably rated accessory kits in accordance with the applicable instructions.
2. For insulated externally heated surfaces, lower T- class systems may be obtained by utilizing stabilized design of a trace heating system using methods described in IEC 60079-30-2, using CompuTrace® Electric Heat Tracing Design Software or by Thermon Engineering. The system design parameters, including the resulting T-class, shall be retained as a record of system documentation for each stabilized system design for as long as the system is in use. The parameters in the system documentation shall be checked during commissioning of the system.



#### 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 core, insulation, and braid where exposure to chemicals or corrosives is expected.

#### BASIC ACCESSORIES

Thermon offers system accessories designed specifically for rapid, trouble-free installation of Thermon heat tracing.

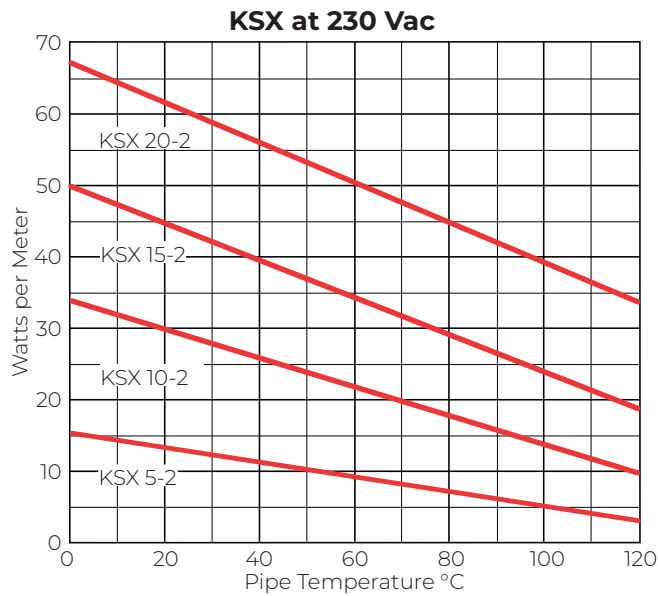
All trace heaters require a connection kit to comply with approval requirements.



**POWER OUTPUT CURVES<sup>1</sup>**

The power outputs shown apply to trace heater installed on insulated metallic pipe (using the procedures outlined in IEC/IEEE 60079-30-1) at the service voltages stated below. For use on other service voltages, contact Thermon.

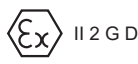
Product Type 230 Vac Nominal	Power Output at 10°C W/m
KSX 5-2	15
KSX 10-2	32
KSX 15-2	48
KSX 20-2	64



**CERTIFICATIONS/APPROVALS**



CSANe 20ATEX3059  
 IECEx CSA 20.0006



Ex 60079-30-1 IIC T\* Gb  
 Ex 60079-30-1 IIIC T& Db

\*T6 to T3 for EPL Gb; T85°C to T200°C for EPL Db

Contact Thermon for additional approvals and specific information.

**CIRCUIT BREAKER SIZING AND TYPE<sup>2</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>2</sup> °C	Max. Circuit Length <sup>3</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>2</sup> °C	Max. Circuit Length <sup>3</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

**Notes**

- For more precise power output values as a function of pipe temperature, refer to CompuTrace®.
- 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.
- While a heat tracing system is generally designed to keep the contents of a pipe at the desired maintain temperature, the trace heater may be energized at lower temperatures. For design data with lower start-up temperatures than represented above contact Thermon for design assistance.
- The maximum circuit length is for one continuous length of trace heater, not the sum of segments of trace heater. Refer to CompuTrace® design software or contact Thermon for current loading of segments.