



APPLICATION: SNOW AND ICE MELTING

KSR self-regulating heating cables are an integral part of Thermon's SnoTrace™ snow and ice melting systems. Designed and approved specifically for direct burial, KSR cable withstands the abuse encountered during concrete placement.

The self-regulating heat output of KSR cable varies in response to the surrounding concrete temperatures. When the concrete is at or below freezing temperatures, KSR will deliver the maximum power output. As the concrete warms up, the power output of the cable will decrease. Energy efficiency can be accomplished without special or sophisticated controls.

KSR cables are approved for use in ordinary (nonclassified) areas and are IECEx and ATEX certified for use in Category 2 and 3 (Zone 1 and 2) classified areas.

EASY TO DESIGN AND INSTALL

Determining the circuit layout of KSR cable for a snow and ice melting system is easy. With cut-to-length parallel circuitry, KSR cables are easily adapted to variations in design found at the job site. This can reduce or eliminate the need to redesign circuits off-site without details or sufficient time to react.

Installing and terminating the cable is easy. Simply unreel the amount of cable needed for the area/circuit and terminate with Thermon circuit fabrication kits and accessories. Power connection, end termination and expansion joint kits are all designed specifically for the demanding application.

CHARACTERISTICS

Minimum bend radius	32 mm
Supply voltage	230 Vac
Circuit protection	30 mA ground-fault protection
Max. continuous exposure temp	121°C
Minimum Installation Temperature	-60°C
T-rating ¹	230°C (T2)
Based on stabilized design ²	T3 to T6



CONSTRUCTION

- 1 Bus Wire 1,3 mm² Nickel-plated Copper
- 2 Semiconductive Heating Matrix
- 3 Fluoropolymer Insulation
- 4 Tinned Copper Braid
- 5 Silicone Rubber Outer Jacket

CERTIFICATIONS/APPROVALS



International Electrotechnical Commission
IEC Certification Scheme for Explosive Atmospheres
UL 16.0075X



Certificate DEMKO 04 ATEX 136794X
in accordance with the EU ATEX Directive 94/9/EC

Notes:

1. T-rating per internationally recognised testing agency guidelines. T2 T-rating is based on the product classification approach.
2. Lower T-ratings may be possible based on the stabilized design approach. Contact factory for design assistance.



KSR™ SELF-REGULATING HEATING CABLE

POWER OUTPUT CURVES

Power output shown applies to cable buried in concrete where the surface of the slab is 0°C. Contact Thermon for other conditions.

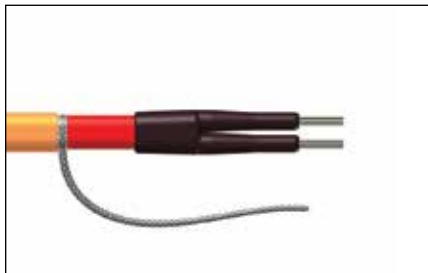
Product Type 230 Vac Nominal	Power Output Slab at 0°C W/m
KSR-2	90

PRODUCT FEATURES

- 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
- Meet or exceed the requirements of IEC 60079-30-1

BASIC ACCESSORIES

Power Connection: All KSR cables require a TBX-3L power connection boot for terminating the circuit before connecting to power. **End-of-Circuit Termination:** KSR cables require the ET-6 end cap for terminating at the end of the circuit.



KSR-CFK......circuit fabrication kit for use in hazardous and industrial areas. Terminates SX heating cables in a suitably rated and certified junction box. Kit includes a power boot, end cap, RTV adhesive, and yellow/green earth wire sleeve.



Terminator ZP-WP......kits are designed for rapid, trouble-free installation for use in harsh industrial environments and has an IP66 degree of protection. Features of the Terminator include:

- Minimum installation temperature -60°C
- Corrosion resistant
- UV resistant
- High impact resistant (7 joule at -60°C)
- Easy access to terminal block for wiring
- Snap-on DIN rail for permanent mounting
- Multiple cable entry capacity
- Independent sealing for each heating cable
- Built-in cable guide with power compression provides strain-relief of the cable.



Terminator ZP-Ambient......kits are designed to provide ambient sensing control of electric heat tracing circuits for freeze protection of piping and vessels. This thermostat can be used to control a heating circuit or as pilot control of a contactor switching multiple heat tracing circuits.

Features of the Terminator include:

- Minimum installation temperature -60°C
- Corrosion resistant
- UV resistant
- High impact resistant (7 joule at -60°C)
- Easy access to terminal block for wiring
- Snap-on DIN rail for permanent mounting
- Multiple cable entry capacity
- Independent sealing for each heating cable
- Built-in cable guide with power compression provides strain-relief of the cable.



KSR-EJK......expansion joint kits are designed to allow cable to cross a concrete expansion or construction joint. When installed, the kit will allow normal expansion and contraction of the substrate without straining or damaging the heating circuit. Easy-to-use kit includes a reinforced flexible sleeve and RTV adhesive.



Cable Glands non-metallic......polyamide cable glands used for inserting permanent circular and noncircular cables into the enclosure.

For more information see product specifications for Tracer Cable Glands non-metallic, form number TEP0161U and Power Cable Glands non-metallic, form number TEP0165U.



CL......vinyl-based peel-and-stick caution labels are intended for direct exposure to industrial environments. Additional languages are available; contact Thermon.

CIRCUIT BREAKER SIZING AND TYPE

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.

Type B Circuit Breakers

Product Type	Start-Up Temperature °C	Max. Circuit Length vs. Breaker Size Metres			
		16 A	25 A	32 A	40 A
KSR-2	0	30	47	62	70
KSR-2	-20	27	43	56	70

Type C Circuit Breakers

Product Type	Start-Up Temperature °C	Max. Circuit Length vs. Breaker Size Metres			
		16 A	25 A	32 A	40 A
KSR-2	0	31	50	65	70
KSR-2	-20	31	50	65	70