

# HTSX™

## Self-Regulating Heating Cable

### Product Specifications

#### Application . . .

##### Process Temperature Maintenance or Freeze Protection

HTSX self-regulating heating cables are designed specifically for process temperature maintenance or freeze protection where high temperature exposure capability is required. HTSX withstands the temperature exposures associated with steam purging.

The heat output of HTSX cable varies in response to the surrounding temperature. Variations in the ambient temperature or heat lost through the thermal insulation are compensated for automatically along the entire length of a heat-traced pipe.

HTSX 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...             | 9, 18, 27, 37, 48, 64 W/m @ 10°C |
| Nominal supply voltages <sup>1</sup>    | 230 Vac                          |
| Max. maintenance temperature            | 121°C                            |
| Max. exposure temperature               |                                  |
| Intermittent power-on                   | 215°C                            |
| Intermittent power-off                  | 250°C                            |
| Continuous power-off                    | 204°C                            |
| Minimum installation temperature        | -60°C                            |
| Minimum bend radius                     |                                  |
| @ -15°C                                 | 10 mm                            |
| @ -60°C                                 | 32 mm                            |
| T-rating <sup>2</sup>                   |                                  |
| HTSX 3-2, 6-2, 9-2, 12-2, 15-2          | T3                               |
| HTSX 20-2                               | T2                               |
| Based on stabilized design <sup>3</sup> | T3 to T6                         |

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

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

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

#### Notes . . .

- Cable may be energised at other voltages; contact Thermon for design assistance.
- T-rating per internationally recognised testing agency guidelines.
- 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.
- 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).

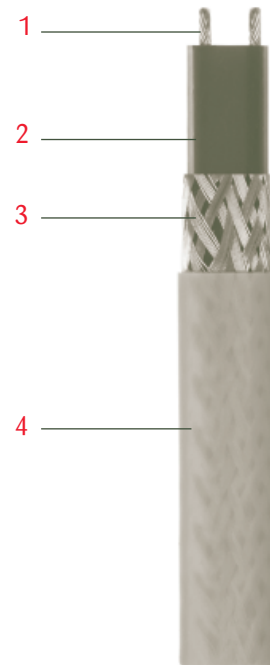
#### THERMON . . . The Heat Tracing Specialists®

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#### Construction . . .

- Nickel-Plated Copper Bus Wires (1.3 mm<sup>2</sup>)
- Semiconductive Heating Matrix and Fluoropolymer Dielectric Insulation
- Tinned Copper Braid
- 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



ISO 9001  
REGISTERED

# HTSX™

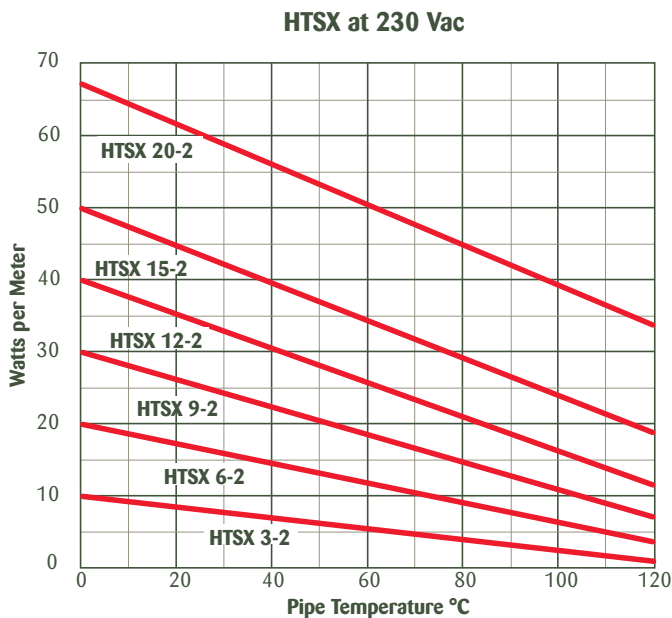
## Self-Regulating Heating Cable

## Product Specifications

### Power Output Curves<sup>1</sup> . . .

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

| Product Type<br>230 Vac Nominal | Power Output at 10°C<br>W/m |
|---------------------------------|-----------------------------|
| HTSX 3-2                        | 9                           |
| HTSX 6-2                        | 18                          |
| HTSX 9-2                        | 27                          |
| HTSX 12-2                       | 37                          |
| HTSX 15-2                       | 48                          |
| HTSX 20-2                       | 64                          |



### Certifications/Approvals . . .



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



II 2 G/D Ex e II T3 DEMKO 02 ATEX 0120790



**International Electrotechnical Commission**  
IEC Certification Scheme for Explosive Atmospheres  
UL 06.0004



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



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

HTSX 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 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

| Product Type | 230 Vac Service Voltage<br>Start-Up Temperature <sup>3</sup><br>°C | Max. Circuit Length <sup>1</sup> vs. Breaker Size<br>Metres |      |      |
|--------------|--|---|------|------|
|              |  | 16 A  | 25 A | 32 A |
| HTSX 3-2     | 10   | 177   | 215  | 215  |
|              | 0  | 177   | 215  | 215  |
|              | -20  | 171   | 215  | 215  |
|              | -40  | 134   | 215  | 215  |
| HTSX 6-2     | 10   | 114   | 152  | 152  |
|              | 0  | 114   | 152  | 152  |
|              | -20  | 114   | 152  | 152  |
|              | -40  | 95  | 152  | 152  |
| HTSX 9-2     | 10   | 82  | 123  | 123  |
|              | 0  | 82  | 123  | 123  |
|              | -20  | 82  | 123  | 123  |
|              | -40  | 72  | 120  | 123  |
| HTSX 12-2    | 10   | 65  | 106  | 106  |
|              | 0  | 65  | 106  | 106  |
|              | -20  | 64  | 106  | 106  |
|              | -40  | 57  | 94   | 106  |
| HTSX 15-2    | 10   | 47  | 77   | 94   |
|              | 0  | 45  | 74   | 94   |
|              | -20  | 41  | 67   | 89   |
|              | -40  | 37  | 60   | 79   |
| HTSX 20-2    | 10   | 34  | 55   | 73   |
|              | 0  | 33  | 52   | 69   |
|              | -20  | 30  | 48   | 62   |
|              | -40  | 27  | 43   | 57   |

#### Type C Circuit Breakers

| Product Type | 230 Vac Service Voltage<br>Start-Up Temperature <sup>3</sup><br>°C | Max. Circuit Length <sup>1</sup> vs. Breaker Size<br>Metres |      |      |
|--------------|--|---|------|------|
|              |  | 16 A  | 25 A | 32 A |
| HTSX 3-2     | 10   | 177   | 215  | 215  |
|              | 0  | 177   | 215  | 215  |
|              | -20  | 171   | 215  | 215  |
|              | -40  | 134   | 215  | 215  |
| HTSX 6-2     | 10   | 114   | 152  | 152  |
|              | 0  | 114   | 152  | 152  |
|              | -20  | 114   | 152  | 152  |
|              | -40  | 95  | 152  | 152  |
| HTSX 9-2     | 10   | 82  | 123  | 123  |
|              | 0  | 82  | 123  | 123  |
|              | -20  | 82  | 123  | 123  |
|              | -40  | 73  | 123  | 123  |
| HTSX 12-2    | 10   | 65  | 106  | 106  |
|              | 0  | 65  | 106  | 106  |
|              | -20  | 65  | 106  | 106  |
|              | -40  | 58  | 96   | 106  |
| HTSX 15-2    | 10   | 47  | 77   | 94   |
|              | 0  | 47  | 77   | 94   |
|              | -20  | 47  | 76   | 94   |
|              | -40  | 42  | 69   | 91   |
| HTSX 20-2    | 10   | 39  | 64   | 81   |
|              | 0  | 39  | 64   | 81   |
|              | -20  | 36  | 59   | 78   |
|              | -40  | 33  | 53   | 70   |

#### Note . . .

- 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 cable 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 cable, not the sum of segments of cable. Refer to CompuTrace® design software or contact Thermon for current loading of segments.