A CECO ENVIRONMENTAL BRAND

PRODUCT DATASHEET

# TUBETRACE® TYPE SE/ME

## ELECTRICALLY HEATED INSTRUMENT TUBING

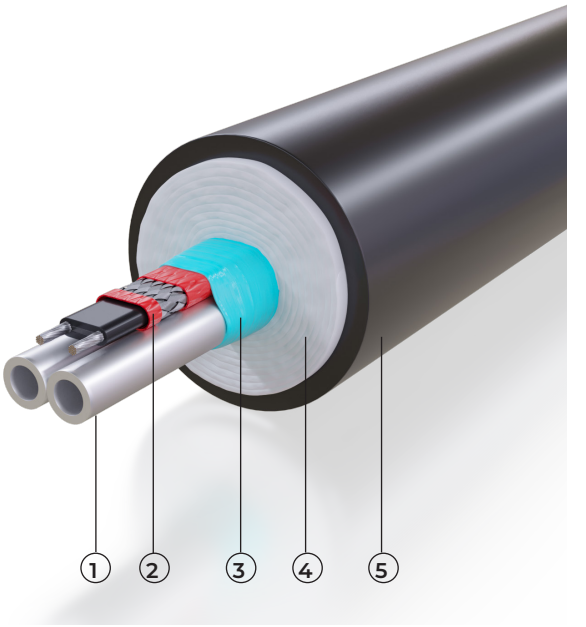
### With USX™ Self-Regulating Heat Tracing

## APPLICATION

TubeTrace, with "cut-to-length" USX self-regulating heat tracing, is designed to provide freeze protection or temperature maintenance from 40°F to 356°F (5°C to 180°C) for tubing where high temperature exposure capability is possible. USX withstands intermittent temperature exposures of 482°F (250°C) and continuous 464°F (240°C).

Self-regulating USX heat tracing:

- Varies in response to the surrounding conditions along the entire length of a circuit.
- Lower risk of overheating the tube or product.
- Installed cost is lower because "cut-to-length" USX makes end connections easy with minimal waste.
- USX is approved for use in ordinary (non-classified) areas and hazardous (classified) areas.




## RATINGS

| USX | Ratings |
|---|---|
| Available watt densities | 10, 20, 30, 39, 49, 66 W/m @ 10°C<br>(3, 6, 9, 12, 15, 20 W/ft @ 50°F) |
| Supply voltages | 110-120 or 208-277 Vac |
| Maintain temperature range | 5°C to 180°C (40°F to 356°F) |
| Max. exposure temperature[1]<br>Intermittent power-on or off<br>Continuous power-off | <br>250°C (482°F)<br>240°C (465°F) |
| T-rating<br>3,6,9,12, 15-2 W/ft<br>15-1 and 20-1 W/ft<br>20-2 W/ft | <br>T3: 200°C (392°F)<br>T2D: 215°C (419°F)<br>T2C: 230°C (446°F) |

**Notes**

1. This reflects maximum exposure for heater. If bundle jacket is to remain below 60°C (140°F) in 27°C (80°F) ambient (in consideration of personnel burn risk) tube temperature must remain below 205°C (400°F). Alternative designs to keep jacket below 60°C (140°F) in higher ambients and/or with higher tube temperatures are available. Contact Thermon.

1. T-rating per the National Electrical Code and Canadian Electrical Code.
2. Thermon heat tracing is approved for the listed T-ratings using the stabilized 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.

**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 Process tube(s)
2 USX self-regulating electrical heat tracing
3 Heat reflective tape
4 Non-hygroscopic glass fiber insulation
5 Polymer outer jacket (ATP or TPU available)

## PRODUCT FEATURES

- Self-regulating
- "Cut-to-length"
- Hazardous area approvals

For additional information on USX and other Thermon heat tracing products and services, visit www.thermon.com.

## BASIC ACCESSORIES

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

All heat tracing requires a suitably certified connection kit to comply with approval requirements.

Hot end terminations > 230°C (446°F) must be completed using the Terminator DS/DE, ZS/ZE, DE-B, ZE-B kits.

**NOTE:**
**"D" Kits** Division 2 and Zone 2 Areas
**"Z" Kits** Zone 1 Areas

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For the Thermon office nearest you visit us at www.thermon.com

Form CLX0096-0125

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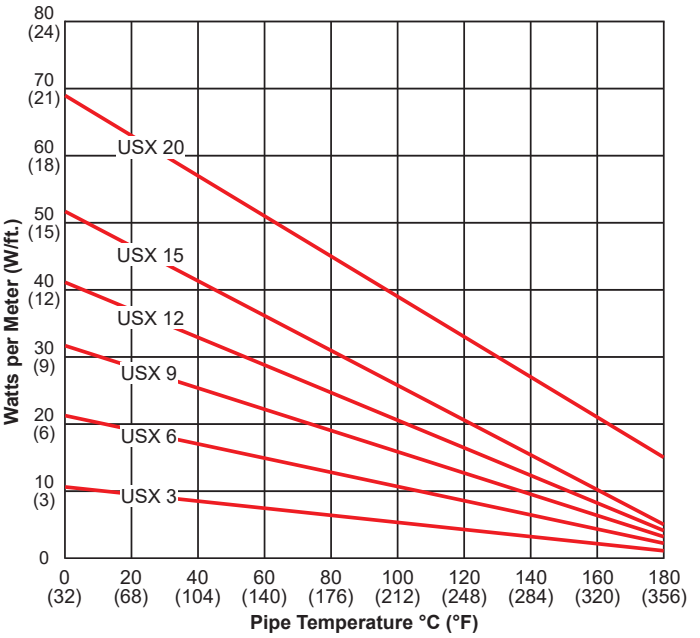
# TUBETRACE® TYPE SE/ME

ELECTRICALLY HEATED INSTRUMENT TUBING

With **USX™** Self-Regulating Heat Tracing

## POWER OUTPUT CURVES

The power outputs shown apply to heat tracing 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.




## DESIGN TOOLS

Technical Design Information and CompuTrace® - IT computer design program for TubeTrace heated instrument tubing are available online at www.thermon.com.

## TUBETRACE ACCESSORIES

Sealing the ends of pre-insulated tubing bundles ensures their efficient and reliable performance. A variety of termination kits and accessories are available and can be found on Form CLX0020.

## ELECTRICAL HEAT TRACE ACCESSORIES

Thermon manufactures every type of electrical resistance heat tracing available in the world today. Power connection and termination kits (Form CLX0024) and a variety of controls are all available for heated instrument tubing applications.

## CIRCUIT BREAKER SIZING

Maximum circuit lengths for various circuit breaker amperages are shown in Thermon USX Datasheet. Refer to Thermon website for details.

**Note**

1. The cabling of the heating cable around the tube/tubes within a bundle can affect the maximum circuit length. For specific operational properties of your bundle design, contact Thermon.

## HOW TO SPECIFY

**SE- 4A1-U61-7-ATP- 035**

**Bundle Type**
SE = Single Tube
ME = Multiple Tubes

**Process Tube O.D.**
1 = 1/8"
2 = 1/4"
3 = 3/8"
4 = 1/2"
5 = 5/8"
6 = 3/4"
8 = 1"[1]

**Process Tube Material**
A = 316 SS Welded
B = #122 Copper
C = PFA Teflon[2]
D = Monel[3]
E = Titanium
F = 316 SS Seamless
G = 304 SS Welded
H = 304 SS Seamless
J = Alloy C276
K = Alloy 825
L = Alloy 20
M = FEP Teflon
N = Nylon
P = Polyethylene
T = TFE Teflon
X = Special

**Number of Tubes**
1
2
3
4

**Heat Trace Type**
U31 = USX 3 w/ft. 120 Vac
U32 = USX 3 w/ft. 240 Vac
U61 = USX 6 w/ft. 120 Vac
U62 = USX 6 w/ft. 240 Vac
U91 = USX 9 w/ft. 120 Vac
U92 = USX 9 w/ft. 240 Vac
U121 = USX 12 w/ft. 120 Vac
U122 = USX 12 w/ft. 240 Vac
U151 = USX 15 w/ft. 120 Vac
U152 = USX 15 w/ft. 240 Vac
U201 = USX 20 w/ft. 120 Vac
U202 = USX 20 w/ft. 240 Vac

**Heat Trace Option**
7 = NEC Ordinary/D2 Areas and CEC D1 & D2 Areas
8 = NEC Division 1 Areas

**Bundle Jacket**
ATP[4]
TPU

**Process Tube(s) Wall Thickness**
030 = .030"
032 = .032" (Copper Only)
035 = .035"
040 = .040" (Plastic Only)
047 = .047" (Plastic Only)
049 = .049"
062 = .062" (Plastic Only)
065 = .065"
083 = .083" (SS Only)

**Notes**

1. Contact factory for availability of long length coils 1" O.D.
2. Teflon is a trademark of E.I. du Pont de Nemours & Co., Inc.
3. Monel and Inconel are trademarks of Inco Alloys International, Inc.
4. Black ATP is standard, other jacket materials are available.

## CERTIFICATIONS/APPROVALS

**Canadian Standards Association**
Ordinary Locations
Hazardous (Classified) Locations

**Canada:**
Class I, Division 1, Groups A, B, C and D Class II, Division 1, Groups E, F and G Class III
Ex 60079-30-1 IIC Gb
Ex 60079-30-1 IIIC Db

**US:**
Class I, Division 2, Groups A, B, C and D Class II, Division 2, Groups E, F and G Class III
Class I Zone 1 AEx 60079-30-1 IIC Gb
Class II Zone 21 AEx 60079-30-1 IIIC Db

**Notes**

For more precise power output values as a function of pipe temperature, refer to CompuTrace®.

Based on the trip current characteristic of Type QOB or Type QO equipment protection devices. For devices with other trip current characteristics, contact Thermon.

The maximum circuit length is for one continuous length of heat tracing, not the sum of segments of heat tracing. Refer to CompuTrace® design software or contact Thermon for current loading of segments.