



PRODUCT SPECIFICATIONS

# TubeTrace® Type SE/ME

## ELECTRICALLY HEATED INSTRUMENT TUBING with HPT™ Power-Limiting Heat Tracing

### APPLICATION

TubeTrace, with “cut-to-length” HPT power-limiting heat tracing, is designed to provide freeze protection or temperature maintenance from 40°F (5°C) to 350°F (177°C) for tubing where high temperature exposure capability is possible. HPT withstands temperature exposures of 500°F (260°C).

The composite construction of the heating element and fiber substrate, plus an additional fiber cushion layer, make HPT an exceptionally durable heating cable. Durability has made TubeTrace with HPT the industry standard for high temperature emissions and process analyzer applications.

Power-Limiting HPT heat tracing:

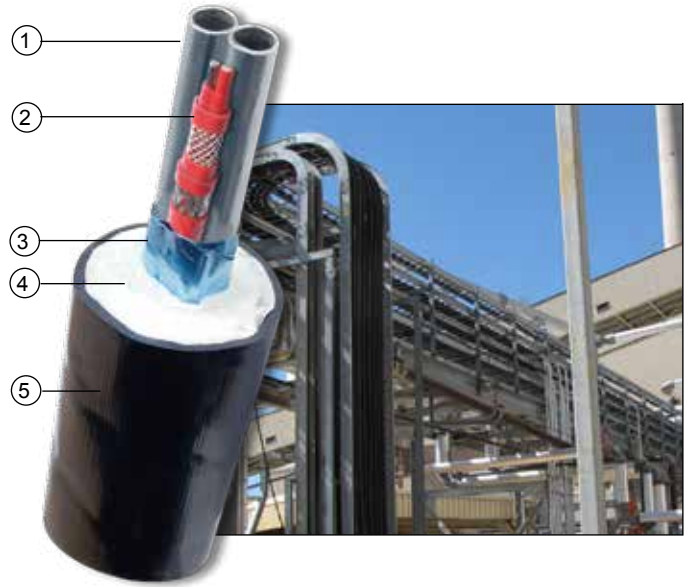
- Varies in response to the surrounding conditions along the entire length of a circuit.
- Lower risk of overheating the tube or product than with constant watt designs.
- HPT is approved for use in ordinary (non-classified) areas and hazardous (classified) areas.

### RATINGS

HPT	Ratings
Available watt densities	5, 10, 15, 20 w/ft @ 50°F 16, 33, 49, 66 w/m @ 10°C
Supply voltages <sup>1</sup>	120 to 240 Vac Nominal
Tube temperature range	40°F to 400°F (5°C to 204°C)
Max. continuous exposure <sup>2</sup> Power-off	500°F (260°C)

**Note**

1. Higher voltages up to 480 Vac may be possible: Contact Thermon for design assistance.
2. This reflects maximum exposure for heater. If bundle jacket is to remain below 140°F (60°C) in +80°F (27°C) ambient (in consideration of personnel burn risk) tube temperature must remain below 400°F (205°C). Alternative designs to keep jacket below 140°F (60°C) in higher ambients and/or with higher tube temperatures are available. Contact Thermon.



### CONSTRUCTION

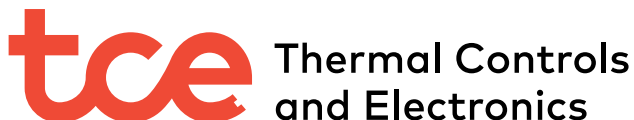
- 1 Process tube
- 2 HPT power-limiting electrical heat tracing
- 3 Heat reflective tape
- 4 Non-hygroscopic glass fiber insulation
- 5 Polymer outer jacket (ATP or TPU available)

### PRODUCT FEATURES

- Power-limiting
- Low start-up current
- “Cut-to-length”
- Hazardous area approvals

For additional information on HPT and other Thermon heat tracing products and services, visit [www.thermon.com](http://www.thermon.com).

THERMON The Heat Tracing Specialists®



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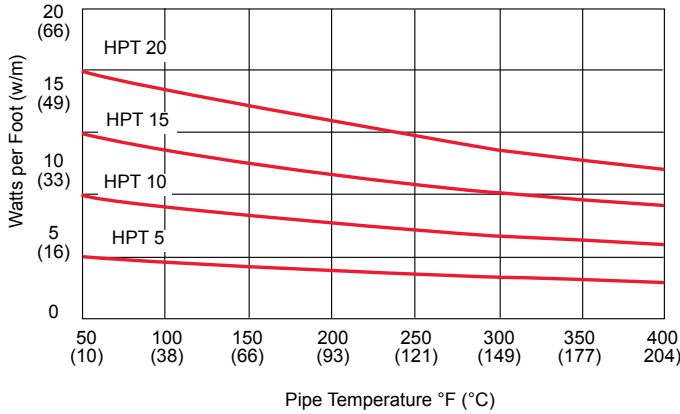
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ELECTRICALLY HEATED INSTRUMENT TUBING  
with HPT™ Power-Limiting Heat Tracing

## POWER OUTPUT CURVES

The power outputs shown apply to cable installed on insulated metallic pipe (using the procedures outlined in IEEE Standard 515) 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](http://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.

## HOW TO SPECIFY

### SE-4F1-52-7-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"

#### Process Tube Material

- A = 316 SS Welded
- B = #122 Copper
- C = PFA Teflon<sup>2</sup>
- D = Monel<sup>3</sup>
- 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 Option

- 7 = OJ/Fluoropolymer  
NEC Ordinary/D2 Areas  
and CEC D1 & D2 Areas
- 8 = NEC Division 1 Areas

#### Heat Trace Type

- 50 = HPT 5 w/ft. 120 Vac
- 51 = HPT 5 w/ft. 240 Vac
- 52 = HPT 10 w/ft. 120 Vac
- 53 = HPT 10 w/ft. 240 Vac
- 54 = HPT 15 w/ft. 120 Vac
- 55 = HPT 15 w/ft. 240 Vac
- 56 = HPT 20 w/ft. 120 Vac
- 57 = HPT 20 w/ft. 240 Vac

#### Bundle Jacket

- ATP<sup>4</sup>
- TPU

- #### Process Tube(s) Wall Thickness
- 028 = .028" (SS Only)
  - 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



FM Approvals  
Ordinary Locations  
Hazardous (Classified) Locations  
Class I, Division 2, Groups B, C and D  
Class II, Division 2, Groups F and G\*  
Class III, Divisions 1 and 2  
Division 1 Locations  
Requires Heater Cable Option 8:  
Class I, Division 1, Groups B, C and D  
Class II, Division 1, Groups E, F and G



Underwriters Laboratories Inc.  
Ordinary Locations  
Hazardous (Classified) Locations  
Class I, Division 2, Groups B, C and D  
Class II, Division 2, Groups E, F and G\*  
Class III, Divisions 1 and 2  
Class I, Zone 1, AExe II  
Class I, Zone 2, AExe II  
Division 1 Locations  
Requires Heater Cable Option 8:  
Class I, Division 1, Groups B, C and D  
Class II, Division 1, Groups E, F and G



Canadian Standards Association  
Ordinary Locations  
Hazardous (Classified) Locations  
Class I, Division 2, Groups A, B, C and D  
Class II, Division 2, Groups E, F and G  
Class I, Division 1, Groups A, B, C and D  
Class II, Division 1, Groups E, F and G  
Ex e II

\* CL. II, Div. 2 requires Thermon design review.