

TubeTrace® Type SE/ME

Electrically Heated Instrument Tubing with VSX™ Self-Regulating Heat Tracing

Product Specifications

Application . . .

Freeze Protection or Process Temperature Maintenance Range: 5°C to 150°C

TubeTrace, with “cut-to-length” VSX self-regulating heat tracing, is designed to provide freeze protection or temperature maintenance for tubing where high temperature exposure capability is possible. VSX withstands intermittent temperature exposures of 232°C.

Self-regulating VSX heat tracing

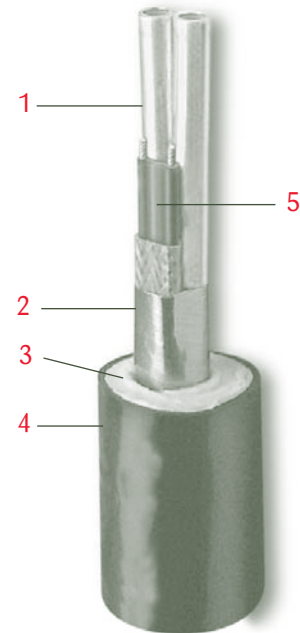
- Varies in response to the surrounding conditions along the entire length of a circuit.
- Lower risk of overheating the tube or product.
- Installed cost is lower because “cut-to-length” VSX makes end connections easy with minimal waste.
- VSX cables are certified for use in ordinary (nonclassified) areas and in potentially explosive atmospheres in accordance with the ATEX Directive and the IEC Ex Scheme.

Ratings/Specifications . . .

VSX	Ratings
Available watt densities	15, 32, 48, 64 W/m @ 10°C
Supply voltages	230 Vac
Tube temperature range	5°C to 150°C
Maximum exposure temperature ¹	
Intermittent power-on	232°C
Intermittent power-off	250°C
Continuous power-off	204°C
T-rating ²	
15, 32, 48, 64 W/m	T3 200°C
Based on stabilised design ³	T4 to T6

Notes . . .

1. This reflects maximum exposure for heater. If bundle jacket is to remain below 60°C in +27°C ambient (in consideration of personnel burn risk) tube temperature must remain below 205°C. Alternative designs to keep jacket below 60°C in higher ambients and/or with higher tube temperatures are available. Contact Thermon.
2. T-rating per internationally recognised testing agency guidelines.
3. 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.



Construction . . .

- 1 Process Tube
- 2 Heat Reflective Tape
- 3 Non-Hygroscopic Glass Fiber Insulation
- 4 Polymer Outer Jacket (ATP or TPU available)
- 5 VSX Self-Regulating Electrical Heat Tracing

VSX Product Features . . .

- Self-Regulating
- “Cut-to-Length”
- Hazardous Area Approvals

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



THERMON . . . The Heat Tracing Specialists®
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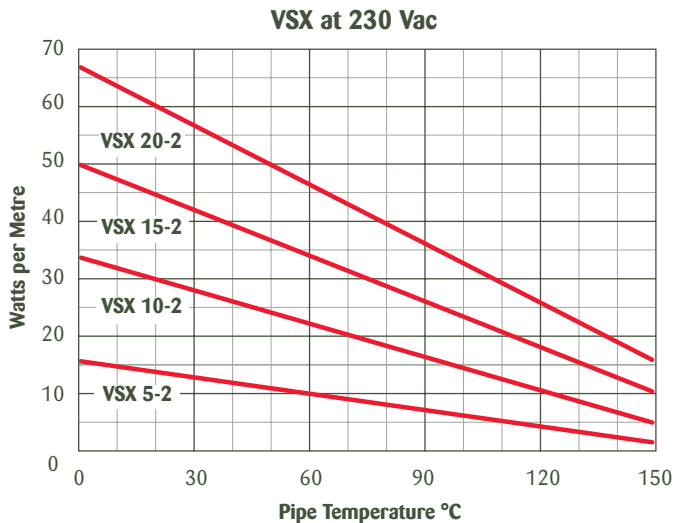
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Power Output Curves . . .

The power outputs shown apply to VSX heat tracing installed on insulated metallic pipe (using the procedures outlined in IEEE Standard 515-2004). Power output may be slightly higher due to the thermal efficiency of TubeTrace.



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.

How to Specify . . .

SE-6A1-31-7-ATP-1-M

Bundle Type SE = Single Tube ME = Multiple Tubes	Process Tube O.D. 2 = 1/4" 3 = 3/8" 4 = 1/2" 6 = 6 mm 8 = 8 mm 10 = 10 mm 12 = 12 mm	Process Tube Material ¹ A = 316L SS Welded As = 316Ti SS Welded B = B68 Copper C = PFA Teflon ² D = Monel ³ E = Titanium F = 316L SS Seamless Fs = 316Ti SS Seamless G = 304 SS Welded H = 304 SS Seamless J = Hastaloy C276 K = Alloy 825 M = FEP Teflon P = Polyethylene T = PTFE Teflon X = Special	Number of Tubes 1 2 3 4	Heat Trace Type 31 = VSX 5 (15 W/m) @ 230Vac 33 = VSX 10 (32 W/m) @ 230Vac 35 = VSX 15 (48 W/m) @ 230Vac 37 = VSX 20 (64 W/m) @ 230Vac	Heat Trace Option 7 = OJ/Fluoropolymer	Bundle Jacket ATP ⁴ PE TPU	M or I Metric or Imperial Indication	Process Tube(s) Wall Thickness 030 = .030" 032 = .032" (B68 Copper) 035 = .035" 040 = .040" (Plastic Only) 047 = .047" (Plastic Only) 049 = .049" 062 = .062" (Plastic Only) 065 = .065" (316/316L SS Seamless Only) 1 = 1 mm 1.5 = 1.5 mm
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Notes . . .

- Seamless tubing has a standard quality K3, other qualities are available on special request. Tubing meets the ASTM standards, tubing that meets DIN standards is available on special request.
- Teflon is a trademark of E.I. du Pont de Nemours & Co., Inc.
- Monel and Inconel are trademarks of Inco Alloys International, Inc.
- Black ATP is standard, other jacket materials are available.

Heat Trace Certifications/Approvals . . .

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

CE **Ex** II 2 G/D Ex e II T2 or T3 **D**02 ATEX 0152667

IEC Ex International Electrotechnical Commission
IEC Certification Scheme for Explosive Atmospheres
UL 05.0008



Factory Mutual Research
Ordinary and Hazardous (Classified) Locations



Underwriters Laboratories Inc.
Hazardous (Classified) Locations

VSX has additional hazardous area approvals including:
• DNV • Lloyd's • JIS • CCE/CMRS

Contact Thermon for additional approvals and specific information.

