PRODUCTS and ACCESSORIES INFORMATION GUIDE



THERMON The Heat Tracing Specialists®



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SELF-REGULATING HEATING CABLES

Features:

- Semiconductive Self-Regulating Heating Matrix
- Cut-to-Length Parallel Circuitry
- Nickel-Plated Copper Bus Wires
- Metallic Braids for Grounding Purposes
- Polyolefin or Fluoropolymer Overjacket
- Worldwide Approvals

BSX™

Freeze Protection and Temperature Maintenance to 65°C (150°F) Maximum Exposure Temperature 85°C (185°F)

Available Watt Densities....3, 5, 8 & 10 w/ft @ 10°C (50°F) Available Voltages.....110-120 or 208-277 Vac Available With Fluoropolymer Overjacket (FOJ)

HTSX™

Freeze Protection and Temperature Maintenance to 121°C (250°F) Maximum Exposure Temperature 250°C (482°F) Withstands Temperatures Associated With Steam Purging

Available Watt Densities....3, 6, 9, 12, 15, & 20 w/ft @ 10°C (50°F) Available Voltages......110-120 or 208-277 Vac

POWER-LIMITING HEATING CABLES

Features:

- PTC Coiled Resistor Alloy Heating Element
- Cut-to-Length Parallel Circuitry
- Nickel-Plated Copper Bus Wires
- Metallic Braids for Grounding Purposes
- · Fluoropolymer Overjacket
- Worldwide Approvals



Freeze Protection and Temperature Maintenance to 149°C (300°F) Maximum Exposure Temperature 260°C (500°F)

Available Watt Densities.....5, 10, 15 & 20 w/ft @ 10°C (50°F) Available Voltages......120 and 240 Vac Nominal

HEAT TRACING SYSTEMS ACCESSORIES (See Pages 8 and 9)

Thermon Provides a Complete Range of:

- Power and Termination Kits
- Splice Kits
- Mechanical Thermostats
- Electronic Control and Monitoring Modules
- Power Distribution and Control Panels
- System Communications Software



VSX™

Freeze Protection and Temperature Maintenance up to 149°C (300°F) Maximum Exposure Temperature 250°C (482°F) Withstands Temperatures Associated With Steam Purging

Available Watt Densities......3, 6, 9, 12, 15, & 20 w/ft @ 10°C (50°F) Available Voltages......110-120 or 208-277 Vac

ELECTRIC HEATING CABLES

CONSTANT WATT HEATING CABLES

Features:

- Nichrome Heating Element
- Cut-to-Length Parallel Circuitry
- 12 AWG Copper Bus Wires
- Metallic Braids for Grounding Purposes
- Fluoropolymer Overjacket
- Worldwide Approvals

MINERAL INSULATED HEATING CABLES

Features:

- High Temperature Magnesium Oxide Dielectric
- Seamless Alloy 825 Sheath
- Worldwide Approvals

MIQ™

Freeze Protection and Temperature Maintenance to 500°C (932°F) Maximum Exposure Temperature 600°C (1,112°F)

Available Watt Densities Designs up to 80 w/ft Available Voltages Rated up to 600 Vac

SERIES RESISTANCE HEATING CABLES

Features:

FΡ

Freeze Protection and

and Foundation Heating

Temperature Maintenance to 65°C (150°F)

Maximum Exposure Temperature 200°C (392°F)

Available Watt Densities 2.5, 5 & 10 w/ft @ 10°C (50°F) Available Voltages 120, 240, 480 and 575 Vac

- Circuit Lengths up to 12,000 Feet
- Metallic Braids for Grounding Purposes
- · Fluoropolymer Overjacket
- Worldwide Approvals

SKIN EFFECT HEATING SYSTEMS

Features:

- Rugged Heat Tube to Generate Heat
- Circuit Lengths up to 24 Kilometers (15 Miles)
- Each System Fully Factory-Engineered



Power Outp	outs up to 50 W/fl
Operating Voltages	up to 3.5 KV
Maintenance Temperatures	up to 200°C (392°F)
Exposure Temperatures	up to 260°C (500°F)

TEK™

Freeze Protection and Temperature Maintenance to 101°C (214°F) Maximum Exposure Temperature 232°C (450°F)

Available Watt Densities Designs up to 20 w/ft Available Voltages Rated up to 600 Vac



ELECTRICALLY HEATED INSTRUMENT TUBING FOR FREEZE PROTECTION AND TEMPERATURE MAINTENANCE

TubeTrace® TYPE SE/ME

Approved for hazardous (classified) locations, including options for Class I, Division 1 or Zone 1.

TubeTrace with HTSX[™]

Self-Regulating Heat Trace Use where temperature exposure to steam purge is expected.

Tube Temperature Range: 5°C to 121°C (40°F to 250°F) Maximum Exposure Temperature: 250°C (482°F)

TubeTrace with **BSX**[™] **Self-Regulating Heat Trace** Use for water freeze protection and low temperature maintenance.

Tube Temperature Range: 5°C to 65°C (40°F to 150°F) Maximum Exposure Temperature: 85°C (185°F)

TubeTrace with VSX[™] Self-Regulating Heat Trace

Use where high temperature exposure is a consideration.

Tube Temperature Range: 5°C to 149°C (40°F to 300°F) Maximum Exposure Temperature: 250°C (482°F)

TubeTrace with HPT™

Self-Regulating Heat Trace

A "cut-to-length" heat tracing for higher temperature maintenance. Also used for freeze protection where high temperature exposure is a factor.

HPT power-limiting cables represent the best choice for maintaining temperatures up to 204°C (400°F) that can be "cut-to-length" in the field.

Tube Temperature Range: 5°C to 204°C (40°F to 400°F) Maximum Exposure Temperature: 260°C (500°F)



Many analyzer applications have specialty tubing requirements, all of which Thermon can provide within our instrument tubing bundles. Examples of tube materials and finishes that are available include:

- Fluoropolymer tubing, 316 and 304 stainless, welded or seamless, Monel*, titanium, Inconel* 825, and Alloy 20 are readily available.
- Optional Electropolished (EP), Chemical Passivation (CP), and performance coatings such as SilcoNert* are also available on stainless steel tubing
- Double containment tubing or multiple tube materials can be provided in a common bundle.

"NI" Non-insulated (and non-heated) Bundle Other TubeTrace options can include:

- Auxiliary conductors
- Unheated tubes
- Factory installed temperature sensor(s)
- · Special markings and identification as required
- * Monel and Inconel are trademarks of Inco Alloys International., Inc.

Trade name of SilcoTek[™], formerly a division of Restek Performance Coatings. SilcoNert[™]1000 replaces Silcosteel[®]. SilcoNert[™]2000 replaces Sulfinert[®]/Siltek[®].

INSTRUMENT TUBING BUNDLES

ELECTRICALLY HEATED INSTRUMENT TUBING FOR FREEZE PROTECTION OF HIGH TEMPERATURE STEAM LINES

TubeTrace® TYPE SEI/MEI - HT, HTX & HTX2

Isolated "cut-to-length" heat trace for high temperature exposure, suitable for ambient sensing control.



TubeTrace[®] **Type SEI/MEI - HT** Maintain: 5°C (40°F) Continuous Exposure: 399°C (750°F)

TubeTrace[®] Type SEI/MEI - HTX Maintain: 5°C (40°F) Continuous Exposure: 593°C (1100°F)

TubeTrace[®] **Type SEI/MEI - HTX2** Maintain: 5°C (40°F) Intermittent Exposure: 593°C (1100°F)

INSTRUMENT TUBING ACCESSORIES (See Pages 10 and 11)

Every type of tubing bundle requires proper termination to ensure reliable performance and Thermon offers a complete range of termination kits. Because Thermon

manufactures the electrical heat tracing as well, all of the power connection and termination accessories are designed and approved for the specific application.



STEAM HEATED INSTRUMENT TUBING FOR FREEZE PROTECTION AND TEMPERATURE MAINTENANCE

TubeTrace® TYPE TYPE SI/MI AND SP/MP



Steam or Fluid "Light Traced" (SI/MI)

For freeze protection and lower temperature maintenance. The tracer tube is isolated from the process tube(s), so process tube temperatures will be significantly lower than the tracer tube temperature.

Tube Temperature Range: 5°C to 121°C (40°F to 250°F) Maximum Exposure: 205°C (400°F)*



Steam or Fluid "Heavy Traced" (SP/MP)

For freeze protection and process maintenance. The tracer tube is in direct contact with the process tube(s), so process tube temperatures will be very close to the tracer tube temperature.

Standard Tracer Temperature Range: 5°C to 205°C (40°F to 400°F) Maximum Exposure: 205°C (400°F)*

* Higher tube temperatues are possible with XINS-extra insulation, HT and HTX type designs.



HEAT TRANSFER COMPOUNDS TO MAINTAIN HIGH TEMPERATURES

"Thermonized" with Thermon Heat Transfer Compounds

- Consistent Heat Transfer Properties
- · Less Than 20% of Cost for Steam Jacketing

SnapTrace®

Preformed Extrusions for Straight Piping

Available in 1.22 m (4 ft) lengths

- Significantly Reduces Installation Time
- No Surface Preparation Required
- Use With Up to 208°C (406°F) Fluid/Steam



SnapTrace[™] Pre-formed Extrusion Installation

HT Compounds for Piping, Valves and Irregular Surfaces

(Maximum temperature ratings shown) **T-3:** 371°C (700°F) **T-99:** 1,000°C (1,832°F) **T-80:** 163°C (325°F) **T-85:** 190°C (375°F) **T-802:** 135°C (275°F) Two part compound



ISOLATED STEAM TRACERS FOR LOWER MAINTAIN TEMPERATURES

SafeTrace[™] SLS-IT: 24°C to 93°C (75°F to 200°F) SafeTrace[™] DLS-IT: 5°C to 54°C (40°F to 130°F)



SafeTrace[™] Provides Increased Safety

- SafeTrace Tracers Comply With Tests for Skin Exposure (per ASTM Std C-1005/1057)
- Safety Yellow Jacket Alerts Plant Personnel to Potentially Dangerous Conditions

SafeTrace[™] Provides Predictable Heat Transfer

- Permits Winterization for Any Size Pipe
- Eliminates Hot/Cold Spots Associated With Bare Tubing and Spacer Blocks
- Suitable for Temperature-Sensitive Processes

Medium Maintain Temperatures

SafeTrace[™] BTS: 38°C to 121°C (100°F to 250°F

STEAM SUPPLY/CONDENSATE RETURN LINES

ThermoTube[®] Pre-Insulated Tubing

- Ideally Suited to Transport Liquids, Gases or Refrigerants
- Non-hygroscopic Glass Fiber Insulation for Efficiency
- Protective Outer Jacket Resists Weather and Moisture
- ThermoTube Can be Installed in Cable Trays, Angles, Channels, Struts and on I-Beams
- All Tubing Types Available

Continuous Temp. Range: Service to 205°C (400°F)* ThermoTube ratings to 593°C (1100°F) also available*.

* Higher tube temperatues are possible with XINS-extra insulation HT and HTX type designs.

For steam heated instrument tubing, see Instrument Tubing Bundles.



STEAM TRACING AND TANK/HOPPER HEATING

TANK AND VESSEL HEATING

RT FlexiPanel[®] and RTF FlexiPanel[®] Tank and Vessel Heating Units

- High Temperature Lead Wires (16 AWG)
- Protective Metal Jacket
- Parallel Circuit High Temperature Alloy Heating Element
- Heat-Laminated, High Temperature Silicone Rubber Insulation

HOPPER AND CHUTE HEATING

HT Module Hopper Heater

- Fluoropolymer Insulated High Temperature 16 AWG Lead Wires (with stress relief at connection)
- Parallel Circuit High Teperature Alloy Heating Element
- Temperature-Rated Insulation (directs energy towards surface to be heated)
- Aluminized Steel Protective Enclosure and Cover



RT FlexiPanel

HeetSheet[®] Tank and Vessel Heating Units

- · Provides Predictable and Reliable Heating (or Cooling)
- Factory-Applied Non-hardening Heat Transfer Compound Ensures Maximum Heat Transfer
- Waffle Pattern Permits Multiple Flow Paths for Heating and Cooling Media
- Provides 2 to 3 Times the Heat Transfer of Plate-Type Coils
- No Risk of Cross-Contamination with Process
- Light-weight Stainless Steel
 Construction for Easy Installation
- Stainless Steel Inlet and Outlet Tubing Provided from Factory





Terminator DS/

DE and ZS/ZE

nonmetallic kits

are designed to

fabricate in-line

electric heat trace

ECA-1 metallic kits

splicing two electric

are designed for

heat trace cables

splices of an

circuit.

together.

POWER CONNECTION KITS



Terminator DP and **ZP** nonmetallic

kits are designed to fabricate power connections of an electric heat trace circuit.



Terminator DL and ZL nonmetallic kits are designed to fabricate power connections and provide visual indication of an energized heat trace circuit.



ECA-1 metallic kits are designed to fabricate power connections of an electric heat trace circuit.



PCA nonmetallic kits are designed to fabricate power connections of an electric heat trace circuit.

- · Terminator "D" kits Division 2 and Zone 2 Areas
- Terminator "Z" kits Zone 1 Areas.

IN-LINE SPLICE KITS







PCS nonmetallic kits are designed to fabricate inline splices of an electric heat trace circuit.

END TERMINATION KITS



fabricate an end termination of an electric heat trace





PCS metallic kits are designed to fabricate an end termination of an electric heat trace circuit.

T-SPLICE KITS





PCA nonmetallic kits are designed to fabricate T-splice connections of an electric heat trace circuit.

Terminator

nonmetallic kits

are designed to

fabricate T-splice

connections of an

electric heat trace

ECT-2 metallic

kits are designed

for splicing three

cables together.

electric heat trace

DP and **ZP**

circuit.

MISCELLANEOUS



PETK power and end termination kits are required for use with all Thermon parallel heating cables connection kits.

SCTK Splice connection kits are required when preparing splices with all Thermon parallel heating cables connection kits.

FT-1L, FT-1H fixing tapes for attaching heating cable to piping every 12" (30 cm) or as required by code or specification.

AL-20L, AL-20H. AL-30L, AL-30H aluminum tape for continuous (longitudinal) covering.



Terminator DS/ DE and ZS/ZE nonmetallic kits are designed to

Terminator

DE-B and ZE-B

nonmetallic kits are designed to provide

visual indication of

an energized heat

trace circuit.

CONTROL AND MONITORING

MECHANICAL THERMOSTATS



B4X-15140 and B7-15140 are designed to provide ambient sensing control of electric heat trace circuits.

ELECTRONIC CONTROLLERS



TraceNet TN Series provides control and monitoring for up to 180 electric heat trace circuits within one Can bus network.



TraceNet TC Series provides control and monitoring for up to 18 electric heat trace circuits with input from single or dual RTD inputs.



E4X-35235 and E4X-1 are designed to provide pipewall or tankwall sensing control of electric heat trace circuits.



E4X-25325 and E7-25325 are designed to provide pipewall or tankwall sensing control of electric heat trace circuits.



TC 1818a provides control and monitoring for up to 18 electric heat trace circuits.



TC 202a provides control and monitoring for two electric heat trace circuits with input from two RTDs.

TC 201a provides control and

circuit with input from two RTDs.



E4X/7-35235JB, E4X/7-200600JB and 4X/7350235JB are designed to provide pipewall or tankwall sensing control of electric heat trace circuits.



RTD-100 is designed for use as control input for electric heat trace circuits requiring pipewall or tankwall temperature sensing.





TC 101a provides control and monitoring for one electric heat trace circuit with input from one RTD.

monitoring for one electric heat trace



ENCLOSURE/SHELTER ENTRY KITS



Bulkhead Entry Heat Shrink Seal provides an effective transition and strain-relief when bundle passes through a wall 1" thick or less.



FAK-1 Kit for bulkhead entry of TubeTrace bundles. The kit is designed to make a waterproof seal around the bundle.



Terminator DP/FAK-1 and ZP/FAK-1 Kit for bulkhead entry of electrically heated TubeTrace bundles. The kit is designed to make a waterproof seal over the end of TubeTrace and terminate Thermon electric heat tracing.



Terminator DE-B/FAK-1 and ZE-B/FAK-1 Kit for bulkhead entry of electrically heated TubeTrace bundles. The kit is designed to make a waterproof seal over the end of TubeTrace and terminate Thermon electric heat tracing.

T-SPLICE KITS



T-Splice Kits designed to make a waterproof seal over TubeTrace splices.



Terminator DP/FAK-5 and ZP/FAK-5 Kits for tee splice of electrically heated TubeTrace bundles. These kits are designed to make a waterproof seal at tee splice connections of Thermon TubeTrace bundle with electric heat tracing.

- Terminator "D" kits Division 2 and Zone 2 Areas
- Terminator "Z" kits Zone 1 Areas.
- High temperature kits are designed so that the outer jacket will not exceed 140°F (60°C) for high temperature bundles up to 1,100°F (593°C).

IN-LINE SPLICE KITS



In-line Splice Kits are designed to make a waterproof seal over TubeTrace splices.



Terminator DP/FAK-4 and ZP/ FAK-4 Kits are designed for an in-line splice of electrically heated TubeTrace bundles.



Terminator DS/FAK-4 and ZS/FAK-4 Kits are designed to fabricate outside in-line splices on insulated TubeTrace with electric heat tracing.



FAK-8 Kits are designed to make a waterproof seal over TubeTrace splices.

90° ELBOW TRANSITION KITS



90° Elbow Transition Kits are designed to make a waterproof seal over TubeTrace splices.





Terminator DP/FAK-2 and ZP/FAK-2 Kits are designed to fabricate outside the insulation power connection, in-line splices or end terminations on TubeTrace with electric heat tracing.



INSTRUMENT TUBING ACCESSORIES

TERMINATION/SEAL KITS



FAK-7 Seal Kits are designed to make a waterproof seal over the end of TubeTrace.



FAK-10 Kits are designed to make a waterproof seal over the end of TubeTrace tubing bundles. Kits include heat shrink seal.

HIGH TEMPERATURE SEAL KIT



FAK-SSHT is designed to make a seal over the end of TubeTrace for high temperature applications.

ACCESSORIES FOR ELECTRIC HEAT TRACE TERMINATION



PETK power and end termination kits are required for use with all Thermon parallel heating cables connection kits.

SCTK Splice connection kits are required when preparing splices with all Thermon parallel heating cables connection kits.

FIELD INSTALLED CONTROL SENSOR KITS



FAK-4T Kits provide a waterproof seal over TubeTrace for field installed thermostat.



FAK-4S Kits provide a waterproof seal over TubeTrace for field installed sensor.

ELECTRONIC CONTROLLERS



TraceNet TN Series provides control and monitoring for up to 180 electric heat trace circuits within one Can bus network.



TraceNet TC Series provides control and monitoring for up to 18 electric heat trace circuits with input from single or dual RTD inputs.



TC 1818a provides control and monitoring for up to 18 electric heat trace circuits.



TC 202a provides control and monitoring for two electric heat trace circuits with input from two RTDs.



TC 201a provides control and monitoring for one electric heat trace circuit with input from two RTDs.



TC 101a provides control and monitoring for one electric heat trace circuit with input from one RTD.

OFFICES WORLDWIDE

UNITED STATES CANADA MEXICO NETHERLANDS UNITED KINGDOM FRANCE SPAIN GERMANY RUSSIA AUSTRALIA MALAYSIA CHINA INDIA JAPAN SOUTH KOREA BAHRAIN BRAZIL

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





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