



PRODUCT SPECIFICATIONS

# TubeTrace® Type SE/ME

ELECTRICALLY HEATED INSTRUMENT TUBING  
with MIQ Mineral Insulated Heat Tracing

## APPLICATION

TubeTrace, with series resistance MIQ heat tracing, is a pre-fabricated heat tracing circuit designed to maintain freeze protection or high temperatures from 5°C to 500°C where high temperature exposure is possible. MIQ withstands temperature exposures of 593°C.

The seamless Alloy 825 sheath and construction of the heating element make MIQ an exceptionally durable heat tracing option. This has made MIQ the industry standard for high temperature heat tracing applications.

## RATINGS

MIQ	Ratings
Available watt densities	262 W/m
Tube temperature range <sup>1</sup>	5°C to 500°C
Max. continuous exposure <sup>2</sup> Power-off	593°C

Notes

- Temperatures above 260°C require high temperature woven fiberglass. Contact Thermon for design assistance and specify high temperature option HT for applications >260°C and option HTX for applications > 398°C.
- If bundle jacket is to remain below 60°C in +27°C ambient (in consideration of personnel burn risk) core temperatures must remain below 205°C. Alternative designs to keep jacket below 60°C in higher ambients and/or with higher tube or heater temperatures are available.



## CONSTRUCTION

- Process tube(s)
- MIQ mineral insulated electrical heat tracing
- Heat reflective tape
- Non-hygroscopic glass fiber insulation
- Polymer outer jacket (ATP or TPU available)

## HOW TO SPECIFY

**SE-4F1-MIQ-X-X-ATP-035-XX**

<p><b>Bundle Type</b></p> <p>SE = Single Tube ME = Multiple Tubes</p>	<p><b>Process Tube O.D.</b></p> <p>1 = 1/8" 2 = 1/4" 3 = 3/8" 4 = 1/2" 5 = 5/8" 6 = 3/4" 8 = 1"¹</p>	<p><b>Process Tube Material</b></p> <p>A = 316 SS Welded D = Monel² E = Titanium F = 316 SS Seamless G = 304 SS Welded H = 304 SS Seamless J = Alloy C276 K = Alloy 825 L = Alloy 20 X = Special</p>	<p><b>Number of Tubes</b></p> <p>1 2 3 4</p>	<p><b>MIQ Heater³</b></p>	<p><b>Bundle Jacket</b></p> <p>ATP⁴ TPU</p>	<p><b>Process Tube(s) Wall Thickness</b></p> <p>028 = .028" (SS Only) 030 = .030" 035 = .035" 049 = .049" 065 = .065" 083 = .083" (SS Only)</p>	<p><b>High Temp Options</b></p> <p>HT continuous 399°C or below HTX continuous 399°C to 593°C HTX2 intermittent* up to 593°C and continuous to 399°C</p> <p>*intermittent = up to 2 minutes per steam cycle.</p>
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Notes

- Contact factory for availability of long length coils 1" O.D.
- Monel is a trademark of Inco Alloys International, Inc.
- Heater identification is established before ordering the TubeTrace bundle. MIQ heaters require design based on specific lengths and are fabricated separately.
- Black ATP is standard. Other jacket materials are available.

**THERMON The Heat Tracing Specialists®**



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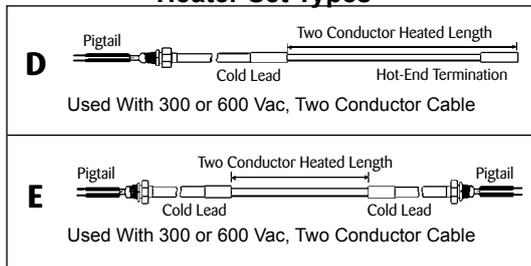
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## MIQ HEATER SETS

For TubeTrace, MIQ mineral insulated heat tracing sets are available in two factory fabricated configurations: Type D or E. The standard assemblies consist of a predetermined length of heat tracing joined to a standard <sup>1</sup> 1,220 mm non-heating cold lead with 203 mm long thermoplastic insulated pigtails.

The non-heating section of the unit is sealed and fitted with a high pressure, liquid-tight 1/2" or 3/4" NPT stainless steel gland <sup>2</sup> for connection into the supply junction box.

Heater Set Types <sup>3</sup>



## 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). MIQ heaters will require assistance from Thermon. <sup>3</sup>

## 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 CLX0020U.

## ELECTRICAL HEAT TRACE ACCESSORIES

Thermon manufactures every type of electrical resistance heat tracing available in the world today. Power connection and termination kits (Form CLX0024U) and a variety of controls are all available for heated instrument tubing applications.

## CIRCUIT BREAKER SIZING AND TYPE

Breaker sizing should be based on the National Electrical Code, Canadian Electrical Code or any other applicable code.

The National Electrical Code and Canadian Electrical Code require ground-fault protection of equipment for each branch circuit supplying electric heating equipment. Check local codes for ground-fault protection requirements.

### Notes

1. Cold lead will be sized for the circuit operating current in accordance with relevant NEC or CEC code requirements.
2. Cold lead gland is 1/2" NPT except for 2-conductor sets with larger wire sizes for which a 3/4" NPT gland is provided. M20, M25 and M32 glands are available, contact factory.
3. Heater identification is established before ordering the TubeTrace bundle. MIQ heaters require design based on specific lengths and are fabricated separately.
4. Flameproof system must be specified, contact factory.

## CERTIFICATIONS/APPROVALS

Certificate FM13 ATEX 0052  
in accordance with the EU ATEX Directive 94/9/EC

International Electrotechnical Commission  
IEC Certification Scheme for Explosive Atmospheres  
FMG 13.0020

BSX has additional hazardous area approvals including:  
• DNV • Lloyd's • TIIS • CCE/CSIR • GOST-R  
Contact Thermon for additional approvals and specific information.

FM Approvals  
Ordinary and Hazardous (Classified) Locations

Underwriters Laboratories Inc.  
Hazardous (Classified) Locations