

# TraceNet™ ECM-P/FAK-1

ECM—Electronic Control Module  
Mounted on FAK-1 Bulkhead Entry  
For Use With TubeTrace® Bundles

## INSTALLATION PROCEDURES



# TraceNet™ ECM/FAK-1

The following installation procedures are suggested guidelines for the installation of the Terminator ECM/FAK-1 Split Bulkhead Entry Kit with the ECM Electronic Controller. For translations other than English and local language translation provided here, please contact Thermon. The English language installation procedure shall govern.

## TraceNet ECM/FAK-1 Kit Contents



Item	Quantity	Description
1	1	Expediter Assembly: Flat Mount Base, Grommet, Threaded Grommet Compressor, and Support Cap with O-Ring
2	1	Junction Box Lid
3	1	Junction Box Base with O-Ring
4	1	Nut
5	1	Electronic Control Module w/Terminal Blocks <small>(Refer to terminal specifications for maximum allowable wire size)</small> ECM Type C- Controller L- Limiter CL- Controller/Limiter
6	1	Junction Box Cord
7	1	FAK-1 Cover (Top)
8	1	FAK-1 Cover (Bottom)
9	1	Heat Reflective Tape
10	2	RTV Sealant Tube
11	1	Glass Fiber Tape
12	1	Silicone Gasket
13	1	Self-Vulcanizing Tape
14	3	Blind Plug

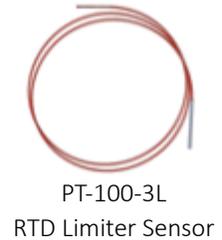
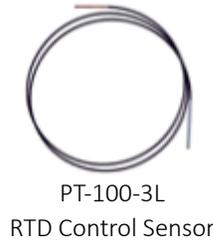
Provided by others — 8 each 8-32 stainless steel bolts, washers and nuts required.

**Required: Order Separately for each heater to be fabricated.**

## PETK Power and End Termination Kits (per cable)

PETK-1	for RSX, VSX-HT, BSX
PETK-2	for KSX, HTSX
PETK-3-ECM	for HPT, FP

## RTD Sensors



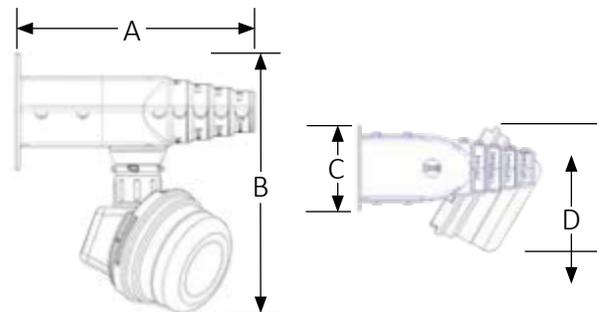
## Receiving, Storing and Handling

1. Inspect materials for damage incurred during shipping.
2. Report damages to the carrier for settlement.
3. Identify parts against the packing list to ensure the proper type and quantity has been received.
4. Store in a dry location.

## Manuals

For operating and monitoring please refer to ECM operating manual.

## Dimensions



	A mm (inch)	B mm (inch)	C mm (inch)	D inch (mm)
TraceNet ECM/FAK-1	220 mm (8-5/8")	277 mm (11-7/8")	107 mm (4-1/4")	171 mm (6-3/4")

## Tools Required



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The TraceNet ECM/FAK-1 Split Bulkhead Entry Kit is designed to provide accurate control with ECM Electronic Control and make a waterproof seal over the end of TubeTrace and terminate Thermon electric heat trace in an approved Terminator junction box. Review Instructions prior to installation. Kit will make one connection.

## Terminator ECM Certifications/Approvals



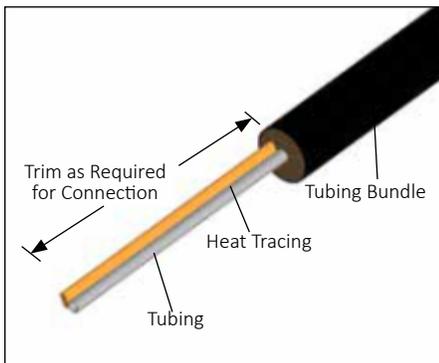
II 2 G Ex e mb [ib] IIC T4 Gb SIRA 12ATEX5239X  
II 2 D Ex tb IIC T135°C IP66 Db



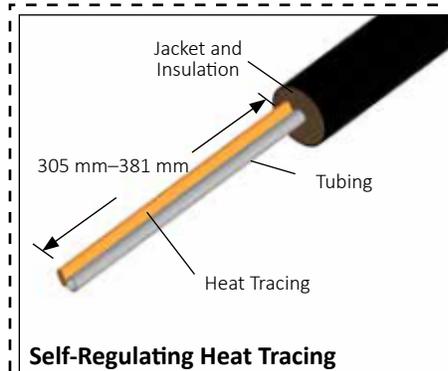
**International Electrotechnical Commission**  
IEC Certification Scheme for Explosive Atmospheres  
SIR 12.0103X

## Installation Precautions

- Keep ends of bundles, heat tracing and kit components dry before and during installation.
- To minimize the potential for arcing on electrical heat tracing caused by product damage or improper installation, use appropriate ground-fault circuit protection.
- Installation must comply with Thermon requirements and be installed in accordance with any applicable national and local codes.
- Component approvals and performance ratings are based on the use of Thermon specified parts only. User supplied power connection fittings must be listed or certified for intended use.
- De-energize all power sources before opening enclosure.
- Individuals installing these products are responsible for complying with all applicable safety and health guidelines. Proper personal protective equipment, or PPE, should be utilized during installation. Contact Thermon if you have any additional questions.

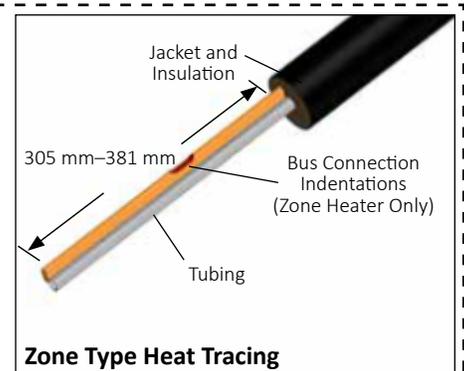


1. Remove outer jacket and insulation from tubing bundle to expose the electric heat trace and tubing. Ensure sufficient heat trace is available for electrical connection. See instructions included with heat trace PETK kit (purchased separately).



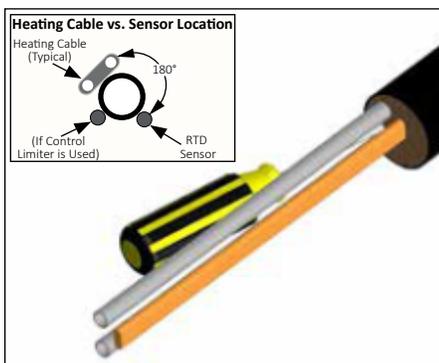
**Self-Regulating Heat Tracing**

2. Trim heat tracing to within 305 mm–381 mm of the end of the insulation. If self-regulating heat trace proceed to step 3. For Zone-type heat trace continue with identification of bus connection on step 2a.

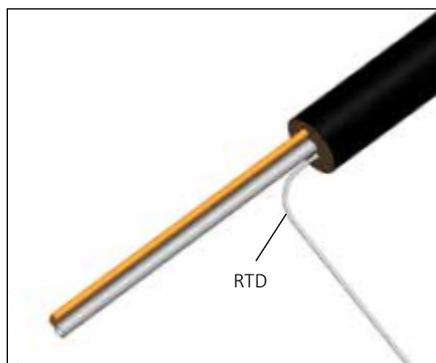


**Zone Type Heat Tracing**

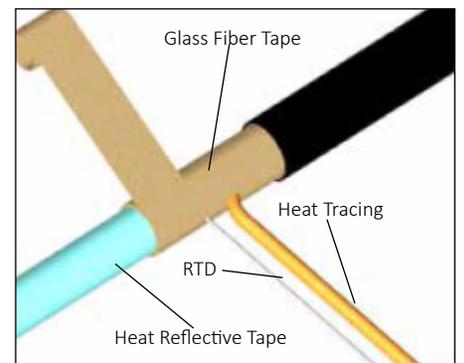
- 2a. Strip back bundle insulation 38 mm to 76 mm beyond bus connection heat tracing. If bus connection indentation is less than 305 mm–381 mm from end of the heat tracing, proceed stripping the bundle insulation to the next indentation.



3. Prepare tubing bundle for RTD sensor(s) by inserting a phillips screwdriver between the process tube(s) and insulation at a point opposite the heating cable. The sensor should be placed 180° around the circumference from the heating cable. Make sure that the entire length of the sensor is in intimate contact with the tube surface. Prevent kinking.

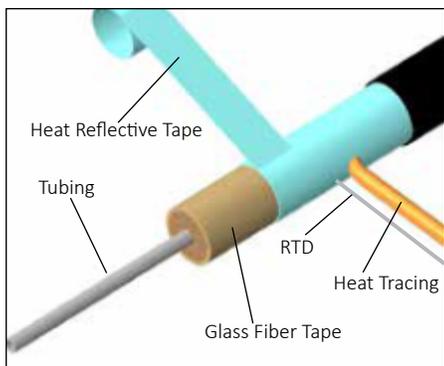


4. Insert the RTD(s) into the prepared hole(s) in the thermal insulation.

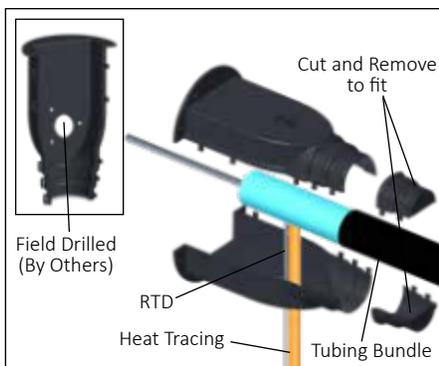


5. Wrap tubes and heat tracing with pass of heat reflective tape (25% overlap). Then wrap with 3 passes of glass fiber tape (50% overlap), or until fiber tape is equal to original bundle insulation thickness.

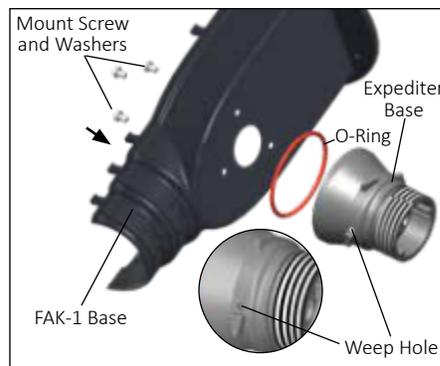
# TraceNet™ ECM/FAK-1



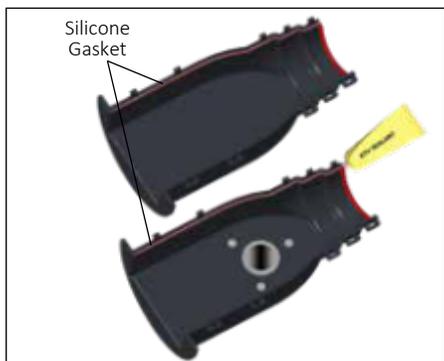
**6.** Complete with 1 additional pass of heat reflective tape.



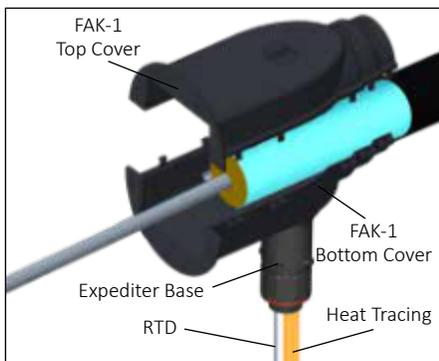
**7.** Cut FAK-1 top and base ends to match outside diameter of tubing bundle and remove end pieces.



**8.** Mount expediter base with o-ring to FAK-1 base using (3) M5 mounting screws and lock washers. Punch out weep hole.



**9.** Install RTV silicone and gasket, cutting off excess. Apply RTV sealant to both halves.



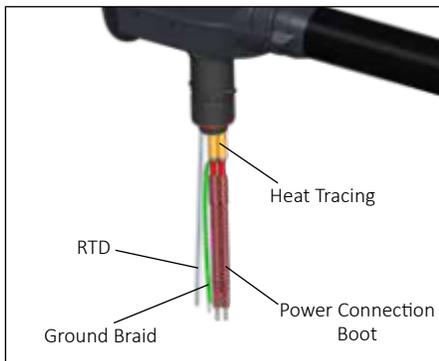
**10.** Assemble FAK-1 top, tubing bundle, and FAK-1 bottom together as shown. Snap together firmly. Inspect ends of tubing splice cover for snug fit. Apply additional RTV sealant where needed.



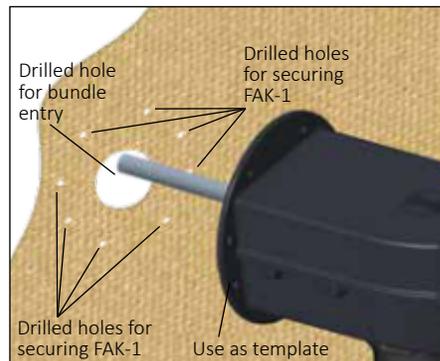
**11.** For HPT and FP cable, exchange grommet in Terminator with GRW-GT2 provided in PETK-3-ECM.



**12.** Apply self-vulcanizing tape around bundle jacket and work up over FAK ends.

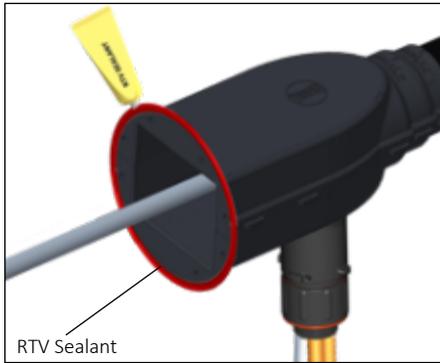


**13.** Terminate heat tracing with appropriate PETK termination kit. Refer to PETK installation instructions for details (not addressed here).

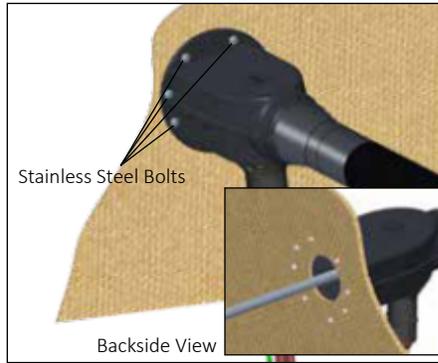


**14.** Field drill required entry hole in wall/plate. Use the FAK-1 flange as a template and mark and drill holes for bolts.

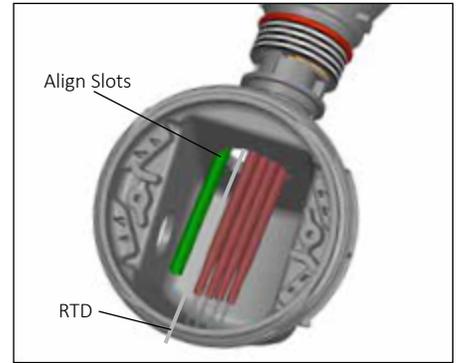
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**15.** Apply RTV bead to back of FAK-1 flange prior to securing to bulkhead.



**16.** Secure FAK-1 to bulkhead/wall using (8) eight stainless steel bolts. Note: stainless steel bolts, washers, and nuts provided by others. Recommended bolt size is 8-32.



**17.** Mount junction box on expediter making sure to align slots to properly orient junction box base.



**18.** Remove M25 dust cap. Install M25 power gland (order separately) and M25 blind plug.



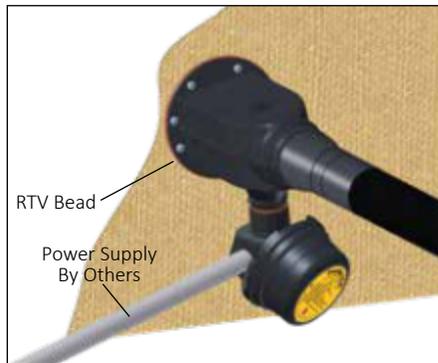
**19.** Install ECM electronic control module and complete system wiring. Terminal set screws shall be tightened to a torque value of 1,4 Nm (12,4 lb-in). See wiring details. Set ECM modules electronic control and/or control limiter at desired setpoints.



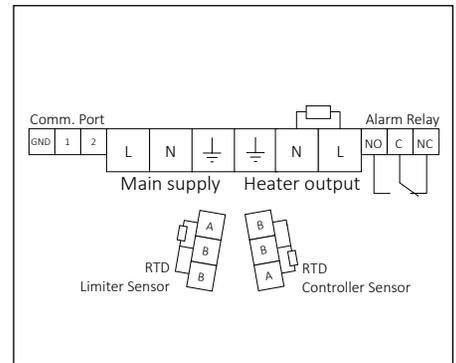
**20.** Use the rotary switches for settling Control and Limit Temperature, (Celsius or Fahrenheit) and Auto or Manual reset (Control switches on Type "C", Limiter switches on Type "L" and both on Type "CL"). Refer to ECM user manual for further details.



**21.** Install junction box lid and twist hand tight. Insert screwdriver into ratchet slot located on side of junction box base to tighten. Use screwdriver to ratchet on junction box lid. Lid will rotate 30° for tight seal. To remove lid, repeat step 21 in opposite direction.



**22.** Apply RTV bead around FAK-1 flange. Completed Terminator with ECM Electronic Controller and FAK-1 for bulkhead entry of Electrically Heated TubeTrace Bundles.



## Wiring Details

Connection (for Heat Trace, RTD Sensor Leads, Alarm and/or Communication Connections)

