

**TraceNet™ ECM/FAK-4(L) Kit**  
ECM Electronic Control Module  
Mounted on FAK-4 or FAK-4L  
In-Line Power/Splice Kit

**INSTALLATION PROCEDURES**



# TraceNet™ ECM / FAK-4(L)

The following installation procedures are suggested guidelines for the installation of the TraceNet™ ECM-P/FAK-4(L) Electronic Control Module In-Line Power/Splice Kit.

## Receiving, Storing and Handling

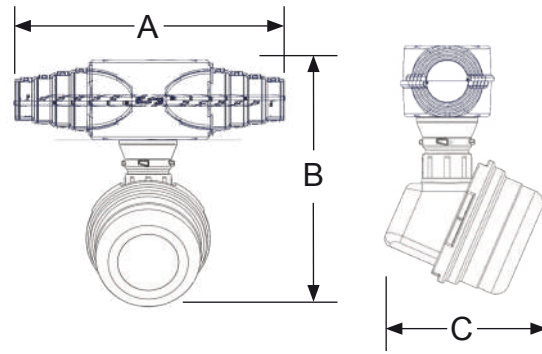
1. Inspect materials for damage incurred during shipping.
2. Report damages to the carrier for settlement.
3. Identify parts against the packing list to ensure the proper type and quantity has been received.
4. Store in a dry location.

## TraceNet™ ECM / FAK-4(L) Kit Contents



Item	Qty	Description
1	1	Expediter Assembly: Support Cap with O-Ring, Threaded Grommet Compressor, Grommet, Support Base with O-Ring
2	1	Junction Box Lid
3	1	Junction Box Base with O-ring
4	1	Expediter Nut
5	1	Electronic Control Module w/ Terminal Blocks (Refer to terminal specifications for maximum allowable wire size) ECM Type C - Controller (with low temp alarm) CH - Controller (with high temp alarm) CL - Controller and Limiter
6	1	Junction Box Cord
7	1	Splice Cover (Top)
8	1	Splice Base (Bottom)
9	8/12	Pan Head S.S. Screws, #10-32 x 3/4"
10	8/12	KEPT S.S. Nuts, #10-32
11	3	M5 Screw
12	3	M5 Lock Washer
13	1	Heat Reflective Tape
14	1	Glass Fiber Tape
15	2	RTV Sealant Tube

## Dimensions



	A mm (inch)	B mm (inch)	C mm (inch)
Terminator ECM /FAK-4	279 mm (11")	289 mm (11-3/8")	185 mm (7")
Terminator ECM /FAK-4L	489 mm (19-1/4")	305 mm (12")	185 mm (7")

## Product Reference Legend

**ECM-CL-12-P-WP-SP**

<b>Control Type</b>	<b>Switch Configuration</b>
C = Controller (with low temp alarm)	SP = Single Pole (120 Vac)
CH = Controller (with high temp alarm)	DP = Double Pole (208 or 240 Vac)
CL = Controller and Limiter	<b>Mounting Options</b>
<b>Comm. Network</b>	WP = Wall Mount Bracket with Expediter
1 = RS485	<b>Cable Profile</b>
<b>Nominal Voltage Range</b>	P = RSX, VSX-HT, BSX, KSX, HTSX, FP, HPT, USX
1 = 120 Vac	
2 = 240 Vac	
3 = 208 Vac	

## Tools Required



## Order Separately

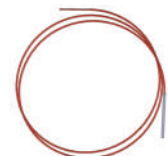
### PETK Power and End Termination Kits (per cable)

PETK-1D	for RSX, VSX, BSX
PETK-2D	for KSX, HTSX
PETK-3-ECMD	for HPT, FP

### RTD Sensors



PT100-3L  
Control Sensor



PT100-3L  
Limiter Sensor

# INSTALLATION PROCEDURES

The TraceNet™ ECM / FAK-4(L) Electronic Control Module In-Line Power / Splice Kit is designed to provide accurate control with the ECM controller and make a waterproof seal over the TubeTrace and terminate the Thermon electric heat trace in an approved Terminator junction box. Review Instructions prior to installation. Kit will make one connection.

## 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.

## Terminator ECM Certifications/Approvals



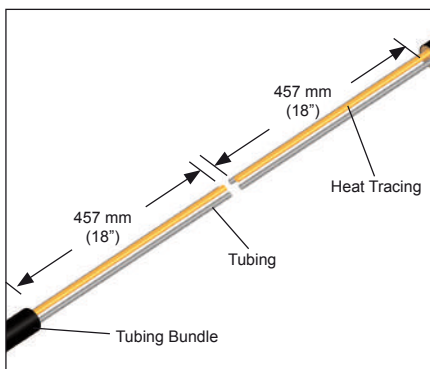
II 2 G Ex eb mb [ib] IIC T4 Gb SIRA 12ATEX5239X  
II 2 D Ex tb IIIC T135°C IP66 Db



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



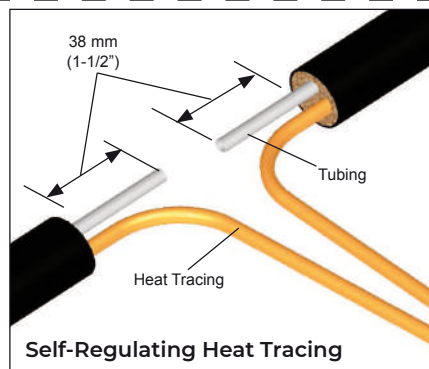
Class I Division 2, Groups A, B, C, D  
Class II Division 2, Groups F, G; Class III; T4  
14.2709489X Ex eb mb [ib] IIC T4  
Ex tb IIIC T135°C  
Class 1, Zone 1, AEx eb mb [ib] IIC T4  
Zone 21, AEx tb IIIC T135°C



1. Remove outer jacket and insulation from tubing bundle approximately 508 mm (20") from end of the tubing bundle.

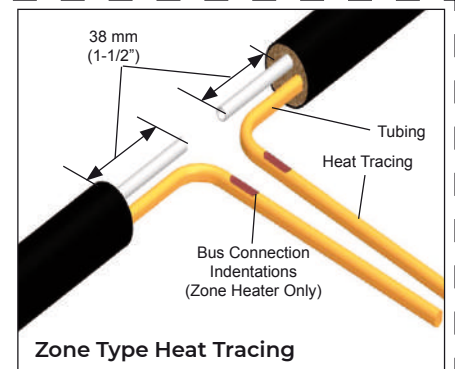


Do not cut or damage the heat trace or sampling tube.



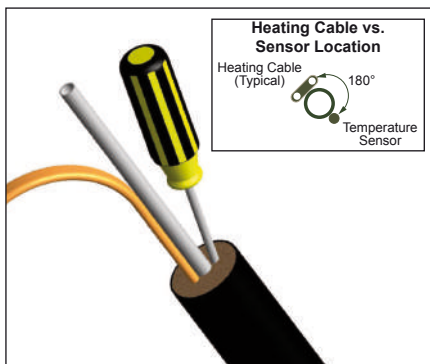
**Self-Regulating Heat Tracing**

2. Trim tubing to within 38 mm (1-1/2") 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.

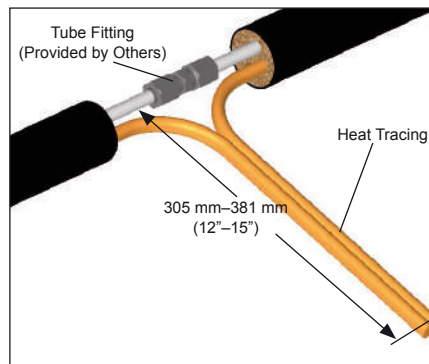


**Zone Type Heat Tracing**

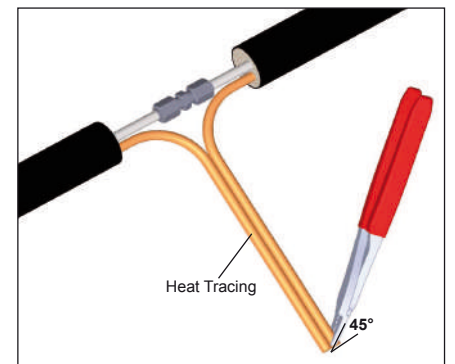
- 2a. Strip back bundle insulation 38 mm (1-1/2") beyond bus connection indentation of each heat tracing. If bus connection indentation is less than 305 mm (12")—381 mm (15") from end of the heat tracing, proceed stripping the bundle insulation to the next indentation. Trim tubes so the bus connection indentation on each meet.



3. With a screw driver, create a gap for the sensor between the insulation and the tubes and place the sensor inside.

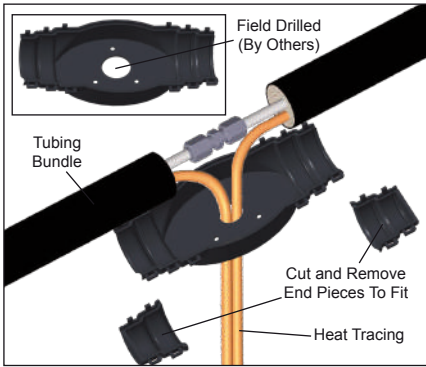


4. Make tube fitting connections with appropriate fitting (provided by others). Test fitting for leaks before proceeding. Mount tube fitting shifted from each other in case of multiple tubes.

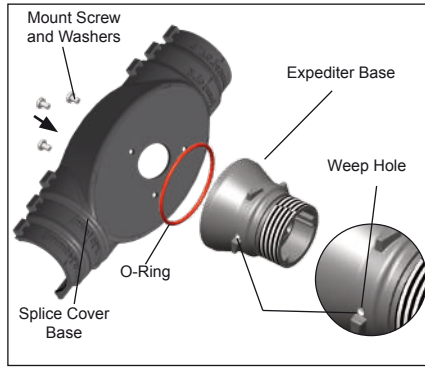


5. Cut the ends of the cable at an angle to aid in piercing grommet.

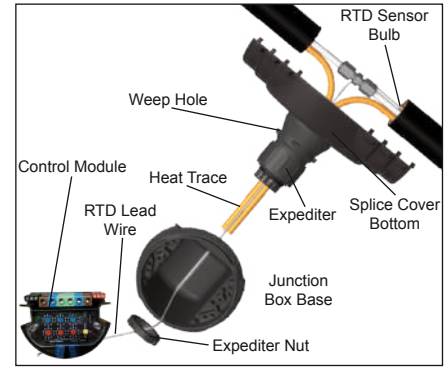
# TraceNet™ ECM / FAK-4(L)



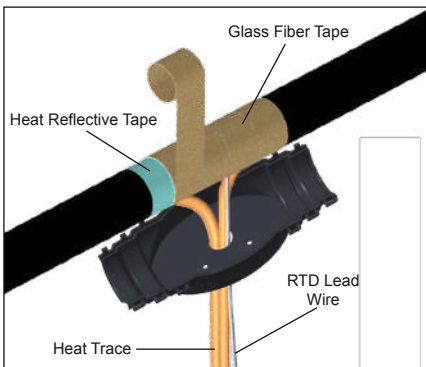
6. Cut splice cover ends to match outside diameter of tubing bundle. Field drill expediter base holes.



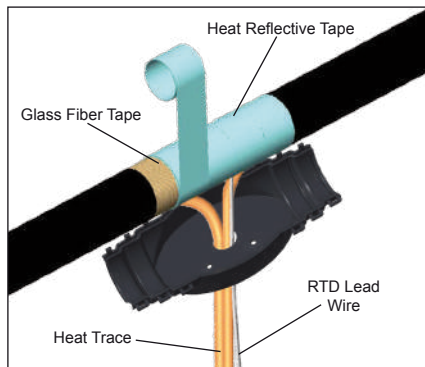
7. Mount expediter base with o-ring to the splice cover base using (3) M5 mounting screws and lock washers. Punch out weep hole.



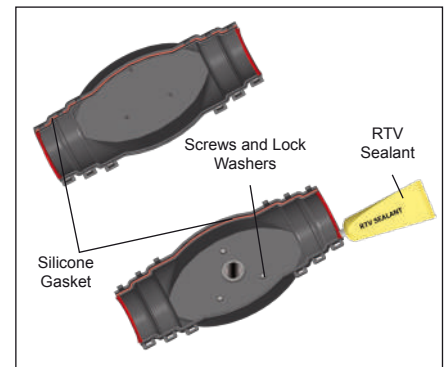
8. Route RTD tip through expediter nut and expediter opening in junction box base. If necessary, apply lubricant (user supplied) to the end of RTD tip. Slide through conical grommet hole. Insert the tracing cables through conical grommet holes and punch out weep hole.



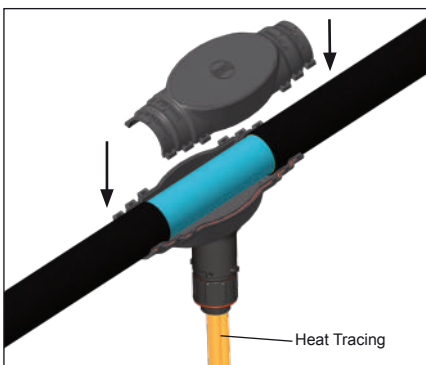
9. Wrap tube and heat trace with 1 pass of reflective tape (25% overlap), then wrap with 3 passes of glass fiber tape (50% overlap), or until fiber tape is equal to original bundle insulation thickness.



10. Complete with additional passes of heat reflective tape.



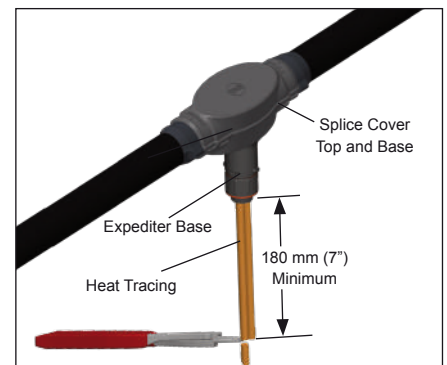
11. Install silicone gasket and cut off excess. Apply RTV sealant to both halves.



12. Assemble splice cover top, tubing bundle, and splice cover base together as shown. Snap together firmly. Inspect ends of tubing splice cover for snug fit. Apply additional RTV sealant where needed.

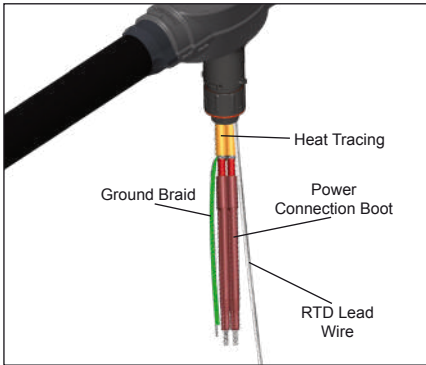


13. Apply self-vulcanizing tape around bundle jacket and work up over FAK ends.

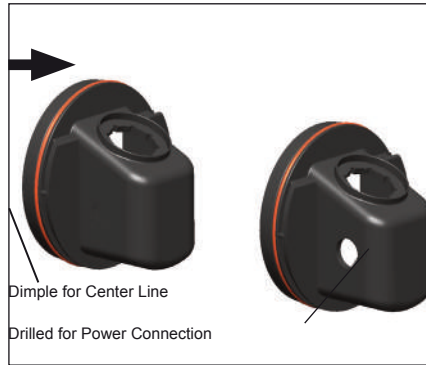


14. Trim heat tracing to 180 mm (7") minimum from expediter base.

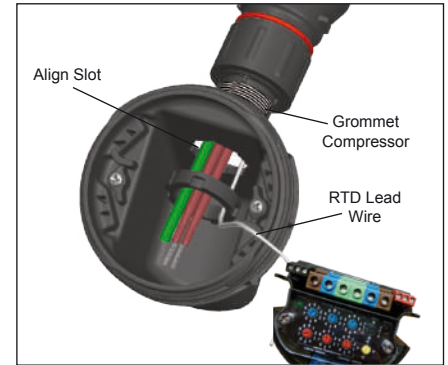
# INSTALLATION PROCEDURES



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



**16.** Locate the dimple molded into side of junction box base, identify center hole, drill for user supplied power connection fitting per manufacturer's recommendations.



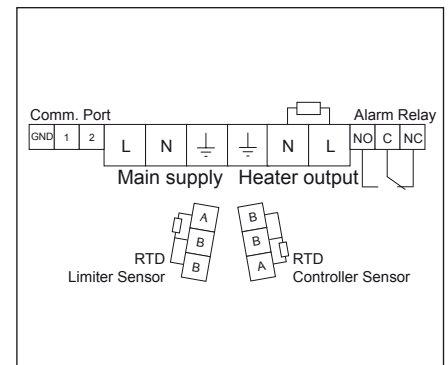
**17.** Mount junction box on expediter making sure to align slots to properly orient junction box base. Tighten nut.



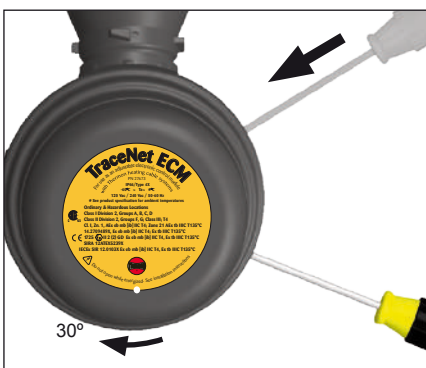
**18.** Install ECM electronic control module and complete system wiring. Terminal set screws shall be tightened to a torque value of 1,4 Nm (12,4 lb-in). See wiring details. Set ECM modules electronic control and/or control limiter at desired setpoints.



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



**20.** Wiring Details: Connection (for Heat Trace, RTD Sensor Leads, Alarm and/or Communication Connections)



**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 ratchet on junction box lid. Lid will rotate 30°. To remove lid, repeat steps but in opposite direction.



**22.** Completed TraceNet ECM / FAK-4(L) In-Line Power/Splice Kit for TubeTrace Type SE/ME Bundle (Installation shown is to feed power in the middle of a TubeTrace bundle. Many installations will be near the end of a TubeTrace bundle.) Install bundle clamps (order separately) 300 mm (12") before and after In-line power kit.

