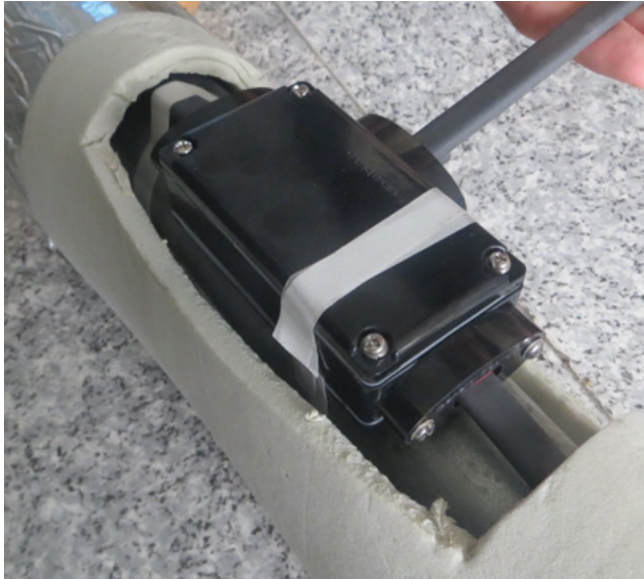




Installation Instructions

Description

- The TBK-EHT is designed to be used with POWER TRACE EHT Self-Regulating Heating Cables.
- The TBK-EHT is installed on the pipe under the insulation and/or cladding.
- The TBK-EHT is Explosion Proof Rated / Nema 4x.

Tools & Material Needed

- Wire cutter • Needle Nose Pliers • Screwdriver • Tie Wrap
- Ambient Temperature $-40^{\circ}\text{C} \sim +40^{\circ}\text{C}$ or $+55^{\circ}\text{C}$
- Rated voltage: 110V-120V, 220-240V
- IP Class: IP 66/67
- Fastener screw torque: 1.2N-m
- COT (Sealing plug) : $-55^{\circ}\text{C} \sim +210^{\circ}\text{C}$
- COT (Gasket) : $-55^{\circ}\text{C} \sim +210^{\circ}\text{C}$
- RTI (Enclosure) : $+200^{\circ}\text{C}$
- Rated Current : 35A or 28A
- Terminal Torque: 0.7N-m; Fastener screw torque: 1.2N-m

Protection Type:



Class I, Zone 1, AEx/Ex 60079-30-1 IIC T6...T3 Gb, Zone 21, AEx/Ex 60079-30-1 IIIC T85°C...T200°C Db Class I, Division 2, Groups A, B, C, D T6...T3, Class II, Division 2, Groups F, G T6...T3

Kit Includes		
Item	Qty	Description
A	1	Main Box
B	3	Pressure Seal End
C	3	Sealing Plug Grommet
D	2	Gaskets for Main Box
E	2	Cover for Main Box
F	1	Label



WARNING

This component is an electrical device that must be installed correctly to ensure proper operation and to prevent shock or fire. Read these important warnings and carefully follow all the installation instructions. To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with the requirements of POWER TRACE LLC.

certifications, and National Electrical Codes, and ground fault equipment protection must be used. Arcing may not be stopped by conventional circuit breakers. Component approvals and performance are based on the use of Power Trace. specified parts only. Do not use substitute parts or vinyl electrical tape. The black heating cable core is conductive and can short. It must be properly insulated and kept dry.

Damaged bus wires can overheat or short. Do not break bus wire strands when scoring the jacket or core. Keep components and heating cable ends dry before and during installation. Bus wires will be short if they contact each other. Keep bus wires separated. Use only fire-resistant insulation materials, such as fiberglass wrap or flame-retardant foam.

2 Installation

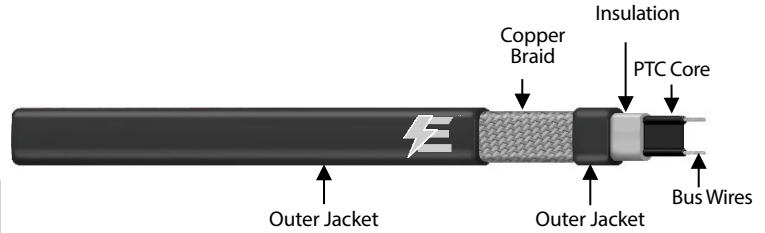
1

Cable Description

Heating Cable Type	Grommet
EHT	-CR or -CT RED



WARNING: Use of the wrong grommet can result in leaks, cracked components, shock or dielectric failure, and will invalidate approvals and certifications.



Structure of Model EHT Heating Cable



2

- Leave extra wire for connections and mishaps.
- Place connection box in the middle.

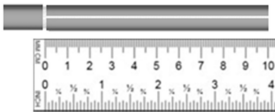


3

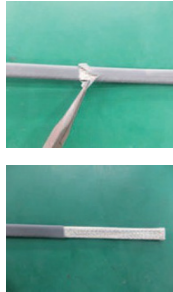
- Insert the pressure seal end first, then the grommet for each cable.



4

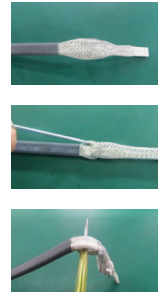


- Score the outer jacket (Do not cut braiding)
- Slightly bend the cable where you made the cut and carefully remove the outer jacket.



5

- Push the braiding back to create bump.
- At the bump, use a screwdriver to make a small hole in the braiding.
- Bend the cable and work it through the braiding.



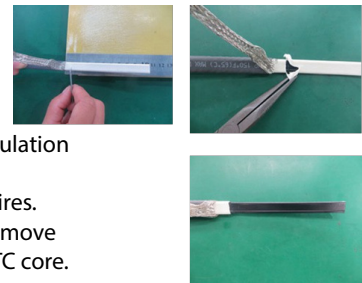
6

- Make a tail with the braiding at the center of the cable.



7

- Lightly cut around insulation jacket.
- Do not cut into bus wires.
- Bend the cable and remove insulation from the PTC core.



8

- Nick the end of the PTC core.
- Using needle nose pliers, grip bus wire and strip back.
- Repeat for second bus wire.



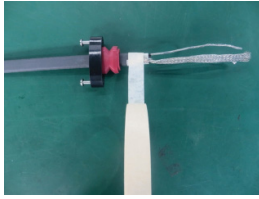
9

- Remove center PTC core.
- Cut the center core between the two bus wires.
- Strip and clean the two bus wires.

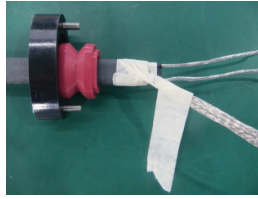


2 Installation

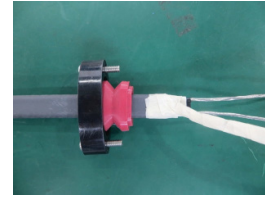
1 FOR CLASS 1 DIVISION 2 APPLICATIONS ONLY! - Otherwise proceed to step 10.



- Using fiberglass fixing tape, wrap a minimum of three loops around the inner insulation jacket..



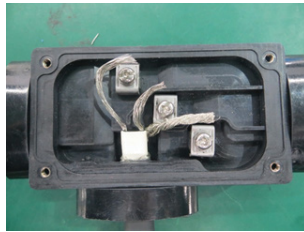
- Separate the braiding and wrap a loop around the length of braid, making a tail.



- Install the sealing plug to the edge of the tape.
CAUTION: Do not install the sealing plug over the tape!

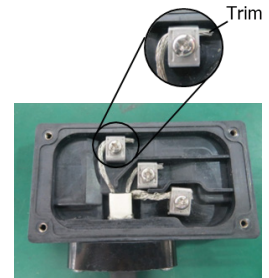
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- Install wire number 3 into the main box.
- Install the pressure seal and sealing plug into their positions.
- Push pressure seal end in and then tighten screws back to the main box.



11

- Loosen screw number 3.
- Install wire number 3 on its base and tighten the screw back into position.



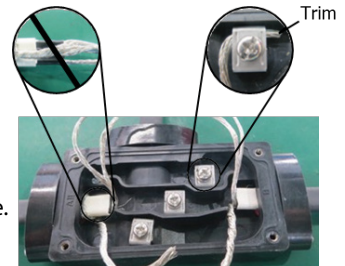
12

- Install wires from cables 1 and 2 into the main box.
- Install sealing plugs into holes of main box..
- Push in pressure seal ends and tighten screws into main box.



13

- Loosen screws 1 and 2.
- Install wires 1 and 2 onto each base.
- Tighten the screws back into position.
- Remove any extra bus wire.



14

- Install the gaskets and cover onto the main box.
- Tighten main cover with the four screws onto the main box.



15

- Install the low-profile tee box on the pipe using fiberglass fixing tape.
- Cover with insulation.
- Install a warning label on the outer insulation protective jacket to show location.



Important:

- For the Power Trace warranty and agency approvals to apply, the instructions that are included in this manual and product packages must be followed.
- The safety and reliability of any heat-tracing system depends on the proper design, installation and maintenance.
- Improper handling, installation, or maintenance of any of the system components can cause under-heating or overheating of the pipe or damage to the heating cable system and may result in system failure, electric shock or fire.
- Power Trace heating cables and components are approved for use in hazardous and nonhazardous locations.

3 Maintenance

Recommended maintenance for Power Trace EHT model series systems consist of performing the commissioning tests on a regular basis. Systems should be checked before each winter. A means of protecting against earth ground faults shall be adopted for the circuit in accordance with the user Instruction.

- *Check inside heating cable components for proper installation, overheating, corrosion, moisture, and loose connections.
- *Check the electrical connections to ensure that ground and bus wires are insulated over their full length.
- *Check for damaged or wet thermal insulation; damaged, missing or cracked lagging and weather-proofing.
- *Check that end seals, splices, and tees are properly labeled on insulation cladding.
- *Check control and monitoring system for moisture, corrosion, set point, switch operation and capillary damage.

Symptoms & Probable Causes

Symptom	Probable Causes	Corrective Action
Low or inconsistent insulation resistance	Arcing due to damaged heating cable insulation. Moisture is present in the components.	Replace damaged heating cable sections and re-terminate any improper or damaged connections. If moisture is present, dry out the connections and retest.
Circuit breaker trips	Circuit breaker is undersized. Start-up at too low a temperature. Connections and/or splices are shorting out.	Recheck the design for startup temperature and current loads. Do not exceed the maximum circuit length for heating cable used. Check to see if existing power wire sizing is compatible with circuit breaker. Replace the circuit breaker if defective or improperly sized. Visually inspect the power connections, splices, and end seals for proper installation, correct as necessary.

For information regarding other applications, design assistance or technical support, contact Power Trace representative directly. The person should be familiar with the plans, installation, operation and maintenance of electric trace heating systems. The person should be trained and qualified before installation.

Storage & Transport

- Store the TBK-EHT end seal junction box in a clean, dry place.
- Ambient Temperature: -40°C ~+40 °C or +55°C
- Protect the heating cable from mechanical damage.
- Compare the delivery note with the supplied goods.
- Examine the supplied heating cables and accessory components for possible transport damage.

Warning:

- Do Not Open When an Explosive Atmosphere Is Present! Do Not Expose to Ultraviolet Light!
- Do Not Reuse Integral Components!

4 Specific Conditions Of Use

- The minimum installation temperature of the EHT model line of heat trace is -40°F/-40°C.
- The relationship between heating cable type, temperature class, maintenance temperature, and maximum exposure temperature is as follows:

CABLE NUMBER	TEMPERATURE CLASS	MAXIMUM MAINTENANCE TEMPERATURE	MAXIMUM EXPOSURE TEMPERATURE
EHTx	T6	150°F/85°C	150°F/85°C
EHTL	T6	150°F/85°C	150°F/85°C
12EHTL	T5	212°F/100°C	212°F/100°C
EHTP	T4	230°F/110°C	275°F/135°C
EHTM	T3	302°F/150°C	392°F/200°C
EHTM	T2	410°F/210°C	500°F/260°C

- The minimum installation temperature of the EHT line of heat trace is -40°F/-40°C.
- The minimum bending radius of EH Series cables is 30 mm or approximately 1".
- The EHT Series Self-Regulating Heat Trace Cable Systems must be installed according to the instructions.
- Ground-Fault Equipment Protection (GFEP) Device must be used with this heating cable!
- The EHT Series heat trace cable and integral components (SBK-EHT, TBK-EHT, ELK-EHT) shall be covered by thermal insulation when installed.
- When installing the EHT integral components, the user must provide sufficient clamping of heat trace cable to ensure that pulling on the cable is not transmitted to its terminations.
- Only approved suitable certified terminal enclosure according to the instructions.
- An additional, suitably certified cable seal and, if applicable, blanking element is required to complete the installation. Refer to the instructions.
- The PBK-EHT-120, SBK-EHT, TBK-EHT and ELK-EHT connection kits are for use only with the manufacturer's EHTx, EHTL, EHTP, EHTM and EHTH model series heating cables.

WARNING:

De-energize the circuit before installing or servicing heating cables or components.

See Individual Product Installation Instructions for more Important Safety Information.

A Ground-Fault Equipment Protection (GFEP) Device must be used with this heating cable!

Reference NEC Article 215.10.