

Polymer Insulated Series Heating System

Constant Watt Technology

The most proven and reliable range of HEW-THERM Polymer Insulated (PI) series heating systems is the industry-preferred solution when circuit lengths exceed the ratings of parallel heating cables and the number of power supply points is a constraint. Operating to voltages up to 750 V, Pyrotenax are series resistance heating cables which can provide:

Temperature maintenance up to 200°C;

Exposure temperatures up to 300°C;

Circuit lengths from a few metres to approximately 5 kilometres.



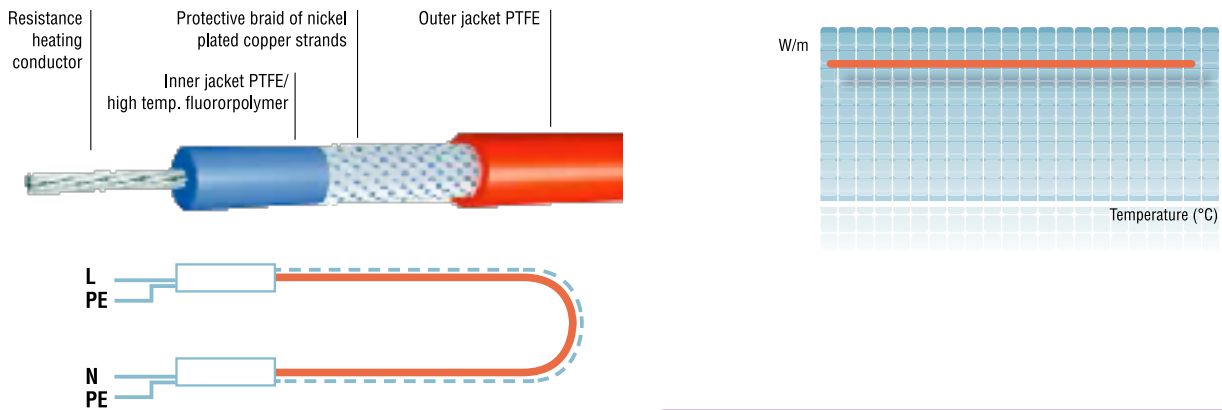
Construction

The stranded high temperature conductor is nickel plated to ensure a long life at elevated temperatures in corrosive environments. It is electrically isolated using an innovative sandwich construction of selected high-temperature fluoropolymers. A braid of nickel plated copper strands provides extra mechanical protection as well as a low Ohmic resistance earth path. A final PTFE jacket ensures optimum chemical resistance and highest temperature withstand capabilities.

How it works

Heat is generated in the central conductor through the principle of Ohmic resistance heating. A variety of conductor materials is used, depending on the specific resistance requirements.

Power output and temperature of a PI series heating system depend on the specific application. Design parameters including type/resistance used, circuit length, applied voltage and electrical configuration directly influence the performance of the heating system. Design and product selection should be carried out by qualified personnel using appropriate design software. Any change to these parameters can be critical and requires a re-validation of the design.



Benefits

• Large variety of resistances

PI heating cables are available in a very wide resistance range to meet the requirements of the broadest range of applications.

• Easy termination on-site

They can easily be terminated in the field. The fabrication method keeps the cables very flexible and allows for easy stripping while printed metre marks facilitate on-site handling.

• Maximum chemical resistance of PTFE

The use of PTFE provides maximum chemical resistance and ensures the highest lifetime insulation resistance over the entire temperature.

Applications

PI heating systems can be used for applications involving maintain temperatures up to 200°C and exposure temperatures up to 300°C.

Maximised circuit lengths can significantly reduce the total installed cost.

Control, Monitoring and Design Tools

As PI heating cables do not adjust their power output with temperature and do not have an unconditional T-rating, they typically require the use of more sophisticated control and monitoring systems.

Supermec offers a vast range of control and monitoring products to suit every application's needs with respect to control, supervision and data analysis.

PI heating systems are also supported by our unique TraceCalc Pro design tool, a free, state of the art software, downloadable from:

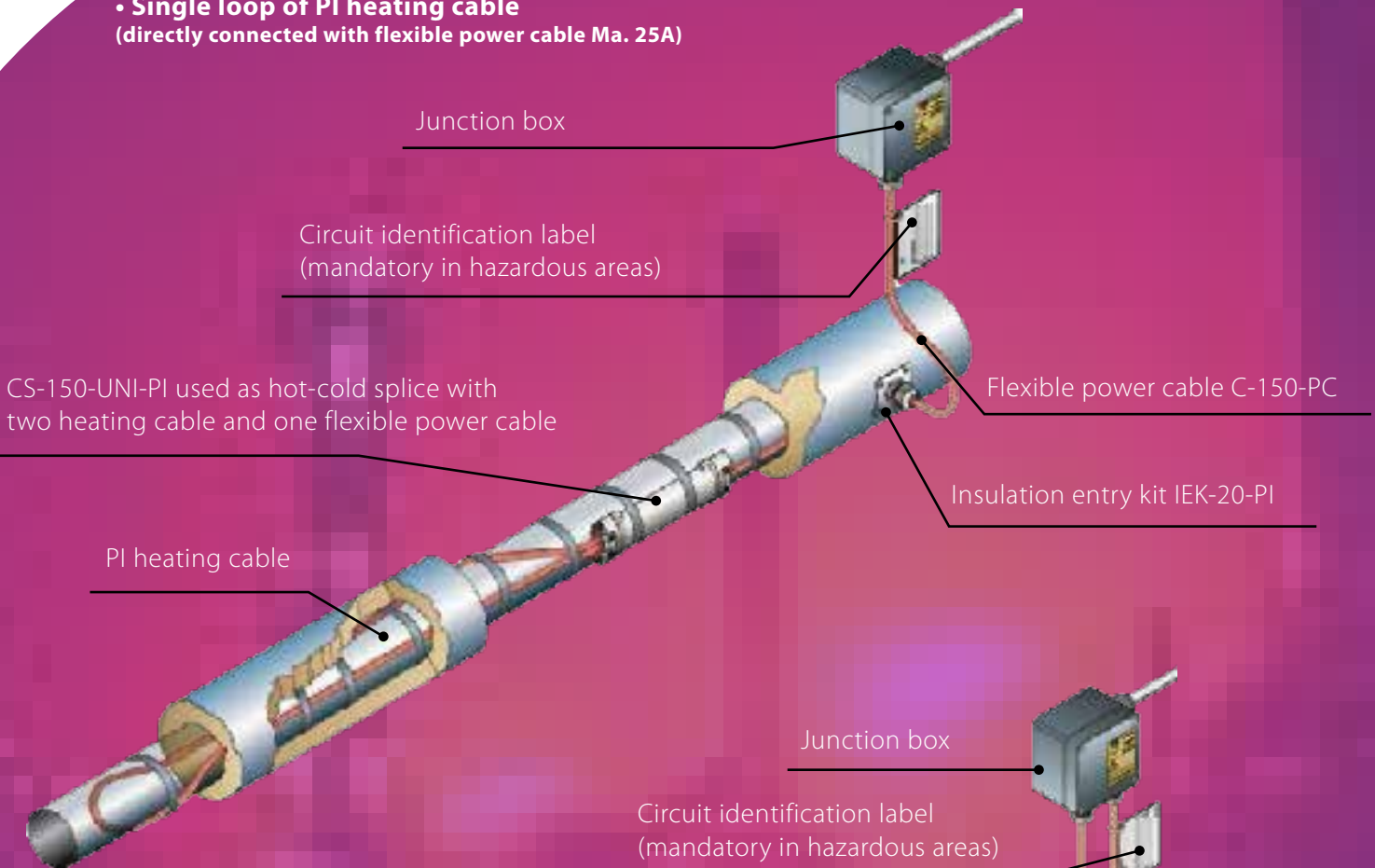
www.supermec.com.sg

Refineries	Natural gas plants	General industrial facilities
Crude oil gathering lines (viscosity control)	Natural gas lines (condensation prevention)	Tank farms
Off-site crude oil lines	Sulphur lines (viscosity control & melting)	Storage facilities
Fuel oil lines	Transfer lines	Bitumen lines
Sulphur lines (viscosity control & melting)	Caustic soda lines	Product transfer lines
Transfer lines	Waste water lines	Frost protection of long linesww
Caustic soda lines		
Waste water lines		

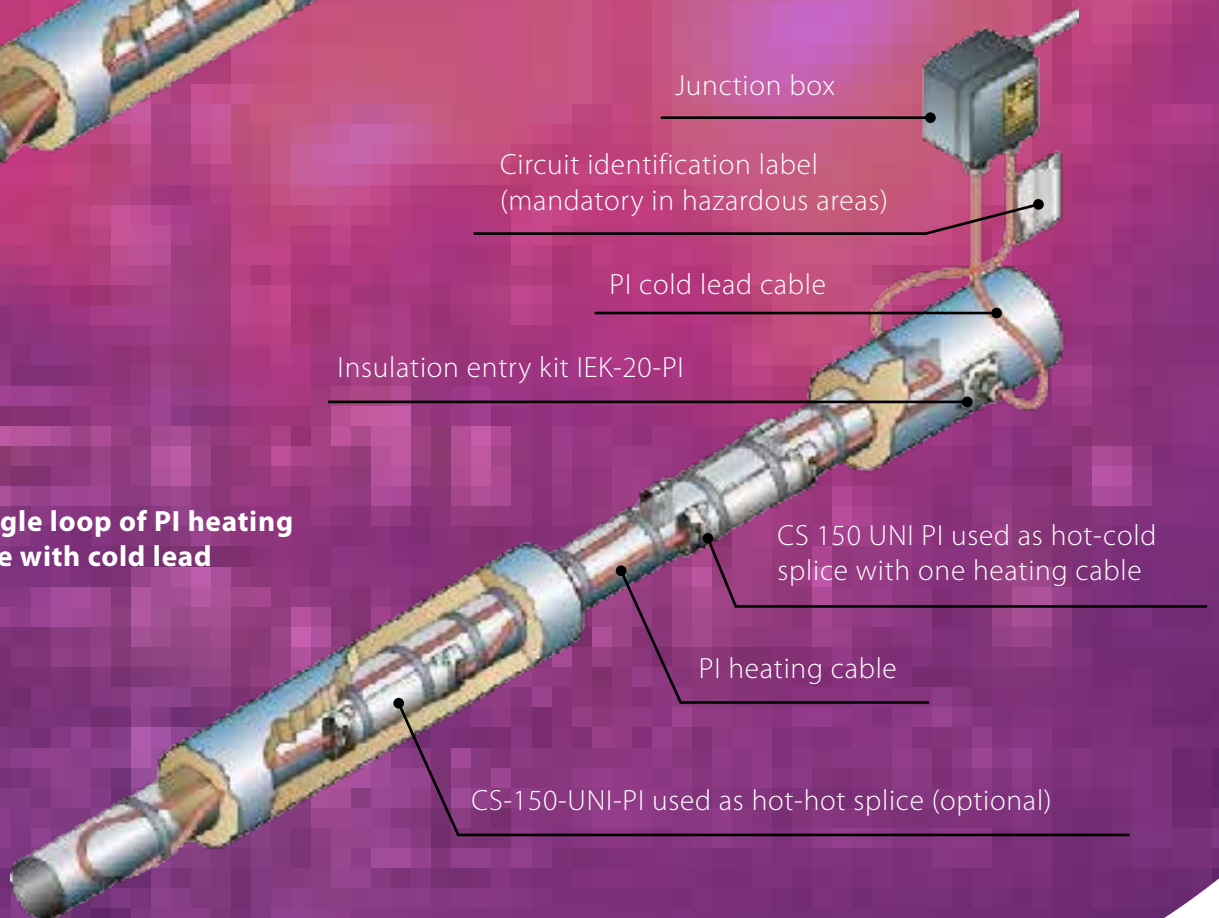


Typical configurations for PI heating cable systems

• Single loop of PI heating cable (directly connected with flexible power cable Ma. 25A)



• Single loop of PI heating cable with cold lead





XPI-NH

HEW-THERM Polymer Insulated (PI) series heating cable for use in non-hazardous areas. The heating cable can be used for temperatures up to 260°C and provides the highest chemical resistance and good mechanical strength, particularly at elevated temperatures.



XPI

HEW-THERM Polymer Insulated (PI) series heating cable for use in hazardous areas (gas and dust environments). The heating cable can be used for temperatures up to 260°C with an intermittent exposure up to 300°C. The inner insulation layer consists of a sandwich construction of high temperature fluoropolymers and PTFE and the outer jacket is made of PTFE, providing a highly flexible, easy to terminate robust heating cable with the highest chemical resistance and excellent mechanical strength (4 J impact resistance), particularly at elevated temperatures.



XPI-S

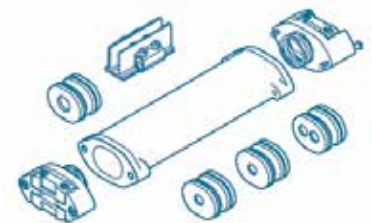
HEW-THERM Polymer Insulated (PI) series heating cable for use in hazardous areas (gas and dust environments). The heating cable can be used for temperatures up to 260°C with an intermittent exposure up to 300°C. The inner insulation layer consists of an extra thick sandwich construction of high temperature fluoropolymers and PTFE and the outer jacket is made of PTFE, providing a highly flexible, easy to terminate very robust heating cable with the highest chemical resistance and most excellent mechanical strength (7 J impact resistance), particularly at elevated temperatures.



CS-150-UNI PI

Universal under insulation connection kit for PI heating cables. Approved for use in hazardous areas, cold applied, using screw terminals.

For the splicing and the connection of PI heating cables to cold leads (max 32A) or a 3-core flexible power cable (max 25A). Glands (M20) and appropriate insulation entry kits need to be ordered separately.

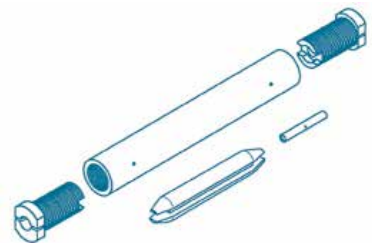


CS-150-2.5-PI

Under insulation splice/connection kit for PI heating cables.

Approved for use in hazardous areas, silicone filled, using crimp connectors.

For the splicing and the connection of PI heating cables to cold leads with a maximum cross section of 2.5 mm². Glands (M20) and appropriate insulation entry kits as well as the conductor crimp, need to be ordered separately.



CS-150-6-PI

Under insulation splice/connection kit for PI heating cables.

Approved for use in hazardous areas, silicone filled, using crimp connectors.

For the splicing and the connection of PI heating cables to cold leads with a cross section from 4 to 6 mm². Glands (M20) and appropriate insulation entry kits as well as the conductor crimp, need to be ordered separately.

