

**HEAT TRACING SYSTEMS**

Electrical Heat Tracing systems

The flexible and adaptable electrical heat tracing systems of Klöpper-Therm are suited for keeping your processes at the proper temperature. The areas of application are as varied as your processes. Whether you want to protect a medium against frost, heat it to process temperature, or maintain the process temperature. With the electrical heat tracing systems of Klöpper-Therm, the possibilities are endless.

The advantages

- ▶ High flexibility and adaptation to your local conditions
- ▶ Effective and economical utilisation of the energy deployed
- ▶ High temperature control precision
- ▶ Low maintenance costs
- ▶ Components that have been adapted to each other
- ▶ Planning and execution of wiring
- ▶ Commissioning or handover of the ready-to-operate system
- ▶ Documentation

Our services include

- ▶ Determination of customer-specific requirement
- ▶ Development of suggestions for solutions
- ▶ Engineering, especially for systems in explosive atmospheres
- ▶ Provision of heating materials
- ▶ Switchgear construction using control units that have been especially developed for heating control systems
- ▶ Planning and execution of wiring
- ▶ Assembly/construction site management
- ▶ Commissioning or handover of the ready-to-operate system
- ▶ Turnkey systems
- ▶ Documentation
- ▶ Customer care provided by our service employees (even after the hand-over of the system)

Heating cables and heating tapes

We offer heating cables for use in:

- ▶ Chemical plants, refineries, power plants, etc.
- ▶ Explosive atmospheres

Fixed resistance cables are mainly single-wire heating cables/heating lines with the following features:

- ▶ Defined resistance per metre
- ▶ Constant heating output across the entire temperature range
- ▶ Variable supply voltage up to 690 Volt
- ▶ Optimum monitoring due to the series connection of resistors
- ▶ Simple heating circuit structure for long pipelines with only one source of supply
- ▶ Low wiring effort
- ▶ Can be used in explosive atmospheres, also in ATEX-certified design
- ▶ Stabilising design according to EN 50019/IEC 62086 - 1 possible

The fixed resistance cables are mainly divided into two groups:

Single-wire plastic heating lines (EKL) can be used for operating temperatures up to a maximum of 260°C. The conductor insulation and external sheath are made of fluorocarbon resin. For this reason, these heating lines are particularly suited for use in the chemical industry under aggressive ambient conditions. Single-wire plastic heating lines are available in various designs according to requirements.

Mineral-insulated heating cables (MI) are particularly used for high temperatures up to 800°C, but also represent an affordable alternative to single-wire plastic heating lines in the case of long transfer lines, insofar as the possibility of corrosion can be excluded. Mineral-insulated heating cables are available with various external sheaths in copper, copper-nickel, and stainless steel.

Self-limiting heating tapes (SBH)

Between their two connections, self-limiting heating tapes have a heating element that permits a lower flow of current at higher temperatures and thus reduces the power output in a self-limiting manner.

The main features are as follows:

- ▶ Temperature-dependent power output
- ▶ Supply voltage: 230 to 277 V
- ▶ Easy handling
- ▶ Can be cut to almost any length within certain limitations
- ▶ Can be used in explosive atmospheres
- ▶ Stabilising design according to EN 50019/IEC 62086-1 possible

Self-limiting heating tapes are suited for frost protection and the maintenance of process temperatures up to 150 °C, periodically up to a maximum of 250 °C saturated steam.

Parallel heating tapes (PHB)

In contrast with the self-limiting heating tapes, parallel heating tapes do not have a temperature-dependent heating element and thus have a constant heating capacity output.

For all heating cables, heating lines, and heating tapes, assembly-friendly connection components and various fastening materials are available.