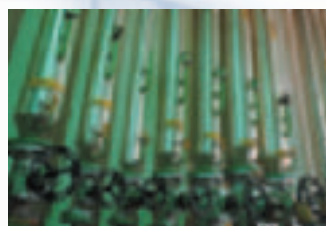




Telecommunications



Valves and controls



Healthcare



Fire and security systems



### Electrical heat-tracing

### Tyco Thermal Controls

As part of Tyco's Engineered Products and Services Division, we have access to the know-how and resources of sister companies active in allied sectors such as pipes, pipe hangers, valves, couplings, fittings and measuring instruments.

We deliver heat-tracing and leak detection systems to the industrial, commercial construction, telecommunications, transportation, medical and other OEM sectors. Embracing the activities and experience of Raychem, Hew-Therm, Pyrotex, DigiTrace, Isopad, TraceTek and Tracer, we make a greater variety of heat-tracing products than any other company. With more than 50 years of experience, we have delivered over 500 000 km of heat-tracing cable for installation in more than 100 countries around the world.

We manage the heat you need.

## tyco Thermal Controls



## TOTAL CARE IN HEAT-TRACING

## We manage the heat you need

Reliable frost protection, process temperature maintenance and accurately controlled heating are essential in minimising costs and improving efficiency for many sectors of industry. Each application demands a specifically tailored approach.

We offer thermal management solutions based on the most appropriate technologies for any situation. And we back them with a flexible approach to service provision on a global scale.



### Pipe tracing

From long, straight transfer lines to complex process pipework



### Surface heating

Tanks, vessels and drums  
Custom applications



### Specialty applications

Tubing bundles for instrument lines  
Flexible hoses



### Control and monitoring

From basic thermostats to complete, multi-circuit monitoring and control systems



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Reliable temperature maintenance for pipes



A tailored solution for any type of tanks and vessels



Drum heaters for all environments

*“The extensive product range made it easy to find a perfect fit to our specific needs.”*



Frost protection of process lines

### Pipe tracing

**From a two-metre instrument line to a 20 km transfer line**

Our pipe heat-tracing systems cover the complete range of applications: from frost protection of water lines for general industrial operations, to temperature maintenance up to 800°C in many types of process plant (including steam-cleanable systems).

**From frost protection to high-temperature process maintenance**

Whether the process involves the protection of a single water line – or requires tight temperature control for multiple process lines – we can provide the most cost-effective answer.

### Surface heating

**From standard drums to custom-built vessels**

A choice of our cables, jackets and panels meets a broad spectrum of needs for heating-up or maintaining the temperature of tanks, hoppers and other storage containers, valves, filters and process vessels. Standard off-the-shelf products are available for most applications requiring temperatures up to 800°C. These can be adapted to individual order.

**Customised solutions**

Our service also extends to the design and custom manufacture of special heaters for more complex shapes.

Insulated jacket heaters, base heaters and band heaters cater for temperature maintenance and heating of drums from 90 to 270 litres capacity. Standard units are available for temperatures up to 300°C.



Flexible heated hoses

### Specialty applications

**Tubing bundles**

Heated tubing bundles are the most economical solution for tracing small-diameter tubes (e.g. instrument lines). They are made to order in a variety of configurations.

**Flexible heated hoses**

Flexible heated hoses are tailored to suit a wide range of industrial applications, such as tanker filling lines and the supply of fluid or viscous products to on-line workstations and robotic process devices. Constructed to resist high temperatures, pressures and aggressive chemicals, our hoses enable material to be conveyed around a plant in circumstances where placing a fixed pipe may be impractical.

### Control and monitoring

**From ambient sensing to multi-circuit control and monitoring**

For the control of single-lines, we offer a wide range of local thermostats for frost protection (ambient sensing) and temperature maintenance up to 500°C (line sensing) in both hazardous and non-hazardous areas. Single-point temperature controllers are also available.

More complex piping installations with multiple temperature sensing points are monitored by an integrated system that includes control units, remote modules for temperature data acquisition, and contactor relay outputs. Each control unit is capable of controlling up to 130 circuits and can be linked with several other control units with one interface to a DCS (Data Collection System).



Custom-built heating jackets



Heating of aggressive media



Monitoring and control capabilities up to 130 circuits per control unit

## End-to-end execution of your project

Our customer-first philosophy means that we adopt a totally flexible approach to service provision. We can assume full responsibility for the conception, realisation and on-going maintenance of a complete turnkey package – or provide only the elements you need to interface with your own project resources. Whichever route you choose, you benefit from our in-depth experience and worldwide presence – ensuring maximum economy, speed of installation and reliable support over the lifetime of your heat-tracing project.

*“The project was delivered on time and on budget ...*

*... and cost-of-ownership forecasts are proving accurate.”*

### Planning pays

We know that the success of any project depends on the care and attention devoted to initial planning. We can begin by providing you with an economic analysis that demonstrates the optimal heat-tracing system for your needs – from power supply system through to thermal insulation. Our state-of-the-art design software enables us to take account of all the individual characteristics of your application in designing a circuit that combines top performance with maximum economy. And you can be sure that the solution we propose will incorporate advanced controls and monitoring that make it easy to link with your existing plant computers.

### On-site efficiency

Our Services group provides global and local expertise in a range of construction services – from site preparation to installation, testing and commissioning.

Based on experience in handling projects of all sizes, our measured and methodical approach to procurement and logistics saves money and keeps heat-tracing and insulation off the critical path. Just-in-time methods translate into lower costs for on-site inventory.

We are familiar with international terms and conditions of contracts, and are ready to work on a reimbursable-cost, unit price or lump sum basis.

### Safety first

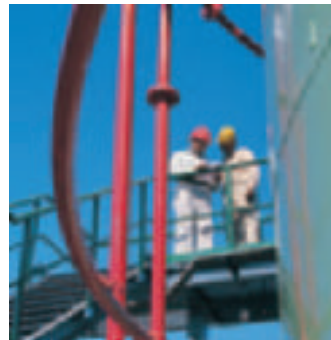
We believe that the safety of our employees, our clients and the general public are of paramount importance. We are committed to zero



State-of-the-art design software



From site preparation and installation, ...



... over testing and commissioning, ...

... to preventive maintenance



### Global reach, local response

A worldwide network of consultants, representatives, field service engineers and service centres puts support close to your operating location. We ensure that local expertise is on call wherever and whenever you need it.

Round the clock, round the globe service



accidents and are guided by an established accident prevention policy. Multi-language manuals, combined with proactive safety management techniques, training and planning, ensure a safe and healthy work process for all.

### Reliability assured

Timely preventive maintenance is essential to guarantee the reliable operation of your heat-tracing system, and to avoid the cost associated with unexpected downtime. We will provide training for your own service engineers, or offer the assurance of a maintenance contract tailored to your specific needs.

- Parallel**
- Self-regulating
  - Power-limiting
  - Constant wattage (zone)

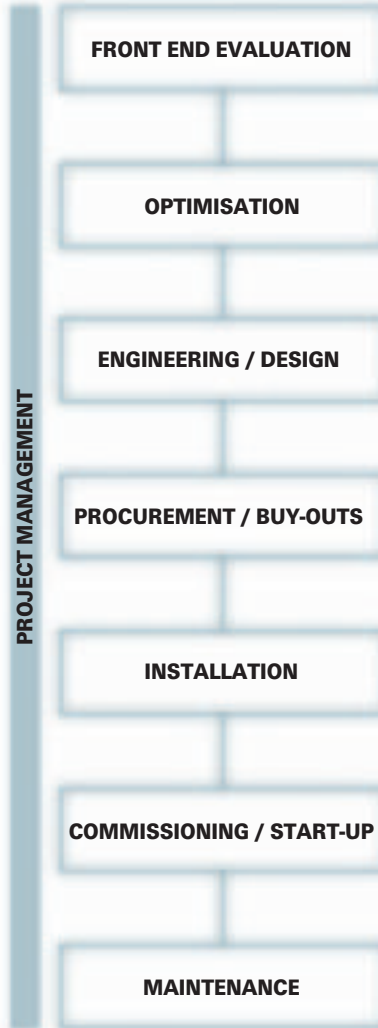
- Series**
- Constant wattage mineral insulated (MI)
  - Constant wattage polymer
  - Constant wattage tapes
  - Constant wattage skin-effect (STS)

Our range of unique fibre-wrapped, self-regulating cables is manufactured using high-performance polymers.

Our constant wattage cables and tapes have outer jackets made from silicone, FEP or PFA, woven glass fibre or quartz-cloth materials. Our industrial heating cables are equipped with an outer braid for additional mechanical strength and safety.

Our high temperature MI heating cables are terminated using state-of-the-art laser welding technology.

Manufacturing sites in Canada, Germany, Korea, Sweden, UK and USA give us the capability to produce technologically advanced products of the highest quality, while consistently achieving industry-leading response times. Our products and processes are certified according to international quality standards.



Committed to safety through proactive safety management techniques



A measured and methodical approach to procurement and logistics





## Active in many markets

Our heating systems are designed to meet the diverse temperature requirements of many different industries — oil and gas, power utilities, petrochemicals, specialty chemicals, pulp and paper, pharmaceuticals, agriculture, steel, commercial construction ...

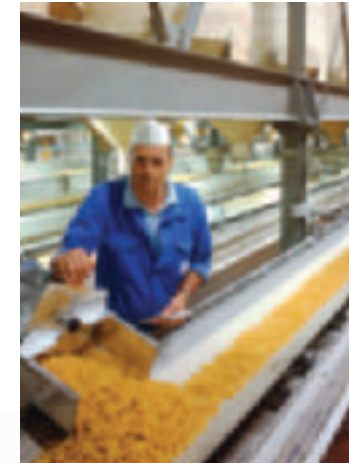
Specific heating solutions are also used extensively in the telecommunications, automotive, mass transportation and other original equipment manufacturing (OEM) industries.



Temperature maintenance in pharmaceutical, food and beverage processing plants



Frost protection in pulp and paper plants



Frost protection, temperature maintenance and heating at refineries, chemical, petrochemical and specialty chemical plants



Temperature maintenance at automotive assembly paint and testing line

