



Products & Service



■ Caloplex GmbH- Electrical Heating Technology

You are looking for an individual heating solution with products based on highest quality requirements? Then you are here in the right place.

We are a young company which gives special attention to maximum reliability for our products. We continuously develop suitable solutions together with our customers.

As an independent manufacturer, we are offering you heated hoses, heating mats, heating cables, heating foils, antenna heating systems and much more.

Trust in our profound expertise and in our long-lasting experience in the development of individual heating products.

Our products contain innovative up-to-date technologies. They are produced according to current standards using environmentally conscious production

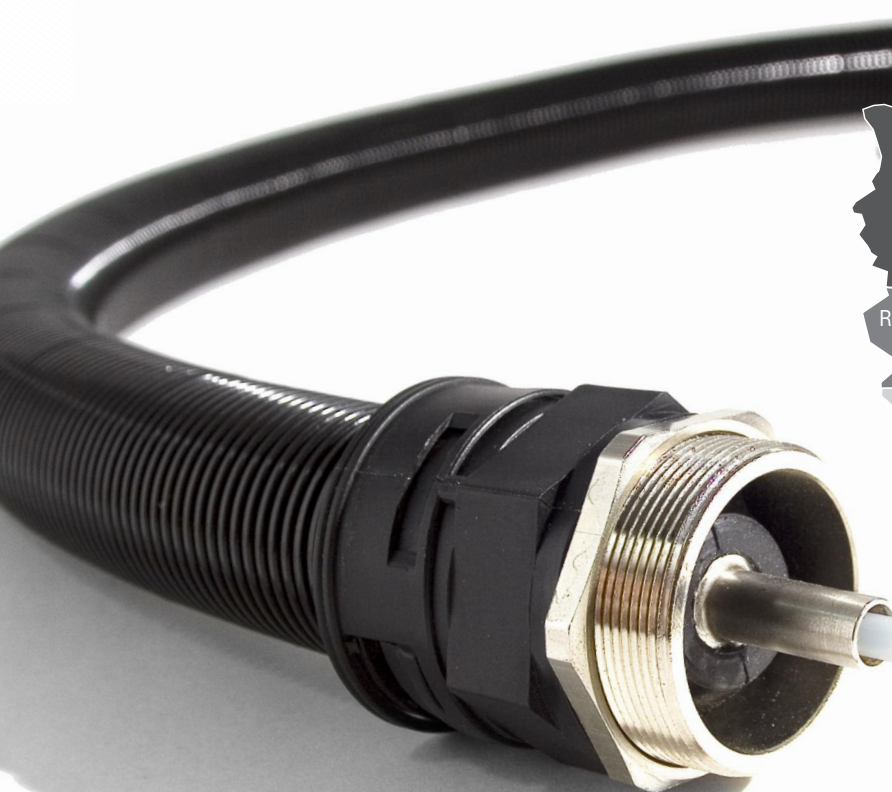
processes. The used raw materials are mostly coming from European manufacturers. High quality and durability of our products are guaranteed by sophisticated quality controls. In addition to our package solutions we are pleased to provide you with installation service, maintenance service and consultancy.

You can rely 100% on our development, our customer service and our delivery reliability - simply on a competent partner.

Contact us and convince yourself. We are looking forward to you!

Your Caloplex team

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- heated analytic hoses
- heated pressure hoses
- heated hoses for roboter applications
- heated hose bundles



- heating jackets
- heating mats
- insulating jackets
- floor and open space heating mats



- constant wattage heating cables
- self stabilising heating cables
- heating cables ready for use



- industrial heating systems
- tank and pipe heatings
- gas bottle and drum heaters
- container heatings
- rail and point heaters



- Heating registers
- Flange and screw-in heaters
- oval tube heaters
- tubular heaters



- Heating foils



- Antenna heating systems



- Measurment and control technologies



- Accessories



- Heatings for laboratory equipment
- control cabinet construction
- Installation services worldwide
- heat insulation

- **heated analytic hoses**
- **heated pressure hoses**
- **heated hoses for roboter applications**
- **heated hose bundles**

Heated hoses enable flexible transportation of fluid or gaseous substances from one point to another without loss of temperature



material of inner hose	<ul style="list-style-type: none"> ■ PTFE, PFA (also in bundles) ■ PTFE, PFA exchangeable (also in bundles) ■ PTFE, PFA with nozzle ■ PTFE, PFA with nozzle, exchangeable ■ PTFE with single stainless steel braiding ■ PTFE with double stainless steel braiding ■ PTFE with double wound steel wire and stainless steel braiding ■ stainless steel pipe ■ inner hose provided by customer
nominal diameter	■ e.g. 4, 6, 8, 10, 12, 16, 20, 25 or provided by customer
operating pressure	■ between 50bar and 250bar depending on temperature and type of inner hose
hose lenght	■ between 0,25m and 150m acc. to customer wishes
armature	<ul style="list-style-type: none"> ■ RSL / RSS / DKR / DKJ / AGR / AGN-NPT / AGJ / CEL ■ CES / BDN / BDN M / DKL / DKM / DKS / DKOL / DKOS
heating cable	<ul style="list-style-type: none"> ■ constant wattage heating cable ■ self stabilising heating cable
material for bar spacer between heating windings	■ fiber glass
material outer sheath of the heating cable	<ul style="list-style-type: none"> ■ silicone ■ PTFE ■ fiber glass ■ fiber quartz ■ TPE
additional cables for customer use	■ between 0,5mm ² and 6mm ² , quantity and diameter acc. to customer
type of sensor	<ul style="list-style-type: none"> ■ without (only in the case of self stabilising cables) ■ PT100 2- / 3- / or 4-wire ■ thermocouple type (B), (C), (D), E, J, K, (L), N, R, S, T, (U) ■ special sensors on request
material of insulation	<ul style="list-style-type: none"> ■ silicone foam hose ■ polyester fabric ■ glass fabric ■ aramid-fabric
material of the outer sheath of the hose	<ul style="list-style-type: none"> ■ polyamide-fabric ■ steel galvanised braiding ■ stainless steel braiding ■ polyamide corrugated hose (different types) ■ metal corrugated hose (also with PVC sheath)
end caps	<ul style="list-style-type: none"> ■ silicone cap with termination space ■ silicone cap without termination space ■ plastic cap with termination space and gland ■ plastic cap with plug ■ metal caps galvanised ■ shrink cap ■ sliceable, to be configured by customer
type of connection	<ul style="list-style-type: none"> ■ heating and sensors separately ■ heating and sensors combined ■ with plug ■ only with wire-end sleeve
material of outer sheath of the connection cables	■ glass fabric silicone impregnated, PTFE, silicone, rubber, PVC
nominal voltage	■ between 6V and 500V, acc. to the customer
nominal wattage	■ between 10W and 350W per meter, acc. to technical eng., diameter, and customer wishes
nominal temperature	■ between frost protection and 350°C
options	<ul style="list-style-type: none"> ■ ATEX approval ■ silicone free (including manufacturing process) ■ sliceable ■ ready to walk on



heating jackets ■
heating mats ■
insulating jackets ■
floor and open space heating mats ■

Heating jackets and heating mats allow flexible heating of almost every surface. They are adjusted to the component of the customer with or without integrated thermal insulation. After the installation, the heating is immediately ready for use and can furthermore easily be removed without leaving any residues.

Our floor and open space heating mats are especially manufactured for you. The flexible heating mats save you a lot of time and effort during installation due to their mounted heating element.



base material and outer sheath	<ul style="list-style-type: none"> ■ fabric, coated with PVC ■ glass fabric ■ glass fabric, coated with silicone ■ glass fabric, coated with aluminium ■ glass fabric, coated with PTFE ■ glass fabric, coated with PTFE, electrically conducting ■ quartz fabric ■ stainless steel sheet ■ aluminium sheet
type of heating cable	<ul style="list-style-type: none"> ■ constant wattage heating cable ■ self stabilising heating cable
material of outer sheath of the heating cables	<ul style="list-style-type: none"> ■ silicone ■ PTFE ■ glass fabric ■ quartz fabric ■ stainless steel, mineral insulated
type of sensor	<ul style="list-style-type: none"> ■ without, only in the case of self stabilising heating cable ■ PT100 2- / 3- / or 4-wire ■ thermocouple type (B), (C), (D), E, J, K, (L), N, R, S, T, (U) ■ special sensors on request
material of insulation	<ul style="list-style-type: none"> ■ aramid-fabric ■ polyamide-fabric ■ silicone foam hose ■ glass needle mats ■ quartz needle mats ■ ceramic wool
type of fastener	<ul style="list-style-type: none"> ■ eyelets, hooks, hook and loop fastener, rotary fasteners
connection cables	<ul style="list-style-type: none"> ■ heating and sensors separately ■ heating and sensors combined ■ with plug ■ only with crimps
material of outer sheath of the connection cables	<ul style="list-style-type: none"> ■ glass fabric silicone impregnated, PTFE, silicone, rubber, PVC
nominal value	<ul style="list-style-type: none"> ■ between 6V and 500V, acc. to the customer
nominal wattage	<ul style="list-style-type: none"> ■ between 10W and 15000W per squaremeter, acc. to technical eng., diameter, and customer wishes
nominal temperature	<ul style="list-style-type: none"> ■ between frost protection and 900°C
options	<ul style="list-style-type: none"> ■ ATEX approval ■ silicone free (including manufacturing process)

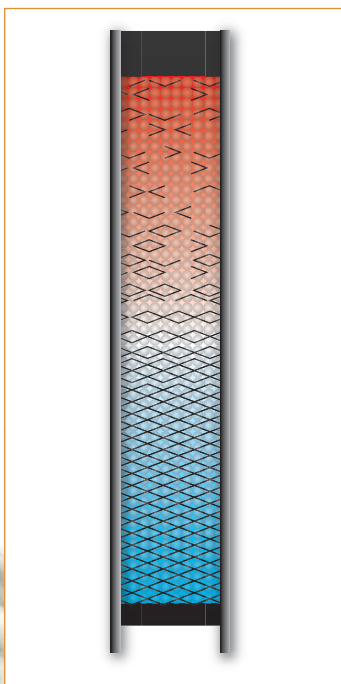


- **constant wattage heating cables**
- **self stabilising heating cables**
- **ready for use heating cables**

We offer heating cables for any application as well as for any condition between frost protection and 1,000 °C either sold by the metre or pre-assembled and ready for use.

Self stabilising heating cables do not overheat even if they are unregulated. They can be shortened or extended to any length required.

Constant wattage heating cables provide constant power at any voltage, even at high temperatures.



type of heating cable	■ self stabilising heating cable
material of outer sheath of the heating cable	■ TPE ■ Fluorpolymere
type of electrical protection sheath	■ copper nickelplated or tinned braiding ■ aluminium foil
nominal voltage	■ 115V and 230V
nominal wattage	■ between 5W/m and 60W/m
nominal temperature	■ between 60°C and 120°C, acc. to type
variants	■ yard goods ■ ready for use ■ heating tapes
options	■ Flourpolymer jacket, for highest chemical resistance ■ ATEX approval

type of heating cable	■ constant wattage heating cable / constant wattage parallel heating cable
material of outer sheath of the heating cable	■ PVC ■ silicone ■ PTFE ■ FEP ■ PFA ■ glass fabric ■ quartz fabric ■ stainless steel mineral insulated
type of electrical protection sheath	■ copper nickelplated or tinned braiding
nominal voltage	■ between 6V and 500V, acc. to the customer
nominal wattage	■ between 5W/m and 250W/m, acc. to type
nominal temperature	■ between frost protection and 1000°C
variants	■ yard goods ■ ready for use ■ heating tapes
options	■ ATEX approval



industrial heating systems ■
tank and pipe heatings ■
gas bottle and drum heaters ■
container heatings ■
rail and point heaters ■

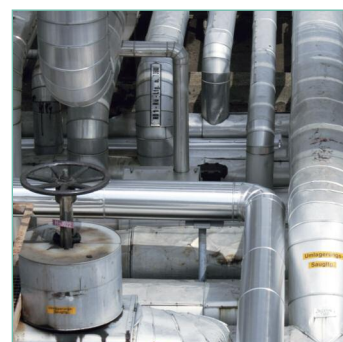
Today's modern industry confronts us daily with new requirements. We are glad to flexibly develop new approaches and solutions for you.

We offer you our consulting services already in the phase of conception of pipes and container plants of all sizes, temperatures and any range of application.

We develop suitable and long-lasting heatings for any standard or special gas cylinders and industrial drums.

Furthermore, our strengths include many additional applications in special areas, for example, the heating of standard and special containers for transportation on the roads, by train or for oversea transportation.

We also offer the adequate solution in innovative electrical heating technology for the national and international railway network and its rail vehicles.



tank and pipe heatings	<ul style="list-style-type: none"> all types of tank and pipe heatings
type of barrel heatings	<ul style="list-style-type: none"> heating chambers barrel heating tapes, metal, glass fabric or silicone barrel heating mats, glass fabric barrel bottom heaters
gas bottle and drum heaters	<ul style="list-style-type: none"> gas bottle heaters, metal gas bottle heaters, glass fabric
outer sheath	<ul style="list-style-type: none"> stainless steel sheet aluminium sheet silicone glass fabric with aluminiumized or silicon coating
type of heating cable	<ul style="list-style-type: none"> constant wattage heating cable self stabilising heating cable
material of outer sheath	<ul style="list-style-type: none"> silicone with glass filament PTFE glass fabric quartz fabric stainless steel mineral insulated
type of temperature control	<ul style="list-style-type: none"> integrated or by customer
type of sensor	<ul style="list-style-type: none"> without (only in the case of self stabilising heating cables) PT100 2- / 3- / or 4-wire thermocouple type (B), (C), (D), E, J, K, (L), N, R, S, T, (U) special sensors on request
type of fasteners	<ul style="list-style-type: none"> spring fastener, eyelet, hooks, hook and loop fastener, rotary fasteners
connection cable	<ul style="list-style-type: none"> with plug ready for use with terminals ready for use with crimps
material of outer sheath of the connection cable	<ul style="list-style-type: none"> PTFE silicone rubber
nominal voltage	<ul style="list-style-type: none"> between 5V and 500V, acc. to customer wishes
nominal temperature	<ul style="list-style-type: none"> between frost protection and 900°C



- **heating registers**
- **Flange and screw-in heaters**
- **oval tube heaters**
- **tubular heaters**

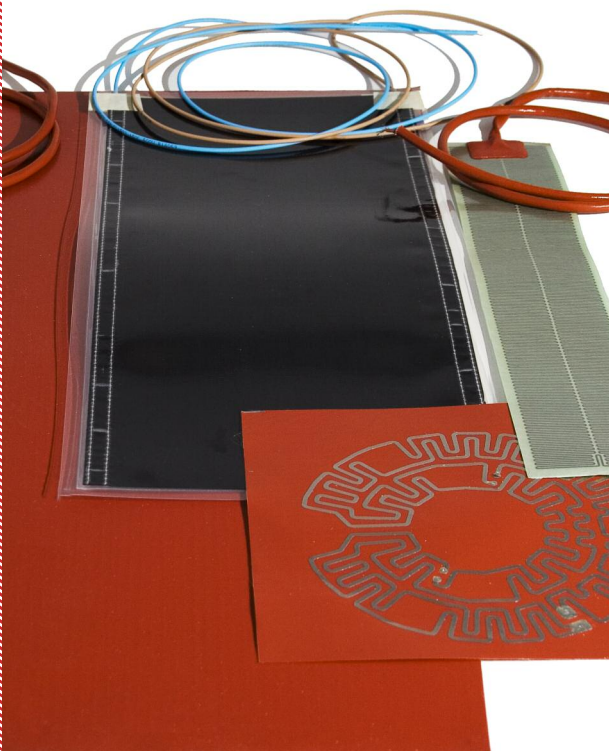
High-energy heatings promise high performance in a very confined space. They are required whenever high quantities of heat have to be introduced into products. This product group is characterised by extremely short heating-up times and, if necessary, also high final temperatures.



outer sheath	<ul style="list-style-type: none"> different types of stainless steel, special materials on request
type of heating	<ul style="list-style-type: none"> tubular heaters oval tube heaters heating tapes
type of temperature sensor	<ul style="list-style-type: none"> without PT100 2- / 3- / or 4-wire thermocouples and special sensors on request
material of connection box	<ul style="list-style-type: none"> steel powder coated stainless steel
connection cable	<ul style="list-style-type: none"> heating and sensors separately heating and sensors combined with plug ready for use with terminals ready for use with wire-end sleeve
material of outer sheath of the connection cable	<ul style="list-style-type: none"> glass fabric PTFE silicone rubber PVC
nominal voltage	<ul style="list-style-type: none"> between 5V and 500V, acc. to the customer
nominal wattage	<ul style="list-style-type: none"> between 5W/m² and 20W/m², in special cases up to 60W/m²
nominal temperature	<ul style="list-style-type: none"> up to 750°C, higher temperatures on request
options	<ul style="list-style-type: none"> included temperature switches UL- approval protection class IP65

- **heating foils**

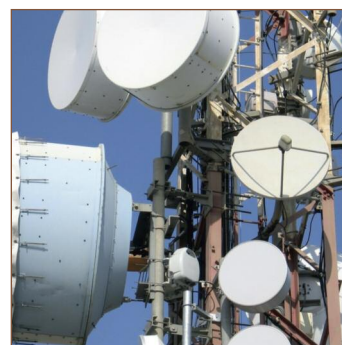
Heating foils are primarily applied into flat components. However, they are also available as adjusted formed parts. Heating foils are characterised by their homogenous distribution of heat, a low overall height and high flexibility.



base material and outer sheath	<ul style="list-style-type: none"> silicone silicone with glass filament Kapton Mica polyester PTFE
type of heating conductor	<ul style="list-style-type: none"> constant wattage heating cable etched resistance foil special ink plot
type of temperature sensor	<ul style="list-style-type: none"> without PT100 2- / 3- / or 4-wire thermocouples and special sensors on request
connection cables	<ul style="list-style-type: none"> heating and sensors separately heating and sensors combined with plug ready for use with wire-end sleeve
material of outer sheath of the connection cable	<ul style="list-style-type: none"> PTFE Kapton silicone rubber PVC
nominal voltage	<ul style="list-style-type: none"> between 6V and 500V, acc. to customer wishes
nominal wattage	<ul style="list-style-type: none"> between 3W/cm² and 7W/cm², in special cases up to 16W/cm²
nominal temperature	<ul style="list-style-type: none"> between 5°C and 260°C, in special cases up to 600°C
options	<ul style="list-style-type: none"> temperature switch UL approval silicone free (including manufacturing process)

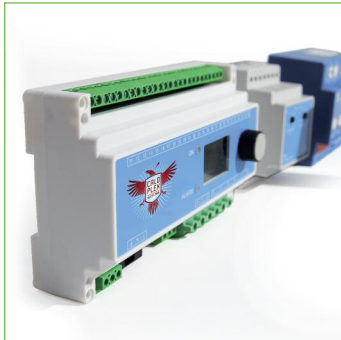
base material and outer sheath	<ul style="list-style-type: none"> ■ special insulating with aluminiumised sheath
type of heating cable	<ul style="list-style-type: none"> ■ constant wattage heating cable
material of outer sheath of the heating cable	<ul style="list-style-type: none"> ■ PVC ■ silicone ■ PTFE ■ FEP ■ PFA
type of sensor	<ul style="list-style-type: none"> ■ without (self stabilising design) ■ PT100 2- / 3- / or 4-wire ■ special sensors on request
material of insulation	<ul style="list-style-type: none"> ■ air cushion insulation
connection cable	<ul style="list-style-type: none"> ■ heating and sensors separately ■ heating and sensors combined ■ with plug ■ ready for use with crimps
material of outer sheath of the connection cable	<ul style="list-style-type: none"> ■ PTFE ■ silicone ■ rubber ■ PVC
nominal voltage	<ul style="list-style-type: none"> ■ between 6V and 500V acc. to customer wishes
nominal wattage	<ul style="list-style-type: none"> ■ between 250W/m² and 1000W/m² acc. to technical eng., diameter, and customer wishes
nominal temperature	<ul style="list-style-type: none"> ■ snow, ice, hoarfrost and frost protection
options	<ul style="list-style-type: none"> ■ included overtemperature protection, temperature acc. to customer wishes ■ with temperature controller ■ optical detection of snow and ice ■ regulation by weather station

Energy saving antenna heatings are feasible for each form and type of antenna as well as for all weather conditions. The direct heating of the back of the antenna only consumes one third of the energy needed by conventional hot air heating systems. Electrical antenna heatings have integrated heat insulation and can be installed in a very easy way.



■ measurment and control technologies

An accurate control is usually essential for precise electrical heating. You can choose from mechanical capillary thermostat to microprocessor multi-channel controls. We also offer all common types of temperature sensors as well as special sensors, including NTC, PT100 and thermocouple.



type of controler	<ul style="list-style-type: none"> ▪ DIN rail ▪ switchboard ▪ table unit ▪ wall mounting ▪ splashproof field device ▪ multiple channel device
product groups	<ul style="list-style-type: none"> ▪ temperature controler ▪ PLC solutions ▪ ice and snow detectors ▪ optical snow and ice detectors ▪ moisture detectors ▪ weather stations
functional principle	<ul style="list-style-type: none"> ▪ mechanically ▪ electrically
control mode	<ul style="list-style-type: none"> ▪ on/off, P, PI, PD, PID, steady
type of sensors	<ul style="list-style-type: none"> ▪ PT100 2- / 3- / or 4-wire ▪ thermocouple type (B), (C), (D), E, J, K, (L), N, R, S, T, (U) ▪ PTC / NTC ▪ standard signals
measurment range	<ul style="list-style-type: none"> ▪ between -99°C and +999°C
display	<ul style="list-style-type: none"> ▪ without ▪ LED ▪ 7-segment display
signals	<ul style="list-style-type: none"> ▪ acoustic ▪ optical ▪ relais
type of relais	<ul style="list-style-type: none"> ▪ electromechanical ▪ semiconductor (SSR)
nominal voltage	<ul style="list-style-type: none"> ▪ between 24V and 400V
nominal wattage	<ul style="list-style-type: none"> ▪ between 2A and 16A, acc. to the type of controler
working temperature	<ul style="list-style-type: none"> ▪ between -30 °C and 60°C, according to the type of controler
protection class	<ul style="list-style-type: none"> ▪ up to IP65
options	<ul style="list-style-type: none"> ▪ ATEX approval ▪ with connection cable and plug

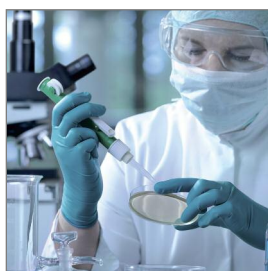
Any product is only as good as its accessories. In this sense, we complete our product range accordingly. For every heating we can provide you with the corresponding mounting accessories. Furthermore, you obtain more individual components from us any time.



self stabilising heating cable	<ul style="list-style-type: none"> ■ connection kits ■ T-branch sets, connection kits included ■ link kits
constant wattage heating cable, constant wattage parallel heating cable	<ul style="list-style-type: none"> ■ connection kits ■ T-branch sets, connection kits included ■ link kits
for all heating, sensor, and connection cables	<ul style="list-style-type: none"> ■ insulation entrance kits
foiles, adhesive foiles, and adhesive tapes	<ul style="list-style-type: none"> ■ aluminium or stainless steel foiles without adhesive ■ glass fabric adhesive foils up to 90°C, 140°C and 180°C ■ aluminium adhesive foils up to 140°C
mounting tapes	<ul style="list-style-type: none"> ■ heat-proof synthetic ties ■ band clamps galvanised or stainless steel ■ threaded clamps galvanised or stainless steel, locks included ■ hose clamps, stainless steel ■ wire, felt and glass fibre tapes ■ punch strip, galvanised or stainless steel
connection boxes	<ul style="list-style-type: none"> ■ polyester ■ polycarbonate ■ aluminium ■ steel powder coated ■ stainless steel
mounting sockets	<ul style="list-style-type: none"> ■ for all controllers/connection boxes
indicating labels	<ul style="list-style-type: none"> ■ e.g. "electrical heat tracing" in different languages

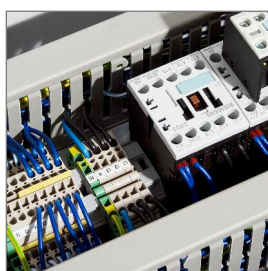
Heatings for laboratory equipment ■

We manufacture laboratory heating jackets and insulation hoods for any type and size of glass jar like for example round bottom flasks, reaction vessels and beakers according to your requirements. You can choose between heating jackets with closed, semicircular trough made of metal or glass yarn. The heating jackets are either driven by a control device integrated in the stand or by a separate control device, depending on their size. A temperature rise of up to 900°C for vessels of the size of 100ml to 200l is possible. Accessories for tripod screens or similar include suitable cross bars and stand clamps.



Control systems ■

We offer the adequate electrical control for your heating. By knowing the exact general requirements, we can guarantee optimum operating conditions for the control of our heatings. Our aim is the energy-conscious and cost-effective operation while ensuring gentle treatment of the material at the same time. The scope of service includes planning, implementation, testing according to current standards, documentation and - if necessary - installation.



Installation services worldwide ■

The installation of electrical trace heatings require the work of experienced specialists. Take advantage of our experienced Caloplex installation engineers at our factory site in Siegen or directly at your home. We are familiar with the safety requirements and factory specifications of various well-known industrial enterprises. We are gladly available for installation services in Germany, Europe and worldwide.



Insulation work ■

An electrical heating is not feasible without thermal insulation executed by an expert. We offer insulation suitable for all heatings manufactured in our factory. We can also provide you with customized insulations for components without heating. Depending on the design we select the appropriate insulation from a variety of insulating materials and coatings.





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