

## SELFREG HEATING SOLUTIONS

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# ADVANTAGES

## 1. Light, compact, low-cost

A heating mat, jacket or enclosure only weighs a few kilograms, and may easily be dismantled for storage when it is not needed. The investment is significantly lower compared to a metal heating system.

## 2. Practical and space-saving

With a flexible heater, you can heat your objects directly wherever they are set up, since only a little space is required. Drums and portable containers can easily be transported with heating mats mounted on them.

## 3. Simple to use

Every heater is completely equipped with mounting fixtures and all of the required components for secure and reliable operation, such as a cable, plug, thermostat, etc. With just a few simple actions, the heater is attached to the object, and can be removed again just as quickly.

## 4. Flexibility and a perfect fit

The flexible heater fits to the shape of the object to be heated. This also enables them to heat any type of geometry. A flexible drums and portable container heater keeps you on the safe side if the dimensions of your containers fluctuate, since the fasteners can be adjusted at any time.

## 5. Efficiency

Direct contact between the heater and the object without any insulating layer of air creates a more effective and consistent heat transfer process. Integrated insulation prevents unnecessary loss of heat to the surrounding environment and protects against ambient temperatures.

## 6. Fast delivery

All the heaters are available within a short delivery time. Delivery times for customized heaters will be mentioned in the offer according to production capacities at the time of quotation.

## 7. Safety and quality

All of our heating mats correspond to low-voltage, electromagnetic, and other applicable guidelines. A detailed user manual is included with delivery.

Our heating mats are handmade from high-quality materials and components. Robust manufacturing techniques ensure a long product life. All products are retested prior to shipping. We are certified according to ISO 9001.

## 8. Special sizes and special power ratings:

Does your heater need to be customized? No problem. We can produce heating mats in any special size, even just one unit. Send us the request form provided for this and we'll send you a non-binding offer.

Request form

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### Important Information

- Sale and delivery are according to our General Terms and Conditions.
- For small orders with a value below € 100,00 we invoice € 30,00 processing charge.
- We reserve the right to technical changes without notice.
- Unless expressly stated otherwise, the products from Winkler GmbH are to be connected to 230V/50Hz operating voltage.

## NEXT GENERATION SOFT ENCLOSURES FROM WINKLER

### Innovative generation of freeze protection soft enclosures for self-regulating heating cables

Energy saving, intuitive self-regulating design, quality and innovation were a top priority during development of our next generation insulation and heated soft enclosure product range. We have selected to implement self-regulating heating cables into this product range as cost-effective measures to reduce the energy consumption related impact on the environment. Self-regulating heating cables have two buswires with a special manufactured matrix between them. This special matrix is able to conduct the flow of electricity between the buswires in order to create heat. As the cable warms, the molecules of the matrix move apart from each other and reduce the amount of electricity flowing between the buswires and therefore the amount of heat produced. In other words, the power usage and power output adjust automatically in response to the ambient temperature.

Insulation and heated soft enclosures are custom made according to customer specifications and are especially widely used for EC&I (Electrical, control and instrumentation), call points, electrical and pneumatic drives, flowing wellhead equipment, valves, pumps, etc.

### Outstanding durability

Designed using durable high quality PVC fabric, water-repellent polyester fabric and Armaflex® insulation for ambient temperatures ranging from -45 °C to +85 °C. Hook and loop fastening and/or robust tension straps featuring adjustable snapping clasps allows easy multiple removal and replacement for maintenance and testing of the heated object. The enclosures have a self-supporting form independent of the geometry to be heated.

### Standard versions

The standard heater version comes with convenient SelfReg heating cable factory installed into channels on the heating side. Depending on site conditions, it can be ordered as insulation version and used without heating cable or for on-site installation of any commonly sold low temperature freeze protection self-regulating heating cable.

### Additional heated soft enclosure self-regulating cable versions

For installation via 3,5 mm<sup>2</sup> cold lead or direct installation of the heating cable into a junction box and thermostat.

- Factory terminated self-regulating heating cable with 230VAC, 15 W/m or 30 W/m at 10°C.
- Innovative Fluoropolymer over-jacket (chemical resistant), factory terminated, round self-regulating heating cable with 230VAC, 27 W/m at 10 °C.
- Power outputs up to 40 W/m @ 10 °C may be used depending on the site conditions.
- Switching range, +5...+15 °C bimetal thermostat or +5...+45 °C adjustable thermostat

## Soft enclosure structure

### Advantages

- Robust construction made of high quality, reliable materials for ambient temperatures -45 °C to 85 °C.
- Robust, cost effective and ideal custom-made concepts for freeze protection of various components.
- Cable channels for self-regulating heating cable are sewn inside.



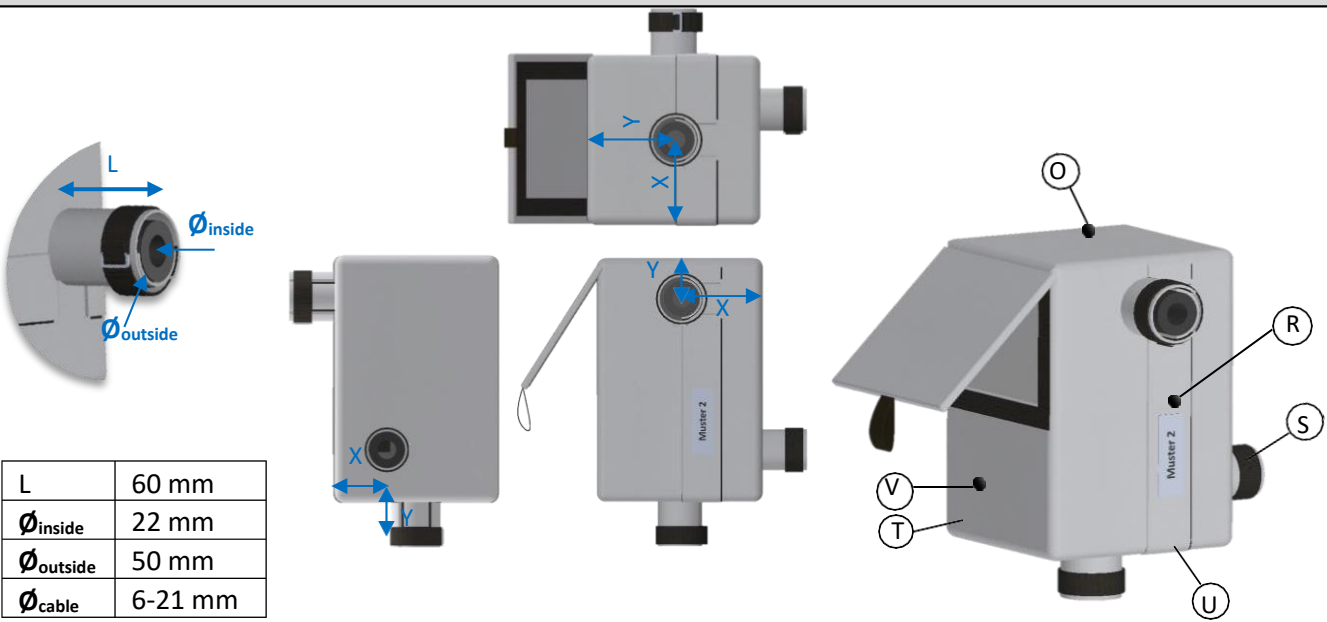
with cover



without cover

Soft Enclosure Request Form; please send per E-Mail to: [sales@winkler.eu](mailto:sales@winkler.eu)

Cable ducts: please specify number and positions



Window:

With/without cover



Position



Dimension  
(according to customer specifications)



# CUSTOMIZED SELFREG HEATING JACKETS AND INSULATION JACKETS

Our SelfReg Heating and Insulation Jackets are used to for frost protection and low temperature maintenance in many areas of industry, research, laboratories and experimental facilities as well as in production, for example: valves, piping, flanges, cylinders, filters, etc.

Manufactured from PVC coated fabric, insulation, and SelfReg heating cable, the customized heating jacket can come with a built- in frost protection +5...+15 °C bimetal thermostat, external junction box with +5...+15 °C bimetal thermostat, or an adjustable +5...+45 °C thermostat for temperature maintenance. Depending on the geometry and application, a combination of PVC coated fabric and water-repellent polyester fabric would be used.



# NEW GENERATION PVC ANTI-STATIC SOFT ENCLOSURES FROM WINKLER

Manufactured from anti-static PVC coated fabric and transparent windows , Armaflex® foam panels, and durables loops for cable installation enable Winkler Soft Enclosures to be self-supporting independent of the geometry to be heated – no longer any need for costly support brackets or frames.

ATEX, IECEx, or EAC certificated SelfReg heating cable can be provide factory installed within the insulated housing to maintain operation temperature during winter months where ambient temperatures can drop as low as -45 °C.



# SELFREG HEATING MAT FOR OUTDOOR AREAS AND WHEEL TRACK SURFACES

Manufactured from PVC coated fabric, insulation, SelfReg heating cable and +5...+15 °C bimetal thermostat, it is perfect for frost protection of wheel track surfaces. Just lay it into position along the wheel tracks overnight and remove it in the morning before the trucks start docking on the loading port.



Bottom view

Other outdoor applications could include frost protection and snow or ice thawing of:

- entrances to buildings
- wheelchair ramps
- water and sewage pipes, sand, electrical and telecommunications cables at construction sites

Operating temperature	-45 °...+65 °C
Rated voltage	230 V
Switching range	+5...+15 °C bimetal thermostat
Switching tolerance	+ / - 3 °C

Standard Width	Type 1 270 W/m <sup>2</sup> Length	Type 2 300 W/m <sup>2</sup> Length	Type 3 900 W Length
1,08 m	up to 2,06 m	2,06 m to 4,16 m	3,06 m
Customized sizes are available upon request			

## SELFREG ACCESSORIES

### Junction Box

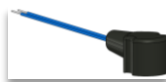


104 x 104 x 70 mm

### Thermostats



230 VAC/16A  
Bimetal Thermostat, +5...+15 °C  
complete encapsulated



230V/16A  
Adjustable +5...+45 °C



Controller/Limiter  
90-260 V/10 A  
WRL430PR



Controller/Limiter  
90-260 V/10 A  
WRWB0210

### Installation and Repair Kits



# SELFREG CABLES USED IN OUR SOLUTIONS

\* not sold separately

## SelfReg heating cable with bimetal thermostat



### Our best seller series

This self-regulating heating cable is the right choice for all standard freeze protection heating applications.

230VAC, with or without Schuko plug  
 factory terminated with 1 m. cold lead  
 no extra thermostat required  
 maximum continuous operating temperature (trace heater de-energized) +85 °C

**15 W/m at +10 °C**  
 20 W/m at -10 °C  
 23 W/m at -20 °C  
 25 W/m at -30 °C  
 27 W/m at -40 °C

## SelfReg heating cable with thermoplastic outer jacket

### Cost-efficient and durable

This self-regulating heating cable is the right choice for low ambient temperature freeze protection heating applications.

230VAC, factory terminated with cold lead  
 or factory terminated for direct junction box/thermostat termination  
 maximum continuous operating temperature (trace heater de-energized) +85 °C

**30 W/m at +10 °C**  
 35 W/m at -10 °C  
 37 W/m at -20 °C  
 39 W/m at -30 °C  
 41 W/m at -40 °C



## SelfReg heating cable with fluoropolymer outer jacket

### Our series for challenging cases

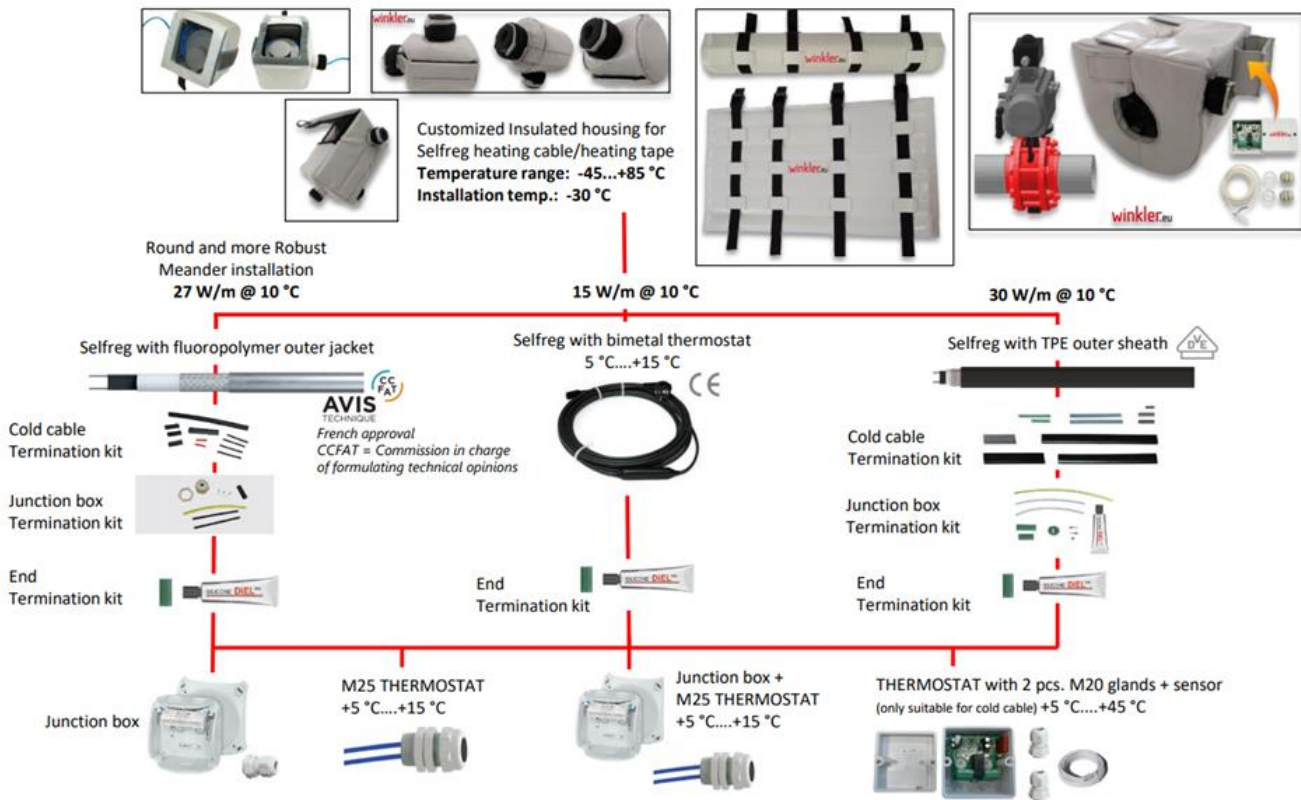
This industrial-grade self-regulating heating cable has been especially designed and developed for extremely low ambient temperature freeze protection heating applications.

230VAC, innovative round form, chemical resistant fluoropolymer outer jacket  
 factory terminated with cold lead or factory terminated for direct junction box/thermostat termination  
 maximum continuous operating temperature (trace heater de-energized) +65 °C

**27 W/m at +10 °C**  
 35 W/m at -10 °C  
 40 W/m at -20 °C  
 44 W/m at -30 °C



## SelfReg Frost Protection System Overview



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### Winkler AG – who we are and what distinguishes us

Our work not only centers on the product itself, but also on developing complete solutions. It is with this belief in mind that our employees plan and manufacture electrical heating devices - adapted precisely to your requirements as a customer. Your temperature problem is our inspiration. Our resourceful developers and skilled manufacturing specialists do everything within their power to make your enquiry into a Winkler heating solution. This way we can respond flexibly and quickly deliver you a ready-for-connection result from a single source.

There is not only enthusiasm for innovation in our 200 employees' heads, but also comprehensive knowledge from a wide range of technologies. We have continuously transferred the experience gained since the company's foundation in 1979 into new product and application areas, such as explosion protection. This versatility allows us to supply customers in industry, in the laboratory and in railway technology – worldwide. But no matter where: We are in close contact with every customer. Because the better we fulfil your requirements, the more convincing the results. And that is what matters for us!

**Winkler - your heating solution!**



winkler

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