

# CONTAINER HEATER



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## About this manual

This manual applies to all standard and custom versions of our heating blankets for container heating, unless otherwise stated. It was originally written in English. Other language versions are available upon request or at the following URL:

<https://heating-manuals.com/>



## Product warranty

This product is warranted against material and workmanship defects for one year or up to 1600 hours of use from the shipment date. If a defect occurs during the warranty period, the manufacturer will repair or replace the product free of charge. This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care.

## Country of origin

This product is produced and shipped from Denmark, EU.

## Warning!!



Read and understand this guide before installing and operating the product. Failure to follow instructions may result in injury, electric shock, fire, or damage to the heating blanket or heated material.

## Important safety instructions

- For industrial use only. Must be operated by trained personnel familiar with heating equipment safety. It is not intended for household use or for heating living beings.
- Do not use this product near flammable liquids, materials, or in areas with explosion risk. For such environments, we recommend using our ATEX-certified products.
- Always inspect the heater for physical damage before use.
- Only use the heater for the intended size container.
- Never overlap the heater over the label or temperature controller.
- Never turn on the heater without a filled container to cool it.
- Use only with materials or liquids that allow heat transfer.
- Keep at least 50 cm clearance around the heated container.
- Wear heat-resistant gloves when handling the heater while in operation or warm.
- Always monitor the heater while in use.
- Disconnect the heater when not in use.
- Never immerse the heater into liquids. If liquids are spilled on the heater, disconnect, clean, and dry before further use.
- Keep the heater away from sharp objects and don't drive or walk on the heater. Avoid sharp folds of the heating blanket, as they will damage the heating wires inside. See the storage section for suggestions.
- Do not attempt to repair or modify damaged or faulty heaters. If the heater is damaged, disconnect it and contact the manufacturer or supplier.
- The end user is responsible for providing a suitable power outlet for the heater. See the "Preparation and Electrical connection" section for detailed guidance.

## Preparation and Electrical connection

### Unpacking and Inspection

Unpack and inspect the heating blanket for transport damage. Do not use if damaged.

### Standard Power Connector

Our heating blankets are shipped with a Schuko combi connector as standard (120V models are shipped with a standard US connector). Other connector types are available upon request.

### Changing the Power Connector

If changing the connector to a local standard, a 3-pin grounded version must be used.

The power cable includes three color-coded conductors:

- Brown (Black on US models) - Line
- Blue (White on US models) - Neutral
- Green/Yellow (Green on US models) - Ground

Do not shorten the power cable. The supplied length complies with safety regulations. All electrical wiring must be performed by trained personnel and comply with local laws and regulations.

### Power Supply

The user must ensure that the correct power supply is available. The power connection must be rated to support the blanket's voltage and power. Proper disconnection and protection devices must be in place. We recommend using a ground fault circuit breaker (GFCI/RCD) for added safety.

## Health and Safety

Heating blankets become hot during use. Wear heat-resistant gloves if handling a warm blanket.

Disconnect before handling if wet or physically damaged to avoid electric shock.

## Operating the heating blanket

1. Check that the heating blanket is intact and that there is no visible damage to the blanket or to the power connection.
2. Check that the container is the size that the heating blanket is designed for.
3. Ensure the container and material can withstand the set temperature.
4. Place the heating blanket on the container, using any straps to secure it tightly.
5. Make sure that the heating blanket is not folded or overlapping itself or other heating blankets and that the controller is not covered.
6. Connect power cable to supply and turn on the power.
7. Adjust the controller to desired temperature (If the blanket is without a controller, the temperature threshold is fixed).
8. Check the heating blanket after 10 minutes to ensure it is heating as expected.
9. Do not leave the heating blanket unattended during use.

## Handling after use

- Disconnect the power and let the heating blanket cool down before handling. Do not pull the cable when disconnecting. Pull the plug instead.
- Do not roll or fold the blanket while it is still hot.
- Do not drag the heating blanket across the floor when moving it, as it will damage the fabric.

## Storing the heating blanket

- Please do not fold and stack the blankets when not in use as sharp bends can break the heating wires inside.
- Wait for the heating blanket to cool down before storing.

### Storing options:

- Stack the blankets unfolded.
- Roll the blankets loosely with the label and controller on the inside, as shown to the right. Roll up the cable and put it inside the rolled up blanket. Do not use the power cable to wrap around the heating blanket. Secure with tape or straps if necessary. The blankets can then be stacked.



## Operating the DigiTherm controller

### Indication of active heating element

A small dot in the lower right corner of the display will light up when the heating element is active.

### Setpoint

Adjust to the desired temperature (setpoint) by pressing the up and down arrows. When the desired temperature is shown on the display press the OK button.



### Timer (A3)

Press the menu button, select A3 in the menu via the arrow buttons and press OK. Set the desired runtime in hours and minutes [hh:mm]. The controller will stop activating the heating element when the selected time is reached. The remaining time will alternate in the display.

When the timer runs out the display will show 00:00 and the heating blanket will be inactive until the controller is rebooted.

Set to 00:00 to disable the timer. Rebooting the controller will disable any timer that was running and return the controller to normal untimed operation.

### Ramp-up (A4)

Press the menu button, select A4 in the menu via the arrow buttons and press OK. Select the desired limit to the temperature rise in %/min. This will introduce the setpoint slowly from the starting temperature until passing the setpoint. The ramp-up value will alternate in the display.

The controller will remember any ramp-up setting when rebooted, but the starting temperature will be reset. Set the value to 0 to disable the ramp-up function.

### °C or °F (A5)

Press the menu button, select A5 in the menu via the arrow buttons and press OK. Select the desired unit type and press OK.

## Standby mode

Some versions of the DigiTherm controller has a standby function that can be used to disable the heating blanket temporarily without disconnecting it. This version can be recognized by a power symbol on the OK button.



To activate or deactivate the standby function press and hold the button with the power symbol for 3 seconds. The display will flash "OFF" while in standby mode. On this version the timer will also go to standby mode when the timer runs out.

## Hysteresis

The controller will deactivate the heating when the selected setpoint is reached and activate it again when measuring 3°C below the setpoint. The hysteresis of the heating blanket will depend on the sensor position inside the heating blanket and other factors, and will always be larger than the controller hysteresis.

## Additional information

For other controller types or further information, visit the manuals homepage via the QR code on page 2.

## External DigiTherm controller

External DigiTherm controllers function like the normal DigiTherm controller. Please connect the heating blanket to the controller before connecting power to the controller to avoid damage to the connectors.



## Test and Calibration

### Test setup

For testing the heating blanket, put it on a filled container of the correct size for the particular heating blanket. The content should be a liquid with low viscosity and high heat conductivity, such as water, to get the best test results. It is important that the content level is above the position of the heating blanket sensor, for a consistent test result.

The temperature should be set for less than the boiling point of the content.

Testing the blanket on a table or a metal plate is possible, although not as accurate as using a container. Avoid testing the heating blanket on the floor or a similar very large surface, as it can result in not being able to reach the setpoint temperature and overheating inside the heating blanket.

### Heating blanket sensor position

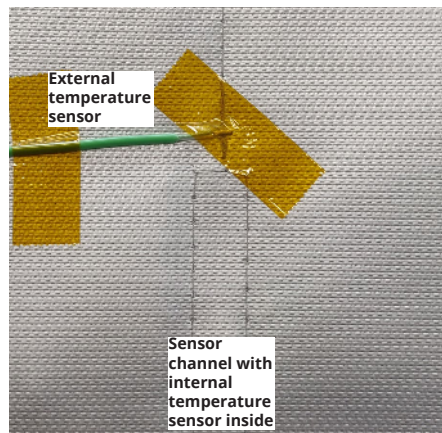
Ensure that the whole heating blanket, especially the part that contains the sensor, has good contact with the surface.

### Measuring the temperature

To measure the temperature, place a small probe directly on the heating blanket surface, next to the temperature sensor inside the heating blanket. Avoid putting the probe directly on top of the heating blanket sensor.

The picture shows the warm side of a heating blanket with the sewn sensor channel visible. The sensor can be located precisely by feeling it through the fabric.

In the picture an external temperature probe has been mounted on the heating blanket fabric, with Kapton tape, next to the heating blanket sensor, in line with the sensor channel.



Other sensors can be placed on the surface of the container or in the content, to monitor the temperature. Be aware that the measured temperature can vary depending on several factors:

- The contact between the (whole) heating blanket and the surface.
- The contact of the sensor part of the heating blanket and the surface.
- How close the test sensor is to a heating wire. The heating wires inside the heating blanket will overshoot the setpoint temperature to be able to transfer heat energy to the container.
- The heat conductivity of the container and the content.
- The heat capacity of the container and the content.
- The viscosity of the content.
- The environment temperature and any draft or wind in the test area.

### **Calibrating the heating blanket**

If a calibration or test is desired, we recommend a setup like described in “Testing the heating blanket” and registering any difference between the chosen setpoint and the actual temperature in the desired measuring point. The DigiTherm controller cannot be calibrated, but a manual offset of the setpoint can then be used to compensate for any difference, if desired.

The heating blankets do not have a recommended calibration interval as the deviations from other factors in the use case has far greater effect on the result than any normal component drift over time.

### **Cleaning and maintenance**

- Break off any pieces of composite material or similar that may have stuck to the heating blanket.
- Vacuum off any dust or loose particles.
- Wiped with a damp cloth.
- Inspect the heating blanket for physical damage to the blanket itself, the power cord, or the plug.
- Make sure that the heating blanket is dry before rolling, stacking, or using it.

### **Disposal of the product**

Heating blankets should be sorted as electronics scrap when they are discarded. Refer to local rules and regulations for detailed information about how to handle the disposal.

## Product options

### Drum heater standard sizes

| Drum size | Fits Ø    |
|-----------|-----------|
| 25-30L    | 328-380mm |
| 50-60L    | 370-439mm |
| 105-120L  | 471-525mm |
| 200-220L  | 580-630mm |

### Other heating blanket options:

- 110V/120V or 230V.
- 0-90°C standard blankets or 0-200°C high temperature blankets.

## Custom designed heating blankets

Our custom design option ensures you can get a heating solution tailored exactly to your specifications. Whether it's a custom size, shape, or feature, tell us what you need, and we'll provide a precise quote for a made-to-order product that fits your use case perfectly.



### Custom controller options

Below are the controller/thermostat options that we offer for custom container heaters. Note that not all options are suitable for all types of container heaters.



*Build-on Digital controller*



*External Digital controller*



*Fixed Bi-Metal thermostat*

## Error codes (DigiTherm controller)

| Code                             | Description                                                                                                                                       | Solution                                                                                                                                                                          |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 00                               | Relay broken.                                                                                                                                     | Contact the seller for repairs/replacement.                                                                                                                                       |
| 01<br>T                          | Temperature inside the controller is too high.                                                                                                    | Disconnect the heating blanket and let it cool down. Check for damage and return to seller if damaged. Examine the setup for the reason for the overheating, before trying again. |
| 11<br>12<br>14<br>S1<br>S2<br>S3 | Temperature sensor error. The controller is not able to measure the temperature correctly.                                                        | Check any connections and reboot the controller, if using an external controller. Contact the seller for repairs/replacement.                                                     |
| L                                | Load not detected. Can be a missing connection when using an external controller. Otherwise it is a broken heating wire or a burned thermal fuse. | Check any connections and reboot the controller, if using an external controller. Otherwise contact the seller for repairs/replacement.                                           |

## Repairs and Service

All repairs and changes to the product should be made by the manufacturer.

When contacting the seller about an error please include pictures of any error messages and pictures of the heating blanket setup with a description of the use, setpoint and other relevant factors.

When returning the heating blanket for repairs please follow the guide for returning heating blankets and fill out and send the return form, before shipping the blankets.

## Returning heating blankets for repairs or service

To protect our employees, returned heating blankets must be handled, packed, and shipped as described below, and registered using our RMA form.

**Non-compliant returns may be rejected.**

1. **Dry** the heating blanket if wet. **Vacuum** and remove any loose dust or material.



2. **Roll loosely** with the controller inside. Avoid folding. Do not wrap the cable around the blanket!



3. **Wrap** each blanket in a plastic bag and secure with tape for easy handling and counting. **Mark** the bag with the item number.



4. **Pack** the blankets in sturdy boxes, crates, or on pallets suitable for transport.



5. Fill out our **RMA form** before shipping. It is available on the next page and via the QR code.



6. **Ship** only after coordinating with us.



# Return Material Authorization Form (RMA)

## Please follow these steps

1. Fill out this form in English.
2. Contact us to obtain an RMA number and write it on this form and in the shipping documents.  
*Returns without an RMA# will not be accepted.*
3. Follow the cleaning and packing instructions in the manual.
4. Place the completed form inside the box with the products.
5. Ship to the provided address.

## Customer information

RMA#: \_\_\_\_\_

Company: \_\_\_\_\_

Contact: \_\_\_\_\_

Address: \_\_\_\_\_

City/Zip: \_\_\_\_\_

E-mail: \_\_\_\_\_

Phone#: \_\_\_\_\_

## List of returned products

| Qty | Order# | Reason for return |
|-----|--------|-------------------|
|     |        |                   |
|     |        |                   |
|     |        |                   |
|     |        |                   |
|     |        |                   |
|     |        |                   |

## List of substances or types of dust in contact with the equipment

*We do not accept products with residue from food or hazardous chemicals for service or repair. Please contact us if you have any questions regarding this.*

| Name or type of substance | Associated Hazards |
|---------------------------|--------------------|
|                           |                    |
|                           |                    |

## Return Conditions Confirmation

| Responsible for the shipment | Date & Signature |
|------------------------------|------------------|
|                              |                  |

# Technical datasheet

## Valid for and intended use of the product

This datasheet is valid for all standard and custom container heaters, unless otherwise specified. The heating blankets are for heating containers to keep them frostfree or to obtain a higher temperature. For industrial use only! Must be operated by trained personnel familiar with heating equipment safety. It is not intended for household use or for heating living beings.

## Disposal of the product

Heating blankets should be sorted as electronics scrap when they are discarded. Refer to local rules and regulations for detailed information about how to handle the disposal.

## Materials

The container heaters come in three main types:

- Standard (**Std**) up to 90°C
- High Temp. (**HT**) up to 200°C
- Food and Pharmaceutical (**F&P**) up to 200°C

|                          |                                                                                                                                                                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Top layer (cold side)    | <ul style="list-style-type: none"> <li>• <b>Std</b>: Black Cordura, colored nylon, or silicone impregnated fiberglass cloth</li> <li>• <b>HT</b>: Silicone impregnated fiberglass cloth</li> <li>• <b>F&amp;P</b>: FDA approved silicone impregnated fiberglass cloth</li> </ul> |
| Bottom fabric (hot side) | <ul style="list-style-type: none"> <li>• <b>Std &amp; HT</b>: Silicone impregnated fiberglass cloth</li> <li>• <b>F&amp;P</b>: FDA approved silicone impregnated fiberglass cloth</li> </ul>                                                                                     |
| Insulation               | <ul style="list-style-type: none"> <li>• <b>Std</b>: 8mm Polyester insulation</li> <li>• <b>HT &amp; F&amp;P</b>: 6mm Glass fiber insulation</li> </ul>                                                                                                                          |

## Temperature control options

- Digital controller with setpoint adjustment, timer, and ramp-up function.
- External digital controller with setpoint adjustment, timer, and ramp-up function.
- Bi-Metal thermostat (only available on some custom products).

## Controller sensor

- Build-on digital controller - Type k Thermocouple
- External digital controller - PT100

## Environment

- Ambient temperature for storing and use: -10°C - 40°C, ≤75% RH, non-condensing
- IP rating: IP40 (Optional: IP54 for controller)

## Safety features and information

- Internal thermal fuse.
- Electrical Protection class II.
- Controller fuse.
- Controller internal overtemperature protection.
- Powder or CO2 can be used for firefighting near active drum heaters.
- Water or foam should not be used for firefighting near active drum heaters.
- Use heat resistant gloves if handled while warm.
- Do not use if wet.

## Technical information

|                         |                                                                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Voltage                 | 230V 50Hz or 120V 60Hz depending on model                                                                                                  |
| Power                   | See individual heating blanket information                                                                                                 |
| Size                    | See individual heating blanket information                                                                                                 |
| Wire mesh ground        | No (except on some custom-made products)                                                                                                   |
| Thermal fuse in blanket | <b>Std</b> : 172°C 16A or lower depending on model<br><b>HT &amp; F&amp;P</b> : 259°C 16A or lower depending on model                      |
| Power cable length      | 2.9 meters unless otherwise specified                                                                                                      |
| Power connector         | Connector type may vary depending on model and customer specifications. An Ilme connector is used for versions with an external controller |
| Protection Class        | Class II                                                                                                                                   |
| Controller fuse         | 10A or 15A depending on model                                                                                                              |

**DECLARATION OF CONFORMITY**

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Seller</b>                                                                       | (or use stamp above)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |
| Name                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| Address                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| Country                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| Tel                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| <b>Hereby declares that the machinery</b>                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| <b>Name</b>                                                                         | Container Heaters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
| <b>Function</b>                                                                     | <p>Container heaters designed for heating and maintaining the temperature of drums, IBCs, and similar containers in industrial applications. They share a common construction and are divided into two types:</p> <ul style="list-style-type: none"> <li>• Standard – with a maximum temperature of 90°C.</li> <li>• High Temperature – with a maximum temperature of 200°C.</li> </ul> <p>The container heaters are available in various sizes and power ratings. All heating blankets are thermostatically controlled, using either a digital controller, analog controller, bi-metal thermostat, or connection for an external third-party controller.</p> <p>The products are intended for use in non-explosive environments and are connected to standard 230V AC (or 120V AC for certain models).</p> |                  |
| <b>Type - model</b>                                                                 | All standard or custom models, unless otherwise defined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |
| <b>Produced - year</b>                                                              | 2016-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |
| <b>Manufactured in accordance with the following EC directives</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
|  | 2006/42/EF - Machine Directive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |
|                                                                                     | 2014/35/EU - Low Voltage Directive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |
|                                                                                     | 2011/65/EU (Including 2015/863 addition) – RoHS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
|                                                                                     | 2014/30/EU - EMC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                  |
| <b>And using the following national standards and technical specifications</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
|                                                                                     | AT Executive Order No. 693 of 10 June 2013 – Technical requirements for the design of machinery (Danish implementation of Directive 2006/42/EC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| <b>Name</b>                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| <b>Title</b>                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| <b>Place</b>                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Signature</b> |
| <b>Date</b>                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |

## Related products

IBC heaters



Insulation jackets for  
barrels and IBCs



Drum heaters  
for food stuff



Drum heaters



Silicone drum heaters

