

# DRUM HEATING BLANKET



**PAULISTA HEATERS**  
ELECTRIC HEATING SYSTEM

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# DRUM HEATING BLANKET

## 1- Product Specifications

- ✓ Voltage: 110V, 220V, 380V, 440V or other.
- ✓ Working Temperature: up to 200°C (392°F) for metal drums and up to 90°C (194°F) for plastic barrels.
- ✓ Suitable for both metal drums and plastic barrels.
- ✓ Standard Size: 20L, 50L, 100L, 200L 4 - We also manufacture for large or small tanks.
- ✓ Features a thermal insulation cover.
- ✓ Controller Types: Analog thermostat, digital thermostat, or digital panel.
- ✓ We have options for classified area EX8.



For 200 liters drums, which are standard in the market, we work with two lines of drum heating blankets:

<p><b>I- Low Power Drum Heating Blanket</b></p> <p>It has 2000W and is made with 1 heating zone (in the center) controlled by a digital thermostat or analog thermostat - ideal for heating products such as oil, grease, fat or chemicals (which have a specific heat lower than that of water) up to 90°C (194°F).</p>	
<p><b>II- High-Power Drum Heating Blanket</b></p> <p>It has 4500W and is made with 3 heating zones (bottom, center and top) controlled by a digital panel or 3 analog thermostats - ideal for heating products such as water or chemicals (which have a specific heat equal to or greater than that of water) up to 200°C (392°F).</p>	

For other drum sizes, the heating blanket is custom-made according to the customer's needs.

## 2- General description of the product structure

Description	Technical Details
<p>The thermal blanket is composed of silicone straps reinforced with fiberglass fabric, resistive wire, a fastening system with hooks, springs, and Velcro, with internal and external cabling according to electric current, temperature control, male power plug, containing a thermal insulation cover sewn in Cordura fabric, with internal insulation in ceramic fiber fabric and external in Nomex fabric.</p>	<p>Working temperature: From -40°C (-104°F) to +200°C (+392°F) (can withstands peaks of -90°C (-194°F) and +230°C (+446°F) for short periods of time)</p>
	<p>Weight capacity: 1kg/cm<sup>2</sup></p>
	<p>Electrical insulation: 20KV</p>
	<p>Hardness: Standard 30 + 5 Shore , other hardness levels may apply according to customer requirements.</p>
	<p>The fastening system consists of stainless steel springs and hooks for the straps and Velcro for the insulation cover. The springs have a 100mm body and stretch up to 150mm. The silicone straps are glued to the insulation fabric.</p>
	<p>Internal Teflon cable – withstands temperatures up to 260°C (500°F) – Voltage: up to 600V</p>
	<p>*Internal electrical connection cables are used to connect the heating element to the controller.</p> <p>External silicone cable – withstands up to 200°C (392°F) – Voltage: up to 500V</p> <p>External PP cable – withstands up to 90°C (194°F) – Voltage: up to 500V</p> <p>*Cables for external electrical connection do not have direct contact with the heating element; they are used to connect the temperature controller to the power outlet.</p>
<p>Direct or alternating current power supply</p>	

Power plug:

We offer a power plug according to the current and voltage of the project, as well as the model the customer needs in their process. The two lines options are:



Brazilian standard 3-pin power plug  
10A or 20A for 110V or 220V



Industrial power plug 16A, 32A, 63A,  
and 125A for 110V, 220V, 380V, or  
440V.

Fastening system:

The fastening is via hooks and springs made for securing the thermal straps, and Velcro for closing the thermal insulation cover.



## Temperature controller:

These are the available options:

### Analog Thermostat

Easy to operate and with excellent cost-benefit ratio, recommended for low-power heating blankets (up to  $0.5\text{W}/\text{cm}^2$ ) and heating systems that do not require precise temperature control. Variation of  $+10^\circ\text{C}$ . Controller used: IMIT.



### Digital Thermostat

Recommended for low and medium power heating blankets (up to  $0.7\text{W}/\text{CM}^2$ ). Variation of  $+5^\circ\text{C}$ . Comes with a temperature sensor (PT100, J, K, NI120, PTC or other) for temperature control of the heating element. More than one controller can be attached to control the product temperature. Controller used: NOVUS 321.



## Digital Panel

Recommended for high-power heating blankets (above  $0.7\text{W}/\text{cm}^2$ ) and heating systems requiring precise temperature control, as it has a PID function. It comes with a sensor (PT100, J, K, NI120, PTC or other) for belt temperature control. More than one controller can be coupled to control the product temperature. Controller used: NOVUS 1030 or NOVUS 1050 (for ramp-plateau heating, ideal for processes that need to follow a heating cycle where the temperature varies over time). It can be coupled to the product (direct connection) or mounted on a pedestal (interconnected to the belt via a multi-pole socket). Made according to NR10 (can be customized according to customer needs to meet the specifications of their process). We also manufacture panels for classified EX areas.



Digital controllers have several quality certifications, such as: ISO 9001, REACH Compliance , RoHS , CE, RU, EX, among others, which ensure operational excellence and reliability for your process.

### Only with temperature sensor

If the customer already has a temperature controller, we can offer the belt with just the sensor. The temperature sensors commonly used are: J, K, PT100, NI 120 and PTC (we can use other models as needed). We offer sensors already installed on the belt to control its temperature or with a bulb to control the product's temperature.

### Insulation cover:

This is the external coating that serves both to protect the strap and to insulate it, ensuring the strap does not lose heat to the environment, also protecting the operator from the risk of burns. The cover is made of Cordura fabric, Nomex, and insulating blanket, which offers high mechanical resistance and withstands high temperatures. Furthermore, it provides safety in use as it is non-flame propagating. And, as it is waterproof, it allows working in external environments. The Velcro strips positioned at the ends allow for modular assembly, enabling the expansion of the heating area according to the application need. Cleaning is simple, as it is done dry using a cloth and alcohol since the fabric does not adhere to dirt. It also has a removable (non-heated)

### **3- Instruction manual:**

#### How to use

1. Install the product by positioning the silicone side (red) towards the container to be heated and the temperature controller towards the outside.
2. Secure the part using the springs and hooks on the strap. Pull the springs only in the horizontal direction (lying down).
3. Close the horizontal and vertical Velcro fasteners.
4. If using an analog thermostat, set it to zero.
5. Check the voltage of the electrical network where the drum heating pad will be connected. If connected to a lower voltage, it will heat up little, and if connected to a higher voltage, it will burn out.
6. Connect the drum heating blanket to the electrical outlet.
7. In the case of a digital panel, especially during first use, do not change the temperature on the controller; wait for the controller to complete its learning period. At the end, the TUNE light will turn off and the green lights will flash; this is normal for the product. Only after the learning process is complete, set the temperature up to 100°C, and if necessary, increase it by 20°C every 20 minutes to allow for proper heating.
8. Adjust to the desired temperature. If using a digital controller, check the supplier's instructions to program it according to your process.
9. Wait for the drum heating pad to heat up to the desired temperature.
10. Allow to heat until the product stored in the drum reaches the appropriate temperature. Heating time varies depending on the specific heat of the product

being heated, the power of your heating mantle, and the volume of your container.

11. Next, unplug the drum heating pad and wait 1 minute for it to cool down.
12. Remove the drum heater blanket and store it properly.

#### Recommendations:

- Do not use the drum heating blanket above its design temperature. It can operate continuously up to 200°C with peaks of 230°C.
- Metal drums or tanks can withstand high temperatures, but plastic drums or containers can only withstand a maximum of 90°C (if placed above that, they will puncture).
- Use the drum heating blanket only when the drum is full of product (at least above the level of the heater).
- Store and transport the drum heating blanket correctly, holding it by the fabric and avoiding folding, stretching, kicking, or throwing it, as these can damage the resistive elements and internal components of the controllers.
- Use rubber gloves to avoid static electricity shock; this shock does not pose a danger to humans, only a discomfort.
- Do not move the drum heating blanket while it is heated or heating up, as this may damage the resistive elements.
- Do not puncture, cut, or immerse the drum heating mantle in liquid; risk of short circuit.
- The drum heating blanket may release gases from its internal components during the initial heating

cycles (especially at high temperatures, above 150°C).

- Cleaning should only be done with the drum heating pad de-energized, using a clean cloth and alcohol.
- If there is damage to the heating blanket or the panel, discontinue use and notify Resistências Paulista to verify if it is safe to continue using the product, as there may be a risk of electric shock in this case.
- Do not make any modifications to the drum heating blanket without prior notification and authorization from Paulista Heaters, as failure to inform or approve this will violate the product's legal warranty.
- Store the drum heating blanket by folding the end straps over the middle strap and then rolling it up . Do not fold or crease it under weight, as this may damage the internal heating element.

#### Safety Items:

- ✓ The thermal belt is fully electrically insulating, resistant to fungi and chemicals.
- ✓ The thermal insulation cover provides approximately 70% insulation, allowing the operator to work close to the container being heated.
- ✓ The insulation cover is waterproof, made with flame-retardant fabrics that are resistant to cutting and high temperatures.
- ✓ The thermal belt or cover should be cleaned dry, using a cloth and alcohol.
- ✓ Both the belt and the cover do not easily attract dirt.
- ✓ The digital panel can be made in accordance with NR10.

- ✓ The drum heating blanket poses no risk for use in EX-classified areas, as the resistive element is completely sealed.
- ✓ For use in EX-classified areas, we work with certified panels and appropriate cabling (please inform us of your classification so that our technical department can analyze it).
- ✓ When the drum heating blanket comes with a pedestal-mounted panel, the pedestal is grounded. However, grounding the equipment to be heated is the customer's responsibility.
- ✓ Low or medium dissipation drum heating blanket (up to 0.7 W/cm<sup>2</sup>) will not burn out if switched on without heat exchange at temperatures up to 150°C. However, high dissipation heating blanket cannot be switched on without proper heat exchange, as there is a risk of burning out.
- ✓ Do not use the drum heating blanket if it is blistered, punctured, cut, has an exposed heating element, or is burnt, as there is a risk of electric shock.
- ✓ The drum heating blanket does not come into contact with the product being heated.
- ✓ It provides a safe heating process for operators, with minimal risk of workplace accidents.

#### 4- Application :

The drum heating blanket is ideal for heating products stored in:

#### Metal drums or plastic containers



#### Ideal for use in areas such as:

- ✓ Pharmaceutical industry,
- ✓ Food industry,
- ✓ Chemical industry,
- ✓ Metallurgical industry,
- ✓ Auto repair shop,
- ✓ Laboratory.

**We offer our products throughout Brazil and abroad. We manufacture customized, tailor-made products to best meet your needs. Contact us for a quote!**

# Registration Data

## Company Name

Paulista Heaters co.

## Trade Name

Paulista Heaters

## CNPJ

44.493.049/0001-07

## State Registration

125,354,590,111

## DUNS® Number

819171629

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