Heated Hose

PAULISTA HEATERS

ELECTRIC HEATING SYSTEM

Summary

HEATED HOSE

1- Product Specifications

- ✓ Voltage: 24V, 110V, 220V, 380V, 440V or other.
- ✓ Working temperature: Teflon hose with metal braid – up to 200ºC (392ºF), rubberized hose – up to 120ºC (248ºF).
- ✓ Ideal for maintaining the temperature of products that need to be dispensed via hose.
- ✓ We manufacture them in various sizes.
- ✓ Type of controllers: digital thermostat, digital panel, or sensors only.
- ✓ fiber-ceramic blanket and nylon mesh.
- ✓ Aeroquip brand Teflon hose with metal braiding or Manulli brand rubber hose. Equator .
- ✓ We manufacture thermal hoses for food use.
- ✓ We have options for classified EX areas.

2- Description of the product structure

Description	Technical Details
The heating hose can be made of Teflon with a metal braid or rubberized. It has a resistive wire encased in silicone tubing with fiberglass for heating, a sensor for temperature control (which may or may not include a digital controller), thermal insulation, a nylon braid for mechanical protection, and metal connections.	Working temperature: Teflon hose with metal braid - withstands temperatures up to 200ºC (392ºF) continuously and peaks of 260ºC (500ºF) for short periods of time. Rubberized hose – withstands temperatures up to 120ºC (248ºF) continuously and peaks of 150ºC (302ºF) for short periods of time.
	It has grounding.
	Electrical insulation: up to 20 kV .
	Thermal insulation: reduces temperature by up to 70%.
	Fastening system using metal connections according to customer needs.
	Internal Teflon cabling – withstands temperatures up to 260ºC (500ºF) – Voltage: up to 600V. *Internal electrical connection cables are used to connect the thermal blanket to the controller. External silicone cabling – withstands up to 200ºC (392ºF) – Voltage: up to 500V. External PP cabling – withstands up to 90ºC (194ºF) – Voltage: up to 500V. *Cables for external electrical connections do not have direct contact with the thermal blanket; they are used to connect the temperature controller to the power outlet.
	Direct or alternating current power supply

Power plug:

We offer plug sockets according to the current and voltage specifications of the design, as well as the model that the customer needs for their process. The two product line options are:

3-pin Brazilian standard plug10A or 20A for 110V or 220V

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

Fastening system:

The thermal hose is secured by metal fittings; we work with various solutions in different sizes:

1- Rotating Female
2- Fixed Male
3- TC
4- No connection

Thread type: BSP, JIC, UNF, NPT, other

Type of outlet: straight, 45º, 90º or other.

Material type: steel, brass, stainless steel, or other.

Temperature controller:

These are the available options:

Bimetallic thermostat

It consists of a thermostat that is placed inside the heating hose to lock at a fixed temperature. It works through a mechanical activation that occurs through expansion. This type of solution is quite imprecise, recommended only for low temperatures, however, it is much cheaper than other models. It is perfectly suited for simple applications where only temperature maintenance is required.

Digital Thermostat

Recommended for low and medium power heating hoses (up to 0.7W/CM²). Variation of +5ºC. Comes with a temperature sensor (PT100, J, K, NI120, PTC or other) for temperature control of the heating hose. Controller used: NOVUS 321.

Digital Panel

Recommended for high-power heating hoses (above 0.7W/cm²) 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 temperature control of the heating hose. More than one controller can be coupled to control the product temperature. Controller used: NOVUS 1030 or NOVUS 1050 (for ramp-plateau, ideal for processes that need to follow a heating cycle where the temperature varies over time). It can be mounted on a pedestal (interconnected to the heating hose 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 thermal hose with just the sensor. The temperature sensors commonly used are: J, K, PT100, NI 120 and PTC (we can also use other models as needed).

Insulation layer:

This refers to the outer covering that serves both to protect and insulate the heating hose. It is made with a fiber-ceramic blanket and a nylon sheath, fabrics that do not propagate flames and thermally insulate the heating hose, allowing the operator to handle it without risk of burns. In addition, it has excellent mechanical resistance, protecting the heating hose during use where it is dragged along the floor.

3- Types of Thermal Hose

As previously mentioned, we work with two models of heated hoses:

Teflon thermal hose with metal braid.

Operating temperature: up to 200ºC continuous, withstands peaks of up to 260ºC for short periods of time.

Ø Pol	Ø MM	Maximum Cold Pressure	Maximum Hot Pressure	Bursting Pressure
1/8”	3.2mm	250 bar	200 bar	850 bar
1/4"	6.4mm	220 bar	180 bar	827 bar
5/16	8.0 mm	200 bar	150 bar	600 bar
3/8”	9.5 mm	170 bar	120 bar	550 bar
1/2"	12.0 mm	150 bar	80 bar	400 bar
5/8	16.0 mm	130 bar	70 bar	330 bar
3/4"	22.0 mm	110 bar	60 bar	270 bar
1”	25.4 mm	80 bar	30 bar	170 bar

We manufacture to the length you require.

Rubberized Thermal Hose

Operating temperature: up to 120ºC continuous,
withstands peaks of up to 150ºC for short periods of time.

Ø Pol	Ø MM	Maximum Cold Pressure	Maximum Hot Pressure	Bursting Pressure
1/4"	6.4mm	400 bar	400 bar	1725 bar
5/16	8.0 mm	350 bar	350 bar	1480 bar
3/8”	9.5 mm	330 bar	330 bar	1400 bar
1/2"	12.0 mm	275 bar	275 bar	1200 bar
5/8	16.0 mm	250 bar	250 bar	1020 bar
3/4"	22.0 mm	215 bar	215 bar	900 bar
1”	25.4 mm	175 bar	175 bar	700 bar
1 1/4"	31.7mm	150 bar	150 bar	600 bar
1 1/2”	38 mm	100 bar	100 bar	410 bar
2”	50.8 mm	90 bar	90 bar	370 bar

We manufacture to the length you require.

4- Instruction manual:

How to use

1. Install the heating hose by securing its connections with the machine switched off, i.e., without any product passing through it.
2. Check the voltage of the electrical network where the heating hose will be connected. If connected to a lower voltage, it will heat up very little, and if connected to a higher voltage, it will burn out.
3. Connect the heating hose to the electrical outlet.
4. 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.
5. Adjust to the desired temperature. If using a digital controller, check the supplier's instructions to program it according to your process.
6. Wait for the silicone heating hose to heat up to the desired temperature before allowing the product to pass through and applying pressure.
7. Next, turn on the machine to allow the product to pass through.

Recommendations:

- Respect the minimum bending radius of 300mm.
- If necessary, use adapters to change the hose's inlet and outlet angles to avoid small bend radii.
- Never connect the hose to a system that does not have temperature or pressure control.
- Do not use the hose above its design temperature.
- Do not use products that corrode Teflon or use products with temperatures exceeding the limits of what the thermal hose can withstand.
- Verify the correct torque on the connections to prevent leaks.
- The hose should only be cleaned when it is de-energized, using a clean cloth and alcohol.
- Do not submerge the hose in water.
- Do not use water to wash the hose.
- Be careful not to damage the threads of the connection.
- If the connection is dirty, clean the threads with a steel brush.
- If this product is damaged, discontinue use and notify Resistências Paulista to verify if it is safe to continue using the product, as there is a risk of electric shock.
- Do not make any modifications to the product without prior notification and authorization from Resistências Paulista; failure to approve such modifications will void the product's legal warranty.
- If the hose becomes clogged, especially during glue heating processes, the correct procedure is to clean the hose without forcing the product through. To do this, simply remove it from the machine, allow it to heat up to the melting temperature of the product, and then apply pressure with water or another liquid to drain all the product out of the hose.

Safety Items:

- ✓ The thermal hose is grounded.
- ✓ The thermal insulation cover provides approximately 70% insulation, allowing the operator to work while handling it.
- ✓ The thermal hose does not attract dirt easily.
- ✓ The digital panel can be made in accordance with NR10.
- ✓ 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).
- ✓ For use in the food industry, we work with non-toxic hoses that are certified for this purpose (please provide your classification so that the technical department can analyze it).
- ✓ Do not use the heating hose if it is stretched outside the braid, leaking, or crushed.
- ✓ Be careful with the minimum bending radius to avoid damaging the hose; the correct way to store it is by rolling it up, not folding it.
- ✓ It provides a safe heating process for operators, with minimal risk of workplace accidents.

5- Application :

Thermal hoses are widely used in heating processes for chemicals, pharmaceuticals, food, hot melt glue , PU glue, adhesive glue, etc.

Ideal for use in areas such as:

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

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Registration Data

Company Name

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Trade Name

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CNPJ

44.493.049/0001-07

State Registration

125,354,590,111

DUNS® Number

819171629

Address

Joaquim de Paula Street, No. 1011 – Morumbi City – São José dos Campos – SP - Brazil – Postal Code: 12236-450

Contact Commercial Department: Alefe Luís Pinto

Phone: +55 (12) 98217-1580 (Whatsapp)

Email: contact@paulistaheaters.com

Technical Department Contact: Vinicius Roberto de Moraes

Phone: +55 (12) 99669-5243 (Whatsapp)

Email: project@paulistaheaters.com

Website: https://paulistaheaters.com