

TPS Unifold® Heater Mat and Control Box

The TPS Unifold® liner heating system The TPS Unifold liner heating system consists of two main components – a silicone rubber heater mat and an electronic temperature control system. The heater mat is placed in the bottom of the container directly underneath the inner liner in order to heat up the product contained within the unit.

The heater mat contains a temperature sensor placed close to the surface of the heater mat. This measures the temperature of the surface of the heater mat, which is in contact with the inner liner and consequently the product. The sensor is connected to a control box through 4-core cable and a 4-pole locking plug and socket arrangement. This connection can only be made in one orientation, making incorrect coupling of the power and the sensor connections impossible.

The cable connections to the heater mat are insulated within a silicone rubber mold. The cable passes through a secondary mold, which limits the movements of the cable in the primary mold – eliminating the possibility of any strain on the electrical connections.

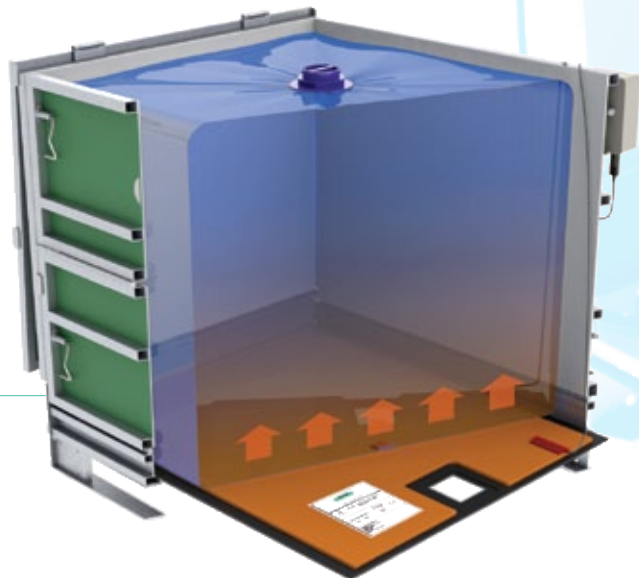
The seal around the cable also prevents any moisture from entering the cable.

The IP65-rated control box contains an electronic temperature control unit (connected to the sensor within the heater mat) and a residual current device (RDC) for protection against electric shock. There is also a 30-amp relay unit.

Both the heater mat and the relay unit are CE marked.

A metal bracket on the back of the control box enables the control box to hang on the top edge of the container. When the control box is hung correctly, the system is fully grounded and must be connected to a grounded power supply.

For mounting and operating instructions – see the product information data sheet.



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Heater Mat Specification

Rating:	230V / 2700W
Element wire:	80/20 Ni/Cr resistance wire
Insulation:	High temperature silicone impregnated glass cloth. Fully post cured.
Temp. Sensor:	Silicone PTC1000 (1000W @ 25°C)
Cable:	1.5 mm 24-core copper conductors, PVC insulated and sheathed. Current rating: 16 amps. Operating temperature range: -5° to +70°C
Cable plug:	4-pole touch-safe plug. Contacts: Gold plated rated 240 volt 20 amps. Operating temperature range: -4° to 176° F (-20° to 80°C)
Weight:	6.2 Lbs (2.8 kg)
Measurement:	L x W: 40.75" x 33.5" (103.5 x 85.1 cm)
Article number:	12901110

Temperature Control Specification

Enclosure:	Polycarbonate IP65 marked with transparent polycarbonate hinged lid
Controller:	MTC271/2 electronic controller with adjustable set point. Range: 32° to 194° F (0° to +90°C) Voltage rating: 230V AC 50/60 Hz Operating temperature range: 14° to 140° F (-10° to 60°C) Accuracy: +/- 1°C
R.C.D.	Voltage rating: 230 V AC Contact rating: 25A Trip current: 30 milli-amps Trip time: 40 milli-seconds
Relay	Voltage rating: 240 V AC Contact arrangement: Normally Open Contact rating: 30 amps Electrical life: 100,000 operations Operating temperature range: -67° to 185° F (-55° to +85°C)
Weight:	3.2 Lbs (1.413 kg)
Box dimensions:	H x W x D: 6.7" x 5.3" x 4.2" (17.0 x 13.4 x 10.5 cm)
Article number:	12901100

Mounting and Operating Instructions

Before you start:

Do not insert the inner liner until the heater mat is correctly in place.

Instructions for mounting the heater mat:

1. Place the heater mat at the bottom of the container (printed side upwards) with the cutout section evenly placed around the discharge hole inside the container. NB: Make sure that the sides of the heater mat are not riding up the walls.
2. Draw the heater mat cable up the inside wall of the Container and hang over the side.
3. Place the inner liner inside the container and, as evenly as possible, spread it over the surface of the heater mat.
4. During filling, the inner liner walls should be continually pushed outwards so that the inner liner is flat on the heater mat at all times, to ensure even heat transfer to the contents.
5. When the inner liner is full, place the cable and the protruding plug gently on top of the inner liner

Instructions for heating the liner contents:

1. Open the container lid and take the heater mat cable from the top of the inner liner, placing it over the side of the container.
2. Hang the control box on the upper edge of the container side, using the stainless steel bracket on the rear of the control box.

IMPORTANT:

Make sure that the control box is not exposed to direct sunlight, as this will raise the internal temperature of the box. It is also important that the bracket is in firm contact with the container metal as this contact forms an electrical ground.

3. Connect the 4-core electric cable of the control box to a 230V single-phase earthed supply, and then switch on.
4. Initially, the control box will display "PFA" as it does not yet receive a signal from heater mat sensor.

IMPORTANT:

Do not plug the heater mat into the control box until the Residual Current Device (RCD) has been tested. Test the RCD by pressing button 'T'. The device should trip to the '0' position. If it does not trip, disconnect the power supply and DO NOT use the equipment. If the RCD shows a '0' continue, but do not reset the device yet.

5. After testing the RCD, insert the plug of the heater mat cable into the socket of the control box. The plug is located in a keyway in the socket, and can only be inserted one way. When the plug is fully inserted, lock into position by turning the locking ring clockwise.
6. Now reset the RCD by turning the pointer back to position '1'. Power will then be applied to the heater mat. The required switch-off temperature can now be set on the control box.

Setting the switch-off temperature:

1. On the control box, press button 'F1'. It will display 'L1' for two seconds, followed by the current switch-off temperature.
2. A new switch-off temperature can be set by pressing the up and down arrow keys.
3. When the required switch-off temperature is set, close the lid of the control box. It is now in operation mode.

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