



PRECISION HEATED PLATES

Vacuum Applications - Remote Control - Max. Temperature 200 °C

Model family: **HTP-MA1-200**

Description.

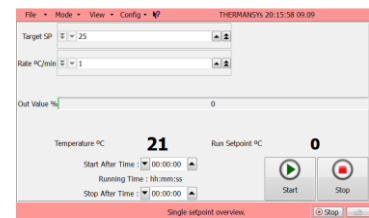
THERMANSYS HTP-MA1-200 Precision Heated Plates family was designed to provide accurate and uniform surface temperature control.

Equipped with an adaptively tuned Temperature PID controller that constantly conforms to various load needs and heat losses to the surroundings is an ideal choice for applications requiring heating under Vacuum or inert atmosphere.

Controlled and monitored through a flexible conduit by a remote control box the heated plate body can operate inside closed Vacuum chambers or other controlled atmosphere containers. A special Vacuum (and pressure) sealing feedthrough is available for such applications providing leak free passage of the interconnection conduit into the chamber.

The outer shell of the heated plate body is made of corrosion-free stainless steel ASTM 304. The heated body is made from Aluminum providing superior heat transfer and temperature uniformity. All the materials of construction including insulation are specially selected to be compatible with Vacuum applications up to **10⁻³ torr (mmHg)**.

Suitable for many applications including Electronics/Semiconductors, Pharmaceuticals/Cosmetics, Plastics, Agricultural and other.



Equipped with a sophisticated, touch screen computer HTP-MA1-200 Precision Heated Plates are fully electronically controlled through PYROLOGISM software.

Narrow profile design allows valuable space saving inside Vacuum or controlled atmosphere chambers.

Key features.

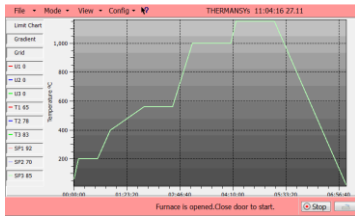
- Control strategy by Thermansys PCC (Power Consistent Control) insures silent operation and compliance with EMC standards.
- Aluminum heated surface enhance fast and uniform heat transfer.
- Outer shell made of corrosion-free stainless steel ASTM 304
- Ideal choice for applications requiring heating under Vacuum or inert atmosphere
- 4.3" touch screen computer running the user friendly, PYROLOGISM software.
- Remote controller
- Adaptively tuned Temperature PID controller constantly conforms to various load needs, accurate and uniform temperature profiles.
- Heater failure, open control thermocouple detection alarms and interlocks.

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Information and data contained in this document was considered correct at the time of publication. Thermansys® is reserving the right to make modifications as a result of design improvements.

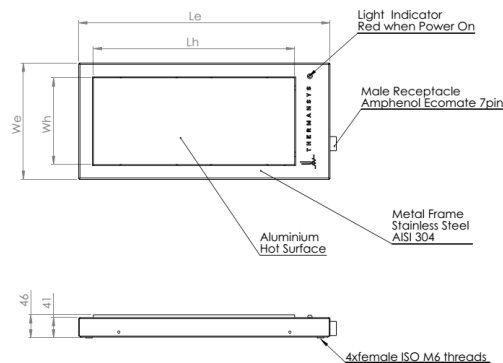
PYROLOGISM control and monitoring software.



- Digital Temperature Indication
- Quick setting of a single ramp rate to a set point -run on timer function.
- Temperature Set-point programming with unlimited ramp and constant temperature programming steps – graphical inspection of programming.
- Storage and reload of unlimited number of distinct programs.
- Graphical inspection of programming.
- Real time chart illustrating control temperature and running set point with dynamic zoom.
- Events and alerts messaging.
- Real time true-RMS Current (A), Voltage (V) and Power (W) measurements.
- Real time actual Power (W) and totalized Energy (kWh) chart.
- Saves all data on local memory and on external USB memory stick.
- Tools for manual PID tuning, auto-tuning or adaptive tuning function.
- Dynamic Help function tool, virtual keyboard, alarm and event message bar.

Specifications and Ordering Information.

- Temperature control range, 5 °C above ambient to 200 °C. Monitoring resolution 0.1 °C.
- Operating Power: 208 /240VAC – 50/60Hz.
- Pt100 type temperature sensor.
- Temperature control setting resolution 0.1 °C. Typical control fluctuation ± 0.1 °C
- Feedthrough flange, DN40 CF or DN40 KF (clamp flange).
- Feedthrough vacuum rating 10⁻³ torr (mmHg)
- Feedthrough pressure rating 0.5 bar Gauge



DRAWING 1. HTP-MA1-200 Precision Heated Plates Dimensions

Compliant with **Low Voltage Directive 2006/95/EC** (harmonized referenced standard EN 61010-1: 2001 and EN 61010-2-010:2003) and **EMC Directive 2004/108/EC** (harmonized referenced standard EN 61326-1:2006)

TABLE1. HTP-MA1-200 Precision Heated Plates Models

Model Part Number	Max. Temp. °C x Heat up time* (min)	Heated Surface dimensions Lh x Wh (mm) see drawing 1	Surface Uniformity % set point (Center and up to 30mm from edges)	Surface Uniformity % set point (Edges)	External dimensions Le x We (mm) see drawing 1	Nominal Heater Max. Power (W)
HTP-AM1...						
-L18W18-200	200 x 20	180x180	<0.5	<2	280x240	800
-L30W18-200	200 x 20	300x180	<0.5	<2	400x240	1200
-L30W30-200	200 x 20	300x300	<0.5	<2	400x360	1600
-L40W18-200	200 x 20	400x180	<0.5	<2	500x240	1600
-L40W30-200	200 x 20	400x300	<0.5	<2	500x360	1800
-L40W40-200	200 x 20	400x400	<0.5	<2	500x460	2000

* Hot plate working with no load..

NOTE on Drawing 1: The units are supplied with 4 removable rubber feet -adding about 20mm to the unit height when installed.

Ordering Example:

HTP-AM1-L40W18-200: This Part Number includes one HTP-MA1-200 Precision Heated Plate having 400x180mm heated surface.

 HELLENIC PRODUCT.

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