

Band Heaters / Quartz Far Infrared Heaters

CAD Data



Peltier Cooling Unit Controller

CAD Data

Band Heaters

MBHS40 Only

(One-piece) (Single-Phase 200V) (Two-piece) (Single-Phase 200V)

Example

OK: The heater is closely contacting the heated object.

NG: The heater is not touching to the heated object.

Materials:
 Cover of the Heater: 1.4016/X6(8)Cr17
 Insulation: Synthetic Mica
 Nickel-chrome Wire: Nickel Chrome Ribbon Wire
 Lead Wire: Nickel Copper Coated Wire
 Resistance Temperature: 180°C

Accessory: Insulation Glass (MBHS: 2 pcs. / MBHD: 4 pcs.)

Part Number Type	No.	(d)	V (Voltage)	W (Electrical Power)	Electrical Power Density (W/cm ²)	€ Unit Price
	40	40	200	150	4.0	
	50	50		200		
	100	100		250		
	120	120		300		
	150	150		400		

Order Example Part Number: Days to Ship: **6 Days**

Price Volume Discount (Round down to one Cent.) P87

Quantity	1-10	11-15	16-20
Rate	€ Unit Price	5%	10%

For orders larger than indicated quantity, please request a quotation.

- ### Features
- The band heater is a thin cylinder heater, coated with stainless steel plate, whose nickel-chrome wire is insulated with the heat-resistant mica board.
 - One-piece type and two-piece type are available for different diameters of the heated object.
 - One-piece Type: Suitable for the cylinder of small diameter. 1 unit (2 pcs.) of terminals are included.
 - Two-piece Type: Suitable for the cylinders of relatively large diameter. 2 units (4 pcs.) of terminals are included.
 - Max Operation Temperature: 300°C
- ### Usage
- Band heater can be used for cylinder shaped heated objects (work).
 - Principal usages are: Heating of hot nozzles, pipes and cylinder shaped metal plates
- ### Precautions for Use
- Do not let the heaters run in open air, for that will cause fires and heater element damages.
 - Apply electric power under the condition in which an object such as metal to be heated is attached to the heater.
 - Attach the object so that the heater comes into close contact with the surface to be heated. A gap will cause premature breakage of wire.
 - After installation, energize it for several minutes, and tighten them once more after heated. At that time, take care not to be burnt.
 - The heater is not waterproof. Avoid water splashes on the heaters.
 - Do not use over the rated voltage (V).
 - Use the temperature controller for safety.
 - Do not mount One-piece Type flat. (Put the heated object through the heater.)

Quartz Far Infrared Heaters

(Quartz Far Infrared Heater + Reflection Mirror + Mounting Holder 2 pcs.) Single-phase 100V/200V

Materials:
 Quartz Tube: Quartz Glass
 Heater Cap: Brass + Nickel
 Plating Terminal: 1.4038/S235JR + Ni Chrome Plating

Reflection Mirror:
 Reflection Mirror: A1050
 Side Plate: A1050
 Holder Mounting Metal Fitting: 1.0038/S235JR + Ni Chrome Plating

Customer should assemble the MPHHS (set), which is a set of quartz far infrared heater, reflection mirror and mounting holder.

How to Mount:
 (1) Fix the "mounting holder" to the "mounting metal" installed on the reflection mirror.
 (2) Fix the reflection mirror and mounting holder to the designated place by using the screw for mounting holder or by drilling holes on reflection mirror body.
 (3) Fix the "heater cap" of quartz far infrared heater by "mounting holder".
 Do not touch the quartz tube or "safety insulator".

Caution on Installation:
 - After heating, tighten the nuts once more. (By heat expansion, it may be loosened.)
 - Additional tightening of the tightening bolt is recommended to only one side as Quartz Far Infrared Heater may be broken due to the different coefficient of heat expansion.

Part Number Type	L (Effective Length) 10mm Increment	V (Voltage) Selection	W (Electrical Power)	€ Unit Price
(Set)	150-240	100	250	
	250-340	100	400	
	350-440	100	500	
(Quartz Far Infrared Heater only)	450-540	100	600	
	550-600	100	1000	
		200	800	

Order Example Part Number: L: V: Days to Ship: **13 Days**

Price Volume Discount (Round down to one Cent.) P87

Quantity	1-10	11-15	16-20
Rate	€ Unit Price	5%	10%

For orders larger than indicated quantity, please request a quotation.

- ### Features
- The quartz far infrared heater has Nickel-chrome wires wrapped inside the quartz glass tube, which irradiate far infrared ray to the heated objects.
 - Although its function is similar to that of far infrared ceramic heaters, compared with ceramic heater it has the features as follows: (1) Rise/Drop in temperature are quick after the power is supplied (2) Relatively broad heat distribution (3) Irradiated heat direction is easily controllable
 - The far infrared ray uniformly heats the surface and interior of the object.
 - The temperature adjustment can be done by adjusting the distance to the heated object.
 - This is a clean heater with little dust scattering. The used quartz tube has excellent chemical resistance.
 - By using the reflection mirror, the irradiation direction of far infrared ray can be controlled, and more effective heat radiation can be obtained.
- ### Notes on Use
- These products are made of glass. Be extremely careful with handling, since it is easy to break.
 - Turn off the power immediately when broke during operation.
 - These products are for horizontal (lateral) use. Not usable in position of vertical (standing positioned) and slant (oblique positioned).
 - This heater becomes very hot. It may result in burn injury if touched while light is on or immediately after lights-out.
 - The cap part (insulators on both ends of quartz tube) should be used at the temperature lower than 100°C.
 - Do not touch the glass tube by bare hand. Sodium from sweat decreases the mech. strength of quartz tubes.
- ### Usage
- Desiccation of the Base and Material
 - Baking Finish and Desiccation of the Coat
 - Baking (Processing), Dehydration and Desiccation of Food
- Example** MPHHS
- Because infrared ray heats the object directly through no air, it is more efficient.

Features: Special controllers designed to adjust the temperature of Peltier Cooling Unit P1533. Excels in high precision control.

Dimensions: 110 (width), 180 (height), 165 (depth), 14 (thickness)

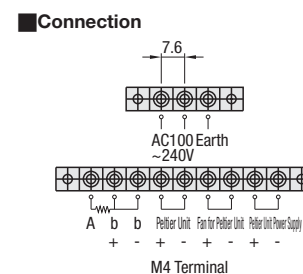
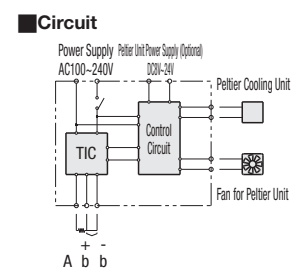
Part Number	€ Unit Price
	1 ~ 2 pcs.

For orders larger than indicated quantity, please request a quotation.

Order Example Part Number: Days to Ship: **8 Days**

Indication Method	Thermocouples (K · J · R · T · N · S · B) Temperature Measuring Resistor (Pt100 JPt100)
Control Method	With auto tuning PID control, with self tuning PID control, ON/OFF control
Indication Accuracy (Thermocouple)	The bigger one of ±0.3% of specified value + 1 digit or ±2 Degrees (Celsius)
Indication Accuracy (Temp. Measuring Resistor)	The bigger one of ±0.3% of specified value + 1 digit or ±0.9 Degrees (Celsius)
Indication Accuracy Maintenance Temp. Range	Ambient Temperature: 23±10°C
Display Breakdown Capability	0.1° (Celsius)
Range of Set Temperature	-30° (Celsius) ~ 120° (Celsius)
Proportional Control	0.1 ~ 200%
Integration Time (I)	0 ~ 3,600 sec.
Derivative Time (D)	0 ~ 3,600 sec.
Peltier Driving Method	PWM driving
Power Supply	Supplied externally (DC9 ~ 24V)
Consumption Current	15VA
Peltier Driving Capability	DC24V 7A (maximum in regular time)
Operating Environment	Indoors
Operating Temp. Range	+10 ~ 40°C
Operating Humidity Range	85% or less (No condensation)
Sampling Frequency	500mS
Storage Element	EEPROM
Power Supply Voltage	9 ~ 24V (Allowable voltage change range 85 ~ 264V)
Power Consumption	15VA (maximum)
Mass	Approx. 2.7kg

Overview
 Peltier Cooling Unit (P1533) Temperature adjustment controllers capable of heating/cooling control of chiller cooling Units. Suitable for not only small chiller and experiment machine but also building into device owing to the compact design specialized in control function. (Power source needs to be obtained by customer.)



Precautions for Use

- Only one Peltier Cooling Unit (P1533) can be connected to one controller.
- DC power source or power plug is not included.

Sensor Input Types and Sensor Range

Sensors	Lower to Upper	Limit Setting of Decimal Point
00 K Thermocouple	-200~1372	-199.9~990.0
01 J Thermocouple	-200~850	-199.9~850.0
02 R Thermocouple	0~1700	
03 T Thermocouple	-200~400	-199.9~390.0
04 N Thermocouple	-200~1300	-199.9~990.0
05 S Thermocouple	0~1700	
06 B Thermocouple	0~1800	
07 Pt100Ω	-199~500	-199.9~500.0
10 JPt100Ω	-199~500	-199.9~500.0
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Example Controller for Peltier Cooling Unit

Warranty

Warranty Period: One year from the shipping date
 Warranty Condition: Please present the guarantee card included at the time of delivery.
 Coverage of Warranty: Problems or damages arising through the normal usage in compliance with the instruction manual included at the time of delivery. If trouble occurs during the warranty period even though the unit has been operated in the normal manner, we will recover and repair or replace the unit.

In the following cases, repairs are for consideration. We will recover the product and make an quotation.
 (1) When the damage caused by the factors out of warranty range and the product is repairable.
 (2) When the damage has occurred beyond the warranty period and the product is repairable.