


# Band Heaters / Quartz Far Infrared Heaters

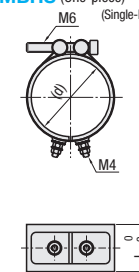
CAD Date Folder Name: 55\_Heaters

### Band Heaters

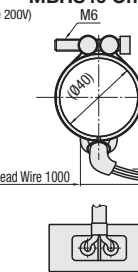


**RoHS**


**MBHS (One-piece)**  
(Single-Phase 200V)



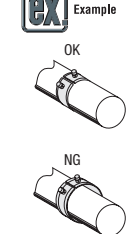
**MBHS40 Only**



**MBHD (Two-piece)**  
(Single-Phase 200V)



**ex Example**



OK The heater is closely contacting the heated object.

X The heater is not touching to the heated object.

**Material:** Cover of the Heater : SUS430  
Mica for Insulation : Synthetic Mica

**Nickel-chrome Wire :** Nickel Chrome Ribbon Wire  
Lead Wire : Nickel Copper Coated Wire

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

Lead Wire Heat Resistance Temperature: 180°C

Order Example **Part Number**  
**MBHS40**

Delivery **5** Days **P87**

Price **Volume Discount Rate** (Round up to the Baht.) **P87**

Quantity	Unit Price	Rate
1-10		5%
11-15		10%

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

Part Number	Type	No.	(d)	V (Voltage)	W (Electrical Power)	L	Electrical Power Density (W/cm)	Unit Price
<b>MBHS</b>		40	40	200	150	30	4.0	3,140
		50	50		200	2,958		
		100	100		250	3,686		
<b>MBHD</b>		120	120	200	300	50	2.0	3,959
		150	150		400	4,277		

### 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

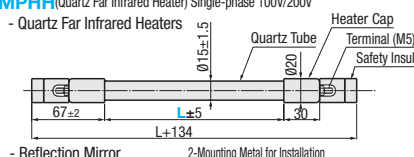


**RoHS**

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

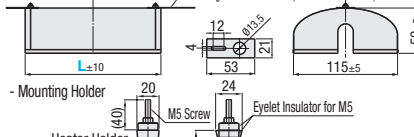
**MPHH** (Quartz Far Infrared Heater) Single-phase 100V/200V

**Quartz Far Infrared Heaters**



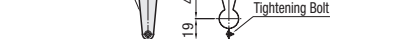
Heater Cap  
Terminal (M5)  
Safety Insulator

**Reflection Mirror**



2-Mounting Metal for Installation  
Mounting Metal for Installation (Plate Thickness 0.5mm)

**Mounting Holder**



Heater Holder  
M5 Screw  
Eyelet Insulator for M5  
Tightening Bolt

Order Example **Part Number**  
**MPHHS - L - V**

Delivery **12** Days

Price **Volume Discount Rate** (Round up to the Baht.) **P87**

Quantity	Unit Price	Rate
1-10		5%
11-15		10%

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

Part Number	Type	L (Effective Length) 10mm Increment	V (Voltage) Selection	W (Electrical Power)	MPHHS	MPHH
<b>MPHHS</b>	(Set)	150~240	100	250	4,186	2,275
		250~340	100	400	4,869	2,639
		350~440	100	500	5,506	3,003
<b>MPHH</b>	(Quartz Far Infrared Heater only)	450~540	100	600	6,143	3,413
		550~600	100	1000	6,825	3,777
			200	800		

### 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 mechanical 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

Because infrared ray heats the object directly through no air, it is more efficient.

Please refer to website for current price, delivery and spec.


# Peltier Cooling Unit Controller

Instruction manual is available online:  
<http://fa.misumi.jp/ht/> (in Japanese only)

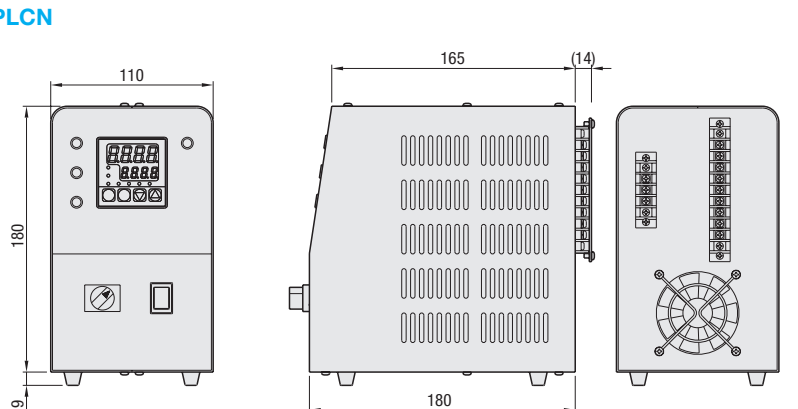
CAD Date Folder Name: 55\_Heaters

Features: Special controllers designed to adjust the temperature of Peltier Cooling Unit P.1533. Excels in high precision control.

**RoHS**



**PLCN**



Part Number	Unit Price
<b>PLCN</b>	1 ~ 2 pcs. 34,808

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

Order Example **Part Number**  
**PLCN**

Delivery **7** Days

Input	Thermocouples (K/J/R/T/N/S/B) Temperature Measuring Resistor (Pt100, JPt100)
<b>Control Method</b>	With auto tuning PID control, with self tuning PID control, ON/OFF control
<b>Indication Accuracy (Thermocouple)</b>	The bigger one of $\pm 0.3\%$ of specified value + 1 digit or $\pm 2$ Degrees (Celsius)
<b>Indication Accuracy (Temperature Measuring Resistor)</b>	The bigger one of $\pm 0.3\%$ of specified value + 1 digit or $\pm 2$ Degrees (Celsius)
<b>Indication Accuracy Maintenance Temperature Range</b>	Ambient Temperature: $23 \pm 10^\circ\text{C}$
<b>Display Breakdown Capability</b>	0.1° (Celsius)
<b>Range of Set Temperature</b>	$-30^\circ$ (Celsius) ~ $120^\circ$ (Celsius)
<b>Proportional Control (P)</b>	0.1 ~ 200%
<b>Integration Time (I)</b>	0 ~ 3,600 sec.
<b>Derivative Time (D)</b>	0 ~ 3,600 sec.
<b>Peltier Driving Method</b>	PWM driving
<b>Power Supply</b>	Supplied externally (DC9 ~ 24V)
<b>Consumption Current</b>	15VA
<b>Peltier Driving Capability</b>	DC24V 7A (maximum in regular time)
<b>Operating Environment</b>	Indoors
<b>Operating Temp. Range</b>	$+10 \sim 40^\circ\text{C}$
<b>Operating Humidity Range</b>	85% or less (No condensation)
<b>Sampling Frequency</b>	500mS
<b>Storage Element</b>	EEPROM
<b>Power Supply Voltage</b>	AC 100 ~ 240V (Allowable voltage change range 85 ~ 264V)
<b>Power Consumption</b>	15VA (maximum)
<b>Mass</b>	Approx. 2.7kg

### Overview

Peltier Cooling Unit (P.1533) Temperature adjustment controllers capable of heating/cooling control of Peltier 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.)

### Circuit

### Connection

### Precautions for Use

- Only one Peltier Cooling Unit (P.1533) 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	
10 Pt100Ω	-199 ~ 500	-199.9 ~ 500.0
11 JPt100Ω	-199 ~ 500	-199.9 ~ 500.0

### 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.

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