

Air Sheathed Heaters

Standard, Configurable

Be sure to refer to "Precautions for Use" in the Heaters for Air Heating Overview on P.1631.

Standard

RoHS10

Maximum Operating Temperature: 160°C

MAHU (U Type) (100V, 200V / Single-phase)

Terminal M5, Bushing M16, Heater Element Ø12, L, 0, -10

MAHM (M Type) (100V, 200V / Single-phase)

Terminal M5, Bushing M16, Heater Element Ø12, L, 0, -10

MAHS (S Type) (200V / Single-phase)

Terminal M5, Heater Element Ø12, M20×3, L±10, 40±5, 25, 10, 15, 11, 25

M Material Element : SUS304
Bushing : SUS304
A Accessory Gasket : Non Asbestos (only for U and M Types)
Flat Washer : SUS304
Nut : SUS304

① Bushing for S Type: Insulator (only for S type) 2 pcs.
② Nut for S Type: Insulator (only for S type) 2 pcs.

U, M, S Type Heaters

Part Number Type	No.	L	W (Electric Power)	V (Voltage)	Electrical Power Density (W/cm ²)	Unit Price
MAHU	1	200	500	100	4.0	
	2	270	1000			
	3	400	1500	200	5.5	
	4	510	2000			
MAHM	1	200	500	100	2.0	
	2	250	1000			
	3	280	1500	200	4.0	
	4	330	2000			
MAHS	1	330	500			
	2	420	667	200	4.1	
	3	500	833			
	4	590	1000			

Configurable

RoHS10

Maximum Operating Temperature: 160°C

MAHUS (U Type) (100V, 200V / Single-phase)

Terminal M5, Bushing M16, Heater Element Ø12, L, 0, -10

MAHUS
M Material Element : SUS321
Bushing : SUS304(M16x1.5)
A Accessory (2 pcs. each) Gasket : Non Asbestos
Flat Washer : SUS304
Nut : SUS304 (M16x1.5) Thickness: 6, Opposite Side: 24, Opposite Angle: 27.7

MAHSS (S Type) (100V, 116V, 200V / Single-phase)

Terminal M5, Heater Element Ø12, L±10, 30±5, 22, 7, 8, 3, 0.28, 0.13, 0.21, 0.24

MAHSS
M Material: Element: SUS321
A Accessory: Flanged Insulator, Aluminum Ring (2 pcs. each)

S Type Configurable

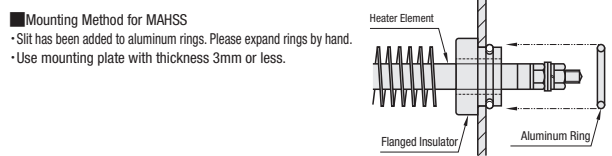
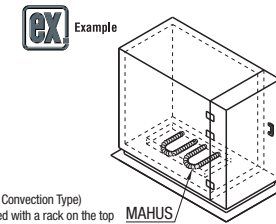
Part Number Type	No.	L	10mm Increment	V (Voltage) Selection	W (Electric Power) 10W Increment	Electrical Power Density (W/cm ²)	Unit Price
MAHSS	12	200-1500		100	150-2250	0.7≤W/cm ² ≤4.0 W/cm ² =W/3.77(L/10)	
				116			
				200			

U Type Configurable

Part Number Type	No.	L	1mm Increment	V (Voltage) Selection	W (Electric Power) 10W Increment	Electrical Power Density (W/cm ²)	Unit Price
MAHUS	12	200-600	60-100	100	150-1750	0.3≤W/cm ² ≤4.0 W/cm ² =W/3.77(2L+0.57A-84)/10	L200-300 L301-400 L401-500 L501-600
				200			
				300			
				400			
				500			
				600			
				700			
				800			
				900			
				1000			
				1100			
				1200			

Ordering Example

Part Number - L - A - V - W
MAHUS12 - 350 - A100 - V200 - W600
 Part Number - L - V - W
MAHSS12 - 400 - V200 - W150



Air Sheathed Plug Heaters, Small Hot Air Generators

Be sure to refer to "Precautions for Use" in the Heaters for Air Heating Overview on P.1631.

Air Sheathed Plug Heaters

RoHS10

Maximum Operating Temperature: 160°C

MAHP (Air Sheathed, 200V / Three-phase)

Plug G (PF) 2, Heater Element Ø12, Cap, 3, 20, 83, 72, 062, 75, 14, L, 0, -10

M Material Element : SUS316L
Plug : SCS14
Cap : SCS13
A Accessory Gasket : Non Asbestos

Example

Partition Plate, Air OUT, MAHP, Air IN

Part Number Type	No.	L	W (Electric Power)	V (Voltage)	Electrical Power Density (W/cm ²)	Unit Price
MAHP	1	230	1000	200	2.5	
	2	400	2000			
	3	580	3000			
	4	760	4000			
	5	890	5000			

Small Hot Air Generators

RoHS10

Maximum Operating Temperature: 800°C

MAHZA (Standard)

2-Lead Wire Length=(160), 2-M4Crimp Terminal, R(PT)1/8, Case, Temperature Monitoring Hole, 102, 14, 5, 11, 0.5, 0.3, 0.5, 1.4

MAHQB (Point Tapered)

0.2, 18, 18, 0.5, 0.5, 1.8

MAHQC (Flat Tip)

0.2, 18, 18, 0.5, 0.5, 1.8

M Material Generator: Quartz Glass / Case: Stainless Steel

As heat generation increase, temperature monitoring holes will turn red in order of 5 to 1. The load reaches the limit when the 5th to 2nd lights turn red and the 1st light remains black. Keep the color of the 5th hole unchanged when using.

Load Limit: 5, 4, 3, 2, 1

Example

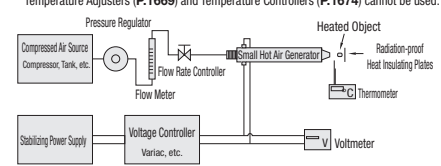
Voltage Controller (Variac), Flow Rate Controller (P.1396), Compressed Air Supply (Connected to air tubes, etc.), Tube, Connecting Socket PT1/8, Stand, Small Hot Air Generator, Heated Object

Part Number Type	No.	V (Voltage)	W (Electric Power)	Max. Flow (l/min)	Operating Gas Pressure (kgf/cm ² /MPa)	Maximum Operating Temperature	Unit Price
MAHZA	1	100	350	60	2(0.2)	800°C	MAHZA
	2	200	440				MAHQB
							MAHQC

Features
MISUMI's small hot air generators employ quartz glass which excels in heat-resistance on the body and ceramic processed special elements on the heat generator. Compact, safe, and clean hot air can be obtained.

- Usage**
- Spot Drying after Workpiece Cleaning
 - Welding of Resin Products
 - Soldering of Electronic Parts such as IC chips
 - Cap Seal Shrinkage (Shrink Packaging)
 - Cutting (heat cutting) of Resin Film etc.
 - Shrinkage of Pipe Wrapping Tubes

- Usage Procedure**
- Introduce compressed air before turning on small hot air generator.
 - Confirm the compressed air is flowing and apply a voltage to it.
 - Put the nozzle toward the object, and start heating.
- * Temperature Adjusters (P.1669) and Temperature Controllers (P.1674) cannot be used.



Applicable / Not Applicable Gases

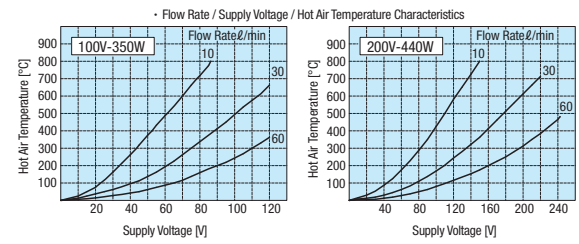
The list below is for reference only and not a product guarantee.

Gas	Applicable or Not	Cautions and Others
Air, Oxygen	○	Avoid large amounts of oil mist or water.
Nitrogen, Argon	○	All inert gases are applicable, but they will decrease the life span of the product.
Hydrogen	△	Igniting occurs if the gas is exposed in the air at temperature 600°C or more.
Water Vapor	△×	Letting the heat generator wet will cause breakage.
Town Gas / LPG	×	After thermal decomposition, carbon adheres to a heat generator.

Calculation of Hot Air Temperature
Use the following formula to estimate hot air temperature.

$$\text{Hot Air Temperature [}^\circ\text{C]} = \frac{50 \times \text{Power Consumption [W]}}{\text{Flow Rate of Compressed Air [l/min]}}$$

Power consumption should be made smaller than W (electric power) of each type. The above formula is for reference. If hot air temperature is high while flow rate is small, heat efficiency may decrease. Hot air temperature must be set lower than 800°C.



- [IMPORTANT] Cautions**
- Check the air flow supply before applying a voltage. Never use without air flow.
 - After turning off the small hot air generator, please keep the compressed airflow for 3 min or more for the sake of safety. Then stop air flow supply when the temperature of the hot air is lower than 50°C.
 - Quartz glass is used on the body. Do not apply an impact.
 - The body and case get high temperature during the operation. Do not touch them. It will cause burn injury.
 - Voltage and electric power should be set lower than the rated values.
 - Do not exceed max. operating temperature (800°C).