

Cartridge Heaters

Flexible Hose

Be sure to refer to "Precautions for Use" in the Cartridge Heater Overview on P.1605.

MCHH (No Flange)
Swaged
Heating Element (L-15)
D: -0.02 to -0.08
L: (L+8), 150, 850
F: +20/0

MCHHA (Flange Shape A)
MCHHC (Flange Shape C)
Only D=16 is available
Swaged
Heating Element (L-12)
D: -0.02 to -0.08
L: 7, 1.5, (20), (2), (100), F: +20/0

Terminal
N (No Crimp Terminal)
M (With Round Crimp Terminal)
Y (With Crimp Spade)

MCHHA - MCHHC
Material: SUS304
Heater: SUS304
Flange: SUS304
Lead Wire: Nickel (Ni)
Lead Wire Film: Glass Fiber Coating
Lead Wire Heat Resistance Temperature: 180°C

Maximum Operating Temperature: 600°C
Applicable only when D=16 is selected.
Maximum Operating Temperature means value at the sheath part. Please pay attention to Lead Wire Heat Resistance Temperature and be sure to put the lead wire out of the mounting hole.

Flexible Hose

Part Number Type	D	L 1mm Increment	V (Voltage) Selection	W (Electric Power) 10W Increment	F (Lead Wire Length)	Electrical Power Density (W/cm ²)	Unit Price							
							L50~100	L101~200	L201~300	L301~400	L401~500	L501~600		
MCHH	8	50~400	100	50~600	1000	2 ≤ W/cm ² ≤ 15 W/cm ² = W/(Dπ(L-15)/100) (Calculate with the electrical power density of heat-generating part, not with the overall length.)								
			110	50~600										
			200	50~1200										
			220	70~1200										
			100	50~600										
			110	50~600										
	10	50~600	200	50~1200										
			100	50~600										
			110	50~600										
			200	50~1200										
			220	70~1200										
			100	50~600										
12	50~600	100	50~800											
		110	50~800											
		200	50~1600											
		220	70~1600											
		100	50~800											
		110	50~800											
12.6 (1/2 inch)	50~600	200	50~1600											
		220	70~1600											
		100	50~800											
		110	50~800											
		200	50~1600											
		220	70~1600											

Flexible Hose - Flanged

Part Number Type	D	L 1mm Increment	V (Voltage) Selection	W (Electric Power) 10W Increment	F (Lead Wire Length) 10mm Increment	Terminal	Electrical Power Density (W/cm ²)	Heater Body Price								
								L50~100	L101~200	L201~300	L301~400	Additional Terminal Price (Body Price +)	N	M	Y	
MCHHA	8	50~400	100	110	50~500	300~1000	N M Y	2 ≤ W/cm ² ≤ 15 W/cm ² = W/(Dπ(L-12)/100) (Calculate with the electrical power density of heat-generating part, not with the overall length.)								
			200	220	50~1100											
			100	110	50~600											
			200	220	50~1600											
			100	110	50~900											
			200	220	50~1800											
MCHHC	16	50~400	100	110	50~1000											
			200	220	50~2000											

Ordering Example: Part Number - L - V - W - F - Terminal
 MCHH12 - 250 - V200 - W1200
 MCHHA10 - 200 - V100 - W500 - F500 - N

Type of Terminal

Symbol	Type of Terminal	Nominal Screw
N	No Crimp Terminal	-
M	Crimp Terminal - Round	M4
Y	Crimp Terminal - Y-Shaped	M4

Features

- The lead wire is covered with flexible hose made of stainless steel for external impacts.
- As the product has a protection cover at the base, the lead wire is not pulled directly when the heater is being pulled out.
- The flexible hose prevents the lead wire from damages due to metal fatigue.

Precautions for Use

- Do not let the heaters run idle in the atmosphere. If the heater is used with some or the whole of the heating element projected from the heated objects, the wire may break or ignite due to abnormal heating.
- The flexible hose is not water resistant. Use it away from water.
- Cartridge Heaters cannot be used in water.

Minimum Bending Radius R

•MCHH	
D	R
8	27.5
9.42	37.5
10	37.5
12	37.5
12.6	37.5

•MCHHA, MCHHC	
D	R
8	25
10	25
12	27
16	27

Cartridge Heaters

With Sensor

Be sure to refer to "Precautions for Use" in the Cartridge Heater Overview on P.1605.

MCHSSS (With Thermal Sensor at the Edge)
MCHSSC (With Thermal Sensor at the Center)
With Thermal Sensor at the Edge
With Thermal Sensor at the Center
Heating Element (L-15)
D: -0.02 to -0.08
L: L±1.5, L/2, (10)
F: +20/0

Material
Heater: SUS321
Terminal: Copper
Lead Wire: Nickel (Ni)
Lead Wire Film: Glass Braid
Lead Wire Heat Resistance Temperature: 180°C

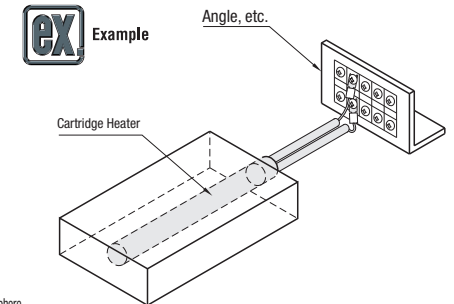
K-Type Thermocouple
K-Type Thermocouple Film: Glass Braid
Thermocouple Heat Resistant Temperature: 180°C
Temperature Measurement Range: 0 ~ 600°C

Maximum Operating Temperature: 600°C
Maximum Operating Temperature means value at the sheath part. Please pay attention to Lead Wire Heat Resistance Temperature and be sure to put the lead wire out of the mounting hole.

Configurable L and W with Sensor

Part Number Type	D	L 1mm Increment	V (Voltage) Selection	W (Electric Power) 10W Increment	F (Lead Wire Length)	Electrical Power Density (W/cm ²)	Unit Price		
							L50~100	L101~200	L201~300
MCHSSS (With Thermal Sensor at the Edge)	8	50~300	100	50~600	250	2 ≤ W/cm ² ≤ 15 W/cm ² = W/(Dπ(L-15)/100) (Calculate with the electrical power density of heat-generating part, not with the overall length.)			
			110	50~600					
			200	70~1000					
			220	90~1000					
			100	50~600					
			110	50~600					
MCHSSC (With Thermal Sensor at the Center)	10	50~300	200	110~1200					
			220	130~1200					
			100	50~800					
			110	50~800					
			200	140~1500					
			220	160~1500					

Ordering Example: Part Number - L - V - W
 MCHSSC10 - 170 - V200 - W450



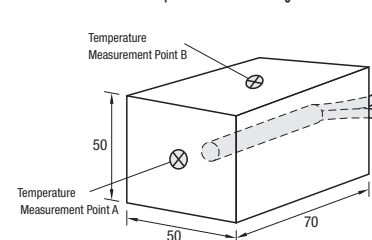
Features

- This unit contains the Cartridge Heater with built-in K Type Thermocouple.
- As the temperature sensor is integrated into the heater, the heater can be used in smaller space.
- The heater has a function to prevent the temperature rise of the heater itself and to perform accurate temperature control.

Precautions for Use

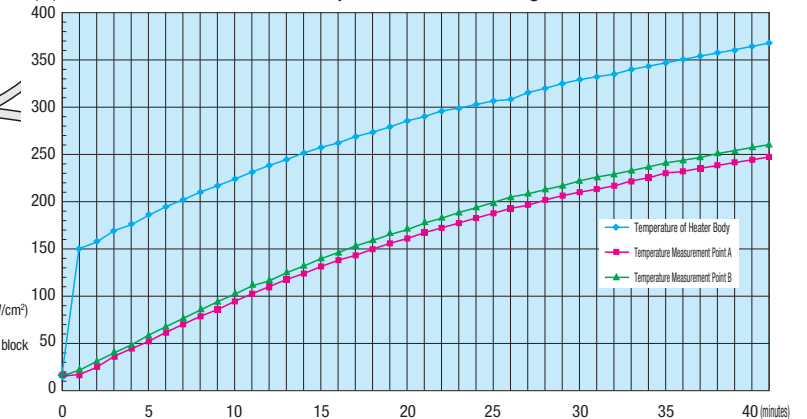
- Do not let the heaters run idle in the atmosphere. If the heater is used with some or the whole of the heating element projected from the heated objects, the wire may break or ignite due to abnormal heating.
- The temperature measured by the Thermocouple is the temperature of the Heater.
- To measure the temperature of the heated object, separate sensor needs to be installed.

Measurement Data of Temperature Rise of Cartridge Heater with Sensor (°C)



Used Heater: MCHSS8-60-V100-W130
 (Electrical Power Density: 10W/cm²)
 Heated Object: SS400(50x50x70)
 Point of Temperature Measurement: Center part of each surface of block

Measurement Data of Temperature Rise of Cartridge Heater with Sensor



* The data above shows the difference of temperature between the heater body and the heated object.