

# Sheathed Heaters for Liquid Heating

## Standard, With Overheating Prevention

Be sure to refer to "Precautions for Use" in Sheathed Heaters for Liquid Heating Overview on P.1637.

**Standard**

**MSHPW** (Water Heating, Plug Type (PF Thread), 200V / Three-phase)  
**MSPWP** (Water Heating, Plug Type (PT Thread), 200V / Three-phase)  
**MSHPL** (Oil Heating, Plug Type (PF Thread), 200V / Three-phase)

Material: Heater Element : SUS316L, Plug : SCS14, Cap : Phenol Resin, Gasket : Non Asbestos  
 Accessory: Gasket (included with MSPWP/MSHPL only)

**MSHFW** (Water Heating, Flanged Type, 200V / Three-phase)

Material: Heater Element : SUS316L, Flange : SCS14, Cap : Phenol Resin, Power Supply Outlet : NBR  
 Accessory: Gasket (Non Asbestos)

Part Number Type	No.	W (Electric Power)	V (Voltage)	Electrical Power Density (W/cm <sup>2</sup> )	L	Plug (Thread Size)	Unit Price						
							MSHPW	MSPWP	MSHFW	MSHPL			
MSHPW MSPWP MSHFW (Only * marked sizes)  (The values in ( ) are for MSHFW10.)	1	1000	200	3.5	170	MSPWP G(PF)2 MSPWP R(PT)2	-	-	-	-			
	2	2000		6.0	200		-	-	-				
	*3	3000		7.0	230		-	-	-				
	4	4000		7.0	300		-	-	-				
	*5	5000		7.0	370		-	-	-				
	6	6000		7.0	430		-	-	-				
	8	8000		8.0	500		-	-	-				
	*10	10000		8.5(7.0)	570(700)		-	-	-				
	MSHPL	1		1000	200		2.5	230	G(PF)2	-	-	-	-
		2		2000			2.5	400		-	-	-	
3		3000	2.5	580		-	-	-					
4		4000	2.5	760		-	-	-					
5		5000	2.5	890		-	-	-					

**With Overheating Prevention**

**MSPND** (Water Heating, Plug Type, 200V / Three-phase)

Material: Heater Element : SUS316L, Protection Tube for a Bimetal Thermostat : SUS304, Cap : Phenol Resin, Braid Lead : Fluorine  
 Accessory: Gasket: Non Asbestos

Part Number Type	No.	Bimetal Thermostat Operating Temperature (°C)	W (Electric Power)	V (Voltage)	Electrical Power Density (W/cm <sup>2</sup> )	L	Unit Price	
MSPND	35	50	3000	200	7.0	230		
	37	70						
	39	90						
	311	110						
	55	50	5000			370		8.5
	57	70						
	59	90						
	511	110	10000		570	8.5		
	105	50						
	107	70						
	109	90						
1011	110							

**Details of Protection Tube**

**Part Name**

No.	Name	No.	Name
①	Protection Tube for a Bimetal Thermostat	③	Power Supply Outlet (NBR)
②	Bimetal Thermostat	④	Insertion Type Connecting Terminal

**Features**  
This heater has both protection pipe and bimetal thermostat. It prevents overheating of a heated object.

**Connecting Diagram(Δ)**

**Precautions for Use**

- Ensure a thermostat is fixed in the protection pipe before using.
- When it exceeds rating, use an assistant relay.
- This product is designed to prevent overheating of liquids. The thermostat does not function under dry-running condition after the liquid is gone, and it may invite unexpected trouble. Use with a monitoring system including a float switch to monitor the liquid level for boil-dry protection.
- Bimetal thermostat of water temperature plus 20°C or above is recommended.

Ordering Example: Part Number **MSHPW8 MSPND35**

# Sheathed Heaters for Liquid Heating

## U/M Fixed / Straight, One Terminal

**Sheathed Heaters**

**MSHU** (100V, 200V / Single-phase) For water heating

**MSHM**

Material: Heater Element : SUS316L, Bushing : SUS304, Gasket : Non Asbestos, Flat Washer : SUS304, Nut : SUS304

Part Number Type	No.	V (Voltage) Selection	L	W (Electric Power)	Electrical Power Density (W/cm <sup>2</sup> )	Unit Price	
							MSHU
1	200	200	1000	8.0			
1.5	200	300	1500	7.5			
2	200	400	2000	7.0			
MSHM	0.5	100	100	500	5.0		
	1	200	150	1000	5.5		
	1.5	200	200	1500	6.0		
	2	200	250	2000	6.0		

Ordering Example: Part Number **MSHU1.5 - V200**

**Straight, One Terminal**

**MSHSW** (Water Heating) (100V, 200V / Single-phase)

Material: Heater Element : SUS316L (for Water), Bushing : SUS304  
 Lead Wire Protection Cap : Silicon Rubber (Heat Resistant Temperature:180°C)  
 Lead Wire : Glass Braid Silicon Coated Wire (Heat Resistance Temperature:180°C)

Part Number Type	No.	V (Voltage) Selection	L	W (Electric Power)	Electrical Power Density (W/cm <sup>2</sup> )	Unit Price		
MSHSW (Water Heating)	0.5	100	230	500	7.0			
	0.75	200						
	1	200	325	750				
	1	200					420	1000
	1.5	200						

Ordering Example: Part Number **MSHSW1.5 - V200**

**Example**