

# User Guide

## Stainless Steel Filter Housing Heater



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# Operator and Equipment Safety

Anyone operating or working near the Heater must comply with the following:

	<p>Read and understand this user guide before using the equipment. Failure to follow instructions could result in user injury or equipment damage.</p>
	<p>Read and understand all maintenance instructions in this user guide before performing maintenance on the equipment. Failure to follow instructions could result in user injury or equipment damage.</p>
	<p>Use appropriate personal protective equipment when operating the equipment.</p>
	<p>Prior to operation, make sure the equipment is fully assembled as described in this user guide.</p>
	<p>Do not submerge the equipment into any fluid. Do not use a water hose or spray gun when cleaning the equipment.</p>
	<p>Any alteration of the equipment from factory specification may cause unsafe conditions and will void the product warranty.</p>
	<p>Maintenance and electrical repair must be performed by trained personnel.</p>
	<p>Use appropriate grounded power supply.</p>
	<p>Never touch the jacket when it is heated.</p>

## Catalog Numbers

Catalog Number	Description
HJ230-104/150	Stainless Steel Housing Heater, 1 Cartridge x 5 in.
HJ230-104/270	Stainless Steel Housing Heater, 1 Cartridge x 10 in.
HJ230-168/255	Stainless Steel Housing Heater, 3 Cartridges x 10 in.
HJ230-256/275	Stainless Steel Housing Heater, 5 Cartridges x 10 in.
HJ230-104/515	Stainless Steel Housing Heater, 1 Cartridge x 20 in.
HJ230-168/500	Stainless Steel Housing Heater, 3 Cartridges x 20 in.
HJ230-104/765	Stainless Steel Housing Heater, 1 Cartridge x 30 in.

# Specifications

## Jacket

Catalog Number	HJ230-104/150	HJ230-104/270	HJ230-168/255	HJ230-256/275	HJ230-104/515	HJ230-168/500	HJ230-104/765
Housing diameter (mm)	104	104	168	256	104	168	104
Housing height (mm)	150	270	255	275	515	500	765
Max power (W)	30	70	100	130	130	160	170
Voltage(V)	230						
Cartridge length (in.)	5	10	10	10	20	20	30
Cartridges per housing	1	1	3	5	1	3	1
Jacket thickness	30 mm						
Heater material	PTFE Coated glass mesh jacket						
Insulation	EPDM Foam						

## Controller

Parameter	Specification
Operating voltage	220 VAC +/-10%, 50/60 Hz
Power consumption	max. 5 W
Relay K1	20A res./max. 250 VAC
Relay K2	8A res./max. 250 VAC
Operating temperature	-25 to +55 °C
Storage temperature	-30 to +60 °C
Adjustable range	0 to +390 °C, optional configuration
Display range/resolution	-50 to +400 °C
Accuracy	± 1K, ± 2 Digits (-50 to 400 °C)
Display/relay indicators	LED, red, 11 mm
Terminals	Sensor: 0.2 to 1.5 mm <sup>2</sup> with 9 to 10 mm exposed copper wire Others: 0.1 to 2.5 mm <sup>2</sup> with 5 to 6 mm exposed copper single-wire
IP rating	IP 65
Control box dimensions	13 x 13 x 7.5 cm
Cable length	1.3 m
Control box material	Polycarbonate



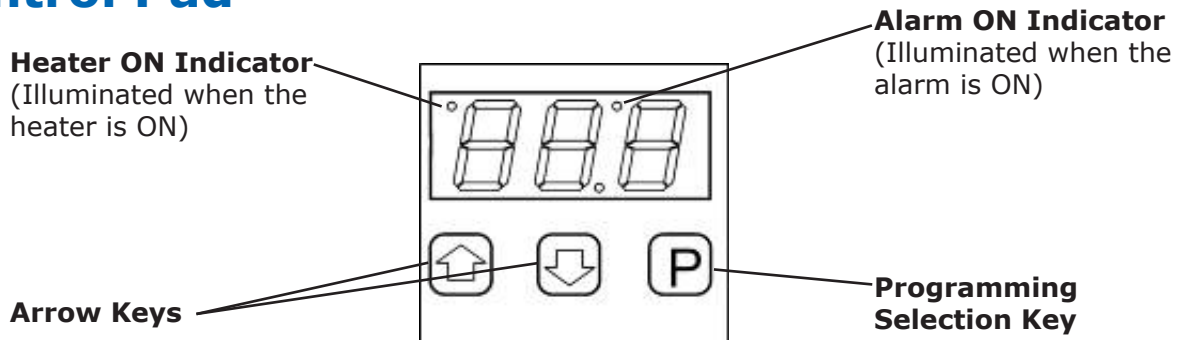
# Installation

NOTE: The Stainless Steel Filter Housing Heater installation should be validated when installed in any process.

1. Unpack the product.
2. Install the control box in a convenient, dry location that allows easy installation of the housing cover and connection to the power supply.
3. Ensure that the outside surface of the housing is clean and dry. Wrap the jacket around the housing. Once the jacket is properly placed on the housing, pull it tightly.
4. Align the two closure bands and firmly press them together.
5. Connect the power cord to the power supply.

# Operation

## Control Pad



Parameter	Description	Range/Notes	Factory Setting
P01	Current temperature of heater	°C (display only)	
P10	Control setpoint	Affects to relay 1, range P13 to P14	80 °C
P11	Switching hysteresis	of P10 range 2 to 10K	2 K
P12	Min. relay idle time (Relay K1)	0 to 30.0 Min.	0 Min.
P13	Highest adjustable control setpoint	Range P14 to +390 °C	100 °C
P14	Lowest adjustable control setpoint	Range -50 °C to P13	0 °C
P20	Sensor/probe type	0 = Pt100, 3-wire, °C (Resolution 1K) 1 = Pt100, 2-wire, °C (Resolution 1K) 2 = Pt100, 3-wire, °F (Resolution 2°F) 3 = Pt100, 2-wire, °F (Resolution 2°F)	
P21	Sensor correction	-20 to +10K	0 K
P30	High temp. alarm threshold	400 °C	100 °C
P31	Low temp. alarm threshold	-60	0 °C
P32	Alarm delay while operation	0 to 99 min., [0.0 Min., Resolution 0.1 Min.]	0 Min.
P33	Alarm Delay while Power-on	0 to 500 Min., [0 Min.]	30 Min.
P34	Alarm Relay Mode (Relay K2)	0 = Relay ON at probe fault 1 = Relay OFF at probe fault 2 = Relay works as releasing relay	1

When the temperature (**P01**) falls below the control setpoint (**P10** minus P11), the heater will turn ON.

The integrated alarm relay provides error messaging to indicate over or under temperature, sensor-interrupt or short circuit. During sensor malfunctions, the alarm indicator flashes.

When the unit is powered on, **C14** appears on the display, followed by a three second delay, then the temperature of the heater.

Press **P** and **SET** is displayed, followed by the set temperature, with a return to the main display after five seconds.

Press **P** for three seconds to access the parameter list, P10. Press **P** for an additional three seconds to display **dC** for degrees Centigrade or **dF** for degrees Fahrenheit.

### Changing Parameters

1. Access the parameter list by pressing and holding the P button for three seconds until P10 appears.
2. Use the arrow keys to locate the required parameter.
3. Press P again.
4. Use the arrow keys to increase or decrease parameter as required.
5. Press P again to save the new value and return to the parameter number.
6. Use the arrow keys to navigate to P1 or T>1 Min and exit the settings menu.

### Parameter Protection

The control set point may be changed at any time to within the limits set in P13 and P14. All other parameters are code protected. If a code is required, the display will read C00.

Using the arrow keys, enter the appropriate code (C42). Confirm by pressing the P button.

If no key is pressed for approximately one minute, the access code is cancelled.

### Autoscrolling

Hold the arrow keys down and the values scroll automatically.

### Releasing Relay Mode

In this mode (P34=2) relay K2 switches independent from P32 and P33 once the actual value falls within the threshold setpoints P30 and P31.

### Alarm Relay Mode

P34 = 0 or 1: If, after initial power on, the actual temperature falls below P31, P33 is used as the alarm delay to provide additional time for warm-up. In normal operating conditions, P32 is used as alarm delay parameter.

### Error Codes

An error code is displayed after a 20 second delay when an error occurs.

Error Code	Problem
E01	Sensor short circuit or temperature < -60 °C
E02	Sensor interrupt or temperature > 410 °C
E03	Sensor 3rd wire missing/not connected or R > 10 ohm
C00	Protected parameters, code entry required
E07*	Error hybrid relay open
E08*	Error hybrid relay short circuit
E09*	Internal error

\*These error codes shut the unit off and prohibit further operation of the controller.

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