

# OMRON

## Digital Heater Element Burnout Detector

### K8AC-H

Detects Burnout for Any of Multiple Single-phase and  
Three-phase Heater Elements

Heater Burnout Alarms for Cyclic Control and Phase Control

Push-in  
terminals

Scaling

**NEW**

\* K8AC-H2□□□□  
models only

PNP equivalent  
output



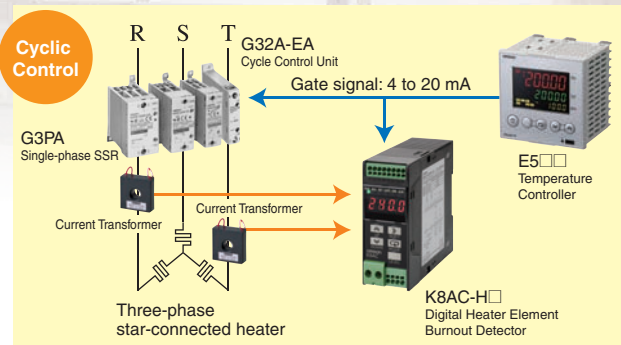
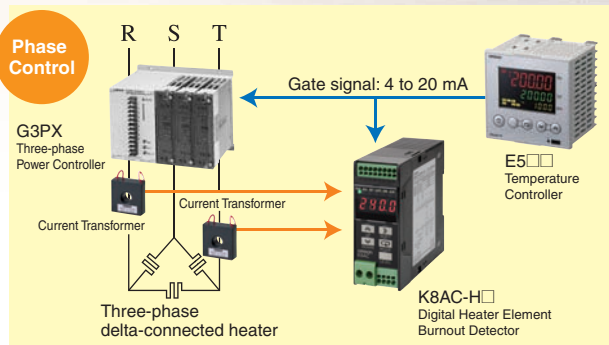
Wide current input range: 2.00 to 200.0 A AC



realizing

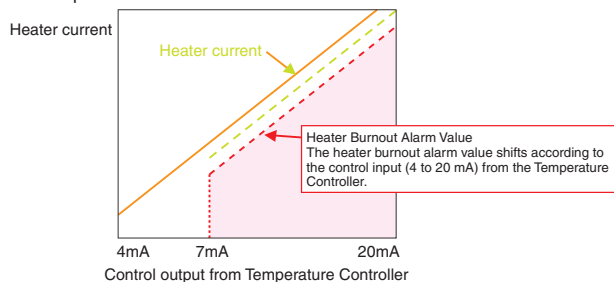
# More Functions in Our Digital Heater Element Burnout Detectors

## Compatible with Phase Control and Cyclic Control



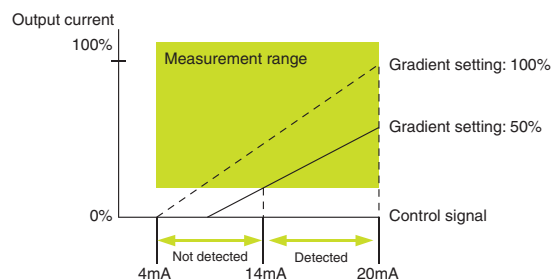
### The burnout alarm level shifts according to the control output from the Temperature Controller.

- Analog control is performed on the heater power according to the Temperature Controller's gate signal (4 to 20 mA) when phase control or cyclic control is used.
- Burnout detection is stable with the K8AC-H because the heater burnout alarm values shift according to the control output value from the Temperature Controller.



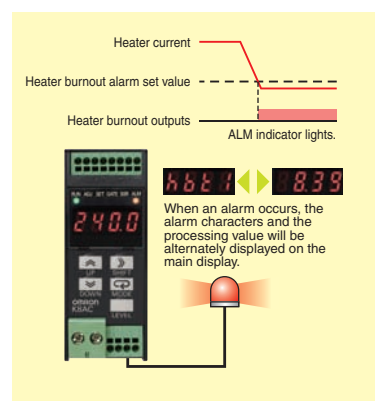
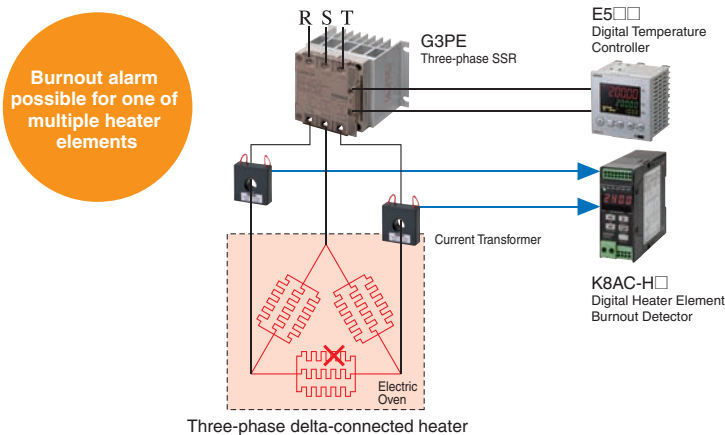
### Compatible with Gradient Settings of Power Controllers

- When using a gradient setting with a power controller, set the gate current level that is suitable for the gradient setting.



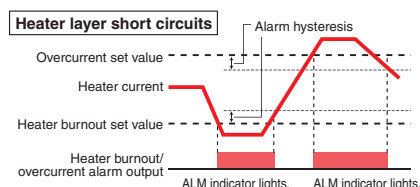
## Digital Measurement Achieves a Highly Precise Heater Burnout Alarm

Heater burnout is detected by digitally processing minor current fluctuations even when multiple heaters are connected in a circuit.

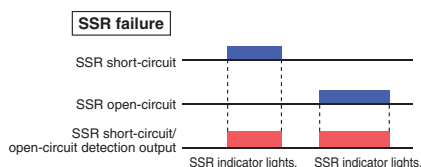


## Detection of Heater Overcurrent and SSR Failure

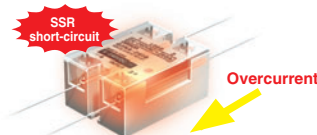
Overcurrent can be detected from layer short circuits in addition to providing heater burnout alarms with overcurrent detection settings.



- SSR short circuit failures and SSR open circuit failures are detected by monitoring the heater current and the control outputs from the Temperature Controller.
- Detecting SSR failures enables promptly discovering that temperature control has failed.



\* Be sure to input the gate signal to detect SSR failure.



# Easier Operation and a Wider Range of Applications

New K8AC-H2 Function

## Point.1<sup>New</sup> New Push-in Terminals

Work steps are reduced because there is no more need to manage screw torque or retighten screws.



Connect by simply inserting ferrules (sleeve terminals). No tools required.

New K8AC-H2 Function

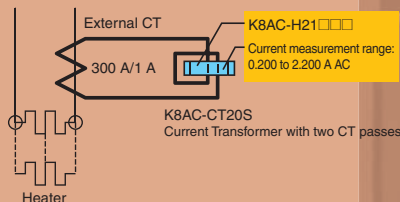
## Point.2<sup>New</sup> Scaling

Use the scaling function of the K8AC-H2□□□□ to display the value of the primary current flowing to the heater by setting the parameters of the CT ratio and the number of CT passes.

### Example of burnout detection of a single-phase heater rated at 240 A:

The maximum measurement range for the K8AC-H2□□□□ is 200.0 A. Measurement cannot be performed directly for a heater rated at 240 A, so the measurement signal is read by using an external CT.

Example: If a 300 A:1 A external CT is used, the secondary current value for an external CT will be 1 A, so select the K8AC-H21□□□□ Heater Element Burnout Detector (current measurement range: 0.200 to 2.200 A).



Select from among three K8AC-H□□□□ models according to the current measurement range.

Model	K8AC-H□1□□	K8AC-H□2□□	K8AC-H□3□□
Measurement range	0.200 to 2.200 A AC	2.00 to 22.00 A AC	20.0 to 200.0 A AC
200A			200.0A
100A			
20A		22.00A	
2A	2.200A 0.200A	2.00A	20.0A
Current Transformer	K8AC-CT20S: 5.8-mm through-hole diameter or K8AC-CT20L: 12-mm through-hole diameter		K8AC-CT200: 12-mm through-hole diameter or K8AC-CT200L: 30-mm through-hole diameter

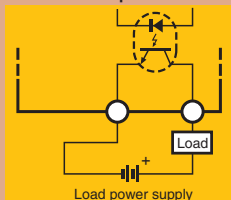
Note: Check the following points when selecting a Current Transformer.  
Rated current flowing to the heater  
Diameter of cable passed through the CT, number of CT passes, and mounting method

New K8AC-H2 Functions

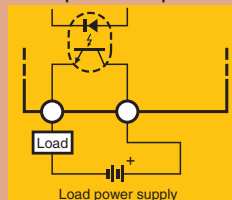
## Point.3<sup>New</sup> Global PNP-equivalent Output

The NPN open-collector output of the K8AC-H2□□□□N Series uses a photocoupler for isolation from the internal circuits, so either an NPN open-collector output or a PNP-equivalent output can be used.

Transistor Output



PNP Equivalent Output



## Point.4<sup>New</sup> Contributes to preventative maintenance.

### Measure the Run Time

Count the total run time in hours from the time the power supply is turned ON or the processing value is reset until an alarm occurs. Keeping a log of the run time until a burnout occurs helps to diagnose problems and maintain equipment.

### Count the Total Number of Alarms Output


Set the upper and lower limits to count the total number of alarms that have been output.

RS-485 communications ability is provided as a standard feature for logging measurement data or analyzing data for preventive maintenance by using a PLC or other external device.



## Ordering Information

Push-in terminals (Power Input: Screw Terminals.) **NEW**


Appearance	Power supply voltage	Heater control method	Input specifications	Output specifications	Communications output	Current input range		
						0.200 to 2.200 A	2.00 to 22.00 A	20.0 to 200.0 A
	100 to 240 VAC	ON/OFF control SSR control	Two current inputs (for either single-phase or three-phase)	One contact output	RS-485	K8AC-H21CC-FLK	K8AC-H22CC-FLK	K8AC-H23CC-FLK
				Two transistor outputs		K8AC-H21CN-FLK	K8AC-H22CN-FLK	K8AC-H23CN-FLK
		Phase control Cyclic control		One contact output		K8AC-H21PC-FLK	K8AC-H22PC-FLK	K8AC-H23PC-FLK
				Two transistor outputs		K8AC-H21PN-FLK	K8AC-H22PN-FLK	K8AC-H23PN-FLK
				Applicable Current Transformer		K8AC-CT20S or K8AC-CT20L	K8AC-CT200 or K8AC-CT200L	

Note: Consult with an OMRON representative if multiple heaters with different capacities are to be connected in parallel or if the heater resistance will vary.

The K8AC-H is designed to monitor for element burnouts on heaters controlled with power regulators that used a three-alarm method.

Normal monitoring is not possible for circuits that use a power regulator with a six-alarm method.

## Models with Screw Terminals Production To Be Discontinued at the End of March 2009





Appearance	Power supply voltage	Heater control method	Input specifications	Output specifications	Communications output	Current input range		
						0.200 to 2.200 A	2.00 to 22.00 A	20.0 to 200.0 A
	100 to 240 VAC	ON/OFF control SSR control	Two current inputs (for either single-phase or three-phase)	One contact output	RS-485	K8AC-H11CC-FLK	K8AC-H12CC-FLK	K8AC-H13CC-FLK
				Two transistor outputs		K8AC-H11CT-FLK	K8AC-H12CT-FLK	K8AC-H13CT-FLK
		Phase control Cyclic control		One contact output		K8AC-H11PC-FLK	K8AC-H12PC-FLK	K8AC-H13PC-FLK
				Two transistor outputs		K8AC-H11PT-FLK	K8AC-H12PT-FLK	K8AC-H13PT-FLK
				Applicable Current Transformer			K8AC-CT20S or K8AC-CT20L	K8AC-CT200 or K8AC-CT200L

Note: Consult with an OMRON representative if multiple heaters with different capacities are to be connected in parallel or if the heater resistance will vary.

The K8AC-H is designed to monitor for element burnouts on heaters controlled with power regulators that used a three-alarm method.

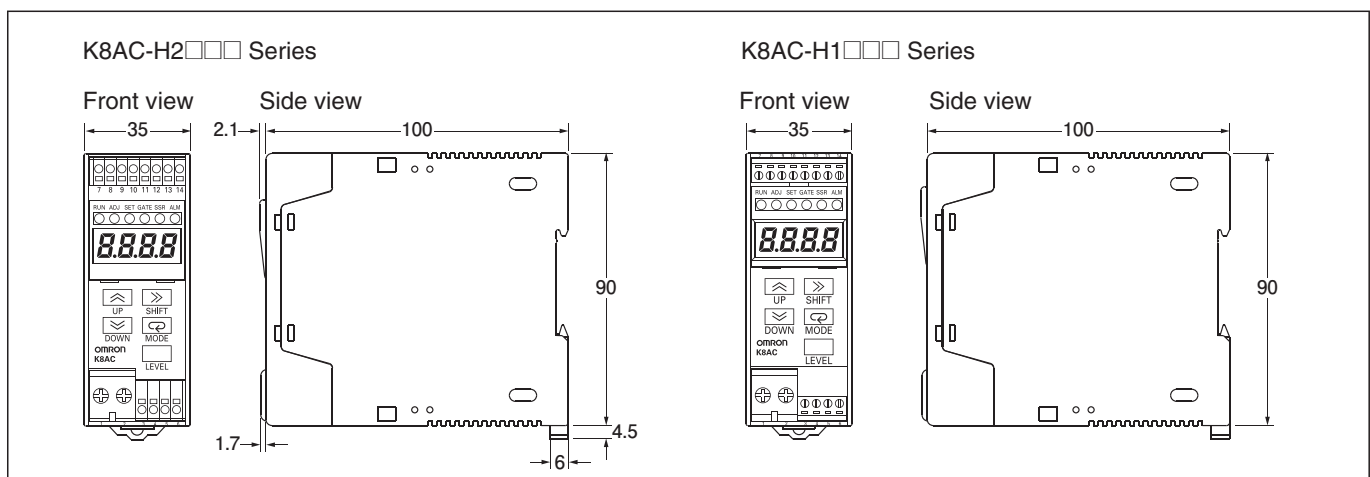
Normal monitoring is not possible for circuits that use a power regulator with a six-alarm method.

## Current Transformers (Sold Separately)

Model	Through-hole diameter	Installation method	Rated current	
			0.200 to 22.00 A	20.0 to 200.0 A
	5.8-mm dia.	Surface-mounted with screws	K8AC-CT20S	—
	12-mm dia.	Rear-surface mounted with screws Binding band	K8AC-CT20L	—
		Rear-surface mounted with screws Binding band	—	K8AC-CT200
	30-mm dia.	Surface-mounted with screws	—	K8AC-CT200L

Note: When selecting a Current Transformer, make sure that the rated current of the heater does not exceed the rated upper limit or the rated current of the Current Transformer.

## Dimensions



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In the interest of product improvement, specifications are subject to change without notice.

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