

NEW

## Measuring and Monitoring Relays K8AK/K8DS series

### Reliable Monitoring You Can Use Anywhere Around the Globe

Compliance with the Main Global Safety Standards  
for Easier Equipment Exporting

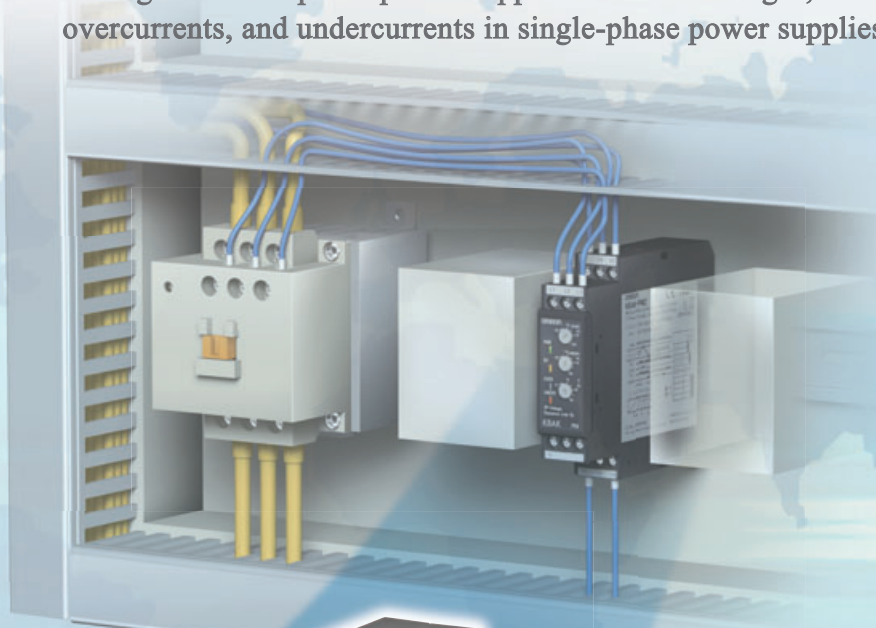


Six Models for Three-phase Voltages Added to the Series

## K8AK/K8DS Series

# Monitoring for Abnormalities in Global Products and Production

The K8AK/K8DS Series can provide the power supply monitoring required by your global products, including monitoring for phase sequences, phase loss, asymmetry, overvoltages, and undervoltages in three-phase power supplies and overvoltages, undervoltages, overcurrents, and undercurrents in single-phase power supplies.



Three-phase Power Supply Monitoring and Motor Temperature Monitoring ——— page. 4 - 5

Single-phase Power Supply Monitoring ——— page. 6

# Five Features for Global Reliability

## Feature 1

### Main Safety Standard Certification for Many Countries



\*The K8AK-TH and K8DS-PZ are exempt from CCC.

## Feature 2

### Handles Power Supply Standards Worldwide

Area	Power supply voltage	Supported
China	3-phase, 380 V	YES
India	3-phase, 400, 415 V	
Thailand	3-phase, 380 V	
United States	3-phase, 460, 480 V	
Europe	3-phase, 380, 400, 415 V	

## Feature 3

### World-standard DIN Track Mounting

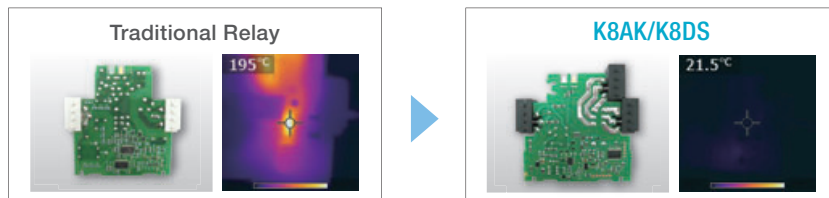
- Global standard sizes with the K8AK at 22.5 mm and the K8DS at 17.5 mm.
- Small enough to add in narrow panel spaces during retrofitting.
- Finger Protection.



## Feature 4

### No Heat Generation for Inverter Noise

High reliability is achieved because there is no heat generation for inverter noise.



Most traditional phase-sequence, phase-loss relays and similar components use a capacitor voltage divider, and therefore generate heat due to inverter noise.

The K8AK/K8DS Series, however, use a switching power supply method. This eliminates heat generation due to inverter noise to increase reliability and safety.

## Feature 5

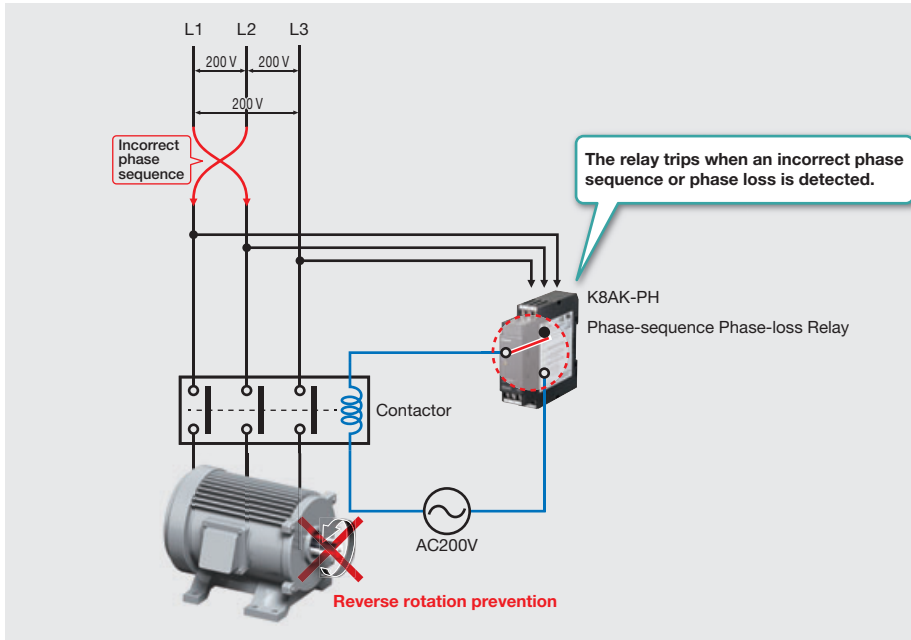
### Well-developed Global Procurement and Support System

#### Distribution Centers in 17 Locations around the Globe

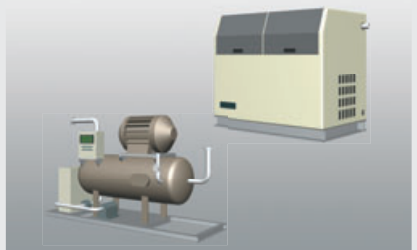
We have distribution centers in many countries in Europe, China, North America, Southeast Asia, and elsewhere for easy procurement.

## Detect Incorrect Phase Sequences and Phase Loss (Not Possible with Thermal Relays), and Prevent Contactors from Closing

You can protect your equipment from faults, such as faulty contactor contact, disconnection during motor operation, and incorrect phase sequences and phase loss that can occur when wiring or changing equipment layout.



Refrigerating Machines, Air Conditioners, and Compressors



Mold Temperature Controllers, Air Dryers, and Chillers



### Lineup

#### Phase-sequence Phase-loss Relay K8AK-PH/K8DS-PH



K8AK-PH  
Width: 22.5 mm  
2c relay output



K8DS-PH  
Width: 17.5 mm  
1c relay output



- Detects phase sequence and phase loss when power is turned ON.
- Phase loss detection during operation.
- 200 to 480 VAC with just one Unit.

#### Three-phase Voltage and Phase-sequence Phase-loss Relay K8AK-PM/K8DS-PM



K8AK-PM  
Width: 22.5 mm  
1c x 2 relay outputs



K8DS-PM **NEW**  
Width: 17.5 mm  
1c relay output



- Detects phase sequence and phase loss when power is turned ON.
- Simultaneously monitors for overvoltages and undervoltages in three-phase three-wire or four-wire circuits.\*

\*K8DS-PM only.

#### Three-phase Asymmetry and Phase-sequence Phase-loss Relay K8AK-PA/K8DS-PA



K8AK-PA  
Width: 22.5 mm  
1c relay output



K8DS-PA **NEW**  
Width: 17.5 mm  
1c relay output

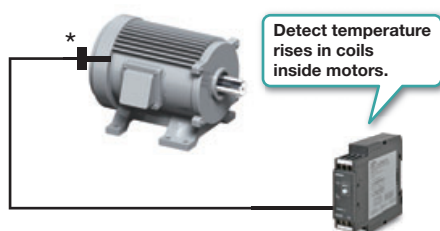


- Detects phase sequence and phase loss when power is turned ON.
- Monitors for voltage asymmetry in three-phase three-wire or four-wire circuits.\*
- Asymmetry rate: 2% to 22%.

\*K8DS-PA only.

### Coil Temperature Monitoring in Motors

This Relay can monitor the temperature rises in a motor with a built-in thermistor.



\*The thermistor is built into the motor.

#### Thermistor Motor Protection Relay K8AK-TS

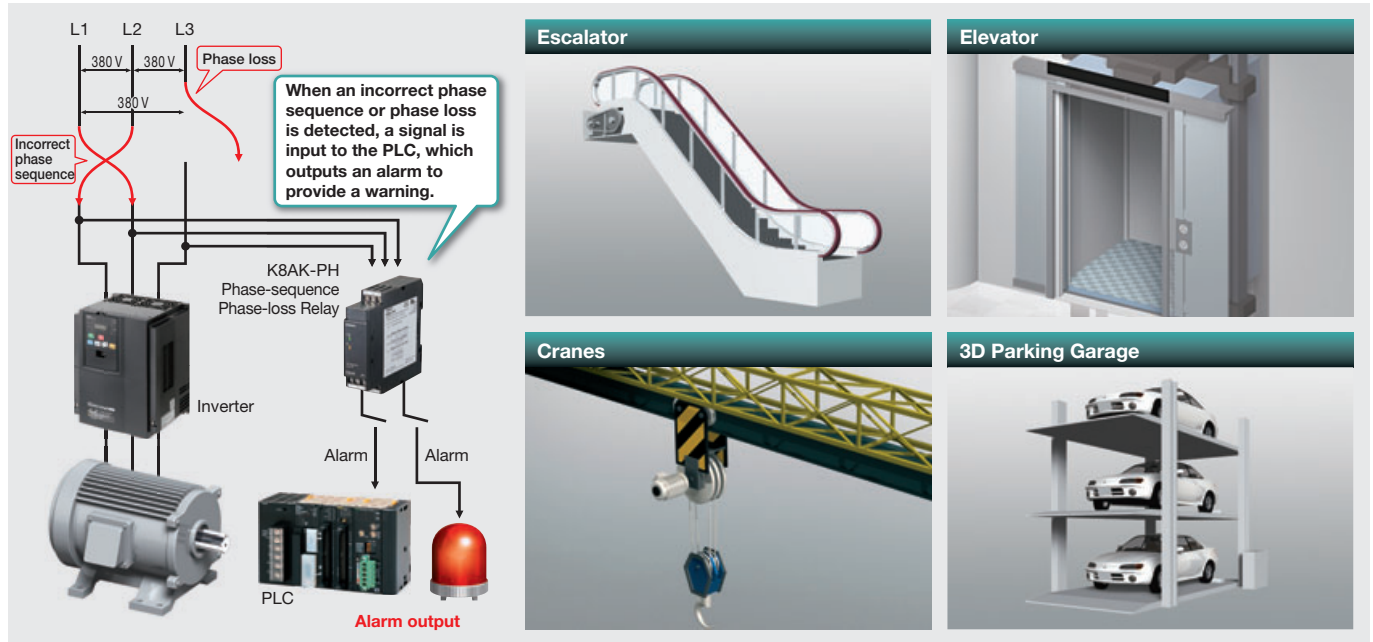


K8AK-TS **NEW**  
Width: 22.5 mm  
1c relay output

# Three-phase Power from Incorrect Phase Sequences and Phase Loss

## Redundant Protection in Combination with an Inverter

Redundancy with the inverter protection functions lets you monitor for incorrect phase sequence and phase loss to protect the equipment and increase safety.



### Thermistor Motor Protection Relay K8AK-PT



K8AK-PT **NEW**  
Width: 22.5 mm  
1c relay output



- Detects phase sequence and phase loss when power is turned ON.
- Coil temperature monitoring in motors using a thermistor.
- The K8AK-TS with only a thermistor is also available.

### Three-phase Voltage, Asymmetry, and Phase-sequence Phase-loss Relay K8DS-PZ

Model with combined functions.\*



K8DS-PZ **NEW**  
Width: 17.5 mm  
1c relay output



- Detects phase sequence and phase loss when power is turned ON.
- Monitors for overvoltages, undervoltages, and voltage asymmetry in three-phase three-wire circuits.

\*Detect three-phase voltages and asymmetry with one unit.

## Output Voltage Monitoring for Generators

These Relays can monitor the output voltages on generators.

### Three-phase Undervoltage and Phase-sequence Phase-loss Relay K8DS-PU



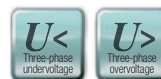
K8DS-PU **NEW**  
Width: 17.5 mm  
1c relay output



### Three-phase Voltage Relay K8AK-PW



K8AK-PW  
Width: 22.5 mm  
1c x 2 relay outputs

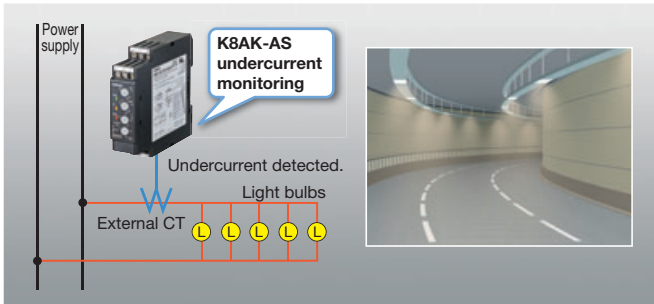


## Single-phase Power Supply Monitoring

# Reliable Monitoring for Power Supply Abnormalities in Equipment with Single-phase Power

### Detecting Burnt-out Lights

You can reduce the work involved in inspecting light bulbs in critical locations by detecting the current of a burnt-out light to output a warning.



Single-phase Current Relay  
**K8AK-AS**



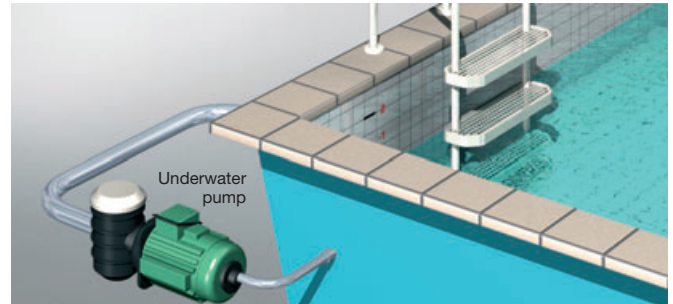
K8AK-AS  
Width: 22.5 mm  
1c relay output



- Monitors for overcurrents or undercurrents.
- Manual reset and automatic reset in a single Relay.
- Switchable between normally open and normally closed contacts.
- Startup lock and operating time can be set separately.

### Monitoring for Overloads and Idling of Underwater Pumps

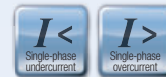
The pump current is monitored so that operation can be stopped immediately before the pump is damaged by idling when the water tank becomes empty or overloads when items are caught in the pipes.



Single-phase Overcurrent/Undercurrent Relay  
**K8AK-AW**



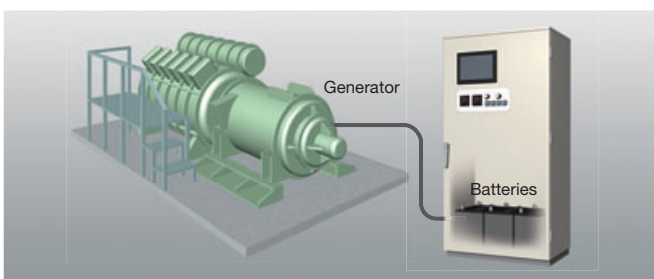
K8AK-AW  
Width: 22.5 mm  
1c x 2 relay outputs



- Monitors for overcurrents and undercurrents simultaneously.
- Manual reset and automatic reset in a single Relay.
- Separate settings and outputs supported for overcurrents and undercurrents.
- Startup lock and operating time can be set separately.

### Monitoring for Voltage Drops in Starter Motor Batteries

Monitoring is performed for battery voltage drops and alarms provide notification of the need for maintenance before it becomes impossible to start the starter motor.



Single-phase Voltage Relay  
**K8AK-VS**



K8AK-VS  
Width: 22.5 mm  
1c relay output



- Monitors for overvoltages or undervoltages.
- Manual reset and automatic reset in a single Relay.
- Switchable between normally open and normally closed contacts.
- Operating time can be set separately.
- Input either AC or DC voltage with one unit.

### Voltage Monitoring in Control Panels for Precision Equipment

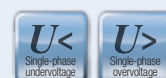
Local voltage fluctuations can cause power outages and adversely affect your products. You can monitor fluctuation on the primary power supply to the equipment to activate a trigger to switch to an alternate power supply.



Single-phase Overvoltage/Undervoltage Relay  
**K8AK-VW**



K8AK-VW  
Width: 22.5 mm  
1c x 2 relay outputs



- Monitors for overvoltages and undervoltages simultaneously.
- Separate settings and outputs supported for overvoltages and undervoltages.
- Manual reset and automatic reset in a single Relay.
- Operating time can be set separately.
- Input either AC or DC voltage with one unit.

# Monitoring Relay Product List

	Model	Function	Output	Size (width)
For three-phase power	K8AK-PH		2c relay output	22.5 mm
	K8DS-PH		1c relay output	17.5 mm
	K8AK-PM		1c x 2 relay outputs	22.5 mm
	K8DS-PM		1c relay output	17.5 mm
	K8AK-PA		1c relay output	22.5 mm
	K8DS-PA		1c relay output	17.5 mm
	K8AK-PW		1c x 2 relay outputs	22.5 mm
	K8DS-PU		1c relay output	17.5 mm
	K8DS-PZ		1c relay output	17.5 mm
	K8AK-PT		1c relay output	22.5 mm
	K8AK-TS		1c relay output	22.5 mm
For single-phase power	K8AK-AS	or	1c relay output	22.5 mm
	K8AK-AW		1c x 2 relay outputs	22.5 mm
	K8AK-VS	or	1c relay output	22.5 mm
	K8AK-VW		1c x 2 relay outputs	22.5 mm
Water levels	K8AK-LS		1c relay output	22.5 mm
Temperatures	K8AK-TH		1c relay output	22.5 mm

**Reliable Introduction!**

## Let OMRON Perform the Settings for New Applications

OMRON will write your desired settings into ROM in the Relays before they are delivered.

**Advantage 1: You do not need to bother with settings, which will shorten commissioning time.**

**Advantage 2: You can prevent unintentional changes to settings.**

Conditions Minimum order: 100 Relays

\* Consult with your OMRON representative for prices.

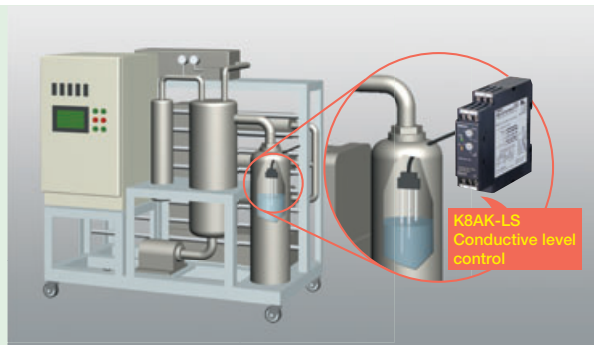
## Related Products

### Conductive Level Controller **K8AK-LS**



K8AK-LS  
Width: 22.5 mm  
1c relay output

- DIN Track mounting; no sockets required.
- Adjustable sensitivity.
- Timer included.

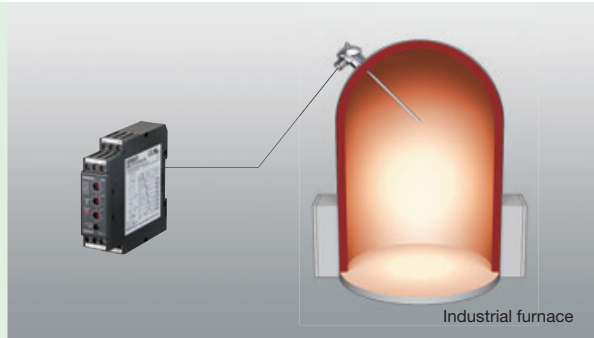


### Temperature Monitoring Relay **K8AK-TH**



K8AK-TH  
Width: 22.5 mm  
1c relay output

- A New, Affordable Temperature Monitoring Relay
- Wide temperature range from 0 to 999°C.
- Increased precision (compared with previous models).
- Precise setting in 1°C increments.



**OMRON Corporation** Industrial Automation Company  
Tokyo, JAPAN

Contact: [www.ia.omron.com](http://www.ia.omron.com)

#### Regional Headquarters

**OMRON EUROPE B.V.**  
Wegalaan 67-69-2132 JD Hoofddorp  
The Netherlands  
Tel: (31)2356-81-300/Fax: (31)2356-81-388

**OMRON ASIA PACIFIC PTE. LTD.**  
No. 438A Alexandra Road # 05-05/08 (Lobby 2),  
Alexandra Technopark,  
Singapore 119967  
Tel: (65) 6835-3011/Fax: (65) 6835-2711

**OMRON ELECTRONICS LLC**  
One Commerce Drive Schaumburg,  
IL 60173-5302 U.S.A.  
Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

**OMRON (CHINA) CO., LTD.**  
Room 2211, Bank of China Tower,  
200 Yin Cheng Zhong Road,  
PuDong New Area, Shanghai, 200120, China  
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

Authorized Distributor:

© OMRON Corporation 2013-2014 All Rights Reserved.  
In the interest of product improvement,  
specifications are subject to change without notice.

CSM\_2\_1\_0314  
Cat. No. N174-E1-02

Printed in Japan  
0314(0613)