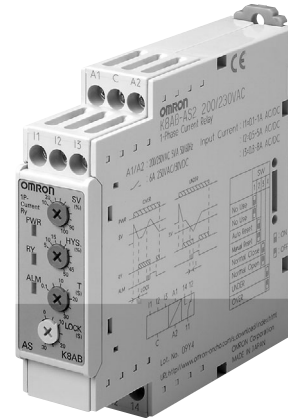


Single-phase Current Relay K8AB-AS

Ideal for current monitoring for industrial heaters and motors.

- Monitor for overcurrents or undercurrents.
- Manual resetting and automatically resetting supported by one Relay.
- Startup lock and operating time can be set separately.
- One SPDT output relay, 6 A at 250 VAC (resistive load).
- Switch the output relay between normally ON and normally OFF operation.
- Process control signal (4 to 20 mA) and commercial CT input (0 to 1 A or 0 to 5 A) supported.
- Relay warning status easily monitoring using LED indicator.
- Easy wiring with ferrules
2 × 2.5 mm² solid or 2 × 1.5 mm² standard ferrules.
- CE mark compliance certified by third party.
UL certification pending.



Model Number Structure

■ Model Number Legend

K8AB-□□□□

1 2 3 4

1. Basic Model

K8AB: Measuring and Monitoring Relays

2. Functions

AS: Single-phase Current Relay (One-sided operation)

3. Measuring Current

- 1: 2 to 20 mA AC/DC, 10 to 100 mA AC/DC, 50 to 500 mA AC/DC
- 2: 0.1 to 1 A AC/DC, 0.5 to 5 A AC/DC, 0.8 to 8 A AC/DC
- 3: 10 to 100 A AC, 20 to 200 A AC (See note.)


Note: The K8AB-AS3 is specially designed to be used in combination with the OMRON K8AC-CT200L Current Transformer (CT). (Direct input is not possible.)

4. Supply Voltage

- 24 VDC: 24 VDC
- 24 VAC: 24 VAC
- 100-115 VAC: 100 to 115 VAC
- 200-230 VAC: 200 to 230 VAC

Ordering Information

■ List of Models

Single-phase Current Relay	Measuring current	Supply voltage	Model
	2 to 20 mA AC/DC, 10 to 100 mA AC/DC, 50 to 500 mA AC/DC	24 VDC	K8AB-AS1 24 VDC
		24 VAC	K8AB-AS1 24 VAC
		100-115 VAC	K8AB-AS1 100-115 VAC
		200-230 VAC	K8AB-AS1 200-230 VAC
	0.1 to 1 A AC/DC, 0.5 to 5 A AC/DC, 8 to 8 A AC/DC	24 VDC	K8AB-AS2 24 VDC
		24 VAC	K8AB-AS2 24 VAC
		100-115 VAC	K8AB-AS2 100-115 VAC
		200-230 VAC	K8AB-AS2 200-230 VAC
	100 A AC, 200 A AC (...te.)	24 VDC	K8AB-AS3 24 VDC
		24 VAC	K8AB-AS3 24 VAC
		100-115 VAC	K8AB-AS3 100-115 VAC
		200-230 VAC	K8AB-AS3 200-230 VAC

Note: The K8AB-AS combination with the OMRON K8AC-CT200L Current Transformer (CT). (Direct input is not possible)

■ Accessory (separately)

OMRON

Current	Applicable Relay	Model
	K8AB-AS3	K8AC-CT200L

Other

Ratings and Specifications

■ Ratings

Operating power	Non-isolated power supply	24 VDC (1 W)
	Isolated power supply	24 VAC (3 VA), 100 to 115 VAC (4 VA), 200 to 230 VAC (5 VA)
Operate (SV)	Operating value setting range	10% to 100% of maximum rated input value
	Operating value	100% operation at set value
Reset (HYS.)	Hysteresis	5% to 50% of operating value
	Resetting method	Manual reset/automatic reset (switchable) Manual reset: Turn OFF operating power for 1 s or longer.
Operating time (T)	0.1 to 30 s (Value when input rapidly changes from 0% to 120%.)	
Operating power ON lock (LOCK)	0 to 30 s (Value when input rapidly changes from 0% to 120%; lock timer starts when input reaches approximately 30% of set value.)	
Setting accuracy	±10% of full scale	
Time error	±10% of set value (Minimum error: 50 ms)	
Input frequency	K8AB-AS1/AS2	DC input, 45 to 65 Hz
	K8AB-AS3	45 to 65 Hz
Continuous input	K8AB-AS1/AS2	Continuous input: 115% of maximum input, 10 s max.: 125% of maximum input
	K8AB-AS3	Continuous input: 240 A, 30 s max.: 400 A, 1 s max.: 1,200 A
Input impedance	5 Ω max.	
Indicators	Power (PWR): Green LED, Relay output (RY): Yellow LED, Alarm outputs (ALM): Red LED	
Output relays	One SPDT relay (6 A at 250 VAC, resistive load)	

■ Specifications

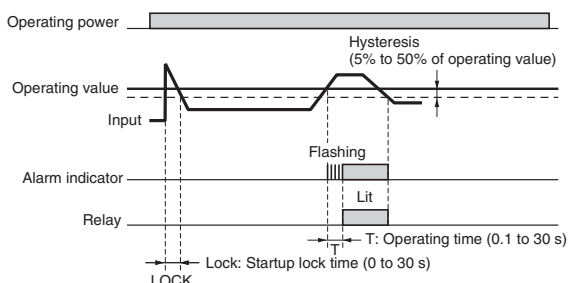
Ambient operating temperature	-20 to 60°C (with no condensation or icing)	
Storage temperature	-40 to 70°C (with no condensation or icing)	
Ambient operating humidity	25% to 85%	
Storage humidity	25% to 85%	
Altitude	2,000 m max.	
Operating voltage range	85% to 110% of rated operating voltage	
Rated power supply frequency	50/60 Hz ±5 Hz (AC power supply)	
Output relays	Resistive load	6 A at 250 VAC (cos φ = 1) 6 A at 30 VDC (L/R = 0 ms)
	Inductive load	1 A at 250 VAC (cos φ = 0.4) 1 A at 30 VDC (L/R = 7 ms)
	Minimum load	10 mA at 5 VDC
	Maximum contact voltage	250 VAC
	Maximum contact current	6 A AC
	Maximum switching capacity	1,500 VA
	Mechanical life	10,000,000 operations
	Electrical life	Make: 50,000 times, Break: 30,000 times
Terminal screw tightening torque	1.2 N·m	
Crimp terminals	Two solid wires of 2.5 mm ² , two crimp terminals of 1.5 mm ² with insulation sleeves, can be tightened together	
Insulation resistance	20 MΩ (at 500 V) between charged terminals and exposed uncharged parts 20 MΩ (at 500 V) between any charged terminals (i.e., between input, output, and power supply terminals)	

Degree of protection	Terminal section: IP20, Rear case: IP40
Case color	Munsell 5Y8/1 (ivory)
Case material	ABS resin (self-extinguishing resin) UL94-V0
Weight	200 g
Mounting	Mounted to DIN Track or via M4 screws
Dimensions	22.5 (W) × 90 (H) × 100 (D) mm
Installation environment	Overvoltage Category III, Pollution Degree 2
Application standards	EN60255-5/-6
Safety standards	EN60664-1
EMC	<p>EMI: EN61326 Industrial applications Electromagnetic interference wave CISPR11 Group 1, Class A: CISPR16-1/-2 Terminal interference wave voltage CISPR11 Group 1, Class A: CISPR16-1/-2 EMS: EN61326 Industrial applications Electrostatic discharge EN61000-4-2: 8 kV (in air) Radiating radio-frequency electromagnetic field EN61000-4-3: 10 V/m 1 kHz sine wave amplitude modulation (80 MHz to 1 GHz) Burst EN61000-4-4: 1 kV (I/O signal line), 2 kV (power line) Surge EN61000-4-5: 1 kV with line (power line), 2 kV with ground (power line) Conducted RF EN61000-4-6: 3 V (0.15 to 80 MHz) Power frequency magnetic field immunity EN61000-4-8: 30 A/m Voltage dip/short interruptions EN61000-4-11: 0.5 cycle, 0.180° each, polarity 100% (rated voltage)</p>

Connections

■ Wiring Diagram

Overcurrent Operation Diagram (Output: Normally Open)

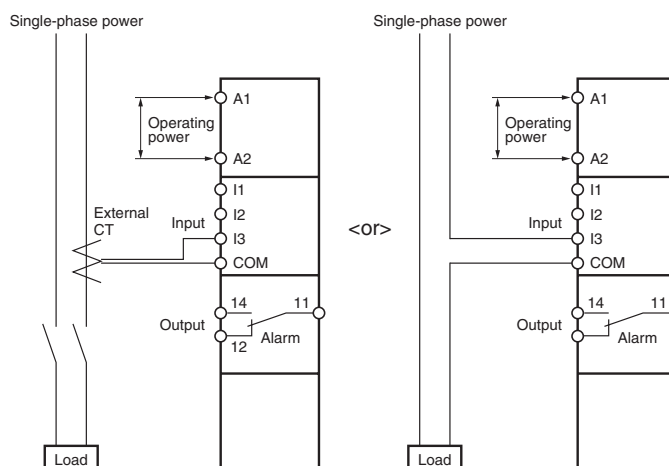
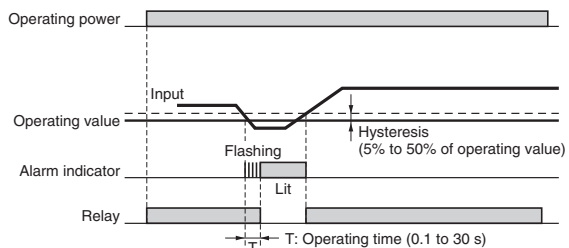


Measuring Ranges and Connections

Model	Measuring range	Connection
K8AB-AS1	2 to 20 mA AC/DC	I1-COM
	10 to 100 mA AC/DC	I2-COM
	50 to 500 mA AC/DC	I3-COM
K8AB-AS2	0.1 to 1 A AC/DC	I1-COM
	0.5 to 5 A AC/DC	I2-COM
	0.8 to 8 A AC/DC	I3-COM
K8AB-AS3	10 to 100 A AC/DC (See note.)	I2-COM
	20 to 200 A AC/DC (See note.)	I3-COM

Note: The K8AB-AS3 is designed to be used in combination with the OMRON K8AC-CT200L Current Transformer (CT). (Direct input is not possible with this model.)

Undercurrent Operation Diagram (Output: Normally Closed)



N
■

Indicators

Setting Knobs

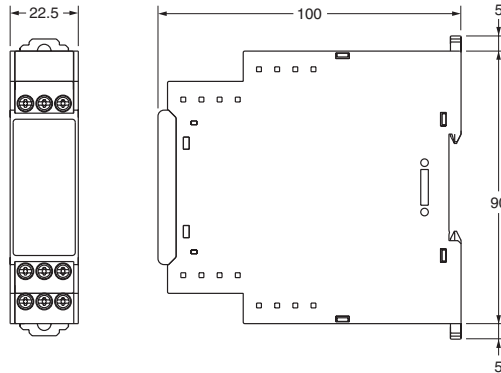
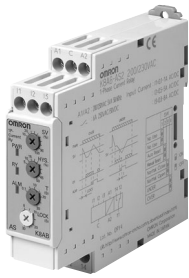
■ Function on DIP Switch

DIP Switch Functions

SW	Function	Function		Default
		OFF	ON	
SW1	Not used.	Not used.	Not used.	OFF
SW2	Resetting method	OFF	Manual reset	OFF
		ON	Automatic reset	
SW3	Relay drive method	OFF	Normally open (normally OFF)	OFF
		ON	Normally closed (normally ON)	
SW4	Operating mode	OFF	Overcurrent monitoring	OFF
		ON	Undercurrent monitoring	

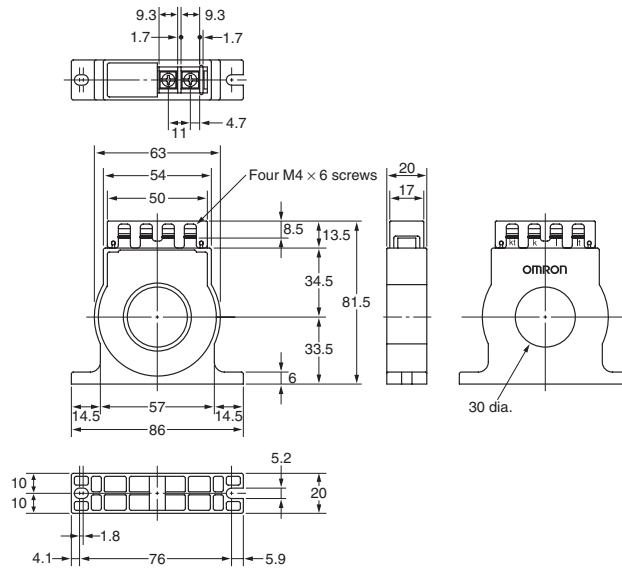
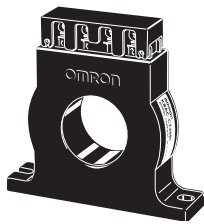
Dimensions

K8AB-AS

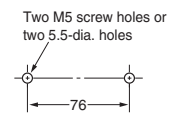


OMRON CT

K8AC-CT200L



Mounting Hole Dimensions



Safety Precautions

■ Precautions for Safe Use

Make sure to follow the instructions below to ensure safety.

1. Do not use or keep this product in the following environments.
 - Outdoors, or places subject to direct sunlight or wearing weather.
 - Places where dust, iron powder, or corrosive gases (in particular, sulfuric or ammonia gas) exist.
 - Places subject to static electricity or inductive noise.
 - Places where water or oil come in contact with the product.
2. Make sure to install this product in the correct direction.
3. There is a remote risk of electric shock. Do not touch terminals while electricity is being supplied.
4. Make sure to thoroughly understand all instructions in the Instructions Manual before handling this product.
5. Make sure to confirm terminal makings and polarity for correct wiring.
6. Tighten terminal screws firmly using the following torque. Recommended torque: 0.54 N·m
7. Operating ambient temperature and humidity for this product must be within the indicated rating when using this product.
8. There is a remote risk of explosion. Do not use this product where flammable or explosive gas exists.
9. Make sure that no weight rests on the product after installation.
10. To enable an operator to turn off this product easily, install switches or circuit breakers that conform to relevant requirements of IEC60947-1 and IEC60947-3, and label them appropriately.
11. For DC input, use a SELV power-supply capable of overcurrent protection. Specifically, a SELV power-supply has a double or reinforced insulation for input and output, and output voltage of 30 V_{r.m.s} with 42.4 V at peak or DC60V maximum. Recommended power-supply: Model S8VS-06024□. (Omron product)

■ Precautions for Correct Use

For Proper Use

1. Do not use the product in the following locations.
 - Places subject to radiant heat from heat generating devices.
 - Places subject to vibrations or physical shocks.
2. Make sure to use setting values appropriate for the controlled object. Failure to do so can cause unintended operation, and may result in accident or corruption of the product.
3. Do not use thinner or similar solvent for cleaning. Use commercial alcohol.
4. When discarding, properly dispose of the product as industrial waste.
5. Only use this product within a board whose structure allows no possibility for fire to escape.

About Installation

1. When wiring, use only recommended crimp terminals.
2. Do not block areas around the product for proper dissipation of heat. (If you do not secure space for heat dissipation, life cycle of the product will be compromised.)
3. To avoid electrical shocks, make sure that power is not supplied to the product while wiring.
4. To avoid electrical shocks, make sure that power is not supplied to the product when performing DIP switch settings.

Noise Countermeasures

1. Do not install the product near devices generating strong high frequency waves or surges.
2. When using a noise filter, check the voltage and current and install it as close to the product as possible.
3. In order to prevent inductive noise, wire the lines connected to the product separately from power lines carrying high voltages or currents. Do not wire in parallel with or on the same cable as power lines. Other measures for reducing noise include running lines along separate ducts and using shield lines.

To avoid faulty operations, malfunctions, or failure, observe the following operating instructions.

1. When turning on the power, make sure to realize rated voltage within 1 second from the time of first supply of electricity.
2. Make sure to use power supply for operations, inputs, and transformer with the appropriate capacity and rated burden.
3. Maintenance and handling of this product may only be performed by qualified personnel.
4. Distortion ratio of input wave forms must be 30% or less. Use of this product with circuits that have large distortion in wave forms may result in unwanted operations.
5. Using this product for thyristor controls or inverters will result in errors.
6. When setting the volume, adjust the control from the minimum side to the maximum side.

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Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. N142-E1-01 **In the interest of product improvement, specifications are subject to change without notice.**

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