

**Compact high capacity  
(25A max)  
Slim heat-sink integrated  
type joining the lineup**

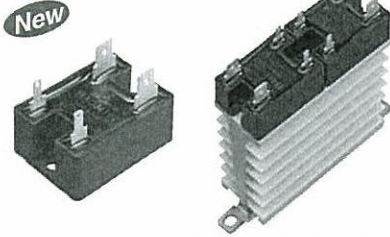
# AQ-J RELAYS

## FEATURES

- 1. Compact Size**  
Approx 40% reduction in required space achieved in the footprint area compared with the previous model (AQ-R relay)
- 2. Built-in varistor**
- Reverse input connection prevention function
- 4. Labor Saving (Tab terminal)**
- 5. Output configuration 1a and 1a × 2 available in the heat-sink integrated type**

## TYPICAL APPLICATIONS

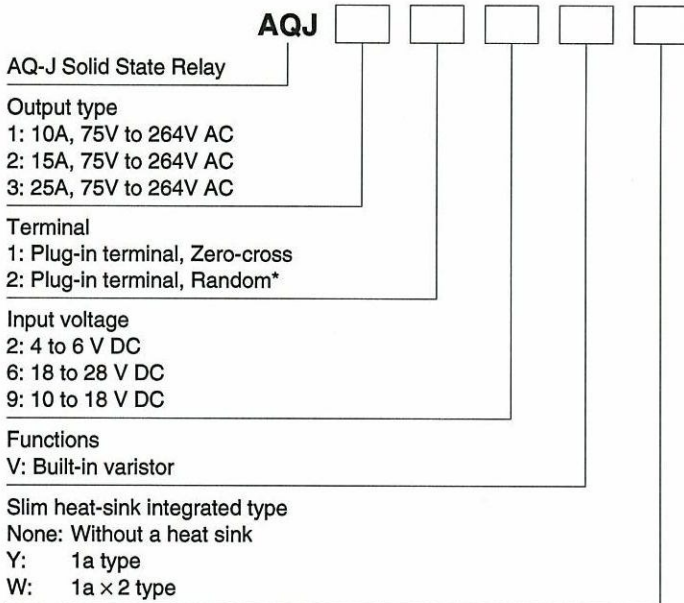
- 1. Kitchen appliances**
- 2. Vending machine**
- 3. Injection molding machine**
- 4. Packing machine**
- 5. Amusement machine**



Slim heat-sink integrated type

**RoHS Directive compatibility information**  
<http://www.mew.co.jp/ac/e/environment/>

## ORDERING INFORMATION



Note: \*1 Random type is available by custom order.

## TYPES

### 1. AQ-J Solid State Relay

Type	Load current	Load voltage	Input voltage	Part No.
Zero-cross	10A	75V to 264V AC	4 to 6V DC	AQJ112V
			10 to 18V DC	AQJ119V
			18 to 28V DC	AQJ116V
	15A		4 to 6V DC	AQJ212V
			10 to 18V DC	AQJ219V
			18 to 28V DC	AQJ216V
	25A		4 to 6V DC	AQJ412V
			10 to 18V DC	AQJ419V
			18 to 28V DC	AQJ416V

Packaged quantity: 10 in an inner carton, 200 in an outer carton

Note: \*1 Random type also available. Please inquire.

**2. AQ-J Heat-sink Integrated Type**

Output configuration	Type	Load current	Load voltage	Input voltage	Part No.
1a	Zero-cross	10A	75V to 264V AC	4 to 6V DC	AQJ112VY
				10 to 18V DC	AQJ119VY
				18 to 28V DC	AQJ116VY
1a × 2		10A (per 1a)		4 to 6V DC	AQJ412VY
				10 to 18V DC	AQJ419VY
				18 to 28V DC	AQJ416VY
1a × 2	Zero-cross	15A (per 1a)	75V to 264V AC	4 to 6V DC	AQJ112VW
				10 to 18V DC	AQJ119VW
				18 to 28V DC	AQJ116VW
1a × 2		10A (per 1a)		4 to 6V DC	AQJ412VW
				10 to 18V DC	AQJ419VW
				18 to 28V DC	AQJ416VW

Packaged quantity: no inner carton, 10 in an outer carton  
 Note: \*1 Random type also available. Please inquire.

**3. Accessories**

Type	Part No.	Packaged quantity
DIN rail mounting plate	AQP809	5 in an inner carton, 50 in an outer carton
Slim heat sink (28mm wide) (Mountable on a DIN rail)	AQP810	No inner carton, 10 in an outer carton
Slim heat sink (45mm wide) (Mountable on a DIN rail)	AQP812	No inner carton, 8 in an outer carton
Standard heat sink (10A and 15A)	AQP811	5 in an inner carton, 20 in an outer carton
Standard heat sink (25A only)	AQP808	No inner carton, 5 in an outer carton

**SPECIFICATIONS**

**1. Ratings (Test sample: AQ-J stand-alone, Measurement condition: at 20°C 68°F, input ripple: 1% or less)**

1) Input side

Item	Part No.	AQJ112V AQJ212V AQJ412V	AQJ119V AQJ219V AQJ419V	AQJ116V AQJ216V AQJ416V
Rated voltage		5V DC	12V DC	24V DC
Input voltage		4 to 6V DC	10 to 18V DC	18 to 28V DC
Input impedance		Approx. 260Ω	Approx. 800Ω	Approx. 1.6kΩ
Drop-out voltage			Min. 1V DC	

2) Output side

Item	Part No.	AQJ112V AQJ119V AQJ116V	AQJ212V AQJ219V AQJ216V	AQJ412V AQJ419V AQJ416V
Max. load current		10A	15A	25A
Load voltage		75 to 264V AC		
Frequency		45Hz to 65Hz		
Non-repetitive surge current		100A	150A	250A
Max. "OFF-state" leakage current			Max. 5mA	
Max. "ON-state" voltage drop			Max. 1.6V	
Min. load current*1			50mA	

Note: \*1 When the load current is less than the rated minimum load current, please refer to P16. CAUTIONS FOR USE, "3. Output side".

**2. Ratings (Test sample: AQ-J heat-sink integrated type, Measurement condition: at 20°C 68°F, input ripple: 1 % or less)**

1) Input side

Item	Part No.	AQJ112V(Y-W) AQJ412V(Y-W)	AQJ119V(Y-W) AQJ419V(Y-W)	AQJ116V(Y-W) AQJ416V(Y-W)
Rated voltage		5V DC	12V DC	24V DC
Input voltage		4 to 6V DC	10 to 18V DC	18 to 28V DC
Input impedance		Approx. 260Ω	Approx. 800Ω	Approx. 1.6kΩ
Drop-out voltage			Min. 1V DC	

2) Output side

Item	Part No.	AQJ112VY AQJ119VY AQJ116VY	AQJ412VY AQJ419VY AQJ416VY	AQJ112VW AQJ119VW AQJ116VW	AQJ412VW AQJ419VW AQJ416VW
Output configuration		1a		1a × 2	
Max. load current*1		10A	20A	10A	15A
Load voltage		75 to 264V AC			
Frequency		45Hz to 65Hz			
Non-repetitive surge current		100A	250A	100A	250A
Max. "OFF-state" leakage current				Max. 5mA	
Max. "ON-state" voltage drop				Max. 1.6V	
Min. load current*2				50mA	

Notes: \*1 Please refer to REFERENCE DATA, "1. Load current vs. ambient temperature" below.

\*2 When the load current is less than the rated minimum load current, please refer to P16. CAUTIONS FOR USE, "3. Output side".

## 3. Characteristics (Measurement condition: at 20°C 68°F, input ripple: 1% or less)

Item	Characteristics	Remarks
Operate time, max.	(1/2 cycle of voltage sine wave) + 1ms	
Release time, max.	(1/2 cycle of voltage sine wave) + 1ms	
Insulation resistance, min.	100MΩ between input to output to case	Using 500 V DC megger
Breakdown voltage	3,000 Vrms between input and output	for 1min.
	2,500 Vrms between input, output and case	
Vibration resistance	Stand-alone: 10 to 55Hz, double amplitude of 1.5mm	X, Y, Z axes
	Heat-sink integrated type: 10 to 55Hz, double amplitude of 0.75mm	
Shock resistance	Stand-alone: Min. 980m/s <sup>2</sup>	X, Y, Z axes
	Heat-sink integrated type: Min. 197m/s <sup>2</sup>	
Ambient temperature	-30 to +80°C -22 to +176°F	Non-condensing at low temperatures
Storage temperature	-30 to +100°C -22 to +212°F	
Operational method	Zero-cross (Turn ON and Turn OFF)	

## REFERENCE DATA

### (1) AQ-J Solid State Relay

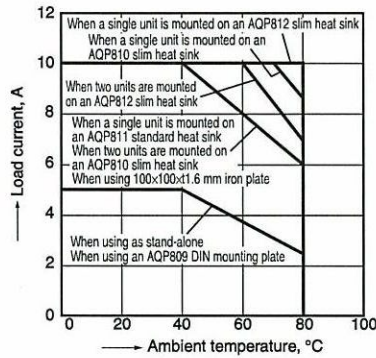
#### 1. Load current vs. ambient temperature Use load current within range specified in the figure below

Tested condition:

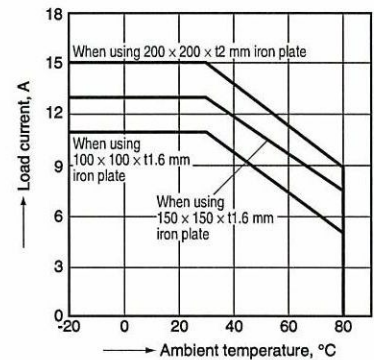
- If attached to a heat sink, use a heat conductive compound (Ex. Toshiba silicone YG6111 or TSK5303) of similar coating to improve cooling
- Without external heat sink  
If the mounting surface is not metallic and a heat sink is not used, expose the bottom surface and plate surface to improve heat dissipation.

3) The current value is per 1a.

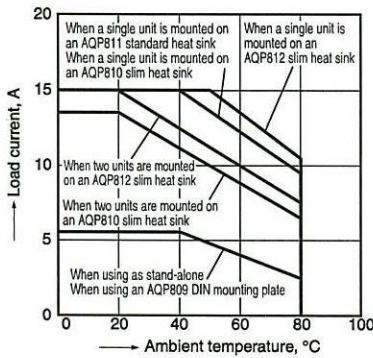
(1) 10 A type (when using heat sink or iron plate)



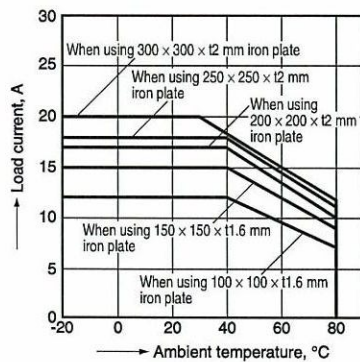
(2)-1. 15 A type (when using iron plate)



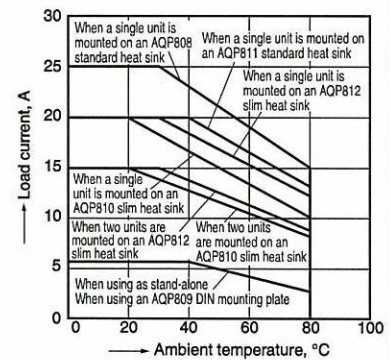
(2)-2. 15 A type (when using a heat sink)



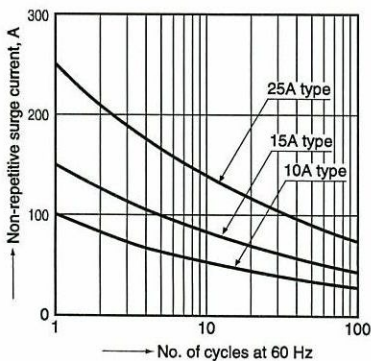
(3)-1. 25 A type (when using iron plate)



(3)-2. 25 A type (when using a heat sink)

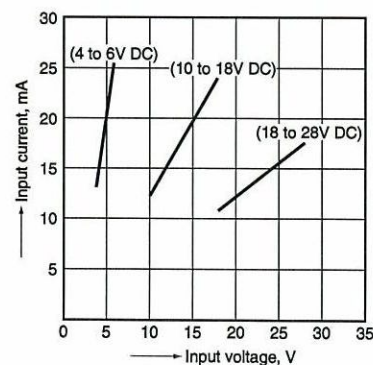


## 2. Non-repetitive surge current vs. carrying time



## 3. Input current vs. input voltage characteristics

(10A, 15A and 25A common)

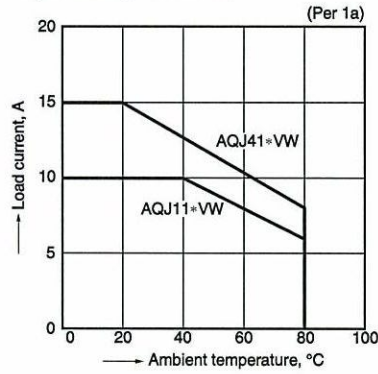
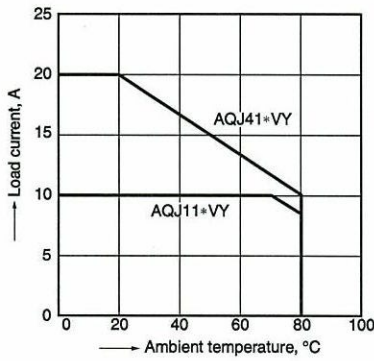


**(2) AQ-J Heat-sink Integrated Type**

**1. Load current vs. ambient temperature Use load current within range specified in the figure below**

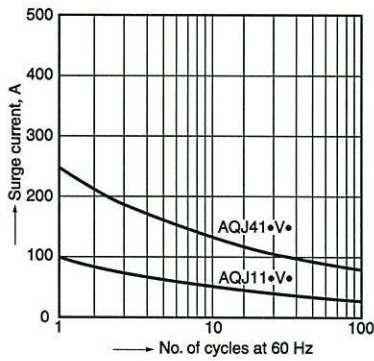
(1) Output configuration: 1a

(2) Output configuration: 1a × 2

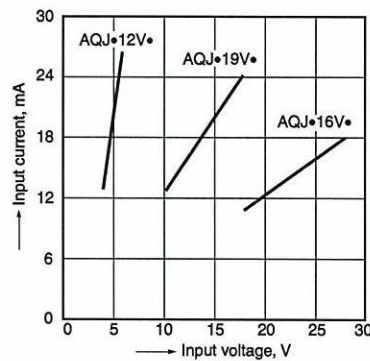


Note:  
\*1 When two contacts are operated simultaneously. In the case of a single-contact operation, the rating of (1) AQJ11\*VY, AQJ41\*VY applies.

**2. Surge current vs. carrying time**

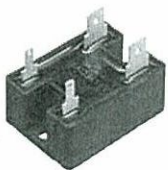


**3. Input current vs. input voltage characteristics**

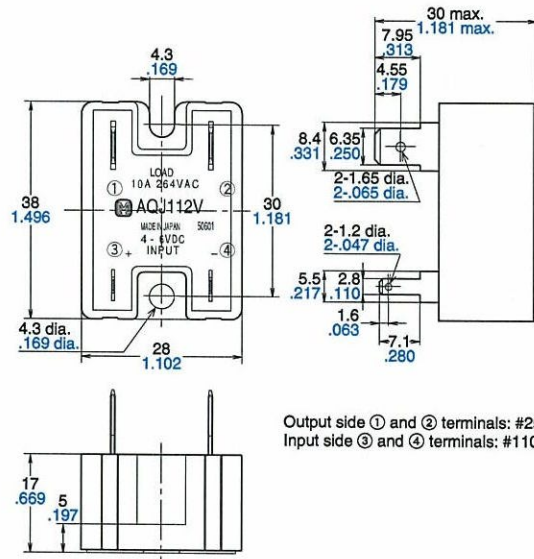


**DIMENSIONS** (Unit: mm inch)

**1. AQ-J Stand Alone**

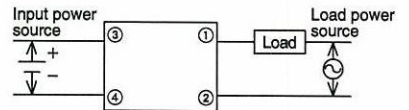


**External dimensions**

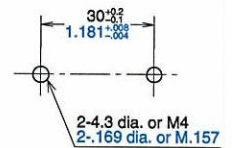


Output side ① and ② terminals: #250 type, t = 0.8  
Input side ③ and ④ terminals: #110 type, t = 0.5

**Schematic**

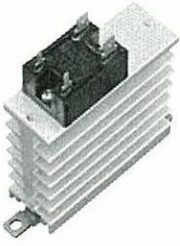


**Mounting dimensions**



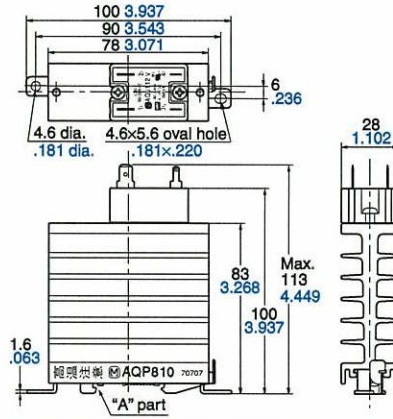
# AQ-J

## 2.-(1) Slim Heat-Sink Integrated Type Output Configuration: 1a

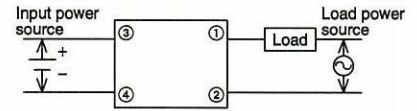


Note: \*1 When using on a DIN rail, please install so that the "A" part is on top.

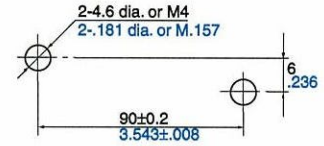
External dimensions



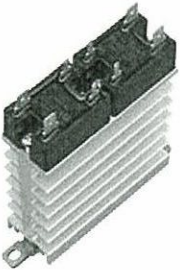
Schematic



Mounting dimensions (Top view)

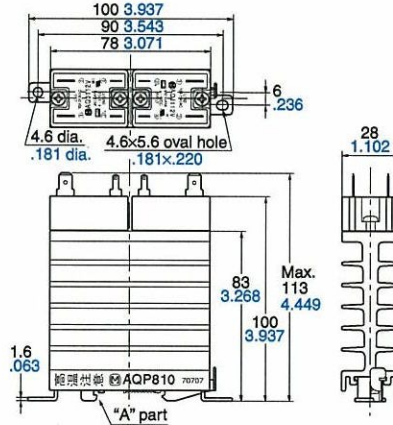


## 2.-(2) Slim Heat-Sink Integrated Type Output Configuration: 1a × 2

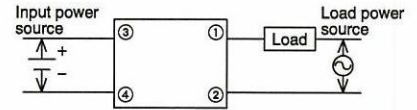


Note: \*1 When using on a DIN rail, please install so that the "A" part is on top.

External dimensions

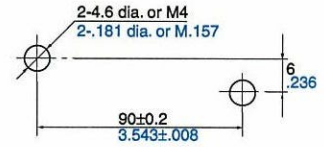


Schematic



Note: \*2 Use caution for AQ-J terminal numbers

Mounting dimensions (Top view)



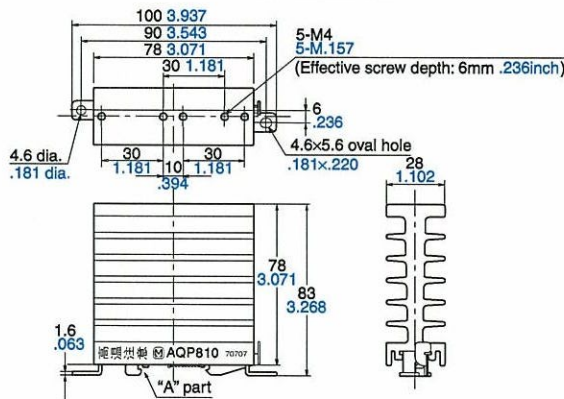
# ACCESSORIES

## AQP810 slim heat sink

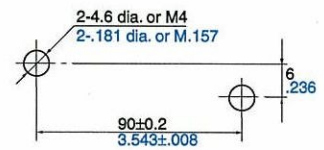


Note: \*1 When using on a DIN rail, please install so that the "A" part is on top.

External dimensions



Mounting dimensions (Top view)

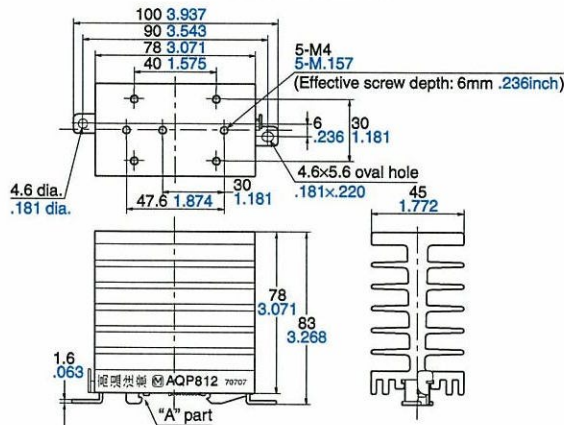


## AQP812 Slim heat sink

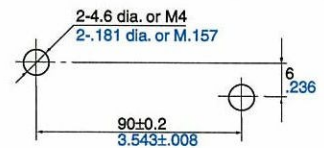


Note: \*1 When using on a DIN rail, please install so that the "A" part is on top.

External dimensions



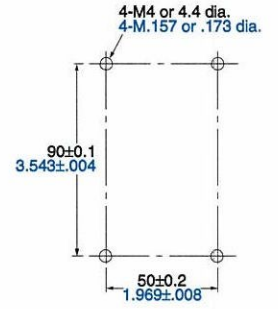
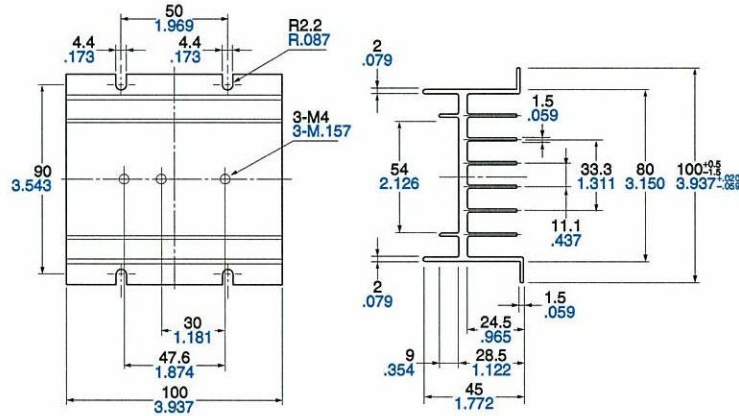
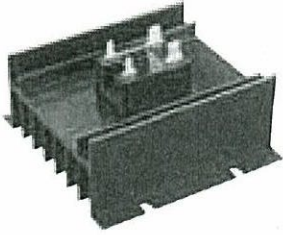
Mounting dimensions (Top view)



**AQP811 Standard heat sink  
(for 10 A and 15 A types)**

**External dimensions**

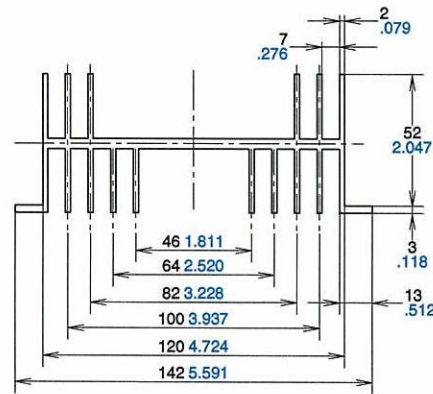
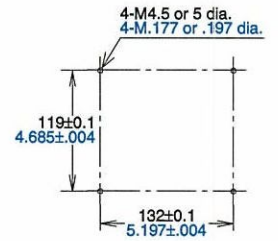
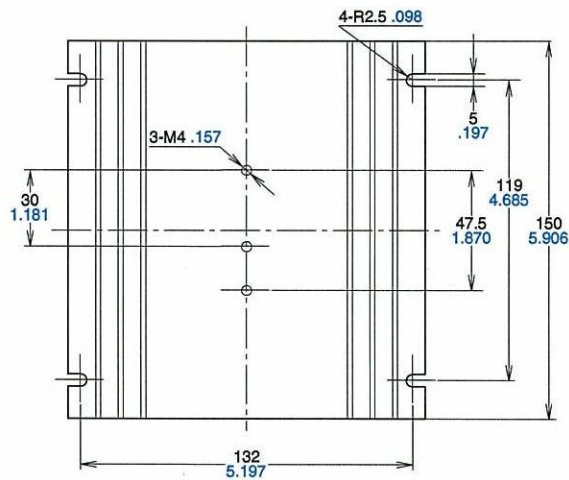
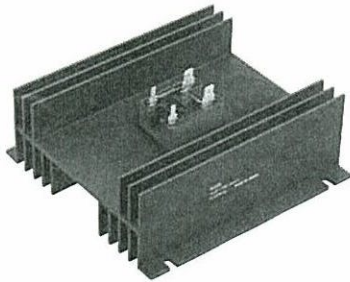
**Mounting dimensions**



**AQP808 Standard heat sink  
(for 25 A type)**

**External dimensions**

**Mounting dimensions**



**AQP809 DIN rail mounting plate**

**External dimensions**

