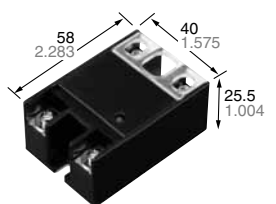




**Small Screw Terminal SSR**  
Ideal for DC Control

**AQ-A (DC output type)**  
**Solid State Relays**



mm inch

RoHS compliant

### FEATURES

- 1. Compact Size**  
W 40 × L 58 × H 25.5 mm  
W 1.575 × L 2.283 × H 1.004 inch
- 2. With terminal cover for safety (output side only).**  
\* Cover on input side available as option.
- 3. Mounting pitch 47.5 mm 1.870 inch**
- 4. Internal diode protects element on output side**
- 5. With LED indication for operation status verification**

### TYPICAL APPLICATIONS

- Photovoltaic power generation system
- Storage battery system
- For control of all types of business equipment and industrial use DC heaters/motors, etc.

## ORDERING INFORMATION

AQAD

Output current  
1: 10 A  
5: 30 A

Load voltage, Type  
5: 100 V DC, Screw terminal  
7: 600 V DC, Screw terminal

Control voltage  
1: 4 to 32 V DC

Functions  
DL: Internal diode and LED indication

\* When the load voltage is AC type, please refer to "AQ-A RELAYS (AC only)".

## TYPES

### 1. AQ-A Solid State Relays (DC only)

Type	Load current	Load voltage	Control voltage	Part No.
DC output	30 A	100 V DC	4 to 32 V DC	AQAD551DL
	10 A	600 V DC		AQAD171DL

Standard Packing; carton: 2 pcs., case: 60 pcs.

### 2. Accessories

Type	Part No.
Standard heat sink	AQP-HS-J25A
Slim heat sink (45 mm 1.772inch wide) (Mountable on a DIN rail)	AQP-HS-SJ20A
DIN rail mounting plate	AQP-DPJ
Terminal cover	AQA801
Mounting rail	AT8-DLA1
Fastening plate	AT8-DLE

# AQ-A (DC only) Solid State Relays

## RATING

### 1. Ratings (Measurement condition: at 20°C 68°F, Input ripple: 1% or less)

Item		Part No.	AQAD551DL	AQAD171DL	Remarks
Input side	Control voltage		4 to 32 V DC		
	Input current		Max. 20 mA		
	Drop-out voltage		Min. 1 V		
Output side	Max. load current (DC)		30 A	10 A	
	Peak load current		90 A (V <sub>L</sub> = 60 V DC)	20 A (V <sub>L</sub> = 600 V DC)	100 ms (1 shot)
	Max. load voltage (DC)		100 V	600 V	
	"OFF-state" leakage current		Max. 100 μA		V <sub>L</sub> = Max.
	"ON" resistance		Max. 20 mΩ	Max. 200 mΩ	at Max. carrying current
	Max. power dissipation		20 W		

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

Item		Part No.	AQAD551DL	AQAD171DL	Condition
Operate time			Max. 10 ms	Max. 5 ms	V <sub>IN</sub> = 4 V, I <sub>L</sub> = 1 A, V <sub>L</sub> = 10 V Resistance load
Release time			Max. 3 ms	Max. 1 ms	V <sub>IN</sub> = 4 V, I <sub>L</sub> = 1 A, V <sub>L</sub> = 10 V Resistance load
Insulation resistance			100 MΩ between input and output		at 500 V DC
Breakdown voltage			4,000 Vrms between input and output 2,500 Vrms between input, output and case		for 1 minute
Vibration resistance			10 to 55 Hz double amplitude of 1.5 mm .059 inch		X, Y, Z axes
Shock resistance			Min. 980 m/s <sup>2</sup>		X, Y, Z axes
Ambient temperature	Operating		-20 to +80°C -4 to +176°F		(Non-icing at low temperatures)
	Storage		-20 to +85°C -4 to +185°F		(Non-icing at low temperatures)
Max. operating frequency			0.5 cps		V <sub>IN</sub> = 4 V, duty = 50%, I <sub>L</sub> = Max., V <sub>L</sub> = Max.

Note: V<sub>IN</sub> is input voltage, I<sub>L</sub> is load current, and V<sub>L</sub> is load voltage.

## REFERENCE DATA

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

Tested condition

### With external heat sink

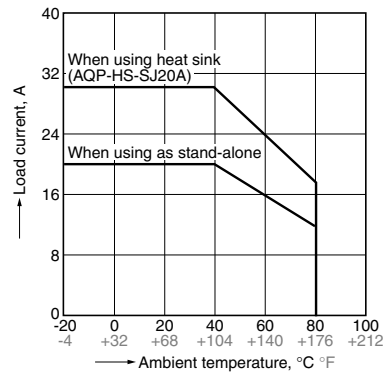
When using heat sink (AQP-HS-J25A) or (AQP-HS-SJ20A)

1) If attached to a heat sink, use a heat conductive compound (Ex. Momentive Performance Materials Inc. YG6111 or TSK5303) of similar coating to improve cooling.

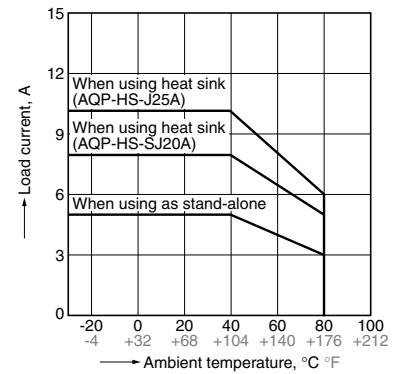
### Without external heat sink

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.

(1) 30 A type (AQAD551DL)



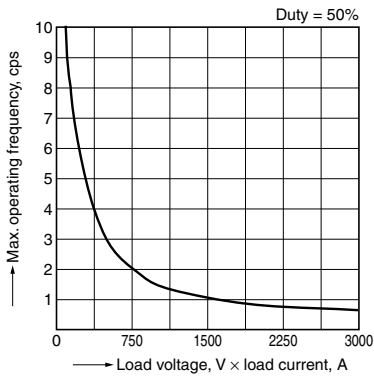
(2) 10 A type (AQAD171DL)



2. Max. operating frequency vs. load voltage × load current characteristics

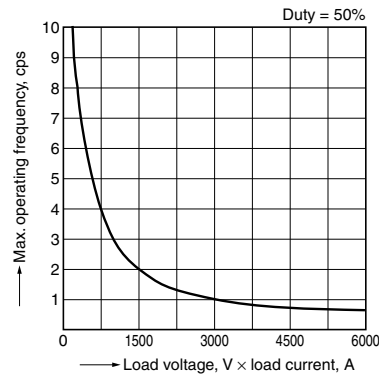
(1) 30 A type (AQAD551DL)

Ambient temperature: 20°C 68°F

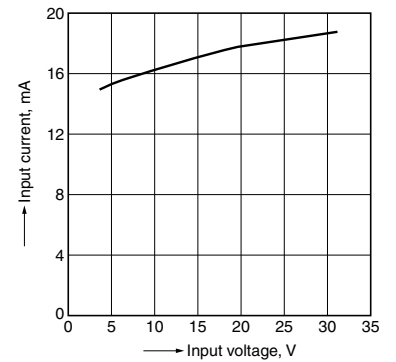


(2) 10 A type (AQAD171DL)

Ambient temperature: 20°C 68°F



3. Input current vs. input voltage characteristics



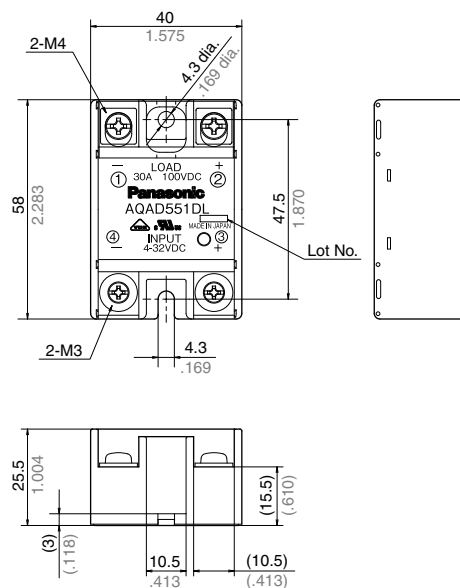
## DIMENSIONS (mm inch)

CAD

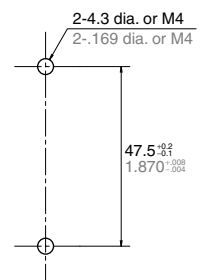


The CAD data of the products with a **CAD** mark can be downloaded from: <https://industrial.panasonic.com/ac/e/>

### External dimensions



### Mounting dimensions



General tolerance:  $\pm 1.0 \pm 0.039$

# AQ-A (DC only) Solid State Relays

## ACCESSORIES (mm inch)

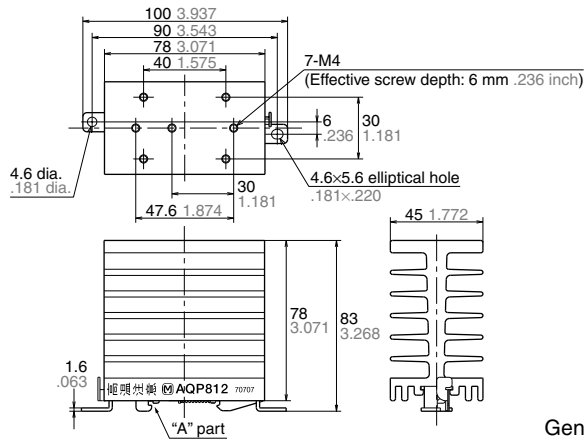
The CAD data of the products with a **CAD** mark can be downloaded from: <https://industrial.panasonic.com/ac/e/>

### AQP-HS-SJ20A Slim Heat Sink

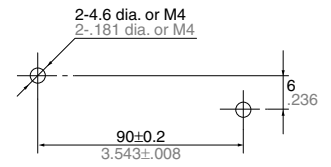
**CAD**



#### External dimensions



#### Mounting dimensions



General tolerance:  $\pm 1.0 \pm .039$

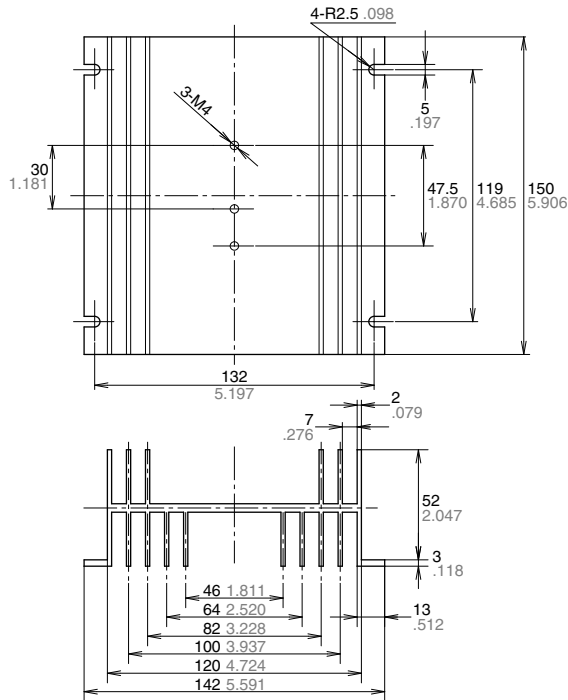
Note: When using on a DIN rail, please install so that the "A" part is on top.

### AQP-HS-J25A Standard Heat Sink

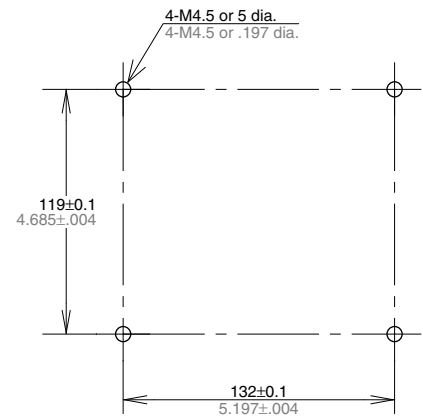
**CAD**



#### External dimensions



#### Mounting dimensions

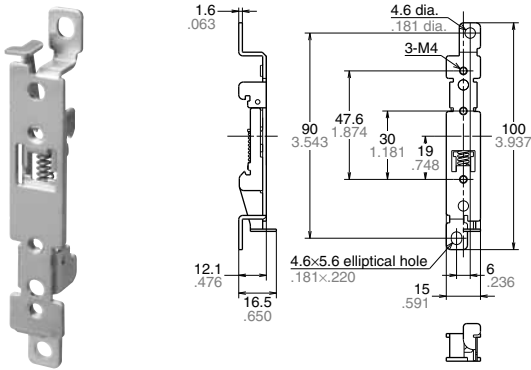


General tolerance:  $\pm 1.0 \pm .039$

**AQP-DPJ DIN Rail Mounting Plate**

**CAD**

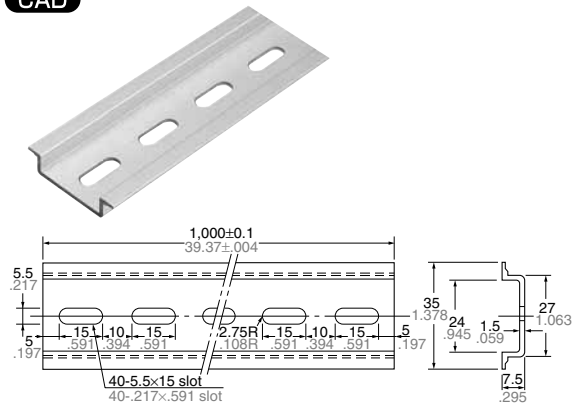
External dimensions



General tolerance:  $\pm 1.0 \pm .039$

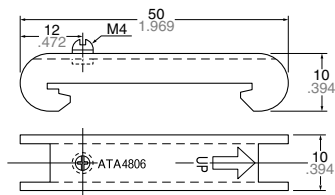
**AT8-DLA1 Mounting Rail**

**CAD**



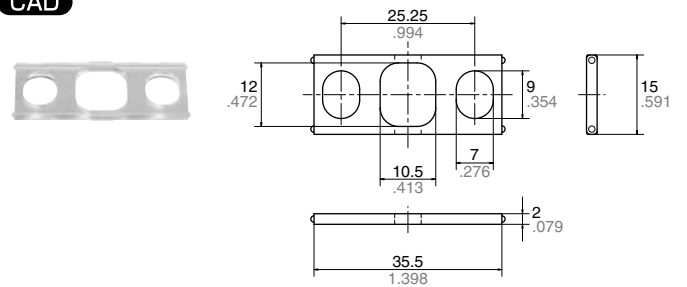
**AT8-DLE Fastening plate**

**CAD**



**AQA801 Terminal cover**

**CAD**



Use this product as a protective terminal cover for AQ-A/SSR. It can be used for either the input or output side.

General tolerance:  $\pm 1.0 \pm .039$

**SCHEMATIC AND WIRING DIAGRAMS**

Schematic	Output configuration	Load	Wiring diagram
	1 Form A	DC	

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Please contact .....

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