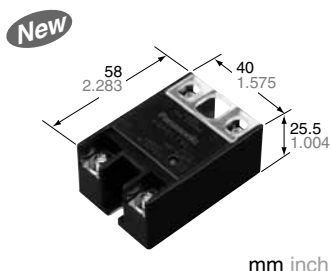




Small Screw Terminal SSR
Ideal for DC Control

AQ-A RELAYS
(DC only)



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: 10A
5: 30A

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

Input 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	Input voltage	Part No.
DC output	30A	100V DC	4 to 32V DC	AQAD551DL
	10A	600V DC		AQAD171DL

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

2. Accessories

Type	Part No.	Packaged quantity
Standard heat sink	AQP-HS-J25A	No carton, 5 in a case
Slim heat sink (45mm 1.772inch wide) (Mountable on a DIN rail)	AQP-HS-SJ20A	No carton, 8 in a case
DIN rail mounting plate	AQP-DPJ	No carton, 50 in a case
Terminal cover	AQA801	No carton, 50 in a case
Mounting rail	AT8-DLA1	1 in a carton, 100 in a case
Fastening plate	AT8-DLE	1 in a carton, 200 in a case

RATING

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

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

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

Item	AQAD551DL	AQAD171DL	Remarks
Operate time	Max. 10ms	Max. 5ms	V _{in} = 4 V, I _L = 1 A, V _L = 10 V Resistance load
Release time	Max. 3ms	Max. 1ms	V _{in} = 4 V, I _L = 1 A, V _L = 10 V Resistance load
Insulation resistance	100MΩ between input and output		at 500V DC
Breakdown voltage	4,000 Vrms between input and output 2,500 Vrms between input, output and case		for 1min.
Vibration resistance	10 to 55Hz double amplitude of 1.5mm .059inch		X, Y, Z axes
Shock resistance	Min. 980 m/s ²		X, Y, Z axes
Ambient temperature	-20°C to +80°C -4°F to +176°F		Non-condensing at low temperatures
Storage temperature	-20°C to +85°C -4°F to +185°F		Non-condensing at low temperatures
Max. switching frequency	0.5 times/s		V _{in} = 4 V, duty = 50%, I _L = Max., V _L = Max.

Note: V_{in} is input voltage, I_L is load current, and V_L is load voltage.

REFERENCE DATA

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

Tested condition

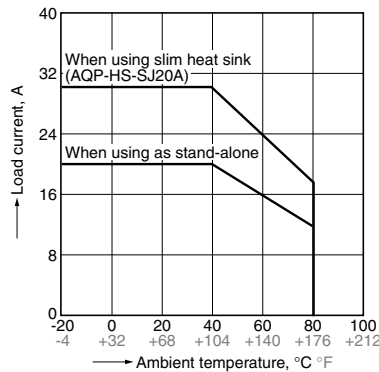
With external heat sink

When using standard heat sink (AQP-HS-J25A) or slim heat sink (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.

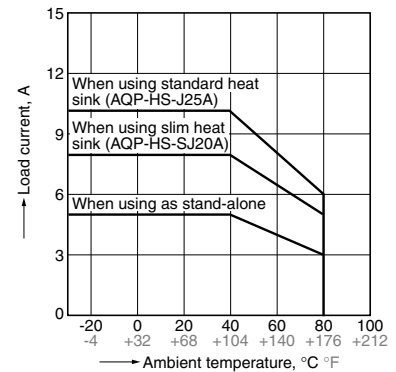
Without external heat sink

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) 30A type (AQAD551DL)



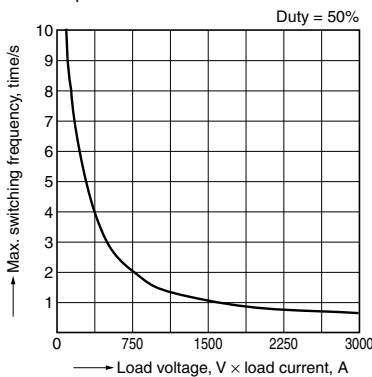
(2) 10A type (AQAD171DL)



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

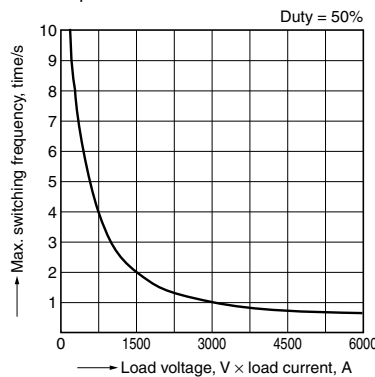
(1) 30A type (AQAD551DL)

Ambient temperature: 20°C 68°F

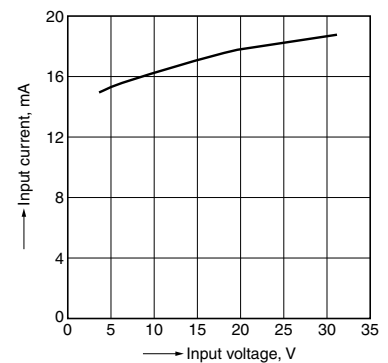


(2) 10A type (AQAD171DL)

Ambient temperature: 20°C 68°F



3. Input current vs. input voltage characteristics



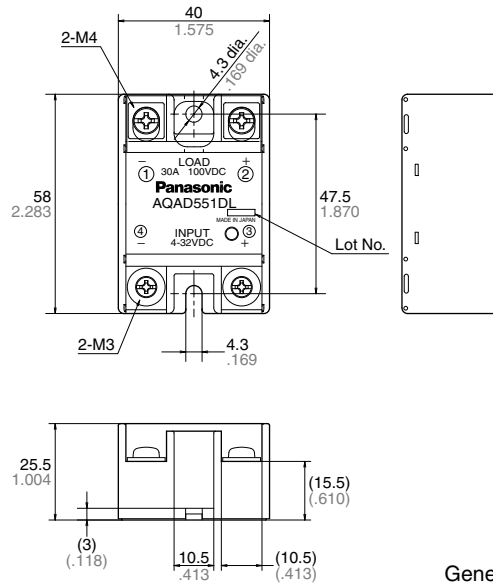
DIMENSIONS (mm inch)

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

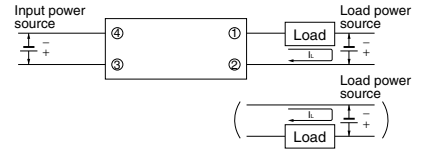
CAD Data



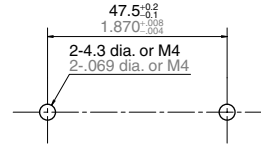
External dimensions



Schematic



Mounting dimensions



General tolerance: $\pm 1.0 \pm 0.039$

ACCESSORIES (mm inch)

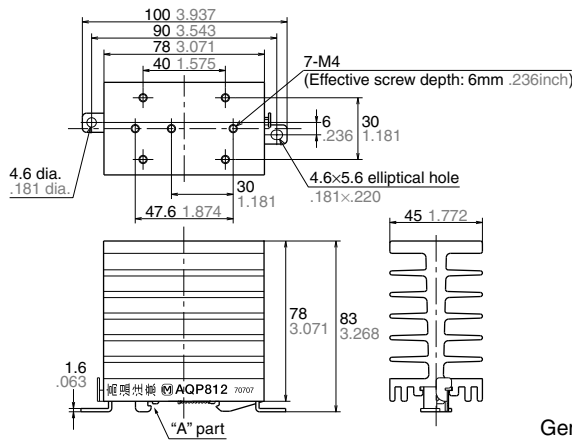
The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://industrial.panasonic.com/ac/e/>

AQP-HS-SJ20A Slim Heat Sink

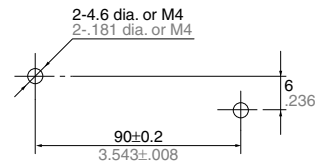
CAD Data



External dimensions



Mounting dimensions



General tolerance: $\pm 1.0 \pm 0.039$

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

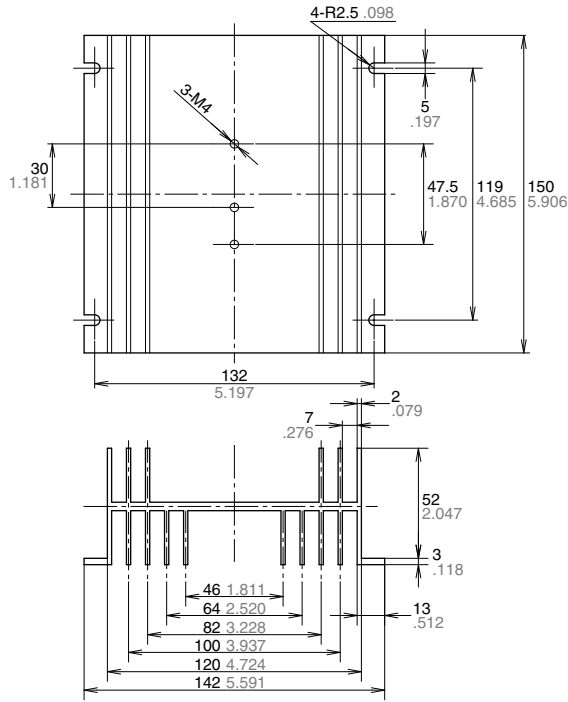
AQ-A (AQAD1, 5)

AQP-HS-J25A Standard Heat Sink

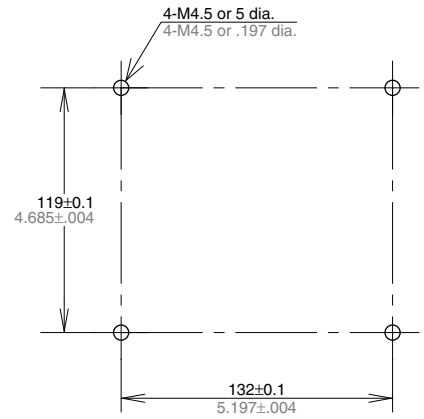
CAD Data



External dimensions



Mounting dimensions



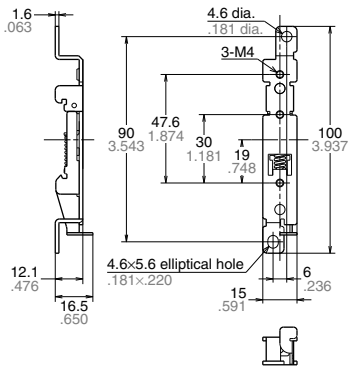
General tolerance: ±1.0 ±.039

AQP-DPJ DIN Rail Mounting Plate

CAD Data

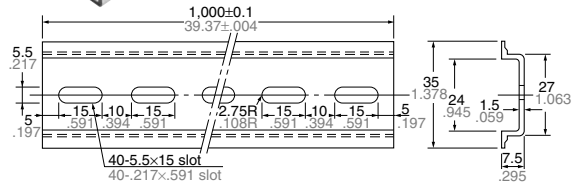


External dimensions



AT8-DLA1 Mounting Rail

CAD Data



AT8-DLE Fastening plate

CAD Data

