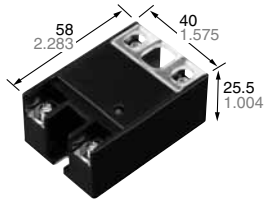
Small Screw Terminal SSR
Ideal for DC Control

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

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_L = 60 V DC)	20 A (V_L = 600 V DC)	100 ms (1 shot)
	Max. load voltage (DC)	100 V	600 V	
	"OFF-state" leakage current	Max. 100 μA		V_L = 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_{IN} = 4 V, I_L = 1 A, V_L = 10 V Resistance load
Release time		Max. 3 ms	Max. 1 ms	V_{IN} = 4 V, I_L = 1 A, V_L = 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/s²		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_{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

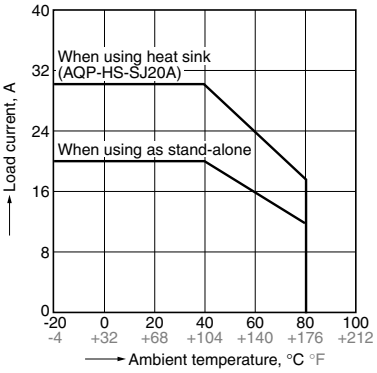
When using heat sink (AQP-HS-J25A) or (AQP-HS-SJ20A)

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.

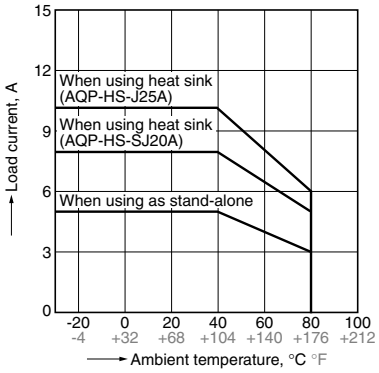
Without external heat sink

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)



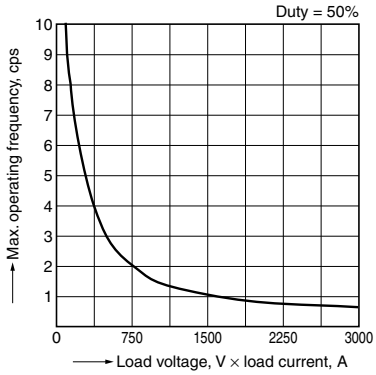
(2) 10 A type (AQAD171DL)



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

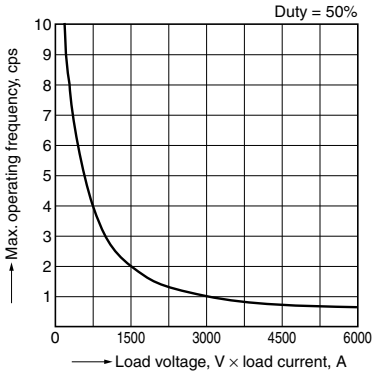
(1) 30 A type (AQAD551DL)

Ambient temperature: 20°C 68°F

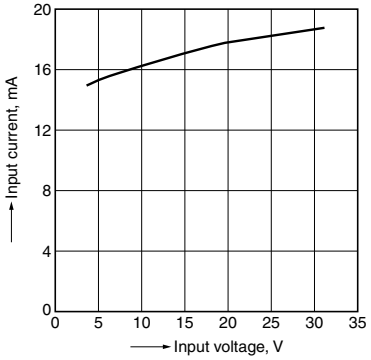


(2) 10 A type (AQAD171DL)

Ambient temperature: 20°C 68°F



3. Input current vs. input voltage characteristics

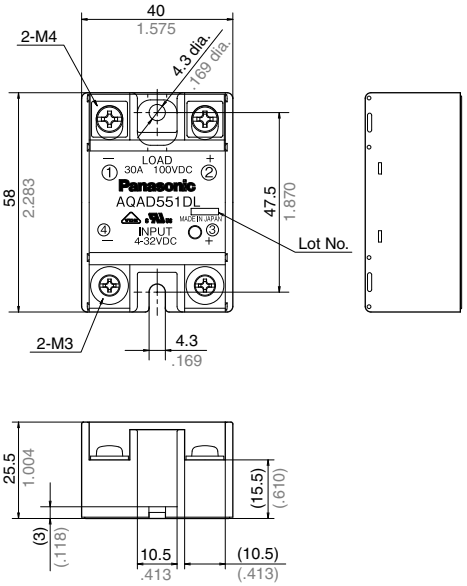


DIMENSIONS (mm inch)

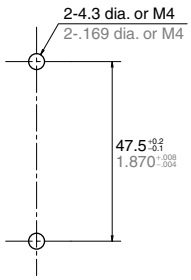
The CAD data of the products with a CAD mark can be downloaded from: https://industrial.panasonic.com/ac/e/

CAD

External dimensions



Mounting dimensions



General tolerance: ±1.0 ±.039

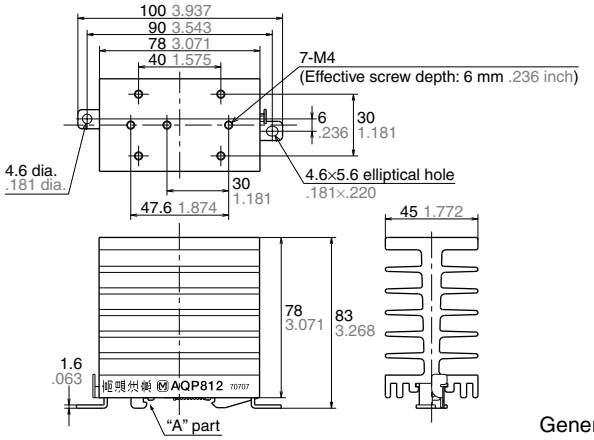
ACCESSORIES (mm inch)

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

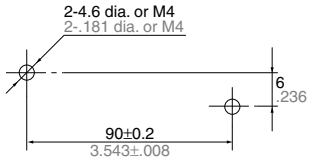
AQP-HS-SJ20A Slim Heat Sink

CAD

External dimensions



Mounting dimensions



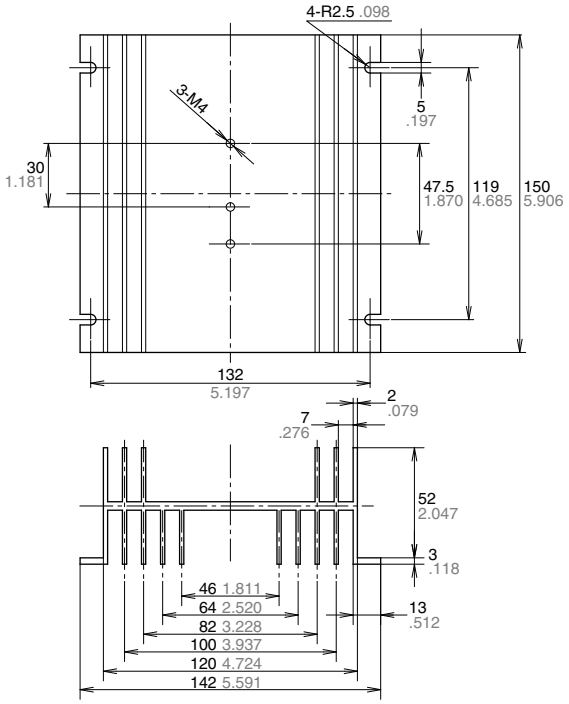
General tolerance: ±1.0 ±.039

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

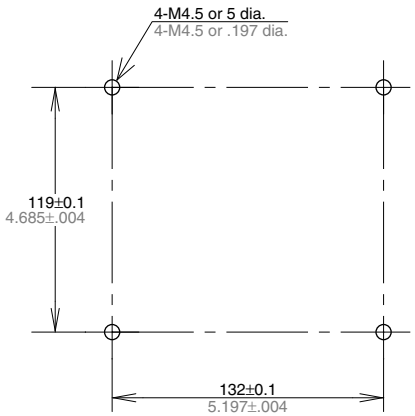
AQP-HS-J25A Standard Heat Sink

CAD

External dimensions



Mounting dimensions

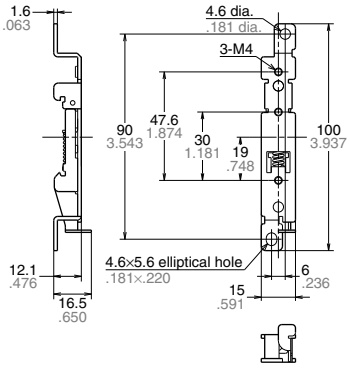


General tolerance: ±1.0 ±.039

AQP-DPJ DIN Rail Mounting Plate

CAD

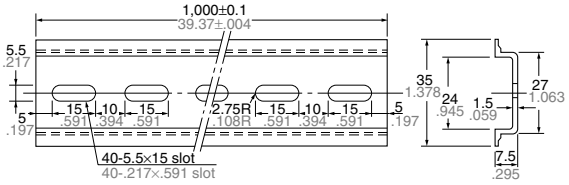
External dimensions



General tolerance: ±1.0 ±.039

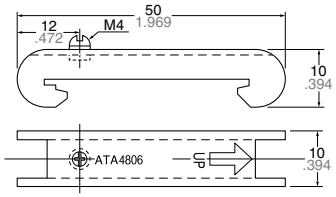
AT8-DLA1 Mounting Rail

CAD



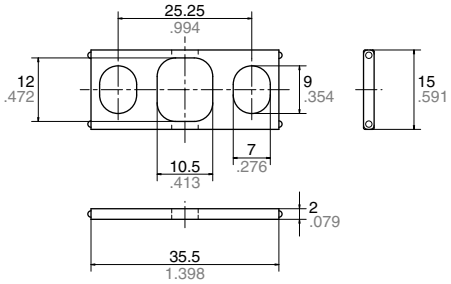
AT8-DLE Fastening plate

CAD



AQA801 Terminal cover

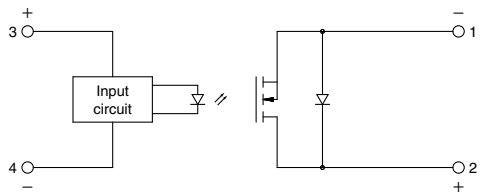
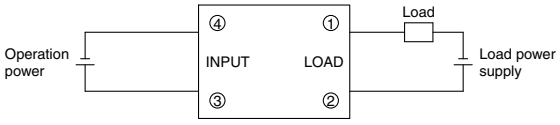
CAD



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: ±1.0 ±.039

SCHEMATIC AND WIRING DIAGRAMS

Schematic	Output configuration	Load	Wiring diagram
	1 Form A	DC	

Please contact .....

Panasonic Corporation
Electromechanical Control Business Division
■ 1006, Oaza Kadoma, Kadoma-shi, Osaka 571-8506, Japan
industrial.panasonic.com/ac/e/

Panasonic®

ASCTB324E-3 201806-T