

NAIS

AQ-N SOLID STATE RELAY

AQ-N RELAYS



FEATURES

- Amazing cost performance
- Five types available from 10 A to 40 A.
- Built-in varistor
- Includes operation LED (red)
- Dielectric voltage of 4,000 V
- 4 to 32 V DC input voltage.

TYPICAL APPLICATIONS

- Molding machine (heater control)
- Temperature controlled bath (heater control)
- Printing machines (heater control)
- Machine tools (heater control)

TYPES

1. Standard type

Type	Load current	Load voltage	Part No.
Zero-cross type	10A	75 to 250V AC	AQN111
	15A		AQN211
	20A		AQN311
	25A		AQN411
	40A		AQN611

2. With LED display type

Type	Load current	Load voltage	Part No.
Zero-cross type	10A	75 to 250V AC	AQN111L
	15A		AQN211L
	20A		AQN311L
	25A		AQN411L
	40A		AQN611L

3. With varistor type

Type	Load current	Load voltage	Part No.
Zero-cross type	10A	75 to 250V AC	AQN111V
	15A		AQN211V
	20A		AQN311V
	25A		AQN411V
	40A		AQN611V

4. With varistor and LED display type

Type	Load current	Load voltage	Part No.
Zero-cross type	10A	75 to 250V AC	AQN111VL
	15A		AQN211VL
	20A		AQN311VL
	25A		AQN411VL
	40A		AQN611VL

AQ-N SOLID STATE RELAY
ASCT1B281E '04.1

New

ORDERING INFORMATION

Ex. AQN

1

1

1

Load current	Load voltage	Input voltage	Type
1: 10 A 2: 15 A 3: 20 A 4: 25 A 6: 40 A	1: 75 to 250 V AC (Zero-corss)	1: 4 to 32 V DC	Nil: None V: Built-in varistor L: LED indication VL: Built-in varistor and LED indication

RATINGS

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

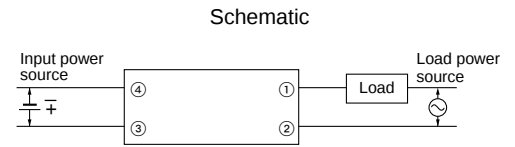
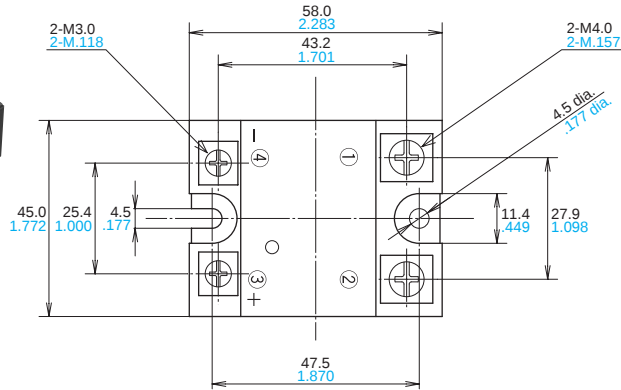
Item	Type	10A	15A	20A	25A	40A	Remarks
	Part No.	AQN111 AQN111L AQN111V AQN111VL	AQN211 AQN211L AQN211V AQN211VL	AQN311 AQN311L AQN311V AQN311VL	AQN411 AQN411L AQN411V AQN411VL	AQN611 AQN611L AQN611V AQN611VL	
Input side	Input voltage	4 to 32V					See REFERENCE DATA 3
	Input current	Max. 20mA					See REFERENCE DATA 3
	Drop-out voltage	Min. 1V					
Output side	Max. load current	10A	15A	20A	25A	40A	See REFERENCE DATA 1
	Load voltage	75V to 250V					
	Frequency	45Hz to 65Hz					
	Non-repetitive surge current	100A	150A	200A	250A	400A	In one cycle at 60Hz, See REFERENCE DATA 2
	Max. “OFF-state” leakage current	Max. 10mA					at 60Hz
	Max. “ON-state” voltage drop	Min. 1.6V					at Max. carrying current
	Min. load current	100mA					

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

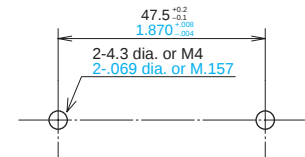
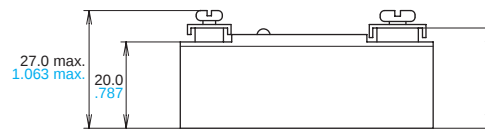
Type	10A	15A	20A	25A	40A	Remarks
Part No.	AQN111	AQN211	AQN311	AQN411	AQN611	
	AQN111L	AQN211L	AQN311L	AQN411L	AQN611L	
	AQN111V	AQN211V	AQN311V	AQN411V	AQN611V	
	AQN111VL	AQN211VL	AQN311VL	AQN411VL	AQN611VL	
Operate time, max.	(1/2 cycle of voltage sine wave) + 1ms					
Release time, max.	(1/2 cycle of voltage sine wave) + 1ms					
Insulation resistance, min.	100MΩ between input and output					Using 500 V DC megger
Breakdown voltage	4,000 Vrms between input and output 2,500 Vrms among input, output and case					for 1min.
Vibration resistance (Functional)	10 to 55Hz double amplitude of 1.5mm					X, Y, Z axes
Shock resistance (Functional)	Min. 980 m/s²					X, Y, Z axes
Ambient temperature	-20°C to +80°C -4°F to +176°F					Non-condensing at low temperatures
Storage temperature	-25°C to +85°C -13°F to +185°F					
Operational method	Zero-cross (Turn-ON and Turn-OFF)					

DIMENSIONS

* The right figure is the LED display type.
The standard type has the same dimensions.

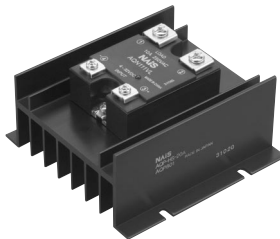


Mounting dimensions

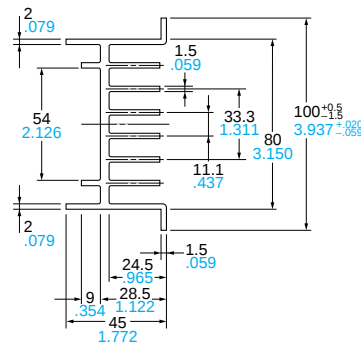
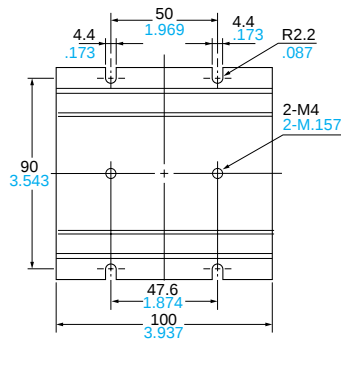


ACCESSORIES

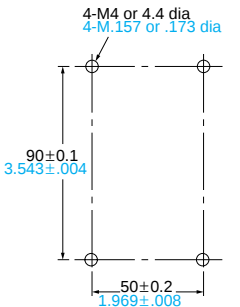
Heat sink (For 10A, 15A, 20A)



AQP-HS-20A



Mounting dimensions

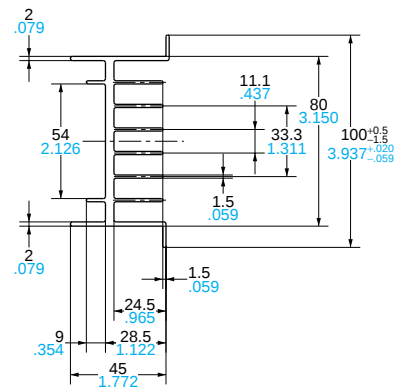
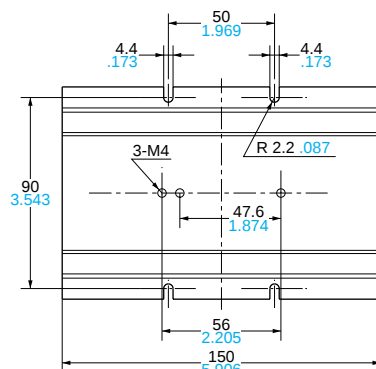


General tolerance: $\pm 0.5 \pm 0.020$

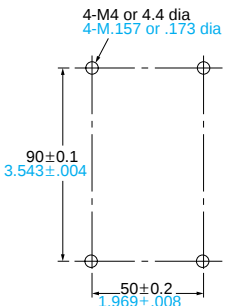
Heat sink (For 25A)



AQP-HS-30/40A



Mounting dimensions

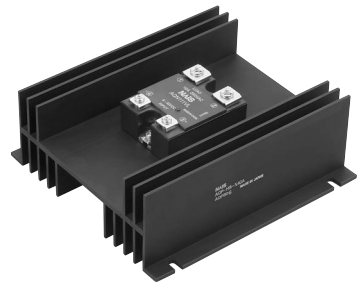


General tolerance: $\pm 0.5 \pm 0.020$

AQ-N

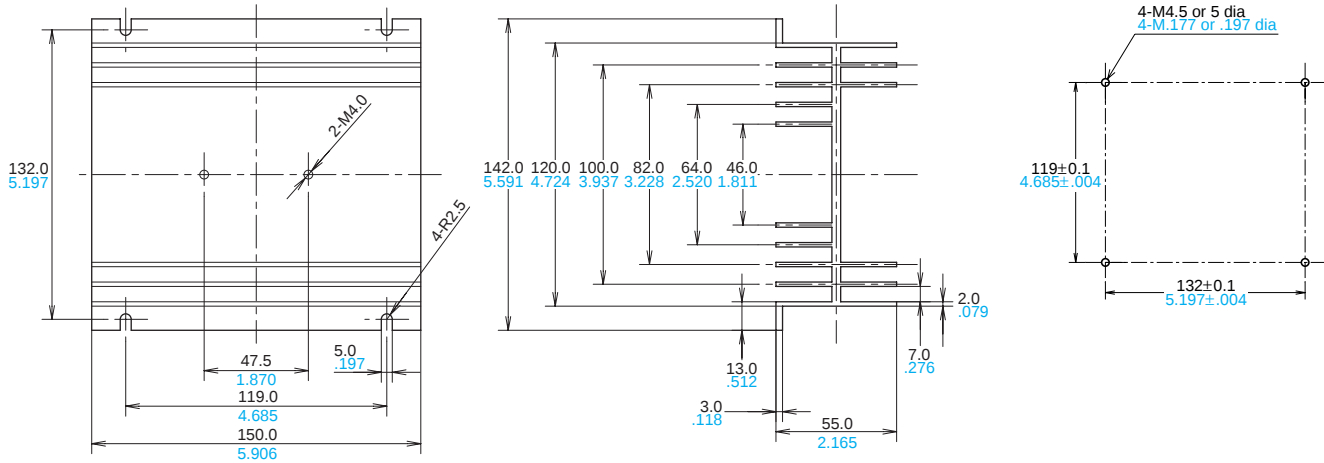
Heat sink (For 40A)

mm inch



AQP-HS-N40

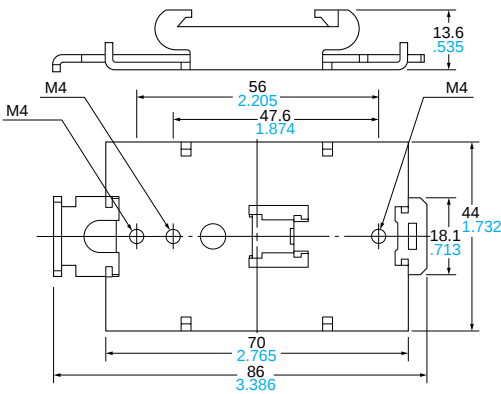
Mounting dimensions



DIN rail mounting plate



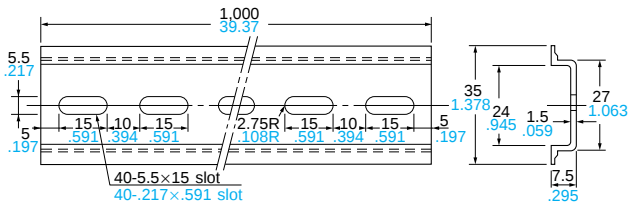
AQP-DP



Mounting rail



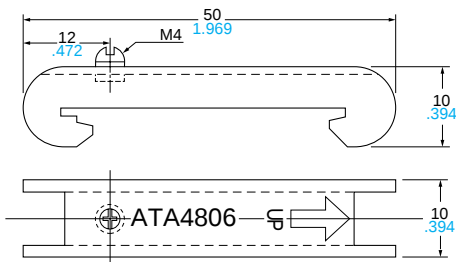
AT8-DLA1



Fastening plate



ATA4806



REFERENCE DATA

1. Load current vs. ambient temperature

Use load current within range specified in the figure below.

Tested condition

(1) With external heat sink

1) (a) 10A, 15A, 20A type

Shown with standard heat sink
(AQP-HS-20A)

(b) Shown with 25A type standard heat sink
(AQP-HS-30/40A)

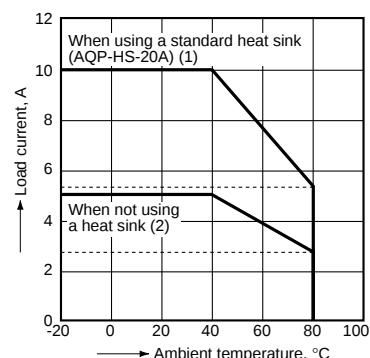
(c) Shown with 40A type standard heat sink
(AQP-HS-N40)

2) If attached to a heat sink, use a heat
conductive compound of similar coating to
improve cooling.

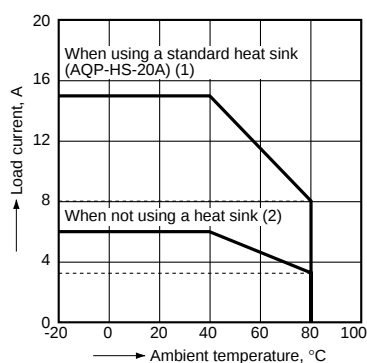
(2) Without external heat sink

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.

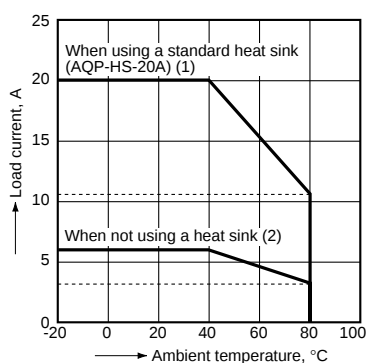
(1) 10 A type



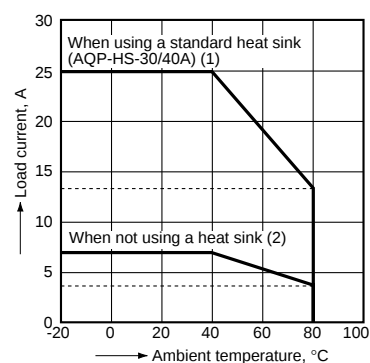
(2) 15 A type



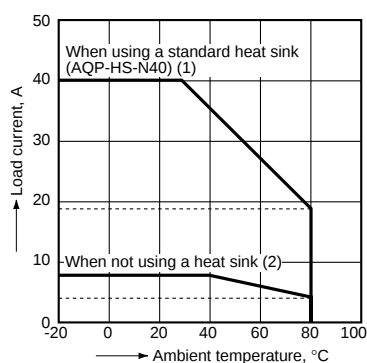
(3) 20 A type



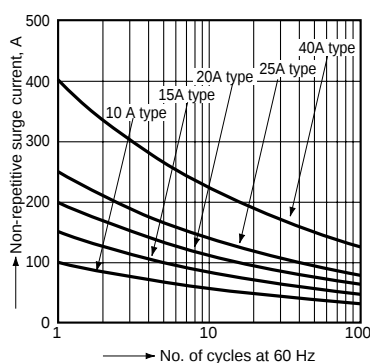
(4) 25 A type



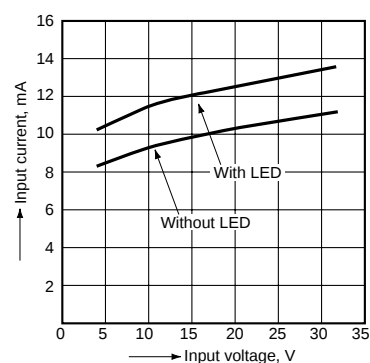
(5) 40 A type



2. Non-repetitive surge current vs. carrying time



3. Input current vs. input voltage 10A, 15A, 20A, 25A, 40A common



CAUTIONS FOR USE

Refer to CAUTIONS FOR USE

Internet Homepage

- | | |
|--|---|
| ◆ North America : http://www.aromat.com/ | ◆ Asia & others : http://www.nais-e.com/ |
| ◆ Europe : http://www.mew-europe.com/ | • (Japanese) : http://www.mac-j.co.jp/ |
| | • (Chinese) : http://www.cmew.com.cn/ |

These materials are printed on ECF pulp.
These materials are printed with earth-friendly vegetable-based (soybean oil) ink.



Please contact

Matsushita Electric Works, Ltd.

Automation Controls Company

■ Head Office: 1048, Kadoma, Kadoma-shi, Osaka 571-8686, Japan

■ Telephone: +81-6-6908-1050

■ Facsimile: +81-6-6908-5781

<http://www.nais-e.com/>

COPYRIGHT © 2004 All Rights Reserved