Panasonic
ideas for life

1a 30A polarized power relays

DQ RELAYS (ADQ)

RoHS compliant

FEATURES

1. **30A capacity in small size**
2. **Contributes to device energy savings with latching type.**
3. **High insulation**
   4,000V AC (between contacts and coil)
   Surge 10,000V (between contacts and coil)
4. **Cd-free, Pb-free**
5. **Sealed construction**
6. **UL/C-UL approved**

TYPICAL APPLICATIONS

1. **Time switches**
2. **Electric water heaters**
3. **Remote control of electric power meters**

ORDERING INFORMATION

ADQ [ ] [3] [Q] [0] [ ]

Operating function
1: 1 coil latching (1 Form A)
2: 2 coil latching (1 Form A)

Contact capacity
3: 30 A

Terminal shape
Q: 250 Faston terminal

Contact characteristics
0: Standard contact

Nominal coil voltage (DC)
4H: 4.5 V, 06: 6 V, 09: 9 V, 12: 12 V, 24: 24 V

TYPES

Contact arrangement	Nominal coil voltage	Part No.	
		1 coil latching	2 coil latching
1 Form A	4.5V DC	ADQ13Q04H	ADQ23Q04H
	6V DC	ADQ13Q006	ADQ23Q006
	9V DC	ADQ13Q009	ADQ23Q009
	12V DC	ADQ13Q012	ADQ23Q012
	24V DC	ADQ13Q024	ADQ23Q024

Standard packing: Carton: 20 pcs.; Case: 200 pcs.

RATING

1. Coil data

1) 1 coil latching

Nominal coil voltage	Set voltage* (at 20°C 68°F)	Reset voltage* (at 20°C 68°F)	Nominal operating current [±10%] (at 20°C 68°F)	Coil resistance [±10%] (at 20°C 68°F)	Nominal operating power	Max. applied voltage (at 20°C 68°F)
4.5V DC	70%V or less of nominal voltage (Initial)	70%V or less of nominal voltage (Initial)	111.1mA	40.5Ω	500mW	130%V of nominal voltage
6V DC			83.3mA	72Ω		
9V DC			55.6mA	162Ω		
12V DC			41.7mA	288Ω		
24V DC			20.8mA	1,152Ω		

* Pulse, direction of measurement: Terminal is downward.

2) 2 coil latching

Nominal coil voltage	Set voltage* (at 20°C 68°F)	Reset voltage* (at 20°C 68°F)	Nominal operating current [±10%] (at 20°C 68°F)		Coil resistance [±10%] (at 20°C 68°F)		Nominal operating power		Max. applied voltage (at 20°C 68°F)
			Set coil	Reset coil	Set coil	Reset coil	Set coil	Reset coil	
4.5V DC	70%V or less of nominal voltage (Initial)	70%V or less of nominal voltage (Initial)	221.7mA	221.7mA	20.3Ω	20.3Ω	1,000mW	1,000mW	130%V of nominal voltage
6V DC			166.7mA	166.7mA	36Ω	36Ω			
9V DC			111.1mA	111.1mA	81Ω	81Ω			
12V DC			83.3mA	83.3mA	144Ω	144Ω			
24V DC			41.7mA	41.7mA	576Ω	576Ω			

* Pulse, direction of measurement: Terminal is downward.

2. Specifications

Characteristics	Item		Specifications
Contact	Arrangement		1 Form A
	Contact resistance (Initial)		Max. 30 mΩ (By voltage drop 6 V DC 1A)
	Contact material		$AgSnO_2$ type
Rating	Nominal switching capacity (resistive load)		30 A 250V AC
	Max. switching power (resistive load)		7,500 V A
	Max. switching voltage		250V AC
	Max. switching current		30 A
	Nominal operating power		500mW (1 coil latching), 1,000mW (2 coil latching)
	Min. switching capacity (Reference value)*1		100mA 5 V DC
Electrical characteristics	Insulation resistance (Initial)		Min. 1,000MΩ (at 500V DC) Measurement at same location as “Breakdown voltage” section.
	Breakdown voltage (Initial)	Between open contacts	1,500 Vrms for 1min. (Detection current: 10mA.)
		Between contact and coil	4,000 Vrms for 1min. (Detection current: 10mA.)
	Surge breakdown voltage*2 (Initial)	Between contact and coil	Min. 10,000 V
	Temperature rise (at 65°C 149°F) (coil)		Max. 50°C (By resistive method, max. switching current) (Coil; de-energized)
	Set time (at 20°C 68°F)		Max. 20 ms (Nominal coil voltage applied to the coil, excluding contact bounce time.)
	Reset time (at 20°C 68°F)		Max. 20 ms (Nominal coil voltage applied to the coil, excluding contact bounce time.)
Mechanical characteristics	Shock resistance	Functional	Min. 200 m/s^2 (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.)
		Destructive	Min. 1,000 m/s^2 (Half-wave pulse of sine wave: 6 ms.)
	Vibration resistance	Functional	10 to 55 Hz at double amplitude of 1.5 mm (Detection time: 10μs.)
		Destructive	10 to 55 Hz at double amplitude of 2 mm
Expected life	Mechanical		Min. 10^6 (at 180 times/min.)
	Electrical		Min. 10^4 (At nominal switching capacity, operating frequency: 3s ON, 3s OFF)
Conditions	Conditions for operation, transport and storage*3		Ambient temperature: –40°C to +65°C –40°F to +149°F Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)
	Max. operating speed		10 times/min. (at rated load)
Unit weight			Approx. 35 g 1.23 oz

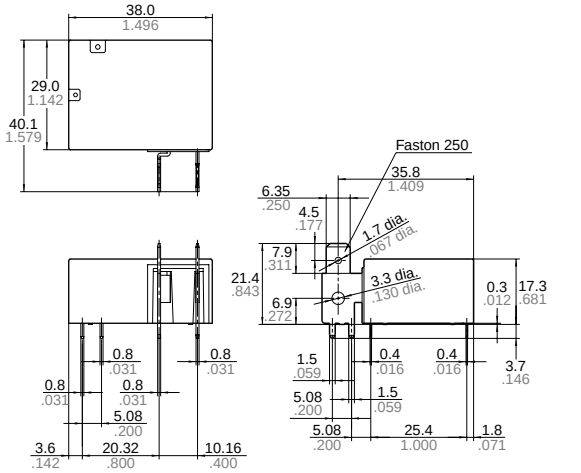
Notes: *1. This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.
*2. Wave is standard shock voltage of ±1.2×50μs according to JEC-212-1981
*3. The upper limit of the ambient temperature is the maximum temperature that can satisfy the coil temperature rise value. Refer to Usage, transport and storage conditions in NOTES.

DIMENSIONS (mm inch)

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

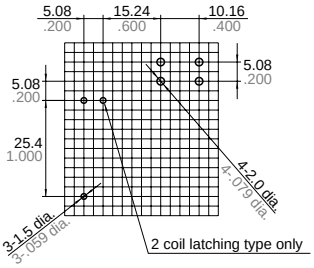
CAD Data

External dimensions



General tolerance: ±0.3 ±.012

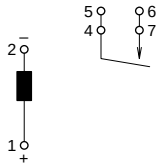
PC board pattern (Bottom view)



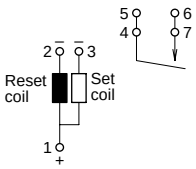
Tolerance: ±0.1 ±.004

Schematic (Bottom view)

1 coil latching type (Reset condition)



2 coil latching type (Reset condition)



SAFETY STANDARDS

UL/C-UL (Recognized)	
File No.	Contact rating
E43149	30A 277V AC

* CSA standard: Certified by C-UL

NOTES

1. Coil connection

When connecting coils, refer to the wiring diagram to prevent mis-operation or malfunction.

2. Others

If more than 20 A is delivered via the plug-in terminal connection, to prevent loosening of contacts loss long periods of operation, ensure that the plug-in terminal is soldered to the receptacle terminal.

For Cautions for Use.

AMEYA360
Components Supply Platform

Authorized Distribution Brand :

Website :

Welcome to visit www.ameya360.com

Contact Us :

- ### Address :

  401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
  Minhang District, Shanghai , China

- ### Sales :

  Direct +86 (21) 6401-6692

  Email amall@ameya360.com

  QQ 800077892

  Skype ameyasales1 ameyasales2

- ### Customer Service :

  Email service@ameya360.com

- ### Partnership :

  Tel +86 (21) 64016692-8333

  Email mkt@ameya360.com