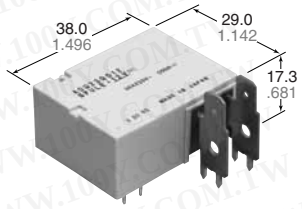
Panasonic
ideas for life

30A POWER LATCHING RELAY

DQ RELAYS (ADQ)



RoHS Directive compatibility information
http://www.nais-e.com/

FEATURES

1. **30A capacity in small size**
2. **Latching type**
3. **High insulation**
   4,000V AC (between contacts and coil)
   Surge 10,000V (between contacts and coil)
4. **Sealed construction**

SPECIFICATIONS

Contact

Arrangement		1 Form A
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)		30 mΩ
Contact material		$AgSnO_2$ type
Rating (resistive load)	Nominal switching capacity	30 A 250V AC
	Max. switching power	7,500 V A
	Max. switching voltage	250V AC
	Max. switching current	30 A
	Min. switching capacity (Reference value)#1	100 mA, 5 V DC
Expected life (min. operations)	Mechanical (at 180 cpm)	10^6
	Electrical (Resistive load)	10^{4*1}

Coil

	Nominal operating power
1 coil latching	500 mW
2 coil latching	1,000 mW

#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.

Characteristics

Max. operating speed (at rated load)		10 cpm
Initial insulation resistance*2		Min. 1,000 MΩ (at 500 V DC)
Initial breakdown voltage*3	Between open contacts	1,500 Vrms for 1 min.
	Between contacts and coil	4,000 Vrms for 1 min.
Surge voltage between contact and coil*4		Min. 10,000 V (initial)
Set time*5 (at 20°C) (at nominal voltage)		Max. 20ms
Reset time*5 (at 20°C) (at nominal voltage)		Max. 20ms
Temperature rise (at 65°C)*6		Max. 50°C (Coil; de-energized)
Shock resistance	Functional*7	Min. 200 m/s²{20 G}
	Destructive*8	Min. 1,000 m/s²{100 G}
Vibration resistance	Functional*9	10 to 55Hz at double amplitude of 1.5mm
	Destructive	10 to 55Hz at double amplitude of 2.0mm
Conditions for operation, transport and storage*10 (Not freezing and condensing at low temperature)	Ambient temperature*11	–40°C to +65°C –40°F to +149°F
	Humidity	5 to 75% R.H.
Unit weight		Approx. 35 g 1.23 oz

Remarks

* Specifications will vary with foreign standards certification ratings.
*1 At nominal switching capacity, operating frequency: 3s ON, 3s OFF
*2 Measurement at same location as "Initial breakdown voltage" section.
*3 Detection current: 10mA
*4 Wave is standard shock voltage of ±1.2 × 50μs according to JEC-212-1981
*5 Excluding contact bounce time.
*6 By resistive method, max. switching current
*7 Half-wave pulse of sine wave: 11 ms; detection time: 10 μs
*8 Half-wave pulse of sine wave: 6 ms
*9 Detection time: 10 μs
*10 Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT
*11 Under the packing condition, allowable temperature range is from –40 to +65°C –40° to +149°F.

TYPICAL APPLICATIONS

- Time switches
- Electric water heaters
- Remote control of electric power meters

ORDERING INFORMATION

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

Operating function	Contact capacity	Terminal shape	Contact characteristics	Coil voltage (DC)
1: 1 coil latching 2: 2 coil latching	3: 30 A	Q: 250 Faston terminal	0: Standard contact	4H: 4.5 V 12: 12 V 06: 6 V 24: 24 V 09: 9 V

TYPES AND COIL DATA (at 20°C 68°F)

• 1 coil latching type

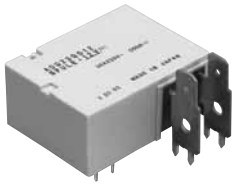
Contact arrangement	Part No.	Nominal voltage, V DC	Set voltage, max. V DC (initial)	Reset voltage, max. V DC (initial)	Coil resistance, Ω (±10%)	Nominal operating current, mA (±10%)	Nominal operating power, mW	Max. allowable voltage, V DC
1 Form A	ADQ13Q04H	4.5	3.15	3.15	40.5	111.1	500	5.85
	ADQ13Q006	6	4.2	4.2	72	83.3	500	7.8
	ADQ13Q009	9	6.3	6.3	162	55.6	500	11.7
	ADQ13Q012	12	8.4	8.4	288	41.7	500	15.6
	ADQ13Q024	24	16.8	16.8	1,152	20.8	500	31.2

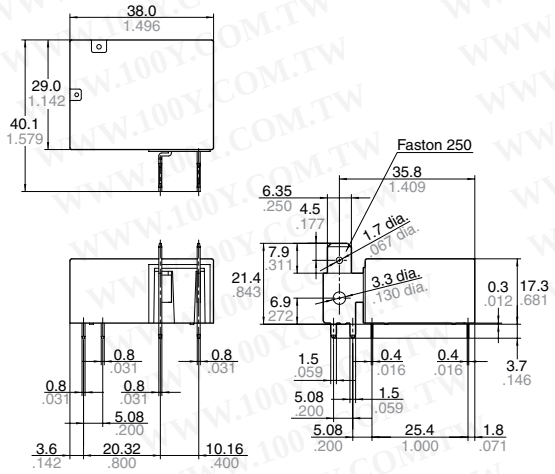
• 2 coil latching type

Contact arrangement	Part No.	Nominal voltage, V DC	Set voltage, max. V DC (initial)	Reset voltage, max. V DC (initial)	Coil resistance, Ω (±10%)		Nominal operating current, mA (±10%)		Nominal operating power, mW		Max. allowable voltage, V DC
					Set coil	Reset coil	Set coil	Reset coil	Set coil	Reset coil	
1 Form A	ADQ23Q04H	4.5	3.15	3.15	20.3	20.3	221.7	221.7	1,000	1,000	5.85
	ADQ23Q006	6	4.2	4.2	36	36	166.7	166.7	1,000	1,000	7.8
	ADQ23Q009	9	6.3	6.3	81	81	111.1	111.1	1,000	1,000	11.7
	ADQ23Q012	12	8.4	8.4	144	144	83.3	83.3	1,000	1,000	15.6
	ADQ23Q024	24	16.8	16.8	576	576	41.7	41.7	1,000	1,000	31.2

DIMENSIONS

mm inch

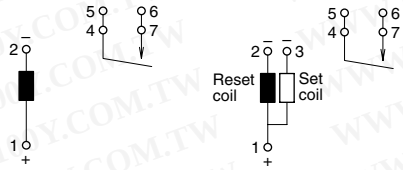




General tolerance: ±0.3 ±.012

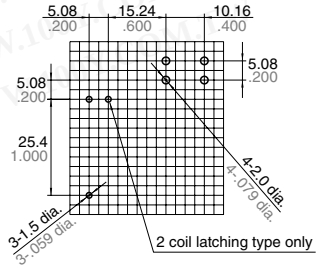
Schematic (Bottom view)

1 coil latching type (Reset condition) 2 coil latching type (Reset condition)



Note) Terminal No.3 is only for 2 coil latching type.

PC board pattern (Bottom view)



Tolerance: ±0.1 ±.004

NOTES

If the relay is used over 20A current through plug-in terminal, plug-in terminal should be soldered on receptacle terminal for preventing the loose contact during long time using.

For Cautions for Use, see Relay Technical Information.