



FEATURES

- Compact size:**
 - 1 Form A (10A 250V AC),
 - 1 Form A 1 Form B (8A 250V AC)
- Latching types available**
- Compliant with IEC EN61010-1.**
Reinforced insulation with 6 mm distance between input and output.
- Electrical life of Min. 2×10^5 times (1 Form A type) realized with inductive load ($\cos\phi=0.4$, $L/R=7ms$, 5A 250V AC)**
- Socket also available.**

TYPICAL APPLICATIONS

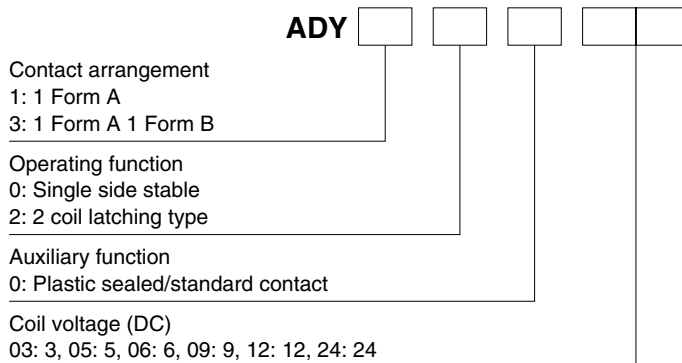
- Control for industrial machines (machine tools, robotics)**
- Output relays for temperature controllers, PLCs, timers, sensors.**
- Measuring equipment**
- Security equipment**

RoHS Directive compatibility information
<http://www.mew.co.jp/ac/e/environment/>

	Product name	Part No.
1 Form A	Single side stable type	DK1a-PS
	2 coil latching type	DK1a-PSL2
1 Form A 1 Form B	Single side stable type	DK2a-PS
	2 coil latching type	DK2a-PSL2

Please see "DK relay socket" for details.

ORDERING INFORMATION



Note: UL/CSA, TÜV approved type is standard.

TYPES

Contact arrangement	Nominal coil voltage	Single side stable	2 coil latching
		Part No.	Part No.
1 Form A	3V DC	ADY10003	ADY12003
	5V DC	ADY10005	ADY12005
	6V DC	ADY10006	ADY12006
	12V DC	ADY10012	ADY12012
	24V DC	ADY10024	ADY12024
1 Form A 1 Form B	3V DC	ADY30003	ADY32003
	5V DC	ADY30005	ADY32005
	6V DC	ADY30006	ADY32006
	12V DC	ADY30012	ADY32012
	24V DC	ADY30024	ADY32024

Standard packing: Tube: 50 pcs.; Case: 500 pcs.

DY (ADY1, 3)

RATING

1. Coil data

1) Single side stable

Nominal coil voltage	Pick-up voltage (at 20°C 68°F)	Drop-out voltage (at 20°C 68°F)	Nominal operating current [$\pm 10\%$] (at 20°C 68°F)	Coil resistance [$\pm 10\%$] (at 20°C 68°F)	Nominal operating power	Max. allowable voltage (at 20°C 68°F)
3V DC	70%V or less of nominal voltage (Initial)	10%V or more of nominal voltage (Initial)	66.6mA	45 Ω	200mW	130%V of nominal voltage
5V DC			40mA	125 Ω		
6V DC			33.3mA	180 Ω		
12V DC			16.6mA	720 Ω		
24V DC			8.3mA	2,880 Ω		

2) 2 coil latching

Nominal coil voltage	Set voltage (at 20°C 68°F)	Reset voltage (at 20°C 68°F)	Nominal operating current [$\pm 10\%$] (at 20°C 68°F)		Coil resistance [$\pm 10\%$] (at 20°C 68°F)		Nominal operating power		Max. allowable voltage (at 20°C 68°F)
			Set coil	Reset coil	Set coil	Reset coil	Set coil	Reset coil	
3V DC	70%V or less of nominal voltage (Initial)	70%V or less of nominal voltage (Initial)	66.6mA	66.6mA	45 Ω	45 Ω	200mW	200mW	130%V of nominal voltage
5V DC			40mA	40mA	125 Ω	125 Ω			
6V DC			33.3mA	33.3mA	180 Ω	180 Ω			
12V DC			16.6mA	16.6mA	720 Ω	720 Ω			
24V DC			8.3mA	8.3mA	2,880 Ω	2,880 Ω			

2. Specifications

Characteristics	Item	Specifications		
		1 Form A	1 Form A 1 Form B	
Contact	Arrangement			
	Initial contact resistance, max.	Max. 30 m Ω (By voltage drop 6 V DC 1A)		
	Contact material	Au-flashed AgSnO ₂ type		
Rating	Nominal switching capacity	Resistive load	10A 250V AC, 10A 30V DC	8A 250V AC, 8A 30V DC
		Inductive load (cos ϕ = 0.4, L/R = 7ms)	5A 250V AC	3.5A 250V AC
	Max. switching capacity (Reference value)	Resistive load	2,500V A, 300W	2,000V A, 240W
		Inductive load (cos ϕ = 0.4, L/R = 7ms)	1,250V A	875V A
	Max. switching voltage	380V AC, 125V DC		
	Max. switching current	10 A	8 A	
	Min. switching capacity (Reference value)*1	5V 10mA		
Nominal operating power	200 mW			
Electrical characteristics	Insulation resistance (Initial)	Min. 1,000M Ω (at 500V DC) Measurement at same location as "Initial breakdown voltage" section.		
	Breakdown voltage (Initial)	Between open contacts	1,000 Vrms for 1 min. (Detection current: 10 mA)	
		Between contact and coil	4,000 Vrms for 1 min. (Detection current: 10 mA)	
	Surge breakdown voltage*2	Between contact and coil	10,000 V (initial)	
	Temperature rise (at 70°C 158°F)	Max. 40°C (By resistive method, nominal voltage applied to the coil; max. switching current)		
	Operate time [Set time] (at 20°C 68°F)	Max. 10 ms [10 ms] (Nominal voltage applied to the coil, excluding contact bounce time.)		
Release time [Reset time] (at 20°C 68°F)	Max. 8 ms [10 ms] (Nominal voltage applied to the coil, excluding contact bounce time.) (without diode)			
Mechanical characteristics	Shock resistance	Functional	Min. 98 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10 μ s.)	
		Destructive	Min. 980 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: 10 μ s.)	
		Destructive	10 to 55 Hz at double amplitude of 3 mm	
Expected life	Mechanical	Min. 5 $\times 10^7$ (at 300 cpm)		
	Electrical	Min. 2 $\times 10^5$: 1 Form A inductive load (at 20 cpm) (at rated load); Min. 10 ⁵ : 1 Form A resistive load, 1 Form A 1 Form B resistive load, 1 Form A 1 Form B inductive load (at 20 cpm) (at rated load)		
Conditions	Conditions for operation, transport and storage*3	Ambient temperature: -40°C to +70°C -40°F to +158°F; Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)		
	Max. operating speed (at rated load)	20 cpm		
Unit weight	Approx. 6g .21oz			

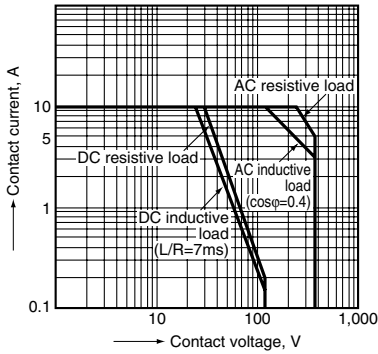
Notes: *1 This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

*2 Wave is standard shock voltage of $\pm 1.2 \times 50 \mu$ s according to JEC-212-1981

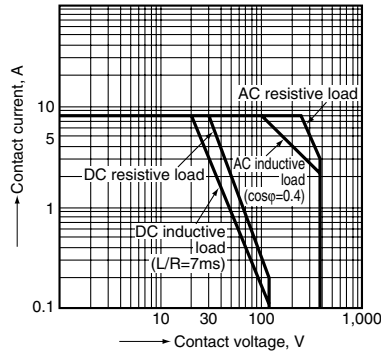
*3 Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT.

REFERENCE DATA

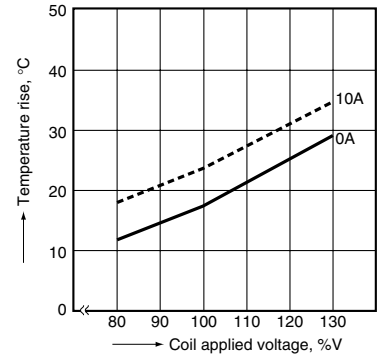
1-(1). Maximum switching capacity
(1 Form A)
Tested sample: ADY10024



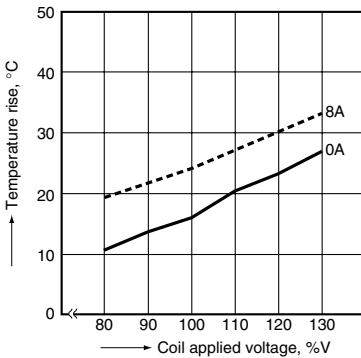
1-(2). Maximum switching capacity
(1 Form A 1 Form B)
Tested sample: ADY30024



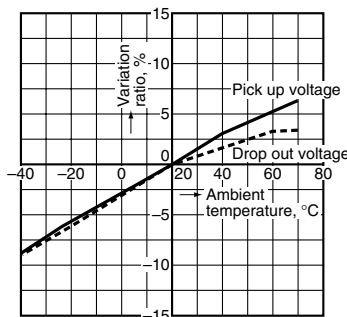
2-(1). Coil temperature rise
(1 Form A)
Tested sample: ADY10024, 6 pcs.
Ambient temperature: 20°C, 68°F



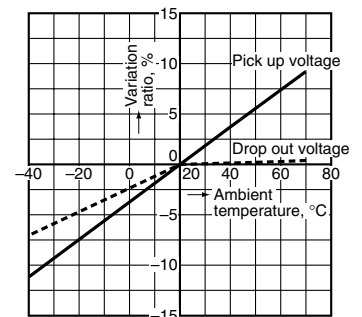
2-(2). Coil temperature rise
(1 Form A 1 Form B)
Tested sample: ADY30024, 6 pcs.
Ambient temperature: 20°C, 68°F



3-(1). Ambient temperature characteristics
(1 Form A)
Tested sample: ADY10024, 6 pcs.
Ambient temperature: -40°C to 70°C -40°F to 158°F



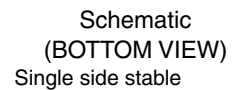
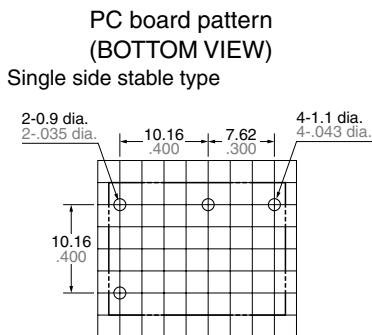
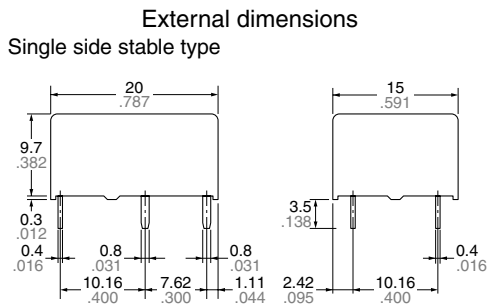
3-(2). Ambient temperature characteristics
(1 Form A 1 Form B)
Tested sample: ADY30024, 6 pcs.
Ambient temperature: -40°C to 70°C -40°F to 158°F



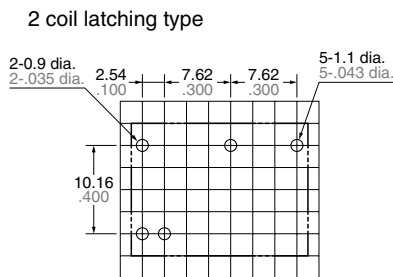
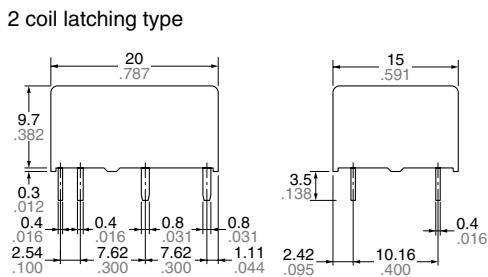
DY (ADY1, 3)

DIMENSIONS (Unit: mm inch)

1. 1 Form A type



(Deenergized condition)



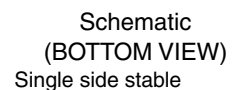
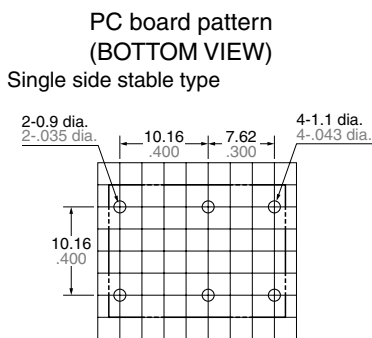
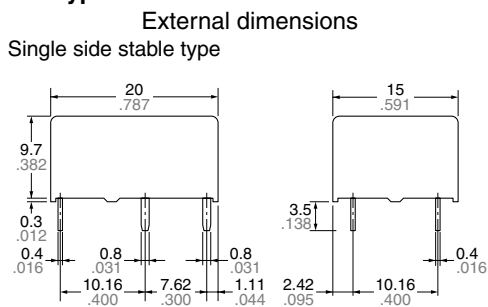
(Reset condition)

Since this is a polarized relay, the connection to the coil should be done according to the above schematic.

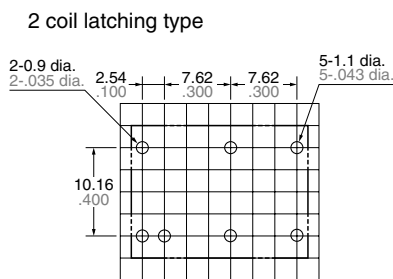
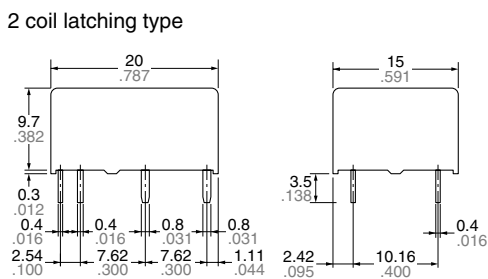
General tolerance: $\pm 0.3 \pm 0.12$

Tolerance: $\pm 0.1 \pm 0.04$

2. 1 Form A 1 Form B type



(Deenergized condition)



(Reset condition)

Since this is a polarized relay, the connection to the coil should be done according to the above schematic.

General tolerance: $\pm 0.3 \pm 0.12$

Tolerance: $\pm 0.1 \pm 0.04$

NOTES

1. Soldering should be done under the following conditions:

- 250°C 482°F within 10s
- 300°C 572°F within 5s
- 350°C 662°F within 3s

Soldering depth: 2/3 terminal pitch

2. External magnetic field

Since DY relays are highly sensitive polarized relays, their characteristics will be affected by a strong external magnetic field. Avoid using the relay under that condition.

3. When using, please be aware that the A contact and B contact sides of 1 Form A and 1 Form B types may go on simultaneously at operate time and release time.

For Cautions for Use, see Relay Technical Information.