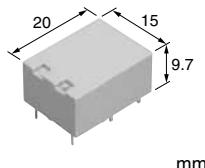


**Electrical life: Min.  $2 \times 10^5$**   
**1 Form A 10A, 1 Form A**  
**1 Form B 8A small**  
**polarized power relays**

## DY RELAYS (ADY)

Protective construction: Sealed type



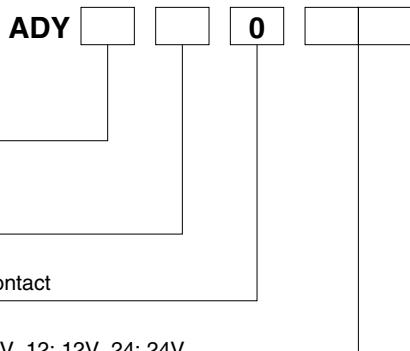
### FEATURES

1. High capacity  
1 Form A (10A 250V AC),  
1 Form A 1 Form B (8A 250V AC)
2. Long insulation distance  
Reinforced insulation with 6 mm  
distance between input and output
3. Variety of contact arrangements  
Wide lineup of 1 Form A, 1 Form A  
A Form B
4. Sockets are available
5. Latching types available

### TYPICAL APPLICATIONS

1. Control for industrial machines
2. Output relays for temperature
3. Measuring equipment
4. Security equipment

### ORDERING INFORMATION



Contact arrangement

1: 1 Form A  
3: 1 Form A 1 Form B

Operate function

0: Single side stable  
2: 2 coil latching type

Auxiliary function

0: Plastic sealed/standard contact

Rated coil voltage (DC)

03: 3V, 05: 5V, 06: 6V, 09: 9V, 12: 12V, 24: 24V

### TYPES

Contact arrangement	Rated coil voltage	Part No.		Standard packing	
		Single side stable	2 coil latching	Carton	Case
1 Form A	3V DC	ADY10003	ADY12003	50 pcs.	500 pcs.
	5V DC	ADY10005	ADY12005		
	6V DC	ADY10006	ADY12006		
	9V DC	ADY10009	ADY12009		
	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		
	9V DC	ADY30009	ADY32009		
	12V DC	ADY30012	ADY32012		
	24V DC	ADY30024	ADY32024		

**RATING****1. Coil data**

## 1) Single side stable

Rated coil voltage	Operate voltage* (at 20°C)	Release voltage* (at 20°C)	Rated operating current [±10%] (at 20°C)	Coil resistance [±10%] (at 20°C)	Rated operating power	Max. allowable voltage (at 20°C)
3V DC	70%V or less of rated coil voltage (Initial)	10%V or more of rated coil voltage (Initial)	66.6mA	45Ω	200mW	130%V of rated coil voltage
5V DC			40mA	125Ω		
6V DC			33.3mA	180Ω		
9V DC			22.2mA	405Ω		
12V DC			16.6mA	720Ω		
24V DC			8.3mA	2,880Ω		

Note: \* Square, pulse drive

## 2) 2 coil latching

Rated coil voltage	Set voltage* (at 20°C)	Reset voltage* (at 20°C)	Rated operating current [±10%] (at 20°C)		Coil resistance [±10%] (at 20°C)		Rated operating power	Max. allowable voltage (at 20°C)
			Set coil	Reset coil	Set coil	Reset coil		
3V DC	70%V or less of rated coil voltage (Initial)	70%V or less of rated coil voltage (Initial)	66.6mA	66.6mA	45Ω	45Ω	200mW	130%V of rated coil voltage
5V DC			40mA	40mA	125Ω	125Ω		
6V DC			33.3mA	33.3mA	180Ω	180Ω		
9V DC			22.2mA	22.2mA	405Ω	405Ω		
12V DC			16.6mA	16.6mA	720Ω	720Ω		
24V DC			8.3mA	8.3mA	2,880Ω	2,880Ω		

Note: \* Square, pulse drive

**2. Specifications**

Item		Specifications	
Contact data	Contact arrangement	1 Form A	1 Form A 1 Form B
	Contact resistance (Initial)	Max. 30 mΩ (By voltage drop 6 V DC 1A)	
	Contact material	Au-flashed AgSnO <sub>2</sub> type	
	Contact rating (Resistive)	10A 250V AC, 10A 30V DC	8A 250V AC, 8A 30V DC
	Max. switching power (Resistive)	2,500VA, 300W	2,000VA, 240W
	Max. switching voltage	250V AC, 125V DC (0.2A)	
	Max. switching current	10 A	8 A
	Min. switching load (Reference value)* <sup>1</sup>	5V 10mA	
Insulation resistance (Initial)		Min. 1,000 MΩ (at 500 V DC) Measured portion is the same as the case of dielectric strength	
Dielectric strength (Initial)	Between open contacts	1,000 Vrms for 1 min. (Detection current: 10 mA)	
	Between contact sets	—	4,000 Vrms for 1 min. (Detection current: 10 mA)
	Between contact and coil	4,000 Vrms for 1 min. (Detection current: 10 mA)	
Surge withstand voltage (Initial)* <sup>2</sup>	Between contact and coil	10,000 V	
Time characteristics	Operate time [Set time] (Initial)	Max. 10 ms [10ms] (at rated coil voltage, at 20°C, without bounce)	
	Release time [Reset time] (Initial)	Max. 8ms [10ms] (at rated coil voltage, at 20°C, without bounce, without diode)	
Shock resistance	Functional	Min. 98 m/s <sup>2</sup> (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.)	
	Destuctive	Min. 980 m/s <sup>2</sup> (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.)	
	Destuctive	10 to 55 Hz at double amplitude of 3 mm	
Expected life	Mechanical	Min. 5×10 <sup>7</sup> (at 300 times/min)	
Conditions	Conditions for operation, transport and storage* <sup>3</sup>	Ambient temperature: -40°C to +70°C Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)	
Unit weight	Approx. 6 g		

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.

**3. Expected electrical life**

Condition: Resistive, at 20 times/min.

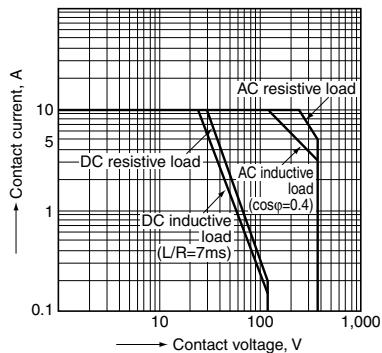
Type	Switching capacity	Number of operations
1 Form A	10A 250V AC 10A 30V DC	Min. 1×10 <sup>5</sup>
1 Form A 1 Form B	8A 250V AC 8A 30V DC	Min. 1×10 <sup>5</sup>

## REFERENCE DATA

### 1-(1). Max. switching capacity

(1 Form A)

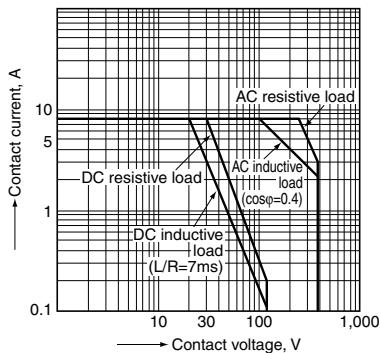
Tested sample: ADY10024



### 1-(2). Max. switching capacity

(1 Form A 1 Form B)

Tested sample: ADY30024

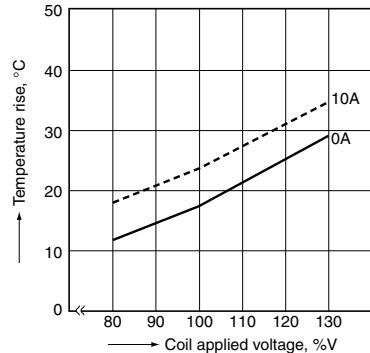


### 2-(1). Coil temperature rise

(1 Form A)

Tested sample: ADY10024, 6 pcs.

Ambient temperature: 20°C

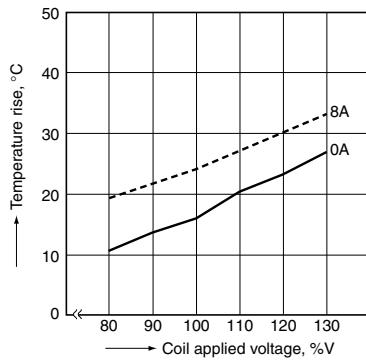


### 2-(2). Coil temperature rise

(1 Form A 1 Form B)

Tested sample: ADY30024, 6 pcs.

Ambient temperature: 20°C

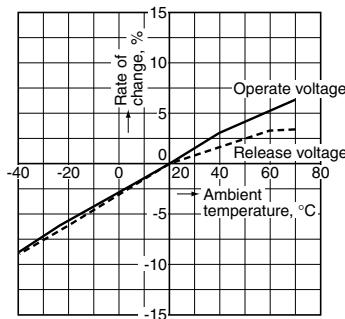


### 3-(1). Ambient temperature characteristics

(1 Form A)

Tested sample: ADY10024, 6 pcs.

Ambient temperature: -40°C to 70°C

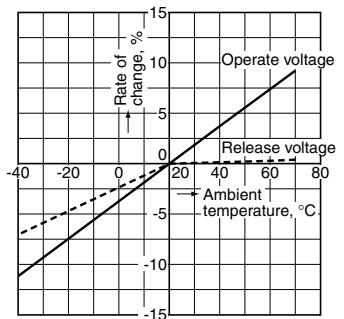


### 3-(2). Ambient temperature characteristics

(1 Form A 1 Form B)

Tested sample: ADY30024, 6 pcs.

Ambient temperature: -40°C to 70°C



## DIMENSIONS (mm)

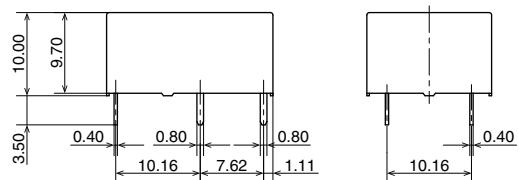
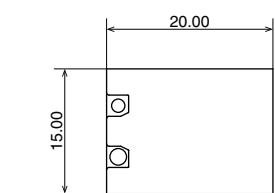
### 1.1 Form A type

**CAD**

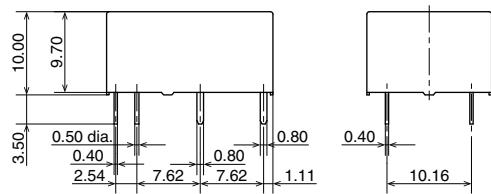
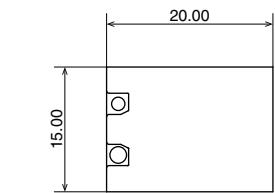


External dimensions

Single side stable type



2 coil latching type



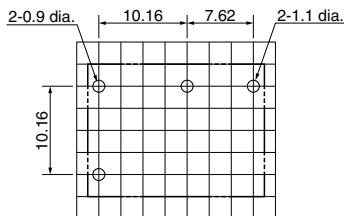
General tolerance:  $\pm 0.3$

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

PC board pattern

(BOTTOM VIEW)

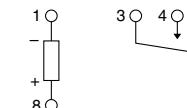
Single side stable type



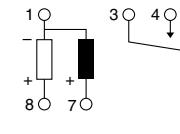
Schematic

(BOTTOM VIEW)

Single side stable



2 coil latching type



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

Tolerance:  $\pm 0.1$

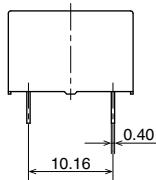
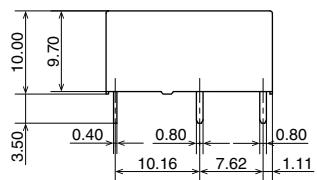
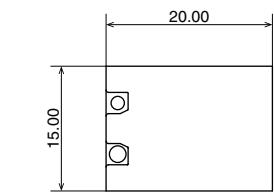
## 2.1 Form A 1 Form B type

CAD

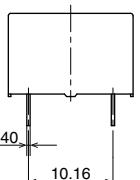
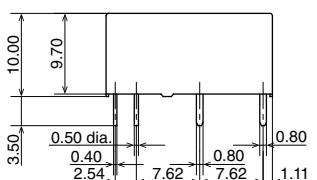
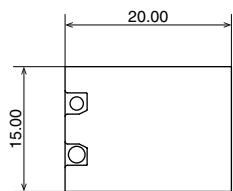


## External dimensions

Single side stable type

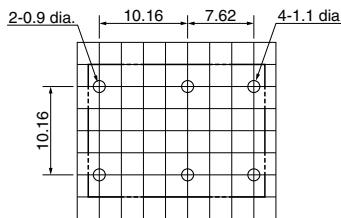


## 2 coil latching type

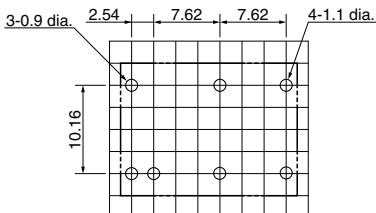
General tolerance:  $\pm 0.3$ 

## PC board pattern (BOTTOM VIEW)

Single side stable type

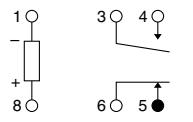


## 2 coil latching type

Tolerance:  $\pm 0.1$ 

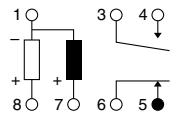
## Schematic (BOTTOM VIEW)

Single side stable



(Deenergized condition)

## 2 coil latching type



(Reset condition)

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

## SAFETY STANDARDS

## ■ UL (Recognized)

## 1 Form A

File No.	Contact rating
E43028	10A 250V AC
	10A 30V DC
	1/3HP 125, 250V AC

## 1 Form A 1 Form B

File No.	Contact rating
E43028	8A 250V AC
	8A 30V DC
	1/4HP 125, 250V AC

## ■ CSA (Certified)

## 1 Form A

File No.	Contact rating
LR26550	10A 250V AC
	10A 30V DC
	1/3HP 125, 250V AC

## 1 Form A 1 Form B

File No.	Contact rating
LR26550	8A 250V AC
	8A 30V DC
	1/4HP 125, 250V AC

## ■ TÜV (Certified)

## 1 Form A

File No.	Contact rating
B 11 12 13461 314	10A 250V AC ( $\cos\phi=1.0$ )
	10A 30V DC (0ms)

## 1 Form A 1 Form B

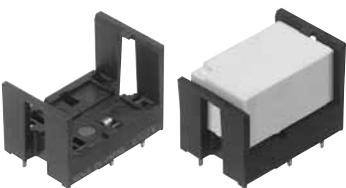
File No.	Contact rating
B 11 12 13461 314	8A 250V AC ( $\cos\phi=1.0$ )
	8A 30V DC (0ms)

## NOTES

1. For cautions for use, please read "GENERAL APPLICATION GUIDELINES".
2. Specification value of operate [set] voltage and release [reset] voltage were measured with a relay oriented terminal down.
3. In case of using this relay, 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.
4. Regarding the set/reset pulse time of the latching type relay, it is recommended to apply rated coil voltage for minimum 50ms pulse across the coil to secure the sure operation considering the ambient temperature and condition change through service life.

### ACCESSORIES

## SOCKET FOR DY RELAY



### TYPES

Type	Part No.		Standard packing	
	Single side stable	2 coil latching	Carton	Case
1 Form A	DK1a-PS	DK1a-PSL2		
1 Form A 1 Form B	DK2a-PS	DK2a-PSL2	50 pcs.	500 pcs.

### RELAY COMPATIBILITY

Relay	Socket	1 Form A		1 Form A 1 Form B	
		Single side stable	2 coil latching	Single side stable	2 coil latching
1 Form A	Single side stable	●	●	—	—
	2 coil latching	—	●	—	—
1 Form A 1 Form B	Single side stable	—	—	●	●
	2 coil latching	—	—	—	●

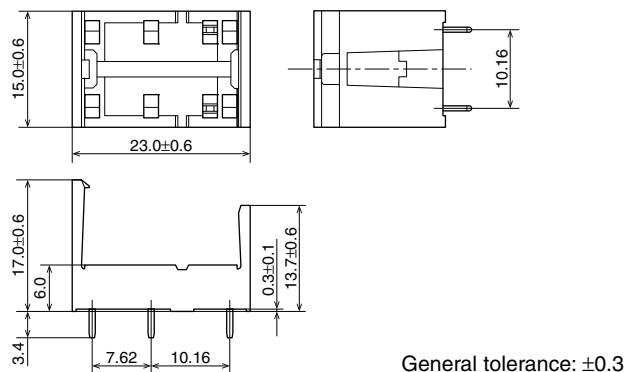
### SPECIFICATIONS

Item	Specifications	
Contact arrangement	1 Form A	1 Form A 1 Form B
Dielectric strength (Initial)	4,000 Vrms (Detection current: 10 mA) (Except the portion between coil terminals)	
Insulation resistance (Initial)	Min. 1,000 mΩ (at 500 V DC)	
Max. continuous current	10 A	8 A
Conditions for operation, transport and storage	Ambient temperature: -40 to 65°C Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)	

### DIMENSIONS (mm)

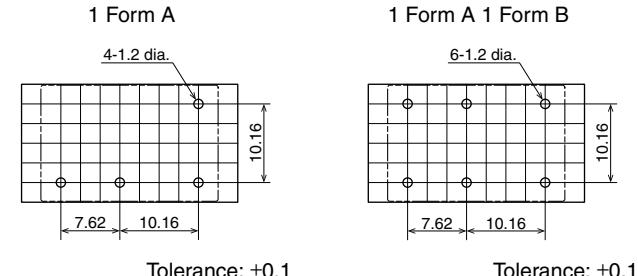
#### Single side stable

#### External dimensions



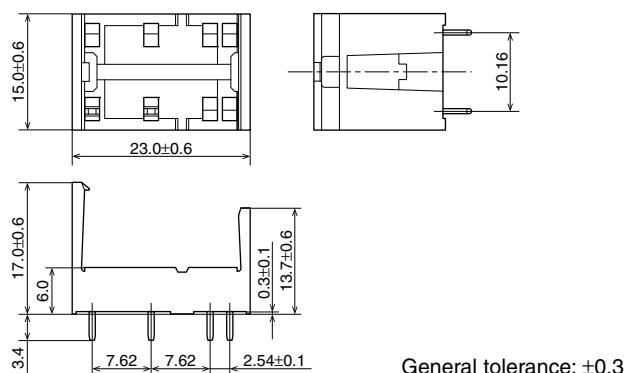
The CAD data of the products with a mark can be downloaded from: <http://industrial.panasonic.com/ac/e/>

#### PC board pattern (Bottom view)

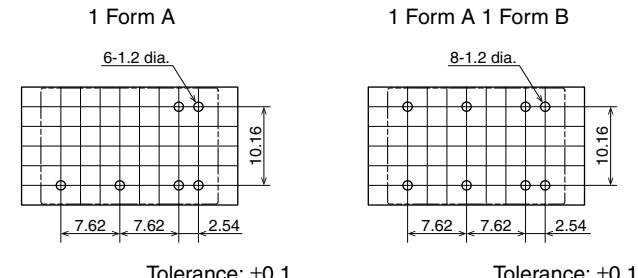


#### 2 coil latching

#### External dimensions

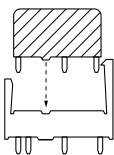


#### PC board pattern (Bottom view)

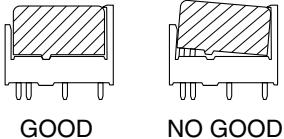


**NOTE****■ Fixing method of relay**

1. Match the direction of relay and socket.



2. Both ends of the relay are to be secured firmly so that the socket hooks on the top surface of the relay.

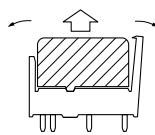


GOOD

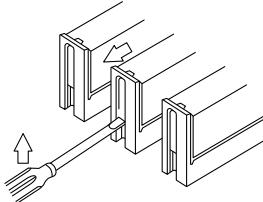
NO GOOD

**■ Removal method of relay**

1. Remove the relay, applying force in the direction shown below.



2. In case there is not enough space to grasp relay with fingers, use screwdrivers in the way shown below.



3. Exercise care when removing relays. If greater than necessary force is applied at the socket hooks, deformation may alter the dimensions so that the hook will no longer catch, and other damage may also occur.

4. It is hazardous to use IC chip sockets.

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Please contact .....

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Electromechanical Control Business Division

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[industrial.panasonic.com/ac/e/](http://industrial.panasonic.com/ac/e/)

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