

New Product Introduction

August 10, 2011

DW (ADW1) Series Polarized Power Relays: 8A Latching Relay for Energy Saving Devices



RoHS
compliant

1. Features:

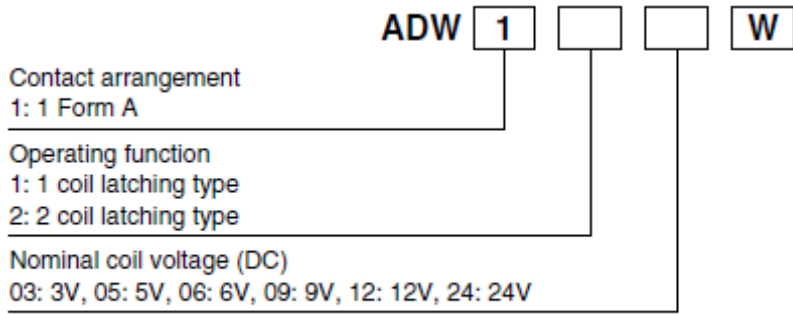
- **8A switching capacity with 1- and 2-coil latching for energy savings**
- **1 Form A contact arrangement**
- **High breakdown voltage**
 - Surge breakdown voltage (between contact and coil): 12,000 V
 - Breakdown voltage (between contact and coil): 5,000 V
- **Pin-in-paste design compatible with reflow process**

2. Applications:

- **Smart meters**
- **Home appliances**
- **Power supplies**
- **Industrial equipment**

3. Release Schedule: August 2011

4. Ordering Information:



Note: The suffix "W" on the part number is only displayed on the inner and outer packaging.
It is not displayed on the relay.

TYPES

Contact arrangement	Nominal coil voltage	Part No.	
		1 coil latching type	2 coil latching type
1 Form A	3V DC	ADW1103W	ADW1203W
	5V DC	ADW1105W	ADW1205W
	6V DC	ADW1106W	ADW1206W
	9V DC	ADW1109W	ADW1209W
	12V DC	ADW1112W	ADW1212W
	24V DC	ADW1124W	ADW1224W

Standard packing: Carton: 100 pcs.; Case: 500 pcs.

5. Technical Information: Please refer to attached datasheet for details.

RATING

1. Coil data

1) 1 coil latching type

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)
3V DC	*80%V or less of nominal voltage (Initial)	*80%V or less of nominal voltage (Initial)	66.7mA		45Ω	200mW	110%V of nominal voltage
5V DC			40.0mA		125Ω		
6V DC			33.3mA		180Ω		
9V DC			22.2mA		405Ω		
12V DC			16.7mA		720Ω		
24V DC			8.3mA		2,880Ω		

2) 2 coil latching type

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	
3V DC	*80%V or less of nominal voltage (Initial)	*80%V or less of nominal voltage (Initial)	133.3mA	133.3mA	22.5Ω	22.5Ω	400mW	400mW	110%V of nominal voltage
5V DC			80.0mA	80.0mA	62.5Ω	62.5Ω			
6V DC			66.7mA	66.7mA	90 Ω	90 Ω			
9V DC			44.4mA	44.4mA	202.5Ω	202.5Ω			
12V DC			33.3mA	33.3mA	360 Ω	360 Ω			
24V DC			16.7mA	16.7mA	1,440 Ω	1,440 Ω			

*Pulse drive (JIS C 5442-1996)

2. Specifications

Characteristics	Item	Specifications	
Contact	Arrangement	1 Form A	
	Contact resistance (Initial)	Max. 100 mΩ (By voltage drop 6 V DC 1A)	
	Contact material	AgSnO ₂ type	
Rating	Nominal switching capacity (resistive load)	8 A 250V AC	
	Max. switching power (resistive load)	2,000 V A	
	Max. switching voltage	250V AC	
	Max. switching current	8A AC	
	Nominal operating power	200mW (1 coil latching type), 400mW (2 coil latching type)	
	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	1,000 Vrms for 1min. (Detection current: 10mA)
		Between contact and coil	5,000 Vrms for 1min. (Detection current: 10mA)
Temperature rise (coil) (at 85°C 185°F)		Max. 35°C 95°F (By resistive method, contact carrying current: 8A, Coil: de-energized)	
Surge breakdown voltage*2 (Between contact and coil)		12,000 V (Initial)	
Set time (at 20°C 68°F)		Max. 15 ms (Nominal voltage applied to the coil, excluding contact bounce time)	
Reset time (at 20°C 68°F)		Max. 15 ms (Nominal voltage applied to the coil, excluding contact bounce time)	
Mechanical characteristics	Shock resistance	Functional	100 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10μs)
		Destructive	1,000 m/s ² (Half-wave pulse of sine wave: 6 ms)
	Vibration resistance	Functional	10 to 55 Hz at double amplitude of 2 mm (Detection time: 10μs)
Destructive		10 to 55 Hz at double amplitude of 3 mm	
Expected life	Mechanical	Min. 10 ⁶ (at 180 times/min.)	
	Electrical	Min. 5 × 10 ⁴ (at 8 A 250V AC, resistive load) (at 20 times/min.)	
Conditions	Conditions for operation, transport and storage*3 *4	Temperature: -40°C to +85°C -40°F to +185°F, Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)	
	Max. operating speed (at nominal switching capacity)	20 times/min.	
Unit weight		Approx. 8 g .28 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 $\pm 1.2 \times 50\mu\text{s}$ 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.

*4. Allowable range when in original packaging is -40°C to +70°C -40°F to +158°F.

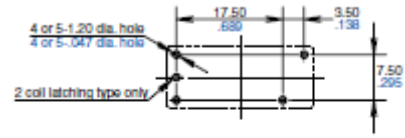
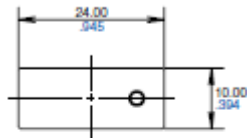
DIMENSIONS (mm inch)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://panasonic-electric-works.net/ac>

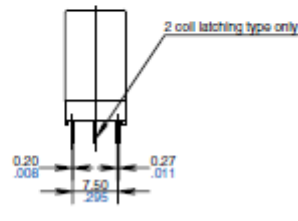
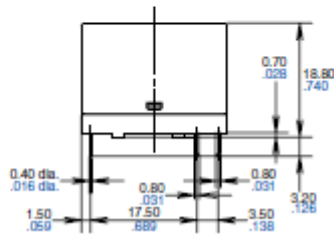
CAD Data

External dimensions

PC board pattern (Bottom view)

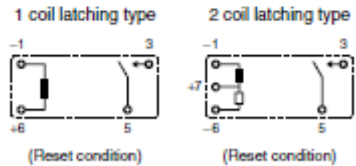


Tolerance: $\pm 0.1 \pm 0.004$



General tolerance: $\pm 0.3 \pm 0.012$

Schematic (Bottom view)



SAFETY STANDARDS

Product name	UL/C-UL (Recognized)		VDE (Certified)	
	File No.	Contact rating	File No.	Contact rating
1 Form A	E43149	8A 250V AC R 85°C 185°F 5A 30V DC R 85°C 185°F	40032254	8A 250V AC (cosφ=1.0) 85°C 185°F 5A 30V DC (0ms) 85°C 185°F

Note: CSA standard; Certified by C-UL

Any questions, please contact your local Panasonic Electric Works Sales representatives.

Ref#: M-403