

## ● Features

- Switching capability up to 20A
- PCB terminals
- Different contact arrangement available
- Unenclosed and Plastic sealed types available
- Environmental friendly product (RoHS compliant)
- Dimension: 17.7 x 15.2 x 19.7 mm (with cover)  
16.0 x 13.2 x 18.0 mm (without cover)



## ● Application

- Signal Light & Lamp Control / Audio System / A/C Control / Fuel Pump Control / Temperature Control / Seat Adjustment / Window Defoggers / Starter Solenoid Switches / Anti-theft Alarm System / Central Door Lock / Power Doors & Windows, etc.

## ● Contact Data

Contact Arrangement	1A, 1U	1B, 1V	1C, 1W
Contact Material	Ag Alloy		
Contact Rating	1A: 20A 1U: 2 x 20A	1B: 10A 1V: 2 x 10A	1C: NO: 20A NC: 10A 1W: NO: 2 x 15A NC: 2 x 5A
Max. Switching Voltage	14VDC		
Max. Switching Current	20A		
Min. Contact Load	1A 6VDC		
Voltage Drop (initial)	NO: Typ. 40mV, 250mV max. (at 10A) NC: Typ. 50mV, 250mV max. (at 10A)		
Contact Resistance	$\leq 100\text{m}\Omega$		
Electrical Endurance	$2 \times 10^5$ (load at 10A 14VDC for 1 form A/B/C/U/V, 7A 14VDC for 1 form W)		
Mechanical Endurance	$1 \times 10^7$		

### ● Coil Parameter (at 23°C)

Coil Voltage (VDC)		Coil Resistance ( $\Omega \pm 10\%$ )	Pickup Voltage(max) (VDC)		Release Voltage(min) (VDC)		Coil Power Consumption (W)
Rated	Max.		1A, 1B, 1C, 1U, 1V	1W	1B, 1V	1A, 1C, 1U, 1W	
6	7.8	28	3.75	4.50	0.35	0.70	1.3
12	15.6	130	7.50	9.00	0.70	1.40	1.1
24	31.2	520	15.0	18.0	1.40	2.80	1.1

### ● Operation Condition

Insulation Resistance		100M $\Omega$ min (at 500VDC)
Dielectric Strength	Between Contacts	500V, 50Hz 1 min.
	Between Contact and Coil	1500V, 50Hz 1 min.
Shock Resistance		100m/s <sup>2</sup> 11ms
Vibration Resistance		10~40Hz double amplitude 1.27mm
Ambient Temperature		-40~85°C (no freezing)
Operate Time		$\leq 3$ ms
Release Time		$\leq 1.5$ ms
Weight		Approx. 8g (Open type), 12g

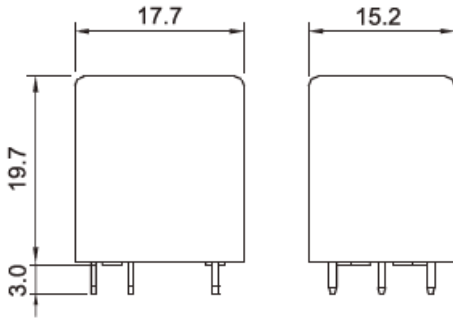
### ● Ordering Information

	AE	-12D	-A	-S	(XXX)
<b>Model</b>					
<b>Coil Voltage</b>	6D: 6VDC	12D: 12VDC	24D: 24VDC		
<b>Contact</b>	A: 1 Form A	B: 1 Form B	C: 1 Form C		
<b>Arrangement</b>	U: 1 Form U	V: 1 Form V	W: 1 Form W		
<b>Construction</b>	Nil: Flux tight	S: Sealed	O: Open		
<b>Special Code</b>	Nil: Standard	XXX: Customer special requirement			

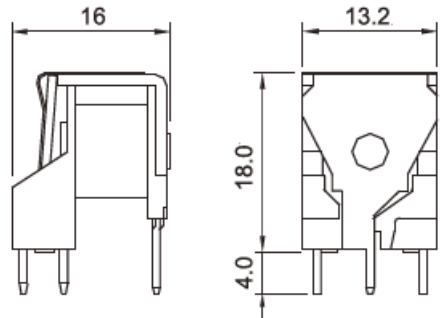
## ● Dimensions (UNIT: mm)

### Outline Dimensions

#### Standard and Sealed type

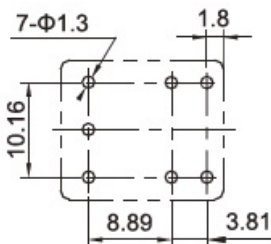


#### Open Type

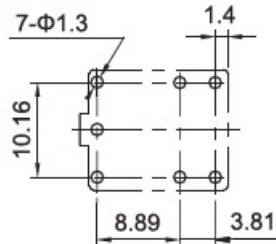


### Mounting (Bottom views)

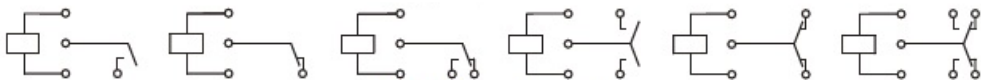
#### Standard and Sealed type



#### Open Type



### Wiring Diagram (Bottom views)



1 Form A

1 Form B

1 Form C

1 Form U

1 Form V

1Form W

Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.5\text{mm}$ .

2) The tolerance without indicating for PCB layout is always  $\pm 0.1\text{mm}$ .

### Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to

# Automotive Relay I AE



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change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact IOEC for the technical service. However, it is the user's responsibility to determine which product should be used only.