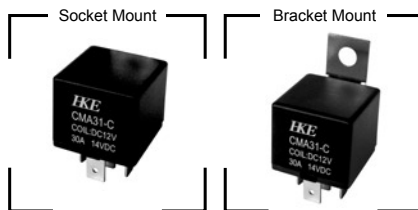




## ■ Features

- Heavy duty general purpose automotive relay  
Dimensions: 27.8×27.8×24.6(mm)
- Switching capacity 40A
- Available in 2 mounting options, socket or bracket mount
- Applications: air compressor, heater, fan motor, blower fan, defogger, etc



## ORDERING INFORMATION

**CMA31** - DC12V - A - R - D

Model	Coil Voltage	Contact Form	Parallel Resistor	Parallel Diode
	DC6V DC12V DC24V	A - 1 Form A B - 1 Form B C - 1 Form C	R - With Resistor (6V - 180Ω, 12V - 680Ω, 24V - 2700Ω) Blank - Standard	D - With Diode Blank - Standard

Remark: Available in 2 mounting options, plug-in or bracket mount

## SPECIFICATION

### CONTACT DATA

Contact Form	1 Form A, 1 Form B, 1 Form C	
Contact Material	Ag Alloy	
Contact Rating	30A 14VDC Resistive (C) 40A 14VDC Resistive (A) 30A 14VDC Resistive (B)	
Contact Resistance	Max. 100mΩ (6VDC 1A)	
Load	Max. Switching Voltage	75VDC
	Max. Switching Current	Refer to table1
	Max. Switching Power	420W(C), 560W(A)
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

### COIL DATA

Nominal Coil Power	1600mW
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### GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	500VAC, 1min
	Between coil and contacts	500VAC, 1min
Operate Time	Max. 10ms	
Release Time	Max. 10ms	
Operating Temperature	-40°C to +85°C	
Humidity	35~95%RH, +40°C	
Shock Resistance	Endurance	1,000m/s <sup>2</sup>
	Misoperation	100m/s <sup>2</sup>
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight	Approximately 37.0g (Bracket) Approximately 32.0g (Without Bracket)	

Note: Data shown are of initial value

Table 1 (Maximum Load Current)

Load	1 Form A	1 Form B	1 Form C	
			NO	NC
Contact Rating Current	40A	30A	40A	30A
Max. Make Current	100A	60A	100A	30A
Max. Break Current	40A	30A	40A	30A

COIL DATA

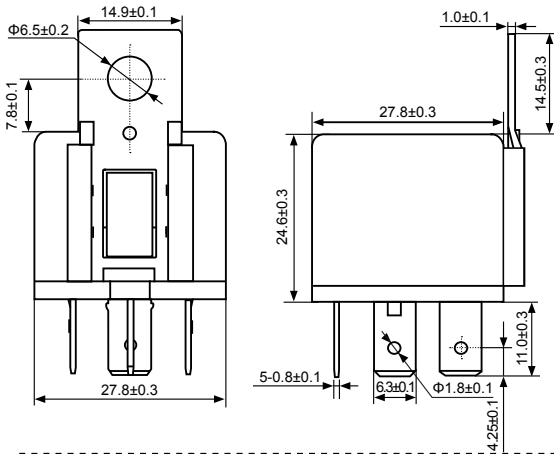
Ambient Temperature: 23°C

Model	Nominal Voltage VDC	Coil Resistance $\Omega \pm 10\%$	Operate Voltage $\leq$ VDC	Release Voltage $\geq$ VDC	Coil Power mW
CMA31-DC6V	6	22.5	4.2	0.6	1600
CMA31-DC12V	12	90.0	8.4	1.2	
CMA31-DC24V	24	360	16.8	2.4	

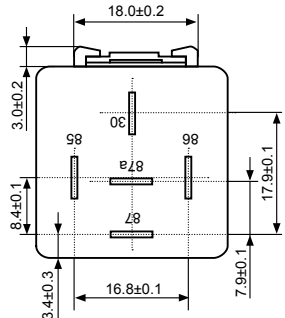
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

With Bracket

Outline



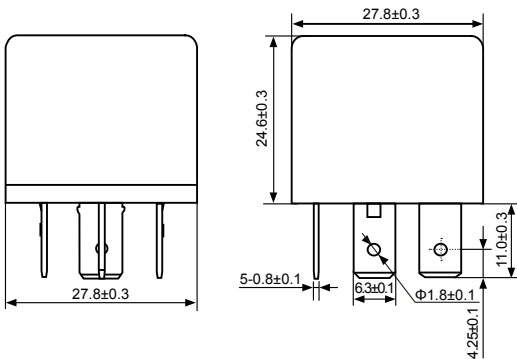
Mounting Hole Layout (Bottom View)



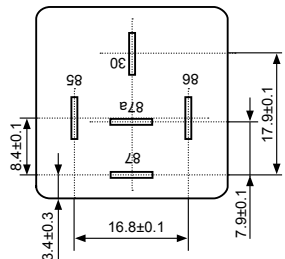
Remark: Form A: Without 87a terminal  
 Form B: Without 87 terminal  
 Form C: With all terminals

Without Bracket

Outline



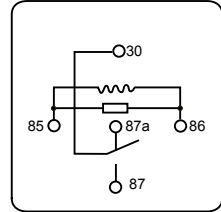
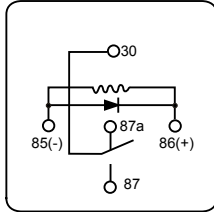
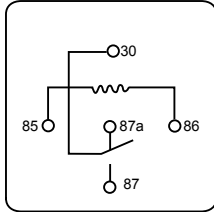
Mounting Hole Layout (Bottom View)



Remark: Form A: Without 87a terminal  
 Form B: Without 87 terminal  
 Form C: With all terminals

**DIMENSIONS, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: MM)**

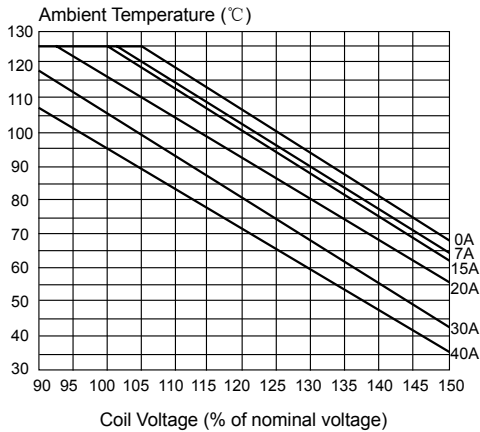
Wiring Diagram  
(Bottom View)



Remark: Form A: Without 87a terminal  
Form B: Without 87 terminal  
Form C: With all terminals

**REFERENCE DATA**

Continuous coil voltage range



Maximum Switching Power

