

# HAG01M SERIES

# POWER RELAY



File No.:E75887



File No.:R 50471143



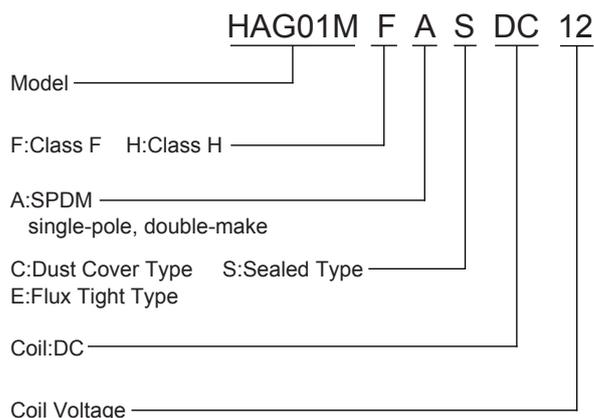
## FEATURES

- With arc extinguishing magnets
- High performance DC relay for photovoltaic power generation systems, energy storage system and xEV charging device, etc

## CONTACT RATINGS

Contact Arrangement	1A
Contact Resistance	Max.10mΩ (by voltage drop 6VDC 20A)
Contact Material	Silver Alloy(Non-Cd)
Contact Rating(Resistive)	15A 500VDC, On 1s/Off 19s, 30,000 ops.
Max. Switching Voltage	500VDC
Max. Switching Current	15A
Mechanical Life	1×10 <sup>6</sup> operations
Electrical Life	15A 500VDC, ON 1s/OFF 19s 30,000 ops 20A 300VDC, ON 1s/OFF 19s 30,000 ops

## ORDERING INFORMATION



### Notes:

1. PC board assembled with dust cover type and flux tight type relays can not be washed and/or coated.
2. Dust cover type and flux tight type relays can not be used in the environment with dust, or H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub> or similar gaseous environment etc.

## CHARACTERISTICS

Insulation Resistance	1000MΩ (at 500VDC)	
Dielectric Strength	Between coil & contacts	5000VAC 1min
	Between open contacts	2000VAC 1min
Surge Voltage	10kV(1.2/50μS)	
Operate time (at nomi. volt.)	≤30ms	
Release time (at nomi. volt.)	≤10ms	
Humidity	5%~85% RH	
Operating Condition	-40°C~+85°C	
Shock Resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance	10Hz ~ 55Hz 1.5mm DA	
Unit weight	Approx. 130g	
Construction	Sealed Type, Dust Cover Type, Flux Tight Type	

Notes: The data shown above are initial values.

## COIL DATA

at 25°C

Nominal Voltage VDC	Operate Voltage (Max.) VDC	Release Voltage (Min.) VDC	*Max. Allowable Voltage VDC	Coil Resistance Ω±10%
6	4.50	0.30	6.60	14.4
9	6.75	0.45	9.90	32.4
12	9.00	0.60	13.20	57.6
24	18.00	1.20	26.40	230.4

Note:\*\*Max Allowable Voltage\*: The relay coil can endure max allowable voltage for a short period time only.

## COIL

Coil Power	Approx. 2.5W
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This datasheet is for customers' reference. All the specifications are subject to change without notice.



\* SINCE 1976 \*

RELAYS  
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## SAFETY APPROVAL RATINGS

UL&CUL	20A 300VDC, ON 0.5s/OFF 9s, 25°C, 3×10 <sup>4</sup> OPS
	20A 300VDC, ON 0.5s/OFF 9s, 85°C, 1×10 <sup>4</sup> OPS

TüV	10A 500VDC, ON 1s/OFF 9s, 25°C, 3×10 <sup>4</sup> OPS
	15A 500VDC, ON 1s/OFF 19s, 25°C, 3×10 <sup>4</sup> OPS
	20A 300VDC, ON 1s/OFF 19s, 25°C, 3×10 <sup>4</sup> OPS
	10A 500VDC, ON 1s/OFF 9s, 85°C, 1×10 <sup>4</sup> OPS
	15A 500VDC, ON 1s/OFF 19s, 85°C, 1×10 <sup>4</sup> OPS
	20A 300VDC, ON 1s/OFF 19s, 85°C, 1×10 <sup>4</sup> OPS

**NOTES:**

1. All values without specified temperature are at 25°C.
2. The above lists the typical loads only. Other loads may be available upon request.

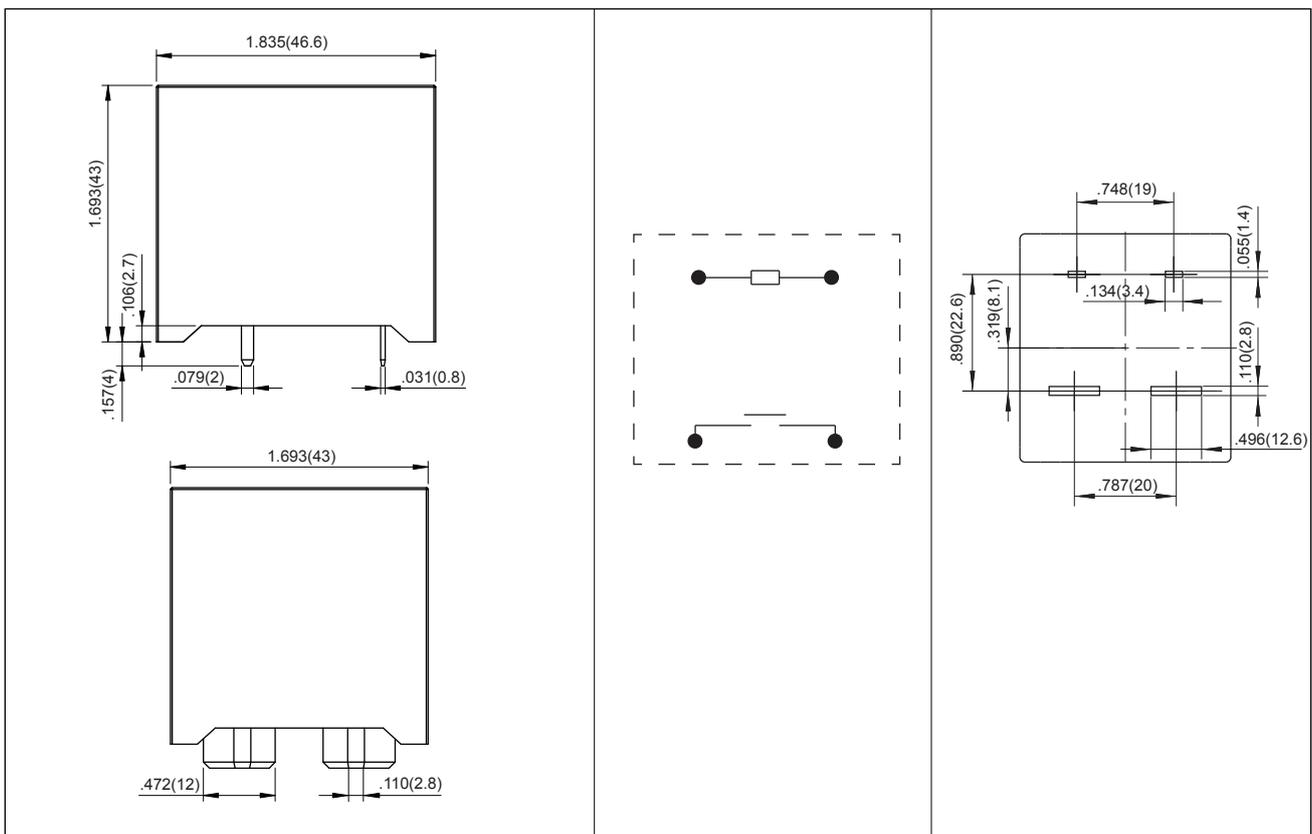
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

Unit: inch(mm)

Outline Dimensions

Wiring Diagram  
(Bottom view)

PCB Layout  
(Bottom view)



- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension > 1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
- 2) The tolerance without indicating for PCB layout is always ±0.1mm.

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# RELAYS

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## PACKAGING SPECIFICATION

BLISTER BOX	OUTER CARTON	OUTER CARTON SIZE
9PCS	54PCS	L455mm*W220mm*H185mm

## APPLICATION GUIDELINES

### Automatic Wave Soldering

- \* Wave solder is the optimum method for soldering.
- \* Adjust the level of solder so that it does not overflow onto the top of the PC board.
- \* Unless otherwise specified, solder under the following conditions depending on the type of relay.

Preheat time 20°C-100°C	Rising slope 20°C-120°C	Decreasing slope Peak-150°C	Soldering temperature 255°C-265°C
90±5 seconds	<3°C/s	<4°C/s	3~5s

### Hand Soldering

- \* Keep the tip of the soldering iron clean.

Solder Iron	30W or 60W
Iron Tip Temperature	Approx. 350°C 662°F
Solder Time	Within approx. 3 seconds

- \* Immediate air cooling is recommended to prevent deterioration of the relay and surrounding parts due to soldering heat.
- \* Although the sealed type relay can be cleaned, avoid immersing the relay into cold liquid (such as washing solvent) immediately after soldering. Doing so may deteriorate the sealing performance.

### Discard the dropped product

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