

# HFA4G

# FORCE-GUIDED RELAY



File No.: E133481



File No.: R50527765



File No.: CQC21002303130



## Features

- 6A switching capability;
- Multi contact arrangements: 2NO+2NC, 3NO+1NC;
- Forcibly guided contacts according to IEC 61810-3;
- High insulation capability: 6kV surge voltage between input and output;
- UL insulation system: Class F;
- Outline dimensions: (35×12.6×25.5)mm.

RoHS compliant

## CONTACT DATA

Contact arrangement	2NO+2NC, 3NO+1NC
Contact resistance	100mΩ max.(at 1A 6VDC)
Contact material	AgSnO <sub>2</sub>
Contact rating(Res.)	6A 250VAC, 6A 24VDC
Min.contact load <sup>2)</sup>	5VDC 10mA
Max.swtiching voltage	30VDC/400VAC
Max.switching current	6A
Max.switching power	180W/1500VA
Mechanical endurance	1×10 <sup>7</sup> OPS
Electrical endurance <sup>3)</sup>	1×10 <sup>5</sup> OPS (6A 250VAC, 1NO Resistive load, Room temp., 1s on 9s off)

Notes:1)The data shown above are initial values.

2)Min. contact load is just a reference value in normal temperature, normal humidity, normal pressure environment and with relay pin up, which will vary depending on the power-on and off frequency, environmental conditions, expected lifespan, and installation direction. Thus, please have confirmation tests with actual load before use. And it is recommended to avoid using the relay when the temperature is below 0°C.

3)No loading test, no mechanical damage after the test.

## CHARACTERISTICS

Insulation resistance	1000MΩ(500VDC)	
Dielectric strength	Between open contacts	1500VAC 1min
	Between contact sets	3000VAC 1min
	Between coil & contacts	4000VAC 1min
Surge Voltage	6kV(1.2×50μs)	
Operate time (at nomi. volt.)	20ms max.	
Release time (at nomi. volt.)	10ms max.	
Shock resistance	Functional	NO: 98m/s <sup>2</sup> ,NC: 49m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance	10Hz to 55Hz 1.5mm DA 55Hz to 200Hz, NO:10g,NC:5g	
Humidity	5% to 85%RH	
Ambient temperature	-40°C to 85°C	
Termination	PCB	
Unit weight	Approx. 25g	
Construction	Flux proofed	

Notes:1)The data shown above are initial values.

## COIL

Coil power	Approx. 1W
Holding Voltage <sup>1)</sup>	50% to 120%U <sub>N</sub> (at 23°C)
	60% to 80%U <sub>N</sub> (at 85°C)

Notes:1) The coil holding voltage is the voltage applied to coil 100ms after the rated voltage.

## COIL DATA

23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Allowable Voltage VDC	Coil Resistance Ω
6	4.20	0.6	6.5	36×(1±10%)
12	8.40	1.2	7.8	150×(1±10%)
20	14.0	2.0	11.7	400×(1±10%)
24	16.8	2.4	15.6	580×(1±10%)
48	33.6	4.8	23.4	2300×(1±10%)
60	42.0	6.0	31.2	3600×(1±10%)
110	77.0	11	62.4	12100×(1±10%)

Notes:1)The data shown above are initial values.

2) Max. voltage refers to the maximum voltage which relay coil could endure in a short period of time.

## SAFETY APPROVAL RATINGS

UL	1NO	6A 250VAC Resistive load 85°C 6A 24VDC Resistive load 85°C B300/R300 85°C
	1NC	6A 250VAC Resistive load 85°C
TÜV	1NO	6 A 250VAC Resistive load 85°C 6 A 24VDC Resistive load 85°C 3A 400VAC Resistive load 85°C AC-15 3A 250VAC 85°C DC-13 4A 24VDC 85°C
	1NC	6A 250VAC Resistive load 85°C AC-15 1A 250VDC 85°C DC-13 3A 24VDC 85°C

Notes:Only typical loads are listed above. Other load specifications can be available upon request.



HONGFA RELAY

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/IEC 27001 CERTIFIED

2025 Rev. 1.00

## ORDERING INFORMATION

Type	HFA4G/	12	-2H2D	1	S	T	F	G	(XXX)
Coil voltage	6, 12, 20, 24, 48, 60, 110VDC								
Contact arrangement	2H2D: 2NO+2NC 3H1D: 3NO+1NC								
Structure	1: 1 type								
Construction	S: Plastic sealed								
Contact material	T: AgSnO <sub>2</sub>								
Insulation class	F: Class F								
Contact plating	G: Au plated								
Special code <sup>2)</sup>	XXX: Customer special requiremen Nil: Standard								

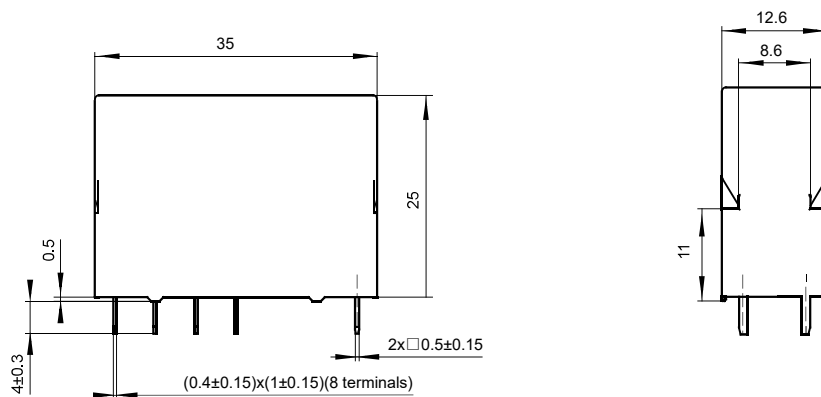
Notes: 1) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB;  
2) The customer special requirement express as special code after evaluating by Hongfa.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

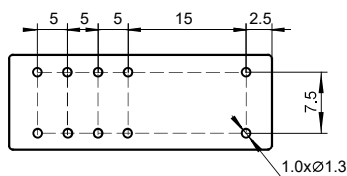
Unit: mm

HFA4G/XX-2H2D1TFG(XXX)

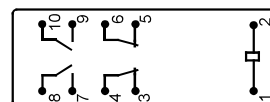
### Outline Dimensions



### PCB Layout(Bottom view)



### Wiring Diagram(Bottom view)

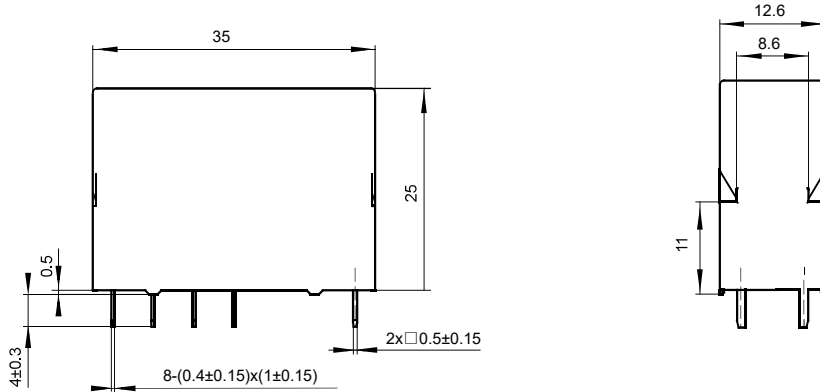


# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

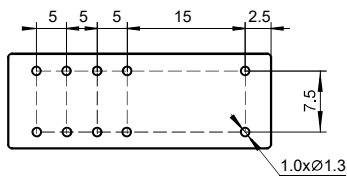
Unit: mm

HFA4G/XX-3H1D1TFG (XXX)

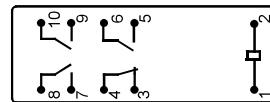
## Outline Dimensions



## PCB Layout(Bottom view)



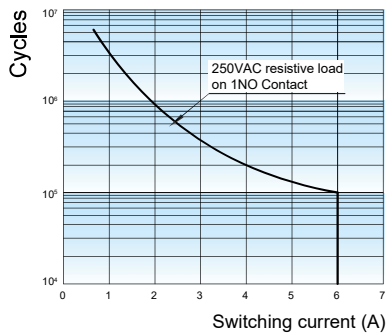
## Wiring Diagram(Bottom view)



- Notes:** 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$ mm, tolerance should be  $\pm 0.2$ mm; outline dimension  $> 1$ mm and  $\leq 5$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 5$ mm, tolerance should be  $\pm 0.4$ mm.  
2) The tolerance without indicating for PCB layout is always  $\pm 0.1$ mm.

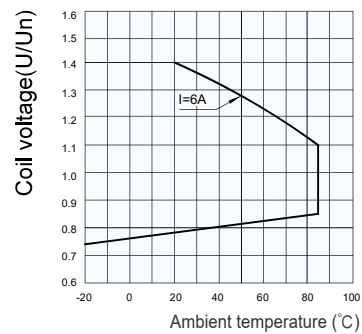
# CHARACTERISTIC CURVES

## ELECTRICAL ENDURANCE



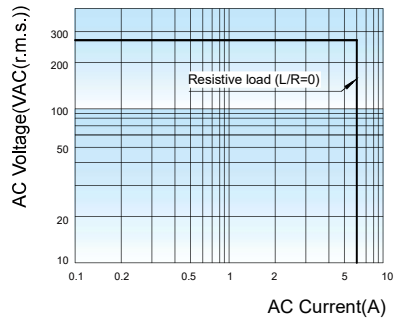
**Test condition:**  
250VAC, Room temp., 1s on 9s off.

## COIL OPERATING RANGE

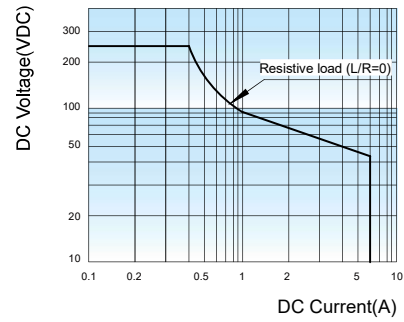


## CHARACTERISTIC CURVES

AC LOAD BREAKING CAPACITY



MAX.DC LOAD BREAKING CAPACITY



### Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to 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 Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.