HFA6 FORCE-GUIDED RELAY

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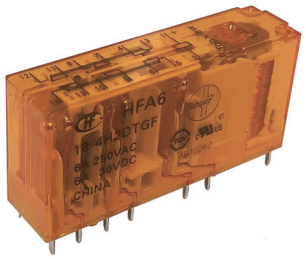
File No.:E134517

TÜV
File No.:B 053286 0043



Features

- Multi contact arrangements: 5NO+1NC, 4NO+2NC, 3NO+3NC
- Forcibly guided contacts according to IEC 61810-3
- 6A switching capability
- Low input power: 500mW
- High insulation capability: 10kV surge voltage between input and output
- UL insulation system: Class F available

RoHS compliant

CONTACT DATA

Contact arrangement	5NO+1NC (5H1D type) 4NO+2NC (4H2D type) 3NO+3NC (3H3D type)
Forcibly guided contacts Type(according to IEC61810-3)	Type A
Contact resistance1)	100mΩ (at 1A 6VDC)
Contact material	$AgSnO_2$
Contact rating (Res. load)	6A 250VAC / 30VDC
Min.contact load2)	5VDC 10mA
Max. switching voltage	400VAC / 30VDC
Max. switching current	6A
Max. switching power	1500VA /180W
Mechanical endurance3)	1 x 10^7OPS
Electrical endurance	1 x 10^5OPS (1NO: 6A 30VDC, Resistive load, Room temp., 1s on 9s off) 1 x 10^5OPS (1NO: 6A 250VAC, 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℃.
3) No loading test, no mechanical damage after the test.

COIL DATA at 23℃

Nominal Voltage VDC	Pick-up Voltage VDC max.1)	Drop-out Voltage VDC min.1)	Max. Voltage VDC 2)	Coil resistance Ω
5	3.8	0.5	5.5	50 x (1±10%)
6	4.5	0.6	6.6	72 x (1±10%)
9	6.8	0.9	9.9	162 x (1±10%)
12	9.0	1.2	13.2	288 x (1±10%)
18	13.5	1.8	21.78	648 x (1±10%)
24	18.0	2.4	26.4	1152 x (1±10%)
36	27.0	3.6	39.6	2592 x (1±10%)
48	36.0	4.8	52.8	4608 x (1±10%)
110	82.5	11	121	24200 x (1±10%)

Notes: 1) The data shown above are initial values.
2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1 min
	Between open contacts	1500VAC 1 min
	Between contact sets	2500VAC 1 min (11-12/13-14) 4000VAC 1 min (Other)
Surge voltage	Between coil & contacts	10kV (1.2 / 50μs)
	Between contact sets	5kV (1.2 / 50μs)
Operate time (at rated voltage)		20ms max.
Release time (at rated voltage)		20ms max.
Temperature rise (at rated voltage)		≤70K (Coil driving voltage: 1.1 times Un, Contact current -carrying: rated current, at 85 ℃)
Vibration resistance		NO/NC:10Hz to 55Hz 1.5mm DA NO:55Hz to 200Hz, 98m/s^2 NC:55Hz to 200Hz, 49m/s^2
Shock resistance	Functional	100m/s^2
	Destructive	980m/s^2
Creepage distance	Between coil & contacts	8mm
	Between contacts	5.5mm
Clearance distance	Between coil & contacts	8mm
	Between contacts	5.5mm
Humidity		5% to 85% RH
Ambient temperature		-40℃ to 85℃
Termination		PCB
Unit weight		Approx. 23g
Construction		Flux proofed

Notes: 1) The data shown above are initial values.
2) UL insulation system: Class F, Class B.

COIL

Coil power	Approx. 500mW

SAFETY APPROVAL RATINGS

UL/CUL	6A 277VAC / 250VAC / 125VAC at 85℃ 6A 30VDC at 85℃ Pilot duty: 1.5A 240VAC 3A 120VAC
TÜV	6A 277VAC / 30VDC 1.5A /2A 240VAC(AC-15)

Notes: 1) All values unspecified are at room temperature.
2) Only typical loads are listed above. Other load specifications can be available upon request.

ORDERING INFORMATION

	HFA6 /	24	-5H1D	T	G	F	(XXX)
Type							
Coil voltage	5,6, 9, 12, 18, 24, 36, 48,110VDC						
Contact arrangement	**5H1D:** 5NO+1NC **3H3D:** 3NO+3NC		**4H2D:** 4NO+2NC				
Contact material	**T:** $AgSnO_2$						
Contact plating	**G:** Gold plated						
Insulation class	**F:** Class F						
Special code[4)]	**XXX:** Customer special requirement			**Nil:** Standard			

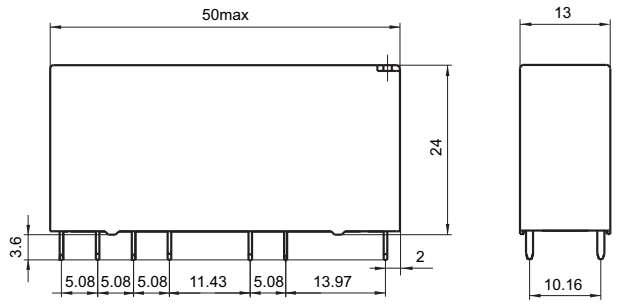
Notes: 1) Flux-proofed relays can not be used in the environment with pollutants like H_2S, SO_2, NO_2, dust, etc.
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
3) Avoid contamination with organic solvents for the case using PC materials, otherwise chemical reactions may occur which may cause the shell to swell or crack.
4) The customer special requirement express as special code after evaluating by Hongfa.

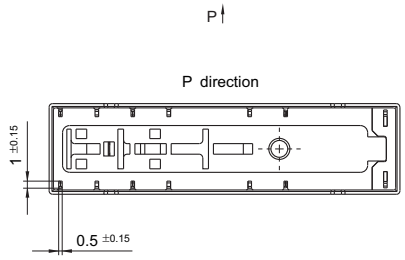
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

HFA6/□□-5H1DT□(□□□)

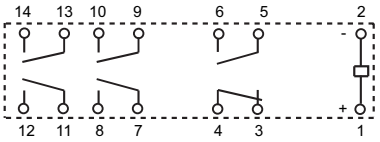
Outline Dimensions





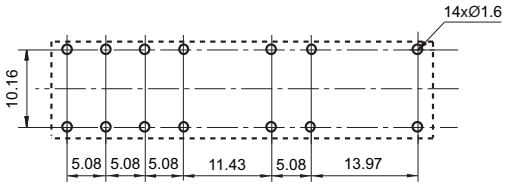
Wiring Diagram

(Bottom view)



PCB Layout

(Bottom view)

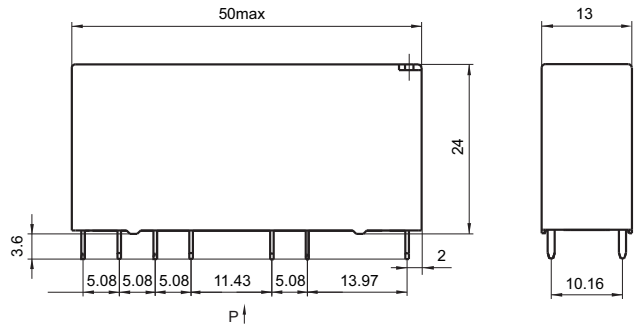


OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

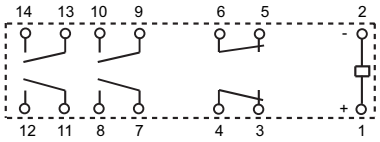
HFA6/□□-4H2DT□ (□□□)

Outline Dimensions



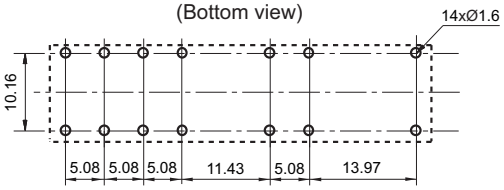
Wiring Diagram

(Bottom view)



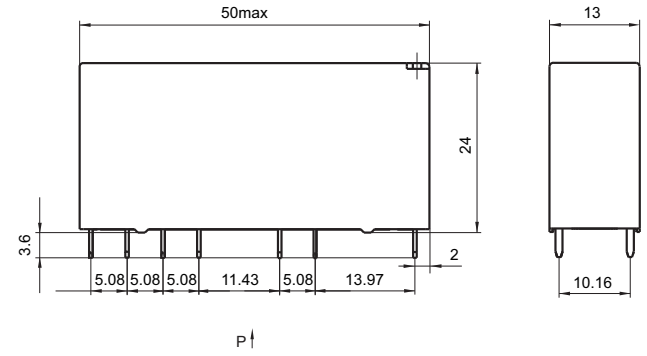
PCB Layout

(Bottom view)



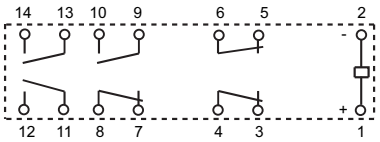
HFA6/□□-3H3DT□ (□□□)

Outline Dimensions



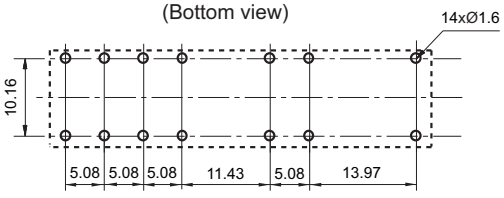
Wiring Diagram

(Bottom view)



PCB Layout

(Bottom view)

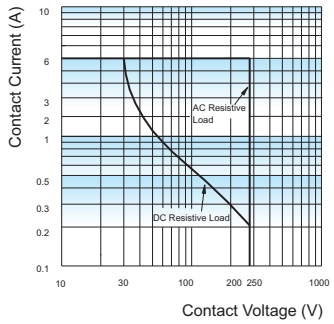


Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

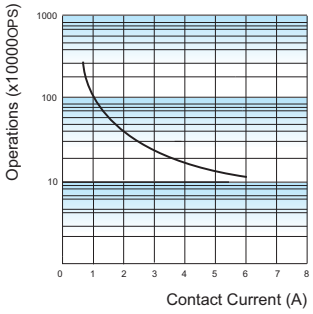
2) The tolerance without indicating for PCB layout is always ±0.1mm.

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER

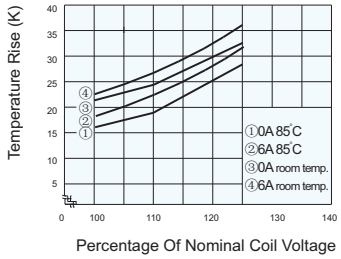


ENDURANCE CURVE

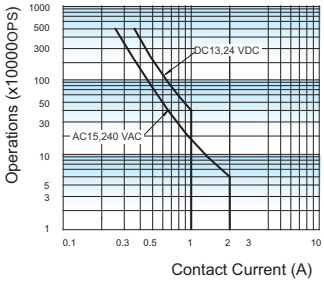


Test conditions:
1NO, Resistive load, 250VAC,
Room temp., 1s on 9s off
The data shown above are typical values.

COIL TEMPERATURE RISE



INDUCTIVE DURABILITY CURVE



Test conditions:
Connected to IEC61810-1 Appendix B Table B.3 method test, at room temperature, 1NO, 1s on and 9s off.