

HFA2

FORCE-GUIDED RELAY



File No.:E134517



File No.:B 053286 0041



Features

- Multi contact arrangements: 2 Form C (2Z type), 1NO+1NC (HD1 type), 1NO+1NC (HD2 type)
- Forcibly guided contacts according to IEC 61810-3
- 8A switching capability
- High insulation capability (1.2 / 50µs):10kV surge voltage between coil & contacts and 6kV between contact sets
- UL insulation system: Class F available

RoHS compliant

CONTACT DATA

| | |
|---|--|
| Contact arrangement | 2 Form C (2Z type) 1NO+1NC (HD1 type) 1NO+1NC (HD2 type) |
| Forcibly guided contacts Type (according to IEC61810-3) | HD1, HD2 type: Type A 2Z type: Type B |
| Contact resistance ¹⁾ | 100mΩ max. (at 1A 6VDC) |
| Contact material | AgSnO ₂ |
| Contact rating (Res. load) | 6A 250VAC / 30VDC Gold plated:5VDC 10mA No gold plated:5VDC 100mA |
| Min.contact load ²⁾ | |
| Max. switching voltage | 400VAC / 250VDC |
| Max. switching current | 8A |
| Max. switching power | 1500VA / 180W |
| Mechanical endurance ³⁾ | 1 x 10 ⁷ OPS |
| Electrical endurance ⁴⁾ | 1 x 10 ⁵ OPS (1NO: 6A 250VAC/30VDC, Resistive load, at 70°C, 1s on 9s off) 5 x 10 ⁴ OPS (1NC: 6A 250VAC/30VDC, Resistive load, at 70°C, 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.
4) Only 1 NO or NC is loaded in the test.

COIL DATA

at 23°C

| Nominal Voltage VDC | Pick-up Voltage VDC Max. ¹⁾ | Drop-out Voltage VDC Min. ¹⁾ | Max. Voltage VDC ²⁾ | Coil resistance Ω |
|---------------------|--|---|--------------------------------|-------------------|
| 5 | 3.80 | 0.5 | 7.5 | 35.7 x (1±10%) |
| 6 | 4.50 | 0.6 | 9.0 | 51 x (1±10%) |
| 9 | 6.80 | 0.9 | 13.5 | 116 x (1±10%) |
| 12 | 9.00 | 1.2 | 18 | 206 x (1±10%) |
| 15 | 11.3 | 1.5 | 22.5 | 321 x (1±10%) |
| 18 | 13.5 | 1.8 | 27 | 483 x (1±10%) |
| 21 | 15.8 | 2.1 | 31.5 | 630 x (1±10%) |
| 24 | 18.0 | 2.4 | 36 | 823 x (1±10%) |
| 36 | 27.0 | 3.6 | 54 | 1851 x (1±10%) |
| 40 | 30.0 | 4.0 | 60 | 2286 x (1±10%) |
| 48 | 36.0 | 4.8 | 72 | 3291 x (1±15%) |
| 60 | 45.0 | 6.0 | 90 | 5142 x (1±15%) |
| 80 | 64.0 | 8.0 | 120 | 9143 x (1±15%) |
| 110 | 82.5 | 11.0 | 165 | 17285 x (1±15%) |

- 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 | 3000VAC 1 min |
| Surge voltage | Between coil & contacts | 10kV (1.2 / 50µs) |
| | Between open contacts | 2.5kV (1.2 / 50µs) |
| | Between contact sets | 6.0kV (1.2 / 50µs) |
| Operate time (at rated voltage) | | 15ms max. |
| Release time (at rated voltage) | | 10ms max. |
| Temperature rise (at rated voltage) | | 60K max. (Coil driving voltage: 1.1 times Un, Contact current -carrying: rated current, at 85 °C) |
| Vibration resistance | | NO:10Hz to 55Hz 1.6mm DA 55Hz to 200Hz, 98m/s ² NC:10Hz to 55Hz 0.4mm DA |
| Shock resistance | Functional | NO:98m/s ² NC: 49m/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°C to 85°C |
| Termination | | PCB |
| Unit weight | | Approx. 20g |
| Construction | | Plastic sealed |

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

COIL

| | |
|------------|---------------|
| Coil power | Approx. 700mW |
|------------|---------------|

SAFETY APPROVAL RATINGS

| | |
|--------|--|
| UL/CUL | 6A 250VAC / 277VAC / 30VDC at 70°C NO: Pilot duty A300, at 70°C NC: Pilot duty B300, at 70°C |
| TÜV | NO: 8A 250VAC at 85°C NC: 6A 250VAC at 85°C NO: 3A 240VAC(AC-15) at 55°C NC: 1.5A 240VAC(AC-15) at 55°C |

- Notes:** 1) All values unspecified are at room temperature.
2)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

2026 Rev. 1.00

ORDERING INFORMATION

| | | | | | | | | |
|----------------------------|---|----|----------------------------|----------------------|---|---|---|-------|
| Type | HFA2 / | 12 | -2Z | S | T | F | G | (XXX) |
| Coil voltage | 5, 6, 9, 12, 15, 18, 21, 24, 36, 40, 48, 60, 80, 110VDC | | | | | | | |
| Contact arrangement | 2Z: 2 Form C HD1: 1NO+1NC (Type 1) HD2: 1NO+1NC (Type 2) | | | | | | | |
| Construction ¹⁾ | S: Plastic sealed | | Nil: Flux proofed | | | | | |
| Contact material | T: AgSnO ₂ | | | | | | | |
| Insulation class | F: Class F | | Nil: Class B | | | | | |
| Contact plating | G: Gold plated | | Nil: No gold plated | | | | | |
| Special code ³⁾ | XXX: Customer special requirement | | | Nil: Standard | | | | |

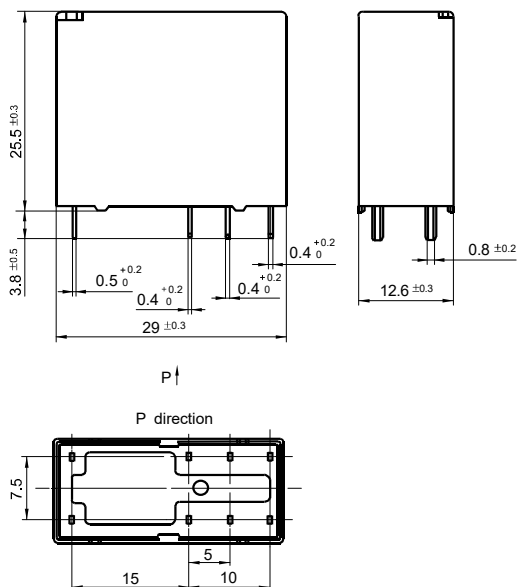
- Notes:**
- 1) If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.
 - 2) Avoid contamination with organic solvents for the case using PC materials, otherwise chemical reactions may occur which may cause the shell to swell or crack
 - 3) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

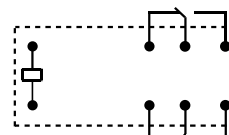
Unit: mm

HFA2/□□-2Z□T□(□□□)

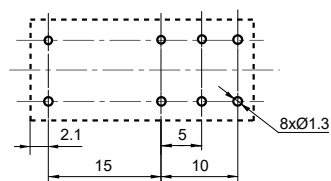
Outline Dimensions



Wiring Diagram

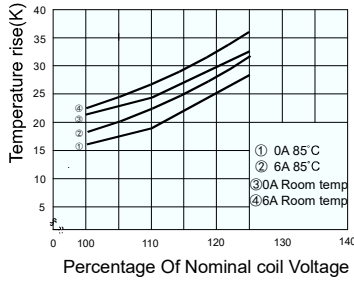


PCB Layout
(Bottom view)

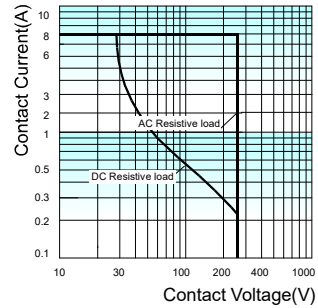


CHARACTERISTIC CURVES

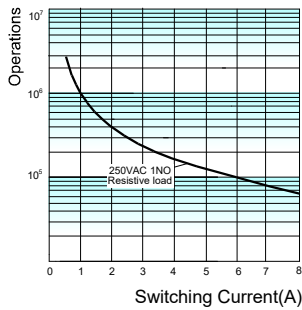
COIL TEMPERATURE RISE



LOAD BREAKING CAPACITY

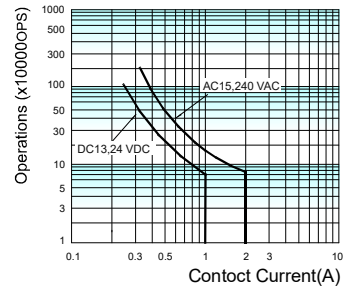


ELECTRICAL ENDURANCE



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

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.

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.

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